CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\057_CCV.D\057_CCV.D#
Date Acquired: May 4 2018 08:34 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.74	ppb	4.26	25	98.96	
11 B	25.67	ppb	6.62	25	102.68	
23 Na	5,189.	ppb	4.00	5,000	103.78	
25 Mg	5,231.	ppb	1.72	5,000	104.62	
27 Al	518.5	ppb	1.13	500	103.7	
28 Si	451.1	ppb	6.98	500	90.22	
29 Si	419.1	ppb	6.38	500	83.82	Fail
39 K	5,069.	ppb	1.42	5,000	101.38	
43 Ca	5,012.	ppb	3.71	5,000	100.24	
44 Ca	5,052.	ppb	2.24	5,000	101.04	
51 V	26.48	ppb	1.06	25	105.92	
52 Cr	26.03	ppb	0.23	25	104.12	
53 Cr	25.58	ppb	2.17	25	102.32	
55 Mn	25.7	ppb	0.65	25	102.8	
56 Fe	5,136.	ppb	1.28	5,000	102.72	
57 Fe	5,214.	ppb	1.91	5,000	104.28	
59 Co	25.86	ppb	1.60	25	103.44	
60 Ni	26.23	ppb	0.96	25	104.92	
63 Cu	25.91	ppb	0.77	25	103.64	
65 Cu	25.91	ppb	0.80	25	103.64	
66 Zn	25.07	ppb	1.77	25	100.28	
68 Zn	25.18	ppb	1.04	25	100.72	
75 As	25.76	ppb	1.01	25	103.04	
82 Se	26.13	ppb	1.95	25	104.52	
88 Sr	24.82	ppb	0.48	25	99.28	
98 Mo	24.35	ppb	0.49	25	97.4	
107 Ag	24.78	ppb	0.69	25	99.12	
109 Ag	24.98	ppb	1.21	25	99.92	
111 Cd	25.05	ppb	0.99	25	100.2	
114 Cd	24.94	ppb	0.18	25	99.76	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.9	ppb	0.79	25	103.6	
120 Sn	25.72	ppb	1.66	25	102.88	
121 Sb	25.64	ppb	1.54	25	102.56	
123 Sb	25.74	ppb	2.39	25	102.96	
135 Ba	25.93	ppb	1.95	25	103.72	
137 Ba	25.74	ppb	1.52	25	102.96	
182 W	24.55	ppb	1.56	25	98.2	
203 Tl	24.77	ppb	2.24	25	99.08	
205 Tl	24.72	ppb	1.37	25	98.88	
208 Pb	24.76	ppb	0.91	25	99.04	
232 Th	28.21	ppb	1.47	25	112.84	Fail
238 U	34.63	ppb	1.85	25	138.52	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2726273.50	3.21	2376938.80	114.7	80 - 120.4	
45 Sc	1721178.50	0.94	1529305.50	112.5	80 - 120.4	
89 Y	2177055.50	1.45	2078192.30	104.8	80 - 120.4	
159 Tb	2745679.30	1.20	2700524.30	101.7	80 - 120.4	
209 Bi	1368669.90	1.56	1395285.40	98.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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 4000285

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\058_CCB.D\058_CCB.D#
Date Acquired: May 4 2018 08:37 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0016	ppb	177.13	1.00	
11 B	3.348	ppb	13.30	1.00	
23 Na	1.829	ppb	30.84	1.00	
25 Mg	0.7345	ppb	112.46	1.00	
27 Al	0.6066	ppb	114.99	1.00	
28 Si	-26.47	ppb	156.25	1.00	
29 Si	-24.07	ppb	91.28	1.00	
39 K	3.586	ppb	54.66	1.00	
43 Ca	4.284	ppb	35.81	1.00	
44 Ca	1.243	ppb	53.19	1.00	
51 V	0.0729	ppb	182.14	1.00	
52 Cr	0.1513	ppb	24.95	1.00	
53 Cr	-0.2271	ppb	159.09	1.00	
55 Mn	0.0419	ppb	35.81	1.00	
56 Fe	14.85	ppb	15.96	1.00	
57 Fe	6.022	ppb	56.49	1.00	
59 Co	0.0061	ppb	130.27	1.00	
60 Ni	0.0035	ppb	56.65	1.00	
63 Cu	0.1111	ppb	20.16	1.00	
65 Cu	0.0852	ppb	29.73	1.00	
66 Zn	0.1021	ppb	30.10	1.00	
68 Zn	-0.0495	ppb	286.55	1.00	
75 As	0.0298	ppb	970.17	1.00	
82 Se	0.2034	ppb	43.47	1.00	
88 Sr	0.0083	ppb	91.50	1.00	
98 Mo	0.0296	ppb	47.84	1.00	
107 Ag	0.0035	ppb	65.24	1.00	
109 Ag	0.0073	ppb	75.64	1.00	
111 Cd	-0.0226	ppb	88.98	1.00	
114 Cd	0.0013	ppb	324.28	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0805	ppb	10.43	1.00	
120 Sn	0.0858	ppb	22.10	1.00	
121 Sb	0.0079	ppb	76.62	1.00	
123 Sb	0.0111	ppb	53.11	1.00	
135 Ba	0.0423	ppb	47.69	1.00	
137 Ba	0.0568	ppb	30.56	1.00	
182 W	0.0483	ppb	52.06	1.00	
203 Tl	-0.0246	ppb	129.94	1.00	
205 Tl	-0.0129	ppb	108.22	1.00	
208 Pb	0.0398	ppb	16.58	1.00	
232 Th	0.042	ppb	9.73	1.00	
238 U	0.0069	ppb	42.20	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2497071.80	5.35	2376938.80	105.1	79.5 - 120	
45 Sc	1531312.00	1.22	1529305.50	100.1	79.5 - 120	
89 Y	1955633.10	0.67	2078192.30	94.1	79.5 - 120	
159 Tb	2494870.80	1.15	2700524.30	92.4	79.5 - 120	
209 Bi	1256127.10	0.99	1395285.40	90.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :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\JLE04E.B\059SMPL.D\059SMPL.D#
Date Acquired: May 4 2018 08:41 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-008
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	8.905	1.781	ppb	4.41	100.	
11 B	159.1	31.82	ppb	3.71	1000.	
23 Na	13,705.	2,741.	ppb	1.08	200000.	
25 Mg	80,750.	16,150.	ppb	1.12	200000.	
27 Al	211,750.	42,350.	ppb	0.75	200000.	
28 Si	2,825.	565.	ppb	9.38	#VALUE!	
29 Si	2,598.5	519.7	ppb	3.88	10000.	
39 K	48,720.	9,744.	ppb	1.40	200000.	
43 Ca	428,550.	85,710.	ppb	1.92	#VALUE!	
44 Ca	396,850.	79,370.	ppb	1.15	200000.	
51 V	345.05	69.01	ppb	1.55	1000.	
52 Cr	170.15	34.03	ppb	1.87	2000.	
53 Cr	185.55	37.11	ppb	2.10	#VALUE!	
55 Mn	2,886.	577.2	ppb	0.64	2000.	
56 Fe	174,700.	34,940.	ppb	1.21	#VALUE!	
57 Fe	168,300.	33,660.	ppb	1.13	100000.	
59 Co	79.6	15.92	ppb	2.38	1000.	
60 Ni	161.45	32.29	ppb	0.96	1000.	
63 Cu	111.6	22.32	ppb	1.94	#VALUE!	
65 Cu	111.9	22.38	ppb	1.82	2000.	
66 Zn	427.3	85.46	ppb	1.13	2000.	
68 Zn	490.1	98.02	ppb	2.55	#VALUE!	
75 As	39.91	7.982	ppb	4.66	1000.	
82 Se	3.54	0.708	ppb	28.33	1000.	
88 Sr	1,183.5	236.7	ppb	1.01	2000.	
98 Mo	7.705	1.541	ppb	2.01	1000.	
107 Ag	0.7075	0.1415	ppb	9.36	100.	
109 Ag	0.5305	0.1061	ppb	6.25	#VALUE!	
111 Cd	2.689	0.5378	ppb	9.58	#VALUE!	
114 Cd	0.0516	0.0103	ppb	87.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.4	10.08	ppb	3.20	1000.	
120 Sn	50.15	10.03	ppb	2.72	#VALUE!	
121 Sb	2.044	0.4088	ppb	4.94	#VALUE!	
123 Sb	2.2705	0.4541	ppb	2.56	1000.	
135 Ba	2,173.5	434.7	ppb	2.34	2000.	
137 Ba	2,154.	430.8	ppb	1.71	#VALUE!	
182 W	0.8605	0.1721	ppb	13.23	1000.	
203 Tl	2.8445	0.5689	ppb	6.49	1000.	
205 Tl	2.9245	0.5849	ppb	3.54	#VALUE!	
208 Pb	115.	23.	ppb	1.68	2000.	
232 Th	97.75	19.55	ppb	1.56	1000.	
238 U	16.295	3.259	ppb	0.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2747718.50	4.72	2376938.80	115.6	69.5 - 120	
45 Sc	1755425.00	1.41	1529305.50	114.8	69.5 - 120	
89 Y	2476920.30	0.57	2078192.30	119.2	69.5 - 120	
159 Tb	2866021.80	1.00	2700524.30	106.1	69.5 - 120	
209 Bi	1379344.30	1.83	1395285.40	98.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000287

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\060SMPL.D\060SMPL.D#
Date Acquired: May 4 2018 08:45 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-009
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	9.585	1.917	ppb	2.93	100.	
11 B	179.6	35.92	ppb	4.02	1000.	
23 Na	4,041.5	808.3	ppb	1.62	200000.	
25 Mg	124,550.	24,910.	ppb	3.64	200000.	
27 Al	211,800.	42,360.	ppb	1.41	200000.	
28 Si	3,257.5	651.5	ppb	3.39	#VALUE!	
29 Si	3,207.5	641.5	ppb	2.41	10000.	
39 K	54,100.	10,820.	ppb	0.91	200000.	
43 Ca	938,000.	187,600.	ppb	1.14	#VALUE!	
44 Ca	892,500.	178,500.	ppb	0.91	200000.	
51 V	547.5	109.5	ppb	1.85	1000.	
52 Cr	168.15	33.63	ppb	2.94	2000.	
53 Cr	188.	37.6	ppb	1.55	#VALUE!	
55 Mn	4,877.	975.4	ppb	1.36	2000.	
56 Fe	204,600.	40,920.	ppb	1.74	#VALUE!	
57 Fe	197,100.	39,420.	ppb	2.38	100000.	
59 Co	68.	13.6	ppb	1.99	1000.	
60 Ni	145.35	29.07	ppb	1.27	1000.	
63 Cu	134.5	26.9	ppb	1.32	#VALUE!	
65 Cu	136.65	27.33	ppb	2.85	2000.	
66 Zn	399.25	79.85	ppb	1.36	2000.	
68 Zn	512.5	102.5	ppb	1.21	#VALUE!	
75 As	177.7	35.54	ppb	2.08	1000.	
82 Se	5.61	1.122	ppb	8.66	1000.	
88 Sr	2,634.5	526.9	ppb	1.49	2000.	
98 Mo	9.28	1.856	ppb	3.54	1000.	
107 Ag	0.7795	0.1559	ppb	12.34	100.	
109 Ag	0.584	0.1168	ppb	10.93	#VALUE!	
111 Cd	3.758	0.7516	ppb	3.65	#VALUE!	
114 Cd	0.5405	0.1081	ppb	16.92	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.6	10.12	ppb	1.30	1000.	
120 Sn	49.59	9.918	ppb	1.18	#VALUE!	
121 Sb	3.333	0.6666	ppb	3.99	#VALUE!	
123 Sb	3.137	0.6274	ppb	3.39	1000.	
135 Ba	3,894.	778.8	ppb	1.49	2000.	
137 Ba	3,931.5	786.3	ppb	0.80	#VALUE!	
182 W	0.9645	0.1929	ppb	12.72	1000.	
203 Tl	3.7145	0.7429	ppb	9.19	1000.	
205 Tl	3.563	0.7126	ppb	8.27	#VALUE!	
208 Pb	150.6	30.12	ppb	1.10	2000.	
232 Th	98.75	19.75	ppb	1.39	1000.	
238 U	24.73	4.946	ppb	1.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2761906.50	2.91	2376938.80	116.2	69.5 - 120	
45 Sc	1798820.00	1.33	1529305.50	117.6	69.5 - 120	
89 Y	2528929.30	0.70	2078192.30	121.7	69.5 - 120	IS Fai
159 Tb	2850788.00	0.17	2700524.30	105.6	69.5 - 120	
209 Bi	1345659.40	1.43	1395285.40	96.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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\JLE04E.B\061SMPL.D\061SMPL.D#
Date Acquired: May 4 2018 08:48 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-010
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	8.63	1.726	ppb	0.32	100.	
11 B	148.55	29.71	ppb	1.69	1000.	
23 Na	6,725.	1,345.	ppb	1.88	200000.	
25 Mg	76,100.	15,220.	ppb	2.06	200000.	
27 Al	186,750.	37,350.	ppb	2.66	200000.	
28 Si	2,744.5	548.9	ppb	9.61	#VALUE!	
29 Si	2,536.	507.2	ppb	6.92	10000.	
39 K	44,665.	8,933.	ppb	2.27	200000.	
43 Ca	328,600.	65,720.	ppb	3.24	#VALUE!	
44 Ca	302,950.	60,590.	ppb	2.46	200000.	
51 V	292.8	58.56	ppb	1.05	1000.	
52 Cr	155.5	31.1	ppb	2.44	2000.	
53 Cr	172.6	34.52	ppb	1.71	#VALUE!	
55 Mn	2,747.5	549.5	ppb	1.78	2000.	
56 Fe	137,600.	27,520.	ppb	0.07	#VALUE!	
57 Fe	133,150.	26,630.	ppb	1.82	100000.	
59 Co	49.925	9.985	ppb	0.54	1000.	
60 Ni	126.3	25.26	ppb	1.27	1000.	
63 Cu	99.4	19.88	ppb	0.79	#VALUE!	
65 Cu	100.25	20.05	ppb	1.28	2000.	
66 Zn	383.3	76.66	ppb	0.51	2000.	
68 Zn	424.25	84.85	ppb	0.52	#VALUE!	
75 As	28.825	5.765	ppb	1.62	1000.	
82 Se	3.583	0.7166	ppb	27.67	1000.	
88 Sr	1,025.	205.	ppb	1.04	2000.	
98 Mo	3.6245	0.7249	ppb	1.99	1000.	
107 Ag	0.706	0.1412	ppb	8.49	100.	
109 Ag	0.5815	0.1163	ppb	4.83	#VALUE!	
111 Cd	2.434	0.4868	ppb	8.72	#VALUE!	
114 Cd	0.1407	0.0281	ppb	37.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.99	9.998	ppb	0.73	1000.	
120 Sn	49.51	9.902	ppb	1.90	#VALUE!	
121 Sb	1.739	0.3478	ppb	1.13	#VALUE!	
123 Sb	1.6915	0.3383	ppb	12.23	1000.	
135 Ba	1,805.	361.	ppb	0.84	2000.	
137 Ba	1,789.	357.8	ppb	0.30	#VALUE!	
182 W	0.5925	0.1185	ppb	12.41	1000.	
203 Tl	2.6265	0.5253	ppb	8.14	1000.	
205 Tl	2.8835	0.5767	ppb	6.10	#VALUE!	
208 Pb	124.45	24.89	ppb	0.35	2000.	
232 Th	93.7	18.74	ppb	0.14	1000.	
238 U	14.45	2.89	ppb	0.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2750637.00	2.74	2376938.80	115.7	69.5 - 120	
45 Sc	1789367.60	2.26	1529305.50	117.0	69.5 - 120	
89 Y	2508679.30	1.76	2078192.30	120.7	69.5 - 120	IS Fai
159 Tb	2883949.80	0.58	2700524.30	106.8	69.5 - 120	
209 Bi	1388445.60	0.42	1395285.40	99.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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\JLE04E.B\062SMPL.D\062SMPL.D#
Date Acquired: May 4 2018 08:52 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-011
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	8.83	1.766	ppb	0.48	100.	
11 B	131.35	26.27	ppb	3.45	1000.	
23 Na	4,693.	938.6	ppb	1.97	200000.	
25 Mg	86,500.	17,300.	ppb	0.97	200000.	
27 Al	197,700.	39,540.	ppb	2.60	200000.	
28 Si	2,385.	477.	ppb	0.96	#VALUE!	
29 Si	2,146.	429.2	ppb	3.67	10000.	
39 K	48,515.	9,703.	ppb	1.10	200000.	
43 Ca	863,000.	172,600.	ppb	1.76	#VALUE!	
44 Ca	818,000.	163,600.	ppb	1.30	200000.	
51 V	293.1	58.62	ppb	1.77	1000.	
52 Cr	152.75	30.55	ppb	2.41	2000.	
53 Cr	167.5	33.5	ppb	1.64	#VALUE!	
55 Mn	3,513.5	702.7	ppb	1.05	2000.	
56 Fe	155,000.	31,000.	ppb	1.46	#VALUE!	
57 Fe	150,750.	30,150.	ppb	2.13	100000.	
59 Co	58.05	11.61	ppb	2.14	1000.	
60 Ni	138.15	27.63	ppb	2.89	1000.	
63 Cu	104.55	20.91	ppb	1.52	#VALUE!	
65 Cu	106.35	21.27	ppb	1.32	2000.	
66 Zn	366.3	73.26	ppb	1.55	2000.	
68 Zn	470.2	94.04	ppb	1.33	#VALUE!	
75 As	36.325	7.265	ppb	3.90	1000.	
82 Se	4.264	0.8528	ppb	4.95	1000.	
88 Sr	1,787.5	357.5	ppb	0.96	2000.	
98 Mo	3.7695	0.7539	ppb	2.32	1000.	
107 Ag	0.8175	0.1635	ppb	9.86	100.	
109 Ag	0.6	0.12	ppb	9.34	#VALUE!	
111 Cd	3.854	0.7708	ppb	1.28	#VALUE!	
114 Cd	1.463	0.2926	ppb	10.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.15	10.23	ppb	1.11	1000.	
120 Sn	50.6	10.12	ppb	2.50	#VALUE!	
121 Sb	1.972	0.3944	ppb	3.89	#VALUE!	
123 Sb	2.039	0.4078	ppb	2.38	1000.	
135 Ba	3,523.5	704.7	ppb	2.34	2000.	
137 Ba	3,530.	706.	ppb	1.58	#VALUE!	
182 W	0.886	0.1772	ppb	7.78	1000.	
203 Tl	2.956	0.5912	ppb	11.60	1000.	
205 Tl	3.088	0.6176	ppb	10.49	#VALUE!	
208 Pb	137.35	27.47	ppb	0.61	2000.	
232 Th	97.3	19.46	ppb	0.76	1000.	
238 U	20.14	4.028	ppb	1.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2783342.80	3.70	2376938.80	117.1	69.5 - 120	
45 Sc	1801411.40	0.94	1529305.50	117.8	69.5 - 120	
89 Y	2595187.80	1.13	2078192.30	124.9	69.5 - 120	IS Fai
159 Tb	2894057.80	0.61	2700524.30	107.2	69.5 - 120	
209 Bi	1368051.50	0.71	1395285.40	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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 4000290

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\063SMPL.D\063SMPL.D#
Date Acquired: May 4 2018 08:56 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-012
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	12.195	2.439	ppb	3.80	100.	
11 B	214.75	42.95	ppb	1.69	1000.	
23 Na	3,424.	684.8	ppb	1.38	200000.	
25 Mg	107,650.	21,530.	ppb	1.97	200000.	
27 Al	288,350.	57,670.	ppb	0.47	200000.	
28 Si	2,725.5	545.1	ppb	10.94	#VALUE!	
29 Si	2,539.5	507.9	ppb	3.27	10000.	
39 K	86,100.	17,220.	ppb	1.80	200000.	
43 Ca	285,800.	57,160.	ppb	0.97	#VALUE!	
44 Ca	267,350.	53,470.	ppb	1.11	200000.	
51 V	505.5	101.1	ppb	2.03	1000.	
52 Cr	212.6	42.52	ppb	1.41	2000.	
53 Cr	237.8	47.56	ppb	1.55	#VALUE!	
55 Mn	3,391.5	678.3	ppb	0.42	2000.	
56 Fe	199,200.	39,840.	ppb	1.53	#VALUE!	
57 Fe	194,250.	38,850.	ppb	0.78	100000.	
59 Co	82.3	16.46	ppb	2.17	1000.	
60 Ni	166.95	33.39	ppb	1.21	1000.	
63 Cu	128.15	25.63	ppb	1.29	#VALUE!	
65 Cu	131.4	26.28	ppb	2.27	2000.	
66 Zn	517.5	103.5	ppb	1.03	2000.	
68 Zn	600.	120.	ppb	2.24	#VALUE!	
75 As	71.8	14.36	ppb	1.25	1000.	
82 Se	5.85	1.17	ppb	9.85	1000.	
88 Sr	1,362.	272.4	ppb	0.43	2000.	
98 Mo	4.8905	0.9781	ppb	2.30	1000.	
107 Ag	0.9275	0.1855	ppb	0.96	100.	
109 Ag	0.7665	0.1533	ppb	2.19	#VALUE!	
111 Cd	4.1215	0.8243	ppb	0.86	#VALUE!	
114 Cd	0.937	0.1874	ppb	13.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.35	10.47	ppb	2.22	1000.	
120 Sn	52.	10.4	ppb	1.73	#VALUE!	
121 Sb	2.1175	0.4235	ppb	2.84	#VALUE!	
123 Sb	2.342	0.4684	ppb	2.20	1000.	
135 Ba	3,041.5	608.3	ppb	1.61	2000.	
137 Ba	3,052.	610.4	ppb	1.21	#VALUE!	
182 W	0.905	0.181	ppb	4.60	1000.	
203 Tl	4.156	0.8312	ppb	3.80	1000.	
205 Tl	4.355	0.871	ppb	6.26	#VALUE!	
208 Pb	193.15	38.63	ppb	1.14	2000.	
232 Th	147.9	29.58	ppb	0.85	1000.	
238 U	19.225	3.845	ppb	1.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2876225.30	4.34	2376938.80	121.0	69.5 - 120	IS Fai
45 Sc	1850275.00	3.22	1529305.50	121.0	69.5 - 120	IS Fai
89 Y	2680705.30	1.58	2078192.30	129.0	69.5 - 120	IS Fai
159 Tb	2888082.80	0.53	2700524.30	106.9	69.5 - 120	
209 Bi	1350547.60	1.26	1395285.40	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :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\JLE04E.B\064SMPL.D\064SMPL.D#
Date Acquired: May 4 2018 09:00 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-013
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	8.72	1.744	ppb	1.80	100.	
11 B	156.7	31.34	ppb	3.06	1000.	
23 Na	10,830.	2,166.	ppb	1.27	200000.	
25 Mg	87,550.	17,510.	ppb	1.39	200000.	
27 Al	204,250.	40,850.	ppb	0.67	200000.	
28 Si	2,803.	560.6	ppb	13.29	#VALUE!	
29 Si	2,590.5	518.1	ppb	6.93	10000.	
39 K	47,960.	9,592.	ppb	3.11	200000.	
43 Ca	716,500.	143,300.	ppb	2.61	#VALUE!	
44 Ca	679,500.	135,900.	ppb	1.45	200000.	
51 V	336.6	67.32	ppb	1.23	1000.	
52 Cr	164.95	32.99	ppb	1.36	2000.	
53 Cr	186.65	37.33	ppb	1.34	#VALUE!	
55 Mn	6,095.	1,219.	ppb	1.12	2000.	
56 Fe	166,750.	33,350.	ppb	0.64	#VALUE!	
57 Fe	160,100.	32,020.	ppb	1.37	100000.	
59 Co	73.45	14.69	ppb	0.08	1000.	
60 Ni	183.7	36.74	ppb	0.18	1000.	
63 Cu	97.05	19.41	ppb	0.45	#VALUE!	
65 Cu	97.7	19.54	ppb	1.98	2000.	
66 Zn	393.95	78.79	ppb	1.56	2000.	
68 Zn	489.45	97.89	ppb	1.22	#VALUE!	
75 As	22.365	4.473	ppb	6.23	1000.	
82 Se	3.792	0.7584	ppb	20.31	1000.	
88 Sr	1,425.	285.	ppb	0.96	2000.	
98 Mo	9.435	1.887	ppb	2.09	1000.	
107 Ag	0.721	0.1442	ppb	2.12	100.	
109 Ag	0.5465	0.1093	ppb	2.09	#VALUE!	
111 Cd	3.557	0.7114	ppb	3.80	#VALUE!	
114 Cd	0.772	0.1544	ppb	10.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.16	9.832	ppb	2.97	1000.	
120 Sn	48.065	9.613	ppb	0.43	#VALUE!	
121 Sb	1.983	0.3966	ppb	4.76	#VALUE!	
123 Sb	1.96	0.392	ppb	1.33	1000.	
135 Ba	3,149.	629.8	ppb	0.43	2000.	
137 Ba	3,184.5	636.9	ppb	1.45	#VALUE!	
182 W	0.821	0.1642	ppb	4.67	1000.	
203 Tl	2.97	0.594	ppb	7.44	1000.	
205 Tl	3.1485	0.6297	ppb	3.89	#VALUE!	
208 Pb	121.6	24.32	ppb	0.22	2000.	
232 Th	95.4	19.08	ppb	0.48	1000.	
238 U	16.715	3.343	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2812282.80	3.73	2376938.80	118.3	69.5 - 120	
45 Sc	1808611.90	3.02	1529305.50	118.3	69.5 - 120	
89 Y	2481844.80	1.76	2078192.30	119.4	69.5 - 120	
159 Tb	2851304.30	0.66	2700524.30	105.6	69.5 - 120	
209 Bi	1341300.90	0.24	1395285.40	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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\JLE04E.B\065SMPL.D\065SMPL.D#
Date Acquired: May 4 2018 09:03 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-014
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	11.82	2.364	ppb	2.68	100.	
11 B	181.75	36.35	ppb	3.98	1000.	
23 Na	7,405.	1,481.	ppb	1.87	200000.	
25 Mg	122,900.	24,580.	ppb	1.51	200000.	
27 Al	261,800.	52,360.	ppb	3.21	200000.	
28 Si	3,175.5	635.1	ppb	6.08	#VALUE!	
29 Si	2,994.	598.8	ppb	7.55	10000.	
39 K	62,700.	12,540.	ppb	1.06	200000.	
43 Ca	631,000.	126,200.	ppb	0.94	#VALUE!	
44 Ca	586,500.	117,300.	ppb	1.91	200000.	
51 V	448.1	89.62	ppb	0.32	1000.	
52 Cr	214.95	42.99	ppb	1.85	2000.	
53 Cr	232.25	46.45	ppb	1.55	#VALUE!	
55 Mn	5,905.	1,181.	ppb	1.82	2000.	
56 Fe	226,900.	45,380.	ppb	1.18	#VALUE!	
57 Fe	219,350.	43,870.	ppb	0.91	100000.	
59 Co	80.8	16.16	ppb	0.51	1000.	
60 Ni	171.05	34.21	ppb	1.10	1000.	
63 Cu	122.6	24.52	ppb	0.81	#VALUE!	
65 Cu	126.35	25.27	ppb	1.48	2000.	
66 Zn	503.	100.6	ppb	0.43	2000.	
68 Zn	576.	115.2	ppb	0.71	#VALUE!	
75 As	39.345	7.869	ppb	2.24	1000.	
82 Se	4.6205	0.9241	ppb	5.41	1000.	
88 Sr	1,502.	300.4	ppb	0.91	2000.	
98 Mo	6.445	1.289	ppb	0.20	1000.	
107 Ag	0.877	0.1754	ppb	7.75	100.	
109 Ag	0.685	0.137	ppb	3.23	#VALUE!	
111 Cd	3.719	0.7438	ppb	4.26	#VALUE!	
114 Cd	0.57	0.114	ppb	25.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.25	10.45	ppb	3.39	1000.	
120 Sn	51.6	10.32	ppb	3.76	#VALUE!	
121 Sb	2.311	0.4622	ppb	3.65	#VALUE!	
123 Sb	2.337	0.4674	ppb	6.57	1000.	
135 Ba	2,735.	547.	ppb	2.43	2000.	
137 Ba	2,778.	555.6	ppb	2.19	#VALUE!	
182 W	0.8275	0.1655	ppb	6.43	1000.	
203 Tl	3.959	0.7918	ppb	1.15	1000.	
205 Tl	4.0855	0.8171	ppb	5.90	#VALUE!	
208 Pb	160.15	32.03	ppb	1.14	2000.	
232 Th	129.2	25.84	ppb	1.54	1000.	
238 U	21.335	4.267	ppb	1.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2749633.80	3.40	2376938.80	115.7	69.5 - 120	
45 Sc	1794601.00	1.60	1529305.50	117.3	69.5 - 120	
89 Y	2594593.00	1.45	2078192.30	124.8	69.5 - 120	IS Fai
159 Tb	2877164.50	1.08	2700524.30	106.5	69.5 - 120	
209 Bi	1358521.50	2.02	1395285.40	97.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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\JLE04E.B\066SMPL.D\066SMPL.D#
Date Acquired: May 4 2018 09:07 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-015
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	2.45	100.	
11 B	139.3	27.86	ppb	1.57	1000.	
23 Na	14,840.	2,968.	ppb	3.37	200000.	
25 Mg	104,050.	20,810.	ppb	3.88	200000.	
27 Al	196,950.	39,390.	ppb	3.47	200000.	
28 Si	2,847.	569.4	ppb	6.53	#VALUE!	
29 Si	2,265.5	453.1	ppb	3.97	10000.	
39 K	49,350.	9,870.	ppb	2.01	200000.	
43 Ca	522,000.	104,400.	ppb	1.25	#VALUE!	
44 Ca	483,550.	96,710.	ppb	1.40	200000.	
51 V	542.	108.4	ppb	0.54	1000.	
52 Cr	164.05	32.81	ppb	1.17	2000.	
53 Cr	178.75	35.75	ppb	2.57	#VALUE!	
55 Mn	10,930.	2,186.	ppb	0.48	2000.	>LDR
56 Fe	200,150.	40,030.	ppb	1.24	#VALUE!	
57 Fe	192,650.	38,530.	ppb	1.76	100000.	
59 Co	94.95	18.99	ppb	1.23	1000.	
60 Ni	283.8	56.76	ppb	0.84	1000.	
63 Cu	139.15	27.83	ppb	1.44	#VALUE!	
65 Cu	142.1	28.42	ppb	1.60	2000.	
66 Zn	408.8	81.76	ppb	1.81	2000.	
68 Zn	591.	118.2	ppb	1.48	#VALUE!	
75 As	161.4	32.28	ppb	0.32	1000.	
82 Se	4.1235	0.8247	ppb	14.76	1000.	
88 Sr	1,471.5	294.3	ppb	0.45	2000.	
98 Mo	28.635	5.727	ppb	1.85	1000.	
107 Ag	0.766	0.1532	ppb	2.84	100.	
109 Ag	0.5535	0.1107	ppb	7.16	#VALUE!	
111 Cd	3.167	0.6334	ppb	8.31	#VALUE!	
114 Cd	0.6695	0.1339	ppb	10.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.895	9.779	ppb	2.02	1000.	
120 Sn	48.535	9.707	ppb	2.04	#VALUE!	
121 Sb	3.188	0.6376	ppb	2.50	#VALUE!	
123 Sb	3.105	0.621	ppb	3.60	1000.	
135 Ba	5,720.	1,144.	ppb	0.71	2000.	
137 Ba	5,635.	1,127.	ppb	0.92	#VALUE!	
182 W	1.1565	0.2313	ppb	5.25	1000.	
203 Tl	4.6175	0.9235	ppb	3.41	1000.	
205 Tl	4.6935	0.9387	ppb	0.32	#VALUE!	
208 Pb	136.95	27.39	ppb	2.28	2000.	
232 Th	102.3	20.46	ppb	1.83	1000.	
238 U	20.145	4.029	ppb	1.65	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2785319.80	2.89	2376938.80	117.2	69.5 - 120	
45 Sc	1764505.10	2.56	1529305.50	115.4	69.5 - 120	
89 Y	2482918.00	0.79	2078192.30	119.5	69.5 - 120	
159 Tb	2869577.30	0.47	2700524.30	106.3	69.5 - 120	
209 Bi	1359688.40	1.44	1395285.40	97.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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 4000294

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\067SMPL.D\067SMPL.D#
Date Acquired: May 4 2018 09:11 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-016
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	14.47	2.894	ppb	2.08	100.	
11 B	267.8	53.56	ppb	6.49	1000.	
23 Na	4,143.5	828.7	ppb	3.45	200000.	
25 Mg	136,250.	27,250.	ppb	1.98	200000.	
27 Al	335,100.	67,020.	ppb	1.56	200000.	
28 Si	2,505.	501.	ppb	12.17	#VALUE!	
29 Si	2,157.5	431.5	ppb	5.16	10000.	
39 K	96,500.	19,300.	ppb	2.51	200000.	
43 Ca	604,000.	120,800.	ppb	2.00	#VALUE!	
44 Ca	564,000.	112,800.	ppb	0.89	200000.	
51 V	561.5	112.3	ppb	1.17	1000.	
52 Cr	236.8	47.36	ppb	1.82	2000.	
53 Cr	253.55	50.71	ppb	2.52	#VALUE!	
55 Mn	3,129.5	625.9	ppb	3.04	2000.	
56 Fe	225,900.	45,180.	ppb	2.17	#VALUE!	
57 Fe	218,200.	43,640.	ppb	1.54	100000.	
59 Co	89.	17.8	ppb	2.83	1000.	
60 Ni	205.05	41.01	ppb	1.74	1000.	
63 Cu	152.95	30.59	ppb	2.31	#VALUE!	
65 Cu	153.55	30.71	ppb	1.60	2000.	
66 Zn	574.5	114.9	ppb	2.13	2000.	
68 Zn	679.	135.8	ppb	2.90	#VALUE!	
75 As	92.5	18.5	ppb	1.40	1000.	
82 Se	5.39	1.078	ppb	13.55	1000.	
88 Sr	1,942.	388.4	ppb	0.86	2000.	
98 Mo	3.088	0.6176	ppb	1.20	1000.	
107 Ag	1.095	0.219	ppb	3.78	100.	
109 Ag	0.8785	0.1757	ppb	4.28	#VALUE!	
111 Cd	4.955	0.991	ppb	4.20	#VALUE!	
114 Cd	1.2635	0.2527	ppb	4.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.05	10.61	ppb	0.42	1000.	
120 Sn	53.75	10.75	ppb	0.56	#VALUE!	
121 Sb	2.906	0.5812	ppb	5.89	#VALUE!	
123 Sb	3.0695	0.6139	ppb	2.69	1000.	
135 Ba	3,961.5	792.3	ppb	0.27	2000.	
137 Ba	3,993.	798.6	ppb	1.81	#VALUE!	
182 W	1.067	0.2134	ppb	8.58	1000.	
203 Tl	5.045	1.009	ppb	2.28	1000.	
205 Tl	5.11	1.022	ppb	5.15	#VALUE!	
208 Pb	186.25	37.25	ppb	0.63	2000.	
232 Th	145.9	29.18	ppb	0.47	1000.	
238 U	21.775	4.355	ppb	0.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2776209.50	3.03	2376938.80	116.8	69.5 - 120	
45 Sc	1843009.10	3.53	1529305.50	120.5	69.5 - 120	IS Fai
89 Y	2691642.80	0.31	2078192.30	129.5	69.5 - 120	IS Fai
159 Tb	2847046.50	0.87	2700524.30	105.4	69.5 - 120	
209 Bi	1330185.40	0.68	1395285.40	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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 4000295

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\068SMPL.D\068SMPL.D#
Date Acquired: May 4 2018 09:14 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	23.86	23.86	ppb	2.57	100.	
11 B	26.23	26.23	ppb	1.93	1000.	
23 Na	5,208.	5,208.	ppb	1.91	200000.	
25 Mg	5,180.	5,180.	ppb	0.81	200000.	
27 Al	521.4	521.4	ppb	3.19	200000.	
28 Si	444.9	444.9	ppb	9.88	#VALUE!	
29 Si	394.7	394.7	ppb	4.40	10000.	
39 K	4,942.	4,942.	ppb	1.16	200000.	
43 Ca	5,010.	5,010.	ppb	2.15	#VALUE!	
44 Ca	5,072.	5,072.	ppb	2.26	200000.	
51 V	26.3	26.3	ppb	0.99	1000.	
52 Cr	26.2	26.2	ppb	1.10	2000.	
53 Cr	25.71	25.71	ppb	3.11	#VALUE!	
55 Mn	26.07	26.07	ppb	1.47	2000.	
56 Fe	5,189.	5,189.	ppb	0.75	#VALUE!	
57 Fe	5,223.	5,223.	ppb	1.59	100000.	
59 Co	25.75	25.75	ppb	1.61	1000.	
60 Ni	26.03	26.03	ppb	0.61	1000.	
63 Cu	26.01	26.01	ppb	0.86	#VALUE!	
65 Cu	25.69	25.69	ppb	0.79	2000.	
66 Zn	25.22	25.22	ppb	2.29	2000.	
68 Zn	25.23	25.23	ppb	3.04	#VALUE!	
75 As	25.68	25.68	ppb	1.43	1000.	
82 Se	25.85	25.85	ppb	2.05	1000.	
88 Sr	25.03	25.03	ppb	0.41	2000.	
98 Mo	24.4	24.4	ppb	0.84	1000.	
107 Ag	24.78	24.78	ppb	0.83	100.	
109 Ag	24.66	24.66	ppb	0.27	#VALUE!	
111 Cd	24.51	24.51	ppb	1.54	#VALUE!	
114 Cd	24.75	24.75	ppb	1.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	25.44	25.44	ppb	1.43	1000.	
120 Sn	25.3	25.3	ppb	1.39	#VALUE!	
121 Sb	25.26	25.26	ppb	1.40	#VALUE!	
123 Sb	25.39	25.39	ppb	1.68	1000.	
135 Ba	25.48	25.48	ppb	2.59	2000.	
137 Ba	25.36	25.36	ppb	2.16	#VALUE!	
182 W	23.85	23.85	ppb	0.87	1000.	
203 Tl	24.57	24.57	ppb	0.77	1000.	
205 Tl	24.61	24.61	ppb	0.97	#VALUE!	
208 Pb	24.64	24.64	ppb	0.57	2000.	
232 Th	28.02	28.02	ppb	0.24	1000.	
238 U	34.04	34.04	ppb	1.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2824119.00	2.70	2376938.80	118.8	69.5 - 120	
45 Sc	1734133.30	1.67	1529305.50	113.4	69.5 - 120	
89 Y	2134561.30	2.21	2078192.30	102.7	69.5 - 120	
159 Tb	2712701.00	1.04	2700524.30	100.5	69.5 - 120	
209 Bi	1324055.30	0.91	1395285.40	94.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000296

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\069_CCV.D\069_CCV.D#
Date Acquired: May 4 2018 09:18 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.13	ppb	0.47	25	96.52	
11 B	25.4	ppb	2.08	25	101.6	
23 Na	5,284.	ppb	2.86	5,000	105.68	
25 Mg	5,245.	ppb	1.60	5,000	104.9	
27 Al	522.7	ppb	1.12	500	104.54	
28 Si	464.8	ppb	8.86	500	92.96	
29 Si	429.3	ppb	5.85	500	85.86	Fail
39 K	5,080.	ppb	1.96	5,000	101.6	
43 Ca	5,022.	ppb	1.21	5,000	100.44	
44 Ca	5,046.	ppb	0.51	5,000	100.92	
51 V	26.54	ppb	1.98	25	106.16	
52 Cr	26.38	ppb	0.55	25	105.52	
53 Cr	25.71	ppb	1.67	25	102.84	
55 Mn	25.67	ppb	0.41	25	102.68	
56 Fe	5,247.	ppb	1.54	5,000	104.94	
57 Fe	5,296.	ppb	0.89	5,000	105.92	
59 Co	25.99	ppb	1.34	25	103.96	
60 Ni	26.09	ppb	0.21	25	104.36	
63 Cu	26.11	ppb	0.50	25	104.44	
65 Cu	26.25	ppb	0.95	25	105	
66 Zn	25.29	ppb	0.50	25	101.16	
68 Zn	25.21	ppb	3.23	25	100.84	
75 As	25.95	ppb	0.85	25	103.8	
82 Se	26.03	ppb	0.78	25	104.12	
88 Sr	24.89	ppb	1.09	25	99.56	
98 Mo	24.29	ppb	0.44	25	97.16	
107 Ag	24.78	ppb	0.67	25	99.12	
109 Ag	25.	ppb	0.67	25	100	
111 Cd	24.8	ppb	0.88	25	99.2	
114 Cd	24.76	ppb	0.15	25	99.04	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.44	ppb	1.11	25	101.76	
120 Sn	25.13	ppb	0.33	25	100.52	
121 Sb	25.16	ppb	0.30	25	100.64	
123 Sb	25.18	ppb	0.99	25	100.72	
135 Ba	25.51	ppb	0.63	25	102.04	
137 Ba	25.21	ppb	0.42	25	100.84	
182 W	23.74	ppb	0.90	25	94.96	
203 Tl	24.4	ppb	1.03	25	97.6	
205 Tl	24.4	ppb	0.29	25	97.6	
208 Pb	24.5	ppb	0.27	25	98	
232 Th	27.94	ppb	0.56	25	111.76	Fail
238 U	33.94	ppb	0.59	25	135.76	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2825726.30	1.35	2376938.80	118.9	80 - 120.4	
45 Sc	1708597.90	1.38	1529305.50	111.7	80 - 120.4	
89 Y	2109445.30	1.93	2078192.30	101.5	80 - 120.4	
159 Tb	2697849.30	1.26	2700524.30	99.9	80 - 120.4	
209 Bi	1320004.50	0.72	1395285.40	94.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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 4000297

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\070_CCB.D\070_CCB.D#
Date Acquired: May 4 2018 09:21 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0034	ppb	139.45	1.00	
11 B	3.592	ppb	12.65	1.00	
23 Na	1.753	ppb	50.14	1.00	
25 Mg	1.405	ppb	103.06	1.00	
27 Al	0.8887	ppb	86.75	1.00	
28 Si	-21.94	ppb	238.56	1.00	
29 Si	-27.09	ppb	139.94	1.00	
39 K	3.159	ppb	72.14	1.00	
43 Ca	7.409	ppb	35.44	1.00	
44 Ca	2.4	ppb	87.71	1.00	
51 V	0.0758	ppb	36.44	1.00	
52 Cr	0.1313	ppb	36.51	1.00	
53 Cr	-0.985	ppb	10.61	1.00	
55 Mn	0.0634	ppb	30.44	1.00	
56 Fe	24.06	ppb	20.52	1.00	
57 Fe	14.3	ppb	15.06	1.00	
59 Co	0.0022	ppb	190.21	1.00	
60 Ni	0.0069	ppb	205.92	1.00	
63 Cu	0.073	ppb	15.11	1.00	
65 Cu	0.0699	ppb	47.65	1.00	
66 Zn	0.0754	ppb	87.52	1.00	
68 Zn	-0.0098	ppb	453.44	1.00	
75 As	0.0385	ppb	285.75	1.00	
82 Se	-0.0149	ppb	290.17	1.00	
88 Sr	0.0089	ppb	138.59	1.00	
98 Mo	0.0394	ppb	41.00	1.00	
107 Ag	0.0054	ppb	29.11	1.00	
109 Ag	0.0042	ppb	121.85	1.00	
111 Cd	0.0119	ppb	136.04	1.00	
114 Cd	0.0052	ppb	176.28	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0919	ppb	20.21	1.00	
120 Sn	0.0935	ppb	13.20	1.00	
121 Sb	0.0093	ppb	55.99	1.00	
123 Sb	0.0136	ppb	23.94	1.00	
135 Ba	0.061	ppb	32.45	1.00	
137 Ba	0.0671	ppb	26.54	1.00	
182 W	0.0643	ppb	26.00	1.00	
203 Tl	-0.0461	ppb	93.41	1.00	
205 Tl	-0.0202	ppb	129.58	1.00	
208 Pb	0.0367	ppb	37.98	1.00	
232 Th	0.0549	ppb	15.66	1.00	
238 U	0.0082	ppb	86.67	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2481462.80	5.17	2376938.80	104.4	79.5 - 120	
45 Sc	1520495.60	3.18	1529305.50	99.4	79.5 - 120	
89 Y	1888819.40	1.61	2078192.30	90.9	79.5 - 120	
159 Tb	2408636.80	1.12	2700524.30	89.2	79.5 - 120	
209 Bi	1204500.90	1.97	1395285.40	86.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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\JLE04E.B\071SMPL.D\071SMPL.D#
Date Acquired: May 4 2018 09:25 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-017
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	13.505	2.701	ppb	5.69	100.	
11 B	219.05	43.81	ppb	1.72	1000.	
23 Na	4,891.5	978.3	ppb	1.16	200000.	
25 Mg	124,950.	24,990.	ppb	3.14	200000.	
27 Al	301,200.	60,240.	ppb	3.41	200000.	
28 Si	2,600.	520.	ppb	7.56	#VALUE!	
29 Si	2,400.5	480.1	ppb	4.23	10000.	
39 K	89,250.	17,850.	ppb	1.67	200000.	
43 Ca	440,350.	88,070.	ppb	0.69	#VALUE!	
44 Ca	411,950.	82,390.	ppb	0.91	200000.	
51 V	537.	107.4	ppb	0.88	1000.	
52 Cr	218.1	43.62	ppb	1.17	2000.	
53 Cr	237.3	47.46	ppb	0.20	#VALUE!	
55 Mn	2,820.	564.	ppb	1.44	2000.	
56 Fe	222,100.	44,420.	ppb	1.19	#VALUE!	
57 Fe	214,850.	42,970.	ppb	1.41	100000.	
59 Co	93.85	18.77	ppb	0.60	1000.	
60 Ni	197.55	39.51	ppb	0.99	1000.	
63 Cu	145.85	29.17	ppb	1.54	#VALUE!	
65 Cu	150.2	30.04	ppb	1.73	2000.	
66 Zn	580.	116.	ppb	2.46	2000.	
68 Zn	684.5	136.9	ppb	1.98	#VALUE!	
75 As	95.6	19.12	ppb	0.41	1000.	
82 Se	5.08	1.016	ppb	4.28	1000.	
88 Sr	1,690.5	338.1	ppb	0.88	2000.	
98 Mo	2.8855	0.5771	ppb	5.54	1000.	
107 Ag	1.0245	0.2049	ppb	6.76	100.	
109 Ag	0.8085	0.1617	ppb	6.48	#VALUE!	
111 Cd	3.7935	0.7587	ppb	4.79	#VALUE!	
114 Cd	0.5935	0.1187	ppb	8.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.7	10.94	ppb	1.34	1000.	
120 Sn	54.35	10.87	ppb	0.45	#VALUE!	
121 Sb	2.9685	0.5937	ppb	3.15	#VALUE!	
123 Sb	2.9635	0.5927	ppb	5.18	1000.	
135 Ba	3,783.5	756.7	ppb	0.52	2000.	
137 Ba	3,802.	760.4	ppb	0.17	#VALUE!	
182 W	1.2565	0.2513	ppb	10.07	1000.	
203 Tl	4.472	0.8944	ppb	3.61	1000.	
205 Tl	4.598	0.9196	ppb	0.76	#VALUE!	
208 Pb	168.2	33.64	ppb	0.77	2000.	
232 Th	133.3	26.66	ppb	0.85	1000.	
238 U	18.185	3.637	ppb	1.85	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2870637.80	3.63	2376938.80	120.8	69.5 - 120	IS Fai
45 Sc	1854749.50	2.77	1529305.50	121.3	69.5 - 120	IS Fai
89 Y	2606823.50	0.83	2078192.30	125.4	69.5 - 120	IS Fai
159 Tb	2815502.80	0.41	2700524.30	104.3	69.5 - 120	
209 Bi	1328703.30	0.56	1395285.40	95.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :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\JLE04E.B\072SMPL.D\072SMPL.D#
Date Acquired: May 4 2018 09:29 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-018
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	8.94	1.788	ppb	2.04	100.	
11 B	183.15	36.63	ppb	1.20	1000.	
23 Na	3,777.	755.4	ppb	2.28	200000.	
25 Mg	105,600.	21,120.	ppb	2.36	200000.	
27 Al	204,150.	40,830.	ppb	2.08	200000.	
28 Si	2,624.	524.8	ppb	19.34	#VALUE!	
29 Si	2,234.	446.8	ppb	17.27	10000.	
39 K	54,950.	10,990.	ppb	3.94	200000.	
43 Ca	844,500.	168,900.	ppb	2.88	#VALUE!	
44 Ca	805,000.	161,000.	ppb	1.85	200000.	
51 V	397.	79.4	ppb	1.26	1000.	
52 Cr	157.95	31.59	ppb	2.94	2000.	
53 Cr	173.2	34.64	ppb	3.82	#VALUE!	
55 Mn	1,626.	325.2	ppb	3.40	2000.	
56 Fe	146,050.	29,210.	ppb	2.40	#VALUE!	
57 Fe	142,050.	28,410.	ppb	1.56	100000.	
59 Co	54.1	10.82	ppb	1.96	1000.	
60 Ni	130.3	26.06	ppb	2.07	1000.	
63 Cu	104.15	20.83	ppb	2.28	#VALUE!	
65 Cu	107.	21.4	ppb	1.43	2000.	
66 Zn	363.9	72.78	ppb	1.34	2000.	
68 Zn	468.95	93.79	ppb	3.09	#VALUE!	
75 As	65.05	13.01	ppb	2.64	1000.	
82 Se	4.679	0.9358	ppb	9.40	1000.	
88 Sr	2,561.	512.2	ppb	1.54	2000.	
98 Mo	1.6315	0.3263	ppb	4.33	1000.	
107 Ag	0.875	0.175	ppb	8.40	100.	
109 Ag	0.627	0.1254	ppb	5.54	#VALUE!	
111 Cd	3.2355	0.6471	ppb	4.34	#VALUE!	
114 Cd	0.3778	0.0756	ppb	12.51	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.275	9.855	ppb	0.67	1000.	
120 Sn	49.07	9.814	ppb	1.92	#VALUE!	
121 Sb	1.987	0.3974	ppb	0.87	#VALUE!	
123 Sb	2.0715	0.4143	ppb	6.14	1000.	
135 Ba	3,636.	727.2	ppb	1.50	2000.	
137 Ba	3,670.	734.	ppb	1.39	#VALUE!	
182 W	0.816	0.1632	ppb	7.44	1000.	
203 Tl	3.308	0.6616	ppb	1.41	1000.	
205 Tl	3.6005	0.7201	ppb	3.47	#VALUE!	
208 Pb	117.45	23.49	ppb	1.44	2000.	
232 Th	95.	19.	ppb	1.57	1000.	
238 U	19.43	3.886	ppb	1.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2803994.80	2.13	2376938.80	118.0	69.5 - 120	
45 Sc	1824917.50	4.45	1529305.50	119.3	69.5 - 120	
89 Y	2503457.50	2.86	2078192.30	120.5	69.5 - 120	IS Fai
159 Tb	2809085.50	1.42	2700524.30	104.0	69.5 - 120	
209 Bi	1332632.90	0.80	1395285.40	95.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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\JLE04E.B\073SMPL.D\073SMPL.D#
Date Acquired: May 4 2018 09:33 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-005
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	10.09	1.009	ppb	3.66	100.	
11 B	174.7	17.47	ppb	2.28	1000.	
23 Na	14,820.	1,482.	ppb	0.95	200000.	
25 Mg	110,800.	11,080.	ppb	0.21	200000.	
27 Al	225,700.	22,570.	ppb	0.35	200000.	
28 Si	2,531.	253.1	ppb	26.84	#VALUE!	
29 Si	1,904.	190.4	ppb	18.58	10000.	
39 K	50,910.	5,091.	ppb	1.57	200000.	
43 Ca	1,137,000.	113,700.	ppb	1.45	#VALUE!	
44 Ca	1,068,000.	106,800.	ppb	1.10	200000.	
51 V	388.	38.8	ppb	1.66	1000.	
52 Cr	196.6	19.66	ppb	2.56	2000.	
53 Cr	203.6	20.36	ppb	1.57	#VALUE!	
55 Mn	4,628.	462.8	ppb	0.47	2000.	
56 Fe	188,800.	18,880.	ppb	1.20	#VALUE!	
57 Fe	184,900.	18,490.	ppb	1.60	100000.	
59 Co	72.37	7.237	ppb	1.85	1000.	
60 Ni	144.9	14.49	ppb	2.90	1000.	
63 Cu	114.6	11.46	ppb	0.76	#VALUE!	
65 Cu	116.2	11.62	ppb	2.42	2000.	
66 Zn	465.	46.5	ppb	0.58	2000.	
68 Zn	548.1	54.81	ppb	1.67	#VALUE!	
75 As	23.65	2.365	ppb	1.31	1000.	
82 Se	5.156	0.5156	ppb	29.98	1000.	
88 Sr	1,739.	173.9	ppb	1.05	2000.	
98 Mo	3.712	0.3712	ppb	5.25	1000.	
107 Ag	0.8273	0.0827	ppb	10.01	100.	
109 Ag	0.6113	0.0611	ppb	15.89	#VALUE!	
111 Cd	5.768	0.5768	ppb	2.38	#VALUE!	
114 Cd	3.181	0.3181	ppb	0.58	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.21	5.221	ppb	1.15	1000.	
120 Sn	52.21	5.221	ppb	1.54	#VALUE!	
121 Sb	1.747	0.1747	ppb	3.58	#VALUE!	
123 Sb	1.787	0.1787	ppb	5.97	1000.	
135 Ba	2,961.	296.1	ppb	1.19	2000.	
137 Ba	2,946.	294.6	ppb	0.63	#VALUE!	
182 W	0.6096	0.061	ppb	20.11	1000.	
203 Tl	2.772	0.2772	ppb	16.27	1000.	
205 Tl	3.019	0.3019	ppb	9.20	#VALUE!	
208 Pb	164.2	16.42	ppb	1.11	2000.	
232 Th	106.1	10.61	ppb	0.76	1000.	
238 U	26.82	2.682	ppb	2.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2781628.50	2.31	2376938.80	117.0	69.5 - 120	
45 Sc	1811425.60	4.17	1529305.50	118.4	69.5 - 120	
89 Y	2478386.80	1.62	2078192.30	119.3	69.5 - 120	
159 Tb	2806795.80	1.33	2700524.30	103.9	69.5 - 120	
209 Bi	1341492.40	1.04	1395285.40	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000301

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\074SMPL.D\074SMPL.D#
Date Acquired: May 4 2018 09:36 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-005L
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 pm
Sample Type: Sample
Dilution Factor: 50.00
Autodil Factor: Undiluted
Final Dil Factor: 50.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.56	0.2112	ppb	2.14	100.	
11 B	247.35	4.947	ppb	1.19	1000.	
23 Na	15,565.	311.3	ppb	0.89	200000.	
25 Mg	123,700.	2,474.	ppb	0.64	200000.	
27 Al	238,200.	4,764.	ppb	1.41	200000.	
28 Si	-1,771.5	-35.43	ppb	126.08	#VALUE!	
29 Si	-4,068.5	-81.37	ppb	34.82	10000.	
39 K	52,700.	1,054.	ppb	2.03	200000.	
43 Ca	1,152,000.	23,040.	ppb	1.40	#VALUE!	
44 Ca	1,105,000.	22,100.	ppb	0.57	200000.	
51 V	431.8	8.636	ppb	3.17	1000.	
52 Cr	223.45	4.469	ppb	2.08	2000.	
53 Cr	161.3	3.226	ppb	9.60	#VALUE!	
55 Mn	5,375.	107.5	ppb	1.69	2000.	
56 Fe	208,850.	4,177.	ppb	2.54	#VALUE!	
57 Fe	213,650.	4,273.	ppb	3.56	100000.	
59 Co	82.65	1.653	ppb	2.40	1000.	
60 Ni	170.15	3.403	ppb	5.91	1000.	
63 Cu	131.45	2.629	ppb	2.46	#VALUE!	
65 Cu	136.75	2.735	ppb	1.62	2000.	
66 Zn	561.	11.22	ppb	1.65	2000.	
68 Zn	654.	13.08	ppb	0.96	#VALUE!	
75 As	30.7	0.614	ppb	25.39	1000.	
82 Se	8.135	0.1627	ppb	40.49	1000.	
88 Sr	1,944.5	38.89	ppb	2.25	2000.	
98 Mo	4.4965	0.0899	ppb	8.78	1000.	
107 Ag	0.959	0.0192	ppb	28.46	100.	
109 Ag	0.5805	0.0116	ppb	18.40	#VALUE!	
111 Cd	5.115	0.1023	ppb	44.65	#VALUE!	
114 Cd	4.1775	0.0836	ppb	4.64	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.1	1.082	ppb	5.47	1000.	
120 Sn	53.7	1.074	ppb	2.51	#VALUE!	
121 Sb	2.08	0.0416	ppb	18.32	#VALUE!	
123 Sb	1.7225	0.0345	ppb	12.79	1000.	
135 Ba	3,045.	60.9	ppb	1.38	2000.	
137 Ba	3,005.5	60.11	ppb	1.78	#VALUE!	
182 W	0.8205	0.0164	ppb	49.74	1000.	
203 Tl	0.2549	0.0051	ppb	907.81	1000.	
205 Tl	1.678	0.0336	ppb	50.51	#VALUE!	
208 Pb	163.6	3.272	ppb	1.54	2000.	
232 Th	101.55	2.031	ppb	2.19	1000.	
238 U	25.02	0.5004	ppb	5.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2851678.80	3.97	2376938.80	120.0	69.5 - 120	
45 Sc	1751014.10	1.84	1529305.50	114.5	69.5 - 120	
89 Y	2237571.30	1.03	2078192.30	107.7	69.5 - 120	
159 Tb	2725514.50	0.77	2700524.30	100.9	69.5 - 120	
209 Bi	1330949.50	0.49	1395285.40	95.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\075SMPL.D\075SMPL.D#
Date Acquired: May 4 2018 09:40 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-005A
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	29.9	2.99	ppb	4.01	100.	
11 B	546.7	54.67	ppb	3.20	1000.	
23 Na	36,150.	3,615.	ppb	1.51	200000.	
25 Mg	115,500.	11,550.	ppb	1.29	200000.	
27 Al	236,300.	23,630.	ppb	1.28	200000.	
28 Si	15,180.	1,518.	ppb	2.24	#VALUE!	
29 Si	14,360.	1,436.	ppb	0.44	10000.	
39 K	72,600.	7,260.	ppb	2.59	200000.	
43 Ca	1,153,000.	115,300.	ppb	2.17	#VALUE!	
44 Ca	1,075,000.	107,500.	ppb	1.22	200000.	
51 V	481.4	48.14	ppb	2.22	1000.	
52 Cr	293.1	29.31	ppb	1.44	2000.	
53 Cr	303.6	30.36	ppb	1.20	#VALUE!	
55 Mn	4,624.	462.4	ppb	0.69	2000.	
56 Fe	188,100.	18,810.	ppb	0.38	#VALUE!	
57 Fe	185,800.	18,580.	ppb	1.61	100000.	
59 Co	90.75	9.075	ppb	0.78	1000.	
60 Ni	183.5	18.35	ppb	2.78	1000.	
63 Cu	165.5	16.55	ppb	1.19	#VALUE!	
65 Cu	170.8	17.08	ppb	2.00	2000.	
66 Zn	644.7	64.47	ppb	0.79	2000.	
68 Zn	710.	71.	ppb	1.59	#VALUE!	
75 As	115.7	11.57	ppb	4.54	1000.	
82 Se	92.7	9.27	ppb	1.84	1000.	
88 Sr	1,817.	181.7	ppb	0.65	2000.	
98 Mo	93.23	9.323	ppb	0.39	1000.	
107 Ag	18.69	1.869	ppb	1.12	100.	
109 Ag	18.44	1.844	ppb	2.54	#VALUE!	
111 Cd	23.92	2.392	ppb	4.64	#VALUE!	
114 Cd	20.75	2.075	ppb	4.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	153.6	15.36	ppb	2.85	1000.	
120 Sn	152.4	15.24	ppb	0.69	#VALUE!	
121 Sb	22.21	2.221	ppb	3.31	#VALUE!	
123 Sb	21.9	2.19	ppb	0.61	1000.	
135 Ba	2,954.	295.4	ppb	1.41	2000.	
137 Ba	2,945.	294.5	ppb	1.09	#VALUE!	
182 W	101.6	10.16	ppb	0.96	1000.	
203 Tl	24.32	2.432	ppb	2.51	1000.	
205 Tl	24.35	2.435	ppb	1.64	#VALUE!	
208 Pb	184.1	18.41	ppb	0.02	2000.	
232 Th	129.2	12.92	ppb	0.92	1000.	
238 U	55.56	5.556	ppb	0.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2765118.50	1.64	2376938.80	116.3	69.5 - 120	
45 Sc	1747117.60	2.13	1529305.50	114.2	69.5 - 120	
89 Y	2435482.30	1.38	2078192.30	117.2	69.5 - 120	
159 Tb	2778470.00	0.19	2700524.30	102.9	69.5 - 120	
209 Bi	1317003.30	0.35	1395285.40	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000303

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\076SMPL.D\076SMPL.D#
Date Acquired: May 4 2018 09:43 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-005S
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	64.28	6.428	ppb	2.05	100.	
11 B	638.2	63.82	ppb	3.73	1000.	
23 Na	25,300.	2,530.	ppb	1.75	200000.	
25 Mg	127,200.	12,720.	ppb	1.67	200000.	
27 Al	296,900.	29,690.	ppb	1.30	200000.	
28 Si	2,955.	295.5	ppb	7.09	#VALUE!	
29 Si	2,320.	232.	ppb	0.76	10000.	
39 K	73,910.	7,391.	ppb	0.96	200000.	
43 Ca	564,700.	56,470.	ppb	2.58	#VALUE!	
44 Ca	526,700.	52,670.	ppb	1.31	200000.	
51 V	1,019.	101.9	ppb	0.83	1000.	
52 Cr	446.4	44.64	ppb	2.30	2000.	
53 Cr	473.	47.3	ppb	1.44	#VALUE!	
55 Mn	4,870.	487.	ppb	0.18	2000.	
56 Fe	226,400.	22,640.	ppb	0.08	#VALUE!	
57 Fe	220,600.	22,060.	ppb	0.92	100000.	
59 Co	584.7	58.47	ppb	1.24	1000.	
60 Ni	678.5	67.85	ppb	3.08	1000.	
63 Cu	380.1	38.01	ppb	1.51	#VALUE!	
65 Cu	379.1	37.91	ppb	0.70	2000.	
66 Zn	1,015.	101.5	ppb	1.90	2000.	
68 Zn	1,158.	115.8	ppb	2.61	#VALUE!	
75 As	124.5	12.45	ppb	1.22	1000.	
82 Se	96.53	9.653	ppb	2.72	1000.	
88 Sr	1,843.	184.3	ppb	1.63	2000.	
98 Mo	88.22	8.822	ppb	0.14	1000.	
107 Ag	48.	4.8	ppb	1.45	100.	
109 Ag	47.87	4.787	ppb	0.59	#VALUE!	
111 Cd	234.6	23.46	ppb	1.10	#VALUE!	
114 Cd	232.	23.2	ppb	1.48	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	559.2	55.92	ppb	2.30	1000.	
120 Sn	556.9	55.69	ppb	2.07	#VALUE!	
121 Sb	32.5	3.25	ppb	1.93	#VALUE!	
123 Sb	32.79	3.279	ppb	4.00	1000.	
135 Ba	4,770.	477.	ppb	1.95	2000.	
137 Ba	4,728.	472.8	ppb	1.98	#VALUE!	
182 W	41.7	4.17	ppb	1.03	1000.	
203 Tl	109.7	10.97	ppb	1.18	1000.	
205 Tl	109.2	10.92	ppb	1.53	#VALUE!	
208 Pb	261.5	26.15	ppb	2.02	2000.	
232 Th	248.7	24.87	ppb	2.35	1000.	
238 U	169.2	16.92	ppb	1.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2801695.00	1.44	2376938.80	117.9	69.5 - 120	
45 Sc	1756092.30	1.26	1529305.50	114.8	69.5 - 120	
89 Y	2340296.00	1.45	2078192.30	112.6	69.5 - 120	
159 Tb	2760456.30	0.31	2700524.30	102.2	69.5 - 120	
209 Bi	1322502.30	1.39	1395285.40	94.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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\JLE04E.B\077SMPL.D\077SMPL.D#
Date Acquired: May 4 2018 09:47 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-005P
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	62.05	6.205	ppb	1.13	100.	
11 B	631.4	63.14	ppb	3.67	1000.	
23 Na	24,230.	2,423.	ppb	2.30	200000.	
25 Mg	136,400.	13,640.	ppb	3.27	200000.	
27 Al	251,600.	25,160.	ppb	1.55	200000.	
28 Si	2,940.	294.	ppb	25.60	#VALUE!	
29 Si	2,112.	211.2	ppb	9.15	10000.	
39 K	64,480.	6,448.	ppb	0.49	200000.	
43 Ca	1,329,000.	132,900.	ppb	0.52	#VALUE!	
44 Ca	1,266,000.	126,600.	ppb	0.68	200000.	
51 V	987.1	98.71	ppb	2.12	1000.	
52 Cr	425.2	42.52	ppb	0.16	2000.	
53 Cr	456.	45.6	ppb	0.93	#VALUE!	
55 Mn	4,997.	499.7	ppb	1.87	2000.	
56 Fe	198,500.	19,850.	ppb	1.41	#VALUE!	
57 Fe	194,800.	19,480.	ppb	0.60	100000.	
59 Co	591.9	59.19	ppb	1.15	1000.	
60 Ni	675.3	67.53	ppb	1.21	1000.	
63 Cu	373.2	37.32	ppb	1.04	#VALUE!	
65 Cu	378.9	37.89	ppb	0.80	2000.	
66 Zn	957.6	95.76	ppb	0.93	2000.	
68 Zn	1,077.	107.7	ppb	2.66	#VALUE!	
75 As	118.3	11.83	ppb	2.08	1000.	
82 Se	99.17	9.917	ppb	4.64	1000.	
88 Sr	2,613.	261.3	ppb	1.22	2000.	
98 Mo	92.83	9.283	ppb	1.09	1000.	
107 Ag	48.37	4.837	ppb	0.83	100.	
109 Ag	48.81	4.881	ppb	2.38	#VALUE!	
111 Cd	241.4	24.14	ppb	0.90	#VALUE!	
114 Cd	237.9	23.79	ppb	0.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	579.5	57.95	ppb	1.44	1000.	
120 Sn	578.5	57.85	ppb	1.54	#VALUE!	
121 Sb	33.03	3.303	ppb	2.19	#VALUE!	
123 Sb	33.46	3.346	ppb	1.36	1000.	
135 Ba	4,233.	423.3	ppb	1.81	2000.	
137 Ba	4,199.	419.9	ppb	0.86	#VALUE!	
182 W	47.61	4.761	ppb	1.36	1000.	
203 Tl	112.8	11.28	ppb	0.88	1000.	
205 Tl	112.6	11.26	ppb	1.33	#VALUE!	
208 Pb	246.3	24.63	ppb	0.94	2000.	
232 Th	237.3	23.73	ppb	0.43	1000.	
238 U	177.7	17.77	ppb	0.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2871319.50	3.33	2376938.80	120.8	69.5 - 120	IS Fai
45 Sc	1799942.50	2.92	1529305.50	117.7	69.5 - 120	
89 Y	2342469.00	2.41	2078192.30	112.7	69.5 - 120	
159 Tb	2753053.30	0.63	2700524.30	101.9	69.5 - 120	
209 Bi	1306547.00	0.43	1395285.40	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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 4000305

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\078SMPL.D\078SMPL.D#
Date Acquired: May 4 2018 09:51 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-015
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	9.715	0.9715	ppb	4.29	100.	
11 B	181.1	18.11	ppb	0.85	1000.	
23 Na	15,290.	1,529.	ppb	1.39	200000.	
25 Mg	108,800.	10,880.	ppb	1.84	200000.	
27 Al	207,500.	20,750.	ppb	3.03	200000.	
28 Si	2,090.	209.	ppb	23.76	#VALUE!	
29 Si	1,523.	152.3	ppb	12.19	10000.	
39 K	51,500.	5,150.	ppb	1.26	200000.	
43 Ca	541,500.	54,150.	ppb	1.32	#VALUE!	
44 Ca	504,700.	50,470.	ppb	0.76	200000.	
51 V	581.7	58.17	ppb	2.34	1000.	
52 Cr	181.8	18.18	ppb	0.94	2000.	
53 Cr	186.5	18.65	ppb	1.62	#VALUE!	
55 Mn	12,080.	1,208.	ppb	1.22	2000.	
56 Fe	222,700.	22,270.	ppb	1.86	#VALUE!	
57 Fe	217,400.	21,740.	ppb	1.17	100000.	
59 Co	102.2	10.22	ppb	2.38	1000.	
60 Ni	311.4	31.14	ppb	1.22	1000.	
63 Cu	157.	15.7	ppb	0.26	#VALUE!	
65 Cu	154.6	15.46	ppb	1.75	2000.	
66 Zn	464.6	46.46	ppb	0.79	2000.	
68 Zn	673.5	67.35	ppb	0.86	#VALUE!	
75 As	181.	18.1	ppb	1.49	1000.	
82 Se	5.318	0.5318	ppb	7.32	1000.	
88 Sr	1,650.	165.	ppb	1.14	2000.	
98 Mo	29.88	2.988	ppb	5.23	1000.	
107 Ag	0.7169	0.0717	ppb	6.76	100.	
109 Ag	0.6537	0.0654	ppb	7.41	#VALUE!	
111 Cd	3.404	0.3404	ppb	14.21	#VALUE!	
114 Cd	0.9111	0.0911	ppb	11.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.34	5.134	ppb	2.50	1000.	
120 Sn	51.84	5.184	ppb	0.09	#VALUE!	
121 Sb	3.362	0.3362	ppb	3.99	#VALUE!	
123 Sb	3.288	0.3288	ppb	3.22	1000.	
135 Ba	5,966.	596.6	ppb	0.52	2000.	
137 Ba	6,000.	600.	ppb	2.09	#VALUE!	
182 W	1.324	0.1324	ppb	6.48	1000.	
203 Tl	4.337	0.4337	ppb	11.09	1000.	
205 Tl	4.624	0.4624	ppb	5.96	#VALUE!	
208 Pb	137.7	13.77	ppb	0.94	2000.	
232 Th	101.2	10.12	ppb	1.44	1000.	
238 U	19.78	1.978	ppb	1.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2780529.80	5.96	2376938.80	117.0	69.5 - 120	
45 Sc	1756500.60	3.07	1529305.50	114.9	69.5 - 120	
89 Y	2297144.30	1.88	2078192.30	110.5	69.5 - 120	
159 Tb	2736228.50	1.87	2700524.30	101.3	69.5 - 120	
209 Bi	1317847.80	0.94	1395285.40	94.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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\JLE04E.B\079SMPL.D\079SMPL.D#
Date Acquired: May 4 2018 09:54 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	688.07	100.	
11 B	3.262	3.262	ppb	7.85	1000.	
23 Na	0.639	0.639	ppb	29.20	200000.	
25 Mg	0.3284	0.3284	ppb	22.21	200000.	
27 Al	0.5157	0.5157	ppb	20.57	200000.	
28 Si	-18.94	-18.94	ppb	324.23	#VALUE!	
29 Si	-49.21	-49.21	ppb	66.86	10000.	
39 K	-0.7552	-0.7552	ppb	187.37	200000.	
43 Ca	3.469	3.469	ppb	99.74	#VALUE!	
44 Ca	1.336	1.336	ppb	46.80	200000.	
51 V	0.0715	0.0715	ppb	26.60	1000.	
52 Cr	0.1185	0.1185	ppb	27.22	2000.	
53 Cr	-1.255	-1.255	ppb	8.10	#VALUE!	
55 Mn	0.0383	0.0383	ppb	32.18	2000.	
56 Fe	22.07	22.07	ppb	23.63	#VALUE!	
57 Fe	10.02	10.02	ppb	16.31	100000.	
59 Co	0.0013	0.0013	ppb	279.53	1000.	
60 Ni	-0.0004	-0.0004	ppb	2600.60	1000.	
63 Cu	0.0625	0.0625	ppb	12.71	#VALUE!	
65 Cu	0.0197	0.0197	ppb	38.45	2000.	
66 Zn	0.0709	0.0709	ppb	13.55	2000.	
68 Zn	-0.0047	-0.0047	ppb	2448.60	#VALUE!	
75 As	-0.0311	-0.0311	ppb	305.64	1000.	
82 Se	-0.0124	-0.0124	ppb	134.63	1000.	
88 Sr	0.0054	0.0054	ppb	83.43	2000.	
98 Mo	0.0099	0.0099	ppb	64.92	1000.	
107 Ag	0.0017	0.0017	ppb	92.00	100.	
109 Ag	-0.0014	-0.0014	ppb	40.62	#VALUE!	
111 Cd	-0.0044	-0.0044	ppb	284.71	#VALUE!	
114 Cd	0.0003	0.0003	ppb	934.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0632	0.0632	ppb	7.99	1000.	
120 Sn	0.0444	0.0444	ppb	18.72	#VALUE!	
121 Sb	0.0013	0.0013	ppb	255.69	#VALUE!	
123 Sb	-0.0023	-0.0023	ppb	69.31	1000.	
135 Ba	0.0125	0.0125	ppb	180.53	2000.	
137 Ba	0.013	0.013	ppb	8.92	#VALUE!	
182 W	0.0076	0.0076	ppb	90.95	1000.	
203 Tl	-0.0554	-0.0554	ppb	64.50	1000.	
205 Tl	-0.0411	-0.0411	ppb	135.71	#VALUE!	
208 Pb	0.0178	0.0178	ppb	79.70	2000.	
232 Th	0.0139	0.0139	ppb	51.30	1000.	
238 U	0.	0.	ppb	6046.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2445090.80	4.04	2376938.80	102.9	69.5 - 120	
45 Sc	1556398.10	2.84	1529305.50	101.8	69.5 - 120	
89 Y	1908706.30	3.49	2078192.30	91.8	69.5 - 120	
159 Tb	2374800.80	0.77	2700524.30	87.9	69.5 - 120	
209 Bi	1178974.30	0.92	1395285.40	84.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\080SMPL.D\080SMPL.D#
Date Acquired: May 4 2018 09:58 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	-0.0043	-0.0009	ppb	205.38	100.	
11 B	10.62	2.124	ppb	2.42	1000.	
23 Na	4.3625	0.8725	ppb	32.06	200000.	
25 Mg	8.73	1.746	ppb	67.13	200000.	
27 Al	14.71	2.942	ppb	72.03	200000.	
28 Si	-234.75	-46.95	ppb	210.20	#VALUE!	
29 Si	-255.2	-51.04	ppb	128.27	10000.	
39 K	-7.6	-1.52	ppb	472.89	200000.	
43 Ca	47.795	9.559	ppb	69.01	#VALUE!	
44 Ca	47.24	9.448	ppb	92.82	200000.	
51 V	0.4046	0.0809	ppb	103.52	1000.	
52 Cr	0.7025	0.1405	ppb	6.30	2000.	
53 Cr	-5.86	-1.172	ppb	24.72	#VALUE!	
55 Mn	0.861	0.1722	ppb	63.01	2000.	
56 Fe	108.05	21.61	ppb	33.39	#VALUE!	
57 Fe	78.05	15.61	ppb	20.96	100000.	
59 Co	0.0386	0.0077	ppb	126.22	1000.	
60 Ni	0.0357	0.0071	ppb	98.19	1000.	
63 Cu	0.2694	0.0539	ppb	10.35	#VALUE!	
65 Cu	0.1401	0.028	ppb	56.10	2000.	
66 Zn	0.3175	0.0635	ppb	76.43	2000.	
68 Zn	-0.2637	-0.0527	ppb	281.38	#VALUE!	
75 As	-0.2498	-0.05	ppb	254.00	1000.	
82 Se	0.4166	0.0833	ppb	225.64	1000.	
88 Sr	0.1506	0.0301	ppb	73.84	2000.	
98 Mo	0.026	0.0052	ppb	95.11	1000.	
107 Ag	-0.0081	-0.0016	ppb	137.03	100.	
109 Ag	0.0035	0.0007	ppb	137.68	#VALUE!	
111 Cd	-0.0116	-0.0023	ppb	906.79	#VALUE!	
114 Cd	0.0013	0.0003	ppb	4025.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2088	0.0418	ppb	36.78	1000.	
120 Sn	0.195	0.039	ppb	29.70	#VALUE!	
121 Sb	0.0027	0.0005	ppb	203.08	#VALUE!	
123 Sb	0.0041	0.0008	ppb	682.93	1000.	
135 Ba	0.3341	0.0668	ppb	43.03	2000.	
137 Ba	0.2892	0.0578	ppb	89.52	#VALUE!	
182 W	0.0026	0.0005	ppb	147.07	1000.	
203 Tl	-0.1764	-0.0353	ppb	107.99	1000.	
205 Tl	-0.2075	-0.0415	ppb	16.80	#VALUE!	
208 Pb	0.1128	0.0226	ppb	116.45	2000.	
232 Th	0.0435	0.0087	ppb	45.58	1000.	
238 U	0.006	0.0012	ppb	87.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2644503.50	5.36	2376938.80	111.3	69.5 - 120	
45 Sc	1580513.00	6.95	1529305.50	103.3	69.5 - 120	
89 Y	1917462.60	4.07	2078192.30	92.3	69.5 - 120	
159 Tb	2410011.30	2.67	2700524.30	89.2	69.5 - 120	
209 Bi	1193482.40	2.12	1395285.40	85.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000308

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\081_CCV.D\081_CCV.D#
Date Acquired: May 4 2018 10:02 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.34	ppb	1.25	25	101.36	
11 B	23.84	ppb	8.36	25	95.36	
23 Na	5,359.	ppb	2.27	5,000	107.18	
25 Mg	5,405.	ppb	3.39	5,000	108.1	
27 Al	531.1	ppb	1.92	500	106.22	
28 Si	452.5	ppb	8.98	500	90.5	
29 Si	425.3	ppb	2.36	500	85.06	Fail
39 K	5,098.	ppb	1.98	5,000	101.96	
43 Ca	4,938.	ppb	1.31	5,000	98.76	
44 Ca	5,062.	ppb	0.40	5,000	101.24	
51 V	26.43	ppb	0.20	25	105.72	
52 Cr	26.27	ppb	1.72	25	105.08	
53 Cr	25.78	ppb	1.25	25	103.12	
55 Mn	25.91	ppb	0.91	25	103.64	
56 Fe	5,223.	ppb	0.84	5,000	104.46	
57 Fe	5,311.	ppb	1.69	5,000	106.22	
59 Co	26.21	ppb	1.31	25	104.84	
60 Ni	26.04	ppb	1.84	25	104.16	
63 Cu	26.05	ppb	1.04	25	104.2	
65 Cu	26.24	ppb	1.13	25	104.96	
66 Zn	26.13	ppb	0.87	25	104.52	
68 Zn	26.3	ppb	0.47	25	105.2	
75 As	26.14	ppb	1.62	25	104.56	
82 Se	26.36	ppb	2.47	25	105.44	
88 Sr	25.01	ppb	1.27	25	100.04	
98 Mo	24.18	ppb	1.46	25	96.72	
107 Ag	24.64	ppb	1.07	25	98.56	
109 Ag	24.85	ppb	0.62	25	99.4	
111 Cd	24.73	ppb	0.48	25	98.92	
114 Cd	24.75	ppb	0.56	25	99	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.35	ppb	1.26	25	101.4	
120 Sn	25.18	ppb	0.50	25	100.72	
121 Sb	25.36	ppb	1.17	25	101.44	
123 Sb	25.31	ppb	0.11	25	101.24	
135 Ba	25.25	ppb	0.87	25	101	
137 Ba	25.26	ppb	0.45	25	101.04	
182 W	24.1	ppb	1.54	25	96.4	
203 Tl	24.73	ppb	0.63	25	98.92	
205 Tl	24.85	ppb	0.64	25	99.4	
208 Pb	24.75	ppb	0.56	25	99	
232 Th	28.08	ppb	0.67	25	112.32	Fail
238 U	34.05	ppb	0.99	25	136.2	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2708048.50	2.00	2376938.80	113.9	80 - 120.4	
45 Sc	1683130.40	1.96	1529305.50	110.1	80 - 120.4	
89 Y	2064355.00	1.52	2078192.30	99.3	80 - 120.4	
159 Tb	2633948.00	1.79	2700524.30	97.5	80 - 120.4	
209 Bi	1291125.80	1.57	1395285.40	92.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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 4000309

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\082_CCB.D\082_CCB.D#
Date Acquired: May 4 2018 10:05 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0025	ppb	76.40	1.00	
11 B	2.724	ppb	12.88	1.00	
23 Na	0.9725	ppb	10.07	1.00	
25 Mg	0.2212	ppb	16.41	1.00	
27 Al	0.2223	ppb	13.16	1.00	
28 Si	-71.38	ppb	71.55	1.00	
29 Si	-43.54	ppb	71.80	1.00	
39 K	0.654	ppb	379.97	1.00	
43 Ca	7.002	ppb	31.38	1.00	
44 Ca	-0.6494	ppb	180.94	1.00	
51 V	0.0628	ppb	144.42	1.00	
52 Cr	0.1202	ppb	23.25	1.00	
53 Cr	-0.7958	ppb	27.71	1.00	
55 Mn	0.0508	ppb	19.61	1.00	
56 Fe	15.48	ppb	3.29	1.00	
57 Fe	11.31	ppb	10.21	1.00	
59 Co	0.0052	ppb	127.33	1.00	
60 Ni	0.	ppb	34609.00	1.00	
63 Cu	0.0562	ppb	15.05	1.00	
65 Cu	0.0232	ppb	164.77	1.00	
66 Zn	0.1391	ppb	29.89	1.00	
68 Zn	-0.1289	ppb	61.65	1.00	
75 As	0.1075	ppb	124.37	1.00	
82 Se	-0.047	ppb	237.87	1.00	
88 Sr	0.0038	ppb	157.07	1.00	
98 Mo	0.0336	ppb	40.49	1.00	
107 Ag	0.0021	ppb	113.96	1.00	
109 Ag	0.0011	ppb	362.19	1.00	
111 Cd	0.021	ppb	105.96	1.00	
114 Cd	0.0007	ppb	590.78	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0683	ppb	23.17	1.00	
120 Sn	0.0835	ppb	3.86	1.00	
121 Sb	0.0056	ppb	73.24	1.00	
123 Sb	0.0029	ppb	50.52	1.00	
135 Ba	0.0715	ppb	14.84	1.00	
137 Ba	0.0496	ppb	48.78	1.00	
182 W	0.0472	ppb	18.83	1.00	
203 Tl	-0.0633	ppb	73.47	1.00	
205 Tl	-0.021	ppb	113.36	1.00	
208 Pb	0.0257	ppb	62.55	1.00	
232 Th	0.0429	ppb	2.32	1.00	
238 U	0.0044	ppb	8.91	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2630904.80	4.37	2376938.80	110.7	79.5 - 120	
45 Sc	1569433.10	2.90	1529305.50	102.6	79.5 - 120	
89 Y	1890504.80	1.33	2078192.30	91.0	79.5 - 120	
159 Tb	2417141.80	0.89	2700524.30	89.5	79.5 - 120	
209 Bi	1202516.50	1.43	1395285.40	86.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :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\JLE04E.B\083SMPL.D\083SMPL.D#
Date Acquired: May 4 2018 10:09 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: PBWLE03IMW2
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	0.0054	0.0011	ppb	173.50	100.	
11 B	9.945	1.989	ppb	7.61	1000.	
23 Na	48.09	9.618	ppb	3.59	200000.	
25 Mg	11.78	2.356	ppb	5.62	200000.	
27 Al	8.73	1.746	ppb	12.31	200000.	
28 Si	-306.6	-61.32	ppb	97.10	#VALUE!	
29 Si	-68.55	-13.71	ppb	271.63	10000.	
39 K	31.005	6.201	ppb	64.38	200000.	
43 Ca	48.975	9.795	ppb	28.32	#VALUE!	
44 Ca	18.375	3.675	ppb	37.25	200000.	
51 V	0.3986	0.0797	ppb	45.98	1000.	
52 Cr	1.9535	0.3907	ppb	7.25	2000.	
53 Cr	32.365	6.473	ppb	6.22	#VALUE!	
55 Mn	0.6485	0.1297	ppb	9.71	2000.	
56 Fe	130.05	26.01	ppb	29.21	#VALUE!	
57 Fe	49.21	9.842	ppb	35.36	100000.	
59 Co	0.0399	0.008	ppb	34.75	1000.	
60 Ni	0.0539	0.0108	ppb	102.04	1000.	
63 Cu	0.4902	0.098	ppb	17.45	#VALUE!	
65 Cu	0.4223	0.0845	ppb	25.24	2000.	
66 Zn	1.191	0.2382	ppb	10.95	2000.	
68 Zn	0.2474	0.0495	ppb	60.93	#VALUE!	
75 As	-0.1049	-0.021	ppb	827.37	1000.	
82 Se	0.9585	0.1917	ppb	55.76	1000.	
88 Sr	0.0556	0.0111	ppb	51.35	2000.	
98 Mo	0.0732	0.0146	ppb	23.75	1000.	
107 Ag	-0.0004	-0.0001	ppb	3849.00	100.	
109 Ag	0.0048	0.001	ppb	233.91	#VALUE!	
111 Cd	0.075	0.015	ppb	298.13	#VALUE!	
114 Cd	0.0101	0.002	ppb	175.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.475	0.295	ppb	14.08	1000.	
120 Sn	1.518	0.3036	ppb	11.99	#VALUE!	
121 Sb	0.0369	0.0074	ppb	16.55	#VALUE!	
123 Sb	0.0399	0.008	ppb	16.87	1000.	
135 Ba	0.1848	0.037	ppb	60.12	2000.	
137 Ba	0.1507	0.0301	ppb	6.91	#VALUE!	
182 W	0.0762	0.0152	ppb	28.33	1000.	
203 Tl	-0.1094	-0.0219	ppb	186.33	1000.	
205 Tl	-0.1135	-0.0227	ppb	58.37	#VALUE!	
208 Pb	-0.2747	-0.0549	ppb	39.63	2000.	
232 Th	0.2444	0.0489	ppb	15.55	1000.	
238 U	-0.0003	-0.0001	ppb	1782.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2500322.00	3.76	2376938.80	105.2	69.5 - 120	
45 Sc	1465361.60	3.87	1529305.50	95.8	69.5 - 120	
89 Y	1829191.90	2.10	2078192.30	88.0	69.5 - 120	
159 Tb	2387327.30	0.75	2700524.30	88.4	69.5 - 120	
209 Bi	1203288.90	0.38	1395285.40	86.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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\JLE04E.B\084SMPL.D\084SMPL.D#
Date Acquired: May 4 2018 10:12 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: LCSWLE03IMW2
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	50.45	10.09	ppb	4.32	100.	
11 B	505.5	101.1	ppb	3.65	1000.	
23 Na	8,310.	1,662.	ppb	1.89	200000.	
25 Mg	5,495.	1,099.	ppb	6.30	200000.	
27 Al	2,320.	464.	ppb	3.14	200000.	
28 Si	481.8	96.36	ppb	30.67	#VALUE!	
29 Si	628.5	125.7	ppb	21.87	10000.	
39 K	10,405.	2,081.	ppb	2.65	200000.	
43 Ca	2,925.	585.	ppb	6.75	#VALUE!	
44 Ca	2,622.	524.4	ppb	2.24	200000.	
51 V	593.5	118.7	ppb	0.73	1000.	
52 Cr	224.	44.8	ppb	2.17	2000.	
53 Cr	254.65	50.93	ppb	1.40	#VALUE!	
55 Mn	571.5	114.3	ppb	0.51	2000.	
56 Fe	1,166.5	233.3	ppb	3.74	#VALUE!	
57 Fe	1,122.5	224.5	ppb	3.76	100000.	
59 Co	581.	116.2	ppb	1.04	1000.	
60 Ni	608.5	121.7	ppb	2.19	1000.	
63 Cu	361.3	72.26	ppb	1.04	#VALUE!	
65 Cu	367.35	73.47	ppb	0.71	2000.	
66 Zn	551.5	110.3	ppb	1.53	2000.	
68 Zn	617.	123.4	ppb	1.30	#VALUE!	
75 As	108.6	21.72	ppb	1.81	1000.	
82 Se	104.4	20.88	ppb	1.66	1000.	
88 Sr	526.5	105.3	ppb	0.27	2000.	
98 Mo	102.75	20.55	ppb	1.41	1000.	
107 Ag	53.65	10.73	ppb	1.37	100.	
109 Ag	54.05	10.81	ppb	0.82	#VALUE!	
111 Cd	255.95	51.19	ppb	0.71	#VALUE!	
114 Cd	256.65	51.33	ppb	1.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	516.	103.2	ppb	1.77	1000.	
120 Sn	517.	103.4	ppb	2.00	#VALUE!	
121 Sb	103.65	20.73	ppb	1.28	#VALUE!	
123 Sb	102.8	20.56	ppb	1.24	1000.	
135 Ba	2,132.5	426.5	ppb	1.87	2000.	
137 Ba	2,116.5	423.3	ppb	2.13	#VALUE!	
182 W	103.15	20.63	ppb	2.97	1000.	
203 Tl	103.65	20.73	ppb	2.00	1000.	
205 Tl	104.05	20.81	ppb	2.20	#VALUE!	
208 Pb	104.	20.8	ppb	2.01	2000.	
232 Th	119.6	23.92	ppb	2.08	1000.	
238 U	144.95	28.99	ppb	2.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2772402.80	2.50	2376938.80	116.6	69.5 - 120	
45 Sc	1591141.30	2.63	1529305.50	104.0	69.5 - 120	
89 Y	1958612.90	2.19	2078192.30	94.2	69.5 - 120	
159 Tb	2567578.00	2.99	2700524.30	95.1	69.5 - 120	
209 Bi	1290314.30	2.16	1395285.40	92.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000312

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\085SMPL.D\085SMPL.D#
Date Acquired: May 4 2018 10:16 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3708-022
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	55.19	100.	
11 B	35.9	7.18	ppb	17.35	1000.	
23 Na	55.65	11.13	ppb	7.20	200000.	
25 Mg	13.1	2.62	ppb	3.46	200000.	
27 Al	10.655	2.131	ppb	8.45	200000.	
28 Si	-338.8	-67.76	ppb	96.36	#VALUE!	
29 Si	-120.65	-24.13	ppb	195.73	10000.	
39 K	41.35	8.27	ppb	84.91	200000.	
43 Ca	26.55	5.31	ppb	120.40	#VALUE!	
44 Ca	20.155	4.031	ppb	12.19	200000.	
51 V	0.4636	0.0927	ppb	34.51	1000.	
52 Cr	1.9685	0.3937	ppb	3.77	2000.	
53 Cr	34.56	6.912	ppb	2.93	#VALUE!	
55 Mn	0.529	0.1058	ppb	7.63	2000.	
56 Fe	110.	22.	ppb	23.07	#VALUE!	
57 Fe	60.35	12.07	ppb	6.85	100000.	
59 Co	0.0502	0.01	ppb	98.39	1000.	
60 Ni	0.0428	0.0086	ppb	53.93	1000.	
63 Cu	0.5375	0.1075	ppb	5.45	#VALUE!	
65 Cu	0.3677	0.0735	ppb	34.79	2000.	
66 Zn	0.4494	0.0899	ppb	42.64	2000.	
68 Zn	0.5075	0.1015	ppb	82.47	#VALUE!	
75 As	1.8385	0.3677	ppb	51.67	1000.	
82 Se	0.6805	0.1361	ppb	52.54	1000.	
88 Sr	0.0488	0.0098	ppb	64.46	2000.	
98 Mo	0.0711	0.0142	ppb	37.46	1000.	
107 Ag	0.0011	0.0002	ppb	147.58	100.	
109 Ag	0.0144	0.0029	ppb	57.12	#VALUE!	
111 Cd	0.1036	0.0207	ppb	215.15	#VALUE!	
114 Cd	0.0222	0.0044	ppb	107.80	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.585	0.317	ppb	4.17	1000.	
120 Sn	1.6305	0.3261	ppb	4.29	#VALUE!	
121 Sb	0.045	0.009	ppb	15.03	#VALUE!	
123 Sb	0.0392	0.0078	ppb	55.49	1000.	
135 Ba	0.2592	0.0518	ppb	53.74	2000.	
137 Ba	0.2696	0.0539	ppb	27.26	#VALUE!	
182 W	0.129	0.0258	ppb	37.85	1000.	
203 Tl	-0.2107	-0.0421	ppb	55.35	1000.	
205 Tl	-0.1868	-0.0374	ppb	47.60	#VALUE!	
208 Pb	-0.2991	-0.0598	ppb	19.31	2000.	
232 Th	0.4251	0.085	ppb	13.38	1000.	
238 U	0.0119	0.0024	ppb	42.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2485603.00	1.38	2376938.80	104.6	69.5 - 120	
45 Sc	1451886.30	4.20	1529305.50	94.9	69.5 - 120	
89 Y	1827627.00	2.39	2078192.30	87.9	69.5 - 120	
159 Tb	2402918.30	1.50	2700524.30	89.0	69.5 - 120	
209 Bi	1218997.50	0.91	1395285.40	87.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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\JLE04E.B\086SMPL.D\086SMPL.D#
Date Acquired: May 4 2018 10:19 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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.	0.	ppb	9134.40	100.	
11 B	2.604	2.604	ppb	7.47	1000.	
23 Na	0.8965	0.8965	ppb	23.00	200000.	
25 Mg	0.544	0.544	ppb	41.77	200000.	
27 Al	0.8275	0.8275	ppb	35.40	200000.	
28 Si	-53.4	-53.4	ppb	124.08	#VALUE!	
29 Si	-24.73	-24.73	ppb	191.06	10000.	
39 K	3.427	3.427	ppb	143.89	200000.	
43 Ca	5.172	5.172	ppb	65.02	#VALUE!	
44 Ca	2.047	2.047	ppb	45.93	200000.	
51 V	0.0443	0.0443	ppb	126.37	1000.	
52 Cr	0.1161	0.1161	ppb	24.38	2000.	
53 Cr	-0.424	-0.424	ppb	58.30	#VALUE!	
55 Mn	0.0523	0.0523	ppb	21.85	2000.	
56 Fe	11.81	11.81	ppb	45.48	#VALUE!	
57 Fe	11.22	11.22	ppb	17.84	100000.	
59 Co	0.0105	0.0105	ppb	72.92	1000.	
60 Ni	0.0186	0.0186	ppb	86.80	1000.	
63 Cu	0.0695	0.0695	ppb	26.46	#VALUE!	
65 Cu	0.0273	0.0273	ppb	161.06	2000.	
66 Zn	0.0303	0.0303	ppb	242.32	2000.	
68 Zn	-0.0343	-0.0343	ppb	309.44	#VALUE!	
75 As	0.0045	0.0045	ppb	3894.20	1000.	
82 Se	-0.0065	-0.0065	ppb	1043.40	1000.	
88 Sr	0.0075	0.0075	ppb	77.27	2000.	
98 Mo	0.0087	0.0087	ppb	59.70	1000.	
107 Ag	0.0023	0.0023	ppb	97.38	100.	
109 Ag	-0.0005	-0.0005	ppb	116.78	#VALUE!	
111 Cd	0.0302	0.0302	ppb	98.24	#VALUE!	
114 Cd	-0.0003	-0.0003	ppb	751.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0671	0.0671	ppb	27.77	1000.	
120 Sn	0.0559	0.0559	ppb	14.60	#VALUE!	
121 Sb	0.0026	0.0026	ppb	134.42	#VALUE!	
123 Sb	0.0053	0.0053	ppb	136.19	1000.	
135 Ba	0.0471	0.0471	ppb	138.64	2000.	
137 Ba	0.0406	0.0406	ppb	113.00	#VALUE!	
182 W	0.0037	0.0037	ppb	76.11	1000.	
203 Tl	-0.0508	-0.0508	ppb	85.73	1000.	
205 Tl	-0.0232	-0.0232	ppb	66.01	#VALUE!	
208 Pb	0.0314	0.0314	ppb	57.03	2000.	
232 Th	0.0097	0.0097	ppb	33.02	1000.	
238 U	0.0031	0.0031	ppb	112.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2523583.80	2.68	2376938.80	106.2	69.5 - 120	
45 Sc	1482560.10	4.43	1529305.50	96.9	69.5 - 120	
89 Y	1839378.10	2.34	2078192.30	88.5	69.5 - 120	
159 Tb	2381090.80	2.48	2700524.30	88.2	69.5 - 120	
209 Bi	1203333.60	1.09	1395285.40	86.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\087SMPL.D\087SMPL.D#
Date Acquired: May 4 2018 10:23 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: PBWLE03IMW1
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	65.48	100.	
11 B	1.945	1.945	ppb	7.93	1000.	
23 Na	11.61	11.61	ppb	8.30	200000.	
25 Mg	8.345	8.345	ppb	6.12	200000.	
27 Al	4.118	4.118	ppb	3.77	200000.	
28 Si	-96.82	-96.82	ppb	43.42	#VALUE!	
29 Si	-59.29	-59.29	ppb	48.95	10000.	
39 K	-2.285	-2.285	ppb	92.04	200000.	
43 Ca	4.558	4.558	ppb	50.29	#VALUE!	
44 Ca	3.184	3.184	ppb	8.21	200000.	
51 V	-0.0534	-0.0534	ppb	120.46	1000.	
52 Cr	0.1972	0.1972	ppb	25.94	2000.	
53 Cr	0.5138	0.5138	ppb	37.10	#VALUE!	
55 Mn	0.2956	0.2956	ppb	3.29	2000.	
56 Fe	12.7	12.7	ppb	32.21	#VALUE!	
57 Fe	15.85	15.85	ppb	12.63	100000.	
59 Co	0.0062	0.0062	ppb	62.49	1000.	
60 Ni	0.0096	0.0096	ppb	78.44	1000.	
63 Cu	0.0094	0.0094	ppb	141.93	#VALUE!	
65 Cu	-0.0238	-0.0238	ppb	85.56	2000.	
66 Zn	0.3769	0.3769	ppb	7.73	2000.	
68 Zn	0.1685	0.1685	ppb	41.83	#VALUE!	
75 As	0.1383	0.1383	ppb	100.80	1000.	
82 Se	0.0305	0.0305	ppb	463.15	1000.	
88 Sr	0.0224	0.0224	ppb	30.80	2000.	
98 Mo	0.0086	0.0086	ppb	62.20	1000.	
107 Ag	0.003	0.003	ppb	53.45	100.	
109 Ag	-0.002	-0.002	ppb	60.29	#VALUE!	
111 Cd	0.0218	0.0218	ppb	56.96	#VALUE!	
114 Cd	0.0037	0.0037	ppb	204.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0538	0.0538	ppb	3.96	1000.	
120 Sn	0.0382	0.0382	ppb	35.82	#VALUE!	
121 Sb	0.0027	0.0027	ppb	56.64	#VALUE!	
123 Sb	0.0039	0.0039	ppb	140.52	1000.	
135 Ba	0.0637	0.0637	ppb	19.59	2000.	
137 Ba	0.0405	0.0405	ppb	40.36	#VALUE!	
182 W	0.0025	0.0025	ppb	104.58	1000.	
203 Tl	-0.0402	-0.0402	ppb	128.35	1000.	
205 Tl	-0.0381	-0.0381	ppb	50.79	#VALUE!	
208 Pb	-0.0309	-0.0309	ppb	23.69	2000.	
232 Th	0.007	0.007	ppb	65.64	1000.	
238 U	-0.0003	-0.0003	ppb	309.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2670972.00	2.38	2376938.80	112.4	69.5 - 120	
45 Sc	1576940.30	1.18	1529305.50	103.1	69.5 - 120	
89 Y	1919142.60	0.88	2078192.30	92.3	69.5 - 120	
159 Tb	2484426.80	0.83	2700524.30	92.0	69.5 - 120	
209 Bi	1241865.50	0.89	1395285.40	89.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000315

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\088SMPL.D\088SMPL.D#
Date Acquired: May 4 2018 10:26 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: LCSWLE03IMW1
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	52.05	10.41	ppb	3.26	100.	
11 B	468.3	93.66	ppb	4.71	1000.	
23 Na	8,630.	1,726.	ppb	2.26	200000.	
25 Mg	5,660.	1,132.	ppb	3.73	200000.	
27 Al	2,372.	474.4	ppb	3.62	200000.	
28 Si	547.	109.4	ppb	30.81	#VALUE!	
29 Si	609.	121.8	ppb	18.99	10000.	
39 K	10,640.	2,128.	ppb	0.95	200000.	
43 Ca	2,940.5	588.1	ppb	4.80	#VALUE!	
44 Ca	2,625.	525.	ppb	1.71	200000.	
51 V	595.5	119.1	ppb	2.07	1000.	
52 Cr	226.8	45.36	ppb	1.46	2000.	
53 Cr	232.7	46.54	ppb	1.50	#VALUE!	
55 Mn	576.5	115.3	ppb	1.60	2000.	
56 Fe	1,103.	220.6	ppb	1.82	#VALUE!	
57 Fe	1,124.	224.8	ppb	3.86	100000.	
59 Co	590.5	118.1	ppb	2.50	1000.	
60 Ni	584.	116.8	ppb	2.21	1000.	
63 Cu	283.05	56.61	ppb	0.72	#VALUE!	
65 Cu	285.5	57.1	ppb	1.01	2000.	
66 Zn	569.	113.8	ppb	1.73	2000.	
68 Zn	636.5	127.3	ppb	1.76	#VALUE!	
75 As	113.4	22.68	ppb	3.13	1000.	
82 Se	112.4	22.48	ppb	0.35	1000.	
88 Sr	532.	106.4	ppb	0.37	2000.	
98 Mo	101.9	20.38	ppb	1.17	1000.	
107 Ag	54.6	10.92	ppb	1.42	100.	
109 Ag	54.45	10.89	ppb	0.49	#VALUE!	
111 Cd	264.2	52.84	ppb	1.49	#VALUE!	
114 Cd	265.	53.	ppb	1.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	528.5	105.7	ppb	0.53	1000.	
120 Sn	524.5	104.9	ppb	1.15	#VALUE!	
121 Sb	107.15	21.43	ppb	1.42	#VALUE!	
123 Sb	107.35	21.47	ppb	1.12	1000.	
135 Ba	2,198.	439.6	ppb	1.57	2000.	
137 Ba	2,178.5	435.7	ppb	0.59	#VALUE!	
182 W	101.75	20.35	ppb	0.77	1000.	
203 Tl	103.7	20.74	ppb	0.53	1000.	
205 Tl	104.05	20.81	ppb	0.57	#VALUE!	
208 Pb	104.5	20.9	ppb	0.33	2000.	
232 Th	118.	23.6	ppb	0.88	1000.	
238 U	145.15	29.03	ppb	0.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2837964.00	0.31	2376938.80	119.4	69.5 - 120	
45 Sc	1610735.40	2.00	1529305.50	105.3	69.5 - 120	
89 Y	1989300.80	1.13	2078192.30	95.7	69.5 - 120	
159 Tb	2588920.80	1.36	2700524.30	95.9	69.5 - 120	
209 Bi	1302558.40	1.73	1395285.40	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\089SMPL.D\089SMPL.D#
Date Acquired: May 4 2018 10:30 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3631-001
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	0.0096	0.0096	ppb	35.29	100.	
11 B	25.82	25.82	ppb	2.95	1000.	
23 Na	226,500.	226,500.	ppb	0.55	200000.	>LDR
25 Mg	2,197.	2,197.	ppb	1.89	200000.	
27 Al	753.8	753.8	ppb	1.85	200000.	
28 Si	3,486.	3,486.	ppb	2.34	#VALUE!	
29 Si	3,825.	3,825.	ppb	1.01	10000.	
39 K	14,580.	14,580.	ppb	2.00	200000.	
43 Ca	23,840.	23,840.	ppb	2.64	#VALUE!	
44 Ca	23,200.	23,200.	ppb	2.24	200000.	
51 V	5.832	5.832	ppb	3.11	1000.	
52 Cr	1.249	1.249	ppb	0.97	2000.	
53 Cr	-0.6572	-0.6572	ppb	24.74	#VALUE!	
55 Mn	419.5	419.5	ppb	0.72	2000.	
56 Fe	356.4	356.4	ppb	3.52	#VALUE!	
57 Fe	396.6	396.6	ppb	2.14	100000.	
59 Co	0.2169	0.2169	ppb	10.69	1000.	
60 Ni	1.302	1.302	ppb	3.27	1000.	
63 Cu	11.48	11.48	ppb	0.86	#VALUE!	
65 Cu	3.462	3.462	ppb	0.99	2000.	
66 Zn	18.35	18.35	ppb	1.20	2000.	
68 Zn	20.11	20.11	ppb	1.51	#VALUE!	
75 As	0.9498	0.9498	ppb	40.64	1000.	
82 Se	0.1902	0.1902	ppb	41.54	1000.	
88 Sr	90.43	90.43	ppb	0.48	2000.	
98 Mo	3.777	3.777	ppb	1.52	1000.	
107 Ag	0.0165	0.0165	ppb	20.50	100.	
109 Ag	0.0199	0.0199	ppb	13.38	#VALUE!	
111 Cd	0.1692	0.1692	ppb	19.44	#VALUE!	
114 Cd	0.1438	0.1438	ppb	4.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.4183	0.4183	ppb	2.13	1000.	
120 Sn	0.4168	0.4168	ppb	2.15	#VALUE!	
121 Sb	0.353	0.353	ppb	3.29	#VALUE!	
123 Sb	0.349	0.349	ppb	3.98	1000.	
135 Ba	65.73	65.73	ppb	2.04	2000.	
137 Ba	64.71	64.71	ppb	1.10	#VALUE!	
182 W	0.2705	0.2705	ppb	10.57	1000.	
203 Tl	-0.0242	-0.0242	ppb	276.82	1000.	
205 Tl	0.0155	0.0155	ppb	105.04	#VALUE!	
208 Pb	1.206	1.206	ppb	0.63	2000.	
232 Th	0.1762	0.1762	ppb	21.07	1000.	
238 U	0.5071	0.5071	ppb	2.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2768985.50	2.83	2376938.80	116.5	69.5 - 120	
45 Sc	1682616.30	3.34	1529305.50	110.0	69.5 - 120	
89 Y	2035576.40	1.44	2078192.30	97.9	69.5 - 120	
159 Tb	2606330.80	1.99	2700524.30	96.5	69.5 - 120	
209 Bi	1179798.60	0.97	1395285.40	84.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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 4000317

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\090SMPL.D\090SMPL.D#
Date Acquired: May 4 2018 10:34 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3632-001
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	0.0145	0.0145	ppb	49.17	100.	
11 B	81.41	81.41	ppb	2.94	1000.	
23 Na	95,600.	95,600.	ppb	0.52	200000.	
25 Mg	4,472.	4,472.	ppb	0.78	200000.	
27 Al	72.3	72.3	ppb	1.87	200000.	
28 Si	3,566.	3,566.	ppb	1.54	#VALUE!	
29 Si	3,936.	3,936.	ppb	0.60	10000.	
39 K	5,987.	5,987.	ppb	1.96	200000.	
43 Ca	14,660.	14,660.	ppb	1.24	#VALUE!	
44 Ca	14,200.	14,200.	ppb	1.40	200000.	
51 V	0.2619	0.2619	ppb	10.87	1000.	
52 Cr	0.5083	0.5083	ppb	3.32	2000.	
53 Cr	1.801	1.801	ppb	60.58	#VALUE!	
55 Mn	32.54	32.54	ppb	0.65	2000.	
56 Fe	178.3	178.3	ppb	1.69	#VALUE!	
57 Fe	212.1	212.1	ppb	0.80	100000.	
59 Co	0.1595	0.1595	ppb	8.41	1000.	
60 Ni	1.374	1.374	ppb	4.34	1000.	
63 Cu	20.54	20.54	ppb	1.02	#VALUE!	
65 Cu	17.66	17.66	ppb	2.83	2000.	
66 Zn	55.49	55.49	ppb	1.95	2000.	
68 Zn	54.22	54.22	ppb	2.32	#VALUE!	
75 As	0.5187	0.5187	ppb	10.39	1000.	
82 Se	0.1079	0.1079	ppb	153.01	1000.	
88 Sr	70.81	70.81	ppb	0.57	2000.	
98 Mo	0.3005	0.3005	ppb	4.66	1000.	
107 Ag	0.0772	0.0772	ppb	18.16	100.	
109 Ag	0.0736	0.0736	ppb	2.43	#VALUE!	
111 Cd	0.1077	0.1077	ppb	17.76	#VALUE!	
114 Cd	0.0969	0.0969	ppb	12.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2892	0.2892	ppb	5.38	1000.	
120 Sn	0.2926	0.2926	ppb	8.23	#VALUE!	
121 Sb	0.157	0.157	ppb	12.33	#VALUE!	
123 Sb	0.1609	0.1609	ppb	5.39	1000.	
135 Ba	13.93	13.93	ppb	0.69	2000.	
137 Ba	13.78	13.78	ppb	0.91	#VALUE!	
182 W	0.0221	0.0221	ppb	27.63	1000.	
203 Tl	0.0047	0.0047	ppb	65.78	1000.	
205 Tl	-0.004	-0.004	ppb	529.07	#VALUE!	
208 Pb	0.6373	0.6373	ppb	3.16	2000.	
232 Th	0.0412	0.0412	ppb	17.33	1000.	
238 U	0.0614	0.0614	ppb	11.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2737576.00	2.76	2376938.80	115.2	69.5 - 120	
45 Sc	1665035.60	2.39	1529305.50	108.9	69.5 - 120	
89 Y	2056604.10	3.08	2078192.30	99.0	69.5 - 120	
159 Tb	2611688.00	1.41	2700524.30	96.7	69.5 - 120	
209 Bi	1241050.80	1.65	1395285.40	88.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000318

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\091SMPL.D\091SMPL.D#
Date Acquired: May 4 2018 10:37 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: SL3778-001
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	372.75	100.	
11 B	47.5	47.5	ppb	4.82	1000.	
23 Na	50,470.	50,470.	ppb	1.75	200000.	
25 Mg	1,537.	1,537.	ppb	2.90	200000.	
27 Al	24.5	24.5	ppb	4.29	200000.	
28 Si	2,025.	2,025.	ppb	4.65	#VALUE!	
29 Si	2,031.	2,031.	ppb	2.97	10000.	
39 K	10,330.	10,330.	ppb	1.38	200000.	
43 Ca	9,644.	9,644.	ppb	0.52	#VALUE!	
44 Ca	9,440.	9,440.	ppb	2.15	200000.	
51 V	0.2067	0.2067	ppb	3.74	1000.	
52 Cr	0.5444	0.5444	ppb	3.07	2000.	
53 Cr	4.828	4.828	ppb	6.49	#VALUE!	
55 Mn	18.6	18.6	ppb	1.39	2000.	
56 Fe	46.92	46.92	ppb	6.20	#VALUE!	
57 Fe	67.45	67.45	ppb	6.96	100000.	
59 Co	0.0779	0.0779	ppb	8.27	1000.	
60 Ni	1.366	1.366	ppb	7.61	1000.	
63 Cu	5.372	5.372	ppb	2.76	#VALUE!	
65 Cu	3.803	3.803	ppb	2.21	2000.	
66 Zn	31.15	31.15	ppb	1.54	2000.	
68 Zn	30.5	30.5	ppb	0.86	#VALUE!	
75 As	0.3993	0.3993	ppb	24.95	1000.	
82 Se	0.1635	0.1635	ppb	30.12	1000.	
88 Sr	34.47	34.47	ppb	1.45	2000.	
98 Mo	25.3	25.3	ppb	1.56	1000.	
107 Ag	0.0012	0.0012	ppb	351.92	100.	
109 Ag	0.0039	0.0039	ppb	29.43	#VALUE!	
111 Cd	0.0333	0.0333	ppb	104.65	#VALUE!	
114 Cd	0.0206	0.0206	ppb	6.69	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.26	0.26	ppb	10.04	1000.	
120 Sn	0.2282	0.2282	ppb	9.04	#VALUE!	
121 Sb	0.2583	0.2583	ppb	5.03	#VALUE!	
123 Sb	0.2674	0.2674	ppb	5.56	1000.	
135 Ba	4.629	4.629	ppb	2.79	2000.	
137 Ba	4.432	4.432	ppb	0.62	#VALUE!	
182 W	0.0179	0.0179	ppb	19.92	1000.	
203 Tl	-0.0485	-0.0485	ppb	73.89	1000.	
205 Tl	-0.0213	-0.0213	ppb	62.26	#VALUE!	
208 Pb	0.1386	0.1386	ppb	1.60	2000.	
232 Th	0.0219	0.0219	ppb	30.43	1000.	
238 U	0.0077	0.0077	ppb	33.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2734799.50	4.34	2376938.80	115.1	69.5 - 120	
45 Sc	1635584.00	4.67	1529305.50	106.9	69.5 - 120	
89 Y	2016001.30	3.10	2078192.30	97.0	69.5 - 120	
159 Tb	2636456.00	1.65	2700524.30	97.6	69.5 - 120	
209 Bi	1269028.90	1.02	1395285.40	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\092SMPL.D\092SMPL.D#
Date Acquired: May 4 2018 10:41 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 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	52.36	100.	
11 B	5.037	5.037	ppb	16.83	1000.	
23 Na	5.278	5.278	ppb	6.99	200000.	
25 Mg	0.2201	0.2201	ppb	16.45	200000.	
27 Al	0.4871	0.4871	ppb	14.12	200000.	
28 Si	-51.27	-51.27	ppb	57.36	#VALUE!	
29 Si	-8.739	-8.739	ppb	90.02	10000.	
39 K	4.686	4.686	ppb	49.19	200000.	
43 Ca	2.451	2.451	ppb	179.60	#VALUE!	
44 Ca	0.192	0.192	ppb	538.54	200000.	
51 V	0.1089	0.1089	ppb	146.28	1000.	
52 Cr	0.1398	0.1398	ppb	25.24	2000.	
53 Cr	6.841	6.841	ppb	6.65	#VALUE!	
55 Mn	0.0389	0.0389	ppb	26.30	2000.	
56 Fe	16.05	16.05	ppb	29.31	#VALUE!	
57 Fe	5.758	5.758	ppb	22.72	100000.	
59 Co	0.0026	0.0026	ppb	60.26	1000.	
60 Ni	0.0059	0.0059	ppb	105.27	1000.	
63 Cu	0.0813	0.0813	ppb	9.66	#VALUE!	
65 Cu	0.0375	0.0375	ppb	44.16	2000.	
66 Zn	0.0208	0.0208	ppb	43.25	2000.	
68 Zn	-0.05	-0.05	ppb	96.82	#VALUE!	
75 As	0.1781	0.1781	ppb	66.76	1000.	
82 Se	-0.035	-0.035	ppb	399.94	1000.	
88 Sr	0.0011	0.0011	ppb	533.07	2000.	
98 Mo	0.026	0.026	ppb	50.08	1000.	
107 Ag	0.	0.	ppb	10711.00	100.	
109 Ag	0.0007	0.0007	ppb	187.32	#VALUE!	
111 Cd	0.0373	0.0373	ppb	87.26	#VALUE!	
114 Cd	0.0017	0.0017	ppb	107.92	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0528	0.0528	ppb	37.38	1000.	
120 Sn	0.0387	0.0387	ppb	23.47	#VALUE!	
121 Sb	0.001	0.001	ppb	367.72	#VALUE!	
123 Sb	-0.0004	-0.0004	ppb	336.58	1000.	
135 Ba	0.0073	0.0073	ppb	147.33	2000.	
137 Ba	0.0188	0.0188	ppb	44.45	#VALUE!	
182 W	0.0092	0.0092	ppb	69.13	1000.	
203 Tl	-0.0612	-0.0612	ppb	45.87	1000.	
205 Tl	-0.0267	-0.0267	ppb	49.93	#VALUE!	
208 Pb	0.0486	0.0486	ppb	7.07	2000.	
232 Th	0.0055	0.0055	ppb	40.75	1000.	
238 U	0.0009	0.0009	ppb	65.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2435629.50	4.14	2376938.80	102.5	69.5 - 120	
45 Sc	1474351.30	0.44	1529305.50	96.4	69.5 - 120	
89 Y	1813017.90	2.39	2078192.30	87.2	69.5 - 120	
159 Tb	2361684.50	1.17	2700524.30	87.5	69.5 - 120	
209 Bi	1189364.30	0.95	1395285.40	85.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000320

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\093_CCV.D\093_CCV.D#
Date Acquired: May 4 2018 10:44 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.	ppb	3.02	25	100	
11 B	25.37	ppb	4.69	25	101.48	
23 Na	5,336.	ppb	1.25	5,000	106.72	
25 Mg	5,346.	ppb	1.58	5,000	106.92	
27 Al	535.1	ppb	2.15	500	107.02	
28 Si	439.9	ppb	11.13	500	87.98	
29 Si	469.6	ppb	7.51	500	93.92	
39 K	5,157.	ppb	2.42	5,000	103.14	
43 Ca	5,023.	ppb	0.90	5,000	100.46	
44 Ca	5,127.	ppb	1.22	5,000	102.54	
51 V	26.85	ppb	2.34	25	107.4	
52 Cr	26.58	ppb	1.85	25	106.32	
53 Cr	26.55	ppb	4.20	25	106.2	
55 Mn	25.98	ppb	1.92	25	103.92	
56 Fe	5,215.	ppb	2.71	5,000	104.3	
57 Fe	5,305.	ppb	2.11	5,000	106.1	
59 Co	26.12	ppb	2.55	25	104.48	
60 Ni	26.08	ppb	2.28	25	104.32	
63 Cu	26.05	ppb	1.81	25	104.2	
65 Cu	26.15	ppb	1.57	25	104.6	
66 Zn	26.15	ppb	3.18	25	104.6	
68 Zn	26.1	ppb	2.20	25	104.4	
75 As	26.15	ppb	2.97	25	104.6	
82 Se	26.42	ppb	4.52	25	105.68	
88 Sr	25.2	ppb	3.51	25	100.8	
98 Mo	24.2	ppb	2.82	25	96.8	
107 Ag	24.89	ppb	2.49	25	99.56	
109 Ag	25.09	ppb	1.57	25	100.36	
111 Cd	25.08	ppb	1.73	25	100.32	
114 Cd	25.22	ppb	1.86	25	100.88	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.86	ppb	1.36	25	99.44	
120 Sn	24.95	ppb	0.90	25	99.8	
121 Sb	24.91	ppb	1.78	25	99.64	
123 Sb	24.98	ppb	1.00	25	99.92	
135 Ba	25.1	ppb	1.40	25	100.4	
137 Ba	24.92	ppb	1.23	25	99.68	
182 W	24.14	ppb	1.86	25	96.56	
203 Tl	24.79	ppb	3.67	25	99.16	
205 Tl	24.66	ppb	2.32	25	98.64	
208 Pb	24.66	ppb	2.49	25	98.64	
232 Th	28.45	ppb	2.88	25	113.8	Fail
238 U	34.96	ppb	2.15	25	139.84	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2683823.00	4.69	2376938.80	112.9	80 - 120.4	
45 Sc	1618958.90	2.18	1529305.50	105.9	80 - 120.4	
89 Y	1979976.40	2.94	2078192.30	95.3	80 - 120.4	
159 Tb	2612706.80	0.96	2700524.30	96.7	80 - 120.4	
209 Bi	1294417.90	1.41	1395285.40	92.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.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 4000321

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE04E.B\094_CCB.D\094_CCB.D#
Date Acquired: May 4 2018 10:48 pm
Acq. Method: 6PTCAL16.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\6PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\6PTCAL16.C
Last Cal. Update: May 04 2018 06:29 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0007	ppb	264.24	1.00	
11 B	3.474	ppb	6.52	1.00	
23 Na	3.95	ppb	4.02	1.00	
25 Mg	0.2529	ppb	9.66	1.00	
27 Al	0.193	ppb	32.96	1.00	
28 Si	-49.47	ppb	103.70	1.00	
29 Si	-1.294	ppb	3061.10	1.00	
39 K	6.294	ppb	41.21	1.00	
43 Ca	6.188	ppb	47.11	1.00	
44 Ca	0.978	ppb	108.59	1.00	
51 V	0.056	ppb	21.59	1.00	
52 Cr	0.1265	ppb	5.65	1.00	
53 Cr	-0.4189	ppb	27.26	1.00	
55 Mn	0.0499	ppb	13.34	1.00	
56 Fe	16.32	ppb	25.93	1.00	
57 Fe	12.73	ppb	14.77	1.00	
59 Co	0.003	ppb	46.02	1.00	
60 Ni	-0.0052	ppb	289.03	1.00	
63 Cu	0.0732	ppb	27.10	1.00	
65 Cu	0.0414	ppb	28.68	1.00	
66 Zn	0.1491	ppb	26.62	1.00	
68 Zn	0.0147	ppb	446.05	1.00	
75 As	-0.0269	ppb	205.69	1.00	
82 Se	-0.0368	ppb	149.12	1.00	
88 Sr	0.0031	ppb	5.31	1.00	
98 Mo	0.0359	ppb	32.52	1.00	
107 Ag	0.0026	ppb	224.56	1.00	
109 Ag	0.0025	ppb	23.53	1.00	
111 Cd	0.0573	ppb	47.09	1.00	
114 Cd	0.0047	ppb	109.48	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0907	ppb	13.38	1.00	
120 Sn	0.0661	ppb	8.88	1.00	
121 Sb	0.0117	ppb	20.34	1.00	
123 Sb	0.0069	ppb	72.61	1.00	
135 Ba	0.0494	ppb	59.91	1.00	
137 Ba	0.0611	ppb	12.77	1.00	
182 W	0.0554	ppb	54.49	1.00	
203 Tl	-0.0308	ppb	27.58	1.00	
205 Tl	-0.0342	ppb	70.57	1.00	
208 Pb	0.0325	ppb	49.21	1.00	
232 Th	0.0482	ppb	11.68	1.00	
238 U	0.0058	ppb	16.36	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2422010.30	3.08	2376938.80	101.9	79.5 - 120	
45 Sc	1441333.50	2.95	1529305.50	94.2	79.5 - 120	
89 Y	1780764.40	1.53	2078192.30	85.7	79.5 - 120	
159 Tb	2350418.50	1.84	2700524.30	87.0	79.5 - 120	
209 Bi	1185431.40	1.24	1395285.40	85.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE04E.B\016CALB.D\016CALB.D#

0 :Element Failures 0 :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

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: Cetac M6100 (H) **ANALYST**: JS **ANALYSIS DATE**: 05/07/2018

FILE NAME: HLE07A **METHOD**: CVAA

☐ 245.1
☑ 7470
☐ 7471
☑ DoD
☐ _____

REVIEWED
amj 5/7/18
KATAHDIN ANALYTICAL
METALS SECTION

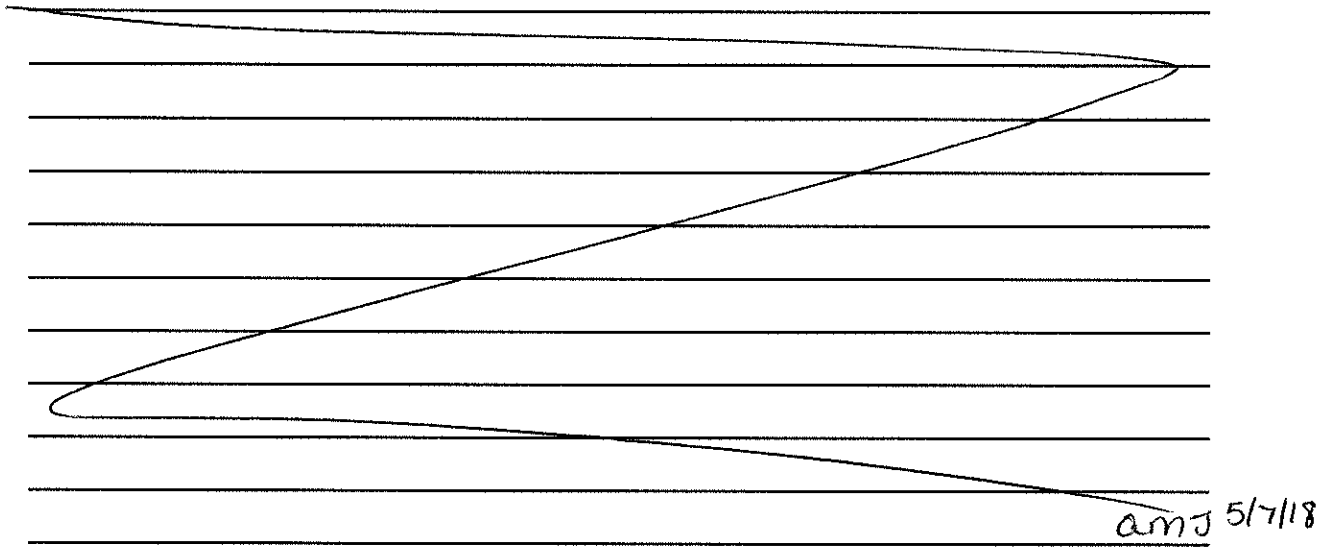
Analyte : Mercury

$SnCl_2$ Lot : MR2005

STANDARDS USED:

Standard Name	Prep. Date	Expiration Date	Standard Conc.
Cal. Blank / ICB / CCB	05/07/2018	06/01/2018	0.00 ug/L
Standard #1 / PQL	05/07/2018	06/01/2018	0.20 ug/L
Standard #2	05/07/2018	06/01/2018	0.50 ug/L
Standard #3	05/07/2018	06/01/2018	1.00 ug/L
Standard #4	05/07/2018	06/01/2018	5.00 ug/L
Standard #5	05/07/2018	06/01/2018	10.00 ug/L
ICV	05/07/2018	06/01/2018	6.00 ug/L

Additional Comments and Notes:



Post Spike (245.1/7470): 0.005 mL MW17721 (pipet M17) into 8.0mL (pipet M12) of sample

Post Spike (7471): 0.008 mL MW17721 (pipet M17) into 8.0mL (pipet M12) of sample

5x Dilution: 1.6mL (pipet M13) of sample + 6.4mL (pipet M13) 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	HLE07A	5/7/2018	12:00	JS
Standard #1 (0.2 ppb)	1.0000	HLE07A	5/7/2018	12:02	JS
Standard #2 (0.5 ppb)	1.0000	HLE07A	5/7/2018	12:04	JS
Standard #3 (1.0 ppb)	1.0000	HLE07A	5/7/2018	12:06	JS
Standard #4 (5.0 ppb)	1.0000	HLE07A	5/7/2018	12:08	JS
Standard #5 (10.0 ppb)	1.0000	HLE07A	5/7/2018	12:10	JS
ICV	1.0000	HLE07A	5/7/2018	12:13	JS
ICB	1.0000	HLE07A	5/7/2018	12:15	JS
PQL	1.0000	HLE07A	5/7/2018	12:17	JS
CCV	1.0000	HLE07A	5/7/2018	12:19	JS
CCB	1.0000	HLE07A	5/7/2018	12:21	JS
PBWLE07HGW1	1.0000	HLE07A	5/7/2018	12:23	JS
LCSWLE07HGW1	1.0000	HLE07A	5/7/2018	12:25	JS
PBSLE04ICS3	1.0000	HLE07A	5/7/2018	12:27	JS
LCSOLE04ICS3	1.0000	HLE07A	5/7/2018	12:29	JS
Q2 SEM MDL01	1.0000	HLE07A	5/7/2018	12:32	JS
SL3557-013	1.0000	HLE07A	5/7/2018	12:34	JS
SL3557-013L	5.0000	HLE07A	5/7/2018	12:36	JS
SL3557-013A	1.0000	HLE07A	5/7/2018	12:38	JS
SL3557-013S	1.0000	HLE07A	5/7/2018	12:40	JS
CCV	1.0000	HLE07A	5/7/2018	12:42	JS
CCB	1.0000	HLE07A	5/7/2018	12:44	JS
SL3557-013P	1.0000	HLE07A	5/7/2018	12:47	JS
SL3557-014	1.0000	HLE07A	5/7/2018	12:49	JS
SL3557-015	1.0000	HLE07A	5/7/2018	12:51	JS
SL3557-016	1.0000	HLE07A	5/7/2018	12:53	JS
SL3557-017	1.0000	HLE07A	5/7/2018	12:55	JS
PBWLE07HGW2	1.0000	HLE07A	5/7/2018	12:57	JS
LCSWLE07HGW2	1.0000	HLE07A	5/7/2018	12:59	JS
SL3265-001	1.0000	HLE07A	5/7/2018	13:01	JS
SL3265-002	1.0000	HLE07A	5/7/2018	13:04	JS
SL3265-003	1.0000	HLE07A	5/7/2018	13:06	JS
CCV	1.0000	HLE07A	5/7/2018	13:08	JS
CCB	1.0000	HLE07A	5/7/2018	13:10	JS
SL3380-001	1.0000	HLE07A	5/7/2018	13:12	JS
SL3380-002	1.0000	HLE07A	5/7/2018	13:14	JS
SL3380-003	1.0000	HLE07A	5/7/2018	13:16	JS
SL3380-003L	5.0000	HLE07A	5/7/2018	13:19	JS
SL3380-003A	1.0000	HLE07A	5/7/2018	13:21	JS
SL3380-003S	1.0000	HLE07A	5/7/2018	13:23	JS
SL3380-003P	1.0000	HLE07A	5/7/2018	13:25	JS
SL3604-001	1.0000	HLE07A	5/7/2018	13:27	JS
SL3708-022	1.0000	HLE07A	5/7/2018	13:29	JS
SL3764-001	1.0000	HLE07A	5/7/2018	13:32	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
CCV	1.0000	HLE07A	5/7/2018	13:34	JS
CCB	1.0000	HLE07A	5/7/2018	13:36	JS
SL3764-002	1.0000	HLE07A	5/7/2018	13:38	JS
SL3764-003	1.0000	HLE07A	5/7/2018	13:40	JS
SL3809-001	1.0000	HLE07A	5/7/2018	13:42	JS
SL3810-001	1.0000	HLE07A	5/7/2018	13:44	JS
SL3810-002	1.0000	HLE07A	5/7/2018	13:47	JS
SL3810-003	1.0000	HLE07A	5/7/2018	13:49	JS
SL3810-004	1.0000	HLE07A	5/7/2018	13:52	JS
SL3810-005	1.0000	HLE07A	5/7/2018	13:54	JS
SL3557-013S	1.0000	HLE07A	5/7/2018	13:56	JS
SL3380-003A	1.0000	HLE07A	5/7/2018	13:59	JS
CCV	1.0000	HLE07A	5/7/2018	14:01	JS
CCB	1.0000	HLE07A	5/7/2018	14:03	JS
SL3808-002	1.0000	HLE07A	5/7/2018	14:05	JS
SL3808-003	1.0000	HLE07A	5/7/2018	14:07	JS
SL3808-004	1.0000	HLE07A	5/7/2018	14:09	JS
SL3808-004L	5.0000	HLE07A	5/7/2018	14:12	JS
SL3808-004A	1.0000	HLE07A	5/7/2018	14:14	JS
SL3808-004S	1.0000	HLE07A	5/7/2018	14:16	JS
SL3808-004P	1.0000	HLE07A	5/7/2018	14:18	JS
SL3808-005	1.0000	HLE07A	5/7/2018	14:20	JS
SL3808-005L	5.0000	HLE07A	5/7/2018	14:22	JS
SL3808-005A	1.0000	HLE07A	5/7/2018	14:25	JS
CCV	1.0000	HLE07A	5/7/2018	14:27	JS
CCB	1.0000	HLE07A	5/7/2018	14:29	JS
SL3808-006	1.0000	HLE07A	5/7/2018	14:31	JS
SL3808-007	1.0000	HLE07A	5/7/2018	14:35	JS
SL3808-009	1.0000	HLE07A	5/7/2018	14:37	JS
SL3808-010	1.0000	HLE07A	5/7/2018	14:39	JS
SL3808-011	1.0000	HLE07A	5/7/2018	14:41	JS
SL3808-012	1.0000	HLE07A	5/7/2018	14:43	JS
SL3808-013	1.0000	HLE07A	5/7/2018	14:46	JS
SL3808-014	1.0000	HLE07A	5/7/2018	14:48	JS
SL3808-015	1.0000	HLE07A	5/7/2018	14:50	JS
SL3808-017	1.0000	HLE07A	5/7/2018	14:52	JS
CCV	1.0000	HLE07A	5/7/2018	14:57	JS
CCB	1.0000	HLE07A	5/7/2018	14:59	JS
SL3808-018	1.0000	HLE07A	5/7/2018	15:01	JS
PBWLE07HGW4	1.0000	HLE07A	5/7/2018	15:03	JS
LCSWLE07HGW4	1.0000	HLE07A	5/7/2018	15:05	JS
SL3841-002	1.0000	HLE07A	5/7/2018	15:07	JS
SL3841-003	1.0000	HLE07A	5/7/2018	15:10	JS
SL3841-004	1.0000	HLE07A	5/7/2018	15:15	JS
SL3841-005	1.0000	HLE07A	5/7/2018	15:18	JS
SL3841-006	1.0000	HLE07A	5/7/2018	15:20	JS
SL3841-008	1.0000	HLE07A	5/7/2018	15:22	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-009	1.0000	HLE07A	5/7/2018	15:24	JS
CCV	1.0000	HLE07A	5/7/2018	15:26	JS
CCB	1.0000	HLE07A	5/7/2018	15:28	JS
SL3841-010	1.0000	HLE07A	5/7/2018	15:30	JS
SL3841-010L	5.0000	HLE07A	5/7/2018	15:33	JS
SL3841-010A	1.0000	HLE07A	5/7/2018	15:35	JS
SL3841-010S	1.0000	HLE07A	5/7/2018	15:37	JS
SL3841-010P	1.0000	HLE07A	5/7/2018	15:39	JS
SL3841-011	1.0000	HLE07A	5/7/2018	15:41	JS
SL3841-012	1.0000	HLE07A	5/7/2018	15:43	JS
SL3841-013	1.0000	HLE07A	5/7/2018	15:45	JS
SL3841-014	1.0000	HLE07A	5/7/2018	15:48	JS
SL3841-015	1.0000	HLE07A	5/7/2018	15:50	JS
CCV	1.0000	HLE07A	5/7/2018	15:52	JS
CCB	1.0000	HLE07A	5/7/2018	15:54	JS
SL3841-016	1.0000	HLE07A	5/7/2018	15:56	JS
SL3841-017	1.0000	HLE07A	5/7/2018	15:58	JS
SL3841-018	1.0000	HLE07A	5/7/2018	16:00	JS
SL3841-019	1.0000	HLE07A	5/7/2018	16:03	JS
SL3841-020	1.0000	HLE07A	5/7/2018	16:05	JS
PBWLE07HGW3	1.0000	HLE07A	5/7/2018	16:07	JS
LCSWLE07HGW3	1.0000	HLE07A	5/7/2018	16:09	JS
SL3808-005S	1.0000	HLE07A	5/7/2018	16:11	JS
SL3808-005P	1.0000	HLE07A	5/7/2018	16:13	JS
SL3808-008	1.0000	HLE07A	5/7/2018	16:16	JS
CCV	1.0000	HLE07A	5/7/2018	16:18	JS
CCB	1.0000	HLE07A	5/7/2018	16:20	JS
SL3808-~~010K~~ JS 5.7.18	1.0000	HLE07A	5/7/2018	16:22	JS
CCV	1.0000	HLE07A	5/7/2018	16:24	JS
CCB	1.0000	HLE07A	5/7/2018	16:27	JS

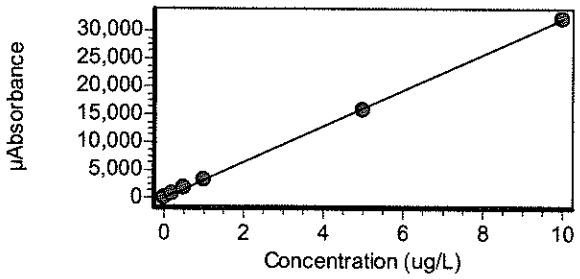
Report Generated By CETAC QuickTrace
Analyst: kasgc
Worksheet file: C:\Program Files\QuickTrace\Worksheets\HLE07A.wsz
Date Started: 5/7/2018 11:39:05 AM
Comment:

Results

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Calibration Blank				STD	05/07/18 12:00:13 pm	0.000	9	152.41		1.00
Replicates	-8.0	5.0	15.2	25.3						
Standard #1 (0.2 ppb)				STD	05/07/18 12:02:19 pm	0.200	660	2.71		1.00
Replicates	648.2	641.8	679.6	670.3						
Standard #2 (0.5 ppb)				STD	05/07/18 12:04:26 pm	0.500	1632	1.75		1.00
Replicates	1602.7	1651.0	1611.9	1660.7						
Standard #3 (1.0 ppb)				STD	05/07/18 12:06:34 pm	1.000	3309	0.58		1.00
Replicates	3336.2	3302.7	3304.2	3291.7						
Standard #4 (5.0 ppb)				STD	05/07/18 12:08:42 pm	5.000	15794	0.37		1.00
Replicates	15854.0	15753.4	15735.4	15834.9						
Standard #5 (10.0 ppb)				STD	05/07/18 12:10:50 pm	10.000	32262	0.22		1.00
Replicates	32295.6	32161.9	32262.6	32327.9						

Calibration

Equation: A = -0.391 + 3213.675C
R2: 0.99988
SEE: 158.7390
Flags:



ICV				ICV	05/07/18 12:13:00 pm	5.739	18442	0.38		1.00
Replicates	18513.3	18373.3	18389.8	18492.8						
% Recovery	95.65									
ICB				ICB	05/07/18 12:15:06 pm	-0.001	-4	609.66		1.00
Replicates	-6.3	-29.2	-9.9	29.4						

Katahdin Analytical Services 4000327

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
PQL					CRDL	05/07/18 12:17:12 pm	0.228	732	0.82		1.00
	Replicates	730.5	727.0	740.8	730.5						
	% Recovery	113.98									
CCV					CCV	05/07/18 12:19:20 pm	4.843	15563	0.22		1.00
	Replicates	15602.9	15520.7	15571.7	15558.7						
	% Recovery	96.86									
CCB					CCB	05/07/18 12:21:27 pm	0.027	85	25.18		1.00
	Replicates	108.5	67.9	98.7	66.2						
PBWLE07HGW1					PBK	05/07/18 12:23:34 pm	0.005	16	211.98		1.00
	Replicates	-33.4	24.1	33.1	39.0						
LCSWLE07HGW1					LCS	05/07/18 12:25:41 pm	4.771	15331	0.32		1.00
	Replicates	15400.8	15320.0	15314.3	15287.6						
	% Recovery	95.41									
PBSLE04ICS3					UNK	05/07/18 12:27:49 pm	0.018	58	22.62		1.00
	Replicates	59.9	64.2	38.8	68.2						
LCSOLE04ICS3					UNK	05/07/18 12:29:57 pm	4.178	13426	0.35		1.00
	Replicates	13496.6	13402.2	13396.5	13407.4						
Q2 SEM MDL01					UNK	05/07/18 12:32:05 pm	0.124	397	11.14		1.00
	Replicates	418.4	429.1	331.9	409.4						
SL3557-013					UNK	05/07/18 12:34:13 pm	0.037	120	6.95		1.00
	Replicates	129.0	125.4	113.4	112.6						
SL3557-013L					UNK	05/07/18 12:36:21 pm	0.113	72	10.22		5.00
	Replicates	70.0	75.7	79.9	62.9						
SL3557-013A					UNK	05/07/18 12:38:29 pm	0.859	2759	0.85		1.00
	Replicates	2770.4	2733.2	2785.3	2746.3						
SL3557-013S					UNK	05/07/18 12:40:37 pm	0.331	1062	3.35		1.00
	Replicates	1070.3	1039.9	1028.9	1108.4						

Reanalyzed to Confirm result JS 5.7.18

Katahdin Analytical Services 4000328

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/07/18 12:42:45 pm	4.887	15706	0.33		1.00
	Replicates	15775.4	15699.1	15649.1	15698.6						
	% Recovery	97.74									
CCB					CCB	05/07/18 12:44:52 pm	0.006	20	170.66		1.00
	Replicates	24.8	30.8	-27.9	51.1						
SL3557-013P					UNK	05/07/18 12:47:00 pm	1.301	4182	0.79		1.00
	Replicates	4170.2	4140.2	4202.4	4213.4						
SL3557-014					UNK	05/07/18 12:49:08 pm	0.011	36	57.19		1.00
	Replicates	8.3	52.2	50.7	32.2						
SL3557-015					UNK	05/07/18 12:51:16 pm	0.009	29	140.40		1.00
	Replicates	51.1	75.2	6.6	-15.4						
SL3557-016					UNK	05/07/18 12:53:25 pm	0.013	42	59.68		1.00
	Replicates	29.7	60.2	66.9	13.2						
SL3557-017					UNK	05/07/18 12:55:34 pm	0.016	51	42.41		1.00
	Replicates	77.6	38.0	29.5	57.1						
PBWLE07HGW2					PBK	05/07/18 12:57:43 pm	0.002	5	149.57		1.00
	Replicates	10.4	12.1	-3.4	0.8						
LCSWLE07HGW2					LCS	05/07/18 12:59:51 pm	4.670	15008	0.27		1.00
	Replicates	15064.9	15011.2	14986.0	14971.5						
	% Recovery	93.41									
SL3265-001					UNK	05/07/18 01:01:59 pm	-0.001	-5	580.73		1.00
	Replicates	4.0	-2.7	22.5	-42.5						
SL3265-002					UNK	05/07/18 01:04:08 pm	0.005	14	225.40		1.00
	Replicates	-13.0	60.3	-1.9	11.9						
SL3265-003					UNK	05/07/18 01:06:17 pm	-0.004	-14	149.18		1.00
	Replicates	-41.6	3.6	-16.2	-0.7						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 01:08:26 pm	4.831	15526	0.31		1.00
Replicates	15576.3	15514.5	15465.6	15547.1						
% Recovery	96.63									
CCB				CCB	05/07/18 01:10:32 pm	-0.009	-29	89.29		1.00
Replicates	-0.7	-17.8	-60.3	-35.3						
SL3380-001				UNK	05/07/18 01:12:41 pm	-0.014	-45	47.99		1.00
Replicates	-15.0	-65.5	-54.3	-45.6						
SL3380-002				UNK	05/07/18 01:14:50 pm	-0.012	-38	45.08		1.00
Replicates	-26.1	-46.2	-21.0	-57.2						
SL3380-003				UNK	05/07/18 01:16:59 pm	-0.017	-55	65.52		1.00
Replicates	-96.8	-9.3	-58.3	-54.3						
SL3380-003L				UNK	05/07/18 01:19:08 pm	-0.120	-77	17.10		5.00
Replicates	-80.0	-86.0	-85.6	-58.0						
SL3380-003A				UNK	05/07/18 01:21:17 pm	-0.018	-58	26.22		1.00
Replicates	-56.2	-63.4	-75.1	-38.6						
reanalyzed due to missed spike JS 5.7.18										
SL3380-003S				UNK	05/07/18 01:23:27 pm	0.966	3103	0.60		1.00
Replicates	3094.9	3131.1	3090.0	3097.5						
SL3380-003P				UNK	05/07/18 01:25:36 pm	0.974	3130	0.26		1.00
Replicates	3131.1	3119.0	3138.8	3131.1						
SL3604-001				UNK	05/07/18 01:27:45 pm	0.028	90	26.55		1.00
Replicates	60.3	92.4	118.2	87.1						
SL3708-022				UNK	05/07/18 01:29:54 pm	0.020	65	29.21		1.00
Replicates	83.1	48.6	79.1	48.3						
SL3764-001				UNK	05/07/18 01:32:04 pm	0.011	35	30.83		1.00
Replicates	24.1	50.1	32.3	34.6						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 01:34:12 pm	4.780	15360	0.41		1.00
Replicates	15449.7	15358.2	15308.0	15322.7						
% Recovery	95.59									
CCB				CCB	05/07/18 01:36:19 pm	-0.016	-53	13.05		1.00
Replicates	-54.8	-42.6	-57.1	-56.7						
SL3764-002				UNK	05/07/18 01:38:29 pm	-0.006	-18	236.74		1.00
Replicates	-63.0	-35.9	-11.5	38.0						
SL3764-003				UNK	05/07/18 01:40:38 pm	0.003	8	429.45		1.00
Replicates	-23.3	44.5	-22.2	34.8						
SL3809-001				UNK	05/07/18 01:42:47 pm	-0.003	-10	400.77		1.00
Replicates	-17.2	-36.7	-37.5	50.1						
SL3810-001				UNK	05/07/18 01:44:57 pm	-0.010	-33	87.26		1.00
Replicates	2.0	-67.4	-27.1	-39.3						
SL3810-002				UNK	05/07/18 01:47:07 pm	0.001	1	405.23		1.00
Replicates	-9.8	-5.7	45.9	-25.2						
SL3810-003				UNK	05/07/18 01:49:18 pm	-0.008	-26	118.48		1.00
Replicates	14.2	-24.1	-61.2	-34.4						
SL3810-004				UNK	05/07/18 01:52:39 pm	-0.002	-5	607.56		1.00
Replicates	-38.4	-22.6	0.6	38.4						
SL3810-005				UNK	05/07/18 01:54:49 pm	-0.010	-32	68.72		1.00
Replicates	-19.8	-11.5	-61.4	-34.7						
SL3557-013S				UNK	05/07/18 01:56:58 pm	0.323	1036	2.78		1.00
Replicates	1056.8	1063.8	1004.1	1019.5						
SL3380-003A				UNK	05/07/18 01:59:07 pm	0.813	2612	1.44		1.00
Replicates	2655.9	2603.7	2622.7	2565.7						

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: MD **ANALYSIS DATE**: 05/08/2018

REVIEWED
JS 5.9.18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE08C

METHOD: ICP-MS
- ☑ 200.8
- ☐ ~~6020~~
- ☑ DOD

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 5/9/18 (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17714	04/30/2018	04/30/2019	0 ug/L
Standard 1	MW17738	05/04/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17736	05/04/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17726	05/02/2018	05/08/2018	Varies by Element
ICSAB	MW17727	05/02/2018	05/08/2018	Varies by Element
CCV	MW17734	05/04/2018	06/21/2018	Varies by Element
Internal Standard	MW17712	04/27/2018	07/192018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

- Opening PQL failed low for DOD for lead, all DOD samples with Pb concentrations greater than 10x the PQL TV were accepted
- Analytical run ID in PDF ~~was~~ inaccurately labeled as "JLE05C", this remains in raw PDF file, ~~but~~ however was changed to proper ID in all imported data JS 5.9.18

MS 5/9/18

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

50x serial diln.: 1.6mL of 10x diln. of sample(pipet M18) + 6.4mL of MW17714(pipet M18)

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17714 (pipet M18)

25x diln.: 0.4mL of samples (pipet M16) + 9.6mL of MW17714 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17714(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17714 (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	JLE08C	5/8/2018 4:14:00	12:48	MD
200.8 TUNE	1	JLE08C	5/8/2018 4:14:00	12:51	MD
Cal Blank	1	JLE08C	5/8/2018 4:14:00	16:14	MD
Cal Std	1	JLE08C	5/8/2018 4:18:00	16:18	MD
ICV	1	JLE08C	5/8/2018 4:22:00	16:22	MD
ICB	1	JLE08C	5/8/2018 4:26:00	16:26	MD
PQL	1	JLE08C	5/8/2018 4:30:00	16:30	MD
RINSE	1	JLE08C	5/8/2018 4:34:00	16:34	MD
ICSA	1	JLE08C	5/8/2018 4:38:00	16:38	MD
ICSAB	1	JLE08C	5/8/2018 4:42:00	16:42	MD
RINSE	1	JLE08C	5/8/2018 4:46:00	16:46	MD
LRS1	1	JLE08C	5/8/2018 4:50:00	16:50	MD
LRS2	1	JLE08C	5/8/2018 4:54:00	16:54	MD
RINSE	1	JLE08C	5/8/2018 4:58:00	16:58	MD
RINSE	1	JLE08C	5/8/2018 5:02:00	17:02	MD
CCV	1	JLE08C	5/8/2018 5:06:00	17:06	MD
CCB	1	JLE08C	5/8/2018 5:10:00	17:10	MD
SL3719-001	1	JLE08C	5/8/2018 5:14:00	17:14	MD
PBSLE02IMS1	5	JLE08C	5/8/2018 5:19:00	17:19	MD
LCSOLE02IMS1	5	JLE08C	5/8/2018 5:23:00	17:23	MD
SL3708-001	5	JLE08C	5/8/2018 5:27:00	17:27	MD
SL3708-002	5	JLE08C	5/8/2018 5:31:00	17:31	MD
SL3708-003	5	JLE08C	5/8/2018 5:35:00	17:35	MD
SL3708-004	5	JLE08C	5/8/2018 5:39:00	17:39	MD
SL3708-005	5	JLE08C	5/8/2018 5:43:00	17:43	MD
SL3708-005L	25	JLE08C	5/8/2018 5:48:00	17:48	MD
RINSE	1	JLE08C	5/8/2018 5:52:00	17:52	MD
CCV	1	JLE08C	5/8/2018 5:56:00	17:56	MD
CCB	1	JLE08C	5/8/2018 6:00:00	18:00	MD
SL3708-005A	5	JLE08C	5/8/2018 6:04:00	18:04	MD
SL3708-005S	5	JLE08C	5/8/2018 6:09:00	18:09	MD
SL3708-005P	5	JLE08C	5/8/2018 6:13:00	18:13	MD
SL3708-006	5	JLE08C	5/8/2018 6:17:00	18:17	MD
SL3708-008	5	JLE08C	5/8/2018 6:21:00	18:21	MD
SL3708-009	5	JLE08C	5/8/2018 6:26:00	18:26	MD
SL3708-010	5	JLE08C	5/8/2018 6:30:00	18:30	MD
SL3708-011	5	JLE08C	5/8/2018 6:34:00	18:34	MD
SL3708-012	5	JLE08C	5/8/2018 6:38:00	18:38	MD
RINSE	1	JLE08C	5/8/2018 6:43:00	18:43	MD
CCV	1	JLE08C	5/8/2018 6:47:00	18:47	MD
CCB	1	JLE08C	5/8/2018 6:51:00	18:51	MD
SL3708-013	5	JLE08C	5/8/2018 6:56:00	18:56	MD
SL3708-014	5	JLE08C	5/8/2018 7:00:00	19:00	MD
SL3708-015	5	JLE08C	5/8/2018 7:04:00	19:04	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3708-016	5	JLE08C	5/8/2018 7:09:00	19:09	MD
SL3708-017	5	JLE08C	5/8/2018 7:13:00	19:13	MD
SL3708-018	5	JLE08C	5/8/2018 7:17:00	19:17	MD
SL3708-005	10	JLE08C	5/8/2018 7:21:00	19:21	MD
SL3708-005L	50	JLE08C	5/8/2018 7:25:00	19:25	MD
SL3708-005A	10	JLE08C	5/8/2018 7:30:00	19:30	MD
RINSE	1	JLE08C	5/8/2018 7:34:00	19:34	MD
CCV	1	JLE08C	5/8/2018 7:38:00	19:38	MD
CCB	1	JLE08C	5/8/2018 7:42:00	19:42	MD
SL3708-005S	10	JLE08C	5/8/2018 7:46:00	19:46	MD
SL3708-005P	10	JLE08C	5/8/2018 7:51:00	19:51	MD
SL3708-015	10	JLE08C	5/8/2018 7:55:00	19:55	MD
RINSE	1	JLE08C	5/8/2018 7:59:00	19:59	MD
PBWLE03IMW2	5	JLE08C	5/8/2018 8:03:00	20:03	MD
LCSWLE03IMW2	5	JLE08C	5/8/2018 8:08:00	20:08	MD
SL3708-022	5	JLE08C	5/8/2018 8:12:00	20:12	MD
RINSE	1	JLE08C	5/8/2018 8:16:00	20:16	MD
PBWLE03IMW1	1	JLE08C	5/8/2018 8:20:00	20:20	MD
LCSWLE03IMW1	5	JLE08C	5/8/2018 8:24:00	20:24	MD
CCV	1	JLE08C	5/8/2018 8:29:00	20:29	MD
CCB	1	JLE08C	5/8/2018 8:33:00	20:33	MD
SL3618-001	1	JLE08C	5/8/2018 8:37:00	20:37	MD
SL3628-001	1	JLE08C	5/8/2018 8:41:00	20:41	MD
SL3631-001	1	JLE08C	5/8/2018 8:45:00	20:45	MD
SL3632-001	1	JLE08C	5/8/2018 8:50:00	20:50	MD
SL3721-001	1	JLE08C	5/8/2018 8:54:00	20:54	MD
SL3778-001	1	JLE08C	5/8/2018 8:58:00	20:58	MD
RINSE	1	JLE08C	5/8/2018 9:03:00	21:03	MD
PBWLE04IMW1	5	JLE08C	5/8/2018 9:07:00	21:07	MD
LCSWLE04IMW1	5	JLE08C	5/8/2018 9:11:00	21:11	MD
SL3809-001	5	JLE08C	5/8/2018 9:15:00	21:15	MD
CCV	1	JLE08C	5/8/2018 9:20:00	21:20	MD
CCB	1	JLE08C	5/8/2018 9:24:00	21:24	MD
PBSLE04IMS2	5	JLE08C	5/8/2018 9:28:00	21:28	MD
LCSOLE04IMS2	5	JLE08C	5/8/2018 9:32:00	21:32	MD
SL3809-002	5	JLE08C	5/8/2018 9:36:00	21:36	MD
SL3809-002L	25	JLE08C	5/8/2018 9:41:00	21:41	MD
SL3809-002A	5	JLE08C	5/8/2018 9:45:00	21:45	MD
SL3809-002S	5	JLE08C	5/8/2018 9:49:00	21:49	MD
SL3809-002P	5	JLE08C	5/8/2018 9:54:00	21:54	MD
SL3809-003	5	JLE08C	5/8/2018 9:58:00	21:58	MD
SL3809-004	5	JLE08C	5/8/2018 10:02:00	22:02	MD
RINSE	1	JLE08C	5/8/2018 10:07:00	22:07	MD
CCV	1	JLE08C	5/8/2018 10:11:00	22:11	MD
CCB	1	JLE08C	5/8/2018 10:15:00	22:15	MD
SL3809-005	5	JLE08C	5/8/2018 10:19:00	22:19	MD
SL3809-006	5	JLE08C	5/8/2018 10:24:00	22:24	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3809-007	5	JLE08C	5/8/2018 10:28:00	22:28	MD
SL3809-008	5	JLE08C	5/8/2018 10:33:00	22:33	MD
SL3809-009	5	JLE08C	5/8/2018 10:37:00	22:37	MD
SL3809-010	5	JLE08C	5/8/2018 10:41:00	22:41	MD
SL3809-011	5	JLE08C	5/8/2018 10:46:00	22:46	MD
SL3809-002	10	JLE08C	5/8/2018 10:50:00	22:50	MD
SL3809-002L	50	JLE08C	5/8/2018 10:54:00	22:54	MD
RINSE	1	JLE08C	5/8/2018 10:58:00	22:58	MD
CCV	1	JLE08C	5/8/2018 11:03:00	23:03	MD
CCB	1	JLE08C	5/8/2018 11:07:00	23:07	MD
SL3809-002A	10	JLE08C	5/8/2018 11:11:00	23:11	MD
SL3809-002S	10	JLE08C	5/8/2018 11:15:00	23:15	MD
SL3809-002P	10	JLE08C	5/8/2018 11:20:00	23:20	MD
SL3809-006	10	JLE08C	5/8/2018 11:24:00	23:24	MD
SL3809-010	10	JLE08C	5/8/2018 11:28:00	23:28	MD
SL3809-011	10	JLE08C	5/8/2018 11:33:00	23:33	MD
RINSE	1	JLE08C	5/8/2018 11:37:00	23:37	MD
RINSE	1	JLE08C	5/8/2018 11:41:00	23:41	MD
PBSLE07IMS1	5	JLE08C	5/8/2018 11:46:00	23:46	MD
LCSOLE07IMS1	5	JLE08C	5/8/2018 11:50:00	23:50	MD
CCV	1	JLE08C	5/8/2018 11:54:00	23:54	MD
CCB	1	JLE08C	5/8/2018 11:58:00	23:58	MD
SL3809-012	5	JLE08C	5/9/2018 12:03:00	0:03	MD
SL3809-013	5	JLE08C	5/9/2018 12:07:00	0:07	MD
SL3809-014	5	JLE08C	5/9/2018 12:11:00	0:11	MD
SL3809-015	5	JLE08C	5/9/2018 12:16:00	0:16	MD
SL3809-017	5	JLE08C	5/9/2018 12:20:00	0:20	MD
SL3809-018	5	JLE08C	5/9/2018 12:25:00	0:25	MD
SL3809-019	5	JLE08C	5/9/2018 12:29:00	0:29	MD
SL3809-020	5	JLE08C	5/9/2018 12:33:00	0:33	MD
RINSE	1	JLE08C	5/9/2018 12:38:00	0:38	MD
CCV	1	JLE08C	5/9/2018 12:42:00	0:42	MD
CCB	1	JLE08C	5/9/2018 12:46:00	0:46	MD
SL3809-056	5	JLE08C	5/9/2018 12:50:00	0:50	MD
SL3809-057	5	JLE08C	5/9/2018 12:55:00	0:55	MD
SL3809-058	5	JLE08C	5/9/2018 12:59:00	0:59	MD
SL3809-059	5	JLE08C	5/9/2018 1:04:00	1:04	MD
SL3809-060	5	JLE08C	5/9/2018 1:08:00	1:08	MD
SL3809-061	5	JLE08C	5/9/2018 1:12:00	1:12	MD
SL3809-062	5	JLE08C	5/9/2018 1:17:00	1:17	MD
SL3809-063	5	JLE08C	5/9/2018 1:21:00	1:21	MD
SL3809-064	5	JLE08C	5/9/2018 1:26:00	1:26	MD
RINSE	1	JLE08C	5/9/2018 1:30:00	1:30	MD
CCV	1	JLE08C	5/9/2018 1:34:00	1:34	MD
CCB	1	JLE08C	5/9/2018 1:38:00	1:38	MD
SL3809-065	5	JLE08C	5/9/2018 1:43:00	1:43	MD
SL3453-008	5	JLE08C	5/9/2018 1:47:00	1:47	MD

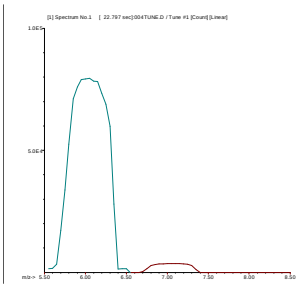
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3453-015	5	JLE08C	5/9/2018 1:52:00	1:52	MD
SL3453-016	5	JLE08C	5/9/2018 1:56:00	1:56	MD
SL3453-017	5	JLE08C	5/9/2018 2:00:00	2:00	MD
SL3453-018	5	JLE08C	5/9/2018 2:05:00	2:05	MD
SL3453-019	5	JLE08C	5/9/2018 2:09:00	2:09	MD
SL3453-020	5	JLE08C	5/9/2018 2:14:00	2:14	MD
SL3453-021	5	JLE08C	5/9/2018 2:18:00	2:18	MD
RINSE	1	JLE08C	5/9/2018 2:22:00	2:22	MD
CCV	1	JLE08C	5/9/2018 2:27:00	2:27	MD
CCB	1	JLE08C	5/9/2018 2:31:00	2:31	MD
PQL	1	JLE08C	5/9/2018 2:36:00	2:36	MD
CCV	1	JLE08C	5/9/2018 2:40:00	2:40	MD
CCB	1	JLE08C	5/9/2018 2:44:00	2:44	MD

6020 QC Tune Report

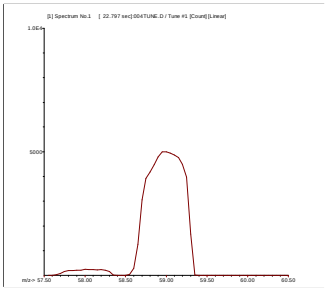
Data File: C:\ICPCHEM\1\DATA\JLE06A.B\004TUNE.D
Date Acquired: May 8 2018 12:48 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

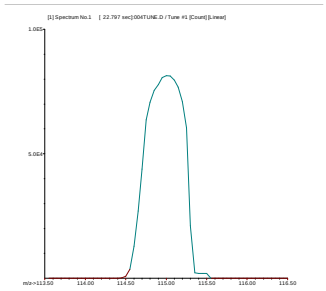
Element	Actual	Required	Flag
7 Li	3.67	5.00	
59 Co	0.95	5.00	
115 In	0.87	5.00	
205 Tl	0.37	5.00	



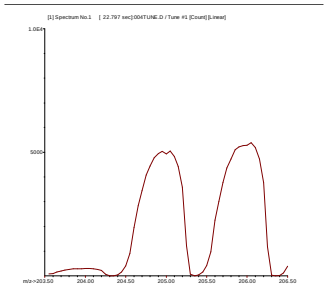
7 Li
Mass Calib.
Actual: 7.10
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



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:



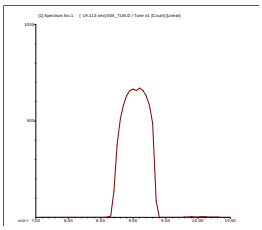
205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

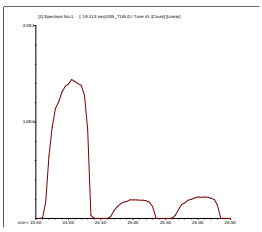
Data File: C:\ICPCHEM\1\DATA\JLE06A.B\005_TUN.D
Date Acquired: May 8 2018 12:51 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

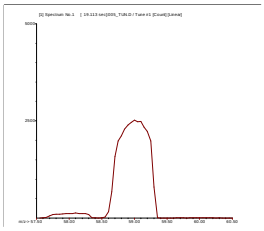
Element	Actual	Required	Flag
9 Be	4.06	5.00	
24 Mg	0.87	5.00	
59 Co	1.74	5.00	
115 In	1.83	5.00	
208 Pb	1.12	5.00	



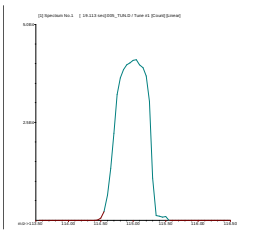
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



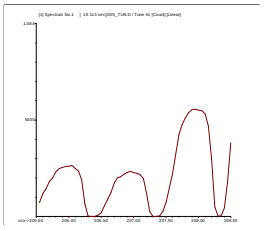
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
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 4000338

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.I
Date Acquired: May 8 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: May 08 2018 04:16 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2088826.00	A	19980.00	0.96
9	Be	5.56	P	2.94	52.92
11	B	175.56	P	6.94	3.95
23	Na	14856.55	P	443.70	2.99
25	Mg	97.79	P	25.24	25.81
27	Al	2200.93	P	166.80	7.58
28	Si	2152538.00	A	46050.00	2.14
29	Si	102388.50	P	677.20	0.66
39	K	772987.13	A	2877.00	0.37
43	Ca	92.60	P	6.42	6.93
44	Ca	2573.94	P	188.70	7.33
45	Sc	1552282.00	A	29510.00	1.90
51	V	1442.40	P	459.90	31.88
52	Cr	5124.36	P	201.90	3.94
53	Cr	2424.72	P	94.08	3.88
55	Mn	1121.19	P	15.75	1.40
56	Fe	1231970.00	A	33700.00	2.74
57	Fe	10290.81	P	267.00	2.59
59	Co	111.12	P	20.37	18.33
60	Ni	58.57	P	24.13	41.20
63	Cu	538.92	P	11.71	2.17
65	Cu	237.79	P	10.72	4.51
66	Zn	438.91	P	10.18	2.32
68	Zn	901.17	P	10.18	1.13
72	Ge	310193.81	P	6403.00	2.06
75	As	-66.04	P	151.60	229.55
82	Se	-8.22	P	7.94	96.58
88	Sr	92.60	P	50.11	54.11
89	Y	2196416.00	A	38030.00	1.73
98	Mo	18.70	P	9.76	52.17
107	Ag	31.11	P	10.18	32.72
109	Ag	21.11	P	8.39	39.74
111	Cd	468.55	P	24.82	5.30
114	Cd	-5.43	P	7.18	132.27
115	In	2210377.00	A	45560.00	2.06
118	Sn	253.34	P	47.26	18.65
120	Sn	323.35	P	37.86	11.71
121	Sb	11.11	P	6.94	62.45
123	Sb	22.22	P	16.44	73.98
135	Ba	10.00	P	3.33	33.33
137	Ba	34.45	P	9.62	27.94
159	Tb	3000713.00	A	47260.00	1.58
182	W	24.45	P	8.39	34.32
203	Tl	1304.55	P	68.84	5.28
205	Tl	3067.12	P	212.30	6.92
208	Pb	2161.26	P	75.75	3.50
209	Bi	1596081.00	A	17860.00	1.12
232	Th	15.56	P	1.93	12.38
238	U	16.67	P	3.33	20.00

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\016CALI.D\016CALI.D#
Date Acquired: May 8 2018 04:18 pm
Operator: MD
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 08 2018 04:16 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2291074.00	A	75680.00	3.30
9 Be	83087.03	P	2116.00	2.55
11 B	40820.25	P	2310.00	5.66
23 Na	56210780.00	A	1927000.00	3.43
25 Mg	4801325.00	A	48660.00	1.01
27 Al	4703965.00	A	35700.00	0.76
28 Si	4716099.00	A	91040.00	1.93
29 Si	241859.00	P	1490.00	0.62
39 K	60075728.00	A	1369000.00	2.28
43 Ca	103606.20	P	1936.00	1.87
44 Ca	1691734.00	A	20780.00	1.23
45 Sc	1669450.00	A	10170.00	0.61
51 V	348488.59	P	7048.00	2.02
52 Cr	298199.59	P	1079.00	0.36
53 Cr	36784.76	P	540.20	1.47
55 Mn	376106.91	P	4095.00	1.09
56 Fe	61217152.00	A	923800.00	1.51
57 Fe	1511139.00	A	16820.00	1.11
59 Co	317530.00	P	5133.00	1.62
60 Ni	70691.10	P	643.50	0.91
63 Cu	168695.59	P	1362.00	0.81
65 Cu	79854.09	P	1600.00	2.00
66 Zn	40423.44	P	553.90	1.37
68 Zn	29986.44	P	451.30	1.51
72 Ge	332504.41	P	3077.00	0.93
75 As	42340.20	P	708.00	1.67
82 Se	2993.41	P	34.09	1.14
88 Sr	441208.81	P	3356.00	0.76
89 Y	2405956.00	A	19750.00	0.82
98 Mo	136323.30	P	1618.00	1.19
107 Ag	215316.80	P	2855.00	1.33
109 Ag	206535.41	P	3274.00	1.59
111 Cd	43555.46	P	482.20	1.11
114 Cd	96792.04	P	1166.00	1.20
115 In	2375156.00	A	20060.00	0.84
118 Sn	135500.59	P	509.00	0.38
120 Sn	187695.91	P	2292.00	1.22
121 Sb	172187.30	P	2229.00	1.29
123 Sb	131861.91	P	1294.00	0.98
135 Ba	43484.61	P	867.70	2.00
137 Ba	76037.91	P	1704.00	2.24
159 Tb	3286770.00	A	15730.00	0.48
182 W	161466.70	P	673.70	0.42
203 Tl	144539.41	P	1305.00	0.90
205 Tl	341842.91	P	2265.00	0.66
208 Pb	469076.91	P	4786.00	1.02
209 Bi	1727788.00	A	13980.00	0.81
232 Th	485717.31	P	3821.00	0.79
238 U	425492.50	P	5094.00	1.20

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2291074.30	3.30	2088826.00	109.7	79.5 - 120.4	
45 Sc	1669450.10	0.61	1552281.90	107.5	79.5 - 120.4	
72 Ge	332504.41	0.93	310193.78	107.2	79.5 - 120.4	
159 Tb	3286770.30	0.48	3000713.50	109.5	79.5 - 120.4	
209 Bi	1727788.30	0.81	1596081.40	108.3	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000340

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\017_ICV.D\017_ICV.D#
Date Acquired: May 8 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: May 08 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	20.78	ppb	1.68	20	103.9	
11 B	22.55	ppb	4.44	20	112.75	Fail
23 Na	3,994.	ppb	1.18	4,000	99.85	
25 Mg	4,084.	ppb	1.55	4,000	102.1	
27 Al	402.5	ppb	1.01	400	100.625	
28 Si	365.7	ppb	6.76	400	91.425	
29 Si	368.8	ppb	3.60	400	92.2	
39 K	3,966.	ppb	0.89	4,000	99.15	
43 Ca	3,973.	ppb	1.64	4,000	99.325	
44 Ca	3,932.	ppb	1.25	4,000	98.3	
51 V	19.82	ppb	1.57	20	99.1	
52 Cr	19.69	ppb	2.11	20	98.45	
53 Cr	19.04	ppb	3.66	20	95.2	
55 Mn	19.49	ppb	1.97	20	97.45	
56 Fe	3,968.	ppb	2.01	4,000	99.2	
57 Fe	3,973.	ppb	1.10	4,000	99.325	
59 Co	19.99	ppb	1.09	20	99.95	
60 Ni	19.87	ppb	1.96	20	99.35	
63 Cu	19.91	ppb	3.83	20	99.55	
65 Cu	19.5	ppb	1.07	20	97.5	
66 Zn	20.84	ppb	0.66	20	104.2	
68 Zn	20.55	ppb	2.50	20	102.75	
75 As	19.71	ppb	0.90	20	98.55	
82 Se	20.76	ppb	1.48	20	103.8	
88 Sr	19.46	ppb	0.57	20	97.3	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.78	ppb	2.02	40	96.95	
107 Ag	19.95	ppb	0.44	20	99.75	
109 Ag	20.06	ppb	1.20	20	100.3	
111 Cd	20.09	ppb	1.44	20	100.45	
114 Cd	20.01	ppb	1.08	20	100.05	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.72	ppb	1.15	20	98.6	
120 Sn	19.8	ppb	1.35	20	99	
121 Sb	20.09	ppb	1.88	20	100.45	
123 Sb	19.88	ppb	2.21	20	99.4	
135 Ba	20.05	ppb	0.85	20	100.25	
137 Ba	19.86	ppb	3.80	20	99.3	
182 W	19.89	ppb	1.87	20	99.45	
203 Tl	20.23	ppb	1.48	20	101.15	
205 Tl	20.32	ppb	1.34	20	101.6	
208 Pb	19.72	ppb	1.87	20	98.6	
232 Th	19.91	ppb	1.26	20	99.55	
238 U	19.84	ppb	1.37	20	99.2	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2202619.50	1.21	2088826.00	105.4	80 - 120.4	
45 Sc	1651327.90	0.54	1552281.90	106.4	80 - 120.4	
72 Ge	330452.13	0.91	310193.78	106.5	80 - 120.4	
159 Tb	3234650.30	0.49	3000713.50	107.8	80 - 120.4	
209 Bi	1711746.60	1.04	1596081.40	107.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\018_ICB.D\018_ICB.D#
Date Acquired: May 8 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: May 08 2018 04:20 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	137.37	1.00	
11 B	1.761	ppb	15.18	1.00	
23 Na	0.3306	ppb	57.32	1.00	
25 Mg	0.1235	ppb	19.10	1.00	
27 Al	0.1081	ppb	38.97	1.00	
28 Si	9.561	ppb	497.12	1.00	
29 Si	1.397	ppb	2612.00	1.00	
39 K	0.1878	ppb	2567.60	1.00	
43 Ca	1.24	ppb	121.69	1.00	
44 Ca	-2.093	ppb	75.87	1.00	
51 V	0.013	ppb	439.85	1.00	
52 Cr	0.0089	ppb	209.70	1.00	
53 Cr	-0.5835	ppb	27.99	1.00	
55 Mn	-0.0108	ppb	152.32	1.00	
56 Fe	3.897	ppb	99.23	1.00	
57 Fe	2.936	ppb	55.28	1.00	
59 Co	-0.0001	ppb	6998.10	1.00	
60 Ni	-0.0051	ppb	123.66	1.00	
63 Cu	-0.0228	ppb	13.17	1.00	
65 Cu	0.0016	ppb	2438.40	1.00	
66 Zn	0.0323	ppb	299.16	1.00	
68 Zn	-0.1297	ppb	40.29	1.00	
75 As	-0.1809	ppb	114.48	1.00	
82 Se	0.0743	ppb	110.78	1.00	
88 Sr	0.0002	ppb	2952.80	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0528	ppb	43.51	1.00	
107 Ag	0.0015	ppb	146.22	1.00	
109 Ag	0.0045	ppb	50.52	1.00	
111 Cd	-0.028	ppb	135.41	1.00	
114 Cd	-0.0005	ppb	177.08	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0202	ppb	76.70	1.00	
120 Sn	0.0272	ppb	18.77	1.00	
121 Sb	0.0029	ppb	37.21	1.00	
123 Sb	0.0085	ppb	84.34	1.00	
135 Ba	0.0127	ppb	113.98	1.00	
137 Ba	-0.0063	ppb	104.66	1.00	
182 W	0.0508	ppb	26.89	1.00	
203 Tl	0.0064	ppb	323.94	1.00	
205 Tl	0.0041	ppb	140.05	1.00	
208 Pb	-0.0121	ppb	54.13	1.00	
232 Th	0.0291	ppb	13.48	1.00	
238 U	0.002	ppb	65.26	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2080900.40	1.47	2088826.00	99.6	79.5 - 120	
45 Sc	1535269.10	2.87	1552281.90	98.9	79.5 - 120	
72 Ge	305237.63	0.57	310193.78	98.4	79.5 - 120	
159 Tb	2968363.30	1.95	3000713.50	98.9	79.5 - 120	
209 Bi	1601206.10	0.91	1596081.40	100.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\019_PQL.D\019_PQL.D#
Date Acquired: May 8 2018 04:30 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: May 08 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1906	ppb	8.41	0.20	95.3	
11 B	5.147	ppb	6.30	4.00	128.675	Fail-DoD
23 Na	209.5	ppb	1.69	200.00	104.75	
25 Mg	20.04	ppb	1.01	20.00	100.2	
27 Al	19.65	ppb	1.09	20.00	98.25	
28 Si	90.97	ppb	34.35	100.00	90.97	
29 Si	84.4	ppb	27.60	100.00	84.4	
39 K	195.2	ppb	4.41	200.00	97.6	
43 Ca	24.98	ppb	13.54	20.00	124.9	
44 Ca	17.65	ppb	3.72	20.00	88.25	
51 V	1.006	ppb	4.92	1.00	100.6	
52 Cr	0.9911	ppb	1.49	1.00	99.11	
53 Cr	0.7513	ppb	12.96	---	#VALUE!	
55 Mn	0.4021	ppb	3.27	0.40	100.525	
56 Fe	16.45	ppb	2.82	20.00	82.25	
57 Fe	22.26	ppb	13.91	20.00	111.3	
59 Co	0.2122	ppb	6.34	0.20	106.1	
60 Ni	0.4313	ppb	0.55	0.40	107.825	
63 Cu	0.6073	ppb	1.00	0.60	101.217	
65 Cu	0.6531	ppb	5.39	0.60	108.85	
66 Zn	2.348	ppb	3.89	2.00	117.4	
68 Zn	2.122	ppb	3.00	2.00	106.1	
75 As	0.9305	ppb	7.38	1.00	93.05	
82 Se	1.19	ppb	6.78	1.00	119	
88 Sr	0.9814	ppb	3.19	1.00	98.14	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9974	ppb	4.44	1.00	99.74	
107 Ag	0.194	ppb	2.94	0.20	97	
109 Ag	0.2071	ppb	1.69	0.20	103.55	
111 Cd	0.1666	ppb	24.42	0.20	83.3	
114 Cd	0.2113	ppb	4.49	0.20	105.65	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	0.9966	ppb	1.68	1.00	99.66	
120 Sn	1.044	ppb	1.84	1.00	104.4	
121 Sb	0.2049	ppb	0.85	0.20	102.45	
123 Sb	0.2152	ppb	3.65	0.20	107.6	
135 Ba	0.4334	ppb	13.86	0.40	108.35	
137 Ba	0.4345	ppb	10.19	0.40	108.625	
182 W	1.026	ppb	2.53	1.00	102.6	
203 Tl	0.2051	ppb	12.49	0.20	102.55	
205 Tl	0.2256	ppb	2.03	0.20	112.8	
208 Pb	0.1405	ppb	9.69	0.20	70.25	Fail-DoD
232 Th	0.2104	ppb	2.24	0.20	105.2	
238 U	0.1824	ppb	2.56	0.20	91.2	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2139838.30	4.48	2088826.00	102.4	80 - 120.4	
45 Sc	1554491.10	1.90	1552281.90	100.1	80 - 120.4	
72 Ge	309320.53	1.13	310193.78	99.7	80 - 120.4	
159 Tb	3011612.30	1.52	3000713.50	100.4	80 - 120.4	
209 Bi	1625934.60	1.13	1596081.40	101.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000343

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\020SMPL.D\020SMPL.D#
Date Acquired: May 8 2018 04:34 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: May 08 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	0.0042	0.0042	ppb	57.42	100.	
11 B	0.5433	0.5433	ppb	8.65	1000.	
23 Na	0.551	0.551	ppb	49.38	200000.	
25 Mg	0.0784	0.0784	ppb	176.70	200000.	
27 Al	0.0624	0.0624	ppb	23.51	200000.	
28 Si	-12.08	-12.08	ppb	138.41	#VALUE!	
29 Si	-9.273	-9.273	ppb	18.48	10000.	
39 K	-2.	-2.	ppb	90.85	200000.	
43 Ca	1.891	1.891	ppb	110.63	#VALUE!	
44 Ca	-0.2144	-0.2144	ppb	962.22	200000.	
51 V	-0.0002	-0.0002	ppb	21376.00	1000.	
52 Cr	-0.0384	-0.0384	ppb	65.62	2000.	
53 Cr	-0.4314	-0.4314	ppb	40.01	#VALUE!	
55 Mn	-0.0141	-0.0141	ppb	76.89	2000.	
56 Fe	-0.3641	-0.3641	ppb	362.26	#VALUE!	
57 Fe	0.786	0.786	ppb	73.73	100000.	
59 Co	0.0022	0.0022	ppb	251.69	1000.	
60 Ni	-0.0116	-0.0116	ppb	80.21	1000.	
63 Cu	-0.0085	-0.0085	ppb	107.53	#VALUE!	
65 Cu	-0.0098	-0.0098	ppb	199.02	2000.	
66 Zn	0.0758	0.0758	ppb	32.73	2000.	
68 Zn	-0.156	-0.156	ppb	69.87	#VALUE!	
75 As	0.0952	0.0952	ppb	73.81	1000.	
82 Se	0.0417	0.0417	ppb	165.62	1000.	
88 Sr	0.0036	0.0036	ppb	40.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0056	0.0056	ppb	105.49	1000.	
107 Ag	0.0022	0.0022	ppb	75.94	100.	
109 Ag	0.0011	0.0011	ppb	239.81	#VALUE!	
111 Cd	-0.038	-0.038	ppb	47.97	#VALUE!	
114 Cd	-0.0009	-0.0009	ppb	575.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0055	-0.0055	ppb	208.55	1000.	
120 Sn	0.0129	0.0129	ppb	55.06	#VALUE!	
121 Sb	0.0049	0.0049	ppb	56.97	#VALUE!	
123 Sb	0.0064	0.0064	ppb	81.78	1000.	
135 Ba	0.0097	0.0097	ppb	50.17	2000.	
137 Ba	-0.0097	-0.0097	ppb	100.11	#VALUE!	
182 W	0.0086	0.0086	ppb	67.72	1000.	
203 Tl	0.0046	0.0046	ppb	493.51	1000.	
205 Tl	0.0033	0.0033	ppb	490.40	#VALUE!	
208 Pb	-0.0217	-0.0217	ppb	68.08	2000.	
232 Th	0.0098	0.0098	ppb	21.76	1000.	
238 U	0.0008	0.0008	ppb	233.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2085872.30	2.67	2088826.00	99.9	69.5 - 120	
45 Sc	1557249.60	1.49	1552281.90	100.3	69.5 - 120	
72 Ge	310207.25	0.79	310193.78	100.0	69.5 - 120	
159 Tb	3012749.30	0.21	3000713.50	100.4	69.5 - 120	
209 Bi	1611051.80	1.35	1596081.40	100.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\021ICSA.D\021ICSA.D#
Date Acquired: May 8 2018 04:38 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: May 08 2018 04:20 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0016	ppb	69.13		
11 B	0.8832	ppb	4.31		
23 Na	105,600.	ppb	2.35		
25 Mg	104,400.	ppb	1.16		
27 Al	104,000.	ppb	1.40		
28 Si	-42.7	ppb	82.97		
29 Si	-15.04	ppb	116.69		
39 K	107,300.	ppb	0.50		
43 Ca	112,900.	ppb	0.20		
44 Ca	104,500.	ppb	0.13		
51 V	0.2072	ppb	42.91		
52 Cr	0.9959	ppb	3.14		
53 Cr	0.8588	ppb	27.22		
55 Mn	0.3829	ppb	3.95		
56 Fe	101,700.	ppb	1.39		
57 Fe	98,600.	ppb	1.04		
59 Co	0.0977	ppb	20.36		
60 Ni	-0.3009	ppb	6.39		
63 Cu	4.752	ppb	1.42		
65 Cu	1.306	ppb	3.02		
66 Zn	3.063	ppb	0.85		
68 Zn	0.5313	ppb	29.48		
75 As	0.2313	ppb	92.39		
82 Se	0.4456	ppb	16.27		
88 Sr	0.9763	ppb	2.00		
89 Y	--------	---	--------		
98 Mo	2,077.	ppb	0.73		
107 Ag	0.0249	ppb	12.05		
109 Ag	0.029	ppb	24.14		
111 Cd	-0.0005	ppb	12942.00		
114 Cd	0.0447	ppb	21.94		
115 In	--------	---	--------		
118 Sn	0.0845	ppb	15.10		
120 Sn	0.1045	ppb	14.78		
121 Sb	0.0473	ppb	8.54		
123 Sb	0.0538	ppb	3.71		
135 Ba	0.1305	ppb	23.98		
137 Ba	0.1128	ppb	37.28		
182 W	0.2612	ppb	7.13		
203 Tl	0.0311	ppb	93.90		
205 Tl	0.0071	ppb	196.92		
208 Pb	-0.0051	ppb	388.62		
232 Th	0.0546	ppb	17.68		
238 U	0.0014	ppb	176.78		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2132294.00	1.53	2088826.00	102.1	69.5 - 120.4	
45 Sc	1688596.40	0.36	1552281.90	108.8	69.5 - 120.4	
72 Ge	344616.94	0.16	310193.78	111.1	69.5 - 120.4	
159 Tb	3316333.30	0.29	3000713.50	110.5	69.5 - 120.4	
209 Bi	1597241.00	0.58	1596081.40	100.1	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\022ICSB.D\022ICSB.D#
Date Acquired: May 8 2018 04:42 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: May 08 2018 04:20 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	22.53	ppb	1.84	20.00	79.5 - 120	
11 B	25.25	ppb	1.47	20.00	79.5 - 120	
23 Na	105,300.	ppb	3.32	#########	79.5 - 120	
25 Mg	104,100.	ppb	1.95	#########	79.5 - 120	
27 Al	103,800.	ppb	2.50	#########	79.5 - 120	
28 Si	543.5	ppb	10.15	---	##### - #####	
29 Si	537.3	ppb	5.46	---	##### - #####	
39 K	107,700.	ppb	2.12	#########	79.5 - 120	
43 Ca	112,900.	ppb	2.12	#########	79.5 - 120	
44 Ca	105,100.	ppb	1.99	#########	79.5 - 120	
51 V	21.98	ppb	1.26	20.00	79.5 - 120	
52 Cr	22.19	ppb	2.12	20.00	79.5 - 120	
53 Cr	22.53	ppb	2.65	---	##### - #####	
55 Mn	21.28	ppb	1.97	20.00	79.5 - 120	
56 Fe	104,300.	ppb	2.38	#########	79.5 - 120	
57 Fe	100,000.	ppb	2.97	#########	79.5 - 120	
59 Co	21.05	ppb	2.41	20.00	79.5 - 120	
60 Ni	19.87	ppb	1.28	20.00	79.5 - 120	
63 Cu	24.95	ppb	1.49	20.00	79.5 - 120	
65 Cu	21.55	ppb	4.14	20.00	79.5 - 120	
66 Zn	22.85	ppb	1.88	20.00	79.5 - 120	
68 Zn	20.28	ppb	2.16	20.00	79.5 - 120	
75 As	21.58	ppb	1.34	20.00	79.5 - 120	
82 Se	20.58	ppb	1.24	20.00	79.5 - 120	
88 Sr	22.48	ppb	2.34	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	2,109.	ppb	1.81	2000.00	79.5 - 120	
107 Ag	20.11	ppb	1.34	20.00	79.5 - 120	
109 Ag	20.16	ppb	1.60	20.00	79.5 - 120	
111 Cd	20.43	ppb	1.55	20.00	79.5 - 120	
114 Cd	20.19	ppb	1.29	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	22.23	ppb	1.13	20.00	79.5 - 120	
120 Sn	22.18	ppb	0.19	20.00	79.5 - 120	
121 Sb	22.01	ppb	1.86	20.00	79.5 - 120	
123 Sb	21.75	ppb	0.43	20.00	79.5 - 120	
135 Ba	22.5	ppb	0.29	20.00	79.5 - 120	
137 Ba	22.46	ppb	0.41	20.00	79.5 - 120	
182 W	22.31	ppb	0.60	20.00	79.5 - 120	
203 Tl	22.89	ppb	0.66	20.00	79.5 - 120	
205 Tl	22.83	ppb	0.53	20.00	79.5 - 120	
208 Pb	22.72	ppb	0.63	20.00	79.5 - 120	
232 Th	23.91	ppb	0.35	20.00	79.5 - 120	
238 U	23.	ppb	0.84	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2138568.00	2.06	2088826.00	102.4	69.5 - 120	
45 Sc	1690348.00	2.14	1552281.90	108.9	69.5 - 120	
72 Ge	341271.94	1.58	310193.78	110.0	69.5 - 120	
159 Tb	3293382.00	0.56	3000713.50	109.8	69.5 - 120	
209 Bi	1572018.30	0.91	1596081.40	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000346

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\023SMPL.D\023SMPL.D#
Date Acquired: May 8 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: May 08 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	0.0039	0.0039	ppb	79.86	100.	
11 B	0.7741	0.7741	ppb	6.96	1000.	
23 Na	4.811	4.811	ppb	7.40	200000.	
25 Mg	0.6461	0.6461	ppb	10.47	200000.	
27 Al	0.6356	0.6356	ppb	20.30	200000.	
28 Si	53.3	53.3	ppb	89.31	#VALUE!	
29 Si	30.56	30.56	ppb	47.15	10000.	
39 K	4.9	4.9	ppb	42.51	200000.	
43 Ca	-2.836	-2.836	ppb	22.41	#VALUE!	
44 Ca	0.0264	0.0264	ppb	3150.20	200000.	
51 V	0.017	0.017	ppb	366.76	1000.	
52 Cr	0.0563	0.0563	ppb	27.15	2000.	
53 Cr	1.864	1.864	ppb	13.85	#VALUE!	
55 Mn	-0.0079	-0.0079	ppb	103.25	2000.	
56 Fe	9.008	9.008	ppb	20.30	#VALUE!	
57 Fe	3.107	3.107	ppb	44.51	100000.	
59 Co	0.0043	0.0043	ppb	131.51	1000.	
60 Ni	-0.0006	-0.0006	ppb	536.22	1000.	
63 Cu	0.0779	0.0779	ppb	21.58	#VALUE!	
65 Cu	0.0846	0.0846	ppb	27.28	2000.	
66 Zn	0.1863	0.1863	ppb	8.70	2000.	
68 Zn	0.0446	0.0446	ppb	143.07	#VALUE!	
75 As	-0.0084	-0.0084	ppb	1794.10	1000.	
82 Se	0.1371	0.1371	ppb	74.11	1000.	
88 Sr	-0.0016	-0.0016	ppb	96.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.253	1.253	ppb	56.71	1000.	
107 Ag	-0.0027	-0.0027	ppb	86.19	100.	
109 Ag	0.0001	0.0001	ppb	4660.20	#VALUE!	
111 Cd	-0.0178	-0.0178	ppb	112.19	#VALUE!	
114 Cd	0.0037	0.0037	ppb	96.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0068	0.0068	ppb	50.11	1000.	
120 Sn	0.0285	0.0285	ppb	14.43	#VALUE!	
121 Sb	0.0041	0.0041	ppb	25.54	#VALUE!	
123 Sb	0.0003	0.0003	ppb	1016.00	1000.	
135 Ba	0.0351	0.0351	ppb	1.23	2000.	
137 Ba	0.0157	0.0157	ppb	80.87	#VALUE!	
182 W	0.0085	0.0085	ppb	43.33	1000.	
203 Tl	-0.007	-0.007	ppb	431.23	1000.	
205 Tl	0.0067	0.0067	ppb	202.58	#VALUE!	
208 Pb	-0.0122	-0.0122	ppb	101.55	2000.	
232 Th	0.0091	0.0091	ppb	25.33	1000.	
238 U	0.001	0.001	ppb	118.16	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1972865.00	2.23	2088826.00	94.4	69.5 - 120	
45 Sc	1493894.60	1.63	1552281.90	96.2	69.5 - 120	
72 Ge	303592.00	1.67	310193.78	97.9	69.5 - 120	
159 Tb	2906925.30	0.90	3000713.50	96.9	69.5 - 120	
209 Bi	1517209.50	0.70	1596081.40	95.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\024SMPL.D\024SMPL.D#
Date Acquired: May 8 2018 04:50 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: May 08 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	103.1	103.1	ppb	5.26	100.	>LDR
11 B	0.3545	0.3545	ppb	5.06	1000.	
23 Na	7.04	7.04	ppb	3.03	200000.	
25 Mg	1.242	1.242	ppb	9.15	200000.	
27 Al	2.734	2.734	ppb	11.33	200000.	
28 Si	-50.43	-50.43	ppb	36.63	#VALUE!	
29 Si	-48.8	-48.8	ppb	15.35	10000.	
39 K	-6.336	-6.336	ppb	31.96	200000.	
43 Ca	1,384.	1,384.	ppb	3.95	#VALUE!	
44 Ca	38.	38.	ppb	73.40	200000.	
51 V	1,032.	1,032.	ppb	2.85	1000.	>LDR
52 Cr	2,014.	2,014.	ppb	1.23	2000.	>LDR
53 Cr	2,109.	2,109.	ppb	0.85	#VALUE!	
55 Mn	2,006.	2,006.	ppb	0.89	2000.	>LDR
56 Fe	-7.678	-7.678	ppb	43.48	#VALUE!	
57 Fe	-4.865	-4.865	ppb	42.96	100000.	
59 Co	1,035.	1,035.	ppb	1.72	1000.	>LDR
60 Ni	1,060.	1,060.	ppb	2.91	1000.	>LDR
63 Cu	2,006.	2,006.	ppb	3.01	#VALUE!	
65 Cu	2,016.	2,016.	ppb	2.02	2000.	>LDR
66 Zn	2,089.	2,089.	ppb	1.51	2000.	>LDR
68 Zn	2,107.	2,107.	ppb	0.19	#VALUE!	
75 As	1,065.	1,065.	ppb	1.72	1000.	>LDR
82 Se	1,080.	1,080.	ppb	1.47	1000.	>LDR
88 Sr	1,966.	1,966.	ppb	1.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,026.	1,026.	ppb	2.11	1000.	>LDR
107 Ag	107.7	107.7	ppb	1.76	100.	>LDR
109 Ag	106.7	106.7	ppb	1.30	#VALUE!	
111 Cd	1,044.	1,044.	ppb	0.74	#VALUE!	
114 Cd	1,038.	1,038.	ppb	1.28	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,052.	1,052.	ppb	1.48	1000.	>LDR
120 Sn	1,031.	1,031.	ppb	1.78	#VALUE!	
121 Sb	1,038.	1,038.	ppb	2.12	#VALUE!	
123 Sb	1,048.	1,048.	ppb	2.35	1000.	>LDR
135 Ba	2,127.	2,127.	ppb	1.78	2000.	>LDR
137 Ba	2,069.	2,069.	ppb	1.37	#VALUE!	
182 W	1,024.	1,024.	ppb	1.19	1000.	>LDR
203 Tl	1,030.	1,030.	ppb	1.10	1000.	>LDR
205 Tl	1,001.	1,001.	ppb	1.70	#VALUE!	
208 Pb	1,995.	1,995.	ppb	1.39	2000.	
232 Th	983.5	983.5	ppb	1.81	1000.	
238 U	927.9	927.9	ppb	1.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2236805.80	3.19	2088826.00	107.1	69.5 - 120	
45 Sc	1619406.40	0.75	1552281.90	104.3	69.5 - 120	
72 Ge	316057.50	0.91	310193.78	101.9	69.5 - 120	
159 Tb	3089039.50	1.27	3000713.50	102.9	69.5 - 120	
209 Bi	1627195.40	1.03	1596081.40	101.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

18 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\025SMPL.D\025SMPL.D#
Date Acquired: May 8 2018 04:54 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: May 08 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	0.0088	0.0088	ppb	46.97	100.	
11 B	0.8158	0.8158	ppb	11.97	1000.	
23 Na	199,300.	199,300.	ppb	3.89	200000.	
25 Mg	198,300.	198,300.	ppb	4.59	200000.	
27 Al	197,600.	197,600.	ppb	3.98	200000.	
28 Si	11,170.	11,170.	ppb	5.15	#VALUE!	
29 Si	11,230.	11,230.	ppb	5.86	10000.	>LDR
39 K	201,900.	201,900.	ppb	4.62	200000.	>LDR
43 Ca	204,400.	204,400.	ppb	4.19	#VALUE!	
44 Ca	195,500.	195,500.	ppb	3.41	200000.	
51 V	0.1611	0.1611	ppb	21.62	1000.	
52 Cr	2.989	2.989	ppb	1.77	2000.	
53 Cr	2.593	2.593	ppb	3.91	#VALUE!	
55 Mn	7.503	7.503	ppb	0.95	2000.	
56 Fe	97,280.	97,280.	ppb	1.66	#VALUE!	
57 Fe	94,290.	94,290.	ppb	2.22	100000.	
59 Co	2.787	2.787	ppb	3.80	1000.	
60 Ni	2.88	2.88	ppb	2.41	1000.	
63 Cu	10.42	10.42	ppb	2.51	#VALUE!	
65 Cu	3.13	3.13	ppb	5.38	2000.	
66 Zn	4.206	4.206	ppb	3.96	2000.	
68 Zn	1.039	1.039	ppb	8.21	#VALUE!	
75 As	0.6593	0.6593	ppb	12.23	1000.	
82 Se	0.9728	0.9728	ppb	2.78	1000.	
88 Sr	6.839	6.839	ppb	1.82	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.578	1.578	ppb	47.13	1000.	
107 Ag	0.3482	0.3482	ppb	0.43	100.	
109 Ag	0.359	0.359	ppb	5.64	#VALUE!	
111 Cd	-0.01	-0.01	ppb	199.34	#VALUE!	
114 Cd	-0.0088	-0.0088	ppb	60.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.5406	0.5406	ppb	27.99	1000.	
120 Sn	0.546	0.546	ppb	20.79	#VALUE!	
121 Sb	0.1488	0.1488	ppb	2.18	#VALUE!	
123 Sb	0.146	0.146	ppb	18.46	1000.	
135 Ba	0.2991	0.2991	ppb	14.12	2000.	
137 Ba	0.2538	0.2538	ppb	8.46	#VALUE!	
182 W	1.247	1.247	ppb	41.57	1000.	
203 Tl	0.0627	0.0627	ppb	54.93	1000.	
205 Tl	0.059	0.059	ppb	30.70	#VALUE!	
208 Pb	0.3605	0.3605	ppb	6.25	2000.	
232 Th	0.938	0.938	ppb	32.32	1000.	
238 U	0.1325	0.1325	ppb	25.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2045880.00	1.08	2088826.00	97.9	69.5 - 120	
45 Sc	1670506.80	0.75	1552281.90	107.6	69.5 - 120	
72 Ge	326627.94	1.27	310193.78	105.3	69.5 - 120	
159 Tb	3034498.00	0.92	3000713.50	101.1	69.5 - 120	
209 Bi	1373613.30	2.02	1596081.40	86.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000349

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\026SMPL.D\026SMPL.D#
Date Acquired: May 8 2018 04:58 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: May 08 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	0.001	0.001	ppb	86.94	100.	
11 B	0.344	0.344	ppb	14.38	1000.	
23 Na	11.27	11.27	ppb	16.73	200000.	
25 Mg	1.006	1.006	ppb	8.81	200000.	
27 Al	0.8111	0.8111	ppb	11.36	200000.	
28 Si	74.97	74.97	ppb	45.46	#VALUE!	
29 Si	25.76	25.76	ppb	46.31	10000.	
39 K	2.194	2.194	ppb	67.69	200000.	
43 Ca	1.795	1.795	ppb	377.38	#VALUE!	
44 Ca	1.18	1.18	ppb	66.95	200000.	
51 V	-0.0004	-0.0004	ppb	16917.00	1000.	
52 Cr	0.0492	0.0492	ppb	75.54	2000.	
53 Cr	1.837	1.837	ppb	6.67	#VALUE!	
55 Mn	-0.0018	-0.0018	ppb	153.74	2000.	
56 Fe	9.173	9.173	ppb	78.40	#VALUE!	
57 Fe	0.3025	0.3025	ppb	729.26	100000.	
59 Co	0.0093	0.0093	ppb	93.34	1000.	
60 Ni	0.0016	0.0016	ppb	1329.70	1000.	
63 Cu	0.1138	0.1138	ppb	19.24	#VALUE!	
65 Cu	0.1049	0.1049	ppb	19.70	2000.	
66 Zn	0.1229	0.1229	ppb	94.39	2000.	
68 Zn	0.0128	0.0128	ppb	762.46	#VALUE!	
75 As	-0.1424	-0.1424	ppb	43.90	1000.	
82 Se	0.0486	0.0486	ppb	241.77	1000.	
88 Sr	-0.0021	-0.0021	ppb	228.39	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2212	0.2212	ppb	66.00	1000.	
107 Ag	-0.0008	-0.0008	ppb	161.49	100.	
109 Ag	-0.0014	-0.0014	ppb	160.96	#VALUE!	
111 Cd	-0.0398	-0.0398	ppb	75.04	#VALUE!	
114 Cd	-0.0011	-0.0011	ppb	438.90	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0871	0.0871	ppb	3.43	1000.	
120 Sn	0.1065	0.1065	ppb	35.62	#VALUE!	
121 Sb	0.0239	0.0239	ppb	23.33	#VALUE!	
123 Sb	0.0203	0.0203	ppb	2.46	1000.	
135 Ba	0.0493	0.0493	ppb	57.83	2000.	
137 Ba	0.0298	0.0298	ppb	99.06	#VALUE!	
182 W	0.2207	0.2207	ppb	46.08	1000.	
203 Tl	0.0159	0.0159	ppb	99.81	1000.	
205 Tl	0.0069	0.0069	ppb	296.58	#VALUE!	
208 Pb	0.0118	0.0118	ppb	103.99	2000.	
232 Th	0.036	0.036	ppb	71.01	1000.	
238 U	0.006	0.006	ppb	44.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2086903.50	0.48	2088826.00	99.9	69.5 - 120	
45 Sc	1520223.10	1.04	1552281.90	97.9	69.5 - 120	
72 Ge	307322.59	1.59	310193.78	99.1	69.5 - 120	
159 Tb	2859040.50	1.57	3000713.50	95.3	69.5 - 120	
209 Bi	1488112.90	1.38	1596081.40	93.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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\JLE05C.B\027SMPL.D\027SMPL.D#
Date Acquired: May 8 2018 05:02 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: May 08 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	0.0026	0.0026	ppb	60.99	100.	
11 B	0.2568	0.2568	ppb	6.78	1000.	
23 Na	6.533	6.533	ppb	7.04	200000.	
25 Mg	0.6152	0.6152	ppb	22.94	200000.	
27 Al	0.675	0.675	ppb	18.42	200000.	
28 Si	55.25	55.25	ppb	63.67	#VALUE!	
29 Si	17.94	17.94	ppb	70.96	10000.	
39 K	1.797	1.797	ppb	104.90	200000.	
43 Ca	-2.586	-2.586	ppb	227.61	#VALUE!	
44 Ca	-0.1222	-0.1222	ppb	595.99	200000.	
51 V	-0.0087	-0.0087	ppb	88.75	1000.	
52 Cr	0.0471	0.0471	ppb	69.00	2000.	
53 Cr	2.762	2.762	ppb	3.66	#VALUE!	
55 Mn	0.0053	0.0053	ppb	274.18	2000.	
56 Fe	3.805	3.805	ppb	45.99	#VALUE!	
57 Fe	4.447	4.447	ppb	82.42	100000.	
59 Co	0.0081	0.0081	ppb	32.67	1000.	
60 Ni	0.0133	0.0133	ppb	89.93	1000.	
63 Cu	0.0864	0.0864	ppb	23.27	#VALUE!	
65 Cu	0.1026	0.1026	ppb	8.19	2000.	
66 Zn	0.2188	0.2188	ppb	16.64	2000.	
68 Zn	0.1271	0.1271	ppb	101.57	#VALUE!	
75 As	0.1013	0.1013	ppb	238.20	1000.	
82 Se	0.1175	0.1175	ppb	124.51	1000.	
88 Sr	0.0024	0.0024	ppb	113.03	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1056	0.1056	ppb	37.21	1000.	
107 Ag	-0.0013	-0.0013	ppb	97.44	100.	
109 Ag	0.0009	0.0009	ppb	271.60	#VALUE!	
111 Cd	-0.0321	-0.0321	ppb	24.00	#VALUE!	
114 Cd	0.0032	0.0032	ppb	60.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.049	0.049	ppb	32.96	1000.	
120 Sn	0.0536	0.0536	ppb	15.43	#VALUE!	
121 Sb	0.0093	0.0093	ppb	19.11	#VALUE!	
123 Sb	0.0104	0.0104	ppb	50.04	1000.	
135 Ba	0.0426	0.0426	ppb	22.72	2000.	
137 Ba	0.0241	0.0241	ppb	39.77	#VALUE!	
182 W	0.0928	0.0928	ppb	56.18	1000.	
203 Tl	0.0248	0.0248	ppb	105.97	1000.	
205 Tl	0.0195	0.0195	ppb	20.44	#VALUE!	
208 Pb	0.0022	0.0022	ppb	546.46	2000.	
232 Th	0.0276	0.0276	ppb	47.52	1000.	
238 U	0.0016	0.0016	ppb	138.50	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2127631.00	4.79	2088826.00	101.9	69.5 - 120	
45 Sc	1536348.90	1.43	1552281.90	99.0	69.5 - 120	
72 Ge	307281.81	0.28	310193.78	99.1	69.5 - 120	
159 Tb	2893408.50	1.10	3000713.50	96.4	69.5 - 120	
209 Bi	1506650.50	1.12	1596081.40	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\028_CCV.D\028_CCV.D#
Date Acquired: May 8 2018 05:06 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: May 08 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	27.07	ppb	1.60	25	108.28	
11 B	26.14	ppb	8.63	25	104.56	
23 Na	5,254.	ppb	1.45	5,000	105.08	
25 Mg	5,434.	ppb	0.44	5,000	108.68	
27 Al	528.4	ppb	0.88	500	105.68	
28 Si	515.1	ppb	6.74	500	103.02	
29 Si	486.2	ppb	3.98	500	97.24	
39 K	5,217.	ppb	0.98	5,000	104.34	
43 Ca	5,229.	ppb	2.93	5,000	104.58	
44 Ca	5,226.	ppb	0.58	5,000	104.52	
51 V	25.86	ppb	1.98	25	103.44	
52 Cr	25.69	ppb	1.15	25	102.76	
53 Cr	26.76	ppb	2.18	25	107.04	
55 Mn	25.77	ppb	0.56	25	103.08	
56 Fe	5,167.	ppb	1.88	5,000	103.34	
57 Fe	5,248.	ppb	2.32	5,000	104.96	
59 Co	26.07	ppb	0.74	25	104.28	
60 Ni	26.19	ppb	0.23	25	104.76	
63 Cu	26.28	ppb	1.69	25	105.12	
65 Cu	26.04	ppb	1.99	25	104.16	
66 Zn	26.67	ppb	1.20	25	106.68	
68 Zn	26.22	ppb	0.13	25	104.88	
75 As	25.93	ppb	0.91	25	103.72	
82 Se	26.29	ppb	0.90	25	105.16	
88 Sr	25.54	ppb	1.26	25	102.16	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.21	ppb	1.94	25	100.84	
107 Ag	25.82	ppb	0.85	25	103.28	
109 Ag	25.61	ppb	1.28	25	102.44	
111 Cd	26.27	ppb	1.21	25	105.08	
114 Cd	25.94	ppb	0.99	25	103.76	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	26.19	ppb	1.91	25	104.76	
120 Sn	26.21	ppb	2.08	25	104.84	
121 Sb	26.31	ppb	0.43	25	105.24	
123 Sb	26.11	ppb	1.79	25	104.44	
135 Ba	26.37	ppb	1.11	25	105.48	
137 Ba	26.35	ppb	0.43	25	105.4	
182 W	25.6	ppb	0.84	25	102.4	
203 Tl	25.94	ppb	1.43	25	103.76	
205 Tl	25.71	ppb	1.20	25	102.84	
208 Pb	25.86	ppb	1.59	25	103.44	
232 Th	24.53	ppb	1.53	25	98.12	
238 U	22.82	ppb	0.90	25	91.28	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2258939.50	1.37	2088826.00	108.1	80 - 120.4	
45 Sc	1665167.00	1.52	1552281.90	107.3	80 - 120.4	
72 Ge	325009.28	1.42	310193.78	104.8	80 - 120.4	
159 Tb	3166346.50	0.53	3000713.50	105.5	80 - 120.4	
209 Bi	1640246.80	0.21	1596081.40	102.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\029_CCB.D\029_CCB.D#
Date Acquired: May 8 2018 05:10 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: May 08 2018 04:20 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0026	ppb	85.98	1.00	
11 B	1.421	ppb	14.62	1.00	
23 Na	2.864	ppb	7.26	1.00	
25 Mg	0.3199	ppb	66.02	1.00	
27 Al	0.0322	ppb	403.98	1.00	
28 Si	37.03	ppb	136.59	1.00	
29 Si	16.52	ppb	204.42	1.00	
39 K	0.9894	ppb	378.21	1.00	
43 Ca	2.196	ppb	145.17	1.00	
44 Ca	0.791	ppb	190.90	1.00	
51 V	-0.0172	ppb	313.46	1.00	
52 Cr	-0.0186	ppb	151.11	1.00	
53 Cr	0.651	ppb	37.53	1.00	
55 Mn	-0.0085	ppb	125.18	1.00	
56 Fe	2.39	ppb	344.23	1.00	
57 Fe	0.5203	ppb	924.47	1.00	
59 Co	0.006	ppb	62.34	1.00	
60 Ni	-0.0011	ppb	901.17	1.00	
63 Cu	0.0315	ppb	71.31	1.00	
65 Cu	0.0408	ppb	54.91	1.00	
66 Zn	0.0619	ppb	115.78	1.00	
68 Zn	-0.0049	ppb	2141.10	1.00	
75 As	0.1004	ppb	73.12	1.00	
82 Se	0.0786	ppb	133.03	1.00	
88 Sr	-0.001	ppb	215.32	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0487	ppb	54.89	1.00	
107 Ag	0.0039	ppb	97.00	1.00	
109 Ag	0.0005	ppb	281.99	1.00	
111 Cd	-0.0183	ppb	112.39	1.00	
114 Cd	-0.0034	ppb	58.70	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0262	ppb	15.33	1.00	
120 Sn	0.0373	ppb	57.11	1.00	
121 Sb	0.0081	ppb	42.32	1.00	
123 Sb	0.0108	ppb	13.26	1.00	
135 Ba	0.0305	ppb	63.39	1.00	
137 Ba	0.009	ppb	25.64	1.00	
182 W	0.0751	ppb	22.73	1.00	
203 Tl	0.0039	ppb	1054.40	1.00	
205 Tl	-0.0067	ppb	224.21	1.00	
208 Pb	0.0073	ppb	175.65	1.00	
232 Th	0.0448	ppb	15.27	1.00	
238 U	0.0026	ppb	92.90	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2129657.30	1.51	2088826.00	102.0	79.5 - 120	
45 Sc	1516452.90	2.12	1552281.90	97.7	79.5 - 120	
72 Ge	300363.78	1.12	310193.78	96.8	79.5 - 120	
159 Tb	2910546.50	1.59	3000713.50	97.0	79.5 - 120	
209 Bi	1524965.10	0.64	1596081.40	95.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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\JLE05C.B\030SMPL.D\030SMPL.D#
Date Acquired: May 8 2018 05:14 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3719-001
Misc Info: AQ
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	0.0046	0.0046	ppb	93.97	100.	
11 B	11.51	11.51	ppb	3.14	1000.	
23 Na	15,320.	15,320.	ppb	2.78	200000.	
25 Mg	2,925.	2,925.	ppb	0.73	200000.	
27 Al	2.672	2.672	ppb	7.96	200000.	
28 Si	8,290.	8,290.	ppb	2.05	#VALUE!	
29 Si	8,546.	8,546.	ppb	4.72	10000.	
39 K	2,827.	2,827.	ppb	4.58	200000.	
43 Ca	16,500.	16,500.	ppb	3.71	#VALUE!	
44 Ca	16,200.	16,200.	ppb	2.09	200000.	
51 V	0.3342	0.3342	ppb	11.10	1000.	
52 Cr	0.9902	0.9902	ppb	4.32	2000.	
53 Cr	0.1067	0.1067	ppb	92.55	#VALUE!	
55 Mn	1.816	1.816	ppb	1.92	2000.	
56 Fe	-9.277	-9.277	ppb	19.85	#VALUE!	
57 Fe	10.19	10.19	ppb	40.93	100000.	
59 Co	0.0515	0.0515	ppb	14.61	1000.	
60 Ni	0.8786	0.8786	ppb	6.54	1000.	
63 Cu	2,161.	2,161.	ppb	0.75	#VALUE!	
65 Cu	2,163.	2,163.	ppb	0.94	2000.	>LDR
66 Zn	151.5	151.5	ppb	1.94	2000.	
68 Zn	147.3	147.3	ppb	1.52	#VALUE!	
75 As	0.2293	0.2293	ppb	33.92	1000.	
82 Se	0.3103	0.3103	ppb	21.44	1000.	
88 Sr	76.81	76.81	ppb	2.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.258	0.258	ppb	13.81	1000.	
107 Ag	0.0415	0.0415	ppb	24.66	100.	
109 Ag	0.0385	0.0385	ppb	33.67	#VALUE!	
111 Cd	-0.0195	-0.0195	ppb	135.92	#VALUE!	
114 Cd	0.0037	0.0037	ppb	83.15	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0843	0.0843	ppb	10.02	1000.	
120 Sn	0.0635	0.0635	ppb	35.60	#VALUE!	
121 Sb	0.1317	0.1317	ppb	17.12	#VALUE!	
123 Sb	0.1151	0.1151	ppb	16.98	1000.	
135 Ba	6.396	6.396	ppb	6.39	2000.	
137 Ba	6.526	6.526	ppb	0.48	#VALUE!	
182 W	0.0435	0.0435	ppb	27.73	1000.	
203 Tl	0.0337	0.0337	ppb	7.50	1000.	
205 Tl	0.0267	0.0267	ppb	75.58	#VALUE!	
208 Pb	1.885	1.885	ppb	1.65	2000.	
232 Th	0.0635	0.0635	ppb	17.60	1000.	
238 U	0.1909	0.1909	ppb	1.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2169886.50	0.73	2088826.00	103.9	69.5 - 120	
45 Sc	1674889.30	2.97	1552281.90	107.9	69.5 - 120	
72 Ge	325840.31	0.71	310193.78	105.0	69.5 - 120	
159 Tb	3153801.80	1.93	3000713.50	105.1	69.5 - 120	
209 Bi	1637532.00	0.95	1596081.40	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\031SMPL.D\031SMPL.D#
Date Acquired: May 8 2018 05:19 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PBSLE02IMS1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	-0.0106	-0.0021	ppb	21.11	100.	
11 B	0.6275	0.1255	ppb	158.01	1000.	
23 Na	-3.3505	-0.6701	ppb	51.90	200000.	
25 Mg	0.3177	0.0635	ppb	226.16	200000.	
27 Al	-0.5695	-0.1139	ppb	226.25	200000.	
28 Si	-2,540.	-508.	ppb	16.17	#VALUE!	
29 Si	-2,594.	-518.8	ppb	4.27	10000.	LOW
39 K	-512.5	-102.5	ppb	12.89	200000.	
43 Ca	-29.44	-5.888	ppb	32.95	#VALUE!	
44 Ca	-47.62	-9.524	ppb	20.62	200000.	
51 V	-0.4518	-0.0904	ppb	31.50	1000.	
52 Cr	-1.467	-0.2934	ppb	9.55	2000.	
53 Cr	-10.615	-2.123	ppb	10.40	#VALUE!	
55 Mn	-0.0742	-0.0148	ppb	264.15	2000.	
56 Fe	-641.5	-128.3	ppb	12.42	#VALUE!	
57 Fe	-257.9	-51.58	ppb	6.24	100000.	LOW
59 Co	0.0373	0.0075	ppb	76.03	1000.	
60 Ni	-0.0767	-0.0153	ppb	45.87	1000.	
63 Cu	-0.5105	-0.1021	ppb	11.39	#VALUE!	
65 Cu	-0.508	-0.1016	ppb	13.02	2000.	
66 Zn	-0.584	-0.1168	ppb	73.80	2000.	
68 Zn	-2.299	-0.4598	ppb	12.78	#VALUE!	
75 As	-0.2077	-0.0415	ppb	152.62	1000.	
82 Se	0.1779	0.0356	ppb	421.42	1000.	
88 Sr	-0.0252	-0.005	ppb	33.42	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0829	0.0166	ppb	44.83	1000.	
107 Ag	-0.0132	-0.0026	ppb	42.65	100.	
109 Ag	-0.005	-0.001	ppb	101.89	#VALUE!	
111 Cd	-0.4158	-0.0832	ppb	62.93	#VALUE!	
114 Cd	0.0034	0.0007	ppb	436.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0627	0.0125	ppb	177.89	1000.	
120 Sn	0.0626	0.0125	ppb	151.08	#VALUE!	
121 Sb	0.0375	0.0075	ppb	54.24	#VALUE!	
123 Sb	0.0269	0.0054	ppb	77.92	1000.	
135 Ba	0.0999	0.02	ppb	26.52	2000.	
137 Ba	-0.0172	-0.0034	ppb	165.59	#VALUE!	
182 W	0.1554	0.0311	ppb	35.44	1000.	
203 Tl	0.5085	0.1017	ppb	64.91	1000.	
205 Tl	0.4842	0.0968	ppb	39.79	#VALUE!	
208 Pb	1.039	0.2078	ppb	70.84	2000.	
232 Th	0.3072	0.0614	ppb	51.68	1000.	
238 U	-0.0053	-0.0011	ppb	67.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2417642.80	26.36	2088826.00	115.7	69.5 - 120	
45 Sc	1994110.60	17.97	1552281.90	128.5	69.5 - 120	IS Fai
72 Ge	383805.47	9.75	310193.78	123.7	69.5 - 120	IS Fai
159 Tb	4373546.00	6.27	3000713.50	145.8	69.5 - 120	IS Fai
209 Bi	2551354.80	5.61	1596081.40	159.9	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

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

Data Results:

Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000355

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\032SMPL.D\032SMPL.D#
Date Acquired: May 8 2018 05:23 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LCSOLE02IMS1
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	0.0167	0.0033	ppb	315.71	100.	
11 B	3.1635	0.6327	ppb	187.77	1000.	
23 Na	34.69	6.938	ppb	194.72	200000.	
25 Mg	3.2355	0.6471	ppb	209.09	200000.	
27 Al	-1.66	-0.332	ppb	11.80	200000.	
28 Si	9,215.	1,843.	ppb	223.28	#VALUE!	
29 Si	2,878.5	575.7	ppb	336.46	10000.	
39 K	260.15	52.03	ppb	521.43	200000.	
43 Ca	137.2	27.44	ppb	212.39	#VALUE!	
44 Ca	96.8	19.36	ppb	268.96	200000.	
51 V	1.1995	0.2399	ppb	231.43	1000.	
52 Cr	13.655	2.731	ppb	191.50	2000.	
53 Cr	16.85	3.37	ppb	289.64	#VALUE!	
55 Mn	1.715	0.343	ppb	183.44	2000.	
56 Fe	1,167.	233.4	ppb	277.55	#VALUE!	
57 Fe	256.95	51.39	ppb	357.07	100000.	
59 Co	0.9765	0.1953	ppb	173.32	1000.	
60 Ni	0.2306	0.0461	ppb	253.31	1000.	
63 Cu	-0.0583	-0.0117	ppb	1639.50	#VALUE!	
65 Cu	0.1466	0.0293	ppb	865.23	2000.	
66 Zn	-0.4822	-0.0964	ppb	11.42	2000.	
68 Zn	20.5	4.1	ppb	197.39	#VALUE!	
75 As	-0.0822	-0.0164	ppb	919.05	1000.	
82 Se	4.637	0.9274	ppb	137.05	1000.	
88 Sr	0.0019	0.0004	ppb	2841.50	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1291	0.0258	ppb	90.82	1000.	
107 Ag	0.0013	0.0003	ppb	2225.40	100.	
109 Ag	0.0104	0.0021	ppb	336.05	#VALUE!	
111 Cd	-0.9685	-0.1937	ppb	81.72	#VALUE!	
114 Cd	-0.0815	-0.0163	ppb	205.58	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.5635	0.3127	ppb	188.04	1000.	
120 Sn	1.8185	0.3637	ppb	180.56	#VALUE!	
121 Sb	0.1996	0.0399	ppb	149.91	#VALUE!	
123 Sb	0.3228	0.0646	ppb	172.11	1000.	
135 Ba	0.1745	0.0349	ppb	159.66	2000.	
137 Ba	-0.0709	-0.0142	ppb	64.98	#VALUE!	
182 W	0.0735	0.0147	ppb	48.49	1000.	
203 Tl	4.669	0.9338	ppb	159.78	1000.	
205 Tl	4.569	0.9138	ppb	154.19	#VALUE!	
208 Pb	16.5	3.3	ppb	161.73	2000.	
232 Th	0.1612	0.0322	ppb	10.15	1000.	
238 U	0.0055	0.0011	ppb	405.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2523030.30	109.11	2088826.00	120.8	69.5 - 120	IS Fai
45 Sc	1630287.90	97.53	1552281.90	105.0	69.5 - 120	
72 Ge	335177.25	93.12	310193.78	108.1	69.5 - 120	
159 Tb	3701327.00	89.94	3000713.50	123.3	69.5 - 120	IS Fai
209 Bi	2061021.30	85.30	1596081.40	129.1	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

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

Data Results:

Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000356

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\033SMPL.D\033SMPL.D#
Date Acquired: May 8 2018 05:27 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-001
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	10.065	2.013	ppb	5.76	100.	
11 B	202.2	40.44	ppb	4.22	1000.	
23 Na	3,492.5	698.5	ppb	1.26	200000.	
25 Mg	151,000.	30,200.	ppb	2.19	200000.	
27 Al	219,800.	43,960.	ppb	2.08	200000.	
28 Si	3,155.5	631.1	ppb	1.98	#VALUE!	
29 Si	2,767.5	553.5	ppb	4.46	10000.	
39 K	67,100.	13,420.	ppb	1.18	200000.	
43 Ca	634,500.	126,900.	ppb	1.93	#VALUE!	
44 Ca	590,500.	118,100.	ppb	1.48	200000.	
51 V	543.	108.6	ppb	0.79	1000.	
52 Cr	201.85	40.37	ppb	0.48	2000.	
53 Cr	218.85	43.77	ppb	0.52	#VALUE!	
55 Mn	4,339.5	867.9	ppb	0.29	2000.	
56 Fe	185,300.	37,060.	ppb	1.27	#VALUE!	
57 Fe	178,950.	35,790.	ppb	2.18	100000.	
59 Co	89.8	17.96	ppb	1.18	1000.	
60 Ni	158.15	31.63	ppb	1.23	1000.	
63 Cu	124.25	24.85	ppb	1.84	#VALUE!	
65 Cu	127.85	25.57	ppb	1.06	2000.	
66 Zn	516.	103.2	ppb	0.91	2000.	
68 Zn	646.5	129.3	ppb	1.96	#VALUE!	
75 As	119.4	23.88	ppb	0.50	1000.	
82 Se	6.77	1.354	ppb	6.36	1000.	
88 Sr	4,639.	927.8	ppb	0.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.11	1.222	ppb	1.22	1000.	
107 Ag	0.9415	0.1883	ppb	5.68	100.	
109 Ag	0.724	0.1448	ppb	9.53	#VALUE!	
111 Cd	5.16	1.032	ppb	8.48	#VALUE!	
114 Cd	1.948	0.3896	ppb	9.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.765	9.553	ppb	4.11	1000.	
120 Sn	48.16	9.632	ppb	2.02	#VALUE!	
121 Sb	1.824	0.3648	ppb	6.58	#VALUE!	
123 Sb	1.9745	0.3949	ppb	2.00	1000.	
135 Ba	4,411.	882.2	ppb	2.06	2000.	
137 Ba	4,368.5	873.7	ppb	0.58	#VALUE!	
182 W	1.1955	0.2391	ppb	10.18	1000.	
203 Tl	3.6665	0.7333	ppb	2.95	1000.	
205 Tl	3.882	0.7764	ppb	1.45	#VALUE!	
208 Pb	156.75	31.35	ppb	3.06	2000.	
232 Th	103.4	20.68	ppb	2.84	1000.	
238 U	11.99	2.398	ppb	2.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1904727.30	2.18	2088826.00	91.2	69.5 - 120	
45 Sc	1526000.90	0.63	1552281.90	98.3	69.5 - 120	
72 Ge	292966.34	0.82	310193.78	94.4	69.5 - 120	
159 Tb	3156731.50	1.26	3000713.50	105.2	69.5 - 120	
209 Bi	1647730.40	3.08	1596081.40	103.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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\JLE05C.B\034SMPL.D\034SMPL.D#
Date Acquired: May 8 2018 05:31 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-002
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	-0.0163	-0.0033	ppb	11.16	100.	
11 B	3.3175	0.6635	ppb	74.24	1000.	
23 Na	-3.7615	-0.7523	ppb	45.55	200000.	
25 Mg	-0.1351	-0.027	ppb	168.99	200000.	
27 Al	-1.098	-0.2196	ppb	15.45	200000.	
28 Si	-2,193.	-438.6	ppb	35.66	#VALUE!	
29 Si	-2,638.	-527.6	ppb	10.98	10000.	LOW
39 K	-495.65	-99.13	ppb	14.97	200000.	
43 Ca	-15.61	-3.122	ppb	117.30	#VALUE!	
44 Ca	-45.405	-9.081	ppb	15.15	200000.	
51 V	-0.441	-0.0882	ppb	41.86	1000.	
52 Cr	-1.0245	-0.2049	ppb	68.62	2000.	
53 Cr	-13.775	-2.755	ppb	3.59	#VALUE!	
55 Mn	0.0414	0.0083	ppb	730.33	2000.	
56 Fe	-604.	-120.8	ppb	16.40	#VALUE!	
57 Fe	-254.	-50.8	ppb	5.22	100000.	LOW
59 Co	0.0117	0.0023	ppb	138.99	1000.	
60 Ni	-0.0891	-0.0178	ppb	59.41	1000.	
63 Cu	-0.5945	-0.1189	ppb	5.98	#VALUE!	
65 Cu	-0.4821	-0.0964	ppb	11.83	2000.	
66 Zn	-0.4604	-0.0921	ppb	55.93	2000.	
68 Zn	-1.398	-0.2796	ppb	68.63	#VALUE!	
75 As	-0.1604	-0.0321	ppb	312.44	1000.	
82 Se	0.438	0.0876	ppb	68.33	1000.	
88 Sr	-0.027	-0.0054	ppb	25.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0471	0.0094	ppb	50.51	1000.	
107 Ag	-0.004	-0.0008	ppb	586.56	100.	
109 Ag	-0.0139	-0.0028	ppb	65.83	#VALUE!	
111 Cd	-0.789	-0.1578	ppb	45.46	#VALUE!	
114 Cd	0.0188	0.0038	ppb	55.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1169	0.0234	ppb	122.16	1000.	
120 Sn	0.1952	0.039	ppb	47.98	#VALUE!	
121 Sb	0.015	0.003	ppb	85.37	#VALUE!	
123 Sb	0.0072	0.0014	ppb	58.48	1000.	
135 Ba	0.0196	0.0039	ppb	155.55	2000.	
137 Ba	0.0098	0.002	ppb	795.02	#VALUE!	
182 W	0.0506	0.0101	ppb	54.92	1000.	
203 Tl	0.4478	0.0896	ppb	16.51	1000.	
205 Tl	0.4925	0.0985	ppb	49.17	#VALUE!	
208 Pb	1.1165	0.2233	ppb	102.55	2000.	
232 Th	0.2197	0.0439	ppb	30.91	1000.	
238 U	-0.0043	-0.0009	ppb	50.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2175899.50	45.54	2088826.00	104.2	69.5 - 120	
45 Sc	1652034.10	27.43	1552281.90	106.4	69.5 - 120	
72 Ge	332453.25	23.15	310193.78	107.2	69.5 - 120	
159 Tb	3652233.30	11.99	3000713.50	121.7	69.5 - 120	IS Fai
209 Bi	2131060.80	13.08	1596081.40	133.5	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

2 :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 4000358

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\035SMPL.D\035SMPL.D#
Date Acquired: May 8 2018 05:35 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-003
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	15.045	3.009	ppb	3.12	100.	
11 B	224.3	44.86	ppb	3.19	1000.	
23 Na	3,039.5	607.9	ppb	3.09	200000.	
25 Mg	135,150.	27,030.	ppb	1.75	200000.	
27 Al	302,350.	60,470.	ppb	3.73	200000.	
28 Si	3,198.5	639.7	ppb	7.35	#VALUE!	
29 Si	2,576.5	515.3	ppb	4.16	10000.	
39 K	87,450.	17,490.	ppb	1.15	200000.	
43 Ca	680,500.	136,100.	ppb	0.26	#VALUE!	
44 Ca	641,000.	128,200.	ppb	0.36	200000.	
51 V	687.5	137.5	ppb	1.07	1000.	
52 Cr	273.7	54.74	ppb	1.69	2000.	
53 Cr	284.2	56.84	ppb	1.71	#VALUE!	
55 Mn	6,535.	1,307.	ppb	0.75	2000.	
56 Fe	278,250.	55,650.	ppb	2.16	#VALUE!	
57 Fe	268,600.	53,720.	ppb	1.18	100000.	
59 Co	130.15	26.03	ppb	1.18	1000.	
60 Ni	259.25	51.85	ppb	1.57	1000.	
63 Cu	177.05	35.41	ppb	0.88	#VALUE!	
65 Cu	177.1	35.42	ppb	1.28	2000.	
66 Zn	722.	144.4	ppb	1.12	2000.	
68 Zn	871.5	174.3	ppb	1.00	#VALUE!	
75 As	152.75	30.55	ppb	1.21	1000.	
82 Se	8.205	1.641	ppb	16.76	1000.	
88 Sr	3,762.5	752.5	ppb	3.02	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.535	1.507	ppb	5.82	1000.	
107 Ag	1.18	0.236	ppb	9.29	100.	
109 Ag	0.989	0.1978	ppb	3.94	#VALUE!	
111 Cd	5.525	1.105	ppb	3.75	#VALUE!	
114 Cd	2.1955	0.4391	ppb	8.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.25	10.45	ppb	1.44	1000.	
120 Sn	51.8	10.36	ppb	1.40	#VALUE!	
121 Sb	2.626	0.5252	ppb	2.86	#VALUE!	
123 Sb	2.681	0.5362	ppb	7.22	1000.	
135 Ba	5,255.	1,051.	ppb	2.57	2000.	
137 Ba	5,195.	1,039.	ppb	2.17	#VALUE!	
182 W	1.501	0.3002	ppb	3.97	1000.	
203 Tl	5.185	1.037	ppb	4.57	1000.	
205 Tl	5.28	1.056	ppb	0.74	#VALUE!	
208 Pb	244.3	48.86	ppb	1.45	2000.	
232 Th	120.95	24.19	ppb	0.81	1000.	
238 U	19.49	3.898	ppb	1.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1660617.00	3.91	2088826.00	79.5	69.5 - 120	
45 Sc	1448829.00	3.94	1552281.90	93.3	69.5 - 120	
72 Ge	277253.44	2.04	310193.78	89.4	69.5 - 120	
159 Tb	3082802.80	1.80	3000713.50	102.7	69.5 - 120	
209 Bi	1654703.90	1.60	1596081.40	103.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\036SMPL.D\036SMPL.D#
Date Acquired: May 8 2018 05:39 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-004
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	12.11	2.422	ppb	6.78	100.	
11 B	203.75	40.75	ppb	0.81	1000.	
23 Na	4,836.5	967.3	ppb	0.48	200000.	
25 Mg	104,650.	20,930.	ppb	2.87	200000.	
27 Al	272,800.	54,560.	ppb	3.82	200000.	
28 Si	3,713.	742.6	ppb	7.12	#VALUE!	
29 Si	2,956.5	591.3	ppb	6.75	10000.	
39 K	65,100.	13,020.	ppb	2.17	200000.	
43 Ca	492,300.	98,460.	ppb	3.94	#VALUE!	
44 Ca	466,300.	93,260.	ppb	3.25	200000.	
51 V	648.	129.6	ppb	2.26	1000.	
52 Cr	249.5	49.9	ppb	4.18	2000.	
53 Cr	260.85	52.17	ppb	3.26	#VALUE!	
55 Mn	5,305.	1,061.	ppb	1.23	2000.	
56 Fe	235,650.	47,130.	ppb	1.93	#VALUE!	
57 Fe	228,000.	45,600.	ppb	3.49	100000.	
59 Co	120.05	24.01	ppb	3.65	1000.	
60 Ni	202.7	40.54	ppb	4.02	1000.	
63 Cu	139.55	27.91	ppb	3.05	#VALUE!	
65 Cu	138.6	27.72	ppb	2.32	2000.	
66 Zn	574.	114.8	ppb	2.79	2000.	
68 Zn	655.	131.	ppb	2.67	#VALUE!	
75 As	111.75	22.35	ppb	3.93	1000.	
82 Se	5.715	1.143	ppb	27.65	1000.	
88 Sr	2,647.5	529.5	ppb	2.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.495	1.299	ppb	3.32	1000.	
107 Ag	1.172	0.2344	ppb	5.70	100.	
109 Ag	0.8235	0.1647	ppb	4.67	#VALUE!	
111 Cd	4.4405	0.8881	ppb	5.00	#VALUE!	
114 Cd	0.9465	0.1893	ppb	16.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.3	10.26	ppb	3.66	1000.	
120 Sn	50.7	10.14	ppb	3.18	#VALUE!	
121 Sb	2.5115	0.5023	ppb	4.76	#VALUE!	
123 Sb	2.5245	0.5049	ppb	3.42	1000.	
135 Ba	3,022.5	604.5	ppb	3.73	2000.	
137 Ba	2,941.	588.2	ppb	2.70	#VALUE!	
182 W	1.3045	0.2609	ppb	7.13	1000.	
203 Tl	4.2905	0.8581	ppb	3.62	1000.	
205 Tl	4.562	0.9124	ppb	3.31	#VALUE!	
208 Pb	192.8	38.56	ppb	3.21	2000.	
232 Th	118.8	23.76	ppb	3.31	1000.	
238 U	16.62	3.324	ppb	3.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1744906.80	3.87	2088826.00	83.5	69.5 - 120	
45 Sc	1451300.60	2.00	1552281.90	93.5	69.5 - 120	
72 Ge	281580.63	2.26	310193.78	90.8	69.5 - 120	
159 Tb	3101881.00	2.29	3000713.50	103.4	69.5 - 120	
209 Bi	1676682.60	2.83	1596081.40	105.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000360

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\037SMPL.D\037SMPL.D#
Date Acquired: May 8 2018 05:43 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	10.075	2.015	ppb	4.72	100.	
11 B	154.55	30.91	ppb	4.53	1000.	
23 Na	12,740.	2,548.	ppb	1.15	200000.	
25 Mg	102,250.	20,450.	ppb	1.40	200000.	
27 Al	209,700.	41,940.	ppb	2.50	200000.	
28 Si	3,650.	730.	ppb	3.05	#VALUE!	
29 Si	2,843.5	568.7	ppb	2.85	10000.	
39 K	47,050.	9,410.	ppb	2.04	200000.	
43 Ca	1,088,500.	217,700.	ppb	2.98	#VALUE!	
44 Ca	1,047,500.	209,500.	ppb	0.60	200000.	>LDR
51 V	423.4	84.68	ppb	1.08	1000.	
52 Cr	213.5	42.7	ppb	0.95	2000.	
53 Cr	224.55	44.91	ppb	2.14	#VALUE!	
55 Mn	5,115.	1,023.	ppb	0.67	2000.	
56 Fe	206,350.	41,270.	ppb	1.36	#VALUE!	
57 Fe	198,200.	39,640.	ppb	1.80	100000.	
59 Co	77.7	15.54	ppb	2.35	1000.	
60 Ni	154.7	30.94	ppb	0.67	1000.	
63 Cu	121.55	24.31	ppb	0.41	#VALUE!	
65 Cu	125.55	25.11	ppb	2.09	2000.	
66 Zn	520.5	104.1	ppb	1.20	2000.	
68 Zn	590.5	118.1	ppb	2.54	#VALUE!	
75 As	22.67	4.534	ppb	7.00	1000.	
82 Se	7.43	1.486	ppb	7.97	1000.	
88 Sr	2,036.	407.2	ppb	2.14	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.6575	0.9315	ppb	3.77	1000.	
107 Ag	0.8975	0.1795	ppb	6.89	100.	
109 Ag	0.6575	0.1315	ppb	13.28	#VALUE!	
111 Cd	7.06	1.412	ppb	9.38	#VALUE!	
114 Cd	4.0985	0.8197	ppb	8.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.535	9.707	ppb	1.20	1000.	
120 Sn	47.79	9.558	ppb	1.20	#VALUE!	
121 Sb	1.6675	0.3335	ppb	7.57	#VALUE!	
123 Sb	1.7225	0.3445	ppb	6.69	1000.	
135 Ba	2,819.	563.8	ppb	0.81	2000.	
137 Ba	2,807.	561.4	ppb	0.92	#VALUE!	
182 W	0.678	0.1356	ppb	5.93	1000.	
203 Tl	3.5835	0.7167	ppb	6.09	1000.	
205 Tl	3.6415	0.7283	ppb	2.34	#VALUE!	
208 Pb	169.4	33.88	ppb	0.68	2000.	
232 Th	88.3	17.66	ppb	1.12	1000.	
238 U	16.425	3.285	ppb	1.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1793715.10	2.07	2088826.00	85.9	69.5 - 120	
45 Sc	1497643.40	1.60	1552281.90	96.5	69.5 - 120	
72 Ge	285587.53	1.41	310193.78	92.1	69.5 - 120	
159 Tb	3121268.50	0.69	3000713.50	104.0	69.5 - 120	
209 Bi	1665776.00	1.05	1596081.40	104.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\038SMPL.D\038SMPL.D#
Date Acquired: May 8 2018 05:48 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005L
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 2018 04:20 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	11.33	0.4532	ppb	8.39	100.	
11 B	193.65	7.746	ppb	4.70	1000.	
23 Na	14,472.5	578.9	ppb	1.39	200000.	
25 Mg	113,425.	4,537.	ppb	1.31	200000.	
27 Al	229,250.	9,170.	ppb	2.75	200000.	
28 Si	3,522.5	140.9	ppb	14.85	#VALUE!	
29 Si	861.	34.44	ppb	52.03	10000.	
39 K	52,450.	2,098.	ppb	1.09	200000.	
43 Ca	1,182,750.	47,310.	ppb	1.20	#VALUE!	
44 Ca	1,144,500.	45,780.	ppb	1.71	200000.	
51 V	436.75	17.47	ppb	0.42	1000.	
52 Cr	227.075	9.083	ppb	1.53	2000.	
53 Cr	219.05	8.762	ppb	2.20	#VALUE!	
55 Mn	5,637.5	225.5	ppb	0.60	2000.	
56 Fe	221,850.	8,874.	ppb	1.06	#VALUE!	
57 Fe	223,325.	8,933.	ppb	2.83	100000.	
59 Co	84.45	3.378	ppb	4.63	1000.	
60 Ni	166.3	6.652	ppb	3.13	1000.	
63 Cu	138.9	5.556	ppb	1.57	#VALUE!	
65 Cu	143.375	5.735	ppb	3.93	2000.	
66 Zn	597.25	23.89	ppb	0.58	2000.	
68 Zn	681.75	27.27	ppb	2.50	#VALUE!	
75 As	27.225	1.089	ppb	1.43	1000.	
82 Se	12.39	0.4956	ppb	18.28	1000.	
88 Sr	2,204.5	88.18	ppb	2.44	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.0475	0.2019	ppb	4.42	1000.	
107 Ag	0.9308	0.0372	ppb	10.58	100.	
109 Ag	0.8253	0.033	ppb	1.65	#VALUE!	
111 Cd	6.4875	0.2595	ppb	16.34	#VALUE!	
114 Cd	4.5975	0.1839	ppb	14.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.525	2.021	ppb	6.06	1000.	
120 Sn	52.725	2.109	ppb	4.61	#VALUE!	
121 Sb	1.9803	0.0792	ppb	5.78	#VALUE!	
123 Sb	1.6815	0.0673	ppb	12.79	1000.	
135 Ba	3,005.	120.2	ppb	2.49	2000.	
137 Ba	2,995.	119.8	ppb	1.33	#VALUE!	
182 W	0.6558	0.0262	ppb	17.59	1000.	
203 Tl	3.6925	0.1477	ppb	15.27	1000.	
205 Tl	3.3275	0.1331	ppb	5.77	#VALUE!	
208 Pb	176.45	7.058	ppb	1.20	2000.	
232 Th	87.775	3.511	ppb	2.36	1000.	
238 U	16.1775	0.6471	ppb	0.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1871386.00	6.71	2088826.00	89.6	69.5 - 120	
45 Sc	1467452.30	0.88	1552281.90	94.5	69.5 - 120	
72 Ge	285925.06	1.40	310193.78	92.2	69.5 - 120	
159 Tb	3114865.50	0.84	3000713.50	103.8	69.5 - 120	
209 Bi	1711384.00	1.00	1596081.40	107.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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\JLE05C.B\039SMPL.D\039SMPL.D#
Date Acquired: May 8 2018 05:52 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: May 08 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	0.0003	0.0003	ppb	173.02	100.	
11 B	1.219	1.219	ppb	18.12	1000.	
23 Na	2.844	2.844	ppb	12.44	200000.	
25 Mg	0.7407	0.7407	ppb	36.87	200000.	
27 Al	1.13	1.13	ppb	46.76	200000.	
28 Si	131.2	131.2	ppb	37.82	#VALUE!	
29 Si	-11.68	-11.68	ppb	212.50	10000.	
39 K	-6.686	-6.686	ppb	24.20	200000.	
43 Ca	12.47	12.47	ppb	57.44	#VALUE!	
44 Ca	17.56	17.56	ppb	8.26	200000.	
51 V	0.033	0.033	ppb	71.34	1000.	
52 Cr	0.1097	0.1097	ppb	40.21	2000.	
53 Cr	-0.9512	-0.9512	ppb	7.10	#VALUE!	
55 Mn	0.0483	0.0483	ppb	42.70	2000.	
56 Fe	18.21	18.21	ppb	16.30	#VALUE!	
57 Fe	0.5092	0.5092	ppb	106.50	100000.	
59 Co	0.018	0.018	ppb	67.35	1000.	
60 Ni	0.002	0.002	ppb	94.80	1000.	
63 Cu	0.0526	0.0526	ppb	19.04	#VALUE!	
65 Cu	0.0609	0.0609	ppb	70.07	2000.	
66 Zn	0.0635	0.0635	ppb	129.49	2000.	
68 Zn	0.1524	0.1524	ppb	48.40	#VALUE!	
75 As	-0.0076	-0.0076	ppb	1662.70	1000.	
82 Se	0.1222	0.1222	ppb	180.28	1000.	
88 Sr	0.0141	0.0141	ppb	48.05	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0082	0.0082	ppb	80.50	1000.	
107 Ag	-0.0051	-0.0051	ppb	22.21	100.	
109 Ag	-0.0028	-0.0028	ppb	39.97	#VALUE!	
111 Cd	-0.0761	-0.0761	ppb	15.09	#VALUE!	
114 Cd	0.0023	0.0023	ppb	271.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0061	0.0061	ppb	390.55	1000.	
120 Sn	0.0107	0.0107	ppb	26.05	#VALUE!	
121 Sb	0.0018	0.0018	ppb	35.12	#VALUE!	
123 Sb	-0.0018	-0.0018	ppb	80.44	1000.	
135 Ba	0.0401	0.0401	ppb	72.10	2000.	
137 Ba	0.0226	0.0226	ppb	87.53	#VALUE!	
182 W	0.0011	0.0011	ppb	408.58	1000.	
203 Tl	-0.0059	-0.0059	ppb	290.81	1000.	
205 Tl	0.0014	0.0014	ppb	574.21	#VALUE!	
208 Pb	0.0156	0.0156	ppb	98.20	2000.	
232 Th	0.0108	0.0108	ppb	25.75	1000.	
238 U	-0.0005	-0.0005	ppb	127.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1682669.90	1.32	2088826.00	80.6	69.5 - 120	
45 Sc	1299901.00	2.12	1552281.90	83.7	69.5 - 120	
72 Ge	263141.19	2.24	310193.78	84.8	69.5 - 120	
159 Tb	2788451.00	0.77	3000713.50	92.9	69.5 - 120	
209 Bi	1558852.30	0.58	1596081.40	97.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\040_CCV.D\040_CCV.D#
Date Acquired: May 8 2018 05:56 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: May 08 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	26.18	ppb	0.70	25	104.72	
11 B	25.54	ppb	6.02	25	102.16	
23 Na	4,872.	ppb	1.98	5,000	97.44	
25 Mg	5,049.	ppb	2.45	5,000	100.98	
27 Al	505.2	ppb	2.04	500	101.04	
28 Si	547.4	ppb	8.15	500	109.48	
29 Si	432.7	ppb	2.39	500	86.54	Fail
39 K	4,973.	ppb	0.80	5,000	99.46	
43 Ca	5,169.	ppb	2.65	5,000	103.38	
44 Ca	5,213.	ppb	1.33	5,000	104.26	
51 V	26.23	ppb	2.28	25	104.92	
52 Cr	26.2	ppb	1.10	25	104.8	
53 Cr	25.43	ppb	2.69	25	101.72	
55 Mn	26.11	ppb	1.17	25	104.44	
56 Fe	5,205.	ppb	2.53	5,000	104.1	
57 Fe	5,167.	ppb	2.18	5,000	103.34	
59 Co	26.24	ppb	0.49	25	104.96	
60 Ni	26.16	ppb	0.76	25	104.64	
63 Cu	26.14	ppb	0.61	25	104.56	
65 Cu	25.53	ppb	1.21	25	102.12	
66 Zn	26.65	ppb	2.20	25	106.6	
68 Zn	26.48	ppb	0.96	25	105.92	
75 As	25.77	ppb	2.62	25	103.08	
82 Se	26.45	ppb	1.21	25	105.8	
88 Sr	26.91	ppb	2.13	25	107.64	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	26.74	ppb	1.30	25	106.96	
107 Ag	26.6	ppb	0.19	25	106.4	
109 Ag	26.79	ppb	1.38	25	107.16	
111 Cd	26.38	ppb	0.86	25	105.52	
114 Cd	26.39	ppb	0.61	25	105.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.68	ppb	1.57	25	98.72	
120 Sn	24.5	ppb	1.29	25	98	
121 Sb	24.26	ppb	0.87	25	97.04	
123 Sb	24.4	ppb	1.28	25	97.6	
135 Ba	25.23	ppb	0.93	25	100.92	
137 Ba	25.14	ppb	0.47	25	100.56	
182 W	26.39	ppb	0.25	25	105.56	
203 Tl	25.55	ppb	0.22	25	102.2	
205 Tl	25.66	ppb	0.52	25	102.64	
208 Pb	25.81	ppb	0.79	25	103.24	
232 Th	22.62	ppb	0.73	25	90.48	
238 U	20.	ppb	0.54	25	80	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1797350.00	1.90	2088826.00	86.0	80 - 120.4	
45 Sc	1420792.00	1.99	1552281.90	91.5	80 - 120.4	
72 Ge	281331.81	2.45	310193.78	90.7	80 - 120.4	
159 Tb	3027369.80	1.27	3000713.50	100.9	80 - 120.4	
209 Bi	1687012.00	1.25	1596081.40	105.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000364

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\041_CCB.D\041_CCB.D#
Date Acquired: May 8 2018 06:00 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: May 08 2018 04:20 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0032	ppb	29.13	1.00	
11 B	1.872	ppb	10.44	1.00	
23 Na	0.8339	ppb	27.57	1.00	
25 Mg	0.0772	ppb	19.72	1.00	
27 Al	0.0066	ppb	419.18	1.00	
28 Si	104.6	ppb	59.65	1.00	
29 Si	-29.93	ppb	98.40	1.00	
39 K	-9.695	ppb	56.64	1.00	
43 Ca	1.277	ppb	186.37	1.00	
44 Ca	-1.14	ppb	89.47	1.00	
51 V	0.0337	ppb	191.21	1.00	
52 Cr	0.0654	ppb	103.07	1.00	
53 Cr	-0.9623	ppb	28.04	1.00	
55 Mn	0.0165	ppb	55.54	1.00	
56 Fe	14.85	ppb	36.21	1.00	
57 Fe	0.2919	ppb	773.21	1.00	
59 Co	0.006	ppb	104.06	1.00	
60 Ni	0.0062	ppb	180.88	1.00	
63 Cu	0.0123	ppb	24.09	1.00	
65 Cu	0.0482	ppb	65.40	1.00	
66 Zn	0.0449	ppb	105.44	1.00	
68 Zn	-0.05	ppb	150.56	1.00	
75 As	-0.1343	ppb	52.93	1.00	
82 Se	0.0721	ppb	120.12	1.00	
88 Sr	0.0028	ppb	77.69	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0358	ppb	54.56	1.00	
107 Ag	-0.0024	ppb	51.42	1.00	
109 Ag	-0.0003	ppb	677.12	1.00	
111 Cd	-0.0934	ppb	39.67	1.00	
114 Cd	0.0025	ppb	73.02	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0024	ppb	324.12	1.00	
120 Sn	0.0178	ppb	34.38	1.00	
121 Sb	0.0048	ppb	57.62	1.00	
123 Sb	0.0012	ppb	329.38	1.00	
135 Ba	0.0189	ppb	60.86	1.00	
137 Ba	0.001	ppb	223.39	1.00	
182 W	0.0391	ppb	42.65	1.00	
203 Tl	0.016	ppb	92.08	1.00	
205 Tl	-0.0199	ppb	76.13	1.00	
208 Pb	0.0246	ppb	126.88	1.00	
232 Th	0.0326	ppb	19.69	1.00	
238 U	0.0013	ppb	6.43	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1627588.00	4.52	2088826.00	77.9	79.5 - 120	ISFail
45 Sc	1308073.90	3.37	1552281.90	84.3	79.5 - 120	
72 Ge	258323.95	2.43	310193.78	83.3	79.5 - 120	
159 Tb	2787125.80	1.22	3000713.50	92.9	79.5 - 120	
209 Bi	1568571.50	2.52	1596081.40	98.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\042SMPL.D\042SMPL.D#
Date Acquired: May 8 2018 06:04 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005A
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	20.56	4.112	ppb	5.98	100.	
11 B	348.6	69.72	ppb	4.45	1000.	
23 Na	21,875.	4,375.	ppb	1.29	200000.	
25 Mg	100,150.	20,030.	ppb	1.56	200000.	
27 Al	205,200.	41,040.	ppb	3.15	200000.	
28 Si	8,540.	1,708.	ppb	5.43	#VALUE!	
29 Si	7,955.	1,591.	ppb	6.19	10000.	
39 K	57,050.	11,410.	ppb	3.65	200000.	
43 Ca	1,076,000.	215,200.	ppb	4.05	#VALUE!	
44 Ca	1,022,500.	204,500.	ppb	1.70	200000.	>LDR
51 V	458.3	91.66	ppb	1.14	1000.	
52 Cr	261.6	52.32	ppb	1.96	2000.	
53 Cr	273.25	54.65	ppb	1.39	#VALUE!	
55 Mn	4,904.	980.8	ppb	1.16	2000.	
56 Fe	199,350.	39,870.	ppb	0.88	#VALUE!	
57 Fe	193,000.	38,600.	ppb	0.85	100000.	
59 Co	86.	17.2	ppb	0.50	1000.	
60 Ni	169.65	33.93	ppb	3.02	1000.	
63 Cu	147.4	29.48	ppb	1.30	#VALUE!	
65 Cu	148.4	29.68	ppb	0.87	2000.	
66 Zn	601.5	120.3	ppb	2.16	2000.	
68 Zn	670.	134.	ppb	1.41	#VALUE!	
75 As	73.8	14.76	ppb	4.36	1000.	
82 Se	58.5	11.7	ppb	3.61	1000.	
88 Sr	2,029.5	405.9	ppb	2.79	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	58.6	11.72	ppb	3.04	1000.	
107 Ag	11.15	2.23	ppb	3.06	100.	
109 Ag	11.105	2.221	ppb	2.34	#VALUE!	
111 Cd	17.515	3.503	ppb	3.55	#VALUE!	
114 Cd	14.17	2.834	ppb	3.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	94.45	18.89	ppb	2.66	1000.	
120 Sn	94.	18.8	ppb	2.31	#VALUE!	
121 Sb	11.565	2.313	ppb	3.55	#VALUE!	
123 Sb	11.13	2.226	ppb	2.30	1000.	
135 Ba	2,751.	550.2	ppb	2.02	2000.	
137 Ba	2,726.5	545.3	ppb	1.35	#VALUE!	
182 W	55.65	11.13	ppb	2.76	1000.	
203 Tl	14.265	2.853	ppb	3.13	1000.	
205 Tl	14.16	2.832	ppb	1.20	#VALUE!	
208 Pb	175.15	35.03	ppb	1.52	2000.	
232 Th	94.15	18.83	ppb	1.41	1000.	
238 U	24.655	4.931	ppb	3.07	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1760582.30	4.21	2088826.00	84.3	69.5 - 120	
45 Sc	1458765.40	3.70	1552281.90	94.0	69.5 - 120	
72 Ge	282715.22	2.21	310193.78	91.1	69.5 - 120	
159 Tb	3081426.80	1.91	3000713.50	102.7	69.5 - 120	
209 Bi	1643870.30	0.70	1596081.40	103.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000366

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\043SMPL.D\043SMPL.D#
Date Acquired: May 8 2018 06:09 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005S
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	58.1	11.62	ppb	1.21	100.	
11 B	593.	118.6	ppb	4.36	1000.	
23 Na	21,200.	4,240.	ppb	1.92	200000.	
25 Mg	108,150.	21,630.	ppb	2.90	200000.	
27 Al	244,400.	48,880.	ppb	2.71	200000.	
28 Si	3,327.	665.4	ppb	5.29	#VALUE!	
29 Si	2,703.	540.6	ppb	5.10	10000.	
39 K	64,350.	12,870.	ppb	0.40	200000.	
43 Ca	507,500.	101,500.	ppb	1.46	#VALUE!	
44 Ca	477,750.	95,550.	ppb	1.62	200000.	
51 V	993.5	198.7	ppb	2.03	1000.	
52 Cr	442.25	88.45	ppb	1.10	2000.	
53 Cr	457.95	91.59	ppb	2.32	#VALUE!	
55 Mn	4,753.5	950.7	ppb	0.96	2000.	
56 Fe	222,300.	44,460.	ppb	1.00	#VALUE!	
57 Fe	212,650.	42,530.	ppb	0.44	100000.	
59 Co	566.	113.2	ppb	0.96	1000.	
60 Ni	659.5	131.9	ppb	2.00	1000.	
63 Cu	368.55	73.71	ppb	1.42	#VALUE!	
65 Cu	365.5	73.1	ppb	1.49	2000.	
66 Zn	1,033.	206.6	ppb	1.11	2000.	
68 Zn	1,129.	225.8	ppb	1.58	#VALUE!	
75 As	121.75	24.35	ppb	2.39	1000.	
82 Se	99.35	19.87	ppb	3.01	1000.	
88 Sr	1,982.	396.4	ppb	0.85	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	97.5	19.5	ppb	0.40	1000.	
107 Ag	50.95	10.19	ppb	1.19	100.	
109 Ag	50.5	10.1	ppb	1.09	#VALUE!	
111 Cd	249.5	49.9	ppb	0.78	#VALUE!	
114 Cd	244.15	48.83	ppb	1.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	483.35	96.67	ppb	2.08	1000.	
120 Sn	482.05	96.41	ppb	1.97	#VALUE!	
121 Sb	27.795	5.559	ppb	2.21	#VALUE!	
123 Sb	28.07	5.614	ppb	3.59	1000.	
135 Ba	4,207.5	841.5	ppb	1.82	2000.	
137 Ba	4,227.5	845.5	ppb	1.22	#VALUE!	
182 W	41.18	8.236	ppb	1.55	1000.	
203 Tl	105.95	21.19	ppb	0.44	1000.	
205 Tl	105.6	21.12	ppb	0.33	#VALUE!	
208 Pb	253.4	50.68	ppb	0.66	2000.	
232 Th	186.5	37.3	ppb	1.75	1000.	
238 U	93.65	18.73	ppb	1.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1824008.30	3.86	2088826.00	87.3	69.5 - 120	
45 Sc	1461432.60	1.85	1552281.90	94.1	69.5 - 120	
72 Ge	280371.16	0.96	310193.78	90.4	69.5 - 120	
159 Tb	3103120.30	0.46	3000713.50	103.4	69.5 - 120	
209 Bi	1667215.80	0.65	1596081.40	104.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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\JLE05C.B\044SMPL.D\044SMPL.D#
Date Acquired: May 8 2018 06:13 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005P
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	-0.0019	-0.0004	ppb	645.15	100.	
11 B	10.68	2.136	ppb	40.30	1000.	
23 Na	-0.3895	-0.0779	ppb	1485.20	200000.	
25 Mg	23.645	4.729	ppb	172.87	200000.	
27 Al	50.8	10.16	ppb	171.95	200000.	
28 Si	-2,102.5	-420.5	ppb	21.67	#VALUE!	
29 Si	-2,616.5	-523.3	ppb	4.85	10000.	LOW
39 K	-474.45	-94.89	ppb	3.81	200000.	
43 Ca	171.7	34.34	ppb	184.71	#VALUE!	
44 Ca	157.85	31.57	ppb	206.15	200000.	
51 V	-0.3775	-0.0755	ppb	147.17	1000.	
52 Cr	-1.088	-0.2176	ppb	43.17	2000.	
53 Cr	-13.82	-2.764	ppb	1.99	#VALUE!	
55 Mn	1.8525	0.3705	ppb	189.07	2000.	
56 Fe	-542.5	-108.5	ppb	27.37	#VALUE!	
57 Fe	-166.1	-33.22	ppb	83.59	100000.	LOW
59 Co	0.214	0.0428	ppb	136.97	1000.	
60 Ni	0.0596	0.0119	ppb	463.00	1000.	
63 Cu	-0.3926	-0.0785	ppb	40.77	#VALUE!	
65 Cu	-0.3159	-0.0632	ppb	90.82	2000.	
66 Zn	-0.2513	-0.0503	ppb	180.00	2000.	
68 Zn	-1.16	-0.232	ppb	48.06	#VALUE!	
75 As	-0.0934	-0.0187	ppb	697.38	1000.	
82 Se	0.1513	0.0303	ppb	803.31	1000.	
88 Sr	1.0815	0.2163	ppb	173.97	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0849	0.017	ppb	115.79	1000.	
107 Ag	0.0315	0.0063	ppb	152.74	100.	
109 Ag	0.0127	0.0025	ppb	161.76	#VALUE!	
111 Cd	-0.681	-0.1362	ppb	16.61	#VALUE!	
114 Cd	0.0695	0.0139	ppb	332.61	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.524	0.1048	ppb	61.28	1000.	
120 Sn	0.5005	0.1001	ppb	46.66	#VALUE!	
121 Sb	0.0294	0.0059	ppb	68.84	#VALUE!	
123 Sb	0.0023	0.0005	ppb	1246.10	1000.	
135 Ba	2.3495	0.4699	ppb	171.74	2000.	
137 Ba	2.225	0.445	ppb	173.89	#VALUE!	
182 W	0.0909	0.0182	ppb	90.53	1000.	
203 Tl	0.4661	0.0932	ppb	71.15	1000.	
205 Tl	0.509	0.1018	ppb	36.97	#VALUE!	
208 Pb	0.858	0.1716	ppb	100.23	2000.	
232 Th	0.2806	0.0561	ppb	79.83	1000.	
238 U	0.0547	0.0109	ppb	201.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1932921.90	27.09	2088826.00	92.5	69.5 - 120	
45 Sc	1485186.10	28.74	1552281.90	95.7	69.5 - 120	
72 Ge	322137.59	12.06	310193.78	103.9	69.5 - 120	
159 Tb	3594795.80	11.70	3000713.50	119.8	69.5 - 120	
209 Bi	2143272.50	13.00	1596081.40	134.3	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

2 :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 4000368

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\045SMPL.D\045SMPL.D#
Date Acquired: May 8 2018 06:17 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-006
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	0.	0.	ppb	78633.00	100.	
11 B	4.0435	0.8087	ppb	12.07	1000.	
23 Na	-2.895	-0.579	ppb	139.62	200000.	
25 Mg	2.421	0.4842	ppb	177.65	200000.	
27 Al	4.988	0.9976	ppb	199.48	200000.	
28 Si	-1,814.5	-362.9	ppb	32.87	#VALUE!	
29 Si	-2,536.5	-507.3	ppb	14.42	10000.	LOW
39 K	-483.75	-96.75	ppb	5.22	200000.	
43 Ca	18.59	3.718	ppb	298.82	#VALUE!	
44 Ca	-20.7	-4.14	ppb	199.44	200000.	
51 V	-0.6655	-0.1331	ppb	25.53	1000.	
52 Cr	-0.2897	-0.0579	ppb	236.97	2000.	
53 Cr	-13.335	-2.667	ppb	1.82	#VALUE!	
55 Mn	0.2569	0.0514	ppb	216.43	2000.	
56 Fe	-582.	-116.4	ppb	12.78	#VALUE!	
57 Fe	-226.1	-45.22	ppb	8.83	100000.	LOW
59 Co	0.0332	0.0066	ppb	117.45	1000.	
60 Ni	-0.0629	-0.0126	ppb	37.80	1000.	
63 Cu	-0.501	-0.1002	ppb	16.21	#VALUE!	
65 Cu	-0.4772	-0.0954	ppb	15.18	2000.	
66 Zn	-0.6105	-0.1221	ppb	18.89	2000.	
68 Zn	-0.936	-0.1872	ppb	116.24	#VALUE!	
75 As	-0.1202	-0.024	ppb	460.26	1000.	
82 Se	0.3069	0.0614	ppb	311.72	1000.	
88 Sr	0.1048	0.021	ppb	185.78	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0037	0.0007	ppb	418.20	1000.	
107 Ag	-0.0078	-0.0016	ppb	76.79	100.	
109 Ag	-0.0058	-0.0012	ppb	183.16	#VALUE!	
111 Cd	-0.8875	-0.1775	ppb	22.03	#VALUE!	
114 Cd	0.0154	0.0031	ppb	38.85	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	-0.0757	-0.0151	ppb	144.08	1000.	
120 Sn	-0.0703	-0.0141	ppb	46.66	#VALUE!	
121 Sb	0.0216	0.0043	ppb	72.12	#VALUE!	
123 Sb	0.0055	0.0011	ppb	371.91	1000.	
135 Ba	0.2702	0.054	ppb	149.80	2000.	
137 Ba	0.27	0.054	ppb	202.96	#VALUE!	
182 W	0.0441	0.0088	ppb	88.65	1000.	
203 Tl	0.562	0.1124	ppb	27.87	1000.	
205 Tl	0.4727	0.0945	ppb	37.24	#VALUE!	
208 Pb	2.092	0.4184	ppb	70.46	2000.	
232 Th	0.0682	0.0136	ppb	21.74	1000.	
238 U	-0.0003	-0.0001	ppb	4770.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1612802.50	9.53	2088826.00	77.2	69.5 - 120	
45 Sc	1326720.40	18.08	1552281.90	85.5	69.5 - 120	
72 Ge	281101.59	13.26	310193.78	90.6	69.5 - 120	
159 Tb	3198412.30	17.29	3000713.50	106.6	69.5 - 120	
209 Bi	1920805.40	19.29	1596081.40	120.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000369

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\046SMPL.D\046SMPL.D#
Date Acquired: May 8 2018 06:21 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-008
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	-0.0036	-0.0007	ppb	429.51	100.	
11 B	4.0385	0.8077	ppb	102.81	1000.	
23 Na	1.2385	0.2477	ppb	645.94	200000.	
25 Mg	16.65	3.33	ppb	176.04	200000.	
27 Al	45.945	9.189	ppb	178.80	200000.	
28 Si	-582.	-116.4	ppb	565.12	#VALUE!	
29 Si	-1,826.	-365.2	ppb	68.78	10000.	LOW
39 K	-390.4	-78.08	ppb	53.92	200000.	
43 Ca	179.1	35.82	ppb	179.93	#VALUE!	
44 Ca	137.2	27.44	ppb	208.20	200000.	
51 V	-0.2538	-0.0508	ppb	147.93	1000.	
52 Cr	0.648	0.1296	ppb	411.81	2000.	
53 Cr	-12.695	-2.539	ppb	19.06	#VALUE!	
55 Mn	1.367	0.2734	ppb	161.96	2000.	
56 Fe	-479.65	-95.93	ppb	38.40	#VALUE!	
57 Fe	-183.15	-36.63	ppb	42.81	100000.	LOW
59 Co	0.222	0.0444	ppb	95.45	1000.	
60 Ni	0.0311	0.0062	ppb	777.33	1000.	
63 Cu	-0.3896	-0.0779	ppb	38.01	#VALUE!	
65 Cu	-0.1857	-0.0371	ppb	99.17	2000.	
66 Zn	-0.3298	-0.066	ppb	130.27	2000.	
68 Zn	0.1552	0.031	ppb	2256.80	#VALUE!	
75 As	-0.3534	-0.0707	ppb	142.49	1000.	
82 Se	-1.9375	-0.3875	ppb	39.41	1000.	
88 Sr	0.691	0.1382	ppb	179.81	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.053	0.0106	ppb	135.60	1000.	
107 Ag	0.0013	0.0003	ppb	3136.50	100.	
109 Ag	0.0115	0.0023	ppb	335.62	#VALUE!	
111 Cd	-0.9785	-0.1957	ppb	41.44	#VALUE!	
114 Cd	0.0458	0.0092	ppb	311.83	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0558	0.0112	ppb	426.10	1000.	
120 Sn	0.0669	0.0134	ppb	418.77	#VALUE!	
121 Sb	0.0136	0.0027	ppb	158.40	#VALUE!	
123 Sb	0.0032	0.0006	ppb	1049.80	1000.	
135 Ba	1.473	0.2946	ppb	167.31	2000.	
137 Ba	1.4995	0.2999	ppb	182.99	#VALUE!	
182 W	0.0746	0.0149	ppb	80.75	1000.	
203 Tl	0.416	0.0832	ppb	28.53	1000.	
205 Tl	0.5325	0.1065	ppb	51.99	#VALUE!	
208 Pb	1.7415	0.3483	ppb	38.73	2000.	
232 Th	0.1514	0.0303	ppb	128.10	1000.	
238 U	0.0473	0.0095	ppb	195.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2146198.00	75.16	2088826.00	102.7	69.5 - 120	
45 Sc	1497605.40	67.71	1552281.90	96.5	69.5 - 120	
72 Ge	310712.84	53.36	310193.78	100.2	69.5 - 120	
159 Tb	3429784.50	44.03	3000713.50	114.3	69.5 - 120	
209 Bi	1967389.40	34.05	1596081.40	123.3	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

2 :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 4000370

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\047SMPL.D\047SMPL.D#
Date Acquired: May 8 2018 06:26 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-009
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	9.385	1.877	ppb	3.31	100.	
11 B	164.3	32.86	ppb	4.21	1000.	
23 Na	3,569.5	713.9	ppb	1.52	200000.	
25 Mg	112,150.	22,430.	ppb	1.40	200000.	
27 Al	189,850.	37,970.	ppb	2.63	200000.	
28 Si	3,654.5	730.9	ppb	1.49	#VALUE!	
29 Si	2,771.	554.2	ppb	5.66	10000.	
39 K	50,650.	10,130.	ppb	2.09	200000.	
43 Ca	915,500.	183,100.	ppb	0.89	#VALUE!	
44 Ca	868,500.	173,700.	ppb	1.37	200000.	
51 V	592.5	118.5	ppb	1.06	1000.	
52 Cr	190.9	38.18	ppb	0.92	2000.	
53 Cr	193.35	38.67	ppb	1.75	#VALUE!	
55 Mn	5,430.	1,086.	ppb	0.88	2000.	
56 Fe	229,550.	45,910.	ppb	0.32	#VALUE!	
57 Fe	217,650.	43,530.	ppb	1.37	100000.	
59 Co	77.2	15.44	ppb	0.92	1000.	
60 Ni	161.15	32.23	ppb	1.07	1000.	
63 Cu	150.5	30.1	ppb	0.64	#VALUE!	
65 Cu	152.7	30.54	ppb	0.70	2000.	
66 Zn	477.55	95.51	ppb	0.26	2000.	
68 Zn	585.	117.	ppb	1.15	#VALUE!	
75 As	198.55	39.71	ppb	0.67	1000.	
82 Se	6.34	1.268	ppb	28.48	1000.	
88 Sr	3,280.	656.	ppb	1.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.695	2.339	ppb	3.43	1000.	
107 Ag	0.8965	0.1793	ppb	19.69	100.	
109 Ag	0.708	0.1416	ppb	6.85	#VALUE!	
111 Cd	3.543	0.7086	ppb	6.11	#VALUE!	
114 Cd	0.902	0.1804	ppb	22.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.575	9.115	ppb	2.02	1000.	
120 Sn	46.395	9.279	ppb	1.96	#VALUE!	
121 Sb	2.822	0.5644	ppb	4.66	#VALUE!	
123 Sb	2.9985	0.5997	ppb	3.90	1000.	
135 Ba	3,609.5	721.9	ppb	1.22	2000.	
137 Ba	3,637.	727.4	ppb	1.45	#VALUE!	
182 W	0.933	0.1866	ppb	13.19	1000.	
203 Tl	3.48	0.696	ppb	3.60	1000.	
205 Tl	3.5955	0.7191	ppb	4.83	#VALUE!	
208 Pb	150.2	30.04	ppb	2.55	2000.	
232 Th	75.75	15.15	ppb	1.63	1000.	
238 U	13.985	2.797	ppb	1.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1554976.80	1.14	2088826.00	74.4	69.5 - 120	
45 Sc	1347212.80	0.43	1552281.90	86.8	69.5 - 120	
72 Ge	256062.78	0.15	310193.78	82.5	69.5 - 120	
159 Tb	2953266.80	1.16	3000713.50	98.4	69.5 - 120	
209 Bi	1638814.00	3.09	1596081.40	102.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\048SMPL.D\048SMPL.D#
Date Acquired: May 8 2018 06:30 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-010
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	8.58	1.716	ppb	2.93	100.	
11 B	150.75	30.15	ppb	4.53	1000.	
23 Na	6,120.	1,224.	ppb	3.63	200000.	
25 Mg	71,200.	14,240.	ppb	3.53	200000.	
27 Al	172,400.	34,480.	ppb	3.64	200000.	
28 Si	3,379.5	675.9	ppb	2.66	#VALUE!	
29 Si	2,511.5	502.3	ppb	6.61	10000.	
39 K	44,045.	8,809.	ppb	1.75	200000.	
43 Ca	326,250.	65,250.	ppb	2.49	#VALUE!	
44 Ca	313,750.	62,750.	ppb	1.54	200000.	
51 V	328.9	65.78	ppb	1.17	1000.	
52 Cr	177.35	35.47	ppb	2.64	2000.	
53 Cr	182.8	36.56	ppb	4.33	#VALUE!	
55 Mn	3,117.	623.4	ppb	1.97	2000.	
56 Fe	155,850.	31,170.	ppb	1.48	#VALUE!	
57 Fe	149,500.	29,900.	ppb	1.05	100000.	
59 Co	56.45	11.29	ppb	3.27	1000.	
60 Ni	141.	28.2	ppb	2.70	1000.	
63 Cu	111.75	22.35	ppb	2.87	#VALUE!	
65 Cu	112.75	22.55	ppb	1.19	2000.	
66 Zn	455.6	91.12	ppb	3.27	2000.	
68 Zn	494.55	98.91	ppb	1.69	#VALUE!	
75 As	32.445	6.489	ppb	6.79	1000.	
82 Se	4.838	0.9676	ppb	8.15	1000.	
88 Sr	1,287.5	257.5	ppb	0.37	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.6765	0.9353	ppb	2.79	1000.	
107 Ag	0.837	0.1674	ppb	6.14	100.	
109 Ag	0.698	0.1396	ppb	5.77	#VALUE!	
111 Cd	2.282	0.4564	ppb	16.78	#VALUE!	
114 Cd	0.4417	0.0883	ppb	9.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.39	9.478	ppb	2.69	1000.	
120 Sn	47.265	9.453	ppb	1.57	#VALUE!	
121 Sb	1.6125	0.3225	ppb	5.04	#VALUE!	
123 Sb	1.517	0.3034	ppb	4.57	1000.	
135 Ba	1,741.	348.2	ppb	1.16	2000.	
137 Ba	1,730.5	346.1	ppb	2.42	#VALUE!	
182 W	0.6235	0.1247	ppb	7.04	1000.	
203 Tl	2.926	0.5852	ppb	11.28	1000.	
205 Tl	3.1325	0.6265	ppb	7.12	#VALUE!	
208 Pb	129.05	25.81	ppb	2.46	2000.	
232 Th	75.55	15.11	ppb	0.64	1000.	
238 U	8.525	1.705	ppb	1.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1525329.00	4.57	2088826.00	73.0	69.5 - 120	
45 Sc	1272018.00	0.31	1552281.90	81.9	69.5 - 120	
72 Ge	252218.53	0.83	310193.78	81.3	69.5 - 120	
159 Tb	2875399.30	0.25	3000713.50	95.8	69.5 - 120	
209 Bi	1637035.10	1.58	1596081.40	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000372

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\049SMPL.D\049SMPL.D#
Date Acquired: May 8 2018 06:34 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-011
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	1.788	0.3576	ppb	10.98	100.	
11 B	29.	5.8	ppb	25.53	1000.	
23 Na	904.	180.8	ppb	32.72	200000.	
25 Mg	16,480.	3,296.	ppb	26.09	200000.	
27 Al	36,715.	7,343.	ppb	20.70	200000.	
28 Si	-1,710.5	-342.1	ppb	21.21	#VALUE!	
29 Si	-2,129.5	-425.9	ppb	15.32	10000.	LOW
39 K	9,165.	1,833.	ppb	18.07	200000.	
43 Ca	188,450.	37,690.	ppb	18.27	#VALUE!	
44 Ca	170,400.	34,080.	ppb	16.70	200000.	
51 V	60.4	12.08	ppb	15.57	1000.	
52 Cr	31.42	6.284	ppb	19.34	2000.	
53 Cr	22.21	4.442	ppb	32.55	#VALUE!	
55 Mn	788.	157.6	ppb	12.13	2000.	
56 Fe	32,405.	6,481.	ppb	12.86	#VALUE!	
57 Fe	31,730.	6,346.	ppb	15.75	100000.	
59 Co	12.335	2.467	ppb	14.66	1000.	
60 Ni	28.865	5.773	ppb	14.23	1000.	
63 Cu	21.995	4.399	ppb	13.50	#VALUE!	
65 Cu	22.435	4.487	ppb	14.02	2000.	
66 Zn	75.45	15.09	ppb	12.82	2000.	
68 Zn	95.15	19.03	ppb	14.68	#VALUE!	
75 As	7.455	1.491	ppb	13.59	1000.	
82 Se	2.188	0.4376	ppb	16.88	1000.	
88 Sr	445.6	89.12	ppb	13.07	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.932	0.1864	ppb	14.74	1000.	
107 Ag	0.1329	0.0266	ppb	18.89	100.	
109 Ag	0.1132	0.0226	ppb	10.02	#VALUE!	
111 Cd	-0.087	-0.0174	ppb	240.14	#VALUE!	
114 Cd	0.3887	0.0777	ppb	12.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	8.255	1.651	ppb	19.35	1000.	
120 Sn	8.505	1.701	ppb	17.34	#VALUE!	
121 Sb	0.3573	0.0715	ppb	21.74	#VALUE!	
123 Sb	0.264	0.0528	ppb	12.84	1000.	
135 Ba	613.5	122.7	ppb	16.04	2000.	
137 Ba	623.	124.6	ppb	16.73	#VALUE!	
182 W	0.2291	0.0458	ppb	27.11	1000.	
203 Tl	0.4605	0.0921	ppb	50.60	1000.	
205 Tl	0.599	0.1198	ppb	25.36	#VALUE!	
208 Pb	25.37	5.074	ppb	19.85	2000.	
232 Th	14.215	2.843	ppb	18.82	1000.	
238 U	2.1345	0.4269	ppb	19.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2351843.00	8.55	2088826.00	112.6	69.5 - 120	
45 Sc	1963593.30	12.58	1552281.90	126.5	69.5 - 120	IS Fai
72 Ge	415242.16	9.56	310193.78	133.9	69.5 - 120	IS Fai
159 Tb	5023288.00	15.72	3000713.50	167.4	69.5 - 120	IS Fai
209 Bi	3014798.00	20.26	1596081.40	188.9	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

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

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000373

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\050SMPL.D\050SMPL.D#
Date Acquired: May 8 2018 06:38 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-012
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	12.455	2.491	ppb	3.30	100.	
11 B	217.25	43.45	ppb	0.64	1000.	
23 Na	3,175.5	635.1	ppb	3.35	200000.	
25 Mg	100,350.	20,070.	ppb	2.51	200000.	
27 Al	268,400.	53,680.	ppb	3.00	200000.	
28 Si	3,356.	671.2	ppb	5.96	#VALUE!	
29 Si	2,583.	516.6	ppb	5.59	10000.	
39 K	82,950.	16,590.	ppb	2.61	200000.	
43 Ca	282,700.	56,540.	ppb	2.35	#VALUE!	
44 Ca	273,350.	54,670.	ppb	1.64	200000.	
51 V	577.	115.4	ppb	1.42	1000.	
52 Cr	257.3	51.46	ppb	1.97	2000.	
53 Cr	267.75	53.55	ppb	2.35	#VALUE!	
55 Mn	4,081.	816.2	ppb	1.03	2000.	
56 Fe	238,200.	47,640.	ppb	0.72	#VALUE!	
57 Fe	228,650.	45,730.	ppb	1.77	100000.	
59 Co	97.3	19.46	ppb	1.27	1000.	
60 Ni	197.75	39.55	ppb	3.09	1000.	
63 Cu	154.25	30.85	ppb	0.77	#VALUE!	
65 Cu	152.55	30.51	ppb	1.01	2000.	
66 Zn	648.	129.6	ppb	2.33	2000.	
68 Zn	729.	145.8	ppb	2.00	#VALUE!	
75 As	86.2	17.24	ppb	1.79	1000.	
82 Se	6.69	1.338	ppb	13.51	1000.	
88 Sr	1,790.5	358.1	ppb	1.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.315	1.263	ppb	3.43	1000.	
107 Ag	1.0715	0.2143	ppb	1.35	100.	
109 Ag	0.875	0.175	ppb	8.88	#VALUE!	
111 Cd	4.6255	0.9251	ppb	8.42	#VALUE!	
114 Cd	1.5855	0.3171	ppb	3.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.43	9.886	ppb	0.89	1000.	
120 Sn	49.81	9.962	ppb	1.88	#VALUE!	
121 Sb	2.1295	0.4259	ppb	4.01	#VALUE!	
123 Sb	2.2205	0.4441	ppb	3.73	1000.	
135 Ba	2,953.	590.6	ppb	1.27	2000.	
137 Ba	2,956.	591.2	ppb	1.18	#VALUE!	
182 W	1.0425	0.2085	ppb	3.87	1000.	
203 Tl	4.225	0.845	ppb	1.13	1000.	
205 Tl	4.392	0.8784	ppb	3.65	#VALUE!	
208 Pb	197.3	39.46	ppb	1.23	2000.	
232 Th	116.35	23.27	ppb	0.64	1000.	
238 U	11.015	2.203	ppb	2.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1700566.50	4.81	2088826.00	81.4	69.5 - 120	
45 Sc	1380387.90	4.71	1552281.90	88.9	69.5 - 120	
72 Ge	262067.06	2.79	310193.78	84.5	69.5 - 120	
159 Tb	2916821.80	2.24	3000713.50	97.2	69.5 - 120	
209 Bi	1615565.50	1.01	1596081.40	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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\JLE05C.B\051SMPL.D\051SMPL.D#
Date Acquired: May 8 2018 06:43 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	0.0128	0.0128	ppb	16.69	100.	
11 B	3.013	3.013	ppb	15.28	1000.	
23 Na	14.66	14.66	ppb	3.94	200000.	
25 Mg	108.7	108.7	ppb	1.38	200000.	
27 Al	256.8	256.8	ppb	1.17	200000.	
28 Si	33.62	33.62	ppb	40.10	#VALUE!	
29 Si	17.68	17.68	ppb	5.69	10000.	
39 K	64.09	64.09	ppb	7.14	200000.	
43 Ca	835.4	835.4	ppb	7.65	#VALUE!	
44 Ca	828.4	828.4	ppb	1.06	200000.	
51 V	0.3812	0.3812	ppb	3.33	1000.	
52 Cr	0.1897	0.1897	ppb	12.60	2000.	
53 Cr	0.9066	0.9066	ppb	35.67	#VALUE!	
55 Mn	7.921	7.921	ppb	0.54	2000.	
56 Fe	210.1	210.1	ppb	1.35	#VALUE!	
57 Fe	220.2	220.2	ppb	1.43	100000.	
59 Co	0.1092	0.1092	ppb	21.36	1000.	
60 Ni	0.2179	0.2179	ppb	9.59	1000.	
63 Cu	0.2081	0.2081	ppb	13.76	#VALUE!	
65 Cu	0.1967	0.1967	ppb	6.81	2000.	
66 Zn	0.6665	0.6665	ppb	8.68	2000.	
68 Zn	0.4936	0.4936	ppb	21.11	#VALUE!	
75 As	-0.0457	-0.0457	ppb	469.56	1000.	
82 Se	0.0643	0.0643	ppb	46.49	1000.	
88 Sr	1.835	1.835	ppb	2.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0124	0.0124	ppb	62.56	1000.	
107 Ag	0.0006	0.0006	ppb	430.29	100.	
109 Ag	-0.0021	-0.0021	ppb	70.18	#VALUE!	
111 Cd	0.0089	0.0089	ppb	397.14	#VALUE!	
114 Cd	0.0026	0.0026	ppb	312.86	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1187	0.1187	ppb	10.13	1000.	
120 Sn	0.1035	0.1035	ppb	12.92	#VALUE!	
121 Sb	0.0045	0.0045	ppb	74.37	#VALUE!	
123 Sb	0.0017	0.0017	ppb	54.51	1000.	
135 Ba	3.838	3.838	ppb	3.24	2000.	
137 Ba	3.712	3.712	ppb	0.85	#VALUE!	
182 W	0.0046	0.0046	ppb	70.31	1000.	
203 Tl	-0.0102	-0.0102	ppb	32.95	1000.	
205 Tl	0.0124	0.0124	ppb	158.52	#VALUE!	
208 Pb	0.0999	0.0999	ppb	11.59	2000.	
232 Th	0.0968	0.0968	ppb	3.70	1000.	
238 U	0.0116	0.0116	ppb	19.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2262281.50	1.31	2088826.00	108.3	69.5 - 120	
45 Sc	1592332.80	1.98	1552281.90	102.6	69.5 - 120	
72 Ge	318189.41	0.37	310193.78	102.6	69.5 - 120	
159 Tb	2907829.80	1.66	3000713.50	96.9	69.5 - 120	
209 Bi	1494724.80	1.14	1596081.40	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\052_CCV.D\052_CCV.D#
Date Acquired: May 8 2018 06:47 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: May 08 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	26.29	ppb	2.40	25	105.16	
11 B	25.92	ppb	2.48	25	103.68	
23 Na	5,500.	ppb	3.38	5,000	110	
25 Mg	5,573.	ppb	2.01	5,000	111.46	Fail
27 Al	532.4	ppb	1.85	500	106.48	
28 Si	493.2	ppb	5.23	500	98.64	
29 Si	493.3	ppb	4.48	500	98.66	
39 K	5,231.	ppb	1.81	5,000	104.62	
43 Ca	5,137.	ppb	1.44	5,000	102.74	
44 Ca	5,223.	ppb	0.81	5,000	104.46	
51 V	25.84	ppb	2.65	25	103.36	
52 Cr	25.99	ppb	0.52	25	103.96	
53 Cr	26.46	ppb	2.41	25	105.84	
55 Mn	25.87	ppb	0.90	25	103.48	
56 Fe	5,181.	ppb	2.56	5,000	103.62	
57 Fe	5,206.	ppb	4.03	5,000	104.12	
59 Co	26.26	ppb	1.47	25	105.04	
60 Ni	26.38	ppb	1.29	25	105.52	
63 Cu	26.48	ppb	1.71	25	105.92	
65 Cu	26.15	ppb	2.01	25	104.6	
66 Zn	27.	ppb	1.19	25	108	
68 Zn	26.32	ppb	1.20	25	105.28	
75 As	26.03	ppb	2.38	25	104.12	
82 Se	26.	ppb	1.18	25	104	
88 Sr	24.72	ppb	1.60	25	98.88	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.12	ppb	1.69	25	100.48	
107 Ag	25.35	ppb	0.49	25	101.4	
109 Ag	25.13	ppb	0.60	25	100.52	
111 Cd	25.43	ppb	1.46	25	101.72	
114 Cd	25.5	ppb	0.44	25	102	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	26.71	ppb	0.79	25	106.84	
120 Sn	26.56	ppb	1.32	25	106.24	
121 Sb	27.12	ppb	2.30	25	108.48	
123 Sb	26.93	ppb	0.60	25	107.72	
135 Ba	26.64	ppb	1.61	25	106.56	
137 Ba	26.65	ppb	2.15	25	106.6	
182 W	25.5	ppb	0.51	25	102	
203 Tl	26.01	ppb	1.78	25	104.04	
205 Tl	25.66	ppb	1.23	25	102.64	
208 Pb	25.77	ppb	0.76	25	103.08	
232 Th	25.8	ppb	0.88	25	103.2	
238 U	26.34	ppb	1.01	25	105.36	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2430931.80	1.88	2088826.00	116.4	80 - 120.4	
45 Sc	1712415.40	1.10	1552281.90	110.3	80 - 120.4	
72 Ge	329945.38	1.66	310193.78	106.4	80 - 120.4	
159 Tb	3072965.30	0.80	3000713.50	102.4	80 - 120.4	
209 Bi	1585743.40	0.97	1596081.40	99.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000376

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\053_CCB.D\053_CCB.D#
Date Acquired: May 8 2018 06:51 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: May 08 2018 04:20 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0038	ppb	21.42	1.00	
11 B	2.343	ppb	16.19	1.00	
23 Na	0.9703	ppb	24.80	1.00	
25 Mg	0.0786	ppb	55.93	1.00	
27 Al	0.1282	ppb	64.25	1.00	
28 Si	43.96	ppb	56.98	1.00	
29 Si	38.09	ppb	30.30	1.00	
39 K	10.48	ppb	13.81	1.00	
43 Ca	3.686	ppb	36.57	1.00	
44 Ca	-1.198	ppb	107.43	1.00	
51 V	-0.0146	ppb	193.51	1.00	
52 Cr	0.129	ppb	16.08	1.00	
53 Cr	0.6603	ppb	27.90	1.00	
55 Mn	0.0152	ppb	62.92	1.00	
56 Fe	9.655	ppb	22.46	1.00	
57 Fe	7.462	ppb	17.19	1.00	
59 Co	0.01	ppb	24.33	1.00	
60 Ni	-0.0038	ppb	546.49	1.00	
63 Cu	0.0701	ppb	15.72	1.00	
65 Cu	0.0839	ppb	41.81	1.00	
66 Zn	0.0572	ppb	23.28	1.00	
68 Zn	-0.073	ppb	89.74	1.00	
75 As	0.0339	ppb	486.73	1.00	
82 Se	0.044	ppb	236.81	1.00	
88 Sr	-0.0018	ppb	118.17	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0331	ppb	35.35	1.00	
107 Ag	0.0001	ppb	854.09	1.00	
109 Ag	-0.0024	ppb	93.54	1.00	
111 Cd	-0.0308	ppb	61.38	1.00	
114 Cd	-0.0004	ppb	1102.10	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0452	ppb	13.32	1.00	
120 Sn	0.0521	ppb	12.58	1.00	
121 Sb	0.0042	ppb	41.79	1.00	
123 Sb	0.0059	ppb	91.57	1.00	
135 Ba	0.0319	ppb	47.10	1.00	
137 Ba	0.0095	ppb	146.25	1.00	
182 W	0.0413	ppb	24.18	1.00	
203 Tl	0.0064	ppb	638.62	1.00	
205 Tl	-0.0061	ppb	435.56	1.00	
208 Pb	0.1175	ppb	4.27	1.00	
232 Th	0.0348	ppb	9.71	1.00	
238 U	0.0039	ppb	79.65	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2132820.50	0.34	2088826.00	102.1	79.5 - 120	
45 Sc	1481444.60	1.04	1552281.90	95.4	79.5 - 120	
72 Ge	294754.69	0.72	310193.78	95.0	79.5 - 120	
159 Tb	2737835.50	0.68	3000713.50	91.2	79.5 - 120	
209 Bi	1431487.40	1.22	1596081.40	89.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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\JLE05C.B\054SMPL.D\054SMPL.D#
Date Acquired: May 8 2018 06:56 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-013
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	9.59	1.918	ppb	4.92	100.	
11 B	160.45	32.09	ppb	2.28	1000.	
23 Na	11,095.	2,219.	ppb	0.26	200000.	
25 Mg	88,500.	17,700.	ppb	2.48	200000.	
27 Al	203,450.	40,690.	ppb	4.28	200000.	
28 Si	2,752.5	550.5	ppb	6.40	#VALUE!	
29 Si	2,776.5	555.3	ppb	6.61	10000.	
39 K	48,715.	9,743.	ppb	4.15	200000.	
43 Ca	737,000.	147,400.	ppb	3.89	#VALUE!	
44 Ca	696,000.	139,200.	ppb	3.37	200000.	
51 V	374.6	74.92	ppb	0.95	1000.	
52 Cr	183.6	36.72	ppb	1.38	2000.	
53 Cr	204.9	40.98	ppb	2.34	#VALUE!	
55 Mn	6,815.	1,363.	ppb	2.08	2000.	
56 Fe	185,750.	37,150.	ppb	1.69	#VALUE!	
57 Fe	178,550.	35,710.	ppb	1.26	100000.	
59 Co	83.05	16.61	ppb	1.43	1000.	
60 Ni	204.7	40.94	ppb	0.57	1000.	
63 Cu	110.7	22.14	ppb	1.51	#VALUE!	
65 Cu	111.65	22.33	ppb	2.49	2000.	
66 Zn	472.9	94.58	ppb	1.19	2000.	
68 Zn	555.5	111.1	ppb	0.61	#VALUE!	
75 As	24.48	4.896	ppb	3.36	1000.	
82 Se	5.925	1.185	ppb	29.60	1000.	
88 Sr	1,585.5	317.1	ppb	0.64	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.97	2.194	ppb	3.69	1000.	
107 Ag	0.835	0.167	ppb	2.57	100.	
109 Ag	0.663	0.1326	ppb	6.26	#VALUE!	
111 Cd	3.9825	0.7965	ppb	1.07	#VALUE!	
114 Cd	0.9855	0.1971	ppb	11.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.64	9.928	ppb	0.27	1000.	
120 Sn	50.15	10.03	ppb	1.06	#VALUE!	
121 Sb	1.923	0.3846	ppb	6.34	#VALUE!	
123 Sb	1.994	0.3988	ppb	6.34	1000.	
135 Ba	3,225.	645.	ppb	0.78	2000.	
137 Ba	3,204.5	640.9	ppb	1.68	#VALUE!	
182 W	0.9695	0.1939	ppb	9.60	1000.	
203 Tl	3.294	0.6588	ppb	7.56	1000.	
205 Tl	3.283	0.6566	ppb	9.21	#VALUE!	
208 Pb	122.7	24.54	ppb	1.56	2000.	
232 Th	88.1	17.62	ppb	1.28	1000.	
238 U	13.795	2.759	ppb	1.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2352417.50	3.65	2088826.00	112.6	69.5 - 120	
45 Sc	1788916.90	2.20	1552281.90	115.2	69.5 - 120	
72 Ge	334420.41	0.88	310193.78	107.8	69.5 - 120	
159 Tb	3200430.30	0.49	3000713.50	106.7	69.5 - 120	
209 Bi	1616571.80	1.20	1596081.40	101.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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\JLE05C.B\055SMPL.D\055SMPL.D#
Date Acquired: May 8 2018 07:00 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-014
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	12.76	2.552	ppb	3.12	100.	
11 B	182.95	36.59	ppb	4.55	1000.	
23 Na	7,250.	1,450.	ppb	4.04	200000.	
25 Mg	124,150.	24,830.	ppb	3.04	200000.	
27 Al	267,950.	53,590.	ppb	2.19	200000.	
28 Si	3,182.	636.4	ppb	5.90	#VALUE!	
29 Si	3,213.	642.6	ppb	5.17	10000.	
39 K	63,150.	12,630.	ppb	1.23	200000.	
43 Ca	639,000.	127,800.	ppb	2.20	#VALUE!	
44 Ca	600,500.	120,100.	ppb	1.84	200000.	
51 V	515.	103.	ppb	1.88	1000.	
52 Cr	248.25	49.65	ppb	1.24	2000.	
53 Cr	270.65	54.13	ppb	0.44	#VALUE!	
55 Mn	6,960.	1,392.	ppb	0.14	2000.	
56 Fe	268,750.	53,750.	ppb	0.83	#VALUE!	
57 Fe	256,050.	51,210.	ppb	1.96	100000.	
59 Co	93.2	18.64	ppb	1.43	1000.	
60 Ni	196.45	39.29	ppb	2.54	1000.	
63 Cu	146.35	29.27	ppb	1.09	#VALUE!	
65 Cu	147.1	29.42	ppb	2.05	2000.	
66 Zn	619.5	123.9	ppb	1.55	2000.	
68 Zn	677.5	135.5	ppb	0.51	#VALUE!	
75 As	46.02	9.204	ppb	3.36	1000.	
82 Se	5.775	1.155	ppb	18.19	1000.	
88 Sr	1,713.	342.6	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.56	1.512	ppb	0.36	1000.	
107 Ag	1.1115	0.2223	ppb	6.19	100.	
109 Ag	0.757	0.1514	ppb	8.32	#VALUE!	
111 Cd	4.8485	0.9697	ppb	5.63	#VALUE!	
114 Cd	0.566	0.1132	ppb	20.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.55	10.71	ppb	2.21	1000.	
120 Sn	54.05	10.81	ppb	2.48	#VALUE!	
121 Sb	2.256	0.4512	ppb	4.12	#VALUE!	
123 Sb	2.442	0.4884	ppb	0.90	1000.	
135 Ba	2,802.5	560.5	ppb	1.36	2000.	
137 Ba	2,781.5	556.3	ppb	0.82	#VALUE!	
182 W	0.8545	0.1709	ppb	5.35	1000.	
203 Tl	4.325	0.865	ppb	3.61	1000.	
205 Tl	4.159	0.8318	ppb	2.78	#VALUE!	
208 Pb	164.	32.8	ppb	0.60	2000.	
232 Th	122.15	24.43	ppb	0.73	1000.	
238 U	17.595	3.519	ppb	1.32	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2478142.50	2.41	2088826.00	118.6	69.5 - 120	
45 Sc	1809748.50	1.94	1552281.90	116.6	69.5 - 120	
72 Ge	336402.50	0.61	310193.78	108.4	69.5 - 120	
159 Tb	3206046.80	0.75	3000713.50	106.8	69.5 - 120	
209 Bi	1601466.80	1.29	1596081.40	100.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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\JLE05C.B\056SMPL.D\056SMPL.D#
Date Acquired: May 8 2018 07:04 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-015
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	9.98	1.996	ppb	2.47	100.	
11 B	140.	28.	ppb	5.29	1000.	
23 Na	14,770.	2,954.	ppb	1.23	200000.	
25 Mg	106,800.	21,360.	ppb	1.88	200000.	
27 Al	203,000.	40,600.	ppb	2.39	200000.	
28 Si	2,475.5	495.1	ppb	9.91	#VALUE!	
29 Si	2,594.	518.8	ppb	6.66	10000.	
39 K	49,925.	9,985.	ppb	1.69	200000.	
43 Ca	531,000.	106,200.	ppb	1.04	#VALUE!	
44 Ca	496,750.	99,350.	ppb	1.35	200000.	
51 V	606.	121.2	ppb	2.66	1000.	
52 Cr	183.55	36.71	ppb	0.58	2000.	
53 Cr	204.45	40.89	ppb	3.72	#VALUE!	
55 Mn	12,385.	2,477.	ppb	1.67	2000.	>LDR
56 Fe	227,050.	45,410.	ppb	1.26	#VALUE!	
57 Fe	217,800.	43,560.	ppb	0.99	100000.	
59 Co	105.85	21.17	ppb	0.48	1000.	
60 Ni	320.75	64.15	ppb	1.17	1000.	
63 Cu	159.9	31.98	ppb	1.51	#VALUE!	
65 Cu	162.5	32.5	ppb	1.33	2000.	
66 Zn	488.7	97.74	ppb	0.55	2000.	
68 Zn	671.5	134.3	ppb	1.00	#VALUE!	
75 As	182.9	36.58	ppb	0.68	1000.	
82 Se	5.37	1.074	ppb	9.37	1000.	
88 Sr	1,644.5	328.9	ppb	1.79	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	32.795	6.559	ppb	1.47	1000.	
107 Ag	0.804	0.1608	ppb	5.35	100.	
109 Ag	0.679	0.1358	ppb	6.92	#VALUE!	
111 Cd	3.927	0.7854	ppb	1.36	#VALUE!	
114 Cd	0.814	0.1628	ppb	17.64	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.	10.2	ppb	0.98	1000.	
120 Sn	51.55	10.31	ppb	0.73	#VALUE!	
121 Sb	3.1895	0.6379	ppb	4.56	#VALUE!	
123 Sb	3.158	0.6316	ppb	1.84	1000.	
135 Ba	5,855.	1,171.	ppb	0.67	2000.	
137 Ba	5,765.	1,153.	ppb	1.50	#VALUE!	
182 W	1.183	0.2366	ppb	5.63	1000.	
203 Tl	5.105	1.021	ppb	2.80	1000.	
205 Tl	5.13	1.026	ppb	2.95	#VALUE!	
208 Pb	142.35	28.47	ppb	1.16	2000.	
232 Th	98.35	19.67	ppb	0.97	1000.	
238 U	17.49	3.498	ppb	0.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2479806.00	3.03	2088826.00	118.7	69.5 - 120	
45 Sc	1793497.60	2.20	1552281.90	115.5	69.5 - 120	
72 Ge	335585.13	1.12	310193.78	108.2	69.5 - 120	
159 Tb	3229332.80	0.39	3000713.50	107.6	69.5 - 120	
209 Bi	1614589.60	1.37	1596081.40	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000380

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\057SMPL.D\057SMPL.D#
Date Acquired: May 8 2018 07:09 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-016
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	-0.0086	-0.0017	ppb	54.57	100.	
11 B	3.496	0.6992	ppb	27.56	1000.	
23 Na	-7.73	-1.546	ppb	8.05	200000.	
25 Mg	0.1757	0.0351	ppb	587.53	200000.	
27 Al	0.0483	0.0097	ppb	4120.00	200000.	
28 Si	-2,956.5	-591.3	ppb	7.45	#VALUE!	
29 Si	-2,859.	-571.8	ppb	4.55	10000.	LOW
39 K	-522.	-104.4	ppb	5.22	200000.	
43 Ca	-11.53	-2.306	ppb	123.11	#VALUE!	
44 Ca	-49.33	-9.866	ppb	28.60	200000.	
51 V	-0.524	-0.1048	ppb	24.55	1000.	
52 Cr	-1.3085	-0.2617	ppb	39.97	2000.	
53 Cr	-13.715	-2.743	ppb	5.37	#VALUE!	
55 Mn	0.028	0.0056	ppb	885.52	2000.	
56 Fe	-661.5	-132.3	ppb	10.95	#VALUE!	
57 Fe	-255.5	-51.1	ppb	6.26	100000.	LOW
59 Co	0.0195	0.0039	ppb	99.61	1000.	
60 Ni	-0.125	-0.025	ppb	15.25	1000.	
63 Cu	-0.5195	-0.1039	ppb	7.30	#VALUE!	
65 Cu	-0.4401	-0.088	ppb	23.55	2000.	
66 Zn	-0.4577	-0.0915	ppb	34.41	2000.	
68 Zn	-3.496	-0.6992	ppb	23.84	#VALUE!	
75 As	0.0499	0.01	ppb	849.72	1000.	
82 Se	1.4665	0.2933	ppb	39.99	1000.	
88 Sr	-0.0169	-0.0034	ppb	50.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.0011	-0.0002	ppb	188.46	1000.	
107 Ag	-0.0052	-0.001	ppb	210.61	100.	
109 Ag	-0.0126	-0.0025	ppb	95.29	#VALUE!	
111 Cd	-0.4502	-0.09	ppb	52.90	#VALUE!	
114 Cd	-0.037	-0.0074	ppb	51.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.7565	0.1513	ppb	72.77	1000.	
120 Sn	0.762	0.1524	ppb	70.93	#VALUE!	
121 Sb	0.008	0.0016	ppb	282.10	#VALUE!	
123 Sb	-0.0098	-0.002	ppb	50.34	1000.	
135 Ba	0.0638	0.0128	ppb	47.82	2000.	
137 Ba	-0.0163	-0.0033	ppb	253.14	#VALUE!	
182 W	0.0145	0.0029	ppb	34.60	1000.	
203 Tl	0.4472	0.0894	ppb	62.34	1000.	
205 Tl	0.4139	0.0828	ppb	49.90	#VALUE!	
208 Pb	1.0625	0.2125	ppb	79.48	2000.	
232 Th	0.0981	0.0196	ppb	41.97	1000.	
238 U	-0.0068	-0.0014	ppb	30.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3261141.50	35.14	2088826.00	156.1	69.5 - 120	IS Fai
45 Sc	2324653.80	22.94	1552281.90	149.8	69.5 - 120	IS Fai
72 Ge	457508.41	25.68	310193.78	147.5	69.5 - 120	IS Fai
159 Tb	4738113.50	23.05	3000713.50	157.9	69.5 - 120	IS Fai
209 Bi	2787549.30	26.19	1596081.40	174.6	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

2 :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 4000381

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\058SMPL.D\058SMPL.D#
Date Acquired: May 8 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-017
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	-0.0126	-0.0025	ppb	55.75	100.	
11 B	2.4465	0.4893	ppb	37.75	1000.	
23 Na	-7.405	-1.481	ppb	23.38	200000.	
25 Mg	-0.7375	-0.1475	ppb	5.89	200000.	
27 Al	-1.5555	-0.3111	ppb	11.57	200000.	
28 Si	-2,818.	-563.6	ppb	18.75	#VALUE!	
29 Si	-2,894.	-578.8	ppb	8.77	10000.	LOW
39 K	-511.	-102.2	ppb	9.12	200000.	
43 Ca	-20.1	-4.02	ppb	27.79	#VALUE!	
44 Ca	-56.5	-11.3	ppb	11.94	200000.	
51 V	-0.575	-0.115	ppb	7.42	1000.	
52 Cr	-0.7315	-0.1463	ppb	176.62	2000.	
53 Cr	-13.125	-2.625	ppb	9.59	#VALUE!	
55 Mn	-0.0355	-0.0071	ppb	563.96	2000.	
56 Fe	-649.	-129.8	ppb	10.42	#VALUE!	
57 Fe	-256.5	-51.3	ppb	6.93	100000.	LOW
59 Co	0.0132	0.0026	ppb	121.09	1000.	
60 Ni	-0.0946	-0.0189	ppb	19.71	1000.	
63 Cu	-0.516	-0.1032	ppb	13.13	#VALUE!	
65 Cu	-0.4852	-0.097	ppb	10.08	2000.	
66 Zn	-0.2343	-0.0469	ppb	216.39	2000.	
68 Zn	-2.8075	-0.5615	ppb	20.43	#VALUE!	
75 As	0.1077	0.0215	ppb	219.00	1000.	
82 Se	0.1533	0.0307	ppb	501.96	1000.	
88 Sr	-0.0235	-0.0047	ppb	58.64	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0033	0.0007	ppb	237.47	1000.	
107 Ag	-0.0033	-0.0007	ppb	505.15	100.	
109 Ag	-0.0101	-0.002	ppb	50.60	#VALUE!	
111 Cd	-0.4116	-0.0823	ppb	41.59	#VALUE!	
114 Cd	0.0031	0.0006	ppb	529.21	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.507	0.1014	ppb	100.49	1000.	
120 Sn	0.514	0.1028	ppb	90.63	#VALUE!	
121 Sb	0.0175	0.0035	ppb	113.62	#VALUE!	
123 Sb	-0.0108	-0.0022	ppb	115.24	1000.	
135 Ba	0.066	0.0132	ppb	47.88	2000.	
137 Ba	-0.0619	-0.0124	ppb	56.74	#VALUE!	
182 W	0.0301	0.006	ppb	85.54	1000.	
203 Tl	0.5395	0.1079	ppb	34.34	1000.	
205 Tl	0.4959	0.0992	ppb	17.49	#VALUE!	
208 Pb	1.6995	0.3399	ppb	55.31	2000.	
232 Th	0.0403	0.0081	ppb	21.29	1000.	
238 U	-0.008	-0.0016	ppb	12.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3003533.50	40.65	2088826.00	143.8	69.5 - 120	IS Fai
45 Sc	2137792.50	38.06	1552281.90	137.7	69.5 - 120	IS Fai
72 Ge	403413.81	28.71	310193.78	130.1	69.5 - 120	IS Fai
159 Tb	4504696.00	25.53	3000713.50	150.1	69.5 - 120	IS Fai
209 Bi	2611226.80	23.80	1596081.40	163.6	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

2 :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 4000382

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\059SMPL.D\059SMPL.D#
Date Acquired: May 8 2018 07:17 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-018
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	-0.0123	-0.0025	ppb	23.51	100.	
11 B	2.0165	0.4033	ppb	53.91	1000.	
23 Na	-7.345	-1.469	ppb	13.34	200000.	
25 Mg	-0.4712	-0.0942	ppb	51.92	200000.	
27 Al	-1.293	-0.2586	ppb	11.59	200000.	
28 Si	-2,900.5	-580.1	ppb	12.99	#VALUE!	
29 Si	-2,848.5	-569.7	ppb	4.35	10000.	LOW
39 K	-508.	-101.6	ppb	9.54	200000.	
43 Ca	-24.9	-4.98	ppb	68.78	#VALUE!	
44 Ca	-53.5	-10.7	ppb	14.98	200000.	
51 V	-0.6	-0.12	ppb	13.54	1000.	
52 Cr	-0.855	-0.171	ppb	122.22	2000.	
53 Cr	-12.885	-2.577	ppb	9.30	#VALUE!	
55 Mn	-0.0635	-0.0127	ppb	314.42	2000.	
56 Fe	-658.5	-131.7	ppb	9.48	#VALUE!	
57 Fe	-254.	-50.8	ppb	6.15	100000.	LOW
59 Co	0.0045	0.0009	ppb	531.69	1000.	
60 Ni	-0.0952	-0.019	ppb	7.78	1000.	
63 Cu	-0.537	-0.1074	ppb	12.77	#VALUE!	
65 Cu	-0.4966	-0.0993	ppb	16.28	2000.	
66 Zn	-0.1788	-0.0358	ppb	113.62	2000.	
68 Zn	-2.7055	-0.5411	ppb	18.33	#VALUE!	
75 As	-0.087	-0.0174	ppb	157.13	1000.	
82 Se	-0.599	-0.1198	ppb	52.33	1000.	
88 Sr	-0.0238	-0.0048	ppb	45.96	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0035	0.0007	ppb	468.88	1000.	
107 Ag	-0.0175	-0.0035	ppb	24.14	100.	
109 Ag	-0.0125	-0.0025	ppb	62.91	#VALUE!	
111 Cd	-0.4847	-0.0969	ppb	50.28	#VALUE!	
114 Cd	0.0071	0.0014	ppb	148.31	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.462	0.0924	ppb	117.55	1000.	
120 Sn	0.5715	0.1143	ppb	99.30	#VALUE!	
121 Sb	0.0128	0.0026	ppb	36.07	#VALUE!	
123 Sb	-0.0075	-0.0015	ppb	89.64	1000.	
135 Ba	0.0169	0.0034	ppb	176.92	2000.	
137 Ba	-0.0397	-0.0079	ppb	64.81	#VALUE!	
182 W	0.0147	0.0029	ppb	171.92	1000.	
203 Tl	0.625	0.125	ppb	37.43	1000.	
205 Tl	0.6435	0.1287	ppb	38.42	#VALUE!	
208 Pb	2.0585	0.4117	ppb	40.69	2000.	
232 Th	0.0318	0.0064	ppb	48.69	1000.	
238 U	-0.0052	-0.001	ppb	5.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3192942.80	37.43	2088826.00	152.9	69.5 - 120	IS Fai
45 Sc	2246779.30	33.23	1552281.90	144.7	69.5 - 120	IS Fai
72 Ge	424075.66	24.36	310193.78	136.7	69.5 - 120	IS Fai
159 Tb	4382334.50	20.79	3000713.50	146.0	69.5 - 120	IS Fai
209 Bi	2507735.00	20.37	1596081.40	157.1	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

2 :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 4000383

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\060SMPL.D\060SMPL.D#
Date Acquired: May 8 2018 07:21 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	-0.0186	-0.0019	ppb	23.88	100.	
11 B	3.491	0.3491	ppb	35.06	1000.	
23 Na	-14.01	-1.401	ppb	7.85	200000.	
25 Mg	-0.9962	-0.0996	ppb	22.42	200000.	
27 Al	-2.852	-0.2852	ppb	3.21	200000.	
28 Si	-5,415.	-541.5	ppb	5.77	#VALUE!	
29 Si	-5,376.	-537.6	ppb	11.95	10000.	LOW
39 K	-1,013.	-101.3	ppb	5.78	200000.	
43 Ca	-41.99	-4.199	ppb	82.52	#VALUE!	
44 Ca	-106.4	-10.64	ppb	10.33	200000.	
51 V	-0.9045	-0.0905	ppb	12.29	1000.	
52 Cr	-0.6867	-0.0687	ppb	343.24	2000.	
53 Cr	-23.84	-2.384	ppb	3.34	#VALUE!	
55 Mn	0.1095	0.011	ppb	1035.60	2000.	
56 Fe	-1,204.	-120.4	ppb	10.00	#VALUE!	
57 Fe	-476.4	-47.64	ppb	2.71	100000.	LOW
59 Co	0.0983	0.0098	ppb	48.35	1000.	
60 Ni	-0.1534	-0.0153	ppb	6.97	1000.	
63 Cu	-1.09	-0.109	ppb	6.61	#VALUE!	
65 Cu	-1.017	-0.1017	ppb	12.10	2000.	
66 Zn	-1.217	-0.1217	ppb	21.51	2000.	
68 Zn	-4.484	-0.4484	ppb	14.10	#VALUE!	
75 As	-0.2385	-0.0239	ppb	419.71	1000.	
82 Se	2.596	0.2596	ppb	107.40	1000.	
88 Sr	-0.0438	-0.0044	ppb	45.10	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.0055	-0.0005	ppb	538.97	1000.	
107 Ag	-0.0137	-0.0014	ppb	239.65	100.	
109 Ag	-0.0106	-0.0011	ppb	183.27	#VALUE!	
111 Cd	-0.432	-0.0432	ppb	187.15	#VALUE!	
114 Cd	-0.0513	-0.0051	ppb	83.89	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.136	0.1136	ppb	109.86	1000.	
120 Sn	1.144	0.1144	ppb	98.16	#VALUE!	
121 Sb	0.0162	0.0016	ppb	207.68	#VALUE!	
123 Sb	0.033	0.0033	ppb	87.29	1000.	
135 Ba	0.0417	0.0042	ppb	212.65	2000.	
137 Ba	-0.0733	-0.0073	ppb	99.76	#VALUE!	
182 W	0.0909	0.0091	ppb	110.89	1000.	
203 Tl	1.437	0.1437	ppb	40.63	1000.	
205 Tl	1.924	0.1924	ppb	37.42	#VALUE!	
208 Pb	7.96	0.796	ppb	46.85	2000.	
232 Th	0.0694	0.0069	ppb	31.78	1000.	
238 U	-0.0132	-0.0013	ppb	42.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2599277.80	34.14	2088826.00	124.4	69.5 - 120	IS Fai
45 Sc	1945533.90	22.80	1552281.90	125.3	69.5 - 120	IS Fai
72 Ge	351595.72	10.52	310193.78	113.3	69.5 - 120	
159 Tb	3291331.50	17.29	3000713.50	109.7	69.5 - 120	
209 Bi	1863748.50	21.13	1596081.40	116.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

2 :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 4000384

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\061SMPL.D\061SMPL.D#
Date Acquired: May 8 2018 07:25 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005L
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 50.00
Autodil Factor: Undiluted
Final Dil Factor: 50.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0971	-0.0019	ppb	68.47	100.	
11 B	13.73	0.2746	ppb	61.00	1000.	
23 Na	-70.25	-1.405	ppb	16.61	200000.	
25 Mg	9.2	0.184	ppb	267.93	200000.	
27 Al	10.89	0.2178	ppb	414.78	200000.	
28 Si	-29,490.	-589.8	ppb	16.67	#VALUE!	
29 Si	-28,145.	-562.9	ppb	5.99	10000.	LOW
39 K	-5,165.	-103.3	ppb	10.79	200000.	
43 Ca	-78.	-1.56	ppb	464.17	#VALUE!	
44 Ca	-494.4	-9.888	ppb	43.79	200000.	
51 V	-6.45	-0.129	ppb	14.84	1000.	
52 Cr	-5.675	-0.1135	ppb	264.76	2000.	
53 Cr	-125.65	-2.513	ppb	16.57	#VALUE!	
55 Mn	2.242	0.0448	ppb	103.81	2000.	
56 Fe	-6,605.	-132.1	ppb	11.70	#VALUE!	
57 Fe	-2,510.5	-50.21	ppb	13.46	100000.	LOW
59 Co	0.2982	0.006	ppb	127.18	1000.	
60 Ni	-0.9255	-0.0185	ppb	38.48	1000.	
63 Cu	-5.52	-0.1104	ppb	7.55	#VALUE!	
65 Cu	-5.39	-0.1078	ppb	3.81	2000.	
66 Zn	-3.669	-0.0734	ppb	89.83	2000.	
68 Zn	-31.38	-0.6276	ppb	25.08	#VALUE!	
75 As	0.6515	0.013	ppb	869.53	1000.	
82 Se	11.7	0.234	ppb	126.41	1000.	
88 Sr	0.2272	0.0045	ppb	518.82	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.14	-0.0028	ppb	46.11	1000.	
107 Ag	-0.1318	-0.0026	ppb	89.34	100.	
109 Ag	-0.0747	-0.0015	ppb	156.49	#VALUE!	
111 Cd	-4.104	-0.0821	ppb	44.32	#VALUE!	
114 Cd	0.2429	0.0049	ppb	12.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.0195	0.0404	ppb	170.02	1000.	
120 Sn	2.8235	0.0565	ppb	134.99	#VALUE!	
121 Sb	0.0232	0.0005	ppb	409.79	#VALUE!	
123 Sb	-0.0683	-0.0014	ppb	144.36	1000.	
135 Ba	0.6455	0.0129	ppb	207.44	2000.	
137 Ba	0.1488	0.003	ppb	991.60	#VALUE!	
182 W	0.1277	0.0026	ppb	77.20	1000.	
203 Tl	3.836	0.0767	ppb	20.82	1000.	
205 Tl	3.974	0.0795	ppb	14.77	#VALUE!	
208 Pb	19.765	0.3953	ppb	33.32	2000.	
232 Th	0.1714	0.0034	ppb	18.72	1000.	
238 U	-0.0528	-0.0011	ppb	52.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3567451.30	51.24	2088826.00	170.8	69.5 - 120	IS Fai
45 Sc	2346126.50	34.89	1552281.90	151.1	69.5 - 120	IS Fai
72 Ge	444268.56	29.69	310193.78	143.2	69.5 - 120	IS Fai
159 Tb	4693686.00	17.13	3000713.50	156.4	69.5 - 120	IS Fai
209 Bi	2701702.30	7.27	1596081.40	169.3	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

2 :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 4000385

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\062SMPL.D\062SMPL.D#
Date Acquired: May 8 2018 07:30 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005A
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	31.06	3.106	ppb	2.29	100.	
11 B	565.1	56.51	ppb	5.28	1000.	
23 Na	37,390.	3,739.	ppb	1.20	200000.	
25 Mg	119,200.	11,920.	ppb	1.84	200000.	
27 Al	234,400.	23,440.	ppb	1.38	200000.	
28 Si	13,670.	1,367.	ppb	2.06	#VALUE!	
29 Si	13,960.	1,396.	ppb	2.87	10000.	
39 K	73,590.	7,359.	ppb	2.61	200000.	
43 Ca	1,179,000.	117,900.	ppb	1.49	#VALUE!	
44 Ca	1,089,000.	108,900.	ppb	2.15	200000.	
51 V	525.	52.5	ppb	1.83	1000.	
52 Cr	323.4	32.34	ppb	1.12	2000.	
53 Cr	342.4	34.24	ppb	0.65	#VALUE!	
55 Mn	5,159.	515.9	ppb	1.63	2000.	
56 Fe	210,400.	21,040.	ppb	2.49	#VALUE!	
57 Fe	206,600.	20,660.	ppb	2.82	100000.	
59 Co	102.2	10.22	ppb	1.06	1000.	
60 Ni	202.	20.2	ppb	1.31	1000.	
63 Cu	192.5	19.25	ppb	1.46	#VALUE!	
65 Cu	192.8	19.28	ppb	0.65	2000.	
66 Zn	747.7	74.77	ppb	2.29	2000.	
68 Zn	813.9	81.39	ppb	1.10	#VALUE!	
75 As	128.3	12.83	ppb	1.45	1000.	
82 Se	109.8	10.98	ppb	2.86	1000.	
88 Sr	1,968.	196.8	ppb	1.25	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	104.5	10.45	ppb	1.89	1000.	
107 Ag	20.73	2.073	ppb	2.31	100.	
109 Ag	20.21	2.021	ppb	2.78	#VALUE!	
111 Cd	28.02	2.802	ppb	1.97	#VALUE!	
114 Cd	23.52	2.352	ppb	2.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	156.6	15.66	ppb	0.97	1000.	
120 Sn	155.7	15.57	ppb	2.56	#VALUE!	
121 Sb	22.38	2.238	ppb	2.64	#VALUE!	
123 Sb	22.36	2.236	ppb	2.58	1000.	
135 Ba	2,975.	297.5	ppb	1.38	2000.	
137 Ba	2,975.	297.5	ppb	1.99	#VALUE!	
182 W	105.1	10.51	ppb	0.71	1000.	
203 Tl	25.06	2.506	ppb	6.30	1000.	
205 Tl	24.86	2.486	ppb	1.80	#VALUE!	
208 Pb	188.6	18.86	ppb	1.75	2000.	
232 Th	125.	12.5	ppb	1.13	1000.	
238 U	48.86	4.886	ppb	2.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2722988.50	2.51	2088826.00	130.4	69.5 - 120	IS Fai
45 Sc	1821078.50	0.68	1552281.90	117.3	69.5 - 120	
72 Ge	336697.19	1.38	310193.78	108.5	69.5 - 120	
159 Tb	3183749.50	0.71	3000713.50	106.1	69.5 - 120	
209 Bi	1592344.50	1.40	1596081.40	99.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000386

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\063SMPL.D\063SMPL.D#
Date Acquired: May 8 2018 07:34 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 08 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	27.49	27.49	ppb	1.52	100.	
11 B	28.98	28.98	ppb	5.43	1000.	
23 Na	5,562.	5,562.	ppb	1.45	200000.	
25 Mg	5,595.	5,595.	ppb	2.03	200000.	
27 Al	545.1	545.1	ppb	1.07	200000.	
28 Si	410.1	410.1	ppb	8.80	#VALUE!	
29 Si	464.4	464.4	ppb	4.94	10000.	
39 K	5,313.	5,313.	ppb	2.46	200000.	
43 Ca	5,255.	5,255.	ppb	4.53	#VALUE!	
44 Ca	5,267.	5,267.	ppb	2.14	200000.	
51 V	26.58	26.58	ppb	2.50	1000.	
52 Cr	26.3	26.3	ppb	0.90	2000.	
53 Cr	27.	27.	ppb	0.93	#VALUE!	
55 Mn	26.43	26.43	ppb	1.22	2000.	
56 Fe	5,284.	5,284.	ppb	1.02	#VALUE!	
57 Fe	5,377.	5,377.	ppb	1.54	100000.	
59 Co	26.52	26.52	ppb	0.24	1000.	
60 Ni	26.56	26.56	ppb	0.93	1000.	
63 Cu	26.87	26.87	ppb	1.93	#VALUE!	
65 Cu	26.57	26.57	ppb	0.75	2000.	
66 Zn	26.74	26.74	ppb	0.87	2000.	
68 Zn	26.07	26.07	ppb	3.54	#VALUE!	
75 As	25.94	25.94	ppb	2.04	1000.	
82 Se	26.96	26.96	ppb	0.43	1000.	
88 Sr	24.93	24.93	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	24.29	24.29	ppb	0.74	1000.	
107 Ag	24.82	24.82	ppb	2.03	100.	
109 Ag	25.	25.	ppb	1.73	#VALUE!	
111 Cd	25.35	25.35	ppb	1.05	#VALUE!	
114 Cd	24.98	24.98	ppb	0.69	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	26.74	26.74	ppb	0.45	1000.	
120 Sn	26.64	26.64	ppb	2.09	#VALUE!	
121 Sb	26.46	26.46	ppb	1.08	#VALUE!	
123 Sb	26.3	26.3	ppb	1.13	1000.	
135 Ba	26.62	26.62	ppb	2.10	2000.	
137 Ba	26.27	26.27	ppb	1.45	#VALUE!	
182 W	25.42	25.42	ppb	0.82	1000.	
203 Tl	25.99	25.99	ppb	1.20	1000.	
205 Tl	25.93	25.93	ppb	0.82	#VALUE!	
208 Pb	25.93	25.93	ppb	0.97	2000.	
232 Th	27.48	27.48	ppb	0.89	1000.	
238 U	30.74	30.74	ppb	1.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2612915.50	2.14	2088826.00	125.1	69.5 - 120	IS Fai
45 Sc	1768713.10	1.81	1552281.90	113.9	69.5 - 120	
72 Ge	329967.19	1.28	310193.78	106.4	69.5 - 120	
159 Tb	3071868.00	1.18	3000713.50	102.4	69.5 - 120	
209 Bi	1582861.40	1.30	1596081.40	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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 4000387

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\064_CCV.D\064_CCV.D#
Date Acquired: May 8 2018 07:38 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: May 08 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	26.76	ppb	1.83	25	107.04	
11 B	28.48	ppb	6.11	25	113.92	Fail
23 Na	5,684.	ppb	1.34	5,000	113.68	Fail
25 Mg	5,710.	ppb	2.62	5,000	114.2	Fail
27 Al	552.1	ppb	1.97	500	110.42	
28 Si	379.3	ppb	2.62	500	75.86	
29 Si	438.6	ppb	4.11	500	87.72	Fail
39 K	5,346.	ppb	2.25	5,000	106.92	
43 Ca	5,262.	ppb	1.52	5,000	105.24	
44 Ca	5,321.	ppb	1.09	5,000	106.42	
51 V	26.52	ppb	0.85	25	106.08	
52 Cr	26.33	ppb	1.44	25	105.32	
53 Cr	26.57	ppb	1.65	25	106.28	
55 Mn	26.35	ppb	1.34	25	105.4	
56 Fe	5,269.	ppb	1.03	5,000	105.38	
57 Fe	5,307.	ppb	1.13	5,000	106.14	
59 Co	26.58	ppb	0.51	25	106.32	
60 Ni	26.5	ppb	0.96	25	106	
63 Cu	26.78	ppb	2.59	25	107.12	
65 Cu	26.5	ppb	2.18	25	106	
66 Zn	26.88	ppb	2.03	25	107.52	
68 Zn	25.63	ppb	2.13	25	102.52	
75 As	25.82	ppb	1.14	25	103.28	
82 Se	25.99	ppb	0.66	25	103.96	
88 Sr	24.7	ppb	0.53	25	98.8	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.85	ppb	0.62	25	95.4	
107 Ag	24.73	ppb	1.27	25	98.92	
109 Ag	24.71	ppb	0.77	25	98.84	
111 Cd	24.92	ppb	1.15	25	99.68	
114 Cd	24.84	ppb	1.42	25	99.36	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	27.17	ppb	0.54	25	108.68	
120 Sn	27.	ppb	0.73	25	108	
121 Sb	26.72	ppb	1.68	25	106.88	
123 Sb	26.63	ppb	0.74	25	106.52	
135 Ba	27.3	ppb	1.89	25	109.2	
137 Ba	26.58	ppb	0.73	25	106.32	
182 W	25.43	ppb	0.55	25	101.72	
203 Tl	25.5	ppb	0.79	25	102	
205 Tl	25.92	ppb	0.45	25	103.68	
208 Pb	25.87	ppb	1.17	25	103.48	
232 Th	27.79	ppb	1.34	25	111.16	Fail
238 U	30.81	ppb	0.95	25	123.24	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2869803.30	2.89	2088826.00	137.4	80 - 120.4	ISFail
45 Sc	1880495.60	1.51	1552281.90	121.1	80 - 120.4	ISFail
72 Ge	350163.06	1.06	310193.78	112.9	80 - 120.4	
159 Tb	3164732.80	0.71	3000713.50	105.5	80 - 120.4	
209 Bi	1612648.10	0.81	1596081.40	101.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.B\015CALB.D\015CALB.D#

6 :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 4000388

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE05C.B\065_CCB.D\065_CCB.D#
Date Acquired: May 8 2018 07:42 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: May 08 2018 04:20 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0025	ppb	88.50	1.00	
11 B	2.634	ppb	17.83	1.00	
23 Na	1.013	ppb	9.43	1.00	
25 Mg	0.0903	ppb	192.71	1.00	
27 Al	0.1311	ppb	3.73	1.00	
28 Si	-68.7	ppb	41.40	1.00	
29 Si	-9.658	ppb	200.46	1.00	
39 K	6.285	ppb	32.43	1.00	
43 Ca	0.3647	ppb	1029.60	1.00	
44 Ca	-2.849	ppb	34.05	1.00	
51 V	-0.0165	ppb	165.21	1.00	
52 Cr	0.0546	ppb	63.54	1.00	
53 Cr	-0.1192	ppb	69.03	1.00	
55 Mn	0.0271	ppb	10.11	1.00	
56 Fe	5.335	ppb	49.43	1.00	
57 Fe	8.178	ppb	21.06	1.00	
59 Co	0.0052	ppb	121.83	1.00	
60 Ni	-0.0037	ppb	76.62	1.00	
63 Cu	0.0551	ppb	26.10	1.00	
65 Cu	0.0682	ppb	28.82	1.00	
66 Zn	0.0544	ppb	32.70	1.00	
68 Zn	-0.1457	ppb	49.29	1.00	
75 As	-0.0458	ppb	284.97	1.00	
82 Se	0.0172	ppb	804.65	1.00	
88 Sr	0.0035	ppb	158.83	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0303	ppb	44.72	1.00	
107 Ag	0.0005	ppb	176.88	1.00	
109 Ag	0.0043	ppb	91.78	1.00	
111 Cd	-0.0193	ppb	92.84	1.00	
114 Cd	0.005	ppb	22.78	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0556	ppb	8.93	1.00	
120 Sn	0.0541	ppb	23.34	1.00	
121 Sb	0.0104	ppb	33.02	1.00	
123 Sb	0.0089	ppb	14.41	1.00	
135 Ba	0.0409	ppb	37.60	1.00	
137 Ba	0.0038	ppb	447.81	1.00	
182 W	0.0539	ppb	32.25	1.00	
203 Tl	-0.001	ppb	4609.20	1.00	
205 Tl	-0.022	ppb	84.87	1.00	
208 Pb	0.0865	ppb	10.75	1.00	
232 Th	0.038	ppb	8.13	1.00	
238 U	0.0037	ppb	43.55	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2339256.80	1.71	2088826.00	112.0	79.5 - 120	
45 Sc	1556090.60	0.85	1552281.90	100.2	79.5 - 120	
72 Ge	301004.19	1.69	310193.78	97.0	79.5 - 120	
159 Tb	2754930.80	2.40	3000713.50	91.8	79.5 - 120	
209 Bi	1433083.30	1.57	1596081.40	89.8	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE05C.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

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: MD

ANALYSIS DATE: 05/09/2018

REVIEWED
JSS 5.10.18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE09B

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

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
JS for MD (initals) on 5.9.18 (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17714	04/30/2018	04/30/2019	0 ug/L
Standard 1	MW17738	05/04/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17736	05/04/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17751	05/09/2018	05/15/2018	Varies by Element
ICSAB	MW17752	05/09/2018	05/15/2018	Varies by Element
CCV	MW17734	05/09/2018	06/21/2018	Varies by Element
Internal Standard	MW17712	04/27/2018	07/192018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

Ca failed for DoD, re-initial RR; accepted Ca results for DoD samples w/ Ca conc >10x PQL result w/associated BCC

JSS 5.10.18

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

50x serial diln.: 1.6mL of 10x diln. of sample(pipet M18) + 6.4mL of MW17714(pipet M18)

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17714 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17714(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17714 (pipet M18)

Post Spike: 0.08mL of MW17698(pipet M16) into 5x diln. of sample(pipet M18)

10x diln. Post Spike: 0.1mL of MW17698(pipet M16) into 10x diln. of sample(pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLE09B	5/9/2018 5:05:00	15:01	MD
200.8 TUNE	1	JLE09B	5/9/2018 5:05:00	15:04	MD
Cal Blank	1	JLE09B	5/9/2018 5:05:00	17:05	MD
Cal Std	1	JLE09B	5/9/2018 5:09:00	17:09	MD
ICV	1	JLE09B	5/9/2018 5:13:00	17:13	MD
ICB	1	JLE09B	5/9/2018 5:16:00	17:16	MD
PQL	1	JLE09B	5/9/2018 5:20:00	17:20	MD
RINSE	1	JLE09B	5/9/2018 5:24:00	17:24	MD
ICSA	1	JLE09B	5/9/2018 5:28:00	17:28	MD
ICSAB	1	JLE09B	5/9/2018 5:32:00	17:32	MD
RINSE	1	JLE09B	5/9/2018 5:36:00	17:36	MD
LRS1	1	JLE09B	5/9/2018 5:40:00	17:40	MD
LRS2	1	JLE09B	5/9/2018 5:43:00	17:43	MD
RINSE	1	JLE09B	5/9/2018 5:48:00	17:48	MD
RINSE	1	JLE09B	5/9/2018 5:52:00	17:52	MD
CCV	1	JLE09B	5/9/2018 5:56:00	17:56	MD
CCB	1	JLE09B	5/9/2018 5:59:00	17:59	MD
SL3719-001	1	JLE09B	5/9/2018 6:03:00	18:03	MD
PBSLE02IMS1	5	JLE09B	5/9/2018 6:07:00	18:07	MD
LCSOLE02IMS1	5	JLE09B	5/9/2018 6:11:00	18:11	MD
SL3708-001	5	JLE09B	5/9/2018 6:15:00	18:15	MD
SL3708-002	5	JLE09B	5/9/2018 6:19:00	18:19	MD
SL3708-003	5	JLE09B	5/9/2018 6:24:00	18:24	MD
SL3708-004	5	JLE09B	5/9/2018 6:28:00	18:28	MD
SL3708-005	5	JLE09B	5/9/2018 6:32:00	18:32	MD
SL3708-005L	25	JLE09B	5/9/2018 6:36:00	18:36	MD
RINSE	1	JLE09B	5/9/2018 6:40:00	18:40	MD
CCV	1	JLE09B	5/9/2018 6:44:00	18:44	MD
CCB	1	JLE09B	5/9/2018 6:48:00	18:48	MD
SL3708-005A	5	JLE09B	5/9/2018 6:52:00	18:52	MD
SL3708-005S	5	JLE09B	5/9/2018 6:56:00	18:56	MD
SL3708-005P	5	JLE09B	5/9/2018 7:00:00	19:00	MD
SL3708-006	5	JLE09B	5/9/2018 7:05:00	19:05	MD
SL3708-008	5	JLE09B	5/9/2018 7:09:00	19:09	MD
SL3708-009	5	JLE09B	5/9/2018 7:13:00	19:13	MD
SL3708-010	5	JLE09B	5/9/2018 7:17:00	19:17	MD
SL3708-011	5	JLE09B	5/9/2018 7:21:00	19:21	MD
SL3708-012	5	JLE09B	5/9/2018 7:25:00	19:25	MD
RINSE	1	JLE09B	5/9/2018 7:30:00	19:30	MD
CCV	1	JLE09B	5/9/2018 7:34:00	19:34	MD
CCB	1	JLE09B	5/9/2018 7:38:00	19:38	MD
SL3708-013	5	JLE09B	5/9/2018 7:42:00	19:42	MD
SL3708-014	5	JLE09B	5/9/2018 7:46:00	19:46	MD
SL3708-015	5	JLE09B	5/9/2018 7:50:00	19:50	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3708-016	5	JLE09B	5/9/2018 7:55:00	19:55	MD
SL3708-017	5	JLE09B	5/9/2018 7:59:00	19:59	MD
SL3708-018	5	JLE09B	5/9/2018 8:03:00	20:03	MD
SL3708-005	10	JLE09B	5/9/2018 8:07:00	20:07	MD
SL3708-005L	50	JLE09B	5/9/2018 8:12:00	20:12	MD
SL3708-005A	10	JLE09B	5/9/2018 8:16:00	20:16	MD
RINSE	1	JLE09B	5/9/2018 8:20:00	20:20	MD
CCV	1	JLE09B	5/9/2018 8:24:00	20:24	MD
CCB	1	JLE09B	5/9/2018 8:28:00	20:28	MD
SL3708-005S	10	JLE09B	5/9/2018 8:33:00	20:33	MD
SL3708-005P	10	JLE09B	5/9/2018 8:37:00	20:37	MD
SL3708-015	10	JLE09B	5/9/2018 8:41:00	20:41	MD
RINSE	1	JLE09B	5/9/2018 8:45:00	20:45	MD
PBWLE03IMW2	5	JLE09B	5/9/2018 8:49:00	20:49	MD
LCSWLE03IMW2	5	JLE09B	5/9/2018 8:54:00	20:54	MD
SL3708-022	5	JLE09B	5/9/2018 8:58:00	20:58	MD
RINSE	1	JLE09B	5/9/2018 9:02:00	21:02	MD
PBWLE03IMW1	1	JLE09B	5/9/2018 9:06:00	21:06	MD
LCSWLE03IMW1	5	JLE09B	5/9/2018 9:10:00	21:10	MD
CCV	1	JLE09B	5/9/2018 9:15:00	21:15	MD
CCB	1	JLE09B	5/9/2018 9:19:00	21:19	MD
SL3618-001	1	JLE09B	5/9/2018 9:23:00	21:23	MD
SL3628-001	1	JLE09B	5/9/2018 9:27:00	21:27	MD
SL3631-001	1	JLE09B	5/9/2018 9:31:00	21:31	MD
SL3632-001	1	JLE09B	5/9/2018 9:36:00	21:36	MD
SL3721-001	1	JLE09B	5/9/2018 9:40:00	21:40	MD
SL3778-001	1	JLE09B	5/9/2018 9:44:00	21:44	MD
RINSE	1	JLE09B	5/9/2018 9:49:00	21:49	MD
PBWLE04IMW1	5	JLE09B	5/9/2018 9:53:00	21:53	MD
LCSWLE04IMW1	5	JLE09B	5/9/2018 9:57:00	21:57	MD
SL3809-001	5	JLE09B	5/9/2018 10:01:00	22:01	MD
CCV	1	JLE09B	5/9/2018 10:05:00	22:05	MD
CCB	1	JLE09B	5/9/2018 10:10:00	22:10	MD
PBSLE04IMS2	5	JLE09B	5/9/2018 10:14:00	22:14	MD
LCSOLE04IMS2	5	JLE09B	5/9/2018 10:18:00	22:18	MD
SL3809-002	5	JLE09B	5/9/2018 10:22:00	22:22	MD
SL3809-002L	25	JLE09B	5/9/2018 10:27:00	22:27	MD
SL3809-002A	5	JLE09B	5/9/2018 10:31:00	22:31	MD
SL3809-002S	5	JLE09B	5/9/2018 10:35:00	22:35	MD
SL3809-002P	5	JLE09B	5/9/2018 10:40:00	22:40	MD
SL3809-003	5	JLE09B	5/9/2018 10:44:00	22:44	MD
SL3809-004	5	JLE09B	5/9/2018 10:48:00	22:48	MD
RINSE	1	JLE09B	5/9/2018 10:53:00	22:53	MD
CCV	1	JLE09B	5/9/2018 10:57:00	22:57	MD
CCB	1	JLE09B	5/9/2018 11:01:00	23:01	MD
SL3809-005	5	JLE09B	5/9/2018 11:05:00	23:05	MD
SL3809-006	5	JLE09B	5/9/2018 11:10:00	23:10	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3809-007	5	JLE09B	5/9/2018	11:14:00 23:14	MD
SL3809-008	5	JLE09B	5/9/2018	11:19:00 23:19	MD
SL3809-009	5	JLE09B	5/9/2018	11:23:00 23:23	MD
SL3809-010	5	JLE09B	5/9/2018	11:27:00 23:27	MD
SL3809-011	5	JLE09B	5/9/2018	11:32:00 23:32	MD
SL3809-002	10	JLE09B	5/9/2018	11:36:00 23:36	MD
SL3809-002L	50	JLE09B	5/9/2018	11:40:00 23:40	MD
RINSE	1	JLE09B	5/9/2018	11:44:00 23:44	MD
CCV	1	JLE09B	5/9/2018	11:49:00 23:49	MD
CCB	1	JLE09B	5/9/2018	11:53:00 23:53	MD
SL3809-002A	10	JLE09B	5/9/2018	11:57:00 23:57	MD
SL3809-002S	10	JLE09B	5/10/2018	12:01:0 0:01	MD
SL3809-002P	10	JLE09B	5/10/2018	12:06:0 0:06	MD
SL3809-006	10	JLE09B	5/10/2018	12:10:0 0:10	MD
SL3809-010	10	JLE09B	5/10/2018	12:14:0 0:14	MD
SL3809-011	10	JLE09B	5/10/2018	12:19:0 0:19	MD
RINSE	1	JLE09B	5/10/2018	12:23:0 0:23	MD
RINSE	1	JLE09B	5/10/2018	12:27:0 0:27	MD
PBSLE07IMS1	5	JLE09B	5/10/2018	12:31:0 0:31	MD
LCSOLE07IMS1	5	JLE09B	5/10/2018	12:35:0 0:35	MD
CCV	1	JLE09B	5/10/2018	12:40:0 0:40	MD
CCB	1	JLE09B	5/10/2018	12:44:0 0:44	MD
SL3809-012	5	JLE09B	5/10/2018	12:48:0 0:48	MD
SL3809-013	5	JLE09B	5/10/2018	12:53:0 0:53	MD
SL3809-014	5	JLE09B	5/10/2018	12:57:0 0:57	MD
SL3809-015	5	JLE09B	5/10/2018	1:01:00 1:01	MD
SL3809-017	5	JLE09B	5/10/2018	1:06:00 1:06	MD
SL3809-018	5	JLE09B	5/10/2018	1:10:00 1:10	MD
SL3809-019	5	JLE09B	5/10/2018	1:15:00 1:15	MD
SL3809-020	5	JLE09B	5/10/2018	1:19:00 1:19	MD
RINSE	1	JLE09B	5/10/2018	1:23:00 1:23	MD
CCV	1	JLE09B	5/10/2018	1:28:00 1:28	MD
CCB	1	JLE09B	5/10/2018	1:32:00 1:32	MD
SL3809-056	5	JLE09B	5/10/2018	1:36:00 1:36	MD
SL3809-057	5	JLE09B	5/10/2018	1:41:00 1:41	MD
SL3809-058	5	JLE09B	5/10/2018	1:45:00 1:45	MD
SL3809-059	5	JLE09B	5/10/2018	1:49:00 1:49	MD
SL3809-060	5	JLE09B	5/10/2018	1:54:00 1:54	MD
SL3809-061	5	JLE09B	5/10/2018	1:58:00 1:58	MD
SL3809-062	5	JLE09B	5/10/2018	2:03:00 2:03	MD
SL3809-063	5	JLE09B	5/10/2018	2:07:00 2:07	MD
SL3809-064	5	JLE09B	5/10/2018	2:11:00 2:11	MD
RINSE	1	JLE09B	5/10/2018	2:16:00 2:16	MD
CCV	1	JLE09B	5/10/2018	2:20:00 2:20	MD
CCB	1	JLE09B	5/10/2018	2:24:00 2:24	MD
SL3809-065	5	JLE09B	5/10/2018	2:29:00 2:29	MD
RINSE	1	JLE09B	5/10/2018	2:33:00 2:33	MD

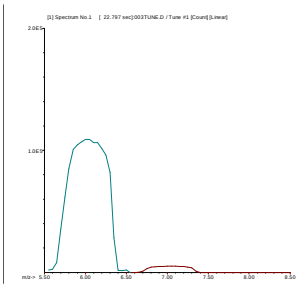
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
RINSE	1	JLE09B	5/10/2018 2:37:00	2:37	MD
CCV	1	JLE09B	5/10/2018 2:42:00	2:42	MD
CCB	1	JLE09B	5/10/2018 2:46:00	2:46	MD
PQL	1	JLE09B	5/10/2018 2:50:00	2:50	MD
CCV	1	JLE09B	5/10/2018 2:55:00	2:55	MD
CCB	1	JLE09B	5/10/2018 2:59:00	2:59	MD

6020 QC Tune Report

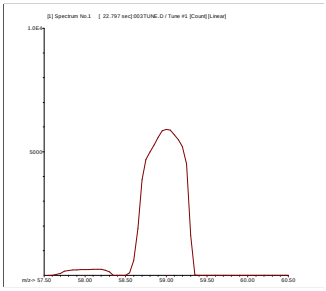
Data File: C:\ICPCHEM\1\DATA\JLE09A.B\003TUNE.D
Date Acquired: May 9 2018 03:01 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

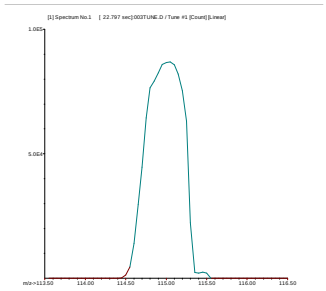
Element	Actual	Required	Flag
7 Li	1.17	5.00	
59 Co	2.20	5.00	
115 In	0.56	5.00	
205 Tl	0.61	5.00	



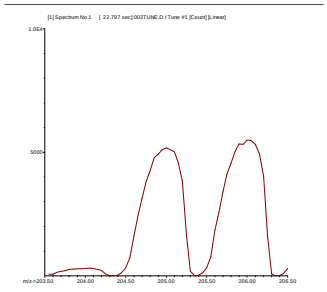
7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



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:



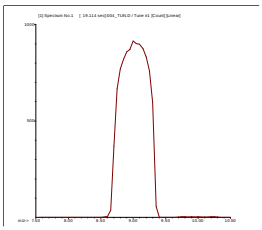
205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

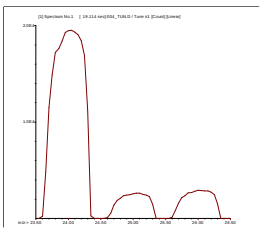
Data File: C:\ICPCHEM\1\DATA\JLE09A.B\004_TUN.D
Date Acquired: May 9 2018 03:04 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

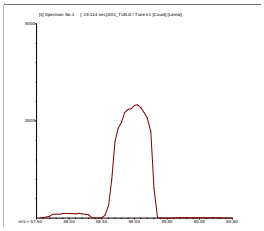
Element	Actual	Required	Flag
9 Be	2.99	5.00	
24 Mg	1.99	5.00	
59 Co	2.06	5.00	
115 In	0.70	5.00	
208 Pb	1.05	5.00	



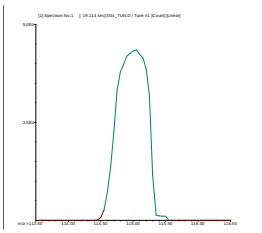
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



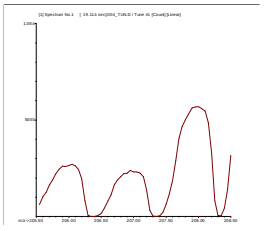
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
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: 208.00
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

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ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\017_ICV.D\017_ICV.D#
Date Acquired: May 9 2018 05:13 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: May 09 2018 05:11 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.54	ppb	4.03	20	97.7	
11 B	21.25	ppb	2.75	20	106.25	
23 Na	3,620.	ppb	3.17	4,000	90.5	
25 Mg	3,763.	ppb	3.96	4,000	94.075	
27 Al	373.2	ppb	2.91	400	93.3	
28 Si	340.4	ppb	13.18	400	85.1	
29 Si	342.8	ppb	10.82	400	85.7	Fail
39 K	3,806.	ppb	1.81	4,000	95.15	
43 Ca	3,849.	ppb	3.01	4,000	96.225	
44 Ca	3,934.	ppb	2.06	4,000	98.35	
51 V	18.44	ppb	0.95	20	92.2	
52 Cr	18.59	ppb	0.85	20	92.95	
53 Cr	16.85	ppb	0.81	20	84.25	
55 Mn	18.88	ppb	0.05	20	94.4	
56 Fe	3,800.	ppb	0.99	4,000	95	
57 Fe	3,753.	ppb	1.49	4,000	93.825	
59 Co	18.71	ppb	0.71	20	93.55	
60 Ni	18.89	ppb	1.66	20	94.45	
63 Cu	19.19	ppb	1.74	20	95.95	
65 Cu	18.87	ppb	1.08	20	94.35	
66 Zn	19.36	ppb	2.42	20	96.8	
68 Zn	19.52	ppb	1.61	20	97.6	
75 As	19.11	ppb	1.87	20	95.55	
82 Se	18.88	ppb	0.79	20	94.4	
88 Sr	18.1	ppb	1.74	20	90.5	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	37.21	ppb	0.72	40	93.025	
107 Ag	19.2	ppb	0.71	20	96	
109 Ag	19.02	ppb	0.51	20	95.1	
111 Cd	19.11	ppb	1.67	20	95.55	
114 Cd	19.	ppb	1.37	20	95	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	18.63	ppb	0.47	20	93.15	
120 Sn	18.11	ppb	1.07	20	90.55	
121 Sb	18.63	ppb	1.16	20	93.15	
123 Sb	18.64	ppb	1.15	20	93.2	
135 Ba	18.64	ppb	0.70	20	93.2	
137 Ba	18.62	ppb	1.36	20	93.1	
182 W	18.68	ppb	1.91	20	93.4	
203 Tl	19.36	ppb	1.08	20	96.8	
205 Tl	19.11	ppb	0.74	20	95.55	
208 Pb	18.76	ppb	0.38	20	93.8	
232 Th	18.9	ppb	0.97	20	94.5	
238 U	18.6	ppb	1.14	20	93	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3486560.30	2.97	3477802.30	100.3	80 - 120.4	
45 Sc	2186777.80	3.24	2104691.00	103.9	80 - 120.4	
72 Ge	406054.19	0.38	391860.38	103.6	80 - 120.4	
159 Tb	3547267.50	0.77	3376351.50	105.1	80 - 120.4	
209 Bi	1768910.80	0.50	1729987.60	102.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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

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ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\018_ICB.D\018_ICB.D#
Date Acquired: May 9 2018 05:16 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: May 09 2018 05:11 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	42.53	1.00	
11 B	1.523	ppb	24.30	1.00	
23 Na	-0.0191	ppb	840.67	1.00	
25 Mg	0.0475	ppb	70.48	1.00	
27 Al	-0.0355	ppb	74.06	1.00	
28 Si	-7.945	ppb	219.01	1.00	
29 Si	-9.887	ppb	129.77	1.00	
39 K	-1.483	ppb	242.41	1.00	
43 Ca	0.2357	ppb	1723.40	1.00	
44 Ca	0.0814	ppb	86.29	1.00	
51 V	-0.0021	ppb	3599.30	1.00	
52 Cr	-0.0268	ppb	100.90	1.00	
53 Cr	-1.885	ppb	11.86	1.00	
55 Mn	-0.0061	ppb	141.39	1.00	
56 Fe	1.961	ppb	118.77	1.00	
57 Fe	-0.39	ppb	636.41	1.00	
59 Co	-0.0011	ppb	212.19	1.00	
60 Ni	-0.0088	ppb	55.60	1.00	
63 Cu	0.003	ppb	39.58	1.00	
65 Cu	0.0163	ppb	81.74	1.00	
66 Zn	0.0019	ppb	1682.00	1.00	
68 Zn	-0.0835	ppb	66.77	1.00	
75 As	-0.0213	ppb	587.60	1.00	
82 Se	0.0801	ppb	68.12	1.00	
88 Sr	-0.0029	ppb	27.20	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0502	ppb	48.39	1.00	
107 Ag	0.0033	ppb	16.30	1.00	
109 Ag	0.0051	ppb	7.92	1.00	
111 Cd	-0.0026	ppb	310.18	1.00	
114 Cd	-0.0004	ppb	694.36	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0275	ppb	52.58	1.00	
120 Sn	0.0252	ppb	35.17	1.00	
121 Sb	0.0033	ppb	20.72	1.00	
123 Sb	0.0073	ppb	88.43	1.00	
135 Ba	0.0039	ppb	248.81	1.00	
137 Ba	0.0038	ppb	159.71	1.00	
182 W	0.0506	ppb	9.91	1.00	
203 Tl	0.0254	ppb	49.76	1.00	
205 Tl	0.0101	ppb	133.53	1.00	
208 Pb	0.0007	ppb	2197.90	1.00	
232 Th	0.0275	ppb	6.73	1.00	
238 U	0.0046	ppb	51.91	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3398500.30	2.35	3477802.30	97.7	79.5 - 120	
45 Sc	2122455.80	2.76	2104691.00	100.8	79.5 - 120	
72 Ge	396501.53	1.25	391860.38	101.2	79.5 - 120	
159 Tb	3376650.80	1.72	3376351.50	100.0	79.5 - 120	
209 Bi	1722342.30	1.29	1729987.60	99.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000398

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\019_PQL.D\019_PQL.D#
Date Acquired: May 9 2018 05:20 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: May 09 2018 05:11 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1874	ppb	4.98	0.20	93.7	
11 B	4.298	ppb	2.18	4.00	107.45	
23 Na	187.3	ppb	3.34	200.00	93.65	
25 Mg	19.14	ppb	2.53	20.00	95.7	
27 Al	18.49	ppb	1.36	20.00	92.45	
28 Si	91.65	ppb	27.23	100.00	91.65	
29 Si	92.32	ppb	17.57	100.00	92.32	
39 K	190.4	ppb	3.20	200.00	95.2	
43 Ca	26.48	ppb	13.47	20.00	132.4	
44 Ca	24.88	ppb	7.62	20.00	124.4	Fail-DoD
51 V	0.9635	ppb	9.22	1.00	96.35	
52 Cr	0.9918	ppb	5.12	1.00	99.18	
53 Cr	-0.1767	ppb	43.38	---	#VALUE!	
55 Mn	0.397	ppb	4.76	0.40	99.25	
56 Fe	21.38	ppb	11.39	20.00	106.9	
57 Fe	19.31	ppb	27.19	20.00	96.55	
59 Co	0.2025	ppb	4.56	0.20	101.25	
60 Ni	0.4101	ppb	6.18	0.40	102.525	
63 Cu	0.6189	ppb	2.76	0.60	103.15	
65 Cu	0.5822	ppb	8.57	0.60	97.0333	
66 Zn	2.23	ppb	4.70	2.00	111.5	
68 Zn	2.071	ppb	6.98	2.00	103.55	
75 As	0.951	ppb	12.72	1.00	95.1	
82 Se	0.8955	ppb	16.77	1.00	89.55	
88 Sr	0.9173	ppb	3.10	1.00	91.73	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9549	ppb	1.76	1.00	95.49	
107 Ag	0.1879	ppb	6.33	0.20	93.95	
109 Ag	0.2088	ppb	4.93	0.20	104.4	
111 Cd	0.2184	ppb	1.49	0.20	109.2	
114 Cd	0.195	ppb	6.14	0.20	97.5	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	0.964	ppb	2.60	1.00	96.4	
120 Sn	0.953	ppb	5.13	1.00	95.3	
121 Sb	0.1966	ppb	9.59	0.20	98.3	
123 Sb	0.2105	ppb	6.28	0.20	105.25	
135 Ba	0.4156	ppb	15.60	0.40	103.9	
137 Ba	0.3747	ppb	11.53	0.40	93.675	
182 W	0.9549	ppb	4.64	1.00	95.49	
203 Tl	0.2041	ppb	14.79	0.20	102.05	
205 Tl	0.1939	ppb	4.76	0.20	96.95	
208 Pb	0.1431	ppb	10.44	0.20	71.55	Fail-DoD
232 Th	0.1952	ppb	1.93	0.20	97.6	
238 U	0.1832	ppb	4.24	0.20	91.6	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3369161.80	2.96	3477802.30	96.9	80 - 120.4	
45 Sc	2091442.90	1.19	2104691.00	99.4	80 - 120.4	
72 Ge	394941.47	1.12	391860.38	100.8	80 - 120.4	
159 Tb	3442561.50	1.00	3376351.50	102.0	80 - 120.4	
209 Bi	1744521.40	0.51	1729987.60	100.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000399

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\020SMPL.D\020SMPL.D#
Date Acquired: May 9 2018 05:24 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: May 09 2018 05:11 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	59.10	100.	
11 B	0.401	0.401	ppb	26.19	1000.	
23 Na	0.1845	0.1845	ppb	42.76	200000.	
25 Mg	-0.0217	-0.0217	ppb	251.63	200000.	
27 Al	0.049	0.049	ppb	60.11	200000.	
28 Si	-23.82	-23.82	ppb	121.62	#VALUE!	
29 Si	-15.29	-15.29	ppb	157.10	10000.	
39 K	-2.346	-2.346	ppb	129.50	200000.	
43 Ca	0.9025	0.9025	ppb	106.56	#VALUE!	
44 Ca	-0.0099	-0.0099	ppb	2308.20	200000.	
51 V	-0.021	-0.021	ppb	303.23	1000.	
52 Cr	-0.0505	-0.0505	ppb	22.68	2000.	
53 Cr	-1.136	-1.136	ppb	30.03	#VALUE!	
55 Mn	-0.01	-0.01	ppb	115.39	2000.	
56 Fe	-3.149	-3.149	ppb	95.30	#VALUE!	
57 Fe	-1.12	-1.12	ppb	113.66	100000.	
59 Co	0.0016	0.0016	ppb	353.87	1000.	
60 Ni	-0.0047	-0.0047	ppb	133.04	1000.	
63 Cu	0.0184	0.0184	ppb	67.90	#VALUE!	
65 Cu	0.0275	0.0275	ppb	49.06	2000.	
66 Zn	0.0777	0.0777	ppb	54.68	2000.	
68 Zn	0.1017	0.1017	ppb	63.16	#VALUE!	
75 As	0.0116	0.0116	ppb	750.95	1000.	
82 Se	0.1482	0.1482	ppb	18.41	1000.	
88 Sr	-0.0035	-0.0035	ppb	66.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0096	0.0096	ppb	44.19	1000.	
107 Ag	0.0011	0.0011	ppb	121.25	100.	
109 Ag	0.0036	0.0036	ppb	21.27	#VALUE!	
111 Cd	0.0173	0.0173	ppb	45.70	#VALUE!	
114 Cd	-0.0022	-0.0022	ppb	76.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0031	0.0031	ppb	236.22	1000.	
120 Sn	0.0081	0.0081	ppb	133.72	#VALUE!	
121 Sb	0.0019	0.0019	ppb	92.24	#VALUE!	
123 Sb	0.0036	0.0036	ppb	94.93	1000.	
135 Ba	0.0097	0.0097	ppb	45.16	2000.	
137 Ba	0.0098	0.0098	ppb	80.63	#VALUE!	
182 W	0.0141	0.0141	ppb	16.91	1000.	
203 Tl	0.0063	0.0063	ppb	197.59	1000.	
205 Tl	0.0027	0.0027	ppb	558.91	#VALUE!	
208 Pb	-0.0214	-0.0214	ppb	69.65	2000.	
232 Th	0.0064	0.0064	ppb	36.44	1000.	
238 U	0.0001	0.0001	ppb	382.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3492303.50	0.84	3477802.30	100.4	69.5 - 120	
45 Sc	2156805.50	1.29	2104691.00	102.5	69.5 - 120	
72 Ge	405182.88	0.30	391860.38	103.4	69.5 - 120	
159 Tb	3458500.00	0.94	3376351.50	102.4	69.5 - 120	
209 Bi	1755432.30	1.10	1729987.60	101.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000400

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\021ICSA.D\021ICSA.D#
Date Acquired: May 9 2018 05:28 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: May 09 2018 05:11 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0023	ppb	105.65		
11 B	0.688	ppb	6.01		
23 Na	87,320.	ppb	1.38		
25 Mg	88,550.	ppb	0.50		
27 Al	88,250.	ppb	1.63		
28 Si	7.92	ppb	215.15		
29 Si	8.715	ppb	116.92		
39 K	92,650.	ppb	1.86		
43 Ca	96,040.	ppb	0.29		
44 Ca	93,070.	ppb	0.61		
51 V	0.2572	ppb	34.57		
52 Cr	0.9565	ppb	2.28		
53 Cr	-1.684	ppb	16.14		
55 Mn	0.2908	ppb	0.82		
56 Fe	89,890.	ppb	1.62		
57 Fe	86,510.	ppb	1.20		
59 Co	0.0909	ppb	2.10		
60 Ni	-0.2004	ppb	28.67		
63 Cu	4.079	ppb	2.10		
65 Cu	1.082	ppb	6.25		
66 Zn	2.541	ppb	2.78		
68 Zn	0.4692	ppb	31.54		
75 As	0.3386	ppb	15.03		
82 Se	0.3551	ppb	36.61		
88 Sr	0.8067	ppb	4.42		
89 Y	--------	---	--------		
98 Mo	1,828.	ppb	0.67		
107 Ag	0.0196	ppb	7.30		
109 Ag	0.029	ppb	7.99		
111 Cd	0.0779	ppb	64.40		
114 Cd	0.0049	ppb	599.23		
115 In	--------	---	--------		
118 Sn	0.0501	ppb	27.24		
120 Sn	0.0412	ppb	7.25		
121 Sb	0.0419	ppb	6.21		
123 Sb	0.0365	ppb	19.18		
135 Ba	0.1127	ppb	25.49		
137 Ba	0.0607	ppb	25.17		
182 W	0.2176	ppb	6.43		
203 Tl	0.0237	ppb	15.03		
205 Tl	0.0089	ppb	101.56		
208 Pb	0.0298	ppb	42.73		
232 Th	0.0442	ppb	8.87		
238 U	0.0003	ppb	487.91		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3164812.30	1.74	3477802.30	91.0	69.5 - 120.4	
45 Sc	2159063.80	0.10	2104691.00	102.6	69.5 - 120.4	
72 Ge	404234.78	0.69	391860.38	103.2	69.5 - 120.4	
159 Tb	3427882.80	0.49	3376351.50	101.5	69.5 - 120.4	
209 Bi	1551606.80	1.08	1729987.60	89.7	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000401

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\022ICSB.D\022ICSB.D#
Date Acquired: May 9 2018 05:32 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: May 09 2018 05:11 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	20.73	ppb	1.27	20.00	79.5 - 120	
11 B	22.73	ppb	1.03	20.00	79.5 - 120	
23 Na	87,130.	ppb	1.55	#########	79.5 - 120	
25 Mg	87,640.	ppb	0.75	#########	79.5 - 120	
27 Al	87,230.	ppb	0.59	#########	79.5 - 120	
28 Si	450.8	ppb	5.43	---	##### - #####	
29 Si	456.2	ppb	1.62	---	##### - #####	
39 K	94,230.	ppb	0.42	#########	79.5 - 120	
43 Ca	98,720.	ppb	2.01	#########	79.5 - 120	
44 Ca	94,270.	ppb	2.33	#########	79.5 - 120	
51 V	18.79	ppb	1.21	20.00	79.5 - 120	
52 Cr	19.21	ppb	1.22	20.00	79.5 - 120	
53 Cr	18.42	ppb	1.56	---	##### - #####	
55 Mn	19.07	ppb	1.92	20.00	79.5 - 120	
56 Fe	92,270.	ppb	1.15	#########	79.5 - 120	
57 Fe	88,040.	ppb	0.61	#########	79.5 - 120	
59 Co	18.33	ppb	0.88	20.00	79.5 - 120	
60 Ni	17.93	ppb	0.66	20.00	79.5 - 120	
63 Cu	21.77	ppb	0.89	20.00	79.5 - 120	
65 Cu	18.99	ppb	1.89	20.00	79.5 - 120	
66 Zn	19.66	ppb	2.65	20.00	79.5 - 120	
68 Zn	18.21	ppb	1.76	20.00	79.5 - 120	
75 As	19.54	ppb	1.59	20.00	79.5 - 120	
82 Se	18.53	ppb	1.30	20.00	79.5 - 120	
88 Sr	19.69	ppb	0.91	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,869.	ppb	1.47	2000.00	79.5 - 120	
107 Ag	18.2	ppb	0.74	20.00	79.5 - 120	
109 Ag	17.77	ppb	1.13	20.00	79.5 - 120	
111 Cd	18.15	ppb	0.23	20.00	79.5 - 120	
114 Cd	18.06	ppb	0.44	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	18.93	ppb	0.25	20.00	79.5 - 120	
120 Sn	18.55	ppb	1.15	20.00	79.5 - 120	
121 Sb	18.96	ppb	0.61	20.00	79.5 - 120	
123 Sb	18.95	ppb	0.43	20.00	79.5 - 120	
135 Ba	19.02	ppb	0.22	20.00	79.5 - 120	
137 Ba	19.29	ppb	1.32	20.00	79.5 - 120	
182 W	19.51	ppb	0.95	20.00	79.5 - 120	
203 Tl	20.21	ppb	1.41	20.00	79.5 - 120	
205 Tl	20.21	ppb	0.24	20.00	79.5 - 120	
208 Pb	20.34	ppb	0.47	20.00	79.5 - 120	
232 Th	20.74	ppb	0.32	20.00	79.5 - 120	
238 U	19.49	ppb	0.46	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3047281.80	0.61	3477802.30	87.6	69.5 - 120	
45 Sc	2135775.50	0.57	2104691.00	101.5	69.5 - 120	
72 Ge	399783.91	0.63	391860.38	102.0	69.5 - 120	
159 Tb	3518947.50	0.42	3376351.50	104.2	69.5 - 120	
209 Bi	1595247.40	0.52	1729987.60	92.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000402

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\023SMPL.D\023SMPL.D#
Date Acquired: May 9 2018 05:36 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: May 09 2018 05:11 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	89.49	100.	
11 B	0.4104	0.4104	ppb	21.04	1000.	
23 Na	3.294	3.294	ppb	8.81	200000.	
25 Mg	0.4719	0.4719	ppb	27.00	200000.	
27 Al	0.0601	0.0601	ppb	42.86	200000.	
28 Si	-3.788	-3.788	ppb	734.16	#VALUE!	
29 Si	-24.53	-24.53	ppb	74.44	10000.	
39 K	-4.177	-4.177	ppb	37.64	200000.	
43 Ca	0.9907	0.9907	ppb	181.19	#VALUE!	
44 Ca	0.5114	0.5114	ppb	234.85	200000.	
51 V	-0.0112	-0.0112	ppb	477.87	1000.	
52 Cr	-0.0194	-0.0194	ppb	65.14	2000.	
53 Cr	-0.0005	-0.0005	ppb	70460.00	#VALUE!	
55 Mn	-0.0252	-0.0252	ppb	17.34	2000.	
56 Fe	3.732	3.732	ppb	97.75	#VALUE!	
57 Fe	-3.815	-3.815	ppb	118.09	100000.	
59 Co	-0.0002	-0.0002	ppb	472.92	1000.	
60 Ni	0.019	0.019	ppb	43.83	1000.	
63 Cu	0.0804	0.0804	ppb	19.88	#VALUE!	
65 Cu	0.0717	0.0717	ppb	24.19	2000.	
66 Zn	0.1146	0.1146	ppb	66.02	2000.	
68 Zn	0.0067	0.0067	ppb	2042.80	#VALUE!	
75 As	-0.0957	-0.0957	ppb	79.02	1000.	
82 Se	0.0758	0.0758	ppb	161.03	1000.	
88 Sr	0.0002	0.0002	ppb	4916.80	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.167	1.167	ppb	57.91	1000.	
107 Ag	0.0037	0.0037	ppb	90.96	100.	
109 Ag	0.0055	0.0055	ppb	70.16	#VALUE!	
111 Cd	-0.0319	-0.0319	ppb	51.88	#VALUE!	
114 Cd	-0.0018	-0.0018	ppb	40.61	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	-0.0068	-0.0068	ppb	131.98	1000.	
120 Sn	-0.0018	-0.0018	ppb	473.66	#VALUE!	
121 Sb	0.0017	0.0017	ppb	34.02	#VALUE!	
123 Sb	0.01	0.01	ppb	22.54	1000.	
135 Ba	0.017	0.017	ppb	42.87	2000.	
137 Ba	0.0061	0.0061	ppb	28.54	#VALUE!	
182 W	0.0083	0.0083	ppb	54.27	1000.	
203 Tl	0.0243	0.0243	ppb	14.01	1000.	
205 Tl	0.0108	0.0108	ppb	138.54	#VALUE!	
208 Pb	-0.0277	-0.0277	ppb	32.97	2000.	
232 Th	0.0087	0.0087	ppb	37.45	1000.	
238 U	0.0011	0.0011	ppb	65.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3306939.30	3.90	3477802.30	95.1	69.5 - 120	
45 Sc	2068514.80	1.52	2104691.00	98.3	69.5 - 120	
72 Ge	389384.28	1.96	391860.38	99.4	69.5 - 120	
159 Tb	3358219.30	2.21	3376351.50	99.5	69.5 - 120	
209 Bi	1680482.60	1.38	1729987.60	97.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000403

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\024SMPL.D\024SMPL.D#
Date Acquired: May 9 2018 05:40 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: May 09 2018 05:11 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	100.4	100.4	ppb	1.11	100.	>LDR
11 B	0.2065	0.2065	ppb	9.47	1000.	
23 Na	4.148	4.148	ppb	8.79	200000.	
25 Mg	1.154	1.154	ppb	18.72	200000.	
27 Al	1.171	1.171	ppb	15.00	200000.	
28 Si	-28.79	-28.79	ppb	73.57	#VALUE!	
29 Si	-43.2	-43.2	ppb	31.18	10000.	
39 K	-3.809	-3.809	ppb	50.17	200000.	
43 Ca	1,373.	1,373.	ppb	1.67	#VALUE!	
44 Ca	166.6	166.6	ppb	7.18	200000.	
51 V	956.3	956.3	ppb	0.74	1000.	
52 Cr	1,907.	1,907.	ppb	0.62	2000.	
53 Cr	2,079.	2,079.	ppb	0.90	#VALUE!	
55 Mn	1,944.	1,944.	ppb	2.47	2000.	
56 Fe	2.676	2.676	ppb	236.02	#VALUE!	
57 Fe	-7.021	-7.021	ppb	21.81	100000.	
59 Co	968.6	968.6	ppb	2.01	1000.	
60 Ni	995.	995.	ppb	0.53	1000.	
63 Cu	1,910.	1,910.	ppb	1.52	#VALUE!	
65 Cu	1,932.	1,932.	ppb	2.16	2000.	
66 Zn	1,979.	1,979.	ppb	1.79	2000.	
68 Zn	2,064.	2,064.	ppb	1.56	#VALUE!	
75 As	1,012.	1,012.	ppb	0.46	1000.	>LDR
82 Se	1,012.	1,012.	ppb	0.64	1000.	>LDR
88 Sr	1,872.	1,872.	ppb	0.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	972.6	972.6	ppb	0.48	1000.	
107 Ag	102.6	102.6	ppb	0.60	100.	>LDR
109 Ag	101.9	101.9	ppb	0.17	#VALUE!	
111 Cd	1,003.	1,003.	ppb	1.22	#VALUE!	
114 Cd	995.3	995.3	ppb	1.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	963.1	963.1	ppb	1.01	1000.	
120 Sn	932.7	932.7	ppb	1.41	#VALUE!	
121 Sb	965.	965.	ppb	0.96	#VALUE!	
123 Sb	982.4	982.4	ppb	1.19	1000.	
135 Ba	1,972.	1,972.	ppb	1.33	2000.	
137 Ba	1,940.	1,940.	ppb	1.53	#VALUE!	
182 W	969.	969.	ppb	0.66	1000.	
203 Tl	989.2	989.2	ppb	0.22	1000.	
205 Tl	954.3	954.3	ppb	1.19	#VALUE!	
208 Pb	1,908.	1,908.	ppb	0.62	2000.	
232 Th	919.3	919.3	ppb	0.98	1000.	
238 U	842.2	842.2	ppb	0.88	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3324411.50	1.73	3477802.30	95.6	69.5 - 120	
45 Sc	2080937.60	0.94	2104691.00	98.9	69.5 - 120	
72 Ge	383906.97	1.25	391860.38	98.0	69.5 - 120	
159 Tb	3408430.50	0.29	3376351.50	101.0	69.5 - 120	
209 Bi	1709888.40	0.51	1729987.60	98.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000404

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\025SMPL.D\025SMPL.D#
Date Acquired: May 9 2018 05:43 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: May 09 2018 05:11 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	0.0085	0.0085	ppb	35.77	100.	
11 B	0.582	0.582	ppb	7.71	1000.	
23 Na	174,100.	174,100.	ppb	0.52	200000.	
25 Mg	174,400.	174,400.	ppb	0.52	200000.	
27 Al	176,000.	176,000.	ppb	2.15	200000.	
28 Si	9,159.	9,159.	ppb	2.10	#VALUE!	
29 Si	9,742.	9,742.	ppb	1.55	10000.	
39 K	181,300.	181,300.	ppb	1.41	200000.	
43 Ca	188,300.	188,300.	ppb	2.52	#VALUE!	
44 Ca	181,800.	181,800.	ppb	1.12	200000.	
51 V	0.1347	0.1347	ppb	61.51	1000.	
52 Cr	2.81	2.81	ppb	4.23	2000.	
53 Cr	0.5117	0.5117	ppb	20.13	#VALUE!	
55 Mn	7.105	7.105	ppb	0.79	2000.	
56 Fe	91,440.	91,440.	ppb	1.29	#VALUE!	
57 Fe	87,220.	87,220.	ppb	1.40	100000.	
59 Co	2.557	2.557	ppb	1.36	1000.	
60 Ni	3.064	3.064	ppb	1.87	1000.	
63 Cu	9.434	9.434	ppb	0.38	#VALUE!	
65 Cu	2.621	2.621	ppb	4.40	2000.	
66 Zn	3.83	3.83	ppb	2.25	2000.	
68 Zn	1.077	1.077	ppb	4.86	#VALUE!	
75 As	0.4125	0.4125	ppb	59.66	1000.	
82 Se	0.6979	0.6979	ppb	32.74	1000.	
88 Sr	6.341	6.341	ppb	2.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.446	1.446	ppb	45.96	1000.	
107 Ag	0.3448	0.3448	ppb	8.85	100.	
109 Ag	0.3493	0.3493	ppb	6.00	#VALUE!	
111 Cd	-0.0163	-0.0163	ppb	112.39	#VALUE!	
114 Cd	-0.0057	-0.0057	ppb	136.13	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.4589	0.4589	ppb	11.96	1000.	
120 Sn	0.4389	0.4389	ppb	20.20	#VALUE!	
121 Sb	0.1531	0.1531	ppb	17.34	#VALUE!	
123 Sb	0.1515	0.1515	ppb	9.98	1000.	
135 Ba	0.2092	0.2092	ppb	6.40	2000.	
137 Ba	0.2378	0.2378	ppb	5.41	#VALUE!	
182 W	1.108	1.108	ppb	34.84	1000.	
203 Tl	0.046	0.046	ppb	29.86	1000.	
205 Tl	0.0497	0.0497	ppb	65.45	#VALUE!	
208 Pb	0.367	0.367	ppb	2.54	2000.	
232 Th	0.8036	0.8036	ppb	29.68	1000.	
238 U	0.1074	0.1074	ppb	23.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2942352.80	3.66	3477802.30	84.6	69.5 - 120	
45 Sc	2037281.40	0.95	2104691.00	96.8	69.5 - 120	
72 Ge	375584.88	1.59	391860.38	95.8	69.5 - 120	
159 Tb	3192358.80	0.96	3376351.50	94.6	69.5 - 120	
209 Bi	1382994.00	0.43	1729987.60	79.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000405

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\026SMPL.D\026SMPL.D#
Date Acquired: May 9 2018 05:48 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: May 09 2018 05:11 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	41.67	100.	
11 B	0.1074	0.1074	ppb	19.23	1000.	
23 Na	7.716	7.716	ppb	12.62	200000.	
25 Mg	0.6294	0.6294	ppb	12.69	200000.	
27 Al	0.11	0.11	ppb	111.55	200000.	
28 Si	16.4	16.4	ppb	150.55	#VALUE!	
29 Si	-28.41	-28.41	ppb	50.44	10000.	
39 K	-4.794	-4.794	ppb	58.59	200000.	
43 Ca	-1.309	-1.309	ppb	191.21	#VALUE!	
44 Ca	0.9467	0.9467	ppb	50.75	200000.	
51 V	0.0184	0.0184	ppb	348.18	1000.	
52 Cr	-0.0029	-0.0029	ppb	386.43	2000.	
53 Cr	0.0621	0.0621	ppb	307.73	#VALUE!	
55 Mn	-0.0257	-0.0257	ppb	33.64	2000.	
56 Fe	9.007	9.007	ppb	32.70	#VALUE!	
57 Fe	-5.446	-5.446	ppb	28.54	100000.	
59 Co	0.0021	0.0021	ppb	281.04	1000.	
60 Ni	0.0198	0.0198	ppb	58.13	1000.	
63 Cu	0.0664	0.0664	ppb	7.34	#VALUE!	
65 Cu	0.0508	0.0508	ppb	31.28	2000.	
66 Zn	0.1023	0.1023	ppb	38.28	2000.	
68 Zn	0.0312	0.0312	ppb	261.70	#VALUE!	
75 As	0.041	0.041	ppb	177.73	1000.	
82 Se	0.0269	0.0269	ppb	505.38	1000.	
88 Sr	0.0018	0.0018	ppb	163.43	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2481	0.2481	ppb	57.80	1000.	
107 Ag	0.0035	0.0035	ppb	34.44	100.	
109 Ag	0.0046	0.0046	ppb	59.01	#VALUE!	
111 Cd	-0.0336	-0.0336	ppb	58.77	#VALUE!	
114 Cd	-0.0025	-0.0025	ppb	107.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0649	0.0649	ppb	26.60	1000.	
120 Sn	0.0613	0.0613	ppb	41.67	#VALUE!	
121 Sb	0.021	0.021	ppb	34.77	#VALUE!	
123 Sb	0.0233	0.0233	ppb	17.86	1000.	
135 Ba	0.0217	0.0217	ppb	49.49	2000.	
137 Ba	0.0143	0.0143	ppb	45.95	#VALUE!	
182 W	0.2122	0.2122	ppb	51.46	1000.	
203 Tl	0.0056	0.0056	ppb	451.40	1000.	
205 Tl	0.0036	0.0036	ppb	348.43	#VALUE!	
208 Pb	-0.0058	-0.0058	ppb	46.74	2000.	
232 Th	0.0323	0.0323	ppb	74.71	1000.	
238 U	0.0054	0.0054	ppb	48.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3121188.80	1.21	3477802.30	89.7	69.5 - 120	
45 Sc	2040224.40	1.90	2104691.00	96.9	69.5 - 120	
72 Ge	375297.44	0.92	391860.38	95.8	69.5 - 120	
159 Tb	3277027.30	0.82	3376351.50	97.1	69.5 - 120	
209 Bi	1622812.60	0.18	1729987.60	93.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\027SMPL.D\027SMPL.D#
Date Acquired: May 9 2018 05:52 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: May 09 2018 05:11 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	116.03	100.	
11 B	0.0508	0.0508	ppb	49.77	1000.	
23 Na	4.059	4.059	ppb	6.06	200000.	
25 Mg	0.4261	0.4261	ppb	18.16	200000.	
27 Al	0.3219	0.3219	ppb	141.57	200000.	
28 Si	22.55	22.55	ppb	108.65	#VALUE!	
29 Si	-11.87	-11.87	ppb	166.64	10000.	
39 K	-2.365	-2.365	ppb	109.47	200000.	
43 Ca	-2.058	-2.058	ppb	4.71	#VALUE!	
44 Ca	0.3641	0.3641	ppb	265.50	200000.	
51 V	0.1116	0.1116	ppb	49.50	1000.	
52 Cr	0.0203	0.0203	ppb	72.08	2000.	
53 Cr	0.7904	0.7904	ppb	10.96	#VALUE!	
55 Mn	-0.0253	-0.0253	ppb	29.62	2000.	
56 Fe	6.977	6.977	ppb	46.48	#VALUE!	
57 Fe	-6.332	-6.332	ppb	16.82	100000.	
59 Co	0.0054	0.0054	ppb	76.51	1000.	
60 Ni	0.0175	0.0175	ppb	42.35	1000.	
63 Cu	0.0611	0.0611	ppb	7.68	#VALUE!	
65 Cu	0.0469	0.0469	ppb	48.58	2000.	
66 Zn	0.0633	0.0633	ppb	104.46	2000.	
68 Zn	0.1567	0.1567	ppb	95.47	#VALUE!	
75 As	-0.0175	-0.0175	ppb	198.17	1000.	
82 Se	0.1465	0.1465	ppb	71.67	1000.	
88 Sr	-0.0006	-0.0006	ppb	1226.10	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0928	0.0928	ppb	46.89	1000.	
107 Ag	0.0028	0.0028	ppb	150.61	100.	
109 Ag	0.0041	0.0041	ppb	35.63	#VALUE!	
111 Cd	-0.05	-0.05	ppb	38.65	#VALUE!	
114 Cd	0.0039	0.0039	ppb	63.99	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0149	0.0149	ppb	73.76	1000.	
120 Sn	0.0235	0.0235	ppb	38.29	#VALUE!	
121 Sb	0.0215	0.0215	ppb	36.71	#VALUE!	
123 Sb	0.0131	0.0131	ppb	18.78	1000.	
135 Ba	0.03	0.03	ppb	37.10	2000.	
137 Ba	0.0076	0.0076	ppb	51.65	#VALUE!	
182 W	0.0944	0.0944	ppb	34.88	1000.	
203 Tl	0.0277	0.0277	ppb	11.29	1000.	
205 Tl	0.0025	0.0025	ppb	309.92	#VALUE!	
208 Pb	-0.0224	-0.0224	ppb	20.55	2000.	
232 Th	0.0232	0.0232	ppb	51.90	1000.	
238 U	0.0013	0.0013	ppb	51.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3089458.80	1.79	3477802.30	88.8	69.5 - 120	
45 Sc	1980987.50	1.46	2104691.00	94.1	69.5 - 120	
72 Ge	370236.03	0.96	391860.38	94.5	69.5 - 120	
159 Tb	3261707.30	1.56	3376351.50	96.6	69.5 - 120	
209 Bi	1640031.80	1.80	1729987.60	94.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000407

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\028_CCV.D\028_CCV.D#
Date Acquired: May 9 2018 05:56 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: May 09 2018 05:11 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.31	ppb	4.46	25	101.24	
11 B	24.64	ppb	5.19	25	98.56	
23 Na	4,488.	ppb	2.46	5,000	89.76	
25 Mg	4,635.	ppb	2.25	5,000	92.7	
27 Al	451.3	ppb	1.95	500	90.26	
28 Si	418.9	ppb	6.20	500	83.78	
29 Si	400.2	ppb	2.80	500	80.04	Fail
39 K	4,620.	ppb	1.35	5,000	92.4	
43 Ca	4,726.	ppb	0.42	5,000	94.52	
44 Ca	4,923.	ppb	1.60	5,000	98.46	
51 V	23.48	ppb	0.12	25	93.92	
52 Cr	23.85	ppb	0.52	25	95.4	
53 Cr	24.06	ppb	1.92	25	96.24	
55 Mn	24.21	ppb	0.46	25	96.84	
56 Fe	4,710.	ppb	1.82	5,000	94.2	
57 Fe	4,800.	ppb	0.76	5,000	96	
59 Co	23.89	ppb	0.88	25	95.56	
60 Ni	24.35	ppb	1.31	25	97.4	
63 Cu	24.76	ppb	0.76	25	99.04	
65 Cu	24.56	ppb	1.54	25	98.24	
66 Zn	24.71	ppb	0.42	25	98.84	
68 Zn	25.24	ppb	2.15	25	100.96	
75 As	24.11	ppb	0.89	25	96.44	
82 Se	24.57	ppb	2.25	25	98.28	
88 Sr	23.39	ppb	0.86	25	93.56	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.17	ppb	1.17	25	96.68	
107 Ag	24.59	ppb	1.32	25	98.36	
109 Ag	24.26	ppb	0.80	25	97.04	
111 Cd	24.5	ppb	0.65	25	98	
114 Cd	24.65	ppb	0.26	25	98.6	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.95	ppb	0.86	25	91.8	
120 Sn	22.66	ppb	1.63	25	90.64	
121 Sb	23.57	ppb	1.27	25	94.28	
123 Sb	23.42	ppb	1.00	25	93.68	
135 Ba	23.06	ppb	1.54	25	92.24	
137 Ba	23.62	ppb	1.37	25	94.48	
182 W	23.48	ppb	2.25	25	93.92	
203 Tl	24.15	ppb	1.29	25	96.6	
205 Tl	23.87	ppb	1.10	25	95.48	
208 Pb	24.13	ppb	1.06	25	96.52	
232 Th	21.04	ppb	1.67	25	84.16	Fail
238 U	19.07	ppb	1.45	25	76.28	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3171389.00	3.47	3477802.30	91.2	80 - 120.4	
45 Sc	2071018.80	0.59	2104691.00	98.4	80 - 120.4	
72 Ge	374028.59	1.00	391860.38	95.4	80 - 120.4	
159 Tb	3401178.30	1.23	3376351.50	100.7	80 - 120.4	
209 Bi	1694031.50	0.44	1729987.60	97.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000408

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\029_CCB.D\029_CCB.D#
Date Acquired: May 9 2018 05:59 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: May 09 2018 05:11 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0004	ppb	255.44	1.00	
11 B	1.258	ppb	23.63	1.00	
23 Na	2.551	ppb	6.48	1.00	
25 Mg	0.2874	ppb	19.53	1.00	
27 Al	0.0625	ppb	51.09	1.00	
28 Si	36.61	ppb	57.42	1.00	
29 Si	18.53	ppb	71.99	1.00	
39 K	2.091	ppb	37.47	1.00	
43 Ca	-3.062	ppb	36.35	1.00	
44 Ca	1.485	ppb	68.22	1.00	
51 V	0.0474	ppb	89.21	1.00	
52 Cr	-0.0262	ppb	102.52	1.00	
53 Cr	-0.6129	ppb	45.28	1.00	
55 Mn	-0.0098	ppb	94.64	1.00	
56 Fe	7.552	ppb	23.11	1.00	
57 Fe	-4.656	ppb	39.20	1.00	
59 Co	0.0005	ppb	1244.20	1.00	
60 Ni	0.0087	ppb	52.61	1.00	
63 Cu	0.0478	ppb	23.70	1.00	
65 Cu	0.0168	ppb	71.48	1.00	
66 Zn	0.0245	ppb	195.50	1.00	
68 Zn	0.0299	ppb	622.99	1.00	
75 As	0.0873	ppb	208.20	1.00	
82 Se	0.1803	ppb	45.00	1.00	
88 Sr	-0.0024	ppb	50.00	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0716	ppb	42.02	1.00	
107 Ag	0.0022	ppb	141.49	1.00	
109 Ag	0.0058	ppb	18.58	1.00	
111 Cd	-0.0172	ppb	252.70	1.00	
114 Cd	0.0017	ppb	273.63	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0349	ppb	32.93	1.00	
120 Sn	0.0351	ppb	36.72	1.00	
121 Sb	0.0122	ppb	39.27	1.00	
123 Sb	0.0156	ppb	25.83	1.00	
135 Ba	0.0209	ppb	38.02	1.00	
137 Ba	0.0039	ppb	157.87	1.00	
182 W	0.0816	ppb	46.13	1.00	
203 Tl	0.0054	ppb	311.45	1.00	
205 Tl	0.0002	ppb	3631.90	1.00	
208 Pb	-0.0206	ppb	40.83	1.00	
232 Th	0.0489	ppb	1.27	1.00	
238 U	0.0026	ppb	49.58	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3020381.80	1.28	3477802.30	86.8	79.5 - 120	
45 Sc	1886289.50	0.69	2104691.00	89.6	79.5 - 120	
72 Ge	357968.94	1.64	391860.38	91.4	79.5 - 120	
159 Tb	3223669.30	1.35	3376351.50	95.5	79.5 - 120	
209 Bi	1636694.00	0.31	1729987.60	94.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000409

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\030SMPL.D\030SMPL.D#
Date Acquired: May 9 2018 06:03 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3719-001
Misc Info: AQ
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	0.0018	0.0018	ppb	38.75	100.	
11 B	10.17	10.17	ppb	4.80	1000.	
23 Na	13,740.	13,740.	ppb	1.78	200000.	
25 Mg	2,674.	2,674.	ppb	1.81	200000.	
27 Al	1.816	1.816	ppb	1.31	200000.	
28 Si	7,085.	7,085.	ppb	3.38	#VALUE!	
29 Si	7,673.	7,673.	ppb	4.21	10000.	
39 K	2,716.	2,716.	ppb	2.75	200000.	
43 Ca	15,810.	15,810.	ppb	0.75	#VALUE!	
44 Ca	15,600.	15,600.	ppb	0.90	200000.	
51 V	0.2916	0.2916	ppb	28.49	1000.	
52 Cr	0.7584	0.7584	ppb	3.63	2000.	
53 Cr	-1.555	-1.555	ppb	18.51	#VALUE!	
55 Mn	1.7	1.7	ppb	0.45	2000.	
56 Fe	-1.414	-1.414	ppb	117.54	#VALUE!	
57 Fe	23.53	23.53	ppb	19.71	100000.	
59 Co	0.0471	0.0471	ppb	19.97	1000.	
60 Ni	0.9081	0.9081	ppb	1.98	1000.	
63 Cu	2,067.	2,067.	ppb	1.04	#VALUE!	
65 Cu	2,079.	2,079.	ppb	1.17	2000.	>LDR
66 Zn	144.	144.	ppb	0.20	2000.	
68 Zn	140.6	140.6	ppb	2.34	#VALUE!	
75 As	0.131	0.131	ppb	156.41	1000.	
82 Se	0.2745	0.2745	ppb	36.50	1000.	
88 Sr	73.04	73.04	ppb	1.08	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2916	0.2916	ppb	5.09	1000.	
107 Ag	0.0427	0.0427	ppb	16.14	100.	
109 Ag	0.0359	0.0359	ppb	7.84	#VALUE!	
111 Cd	0.0174	0.0174	ppb	237.44	#VALUE!	
114 Cd	0.0026	0.0026	ppb	214.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0918	0.0918	ppb	17.45	1000.	
120 Sn	0.0757	0.0757	ppb	25.74	#VALUE!	
121 Sb	0.1357	0.1357	ppb	4.94	#VALUE!	
123 Sb	0.1373	0.1373	ppb	11.20	1000.	
135 Ba	6.045	6.045	ppb	0.98	2000.	
137 Ba	5.947	5.947	ppb	2.27	#VALUE!	
182 W	0.0497	0.0497	ppb	25.43	1000.	
203 Tl	0.0428	0.0428	ppb	25.57	1000.	
205 Tl	0.0283	0.0283	ppb	32.81	#VALUE!	
208 Pb	1.875	1.875	ppb	1.00	2000.	
232 Th	0.0743	0.0743	ppb	16.90	1000.	
238 U	0.1878	0.1878	ppb	9.86	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3330495.00	2.04	3477802.30	95.8	69.5 - 120	
45 Sc	2113661.50	2.69	2104691.00	100.4	69.5 - 120	
72 Ge	390964.25	1.27	391860.38	99.8	69.5 - 120	
159 Tb	3394835.80	1.06	3376351.50	100.5	69.5 - 120	
209 Bi	1682110.80	0.94	1729987.60	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000410

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\031SMPL.D\031SMPL.D#
Date Acquired: May 9 2018 06:07 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PBSLE02IMS1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	0.0093	0.0019	ppb	72.82	100.	
11 B	4.006	0.8012	ppb	6.88	1000.	
23 Na	40.365	8.073	ppb	6.42	200000.	
25 Mg	18.235	3.647	ppb	8.23	200000.	
27 Al	7.505	1.501	ppb	11.63	200000.	
28 Si	81.25	16.25	ppb	104.62	#VALUE!	
29 Si	157.	31.4	ppb	26.34	10000.	
39 K	58.25	11.65	ppb	18.33	200000.	
43 Ca	46.94	9.388	ppb	48.50	#VALUE!	
44 Ca	41.96	8.392	ppb	3.04	200000.	
51 V	0.6895	0.1379	ppb	48.25	1000.	
52 Cr	2.949	0.5898	ppb	2.73	2000.	
53 Cr	62.1	12.42	ppb	4.05	#VALUE!	
55 Mn	0.3568	0.0714	ppb	12.25	2000.	
56 Fe	80.75	16.15	ppb	18.14	#VALUE!	
57 Fe	18.53	3.706	ppb	51.59	100000.	
59 Co	0.0835	0.0167	ppb	55.03	1000.	
60 Ni	0.2675	0.0535	ppb	27.14	1000.	
63 Cu	0.724	0.1448	ppb	18.38	#VALUE!	
65 Cu	0.797	0.1594	ppb	9.60	2000.	
66 Zn	0.8615	0.1723	ppb	41.10	2000.	
68 Zn	0.827	0.1654	ppb	65.90	#VALUE!	
75 As	0.1309	0.0262	ppb	1405.70	1000.	
82 Se	0.3046	0.0609	ppb	70.98	1000.	
88 Sr	0.1369	0.0274	ppb	10.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2232	0.0446	ppb	13.05	1000.	
107 Ag	0.0657	0.0131	ppb	21.48	100.	
109 Ag	0.068	0.0136	ppb	6.83	#VALUE!	
111 Cd	0.0992	0.0198	ppb	224.50	#VALUE!	
114 Cd	-0.0955	-0.0191	ppb	74.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	39.585	7.917	ppb	1.44	1000.	
120 Sn	38.715	7.743	ppb	2.30	#VALUE!	
121 Sb	0.085	0.017	ppb	25.88	#VALUE!	
123 Sb	0.1469	0.0294	ppb	12.10	1000.	
135 Ba	0.1596	0.0319	ppb	28.53	2000.	
137 Ba	0.1829	0.0366	ppb	62.46	#VALUE!	
182 W	0.1903	0.0381	ppb	46.97	1000.	
203 Tl	0.1322	0.0264	ppb	127.36	1000.	
205 Tl	0.1618	0.0324	ppb	52.52	#VALUE!	
208 Pb	-0.1721	-0.0344	ppb	68.27	2000.	
232 Th	0.4002	0.08	ppb	12.82	1000.	
238 U	0.0067	0.0013	ppb	22.73	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3118422.30	1.21	3477802.30	89.7	69.5 - 120	
45 Sc	1975346.30	1.59	2104691.00	93.9	69.5 - 120	
72 Ge	370288.06	0.72	391860.38	94.5	69.5 - 120	
159 Tb	3207422.00	2.25	3376351.50	95.0	69.5 - 120	
209 Bi	1603544.90	2.21	1729987.60	92.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000411

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\032SMPL.D\032SMPL.D#
Date Acquired: May 9 2018 06:11 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LCSOLE02IMS1
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	47.66	9.532	ppb	0.96	100.	
11 B	488.15	97.63	ppb	4.04	1000.	
23 Na	6,845.	1,369.	ppb	2.81	200000.	
25 Mg	4,690.5	938.1	ppb	2.01	200000.	
27 Al	1,918.5	383.7	ppb	1.97	200000.	
28 Si	735.	147.	ppb	13.21	#VALUE!	
29 Si	848.	169.6	ppb	7.19	10000.	
39 K	9,540.	1,908.	ppb	1.91	200000.	
43 Ca	2,688.	537.6	ppb	4.06	#VALUE!	
44 Ca	2,371.	474.2	ppb	1.42	200000.	
51 V	486.45	97.29	ppb	1.37	1000.	
52 Cr	191.25	38.25	ppb	0.37	2000.	
53 Cr	259.	51.8	ppb	1.42	#VALUE!	
55 Mn	496.	99.2	ppb	0.87	2000.	
56 Fe	1,051.5	210.3	ppb	3.11	#VALUE!	
57 Fe	951.5	190.3	ppb	0.50	100000.	
59 Co	480.6	96.12	ppb	1.48	1000.	
60 Ni	494.1	98.82	ppb	0.09	1000.	
63 Cu	245.5	49.1	ppb	0.82	#VALUE!	
65 Cu	240.5	48.1	ppb	0.19	2000.	
66 Zn	475.95	95.19	ppb	0.25	2000.	
68 Zn	551.5	110.3	ppb	0.37	#VALUE!	
75 As	97.2	19.44	ppb	1.86	1000.	
82 Se	92.05	18.41	ppb	1.65	1000.	
88 Sr	458.35	91.67	ppb	1.64	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	91.9	18.38	ppb	0.22	1000.	
107 Ag	48.645	9.729	ppb	1.50	100.	
109 Ag	48.165	9.633	ppb	0.94	#VALUE!	
111 Cd	238.65	47.73	ppb	0.56	#VALUE!	
114 Cd	238.75	47.75	ppb	0.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	506.	101.2	ppb	2.35	1000.	
120 Sn	499.95	99.99	ppb	2.81	#VALUE!	
121 Sb	96.35	19.27	ppb	3.32	#VALUE!	
123 Sb	95.9	19.18	ppb	2.63	1000.	
135 Ba	1,928.	385.6	ppb	2.61	2000.	
137 Ba	1,940.	388.	ppb	2.15	#VALUE!	
182 W	95.5	19.1	ppb	1.58	1000.	
203 Tl	95.55	19.11	ppb	1.81	1000.	
205 Tl	94.8	18.96	ppb	2.09	#VALUE!	
208 Pb	96.7	19.34	ppb	1.73	2000.	
232 Th	97.15	19.43	ppb	2.52	1000.	
238 U	105.	21.	ppb	1.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3454115.30	0.60	3477802.30	99.3	69.5 - 120	
45 Sc	2088394.50	1.18	2104691.00	99.2	69.5 - 120	
72 Ge	378687.50	0.65	391860.38	96.6	69.5 - 120	
159 Tb	3259907.00	1.83	3376351.50	96.6	69.5 - 120	
209 Bi	1635474.90	2.01	1729987.60	94.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000412

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\033SMPL.D\033SMPL.D#
Date Acquired: May 9 2018 06:15 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-001
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	10.085	2.017	ppb	1.07	100.	
11 B	219.	43.8	ppb	1.43	1000.	
23 Na	3,177.	635.4	ppb	3.53	200000.	
25 Mg	151,400.	30,280.	ppb	1.31	200000.	
27 Al	216,600.	43,320.	ppb	2.32	200000.	
28 Si	2,771.5	554.3	ppb	0.59	#VALUE!	
29 Si	2,899.5	579.9	ppb	1.04	10000.	
39 K	65,300.	13,060.	ppb	2.79	200000.	
43 Ca	615,500.	123,100.	ppb	3.50	#VALUE!	
44 Ca	580,500.	116,100.	ppb	2.56	200000.	
51 V	522.5	104.5	ppb	0.83	1000.	
52 Cr	188.65	37.73	ppb	1.49	2000.	
53 Cr	216.45	43.29	ppb	1.10	#VALUE!	
55 Mn	4,145.5	829.1	ppb	0.32	2000.	
56 Fe	175,400.	35,080.	ppb	1.16	#VALUE!	
57 Fe	169,850.	33,970.	ppb	2.00	100000.	
59 Co	84.1	16.82	ppb	1.55	1000.	
60 Ni	152.85	30.57	ppb	2.15	1000.	
63 Cu	118.7	23.74	ppb	0.54	#VALUE!	
65 Cu	119.75	23.95	ppb	0.58	2000.	
66 Zn	485.35	97.07	ppb	2.38	2000.	
68 Zn	637.	127.4	ppb	2.27	#VALUE!	
75 As	115.15	23.03	ppb	3.41	1000.	
82 Se	6.28	1.256	ppb	15.69	1000.	
88 Sr	4,200.	840.	ppb	1.60	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.48	1.096	ppb	1.32	1000.	
107 Ag	0.9435	0.1887	ppb	4.23	100.	
109 Ag	0.703	0.1406	ppb	8.16	#VALUE!	
111 Cd	5.93	1.186	ppb	8.63	#VALUE!	
114 Cd	1.2675	0.2535	ppb	4.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.695	9.539	ppb	0.33	1000.	
120 Sn	47.015	9.403	ppb	2.18	#VALUE!	
121 Sb	1.867	0.3734	ppb	3.42	#VALUE!	
123 Sb	1.883	0.3766	ppb	2.86	1000.	
135 Ba	4,250.5	850.1	ppb	1.82	2000.	
137 Ba	4,309.	861.8	ppb	1.79	#VALUE!	
182 W	1.2465	0.2493	ppb	1.41	1000.	
203 Tl	3.5145	0.7029	ppb	1.82	1000.	
205 Tl	3.6815	0.7363	ppb	1.98	#VALUE!	
208 Pb	149.65	29.93	ppb	0.68	2000.	
232 Th	111.8	22.36	ppb	1.33	1000.	
238 U	15.235	3.047	ppb	0.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3432868.80	0.56	3477802.30	98.7	69.5 - 120	
45 Sc	2186021.50	0.38	2104691.00	103.9	69.5 - 120	
72 Ge	395412.91	0.06	391860.38	100.9	69.5 - 120	
159 Tb	3494269.50	1.24	3376351.50	103.5	69.5 - 120	
209 Bi	1665373.30	2.32	1729987.60	96.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000413

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\034SMPL.D\034SMPL.D#
Date Acquired: May 9 2018 06:19 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-002
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	8.2	1.64	ppb	2.08	100.	
11 B	182.6	36.52	ppb	2.35	1000.	
23 Na	2,515.	503.	ppb	2.57	200000.	
25 Mg	121,550.	24,310.	ppb	1.12	200000.	
27 Al	169,200.	33,840.	ppb	2.30	200000.	
28 Si	2,557.	511.4	ppb	3.77	#VALUE!	
29 Si	2,662.	532.4	ppb	2.96	10000.	
39 K	53,100.	10,620.	ppb	1.27	200000.	
43 Ca	451,700.	90,340.	ppb	1.52	#VALUE!	
44 Ca	427,350.	85,470.	ppb	0.74	200000.	
51 V	411.6	82.32	ppb	0.16	1000.	
52 Cr	156.5	31.3	ppb	1.30	2000.	
53 Cr	180.85	36.17	ppb	3.17	#VALUE!	
55 Mn	3,495.	699.	ppb	1.79	2000.	
56 Fe	146,850.	29,370.	ppb	1.19	#VALUE!	
57 Fe	140,550.	28,110.	ppb	2.60	100000.	
59 Co	74.65	14.93	ppb	1.95	1000.	
60 Ni	130.7	26.14	ppb	3.16	1000.	
63 Cu	105.6	21.12	ppb	2.39	#VALUE!	
65 Cu	107.95	21.59	ppb	3.79	2000.	
66 Zn	414.9	82.98	ppb	2.06	2000.	
68 Zn	558.	111.6	ppb	1.29	#VALUE!	
75 As	93.5	18.7	ppb	0.10	1000.	
82 Se	5.1	1.02	ppb	18.77	1000.	
88 Sr	3,187.5	637.5	ppb	1.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.6225	0.9245	ppb	0.60	1000.	
107 Ag	0.939	0.1878	ppb	10.46	100.	
109 Ag	0.697	0.1394	ppb	9.55	#VALUE!	
111 Cd	4.554	0.9108	ppb	9.53	#VALUE!	
114 Cd	0.952	0.1904	ppb	14.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.675	9.335	ppb	3.24	1000.	
120 Sn	46.34	9.268	ppb	3.34	#VALUE!	
121 Sb	1.5265	0.3053	ppb	7.02	#VALUE!	
123 Sb	1.7495	0.3499	ppb	9.08	1000.	
135 Ba	3,739.	747.8	ppb	3.98	2000.	
137 Ba	3,761.5	752.3	ppb	2.24	#VALUE!	
182 W	1.0155	0.2031	ppb	4.30	1000.	
203 Tl	3.063	0.6126	ppb	11.13	1000.	
205 Tl	3.06	0.612	ppb	5.09	#VALUE!	
208 Pb	128.5	25.7	ppb	1.77	2000.	
232 Th	90.1	18.02	ppb	2.13	1000.	
238 U	11.425	2.285	ppb	2.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3445352.50	1.01	3477802.30	99.1	69.5 - 120	
45 Sc	2221221.80	1.38	2104691.00	105.5	69.5 - 120	
72 Ge	395196.72	0.63	391860.38	100.9	69.5 - 120	
159 Tb	3514922.80	2.22	3376351.50	104.1	69.5 - 120	
209 Bi	1699977.80	1.96	1729987.60	98.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000414

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\035SMPL.D\035SMPL.D#
Date Acquired: May 9 2018 06:24 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-003
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	14.71	2.942	ppb	3.39	100.	
11 B	234.25	46.85	ppb	2.20	1000.	
23 Na	2,819.5	563.9	ppb	4.39	200000.	
25 Mg	132,150.	26,430.	ppb	1.00	200000.	
27 Al	294,150.	58,830.	ppb	0.83	200000.	
28 Si	2,587.5	517.5	ppb	0.70	#VALUE!	
29 Si	2,597.	519.4	ppb	2.14	10000.	
39 K	85,700.	17,140.	ppb	3.54	200000.	
43 Ca	653,000.	130,600.	ppb	2.55	#VALUE!	
44 Ca	630,000.	126,000.	ppb	2.01	200000.	
51 V	643.5	128.7	ppb	1.70	1000.	
52 Cr	251.2	50.24	ppb	0.69	2000.	
53 Cr	274.5	54.9	ppb	1.23	#VALUE!	
55 Mn	6,185.	1,237.	ppb	0.91	2000.	
56 Fe	261,250.	52,250.	ppb	2.37	#VALUE!	
57 Fe	249,150.	49,830.	ppb	1.58	100000.	
59 Co	121.6	24.32	ppb	1.91	1000.	
60 Ni	245.1	49.02	ppb	0.69	1000.	
63 Cu	168.8	33.76	ppb	0.96	#VALUE!	
65 Cu	169.05	33.81	ppb	2.56	2000.	
66 Zn	662.	132.4	ppb	0.54	2000.	
68 Zn	853.5	170.7	ppb	1.58	#VALUE!	
75 As	143.2	28.64	ppb	0.83	1000.	
82 Se	6.535	1.307	ppb	14.38	1000.	
88 Sr	3,259.5	651.9	ppb	1.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.815	1.363	ppb	1.71	1000.	
107 Ag	1.192	0.2384	ppb	8.99	100.	
109 Ag	0.891	0.1782	ppb	1.06	#VALUE!	
111 Cd	6.565	1.313	ppb	3.34	#VALUE!	
114 Cd	1.362	0.2724	ppb	11.58	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.15	10.23	ppb	1.99	1000.	
120 Sn	49.895	9.979	ppb	1.48	#VALUE!	
121 Sb	2.4795	0.4959	ppb	2.92	#VALUE!	
123 Sb	2.629	0.5258	ppb	8.97	1000.	
135 Ba	5,060.	1,012.	ppb	2.55	2000.	
137 Ba	5,010.	1,002.	ppb	2.08	#VALUE!	
182 W	1.2165	0.2433	ppb	4.64	1000.	
203 Tl	4.9025	0.9805	ppb	2.43	1000.	
205 Tl	5.085	1.017	ppb	4.98	#VALUE!	
208 Pb	227.35	45.47	ppb	1.43	2000.	
232 Th	130.15	26.03	ppb	1.61	1000.	
238 U	26.1	5.22	ppb	1.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3419287.50	2.42	3477802.30	98.3	69.5 - 120	
45 Sc	2281429.80	0.94	2104691.00	108.4	69.5 - 120	
72 Ge	398791.41	1.02	391860.38	101.8	69.5 - 120	
159 Tb	3550138.80	2.04	3376351.50	105.1	69.5 - 120	
209 Bi	1670553.40	2.33	1729987.60	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000415

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\036SMPL.D\036SMPL.D#
Date Acquired: May 9 2018 06:28 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-004
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	12.26	2.452	ppb	0.51	100.	
11 B	216.3	43.26	ppb	3.61	1000.	
23 Na	5,080.	1,016.	ppb	3.01	200000.	
25 Mg	108,400.	21,680.	ppb	1.87	200000.	
27 Al	273,000.	54,600.	ppb	1.20	200000.	
28 Si	3,050.	610.	ppb	3.24	#VALUE!	
29 Si	3,196.5	639.3	ppb	1.71	10000.	
39 K	66,450.	13,290.	ppb	2.04	200000.	
43 Ca	477,400.	95,480.	ppb	3.06	#VALUE!	
44 Ca	450,050.	90,010.	ppb	1.59	200000.	
51 V	603.5	120.7	ppb	1.71	1000.	
52 Cr	233.7	46.74	ppb	1.39	2000.	
53 Cr	262.95	52.59	ppb	0.78	#VALUE!	
55 Mn	5,110.	1,022.	ppb	1.10	2000.	
56 Fe	224,250.	44,850.	ppb	0.23	#VALUE!	
57 Fe	214,800.	42,960.	ppb	1.19	100000.	
59 Co	115.9	23.18	ppb	0.58	1000.	
60 Ni	198.9	39.78	ppb	0.32	1000.	
63 Cu	133.3	26.66	ppb	0.64	#VALUE!	
65 Cu	137.	27.4	ppb	1.10	2000.	
66 Zn	547.5	109.5	ppb	1.25	2000.	
68 Zn	642.	128.4	ppb	0.27	#VALUE!	
75 As	107.95	21.59	ppb	1.04	1000.	
82 Se	4.575	0.915	ppb	3.33	1000.	
88 Sr	2,312.5	462.5	ppb	1.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.9	1.18	ppb	2.19	1000.	
107 Ag	1.1625	0.2325	ppb	3.58	100.	
109 Ag	0.7845	0.1569	ppb	4.84	#VALUE!	
111 Cd	5.75	1.15	ppb	7.84	#VALUE!	
114 Cd	-0.1105	-0.0221	ppb	65.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.9	10.38	ppb	0.36	1000.	
120 Sn	51.1	10.22	ppb	0.90	#VALUE!	
121 Sb	2.4385	0.4877	ppb	0.99	#VALUE!	
123 Sb	2.491	0.4982	ppb	4.62	1000.	
135 Ba	2,968.5	593.7	ppb	0.71	2000.	
137 Ba	2,953.5	590.7	ppb	0.32	#VALUE!	
182 W	1.1965	0.2393	ppb	2.29	1000.	
203 Tl	4.299	0.8598	ppb	5.30	1000.	
205 Tl	4.3325	0.8665	ppb	2.35	#VALUE!	
208 Pb	182.1	36.42	ppb	1.02	2000.	
232 Th	128.55	25.71	ppb	1.27	1000.	
238 U	22.68	4.536	ppb	0.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3596860.80	0.87	3477802.30	103.4	69.5 - 120	
45 Sc	2300915.80	1.31	2104691.00	109.3	69.5 - 120	
72 Ge	406657.41	0.07	391860.38	103.8	69.5 - 120	
159 Tb	3498923.30	0.35	3376351.50	103.6	69.5 - 120	
209 Bi	1689345.30	1.50	1729987.60	97.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000416

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\037SMPL.D\037SMPL.D#
Date Acquired: May 9 2018 06:32 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	10.45	2.09	ppb	3.53	100.	
11 B	160.7	32.14	ppb	0.25	1000.	
23 Na	12,910.	2,582.	ppb	4.94	200000.	
25 Mg	101,650.	20,330.	ppb	1.96	200000.	
27 Al	204,100.	40,820.	ppb	0.63	200000.	
28 Si	2,787.	557.4	ppb	6.30	#VALUE!	
29 Si	2,958.	591.6	ppb	6.46	10000.	
39 K	47,385.	9,477.	ppb	3.37	200000.	
43 Ca	1,060,000.	212,000.	ppb	1.69	#VALUE!	
44 Ca	1,026,000.	205,200.	ppb	1.37	200000.	>LDR
51 V	393.85	78.77	ppb	2.11	1000.	
52 Cr	203.05	40.61	ppb	2.62	2000.	
53 Cr	232.85	46.57	ppb	2.01	#VALUE!	
55 Mn	4,959.5	991.9	ppb	1.53	2000.	
56 Fe	198,200.	39,640.	ppb	0.98	#VALUE!	
57 Fe	191,800.	38,360.	ppb	0.31	100000.	
59 Co	74.15	14.83	ppb	1.89	1000.	
60 Ni	149.4	29.88	ppb	2.88	1000.	
63 Cu	119.45	23.89	ppb	0.16	#VALUE!	
65 Cu	120.45	24.09	ppb	2.78	2000.	
66 Zn	482.75	96.55	ppb	2.71	2000.	
68 Zn	585.5	117.1	ppb	1.11	#VALUE!	
75 As	23.635	4.727	ppb	6.40	1000.	
82 Se	6.055	1.211	ppb	21.62	1000.	
88 Sr	1,783.	356.6	ppb	2.03	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.2145	0.8429	ppb	4.91	1000.	
107 Ag	0.9135	0.1827	ppb	6.73	100.	
109 Ag	0.696	0.1392	ppb	9.48	#VALUE!	
111 Cd	8.155	1.631	ppb	0.52	#VALUE!	
114 Cd	3.2965	0.6593	ppb	7.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.845	9.569	ppb	2.54	1000.	
120 Sn	47.26	9.452	ppb	2.25	#VALUE!	
121 Sb	1.661	0.3322	ppb	2.35	#VALUE!	
123 Sb	1.656	0.3312	ppb	3.08	1000.	
135 Ba	2,699.	539.8	ppb	2.70	2000.	
137 Ba	2,679.5	535.9	ppb	1.95	#VALUE!	
182 W	0.666	0.1332	ppb	9.59	1000.	
203 Tl	3.266	0.6532	ppb	4.49	1000.	
205 Tl	3.2965	0.6593	ppb	5.42	#VALUE!	
208 Pb	160.5	32.1	ppb	1.48	2000.	
232 Th	96.5	19.3	ppb	1.47	1000.	
238 U	22.415	4.483	ppb	1.37	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3558891.30	2.34	3477802.30	102.3	69.5 - 120	
45 Sc	2333601.50	2.01	2104691.00	110.9	69.5 - 120	
72 Ge	399415.19	1.04	391860.38	101.9	69.5 - 120	
159 Tb	3529231.30	1.82	3376351.50	104.5	69.5 - 120	
209 Bi	1669745.80	1.77	1729987.60	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000417

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\038SMPL.D\038SMPL.D#
Date Acquired: May 9 2018 06:36 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005L
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	11.3625	0.4545	ppb	2.71	100.	
11 B	202.6	8.104	ppb	0.71	1000.	
23 Na	13,402.5	536.1	ppb	2.50	200000.	
25 Mg	107,900.	4,316.	ppb	2.08	200000.	
27 Al	220,650.	8,826.	ppb	0.94	200000.	
28 Si	1,462.75	58.51	ppb	28.82	#VALUE!	
29 Si	1,540.5	61.62	ppb	29.20	10000.	
39 K	51,025.	2,041.	ppb	4.10	200000.	
43 Ca	1,111,500.	44,460.	ppb	2.09	#VALUE!	
44 Ca	1,089,750.	43,590.	ppb	1.45	200000.	
51 V	404.25	16.17	ppb	2.64	1000.	
52 Cr	214.725	8.589	ppb	1.99	2000.	
53 Cr	191.95	7.678	ppb	0.91	#VALUE!	
55 Mn	5,187.5	207.5	ppb	0.61	2000.	
56 Fe	203,550.	8,142.	ppb	0.27	#VALUE!	
57 Fe	206,450.	8,258.	ppb	1.55	100000.	
59 Co	80.65	3.226	ppb	2.41	1000.	
60 Ni	161.825	6.473	ppb	2.24	1000.	
63 Cu	129.125	5.165	ppb	2.22	#VALUE!	
65 Cu	131.575	5.263	ppb	1.86	2000.	
66 Zn	551.25	22.05	ppb	2.57	2000.	
68 Zn	656.	26.24	ppb	2.05	#VALUE!	
75 As	27.125	1.085	ppb	6.09	1000.	
82 Se	10.6075	0.4243	ppb	47.18	1000.	
88 Sr	1,891.25	75.65	ppb	1.93	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.1775	0.1671	ppb	13.42	1000.	
107 Ag	0.9	0.036	ppb	16.45	100.	
109 Ag	0.7453	0.0298	ppb	13.29	#VALUE!	
111 Cd	9.01	0.3604	ppb	10.45	#VALUE!	
114 Cd	3.8625	0.1545	ppb	7.86	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.775	2.031	ppb	4.07	1000.	
120 Sn	50.85	2.034	ppb	2.62	#VALUE!	
121 Sb	1.711	0.0684	ppb	8.95	#VALUE!	
123 Sb	1.7703	0.0708	ppb	8.03	1000.	
135 Ba	2,807.5	112.3	ppb	1.12	2000.	
137 Ba	2,817.5	112.7	ppb	1.14	#VALUE!	
182 W	0.8465	0.0339	ppb	21.35	1000.	
203 Tl	4.365	0.1746	ppb	4.20	1000.	
205 Tl	4.0425	0.1617	ppb	4.22	#VALUE!	
208 Pb	165.075	6.603	ppb	0.58	2000.	
232 Th	94.375	3.775	ppb	1.79	1000.	
238 U	22.5975	0.9039	ppb	1.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3575177.80	0.87	3477802.30	102.8	69.5 - 120	
45 Sc	2305043.50	2.28	2104691.00	109.5	69.5 - 120	
72 Ge	406707.38	0.22	391860.38	103.8	69.5 - 120	
159 Tb	3546268.80	0.16	3376351.50	105.0	69.5 - 120	
209 Bi	1738650.80	0.41	1729987.60	100.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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\JLE09B.B\039SMPL.D\039SMPL.D#
Date Acquired: May 9 2018 06:40 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: May 09 2018 05:11 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	0.001	0.001	ppb	110.99	100.	
11 B	1.469	1.469	ppb	9.64	1000.	
23 Na	5.185	5.185	ppb	7.97	200000.	
25 Mg	0.6008	0.6008	ppb	23.85	200000.	
27 Al	0.7285	0.7285	ppb	17.06	200000.	
28 Si	-44.89	-44.89	ppb	41.39	#VALUE!	
29 Si	-14.64	-14.64	ppb	58.84	10000.	
39 K	3.796	3.796	ppb	7.57	200000.	
43 Ca	0.7994	0.7994	ppb	225.92	#VALUE!	
44 Ca	1.147	1.147	ppb	21.64	200000.	
51 V	-0.019	-0.019	ppb	79.93	1000.	
52 Cr	0.2206	0.2206	ppb	11.03	2000.	
53 Cr	-1.779	-1.779	ppb	11.53	#VALUE!	
55 Mn	0.0278	0.0278	ppb	31.89	2000.	
56 Fe	6.221	6.221	ppb	90.53	#VALUE!	
57 Fe	-0.5537	-0.5537	ppb	138.94	100000.	
59 Co	0.0034	0.0034	ppb	60.75	1000.	
60 Ni	0.01	0.01	ppb	192.43	1000.	
63 Cu	0.082	0.082	ppb	5.98	#VALUE!	
65 Cu	0.0702	0.0702	ppb	44.14	2000.	
66 Zn	0.2241	0.2241	ppb	20.61	2000.	
68 Zn	0.0428	0.0428	ppb	47.48	#VALUE!	
75 As	-0.0159	-0.0159	ppb	973.58	1000.	
82 Se	0.1351	0.1351	ppb	58.67	1000.	
88 Sr	0.004	0.004	ppb	170.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0076	0.0076	ppb	125.54	1000.	
107 Ag	-0.001	-0.001	ppb	90.24	100.	
109 Ag	0.0028	0.0028	ppb	103.36	#VALUE!	
111 Cd	-0.003	-0.003	ppb	742.50	#VALUE!	
114 Cd	-0.001	-0.001	ppb	445.86	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0476	0.0476	ppb	16.64	1000.	
120 Sn	0.0371	0.0371	ppb	43.94	#VALUE!	
121 Sb	0.004	0.004	ppb	107.60	#VALUE!	
123 Sb	0.0068	0.0068	ppb	79.60	1000.	
135 Ba	0.1063	0.1063	ppb	27.13	2000.	
137 Ba	0.0945	0.0945	ppb	14.35	#VALUE!	
182 W	0.0106	0.0106	ppb	71.27	1000.	
203 Tl	0.0168	0.0168	ppb	174.81	1000.	
205 Tl	0.0346	0.0346	ppb	14.63	#VALUE!	
208 Pb	0.2298	0.2298	ppb	3.94	2000.	
232 Th	0.0114	0.0114	ppb	63.13	1000.	
238 U	0.	0.	ppb	2681.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3373196.50	1.72	3477802.30	97.0	69.5 - 120	
45 Sc	2111259.50	0.62	2104691.00	100.3	69.5 - 120	
72 Ge	381288.66	1.28	391860.38	97.3	69.5 - 120	
159 Tb	3180356.30	1.34	3376351.50	94.2	69.5 - 120	
209 Bi	1607930.50	1.03	1729987.60	92.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\040_CCV.D\040_CCV.D#
Date Acquired: May 9 2018 06:44 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: May 09 2018 05:11 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	26.03	ppb	2.77	25	104.12	
11 B	25.2	ppb	3.40	25	100.8	
23 Na	4,655.	ppb	2.47	5,000	93.1	
25 Mg	4,810.	ppb	2.18	5,000	96.2	
27 Al	474.2	ppb	0.85	500	94.84	
28 Si	356.5	ppb	6.76	500	71.3	
29 Si	394.7	ppb	6.44	500	78.94	Fail
39 K	4,735.	ppb	2.47	5,000	94.7	
43 Ca	4,777.	ppb	4.31	5,000	95.54	
44 Ca	4,963.	ppb	2.22	5,000	99.26	
51 V	23.46	ppb	1.24	25	93.84	
52 Cr	24.01	ppb	1.36	25	96.04	
53 Cr	23.34	ppb	2.78	25	93.36	
55 Mn	24.34	ppb	2.65	25	97.36	
56 Fe	4,780.	ppb	1.28	5,000	95.6	
57 Fe	4,776.	ppb	1.14	5,000	95.52	
59 Co	23.68	ppb	0.50	25	94.72	
60 Ni	24.33	ppb	1.88	25	97.32	
63 Cu	24.58	ppb	1.02	25	98.32	
65 Cu	24.03	ppb	1.29	25	96.12	
66 Zn	24.26	ppb	1.81	25	97.04	
68 Zn	24.61	ppb	2.45	25	98.44	
75 As	24.47	ppb	1.67	25	97.88	
82 Se	24.33	ppb	1.27	25	97.32	
88 Sr	22.75	ppb	0.31	25	91	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.1	ppb	0.57	25	92.4	
107 Ag	23.62	ppb	1.30	25	94.48	
109 Ag	23.48	ppb	1.55	25	93.92	
111 Cd	23.68	ppb	1.14	25	94.72	
114 Cd	23.75	ppb	0.48	25	95	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.63	ppb	0.33	25	94.52	
120 Sn	23.04	ppb	0.58	25	92.16	
121 Sb	23.9	ppb	1.09	25	95.6	
123 Sb	24.18	ppb	1.58	25	96.72	
135 Ba	23.89	ppb	1.02	25	95.56	
137 Ba	23.86	ppb	0.48	25	95.44	
182 W	23.12	ppb	0.98	25	92.48	
203 Tl	24.09	ppb	0.96	25	96.36	
205 Tl	24.06	ppb	0.59	25	96.24	
208 Pb	24.15	ppb	0.65	25	96.6	
232 Th	25.26	ppb	0.23	25	101.04	
238 U	29.19	ppb	0.48	25	116.76	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3552509.50	1.75	3477802.30	102.1	80 - 120.4	
45 Sc	2265775.80	1.16	2104691.00	107.7	80 - 120.4	
72 Ge	401417.41	0.47	391860.38	102.4	80 - 120.4	
159 Tb	3447563.00	0.06	3376351.50	102.1	80 - 120.4	
209 Bi	1696560.00	0.38	1729987.60	98.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000420

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\041_CCB.D\041_CCB.D#
Date Acquired: May 9 2018 06:48 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: May 09 2018 05:11 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	99.02	1.00	
11 B	1.87	ppb	15.39	1.00	
23 Na	0.5844	ppb	20.69	1.00	
25 Mg	0.0494	ppb	57.58	1.00	
27 Al	0.0418	ppb	162.97	1.00	
28 Si	-47.19	ppb	34.50	1.00	
29 Si	-9.724	ppb	130.19	1.00	
39 K	4.686	ppb	74.37	1.00	
43 Ca	-1.175	ppb	125.36	1.00	
44 Ca	-1.361	ppb	65.20	1.00	
51 V	0.0219	ppb	257.08	1.00	
52 Cr	0.2931	ppb	8.02	1.00	
53 Cr	-1.723	ppb	6.49	1.00	
55 Mn	0.0012	ppb	137.18	1.00	
56 Fe	3.758	ppb	101.68	1.00	
57 Fe	1.329	ppb	400.15	1.00	
59 Co	0.0045	ppb	132.42	1.00	
60 Ni	-0.0024	ppb	114.72	1.00	
63 Cu	0.048	ppb	28.38	1.00	
65 Cu	0.0432	ppb	50.80	1.00	
66 Zn	0.0656	ppb	60.77	1.00	
68 Zn	0.0832	ppb	43.58	1.00	
75 As	0.0369	ppb	314.98	1.00	
82 Se	0.0752	ppb	121.13	1.00	
88 Sr	0.004	ppb	182.49	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0366	ppb	55.93	1.00	
107 Ag	0.0047	ppb	46.22	1.00	
109 Ag	0.0046	ppb	28.35	1.00	
111 Cd	0.0109	ppb	477.50	1.00	
114 Cd	-0.0021	ppb	225.56	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0737	ppb	6.99	1.00	
120 Sn	0.0539	ppb	19.68	1.00	
121 Sb	0.0082	ppb	34.34	1.00	
123 Sb	0.0059	ppb	65.48	1.00	
135 Ba	0.02	ppb	32.45	1.00	
137 Ba	0.0224	ppb	18.45	1.00	
182 W	0.0515	ppb	10.29	1.00	
203 Tl	0.0317	ppb	34.58	1.00	
205 Tl	0.0321	ppb	41.63	1.00	
208 Pb	0.2585	ppb	5.15	1.00	Fail
232 Th	0.0499	ppb	13.65	1.00	
238 U	0.0047	ppb	9.13	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3321150.30	2.83	3477802.30	95.5	79.5 - 120	
45 Sc	2085892.30	1.89	2104691.00	99.1	79.5 - 120	
72 Ge	374269.16	0.81	391860.38	95.5	79.5 - 120	
159 Tb	3186648.50	1.81	3376351.50	94.4	79.5 - 120	
209 Bi	1594849.50	1.55	1729987.60	92.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000421

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\042SMPL.D\042SMPL.D#
Date Acquired: May 9 2018 06:52 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005A
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	20.42	4.084	ppb	2.09	100.	
11 B	382.	76.4	ppb	3.37	1000.	
23 Na	21,870.	4,374.	ppb	0.55	200000.	
25 Mg	98,750.	19,750.	ppb	1.25	200000.	
27 Al	200,650.	40,130.	ppb	0.75	200000.	
28 Si	7,505.	1,501.	ppb	4.62	#VALUE!	
29 Si	7,805.	1,561.	ppb	1.03	10000.	
39 K	56,300.	11,260.	ppb	2.05	200000.	
43 Ca	1,018,500.	203,700.	ppb	0.25	#VALUE!	
44 Ca	996,000.	199,200.	ppb	1.68	200000.	
51 V	449.95	89.99	ppb	1.59	1000.	
52 Cr	251.75	50.35	ppb	0.91	2000.	
53 Cr	281.8	56.36	ppb	0.92	#VALUE!	
55 Mn	4,860.5	972.1	ppb	0.56	2000.	
56 Fe	196,150.	39,230.	ppb	0.13	#VALUE!	
57 Fe	188,600.	37,720.	ppb	0.87	100000.	
59 Co	83.45	16.69	ppb	0.52	1000.	
60 Ni	168.35	33.67	ppb	2.18	1000.	
63 Cu	147.4	29.48	ppb	0.31	#VALUE!	
65 Cu	148.45	29.69	ppb	0.44	2000.	
66 Zn	569.	113.8	ppb	0.97	2000.	
68 Zn	664.5	132.9	ppb	1.93	#VALUE!	
75 As	75.8	15.16	ppb	1.24	1000.	
82 Se	52.6	10.52	ppb	0.41	1000.	
88 Sr	1,816.	363.2	ppb	0.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	55.45	11.09	ppb	0.74	1000.	
107 Ag	10.725	2.145	ppb	2.41	100.	
109 Ag	10.295	2.059	ppb	2.81	#VALUE!	
111 Cd	18.225	3.645	ppb	2.52	#VALUE!	
114 Cd	12.715	2.543	ppb	2.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	95.2	19.04	ppb	1.71	1000.	
120 Sn	93.6	18.72	ppb	2.23	#VALUE!	
121 Sb	11.175	2.235	ppb	1.50	#VALUE!	
123 Sb	11.45	2.29	ppb	1.89	1000.	
135 Ba	2,633.5	526.7	ppb	1.12	2000.	
137 Ba	2,630.	526.	ppb	0.43	#VALUE!	
182 W	51.95	10.39	ppb	0.95	1000.	
203 Tl	14.445	2.889	ppb	1.14	1000.	
205 Tl	13.99	2.798	ppb	1.52	#VALUE!	
208 Pb	168.95	33.79	ppb	1.51	2000.	
232 Th	108.1	21.62	ppb	0.98	1000.	
238 U	35.885	7.177	ppb	1.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3519718.80	1.73	3477802.30	101.2	69.5 - 120	
45 Sc	2316888.30	1.01	2104691.00	110.1	69.5 - 120	
72 Ge	393751.09	0.12	391860.38	100.5	69.5 - 120	
159 Tb	3535679.50	1.01	3376351.50	104.7	69.5 - 120	
209 Bi	1671641.30	1.44	1729987.60	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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\JLE09B.B\043SMPL.D\043SMPL.D#
Date Acquired: May 9 2018 06:56 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005S
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	62.1	12.42	ppb	2.01	100.	
11 B	639.	127.8	ppb	3.74	1000.	
23 Na	21,065.	4,213.	ppb	1.31	200000.	
25 Mg	108,400.	21,680.	ppb	1.28	200000.	
27 Al	249,200.	49,840.	ppb	2.88	200000.	
28 Si	2,616.	523.2	ppb	1.93	#VALUE!	
29 Si	2,737.	547.4	ppb	0.20	10000.	
39 K	65,050.	13,010.	ppb	1.28	200000.	
43 Ca	505,000.	101,000.	ppb	1.48	#VALUE!	
44 Ca	481,000.	96,200.	ppb	1.13	200000.	
51 V	955.5	191.1	ppb	0.92	1000.	
52 Cr	430.05	86.01	ppb	0.07	2000.	
53 Cr	473.3	94.66	ppb	1.36	#VALUE!	
55 Mn	4,685.	937.	ppb	2.21	2000.	
56 Fe	217,500.	43,500.	ppb	0.78	#VALUE!	
57 Fe	209,550.	41,910.	ppb	0.85	100000.	
59 Co	572.5	114.5	ppb	2.07	1000.	
60 Ni	647.5	129.5	ppb	0.57	1000.	
63 Cu	363.4	72.68	ppb	1.92	#VALUE!	
65 Cu	362.2	72.44	ppb	1.01	2000.	
66 Zn	989.	197.8	ppb	0.64	2000.	
68 Zn	1,141.	228.2	ppb	1.24	#VALUE!	
75 As	120.55	24.11	ppb	2.16	1000.	
82 Se	88.35	17.67	ppb	2.94	1000.	
88 Sr	1,764.	352.8	ppb	1.30	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	87.6	17.52	ppb	1.27	1000.	
107 Ag	47.685	9.537	ppb	1.35	100.	
109 Ag	46.965	9.393	ppb	1.26	#VALUE!	
111 Cd	231.9	46.38	ppb	0.40	#VALUE!	
114 Cd	227.7	45.54	ppb	1.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	492.1	98.42	ppb	1.38	1000.	
120 Sn	481.85	96.37	ppb	1.53	#VALUE!	
121 Sb	28.555	5.711	ppb	1.86	#VALUE!	
123 Sb	29.22	5.844	ppb	1.98	1000.	
135 Ba	4,191.	838.2	ppb	1.03	2000.	
137 Ba	4,271.5	854.3	ppb	1.04	#VALUE!	
182 W	38.715	7.743	ppb	1.52	1000.	
203 Tl	103.	20.6	ppb	2.07	1000.	
205 Tl	103.9	20.78	ppb	0.88	#VALUE!	
208 Pb	247.05	49.41	ppb	1.02	2000.	
232 Th	219.75	43.95	ppb	0.88	1000.	
238 U	141.65	28.33	ppb	1.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3720951.50	1.20	3477802.30	107.0	69.5 - 120	
45 Sc	2359072.00	1.34	2104691.00	112.1	69.5 - 120	
72 Ge	401190.50	2.05	391860.38	102.4	69.5 - 120	
159 Tb	3521972.80	0.23	3376351.50	104.3	69.5 - 120	
209 Bi	1672263.50	1.49	1729987.60	96.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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\JLE09B.B\044SMPL.D\044SMPL.D#
Date Acquired: May 9 2018 07:00 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005P
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	58.65	11.73	ppb	1.77	100.	
11 B	638.5	127.7	ppb	3.81	1000.	
23 Na	19,615.	3,923.	ppb	1.74	200000.	
25 Mg	110,300.	22,060.	ppb	0.58	200000.	
27 Al	201,150.	40,230.	ppb	0.29	200000.	
28 Si	2,670.	534.	ppb	3.90	#VALUE!	
29 Si	2,786.	557.2	ppb	4.85	10000.	
39 K	55,600.	11,120.	ppb	1.05	200000.	
43 Ca	1,123,500.	224,700.	ppb	2.94	#VALUE!	
44 Ca	1,112,500.	222,500.	ppb	1.23	200000.	>LDR
51 V	893.5	178.7	ppb	0.83	1000.	
52 Cr	390.65	78.13	ppb	0.64	2000.	
53 Cr	422.	84.4	ppb	0.75	#VALUE!	
55 Mn	4,608.	921.6	ppb	0.95	2000.	
56 Fe	183,000.	36,600.	ppb	1.20	#VALUE!	
57 Fe	176,950.	35,390.	ppb	0.94	100000.	
59 Co	542.5	108.5	ppb	1.02	1000.	
60 Ni	602.5	120.5	ppb	0.76	1000.	
63 Cu	340.45	68.09	ppb	1.08	#VALUE!	
65 Cu	338.8	67.76	ppb	0.97	2000.	
66 Zn	871.5	174.3	ppb	1.42	2000.	
68 Zn	996.5	199.3	ppb	1.21	#VALUE!	
75 As	110.65	22.13	ppb	3.32	1000.	
82 Se	90.	18.	ppb	1.61	1000.	
88 Sr	2,395.5	479.1	ppb	0.83	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	88.1	17.62	ppb	1.98	1000.	
107 Ag	45.81	9.162	ppb	1.03	100.	
109 Ag	45.165	9.033	ppb	1.17	#VALUE!	
111 Cd	224.45	44.89	ppb	0.93	#VALUE!	
114 Cd	220.4	44.08	ppb	0.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	479.2	95.84	ppb	1.43	1000.	
120 Sn	466.8	93.36	ppb	2.44	#VALUE!	
121 Sb	27.1	5.42	ppb	2.02	#VALUE!	
123 Sb	27.755	5.551	ppb	1.80	1000.	
135 Ba	3,472.	694.4	ppb	1.59	2000.	
137 Ba	3,534.5	706.9	ppb	1.44	#VALUE!	
182 W	41.91	8.382	ppb	0.46	1000.	
203 Tl	100.05	20.01	ppb	2.54	1000.	
205 Tl	100.1	20.02	ppb	1.01	#VALUE!	
208 Pb	216.65	43.33	ppb	0.46	2000.	
232 Th	194.7	38.94	ppb	1.30	1000.	
238 U	139.65	27.93	ppb	0.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3689873.30	1.79	3477802.30	106.1	69.5 - 120	
45 Sc	2347199.30	1.67	2104691.00	111.5	69.5 - 120	
72 Ge	396735.38	0.80	391860.38	101.2	69.5 - 120	
159 Tb	3524942.00	1.09	3376351.50	104.4	69.5 - 120	
209 Bi	1653209.00	1.77	1729987.60	95.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000424

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\045SMPL.D\045SMPL.D#
Date Acquired: May 9 2018 07:05 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-006
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	9.445	1.889	ppb	1.34	100.	
11 B	180.7	36.14	ppb	3.08	1000.	
23 Na	1,586.	317.2	ppb	3.11	200000.	
25 Mg	67,250.	13,450.	ppb	1.96	200000.	
27 Al	186,450.	37,290.	ppb	2.84	200000.	
28 Si	2,014.5	402.9	ppb	4.14	#VALUE!	
29 Si	2,152.	430.4	ppb	8.28	10000.	
39 K	55,050.	11,010.	ppb	2.41	200000.	
43 Ca	56,950.	11,390.	ppb	2.42	#VALUE!	
44 Ca	56,350.	11,270.	ppb	2.44	200000.	
51 V	441.65	88.33	ppb	2.10	1000.	
52 Cr	155.95	31.19	ppb	1.52	2000.	
53 Cr	193.6	38.72	ppb	0.52	#VALUE!	
55 Mn	3,179.	635.8	ppb	1.04	2000.	
56 Fe	163,500.	32,700.	ppb	1.22	#VALUE!	
57 Fe	156,800.	31,360.	ppb	0.76	100000.	
59 Co	75.7	15.14	ppb	2.15	1000.	
60 Ni	142.2	28.44	ppb	2.45	1000.	
63 Cu	111.35	22.27	ppb	1.96	#VALUE!	
65 Cu	110.45	22.09	ppb	1.30	2000.	
66 Zn	425.45	85.09	ppb	0.95	2000.	
68 Zn	473.4	94.68	ppb	1.50	#VALUE!	
75 As	111.75	22.35	ppb	2.37	1000.	
82 Se	3.0015	0.6003	ppb	10.88	1000.	
88 Sr	558.5	111.7	ppb	1.12	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.337	0.8674	ppb	3.80	1000.	
107 Ag	0.721	0.1442	ppb	7.46	100.	
109 Ag	0.529	0.1058	ppb	3.49	#VALUE!	
111 Cd	2.619	0.5238	ppb	1.77	#VALUE!	
114 Cd	-0.0219	-0.0044	ppb	551.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.23	9.246	ppb	0.47	1000.	
120 Sn	45.74	9.148	ppb	1.12	#VALUE!	
121 Sb	1.499	0.2998	ppb	6.58	#VALUE!	
123 Sb	1.5095	0.3019	ppb	5.10	1000.	
135 Ba	1,535.	307.	ppb	1.02	2000.	
137 Ba	1,545.5	309.1	ppb	0.59	#VALUE!	
182 W	0.707	0.1414	ppb	16.61	1000.	
203 Tl	2.893	0.5786	ppb	7.72	1000.	
205 Tl	2.715	0.543	ppb	1.70	#VALUE!	
208 Pb	117.8	23.56	ppb	0.51	2000.	
232 Th	83.2	16.64	ppb	0.46	1000.	
238 U	8.215	1.643	ppb	1.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3663850.30	4.14	3477802.30	105.3	69.5 - 120	
45 Sc	2321321.30	3.25	2104691.00	110.3	69.5 - 120	
72 Ge	404636.63	2.08	391860.38	103.3	69.5 - 120	
159 Tb	3493593.30	1.10	3376351.50	103.5	69.5 - 120	
209 Bi	1693509.80	1.18	1729987.60	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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\JLE09B.B\046SMPL.D\046SMPL.D#
Date Acquired: May 9 2018 07:09 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-008
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	9.695	1.939	ppb	3.99	100.	
11 B	190.4	38.08	ppb	1.70	1000.	
23 Na	12,395.	2,479.	ppb	1.60	200000.	
25 Mg	76,250.	15,250.	ppb	1.28	200000.	
27 Al	199,300.	39,860.	ppb	2.27	200000.	
28 Si	2,342.	468.4	ppb	6.51	#VALUE!	
29 Si	2,446.	489.2	ppb	3.91	10000.	
39 K	47,185.	9,437.	ppb	1.70	200000.	
43 Ca	415,050.	83,010.	ppb	2.19	#VALUE!	
44 Ca	394,750.	78,950.	ppb	0.48	200000.	
51 V	367.2	73.44	ppb	2.17	1000.	
52 Cr	182.9	36.58	ppb	1.40	2000.	
53 Cr	208.	41.6	ppb	0.39	#VALUE!	
55 Mn	3,182.5	636.5	ppb	0.30	2000.	
56 Fe	191,500.	38,300.	ppb	1.17	#VALUE!	
57 Fe	183,150.	36,630.	ppb	0.36	100000.	
59 Co	85.9	17.18	ppb	2.17	1000.	
60 Ni	177.	35.4	ppb	1.01	1000.	
63 Cu	121.1	24.22	ppb	0.87	#VALUE!	
65 Cu	122.	24.4	ppb	1.40	2000.	
66 Zn	480.15	96.03	ppb	0.98	2000.	
68 Zn	552.	110.4	ppb	1.47	#VALUE!	
75 As	43.18	8.636	ppb	3.03	1000.	
82 Se	4.2005	0.8401	ppb	10.73	1000.	
88 Sr	1,263.	252.6	ppb	0.95	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.245	1.649	ppb	2.59	1000.	
107 Ag	0.812	0.1624	ppb	2.02	100.	
109 Ag	0.5375	0.1075	ppb	7.26	#VALUE!	
111 Cd	3.9125	0.7825	ppb	10.55	#VALUE!	
114 Cd	-0.0522	-0.0104	ppb	30.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.56	9.712	ppb	1.10	1000.	
120 Sn	47.905	9.581	ppb	2.50	#VALUE!	
121 Sb	2.135	0.427	ppb	4.95	#VALUE!	
123 Sb	2.163	0.4326	ppb	4.62	1000.	
135 Ba	2,066.5	413.3	ppb	1.48	2000.	
137 Ba	2,087.	417.4	ppb	1.67	#VALUE!	
182 W	0.7395	0.1479	ppb	3.14	1000.	
203 Tl	3.066	0.6132	ppb	2.28	1000.	
205 Tl	3.052	0.6104	ppb	2.36	#VALUE!	
208 Pb	112.2	22.44	ppb	1.10	2000.	
232 Th	87.4	17.48	ppb	1.07	1000.	
238 U	13.7	2.74	ppb	1.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3537183.80	0.54	3477802.30	101.7	69.5 - 120	
45 Sc	2336632.30	2.12	2104691.00	111.0	69.5 - 120	
72 Ge	401153.00	0.13	391860.38	102.4	69.5 - 120	
159 Tb	3459621.80	1.18	3376351.50	102.5	69.5 - 120	
209 Bi	1665621.60	1.28	1729987.60	96.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000426

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\047SMPL.D\047SMPL.D#
Date Acquired: May 9 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-009
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	10.315	2.063	ppb	1.47	100.	
11 B	195.95	39.19	ppb	2.52	1000.	
23 Na	3,807.	761.4	ppb	2.15	200000.	
25 Mg	122,000.	24,400.	ppb	3.44	200000.	
27 Al	203,600.	40,720.	ppb	3.12	200000.	
28 Si	3,020.	604.	ppb	8.20	#VALUE!	
29 Si	3,184.	636.8	ppb	2.75	10000.	
39 K	52,700.	10,540.	ppb	0.45	200000.	
43 Ca	905,500.	181,100.	ppb	0.86	#VALUE!	
44 Ca	884,000.	176,800.	ppb	0.40	200000.	
51 V	589.	117.8	ppb	0.63	1000.	
52 Cr	185.15	37.03	ppb	0.86	2000.	
53 Cr	209.75	41.95	ppb	1.73	#VALUE!	
55 Mn	5,225.	1,045.	ppb	0.74	2000.	
56 Fe	223,800.	44,760.	ppb	0.57	#VALUE!	
57 Fe	215,750.	43,150.	ppb	0.97	100000.	
59 Co	74.75	14.95	ppb	1.11	1000.	
60 Ni	161.1	32.22	ppb	1.26	1000.	
63 Cu	149.35	29.87	ppb	1.25	#VALUE!	
65 Cu	150.5	30.1	ppb	1.10	2000.	
66 Zn	450.5	90.1	ppb	0.36	2000.	
68 Zn	585.5	117.1	ppb	0.78	#VALUE!	
75 As	196.55	39.31	ppb	0.74	1000.	
82 Se	6.42	1.284	ppb	6.01	1000.	
88 Sr	2,838.5	567.7	ppb	1.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.395	2.079	ppb	1.85	1000.	
107 Ag	0.9265	0.1853	ppb	15.36	100.	
109 Ag	0.692	0.1384	ppb	5.98	#VALUE!	
111 Cd	4.9905	0.9981	ppb	6.55	#VALUE!	
114 Cd	0.5185	0.1037	ppb	11.92	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.62	9.524	ppb	1.25	1000.	
120 Sn	47.25	9.45	ppb	1.56	#VALUE!	
121 Sb	3.2065	0.6413	ppb	7.60	#VALUE!	
123 Sb	3.1485	0.6297	ppb	2.73	1000.	
135 Ba	3,662.	732.4	ppb	0.87	2000.	
137 Ba	3,739.5	747.9	ppb	0.52	#VALUE!	
182 W	0.884	0.1768	ppb	9.50	1000.	
203 Tl	3.4735	0.6947	ppb	0.82	1000.	
205 Tl	3.527	0.7054	ppb	2.56	#VALUE!	
208 Pb	147.35	29.47	ppb	0.54	2000.	
232 Th	88.75	17.75	ppb	0.69	1000.	
238 U	21.015	4.203	ppb	2.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3583606.50	0.75	3477802.30	103.0	69.5 - 120	
45 Sc	2293034.50	1.68	2104691.00	108.9	69.5 - 120	
72 Ge	397750.03	0.50	391860.38	101.5	69.5 - 120	
159 Tb	3443452.80	0.44	3376351.50	102.0	69.5 - 120	
209 Bi	1622710.50	0.43	1729987.60	93.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000427

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\048SMPL.D\048SMPL.D#
Date Acquired: May 9 2018 07:17 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-010
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	8.935	1.787	ppb	0.70	100.	
11 B	163.85	32.77	ppb	3.71	1000.	
23 Na	6,125.	1,225.	ppb	2.76	200000.	
25 Mg	72,950.	14,590.	ppb	1.67	200000.	
27 Al	178,150.	35,630.	ppb	1.72	200000.	
28 Si	2,502.5	500.5	ppb	6.34	#VALUE!	
29 Si	2,585.	517.	ppb	5.91	10000.	
39 K	43,115.	8,623.	ppb	1.47	200000.	
43 Ca	315,550.	63,110.	ppb	3.29	#VALUE!	
44 Ca	297,700.	59,540.	ppb	2.22	200000.	
51 V	312.3	62.46	ppb	1.84	1000.	
52 Cr	167.45	33.49	ppb	1.93	2000.	
53 Cr	191.5	38.3	ppb	0.85	#VALUE!	
55 Mn	2,971.	594.2	ppb	1.50	2000.	
56 Fe	147,050.	29,410.	ppb	1.36	#VALUE!	
57 Fe	142,950.	28,590.	ppb	1.76	100000.	
59 Co	52.9	10.58	ppb	1.59	1000.	
60 Ni	136.25	27.25	ppb	0.50	1000.	
63 Cu	109.55	21.91	ppb	2.62	#VALUE!	
65 Cu	107.6	21.52	ppb	1.83	2000.	
66 Zn	420.1	84.02	ppb	2.04	2000.	
68 Zn	485.8	97.16	ppb	1.83	#VALUE!	
75 As	31.67	6.334	ppb	0.29	1000.	
82 Se	4.1335	0.8267	ppb	21.71	1000.	
88 Sr	1,098.	219.6	ppb	0.71	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.9585	0.7917	ppb	3.42	1000.	
107 Ag	0.886	0.1772	ppb	6.85	100.	
109 Ag	0.7105	0.1421	ppb	11.87	#VALUE!	
111 Cd	3.476	0.6952	ppb	5.46	#VALUE!	
114 Cd	-0.0193	-0.0039	ppb	887.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.825	9.565	ppb	1.43	1000.	
120 Sn	46.71	9.342	ppb	4.09	#VALUE!	
121 Sb	1.6005	0.3201	ppb	6.11	#VALUE!	
123 Sb	1.7005	0.3401	ppb	4.77	1000.	
135 Ba	1,697.5	339.5	ppb	2.67	2000.	
137 Ba	1,710.5	342.1	ppb	1.86	#VALUE!	
182 W	0.63	0.126	ppb	11.00	1000.	
203 Tl	3.0355	0.6071	ppb	4.00	1000.	
205 Tl	2.845	0.569	ppb	1.36	#VALUE!	
208 Pb	120.9	24.18	ppb	1.52	2000.	
232 Th	84.8	16.96	ppb	2.16	1000.	
238 U	12.36	2.472	ppb	3.53	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3600479.00	1.60	3477802.30	103.5	69.5 - 120	
45 Sc	2324468.00	0.37	2104691.00	110.4	69.5 - 120	
72 Ge	398776.13	0.41	391860.38	101.8	69.5 - 120	
159 Tb	3455801.50	1.41	3376351.50	102.4	69.5 - 120	
209 Bi	1660942.40	1.95	1729987.60	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000428

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\049SMPL.D\049SMPL.D#
Date Acquired: May 9 2018 07:21 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-011
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	9.72	1.944	ppb	2.15	100.	
11 B	141.85	28.37	ppb	1.27	1000.	
23 Na	4,189.5	837.9	ppb	2.42	200000.	
25 Mg	81,750.	16,350.	ppb	0.34	200000.	
27 Al	186,250.	37,250.	ppb	1.82	200000.	
28 Si	2,061.5	412.3	ppb	1.80	#VALUE!	
29 Si	2,200.5	440.1	ppb	0.68	10000.	
39 K	44,565.	8,913.	ppb	2.07	200000.	
43 Ca	808,500.	161,700.	ppb	2.33	#VALUE!	
44 Ca	796,500.	159,300.	ppb	1.14	200000.	
51 V	318.45	63.69	ppb	0.38	1000.	
52 Cr	167.6	33.52	ppb	0.61	2000.	
53 Cr	192.5	38.5	ppb	1.35	#VALUE!	
55 Mn	3,915.	783.	ppb	0.47	2000.	
56 Fe	170,950.	34,190.	ppb	0.30	#VALUE!	
57 Fe	164,000.	32,800.	ppb	1.72	100000.	
59 Co	64.1	12.82	ppb	1.28	1000.	
60 Ni	152.1	30.42	ppb	1.28	1000.	
63 Cu	118.35	23.67	ppb	0.98	#VALUE!	
65 Cu	118.6	23.72	ppb	1.16	2000.	
66 Zn	422.25	84.45	ppb	0.64	2000.	
68 Zn	536.5	107.3	ppb	1.15	#VALUE!	
75 As	38.96	7.792	ppb	1.34	1000.	
82 Se	6.015	1.203	ppb	17.23	1000.	
88 Sr	1,924.5	384.9	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.2495	0.8499	ppb	2.48	1000.	
107 Ag	0.916	0.1832	ppb	11.49	100.	
109 Ag	0.739	0.1478	ppb	2.80	#VALUE!	
111 Cd	5.085	1.017	ppb	3.28	#VALUE!	
114 Cd	1.3525	0.2705	ppb	2.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.3	9.86	ppb	1.98	1000.	
120 Sn	47.68	9.536	ppb	2.43	#VALUE!	
121 Sb	1.9585	0.3917	ppb	1.99	#VALUE!	
123 Sb	2.027	0.4054	ppb	9.25	1000.	
135 Ba	3,323.	664.6	ppb	2.35	2000.	
137 Ba	3,368.	673.6	ppb	1.72	#VALUE!	
182 W	0.7825	0.1565	ppb	10.15	1000.	
203 Tl	3.0885	0.6177	ppb	4.12	1000.	
205 Tl	3.069	0.6138	ppb	1.11	#VALUE!	
208 Pb	132.1	26.42	ppb	1.54	2000.	
232 Th	87.	17.4	ppb	1.67	1000.	
238 U	16.915	3.383	ppb	0.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3577115.80	1.21	3477802.30	102.9	69.5 - 120	
45 Sc	2369116.80	0.53	2104691.00	112.6	69.5 - 120	
72 Ge	397135.53	0.61	391860.38	101.3	69.5 - 120	
159 Tb	3440258.00	1.96	3376351.50	101.9	69.5 - 120	
209 Bi	1636008.60	1.62	1729987.60	94.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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\JLE09B.B\050SMPL.D\050SMPL.D#
Date Acquired: May 9 2018 07:25 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-012
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	13.785	2.757	ppb	3.82	100.	
11 B	253.6	50.72	ppb	0.64	1000.	
23 Na	3,231.5	646.3	ppb	3.95	200000.	
25 Mg	105,350.	21,070.	ppb	3.86	200000.	
27 Al	281,750.	56,350.	ppb	2.09	200000.	
28 Si	2,641.5	528.3	ppb	3.63	#VALUE!	
29 Si	2,776.5	555.3	ppb	2.68	10000.	
39 K	84,150.	16,830.	ppb	4.14	200000.	
43 Ca	286,500.	57,300.	ppb	3.71	#VALUE!	
44 Ca	271,050.	54,210.	ppb	2.49	200000.	
51 V	572.5	114.5	ppb	0.89	1000.	
52 Cr	243.3	48.66	ppb	0.78	2000.	
53 Cr	278.95	55.79	ppb	1.11	#VALUE!	
55 Mn	3,960.	792.	ppb	1.21	2000.	
56 Fe	232,450.	46,490.	ppb	0.84	#VALUE!	
57 Fe	220,550.	44,110.	ppb	1.39	100000.	
59 Co	94.9	18.98	ppb	1.70	1000.	
60 Ni	192.45	38.49	ppb	1.45	1000.	
63 Cu	150.7	30.14	ppb	0.80	#VALUE!	
65 Cu	150.75	30.15	ppb	2.49	2000.	
66 Zn	619.	123.8	ppb	1.09	2000.	
68 Zn	725.5	145.1	ppb	0.56	#VALUE!	
75 As	85.05	17.01	ppb	3.59	1000.	
82 Se	5.835	1.167	ppb	3.01	1000.	
88 Sr	1,569.5	313.9	ppb	0.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.685	1.137	ppb	1.86	1000.	
107 Ag	1.1835	0.2367	ppb	2.27	100.	
109 Ag	0.871	0.1742	ppb	3.14	#VALUE!	
111 Cd	6.395	1.279	ppb	4.41	#VALUE!	
114 Cd	0.7845	0.1569	ppb	47.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.65	10.33	ppb	2.10	1000.	
120 Sn	50.95	10.19	ppb	1.13	#VALUE!	
121 Sb	2.333	0.4666	ppb	4.06	#VALUE!	
123 Sb	2.301	0.4602	ppb	6.27	1000.	
135 Ba	2,982.5	596.5	ppb	1.81	2000.	
137 Ba	3,009.	601.8	ppb	1.23	#VALUE!	
182 W	1.001	0.2002	ppb	8.82	1000.	
203 Tl	4.035	0.807	ppb	2.60	1000.	
205 Tl	4.38	0.876	ppb	1.85	#VALUE!	
208 Pb	190.5	38.1	ppb	1.40	2000.	
232 Th	134.85	26.97	ppb	0.62	1000.	
238 U	16.48	3.296	ppb	1.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3584301.50	2.25	3477802.30	103.1	69.5 - 120	
45 Sc	2393808.00	1.73	2104691.00	113.7	69.5 - 120	
72 Ge	406037.66	1.85	391860.38	103.6	69.5 - 120	
159 Tb	3451498.50	1.23	3376351.50	102.2	69.5 - 120	
209 Bi	1631200.40	1.24	1729987.60	94.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000430

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\051SMPL.D\051SMPL.D#
Date Acquired: May 9 2018 07:30 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	632.98	100.	
11 B	3.046	3.046	ppb	13.90	1000.	
23 Na	0.4744	0.4744	ppb	8.98	200000.	
25 Mg	0.2677	0.2677	ppb	25.49	200000.	
27 Al	0.4956	0.4956	ppb	14.78	200000.	
28 Si	-41.27	-41.27	ppb	66.17	#VALUE!	
29 Si	-10.34	-10.34	ppb	269.73	10000.	
39 K	4.947	4.947	ppb	20.52	200000.	
43 Ca	3.158	3.158	ppb	113.01	#VALUE!	
44 Ca	-0.5311	-0.5311	ppb	264.73	200000.	
51 V	0.0091	0.0091	ppb	641.67	1000.	
52 Cr	0.1544	0.1544	ppb	2.20	2000.	
53 Cr	-0.6158	-0.6158	ppb	20.14	#VALUE!	
55 Mn	0.0085	0.0085	ppb	110.56	2000.	
56 Fe	9.397	9.397	ppb	20.37	#VALUE!	
57 Fe	1.278	1.278	ppb	285.37	100000.	
59 Co	0.002	0.002	ppb	185.10	1000.	
60 Ni	-0.0014	-0.0014	ppb	1106.30	1000.	
63 Cu	0.0281	0.0281	ppb	48.59	#VALUE!	
65 Cu	0.042	0.042	ppb	67.46	2000.	
66 Zn	0.1143	0.1143	ppb	51.35	2000.	
68 Zn	-0.152	-0.152	ppb	35.21	#VALUE!	
75 As	0.1553	0.1553	ppb	40.15	1000.	
82 Se	0.0764	0.0764	ppb	139.08	1000.	
88 Sr	-0.0006	-0.0006	ppb	110.44	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0049	0.0049	ppb	204.18	1000.	
107 Ag	0.0003	0.0003	ppb	1318.00	100.	
109 Ag	0.0024	0.0024	ppb	37.32	#VALUE!	
111 Cd	0.0027	0.0027	ppb	913.47	#VALUE!	
114 Cd	-0.0051	-0.0051	ppb	103.66	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0361	0.0361	ppb	14.55	1000.	
120 Sn	0.0271	0.0271	ppb	54.94	#VALUE!	
121 Sb	0.003	0.003	ppb	50.15	#VALUE!	
123 Sb	0.0066	0.0066	ppb	108.81	1000.	
135 Ba	0.0342	0.0342	ppb	36.90	2000.	
137 Ba	0.0222	0.0222	ppb	17.22	#VALUE!	
182 W	0.0071	0.0071	ppb	63.81	1000.	
203 Tl	0.0225	0.0225	ppb	65.75	1000.	
205 Tl	0.0028	0.0028	ppb	286.46	#VALUE!	
208 Pb	0.134	0.134	ppb	11.06	2000.	
232 Th	0.0095	0.0095	ppb	36.99	1000.	
238 U	0.0001	0.0001	ppb	1348.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3304962.80	1.74	3477802.30	95.0	69.5 - 120	
45 Sc	2061008.10	0.84	2104691.00	97.9	69.5 - 120	
72 Ge	371523.34	0.58	391860.38	94.8	69.5 - 120	
159 Tb	3137573.50	1.80	3376351.50	92.9	69.5 - 120	
209 Bi	1576625.50	1.10	1729987.60	91.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\052_CCV.D\052_CCV.D#
Date Acquired: May 9 2018 07:34 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: May 09 2018 05:11 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.88	ppb	3.37	25	103.52	
11 B	26.74	ppb	5.43	25	106.96	
23 Na	4,614.	ppb	3.71	5,000	92.28	
25 Mg	4,746.	ppb	3.78	5,000	94.92	
27 Al	469.9	ppb	0.93	500	93.98	
28 Si	365.6	ppb	12.89	500	73.12	
29 Si	398.7	ppb	8.38	500	79.74	Fail
39 K	4,723.	ppb	2.58	5,000	94.46	
43 Ca	4,622.	ppb	2.12	5,000	92.44	
44 Ca	4,778.	ppb	1.44	5,000	95.56	
51 V	24.39	ppb	1.20	25	97.56	
52 Cr	24.2	ppb	0.94	25	96.8	
53 Cr	23.54	ppb	4.31	25	94.16	
55 Mn	24.61	ppb	1.51	25	98.44	
56 Fe	4,817.	ppb	2.85	5,000	96.34	
57 Fe	4,814.	ppb	1.79	5,000	96.28	
59 Co	23.99	ppb	1.55	25	95.96	
60 Ni	24.45	ppb	0.23	25	97.8	
63 Cu	24.69	ppb	1.84	25	98.76	
65 Cu	24.4	ppb	1.74	25	97.6	
66 Zn	24.22	ppb	1.78	25	96.88	
68 Zn	24.84	ppb	2.41	25	99.36	
75 As	24.49	ppb	2.22	25	97.96	
82 Se	24.47	ppb	1.75	25	97.88	
88 Sr	22.99	ppb	0.74	25	91.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	22.9	ppb	1.65	25	91.6	
107 Ag	23.23	ppb	1.41	25	92.92	
109 Ag	23.09	ppb	0.70	25	92.36	
111 Cd	23.22	ppb	1.46	25	92.88	
114 Cd	23.46	ppb	1.59	25	93.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.57	ppb	1.29	25	94.28	
120 Sn	23.43	ppb	1.19	25	93.72	
121 Sb	24.09	ppb	1.65	25	96.36	
123 Sb	24.24	ppb	1.85	25	96.96	
135 Ba	23.87	ppb	1.68	25	95.48	
137 Ba	24.06	ppb	1.67	25	96.24	
182 W	23.02	ppb	1.53	25	92.08	
203 Tl	24.01	ppb	0.39	25	96.04	
205 Tl	23.67	ppb	0.35	25	94.68	
208 Pb	24.04	ppb	0.49	25	96.16	
232 Th	25.24	ppb	0.37	25	100.96	
238 U	29.07	ppb	0.18	25	116.28	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3601965.00	2.77	3477802.30	103.6	80 - 120.4	
45 Sc	2290805.30	2.95	2104691.00	108.8	80 - 120.4	
72 Ge	396325.41	2.06	391860.38	101.1	80 - 120.4	
159 Tb	3349115.30	1.68	3376351.50	99.2	80 - 120.4	
209 Bi	1653350.10	0.53	1729987.60	95.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000432

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\053_CCB.D\053_CCB.D#
Date Acquired: May 9 2018 07:38 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: May 09 2018 05:11 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0021	ppb	19.25	1.00	
11 B	2.337	ppb	13.15	1.00	
23 Na	0.4653	ppb	40.28	1.00	
25 Mg	0.0177	ppb	152.26	1.00	
27 Al	0.0151	ppb	216.37	1.00	
28 Si	-58.88	ppb	48.49	1.00	
29 Si	-29.8	ppb	72.89	1.00	
39 K	0.5658	ppb	513.79	1.00	
43 Ca	-1.179	ppb	155.98	1.00	
44 Ca	-1.139	ppb	60.44	1.00	
51 V	0.0409	ppb	100.73	1.00	
52 Cr	0.1654	ppb	26.71	1.00	
53 Cr	-1.059	ppb	13.37	1.00	
55 Mn	0.0015	ppb	609.69	1.00	
56 Fe	3.324	ppb	130.75	1.00	
57 Fe	2.868	ppb	45.57	1.00	
59 Co	0.	ppb	12734.00	1.00	
60 Ni	-0.0028	ppb	294.35	1.00	
63 Cu	0.0223	ppb	65.76	1.00	
65 Cu	0.0284	ppb	82.66	1.00	
66 Zn	0.0282	ppb	163.71	1.00	
68 Zn	-0.0612	ppb	19.42	1.00	
75 As	-0.0391	ppb	321.90	1.00	
82 Se	0.0745	ppb	88.86	1.00	
88 Sr	-0.0012	ppb	270.90	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0337	ppb	52.13	1.00	
107 Ag	0.0021	ppb	25.29	1.00	
109 Ag	0.0043	ppb	13.74	1.00	
111 Cd	0.0238	ppb	41.09	1.00	
114 Cd	-0.0021	ppb	154.01	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0474	ppb	27.55	1.00	
120 Sn	0.0506	ppb	25.87	1.00	
121 Sb	0.0072	ppb	20.26	1.00	
123 Sb	0.0059	ppb	22.21	1.00	
135 Ba	0.0423	ppb	30.31	1.00	
137 Ba	0.0402	ppb	23.40	1.00	
182 W	0.0452	ppb	37.35	1.00	
203 Tl	0.0144	ppb	76.39	1.00	
205 Tl	0.0155	ppb	26.90	1.00	
208 Pb	0.1555	ppb	5.42	1.00	
232 Th	0.0443	ppb	1.79	1.00	
238 U	0.0029	ppb	74.24	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3436298.00	2.70	3477802.30	98.8	79.5 - 120	
45 Sc	2157104.80	2.80	2104691.00	102.5	79.5 - 120	
72 Ge	379434.69	1.77	391860.38	96.8	79.5 - 120	
159 Tb	3164777.80	1.53	3376351.50	93.7	79.5 - 120	
209 Bi	1589184.50	0.88	1729987.60	91.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000433

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\054SMPL.D\054SMPL.D#
Date Acquired: May 9 2018 07:42 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-013
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	9.565	1.913	ppb	5.13	100.	
11 B	174.95	34.99	ppb	3.39	1000.	
23 Na	10,715.	2,143.	ppb	0.95	200000.	
25 Mg	86,650.	17,330.	ppb	2.26	200000.	
27 Al	194,700.	38,940.	ppb	1.98	200000.	
28 Si	2,677.	535.4	ppb	4.00	#VALUE!	
29 Si	2,813.	562.6	ppb	1.62	10000.	
39 K	47,795.	9,559.	ppb	1.22	200000.	
43 Ca	730,000.	146,000.	ppb	2.40	#VALUE!	
44 Ca	698,000.	139,600.	ppb	1.45	200000.	
51 V	371.5	74.3	ppb	0.90	1000.	
52 Cr	183.35	36.67	ppb	0.70	2000.	
53 Cr	213.75	42.75	ppb	1.00	#VALUE!	
55 Mn	6,920.	1,384.	ppb	1.04	2000.	
56 Fe	186,800.	37,360.	ppb	0.98	#VALUE!	
57 Fe	180,750.	36,150.	ppb	1.63	100000.	
59 Co	82.5	16.5	ppb	1.41	1000.	
60 Ni	205.	41.	ppb	0.71	1000.	
63 Cu	109.45	21.89	ppb	1.38	#VALUE!	
65 Cu	110.3	22.06	ppb	1.80	2000.	
66 Zn	459.35	91.87	ppb	0.29	2000.	
68 Zn	571.	114.2	ppb	0.66	#VALUE!	
75 As	25.53	5.106	ppb	6.69	1000.	
82 Se	5.075	1.015	ppb	27.08	1000.	
88 Sr	1,591.5	318.3	ppb	0.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.995	2.199	ppb	1.93	1000.	
107 Ag	0.9785	0.1957	ppb	6.13	100.	
109 Ag	0.657	0.1314	ppb	6.29	#VALUE!	
111 Cd	5.15	1.03	ppb	2.08	#VALUE!	
114 Cd	0.718	0.1436	ppb	30.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.92	9.584	ppb	1.02	1000.	
120 Sn	46.75	9.35	ppb	1.55	#VALUE!	
121 Sb	1.895	0.379	ppb	5.17	#VALUE!	
123 Sb	1.9195	0.3839	ppb	3.64	1000.	
135 Ba	3,045.	609.	ppb	0.21	2000.	
137 Ba	3,114.5	622.9	ppb	0.76	#VALUE!	
182 W	0.853	0.1706	ppb	12.77	1000.	
203 Tl	3.2175	0.6435	ppb	3.82	1000.	
205 Tl	3.145	0.629	ppb	5.39	#VALUE!	
208 Pb	120.95	24.19	ppb	1.04	2000.	
232 Th	87.35	17.47	ppb	1.46	1000.	
238 U	14.43	2.886	ppb	1.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3554587.50	1.61	3477802.30	102.2	69.5 - 120	
45 Sc	2314329.30	1.94	2104691.00	110.0	69.5 - 120	
72 Ge	390916.16	0.93	391860.38	99.8	69.5 - 120	
159 Tb	3407011.30	0.51	3376351.50	100.9	69.5 - 120	
209 Bi	1625364.10	0.74	1729987.60	94.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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\JLE09B.B\055SMPL.D\055SMPL.D#
Date Acquired: May 9 2018 07:46 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-014
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	12.895	2.579	ppb	1.98	100.	
11 B	200.	40.	ppb	3.94	1000.	
23 Na	6,905.	1,381.	ppb	0.88	200000.	
25 Mg	119,950.	23,990.	ppb	2.07	200000.	
27 Al	257,200.	51,440.	ppb	3.39	200000.	
28 Si	3,028.5	605.7	ppb	7.19	#VALUE!	
29 Si	3,094.5	618.9	ppb	3.78	10000.	
39 K	61,900.	12,380.	ppb	0.76	200000.	
43 Ca	620,000.	124,000.	ppb	1.83	#VALUE!	
44 Ca	591,500.	118,300.	ppb	1.17	200000.	
51 V	508.5	101.7	ppb	2.77	1000.	
52 Cr	247.3	49.46	ppb	1.21	2000.	
53 Cr	275.05	55.01	ppb	1.55	#VALUE!	
55 Mn	6,840.	1,368.	ppb	1.88	2000.	
56 Fe	260,700.	52,140.	ppb	1.74	#VALUE!	
57 Fe	252,350.	50,470.	ppb	2.26	100000.	
59 Co	90.4	18.08	ppb	1.20	1000.	
60 Ni	193.65	38.73	ppb	2.01	1000.	
63 Cu	143.85	28.77	ppb	1.99	#VALUE!	
65 Cu	143.75	28.75	ppb	2.50	2000.	
66 Zn	589.	117.8	ppb	1.73	2000.	
68 Zn	671.5	134.3	ppb	2.14	#VALUE!	
75 As	46.035	9.207	ppb	3.57	1000.	
82 Se	6.395	1.279	ppb	6.08	1000.	
88 Sr	1,691.5	338.3	ppb	2.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.53	1.506	ppb	1.36	1000.	
107 Ag	1.1545	0.2309	ppb	5.63	100.	
109 Ag	0.8445	0.1689	ppb	8.08	#VALUE!	
111 Cd	5.39	1.078	ppb	4.51	#VALUE!	
114 Cd	0.3415	0.0683	ppb	23.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.05	10.21	ppb	0.83	1000.	
120 Sn	50.5	10.1	ppb	1.26	#VALUE!	
121 Sb	2.394	0.4788	ppb	5.03	#VALUE!	
123 Sb	2.371	0.4742	ppb	1.53	1000.	
135 Ba	2,664.5	532.9	ppb	0.27	2000.	
137 Ba	2,674.	534.8	ppb	1.29	#VALUE!	
182 W	0.839	0.1678	ppb	11.49	1000.	
203 Tl	4.05	0.81	ppb	4.69	1000.	
205 Tl	3.995	0.799	ppb	0.86	#VALUE!	
208 Pb	159.15	31.83	ppb	0.95	2000.	
232 Th	119.35	23.87	ppb	1.68	1000.	
238 U	18.595	3.719	ppb	2.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3554206.30	2.19	3477802.30	102.2	69.5 - 120	
45 Sc	2309024.50	1.66	2104691.00	109.7	69.5 - 120	
72 Ge	396026.72	1.28	391860.38	101.1	69.5 - 120	
159 Tb	3410157.00	0.25	3376351.50	101.0	69.5 - 120	
209 Bi	1623993.60	0.21	1729987.60	93.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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\JLE09B.B\056SMPL.D\056SMPL.D#
Date Acquired: May 9 2018 07:50 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-015
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	9.615	1.923	ppb	2.09	100.	
11 B	145.15	29.03	ppb	5.46	1000.	
23 Na	12,980.	2,596.	ppb	2.19	200000.	
25 Mg	95,000.	19,000.	ppb	2.65	200000.	
27 Al	180,600.	36,120.	ppb	1.89	200000.	
28 Si	2,211.	442.2	ppb	5.76	#VALUE!	
29 Si	2,212.	442.4	ppb	9.63	10000.	
39 K	45,500.	9,100.	ppb	2.68	200000.	
43 Ca	484,850.	96,970.	ppb	2.83	#VALUE!	
44 Ca	462,750.	92,550.	ppb	2.59	200000.	
51 V	555.5	111.1	ppb	1.96	1000.	
52 Cr	169.45	33.89	ppb	1.75	2000.	
53 Cr	191.65	38.33	ppb	2.50	#VALUE!	
55 Mn	11,670.	2,334.	ppb	2.64	2000.	>LDR
56 Fe	210,850.	42,170.	ppb	2.95	#VALUE!	
57 Fe	200,450.	40,090.	ppb	3.37	100000.	
59 Co	97.	19.4	ppb	1.84	1000.	
60 Ni	297.75	59.55	ppb	1.27	1000.	
63 Cu	146.05	29.21	ppb	3.23	#VALUE!	
65 Cu	147.75	29.55	ppb	1.70	2000.	
66 Zn	444.35	88.87	ppb	0.94	2000.	
68 Zn	645.5	129.1	ppb	2.54	#VALUE!	
75 As	171.5	34.3	ppb	1.00	1000.	
82 Se	5.04	1.008	ppb	10.48	1000.	
88 Sr	1,530.5	306.1	ppb	2.54	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	29.96	5.992	ppb	1.30	1000.	
107 Ag	0.8255	0.1651	ppb	6.90	100.	
109 Ag	0.6235	0.1247	ppb	4.24	#VALUE!	
111 Cd	4.3125	0.8625	ppb	7.02	#VALUE!	
114 Cd	0.653	0.1306	ppb	8.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.445	9.089	ppb	1.07	1000.	
120 Sn	44.495	8.899	ppb	2.11	#VALUE!	
121 Sb	2.926	0.5852	ppb	2.73	#VALUE!	
123 Sb	2.926	0.5852	ppb	7.89	1000.	
135 Ba	5,310.	1,062.	ppb	2.89	2000.	
137 Ba	5,260.	1,052.	ppb	1.89	#VALUE!	
182 W	1.102	0.2204	ppb	4.91	1000.	
203 Tl	4.4735	0.8947	ppb	3.14	1000.	
205 Tl	4.357	0.8714	ppb	3.08	#VALUE!	
208 Pb	129.3	25.86	ppb	0.67	2000.	
232 Th	89.35	17.87	ppb	0.95	1000.	
238 U	16.85	3.37	ppb	2.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3585113.30	1.06	3477802.30	103.1	69.5 - 120	
45 Sc	2327511.80	3.14	2104691.00	110.6	69.5 - 120	
72 Ge	395645.47	2.19	391860.38	101.0	69.5 - 120	
159 Tb	3423777.80	1.81	3376351.50	101.4	69.5 - 120	
209 Bi	1637129.80	0.42	1729987.60	94.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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\JLE09B.B\057SMPL.D\057SMPL.D#
Date Acquired: May 9 2018 07:55 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-016
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	14.89	2.978	ppb	2.72	100.	
11 B	297.3	59.46	ppb	3.66	1000.	
23 Na	3,759.	751.8	ppb	0.43	200000.	
25 Mg	126,900.	25,380.	ppb	2.66	200000.	
27 Al	311,350.	62,270.	ppb	2.66	200000.	
28 Si	2,236.5	447.3	ppb	3.40	#VALUE!	
29 Si	2,288.	457.6	ppb	2.94	10000.	
39 K	90,750.	18,150.	ppb	1.70	200000.	
43 Ca	563,500.	112,700.	ppb	1.09	#VALUE!	
44 Ca	539,500.	107,900.	ppb	1.84	200000.	
51 V	624.	124.8	ppb	1.57	1000.	
52 Cr	266.9	53.38	ppb	0.93	2000.	
53 Cr	292.6	58.52	ppb	1.87	#VALUE!	
55 Mn	3,567.	713.4	ppb	0.97	2000.	
56 Fe	255,350.	51,070.	ppb	1.80	#VALUE!	
57 Fe	245,800.	49,160.	ppb	0.96	100000.	
59 Co	99.05	19.81	ppb	1.44	1000.	
60 Ni	228.55	45.71	ppb	0.56	1000.	
63 Cu	175.85	35.17	ppb	0.85	#VALUE!	
65 Cu	176.3	35.26	ppb	0.76	2000.	
66 Zn	675.	135.	ppb	0.88	2000.	
68 Zn	803.	160.6	ppb	0.74	#VALUE!	
75 As	105.15	21.03	ppb	0.73	1000.	
82 Se	7.52	1.504	ppb	4.69	1000.	
88 Sr	2,166.5	433.3	ppb	0.68	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.76	0.752	ppb	4.80	1000.	
107 Ag	1.294	0.2588	ppb	2.02	100.	
109 Ag	0.943	0.1886	ppb	6.01	#VALUE!	
111 Cd	6.65	1.33	ppb	3.87	#VALUE!	
114 Cd	0.992	0.1984	ppb	31.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.	10.	ppb	2.02	1000.	
120 Sn	49.105	9.821	ppb	2.59	#VALUE!	
121 Sb	2.87	0.574	ppb	2.57	#VALUE!	
123 Sb	2.826	0.5652	ppb	3.94	1000.	
135 Ba	3,651.	730.2	ppb	2.04	2000.	
137 Ba	3,694.5	738.9	ppb	2.03	#VALUE!	
182 W	1.068	0.2136	ppb	2.20	1000.	
203 Tl	4.777	0.9554	ppb	5.97	1000.	
205 Tl	4.739	0.9478	ppb	1.12	#VALUE!	
208 Pb	175.75	35.15	ppb	0.69	2000.	
232 Th	126.7	25.34	ppb	0.86	1000.	
238 U	17.72	3.544	ppb	2.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3567793.30	0.24	3477802.30	102.6	69.5 - 120	
45 Sc	2346118.80	1.15	2104691.00	111.5	69.5 - 120	
72 Ge	395224.25	1.06	391860.38	100.9	69.5 - 120	
159 Tb	3375199.30	1.76	3376351.50	100.0	69.5 - 120	
209 Bi	1589692.50	0.56	1729987.60	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000437

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\058SMPL.D\058SMPL.D#
Date Acquired: May 9 2018 07:59 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-017
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	14.025	2.805	ppb	3.94	100.	
11 B	249.65	49.93	ppb	1.23	1000.	
23 Na	4,672.5	934.5	ppb	1.04	200000.	
25 Mg	122,300.	24,460.	ppb	2.89	200000.	
27 Al	281,050.	56,210.	ppb	2.73	200000.	
28 Si	2,512.5	502.5	ppb	8.90	#VALUE!	
29 Si	2,660.	532.	ppb	5.57	10000.	
39 K	86,950.	17,390.	ppb	1.70	200000.	
43 Ca	429,700.	85,940.	ppb	1.68	#VALUE!	
44 Ca	406,200.	81,240.	ppb	1.32	200000.	
51 V	570.5	114.1	ppb	1.61	1000.	
52 Cr	240.55	48.11	ppb	1.17	2000.	
53 Cr	271.6	54.32	ppb	2.63	#VALUE!	
55 Mn	3,144.	628.8	ppb	1.35	2000.	
56 Fe	241,600.	48,320.	ppb	0.75	#VALUE!	
57 Fe	231,900.	46,380.	ppb	1.26	100000.	
59 Co	100.8	20.16	ppb	0.79	1000.	
60 Ni	218.45	43.69	ppb	0.86	1000.	
63 Cu	162.8	32.56	ppb	0.35	#VALUE!	
65 Cu	163.45	32.69	ppb	1.28	2000.	
66 Zn	662.	132.4	ppb	1.31	2000.	
68 Zn	779.5	155.9	ppb	0.60	#VALUE!	
75 As	107.2	21.44	ppb	1.28	1000.	
82 Se	5.09	1.018	ppb	15.31	1000.	
88 Sr	1,845.5	369.1	ppb	1.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.178	0.6356	ppb	4.91	1000.	
107 Ag	1.261	0.2522	ppb	8.91	100.	
109 Ag	0.9195	0.1839	ppb	14.07	#VALUE!	
111 Cd	5.405	1.081	ppb	5.10	#VALUE!	
114 Cd	0.6345	0.1269	ppb	37.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.56	9.912	ppb	1.97	1000.	
120 Sn	48.52	9.704	ppb	0.65	#VALUE!	
121 Sb	2.7305	0.5461	ppb	4.57	#VALUE!	
123 Sb	2.7605	0.5521	ppb	2.42	1000.	
135 Ba	3,491.5	698.3	ppb	1.00	2000.	
137 Ba	3,538.	707.6	ppb	0.84	#VALUE!	
182 W	1.075	0.215	ppb	8.29	1000.	
203 Tl	4.56	0.912	ppb	3.06	1000.	
205 Tl	4.425	0.885	ppb	1.13	#VALUE!	
208 Pb	159.2	31.84	ppb	0.52	2000.	
232 Th	115.55	23.11	ppb	0.67	1000.	
238 U	14.785	2.957	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3593758.80	2.69	3477802.30	103.3	69.5 - 120	
45 Sc	2326681.00	1.88	2104691.00	110.5	69.5 - 120	
72 Ge	398306.22	0.90	391860.38	101.6	69.5 - 120	
159 Tb	3388869.50	0.55	3376351.50	100.4	69.5 - 120	
209 Bi	1603188.30	0.23	1729987.60	92.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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\JLE09B.B\059SMPL.D\059SMPL.D#
Date Acquired: May 9 2018 08:03 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-018
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	9.01	1.802	ppb	4.78	100.	
11 B	193.7	38.74	ppb	3.74	1000.	
23 Na	3,482.5	696.5	ppb	2.97	200000.	
25 Mg	100,450.	20,090.	ppb	0.85	200000.	
27 Al	189,650.	37,930.	ppb	1.46	200000.	
28 Si	2,343.	468.6	ppb	3.56	#VALUE!	
29 Si	2,394.5	478.9	ppb	2.34	10000.	
39 K	51,450.	10,290.	ppb	1.54	200000.	
43 Ca	807,000.	161,400.	ppb	1.68	#VALUE!	
44 Ca	775,500.	155,100.	ppb	0.19	200000.	
51 V	399.85	79.97	ppb	1.18	1000.	
52 Cr	169.7	33.94	ppb	0.33	2000.	
53 Cr	192.65	38.53	ppb	2.28	#VALUE!	
55 Mn	1,791.5	358.3	ppb	0.49	2000.	
56 Fe	155,350.	31,070.	ppb	1.40	#VALUE!	
57 Fe	149,750.	29,950.	ppb	0.41	100000.	
59 Co	56.15	11.23	ppb	1.22	1000.	
60 Ni	137.65	27.53	ppb	0.70	1000.	
63 Cu	112.4	22.48	ppb	0.54	#VALUE!	
65 Cu	113.55	22.71	ppb	1.33	2000.	
66 Zn	398.9	79.78	ppb	1.38	2000.	
68 Zn	523.5	104.7	ppb	1.24	#VALUE!	
75 As	70.85	14.17	ppb	3.29	1000.	
82 Se	5.7	1.14	ppb	7.53	1000.	
88 Sr	2,708.	541.6	ppb	0.77	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.7425	0.3485	ppb	9.14	1000.	
107 Ag	1.001	0.2002	ppb	7.61	100.	
109 Ag	0.701	0.1402	ppb	5.71	#VALUE!	
111 Cd	4.391	0.8782	ppb	6.37	#VALUE!	
114 Cd	0.2922	0.0584	ppb	13.15	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.105	9.221	ppb	2.48	1000.	
120 Sn	44.65	8.93	ppb	2.72	#VALUE!	
121 Sb	1.8125	0.3625	ppb	13.85	#VALUE!	
123 Sb	1.851	0.3702	ppb	1.81	1000.	
135 Ba	3,306.5	661.3	ppb	3.11	2000.	
137 Ba	3,338.5	667.7	ppb	1.80	#VALUE!	
182 W	0.8035	0.1607	ppb	8.04	1000.	
203 Tl	3.239	0.6478	ppb	3.41	1000.	
205 Tl	3.242	0.6484	ppb	1.69	#VALUE!	
208 Pb	111.3	22.26	ppb	1.49	2000.	
232 Th	82.95	16.59	ppb	1.18	1000.	
238 U	16.2	3.24	ppb	0.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3654755.80	2.77	3477802.30	105.1	69.5 - 120	
45 Sc	2328880.50	1.39	2104691.00	110.7	69.5 - 120	
72 Ge	392157.06	1.38	391860.38	100.1	69.5 - 120	
159 Tb	3387229.80	1.07	3376351.50	100.3	69.5 - 120	
209 Bi	1594049.30	1.89	1729987.60	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\060SMPL.D\060SMPL.D#
Date Acquired: May 9 2018 08:07 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	10.82	1.082	ppb	2.30	100.	
11 B	180.2	18.02	ppb	3.87	1000.	
23 Na	13,210.	1,321.	ppb	2.07	200000.	
25 Mg	106,200.	10,620.	ppb	1.75	200000.	
27 Al	216,200.	21,620.	ppb	0.09	200000.	
28 Si	2,701.	270.1	ppb	2.86	#VALUE!	
29 Si	2,682.	268.2	ppb	6.36	10000.	
39 K	48,280.	4,828.	ppb	2.76	200000.	
43 Ca	1,107,000.	110,700.	ppb	2.26	#VALUE!	
44 Ca	1,053,000.	105,300.	ppb	2.44	200000.	
51 V	396.5	39.65	ppb	0.89	1000.	
52 Cr	208.8	20.88	ppb	1.12	2000.	
53 Cr	228.5	22.85	ppb	2.88	#VALUE!	
55 Mn	5,038.	503.8	ppb	0.83	2000.	
56 Fe	199,800.	19,980.	ppb	1.43	#VALUE!	
57 Fe	192,500.	19,250.	ppb	2.36	100000.	
59 Co	75.51	7.551	ppb	0.84	1000.	
60 Ni	152.4	15.24	ppb	1.17	1000.	
63 Cu	124.	12.4	ppb	1.81	#VALUE!	
65 Cu	123.9	12.39	ppb	1.01	2000.	
66 Zn	516.	51.6	ppb	0.83	2000.	
68 Zn	613.8	61.38	ppb	0.46	#VALUE!	
75 As	27.16	2.716	ppb	11.64	1000.	
82 Se	7.324	0.7324	ppb	23.61	1000.	
88 Sr	1,843.	184.3	ppb	1.05	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.398	0.4398	ppb	12.37	1000.	
107 Ag	0.9792	0.0979	ppb	8.65	100.	
109 Ag	0.6904	0.069	ppb	13.12	#VALUE!	
111 Cd	8.402	0.8402	ppb	4.78	#VALUE!	
114 Cd	3.276	0.3276	ppb	4.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.06	4.906	ppb	1.69	1000.	
120 Sn	48.01	4.801	ppb	1.55	#VALUE!	
121 Sb	1.561	0.1561	ppb	11.20	#VALUE!	
123 Sb	1.856	0.1856	ppb	5.58	1000.	
135 Ba	2,721.	272.1	ppb	2.50	2000.	
137 Ba	2,727.	272.7	ppb	2.20	#VALUE!	
182 W	0.6002	0.06	ppb	10.79	1000.	
203 Tl	3.3	0.33	ppb	9.15	1000.	
205 Tl	3.314	0.3314	ppb	6.38	#VALUE!	
208 Pb	159.1	15.91	ppb	1.56	2000.	
232 Th	93.74	9.374	ppb	2.55	1000.	
238 U	21.88	2.188	ppb	0.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3514556.30	0.41	3477802.30	101.1	69.5 - 120	
45 Sc	2300375.30	0.22	2104691.00	109.3	69.5 - 120	
72 Ge	391746.31	0.55	391860.38	100.0	69.5 - 120	
159 Tb	3394464.30	1.44	3376351.50	100.5	69.5 - 120	
209 Bi	1630142.50	1.78	1729987.60	94.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000440

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\061SMPL.D\061SMPL.D#
Date Acquired: May 9 2018 08:12 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005L
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 pm
Sample Type: Sample
Dilution Factor: 50.00
Autodil Factor: Undiluted
Final Dil Factor: 50.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.02	0.2204	ppb	2.04	100.	
11 B	249.85	4.997	ppb	1.64	1000.	
23 Na	13,925.	278.5	ppb	3.30	200000.	
25 Mg	113,200.	2,264.	ppb	2.40	200000.	
27 Al	220,150.	4,403.	ppb	1.84	200000.	
28 Si	-1,585.5	-31.71	ppb	93.88	#VALUE!	
29 Si	-467.75	-9.355	ppb	254.30	10000.	
39 K	49,850.	997.	ppb	0.25	200000.	
43 Ca	1,093,500.	21,870.	ppb	2.11	#VALUE!	
44 Ca	1,086,500.	21,730.	ppb	1.09	200000.	
51 V	398.15	7.963	ppb	2.42	1000.	
52 Cr	213.8	4.276	ppb	2.51	2000.	
53 Cr	134.85	2.697	ppb	15.54	#VALUE!	
55 Mn	5,210.	104.2	ppb	1.92	2000.	
56 Fe	201,050.	4,021.	ppb	2.40	#VALUE!	
57 Fe	200,100.	4,002.	ppb	1.19	100000.	
59 Co	79.05	1.581	ppb	0.36	1000.	
60 Ni	161.4	3.228	ppb	0.23	1000.	
63 Cu	126.15	2.523	ppb	0.32	#VALUE!	
65 Cu	131.3	2.626	ppb	3.84	2000.	
66 Zn	560.	11.2	ppb	2.36	2000.	
68 Zn	639.5	12.79	ppb	3.87	#VALUE!	
75 As	25.525	0.5105	ppb	19.43	1000.	
82 Se	7.065	0.1413	ppb	70.84	1000.	
88 Sr	1,858.	37.16	ppb	1.07	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.152	0.083	ppb	16.34	1000.	
107 Ag	0.893	0.0179	ppb	27.39	100.	
109 Ag	0.801	0.016	ppb	30.11	#VALUE!	
111 Cd	8.38	0.1676	ppb	20.01	#VALUE!	
114 Cd	4.019	0.0804	ppb	19.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.6	1.012	ppb	3.19	1000.	
120 Sn	51.4	1.028	ppb	3.28	#VALUE!	
121 Sb	1.997	0.0399	ppb	12.39	#VALUE!	
123 Sb	2.217	0.0443	ppb	12.27	1000.	
135 Ba	2,800.5	56.01	ppb	1.72	2000.	
137 Ba	2,819.5	56.39	ppb	1.33	#VALUE!	
182 W	0.6575	0.0132	ppb	22.72	1000.	
203 Tl	3.664	0.0733	ppb	18.44	1000.	
205 Tl	3.9005	0.078	ppb	17.88	#VALUE!	
208 Pb	164.55	3.291	ppb	2.79	2000.	
232 Th	91.95	1.839	ppb	4.62	1000.	
238 U	21.835	0.4367	ppb	2.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3576697.50	1.39	3477802.30	102.8	69.5 - 120	
45 Sc	2316859.50	1.39	2104691.00	110.1	69.5 - 120	
72 Ge	398016.84	0.66	391860.38	101.6	69.5 - 120	
159 Tb	3353365.30	1.20	3376351.50	99.3	69.5 - 120	
209 Bi	1649006.80	1.64	1729987.60	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000441

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\062SMPL.D\062SMPL.D#
Date Acquired: May 9 2018 08:16 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005A
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	11.08	1.108	ppb	1.66	100.	
11 B	170.8	17.08	ppb	6.50	1000.	
23 Na	13,660.	1,366.	ppb	1.09	200000.	
25 Mg	108,500.	10,850.	ppb	1.53	200000.	
27 Al	220,800.	22,080.	ppb	0.40	200000.	
28 Si	2,715.	271.5	ppb	11.39	#VALUE!	
29 Si	2,762.	276.2	ppb	8.42	10000.	
39 K	49,430.	4,943.	ppb	2.06	200000.	
43 Ca	1,122,000.	112,200.	ppb	2.17	#VALUE!	
44 Ca	1,079,000.	107,900.	ppb	2.10	200000.	
51 V	410.9	41.09	ppb	1.97	1000.	
52 Cr	213.3	21.33	ppb	1.56	2000.	
53 Cr	228.3	22.83	ppb	1.83	#VALUE!	
55 Mn	5,119.	511.9	ppb	2.90	2000.	
56 Fe	204,600.	20,460.	ppb	2.62	#VALUE!	
57 Fe	198,100.	19,810.	ppb	0.90	100000.	
59 Co	77.2	7.72	ppb	1.29	1000.	
60 Ni	158.6	15.86	ppb	0.69	1000.	
63 Cu	125.	12.5	ppb	1.74	#VALUE!	
65 Cu	128.8	12.88	ppb	0.55	2000.	
66 Zn	521.1	52.11	ppb	1.14	2000.	
68 Zn	612.4	61.24	ppb	0.47	#VALUE!	
75 As	25.52	2.552	ppb	9.80	1000.	
82 Se	6.479	0.6479	ppb	8.98	1000.	
88 Sr	1,880.	188.	ppb	1.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.922	0.3922	ppb	6.79	1000.	
107 Ag	0.9332	0.0933	ppb	7.08	100.	
109 Ag	0.6216	0.0622	ppb	19.95	#VALUE!	
111 Cd	8.655	0.8655	ppb	6.57	#VALUE!	
114 Cd	3.624	0.3624	ppb	4.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.49	4.949	ppb	0.58	1000.	
120 Sn	49.09	4.909	ppb	0.48	#VALUE!	
121 Sb	1.648	0.1648	ppb	6.74	#VALUE!	
123 Sb	1.874	0.1874	ppb	8.84	1000.	
135 Ba	2,812.	281.2	ppb	0.80	2000.	
137 Ba	2,817.	281.7	ppb	0.06	#VALUE!	
182 W	0.5628	0.0563	ppb	23.54	1000.	
203 Tl	3.398	0.3398	ppb	11.15	1000.	
205 Tl	3.346	0.3346	ppb	5.72	#VALUE!	
208 Pb	162.9	16.29	ppb	1.11	2000.	
232 Th	97.22	9.722	ppb	1.77	1000.	
238 U	22.64	2.264	ppb	2.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3545194.00	1.25	3477802.30	101.9	69.5 - 120	
45 Sc	2319486.00	1.70	2104691.00	110.2	69.5 - 120	
72 Ge	394280.38	1.30	391860.38	100.6	69.5 - 120	
159 Tb	3354342.30	0.18	3376351.50	99.3	69.5 - 120	
209 Bi	1604528.60	0.43	1729987.60	92.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000442

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\063SMPL.D\063SMPL.D#
Date Acquired: May 9 2018 08:20 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	26.43	26.43	ppb	2.11	100.	
11 B	27.56	27.56	ppb	4.55	1000.	
23 Na	4,808.	4,808.	ppb	1.39	200000.	
25 Mg	5,008.	5,008.	ppb	2.07	200000.	
27 Al	481.	481.	ppb	0.44	200000.	
28 Si	401.7	401.7	ppb	9.98	#VALUE!	
29 Si	436.5	436.5	ppb	7.21	10000.	
39 K	4,857.	4,857.	ppb	1.64	200000.	
43 Ca	4,750.	4,750.	ppb	1.88	#VALUE!	
44 Ca	4,874.	4,874.	ppb	1.53	200000.	
51 V	24.45	24.45	ppb	0.75	1000.	
52 Cr	24.51	24.51	ppb	0.34	2000.	
53 Cr	23.47	23.47	ppb	1.25	#VALUE!	
55 Mn	24.71	24.71	ppb	0.46	2000.	
56 Fe	4,841.	4,841.	ppb	1.07	#VALUE!	
57 Fe	4,891.	4,891.	ppb	0.70	100000.	
59 Co	24.37	24.37	ppb	0.50	1000.	
60 Ni	24.8	24.8	ppb	2.23	1000.	
63 Cu	24.71	24.71	ppb	0.58	#VALUE!	
65 Cu	24.56	24.56	ppb	2.92	2000.	
66 Zn	24.23	24.23	ppb	2.43	2000.	
68 Zn	24.99	24.99	ppb	1.04	#VALUE!	
75 As	24.37	24.37	ppb	1.14	1000.	
82 Se	24.9	24.9	ppb	1.98	1000.	
88 Sr	23.19	23.19	ppb	1.16	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	22.88	22.88	ppb	1.20	1000.	
107 Ag	23.29	23.29	ppb	1.75	100.	
109 Ag	22.92	22.92	ppb	1.15	#VALUE!	
111 Cd	23.25	23.25	ppb	1.03	#VALUE!	
114 Cd	23.44	23.44	ppb	1.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	23.56	23.56	ppb	0.63	1000.	
120 Sn	23.45	23.45	ppb	0.96	#VALUE!	
121 Sb	24.08	24.08	ppb	1.83	#VALUE!	
123 Sb	24.21	24.21	ppb	1.32	1000.	
135 Ba	24.1	24.1	ppb	1.45	2000.	
137 Ba	24.21	24.21	ppb	1.83	#VALUE!	
182 W	22.81	22.81	ppb	1.36	1000.	
203 Tl	23.96	23.96	ppb	0.71	1000.	
205 Tl	23.93	23.93	ppb	1.39	#VALUE!	
208 Pb	24.08	24.08	ppb	0.93	2000.	
232 Th	25.17	25.17	ppb	1.87	1000.	
238 U	29.08	29.08	ppb	0.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3502802.00	1.81	3477802.30	100.7	69.5 - 120	
45 Sc	2221283.50	3.00	2104691.00	105.5	69.5 - 120	
72 Ge	387335.84	1.08	391860.38	98.8	69.5 - 120	
159 Tb	3264524.50	0.44	3376351.50	96.7	69.5 - 120	
209 Bi	1609918.90	1.08	1729987.60	93.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000443

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\064_CCV.D\064_CCV.D#
Date Acquired: May 9 2018 08:24 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: May 09 2018 05:11 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.94	ppb	1.32	25	103.76	
11 B	26.8	ppb	3.65	25	107.2	
23 Na	4,841.	ppb	2.42	5,000	96.82	
25 Mg	5,019.	ppb	2.04	5,000	100.38	
27 Al	479.6	ppb	0.70	500	95.92	
28 Si	378.5	ppb	6.12	500	75.7	
29 Si	411.1	ppb	5.10	500	82.22	Fail
39 K	4,809.	ppb	1.00	5,000	96.18	
43 Ca	4,664.	ppb	1.11	5,000	93.28	
44 Ca	4,851.	ppb	1.60	5,000	97.02	
51 V	24.25	ppb	0.84	25	97	
52 Cr	24.46	ppb	0.99	25	97.84	
53 Cr	23.8	ppb	4.94	25	95.2	
55 Mn	24.62	ppb	0.35	25	98.48	
56 Fe	4,825.	ppb	0.42	5,000	96.5	
57 Fe	4,855.	ppb	0.53	5,000	97.1	
59 Co	24.34	ppb	0.85	25	97.36	
60 Ni	24.14	ppb	1.49	25	96.56	
63 Cu	24.87	ppb	1.27	25	99.48	
65 Cu	24.46	ppb	1.37	25	97.84	
66 Zn	24.61	ppb	1.15	25	98.44	
68 Zn	24.85	ppb	0.16	25	99.4	
75 As	24.63	ppb	2.24	25	98.52	
82 Se	24.58	ppb	1.63	25	98.32	
88 Sr	22.97	ppb	0.65	25	91.88	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	22.7	ppb	0.45	25	90.8	
107 Ag	23.24	ppb	1.60	25	92.96	
109 Ag	23.04	ppb	1.37	25	92.16	
111 Cd	23.19	ppb	0.38	25	92.76	
114 Cd	23.32	ppb	1.03	25	93.28	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.26	ppb	2.26	25	93.04	
120 Sn	23.28	ppb	0.11	25	93.12	
121 Sb	24.26	ppb	0.31	25	97.04	
123 Sb	24.02	ppb	0.08	25	96.08	
135 Ba	23.9	ppb	2.87	25	95.6	
137 Ba	24.08	ppb	1.32	25	96.32	
182 W	23.08	ppb	0.70	25	92.32	
203 Tl	23.98	ppb	1.94	25	95.92	
205 Tl	23.92	ppb	1.07	25	95.68	
208 Pb	24.1	ppb	0.84	25	96.4	
232 Th	25.24	ppb	1.58	25	100.96	
238 U	29.02	ppb	1.27	25	116.08	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3607677.00	0.85	3477802.30	103.7	80 - 120.4	
45 Sc	2265711.80	1.72	2104691.00	107.7	80 - 120.4	
72 Ge	389573.97	1.25	391860.38	99.4	80 - 120.4	
159 Tb	3268701.30	0.29	3376351.50	96.8	80 - 120.4	
209 Bi	1607664.00	0.42	1729987.60	92.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000444

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\065_CCB.D\065_CCB.D#
Date Acquired: May 9 2018 08:28 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: May 09 2018 05:11 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0015	ppb	46.87	1.00	
11 B	2.27	ppb	14.37	1.00	
23 Na	0.532	ppb	16.04	1.00	
25 Mg	0.0429	ppb	43.77	1.00	
27 Al	0.0387	ppb	90.47	1.00	
28 Si	-39.39	ppb	65.35	1.00	
29 Si	8.922	ppb	162.63	1.00	
39 K	5.872	ppb	33.07	1.00	
43 Ca	-1.476	ppb	5.47	1.00	
44 Ca	-1.244	ppb	109.32	1.00	
51 V	0.0074	ppb	422.17	1.00	
52 Cr	0.2112	ppb	22.13	1.00	
53 Cr	-1.673	ppb	7.79	1.00	
55 Mn	0.0123	ppb	81.58	1.00	
56 Fe	10.87	ppb	12.84	1.00	
57 Fe	7.221	ppb	32.27	1.00	
59 Co	0.0002	ppb	1868.40	1.00	
60 Ni	0.0025	ppb	471.06	1.00	
63 Cu	0.0292	ppb	86.15	1.00	
65 Cu	0.0362	ppb	45.91	1.00	
66 Zn	0.0891	ppb	55.95	1.00	
68 Zn	-0.087	ppb	174.19	1.00	
75 As	0.0775	ppb	196.00	1.00	
82 Se	0.0891	ppb	59.27	1.00	
88 Sr	-0.0027	ppb	50.63	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0318	ppb	35.25	1.00	
107 Ag	0.0023	ppb	96.21	1.00	
109 Ag	0.0032	ppb	92.60	1.00	
111 Cd	0.0183	ppb	117.02	1.00	
114 Cd	-0.0044	ppb	73.49	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0509	ppb	46.07	1.00	
120 Sn	0.0532	ppb	14.26	1.00	
121 Sb	0.0126	ppb	26.76	1.00	
123 Sb	0.0092	ppb	30.19	1.00	
135 Ba	0.0413	ppb	28.09	1.00	
137 Ba	0.0288	ppb	40.01	1.00	
182 W	0.0652	ppb	38.86	1.00	
203 Tl	0.0105	ppb	205.34	1.00	
205 Tl	0.0175	ppb	27.63	1.00	
208 Pb	0.1831	ppb	11.80	1.00	
232 Th	0.0491	ppb	13.70	1.00	
238 U	0.0036	ppb	43.07	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3307132.50	2.98	3477802.30	95.1	79.5 - 120	
45 Sc	2082097.60	1.12	2104691.00	98.9	79.5 - 120	
72 Ge	369622.56	1.62	391860.38	94.3	79.5 - 120	
159 Tb	3061656.30	1.97	3376351.50	90.7	79.5 - 120	
209 Bi	1530563.90	2.40	1729987.60	88.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000445

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\066SMPL.D\066SMPL.D#
Date Acquired: May 9 2018 08:33 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005S
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	67.93	6.793	ppb	2.49	100.	
11 B	703.2	70.32	ppb	4.88	1000.	
23 Na	23,000.	2,300.	ppb	2.51	200000.	
25 Mg	117,800.	11,780.	ppb	1.23	200000.	
27 Al	274,900.	27,490.	ppb	0.97	200000.	
28 Si	2,570.	257.	ppb	8.06	#VALUE!	
29 Si	2,825.	282.5	ppb	4.83	10000.	
39 K	69,870.	6,987.	ppb	2.48	200000.	
43 Ca	544,500.	54,450.	ppb	0.63	#VALUE!	
44 Ca	519,700.	51,970.	ppb	1.93	200000.	
51 V	1,037.	103.7	ppb	3.45	1000.	
52 Cr	456.2	45.62	ppb	3.33	2000.	
53 Cr	489.4	48.94	ppb	2.91	#VALUE!	
55 Mn	5,076.	507.6	ppb	1.97	2000.	
56 Fe	236,300.	23,630.	ppb	3.10	#VALUE!	
57 Fe	225,800.	22,580.	ppb	2.39	100000.	
59 Co	589.4	58.94	ppb	1.25	1000.	
60 Ni	694.	69.4	ppb	3.55	1000.	
63 Cu	397.8	39.78	ppb	2.83	#VALUE!	
65 Cu	393.6	39.36	ppb	2.01	2000.	
66 Zn	1,083.	108.3	ppb	2.24	2000.	
68 Zn	1,242.	124.2	ppb	3.62	#VALUE!	
75 As	130.2	13.02	ppb	2.33	1000.	
82 Se	100.2	10.02	ppb	3.18	1000.	
88 Sr	1,921.	192.1	ppb	4.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	90.4	9.04	ppb	0.75	1000.	
107 Ag	49.63	4.963	ppb	3.89	100.	
109 Ag	48.82	4.882	ppb	3.36	#VALUE!	
111 Cd	244.7	24.47	ppb	2.29	#VALUE!	
114 Cd	240.7	24.07	ppb	2.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	523.8	52.38	ppb	1.55	1000.	
120 Sn	519.4	51.94	ppb	1.92	#VALUE!	
121 Sb	31.18	3.118	ppb	0.56	#VALUE!	
123 Sb	30.94	3.094	ppb	2.46	1000.	
135 Ba	4,468.	446.8	ppb	2.04	2000.	
137 Ba	4,490.	449.	ppb	1.58	#VALUE!	
182 W	39.6	3.96	ppb	1.71	1000.	
203 Tl	105.2	10.52	ppb	1.76	1000.	
205 Tl	105.8	10.58	ppb	1.44	#VALUE!	
208 Pb	255.2	25.52	ppb	0.93	2000.	
232 Th	223.8	22.38	ppb	1.42	1000.	
238 U	143.8	14.38	ppb	1.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3613116.50	0.54	3477802.30	103.9	69.5 - 120	
45 Sc	2331011.00	2.04	2104691.00	110.8	69.5 - 120	
72 Ge	394407.41	2.64	391860.38	100.6	69.5 - 120	
159 Tb	3364274.30	1.09	3376351.50	99.6	69.5 - 120	
209 Bi	1613290.00	1.19	1729987.60	93.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000446

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\067SMPL.D\067SMPL.D#
Date Acquired: May 9 2018 08:37 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-005P
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	65.28	6.528	ppb	2.64	100.	
11 B	674.1	67.41	ppb	4.79	1000.	
23 Na	21,090.	2,109.	ppb	0.94	200000.	
25 Mg	123,900.	12,390.	ppb	1.46	200000.	
27 Al	225,300.	22,530.	ppb	1.53	200000.	
28 Si	2,625.	262.5	ppb	7.33	#VALUE!	
29 Si	2,775.	277.5	ppb	5.08	10000.	
39 K	59,200.	5,920.	ppb	1.66	200000.	
43 Ca	1,233,000.	123,300.	ppb	1.74	#VALUE!	
44 Ca	1,197,000.	119,700.	ppb	1.55	200000.	
51 V	971.5	97.15	ppb	4.79	1000.	
52 Cr	422.5	42.25	ppb	2.01	2000.	
53 Cr	448.1	44.81	ppb	1.27	#VALUE!	
55 Mn	5,057.	505.7	ppb	1.10	2000.	
56 Fe	198,000.	19,800.	ppb	2.21	#VALUE!	
57 Fe	194,800.	19,480.	ppb	2.12	100000.	
59 Co	574.3	57.43	ppb	2.79	1000.	
60 Ni	664.3	66.43	ppb	1.23	1000.	
63 Cu	377.9	37.79	ppb	1.44	#VALUE!	
65 Cu	377.	37.7	ppb	0.94	2000.	
66 Zn	981.8	98.18	ppb	2.14	2000.	
68 Zn	1,113.	111.3	ppb	0.90	#VALUE!	
75 As	122.5	12.25	ppb	2.24	1000.	
82 Se	101.3	10.13	ppb	1.46	1000.	
88 Sr	2,555.	255.5	ppb	1.64	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	92.61	9.261	ppb	1.40	1000.	
107 Ag	49.55	4.955	ppb	2.66	100.	
109 Ag	48.57	4.857	ppb	0.47	#VALUE!	
111 Cd	243.7	24.37	ppb	1.15	#VALUE!	
114 Cd	239.6	23.96	ppb	1.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	521.5	52.15	ppb	2.28	1000.	
120 Sn	508.1	50.81	ppb	2.37	#VALUE!	
121 Sb	29.95	2.995	ppb	2.69	#VALUE!	
123 Sb	31.12	3.112	ppb	1.18	1000.	
135 Ba	3,742.	374.2	ppb	1.86	2000.	
137 Ba	3,788.	378.8	ppb	2.19	#VALUE!	
182 W	44.16	4.416	ppb	1.59	1000.	
203 Tl	103.6	10.36	ppb	2.06	1000.	
205 Tl	104.6	10.46	ppb	1.57	#VALUE!	
208 Pb	229.3	22.93	ppb	2.16	2000.	
232 Th	203.1	20.31	ppb	2.44	1000.	
238 U	145.2	14.52	ppb	1.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3592735.80	2.38	3477802.30	103.3	69.5 - 120	
45 Sc	2309072.30	0.90	2104691.00	109.7	69.5 - 120	
72 Ge	387453.69	1.23	391860.38	98.9	69.5 - 120	
159 Tb	3355847.80	1.23	3376351.50	99.4	69.5 - 120	
209 Bi	1596018.80	1.86	1729987.60	92.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000447

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\068SMPL.D\068SMPL.D#
Date Acquired: May 9 2018 08:41 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-015
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	11.1	1.11	ppb	2.19	100.	
11 B	179.6	17.96	ppb	2.80	1000.	
23 Na	14,960.	1,496.	ppb	3.14	200000.	
25 Mg	110,000.	11,000.	ppb	1.13	200000.	
27 Al	201,900.	20,190.	ppb	1.17	200000.	
28 Si	2,217.	221.7	ppb	6.27	#VALUE!	
29 Si	2,468.	246.8	ppb	4.95	10000.	
39 K	51,580.	5,158.	ppb	2.31	200000.	
43 Ca	557,700.	55,770.	ppb	2.51	#VALUE!	
44 Ca	518,600.	51,860.	ppb	2.35	200000.	
51 V	589.	58.9	ppb	0.97	1000.	
52 Cr	189.	18.9	ppb	0.38	2000.	
53 Cr	200.2	20.02	ppb	2.56	#VALUE!	
55 Mn	12,930.	1,293.	ppb	2.02	2000.	
56 Fe	232,000.	23,200.	ppb	0.56	#VALUE!	
57 Fe	221,700.	22,170.	ppb	1.12	100000.	
59 Co	106.5	10.65	ppb	1.76	1000.	
60 Ni	328.7	32.87	ppb	0.58	1000.	
63 Cu	163.8	16.38	ppb	0.47	#VALUE!	
65 Cu	164.7	16.47	ppb	0.91	2000.	
66 Zn	501.2	50.12	ppb	0.37	2000.	
68 Zn	717.3	71.73	ppb	1.10	#VALUE!	
75 As	191.7	19.17	ppb	0.28	1000.	
82 Se	6.469	0.6469	ppb	14.96	1000.	
88 Sr	1,697.	169.7	ppb	0.79	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	32.44	3.244	ppb	1.02	1000.	
107 Ag	0.9148	0.0915	ppb	3.03	100.	
109 Ag	0.6316	0.0632	ppb	15.28	#VALUE!	
111 Cd	5.256	0.5256	ppb	7.63	#VALUE!	
114 Cd	0.6255	0.0626	ppb	45.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.73	5.073	ppb	1.69	1000.	
120 Sn	50.35	5.035	ppb	1.48	#VALUE!	
121 Sb	3.228	0.3228	ppb	4.61	#VALUE!	
123 Sb	3.048	0.3048	ppb	4.48	1000.	
135 Ba	5,737.	573.7	ppb	1.59	2000.	
137 Ba	5,840.	584.	ppb	1.68	#VALUE!	
182 W	1.362	0.1362	ppb	6.51	1000.	
203 Tl	4.788	0.4788	ppb	2.98	1000.	
205 Tl	4.903	0.4903	ppb	4.35	#VALUE!	
208 Pb	138.7	13.87	ppb	1.21	2000.	
232 Th	94.48	9.448	ppb	0.51	1000.	
238 U	17.75	1.775	ppb	2.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3501864.00	1.44	3477802.30	100.7	69.5 - 120	
45 Sc	2264749.50	1.16	2104691.00	107.6	69.5 - 120	
72 Ge	394067.41	1.35	391860.38	100.6	69.5 - 120	
159 Tb	3345311.00	0.68	3376351.50	99.1	69.5 - 120	
209 Bi	1620577.80	0.89	1729987.60	93.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000448

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\069SMPL.D\069SMPL.D#
Date Acquired: May 9 2018 08:45 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	95.86	100.	
11 B	2.217	2.217	ppb	13.11	1000.	
23 Na	0.2963	0.2963	ppb	60.07	200000.	
25 Mg	0.1765	0.1765	ppb	10.25	200000.	
27 Al	0.3547	0.3547	ppb	10.63	200000.	
28 Si	-50.85	-50.85	ppb	36.01	#VALUE!	
29 Si	-5.265	-5.265	ppb	130.66	10000.	
39 K	2.218	2.218	ppb	89.99	200000.	
43 Ca	-0.5392	-0.5392	ppb	789.32	#VALUE!	
44 Ca	-0.3094	-0.3094	ppb	389.14	200000.	
51 V	0.0433	0.0433	ppb	139.42	1000.	
52 Cr	0.1544	0.1544	ppb	3.29	2000.	
53 Cr	-2.079	-2.079	ppb	7.09	#VALUE!	
55 Mn	0.0326	0.0326	ppb	43.95	2000.	
56 Fe	7.08	7.08	ppb	39.41	#VALUE!	
57 Fe	6.869	6.869	ppb	35.06	100000.	
59 Co	0.0048	0.0048	ppb	205.50	1000.	
60 Ni	0.0065	0.0065	ppb	87.88	1000.	
63 Cu	0.0384	0.0384	ppb	26.00	#VALUE!	
65 Cu	0.0365	0.0365	ppb	46.80	2000.	
66 Zn	0.0529	0.0529	ppb	116.00	2000.	
68 Zn	-0.0506	-0.0506	ppb	352.16	#VALUE!	
75 As	0.0792	0.0792	ppb	231.76	1000.	
82 Se	0.1546	0.1546	ppb	18.88	1000.	
88 Sr	0.001	0.001	ppb	386.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0061	0.0061	ppb	130.73	1000.	
107 Ag	0.0016	0.0016	ppb	52.23	100.	
109 Ag	0.0029	0.0029	ppb	73.41	#VALUE!	
111 Cd	0.0169	0.0169	ppb	156.65	#VALUE!	
114 Cd	-0.0008	-0.0008	ppb	770.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0284	0.0284	ppb	30.70	1000.	
120 Sn	0.0499	0.0499	ppb	10.75	#VALUE!	
121 Sb	0.0014	0.0014	ppb	71.84	#VALUE!	
123 Sb	0.0046	0.0046	ppb	78.81	1000.	
135 Ba	0.0415	0.0415	ppb	79.53	2000.	
137 Ba	0.0221	0.0221	ppb	66.35	#VALUE!	
182 W	0.0096	0.0096	ppb	40.58	1000.	
203 Tl	0.0163	0.0163	ppb	133.50	1000.	
205 Tl	-0.0021	-0.0021	ppb	584.87	#VALUE!	
208 Pb	0.1739	0.1739	ppb	8.02	2000.	
232 Th	0.011	0.011	ppb	34.18	1000.	
238 U	0.0002	0.0002	ppb	232.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3324549.80	1.85	3477802.30	95.6	69.5 - 120	
45 Sc	2145208.00	0.79	2104691.00	101.9	69.5 - 120	
72 Ge	374448.50	0.86	391860.38	95.6	69.5 - 120	
159 Tb	3025456.00	1.96	3376351.50	89.6	69.5 - 120	
209 Bi	1493757.30	1.49	1729987.60	86.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000449

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\070SMPL.D\070SMPL.D#
Date Acquired: May 9 2018 08:49 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PBWLE03IMW2
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	97.56	100.	
11 B	8.915	1.783	ppb	1.24	1000.	
23 Na	40.38	8.076	ppb	5.79	200000.	
25 Mg	11.22	2.244	ppb	0.72	200000.	
27 Al	7.27	1.454	ppb	10.14	200000.	
28 Si	-293.15	-58.63	ppb	36.84	#VALUE!	
29 Si	-18.14	-3.628	ppb	386.99	10000.	
39 K	33.95	6.79	ppb	33.00	200000.	
43 Ca	16.14	3.228	ppb	49.35	#VALUE!	
44 Ca	12.325	2.465	ppb	14.75	200000.	
51 V	0.3994	0.0799	ppb	211.09	1000.	
52 Cr	3.3465	0.6693	ppb	17.50	2000.	
53 Cr	22.34	4.468	ppb	7.73	#VALUE!	
55 Mn	0.5015	0.1003	ppb	3.53	2000.	
56 Fe	101.95	20.39	ppb	20.44	#VALUE!	
57 Fe	63.2	12.64	ppb	27.07	100000.	
59 Co	0.0206	0.0041	ppb	159.08	1000.	
60 Ni	0.0767	0.0153	ppb	64.79	1000.	
63 Cu	0.363	0.0726	ppb	7.11	#VALUE!	
65 Cu	0.2616	0.0523	ppb	41.39	2000.	
66 Zn	1.074	0.2148	ppb	46.70	2000.	
68 Zn	-0.1577	-0.0315	ppb	161.15	#VALUE!	
75 As	-0.1077	-0.0215	ppb	271.39	1000.	
82 Se	0.2557	0.0511	ppb	145.97	1000.	
88 Sr	0.066	0.0132	ppb	6.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0331	0.0066	ppb	18.36	1000.	
107 Ag	0.0253	0.0051	ppb	60.99	100.	
109 Ag	0.0205	0.0041	ppb	20.53	#VALUE!	
111 Cd	0.3256	0.0651	ppb	23.61	#VALUE!	
114 Cd	-0.0224	-0.0045	ppb	234.57	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.642	0.3284	ppb	10.22	1000.	
120 Sn	1.509	0.3018	ppb	8.61	#VALUE!	
121 Sb	0.0335	0.0067	ppb	2.59	#VALUE!	
123 Sb	0.0831	0.0166	ppb	18.91	1000.	
135 Ba	0.2745	0.0549	ppb	26.94	2000.	
137 Ba	0.2311	0.0462	ppb	30.68	#VALUE!	
182 W	0.0402	0.008	ppb	36.71	1000.	
203 Tl	0.0319	0.0064	ppb	258.79	1000.	
205 Tl	-0.0071	-0.0014	ppb	248.04	#VALUE!	
208 Pb	-0.0854	-0.0171	ppb	144.56	2000.	
232 Th	0.1073	0.0215	ppb	28.43	1000.	
238 U	0.004	0.0008	ppb	89.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3360553.00	1.43	3477802.30	96.6	69.5 - 120	
45 Sc	2107650.30	1.98	2104691.00	100.1	69.5 - 120	
72 Ge	369859.63	0.48	391860.38	94.4	69.5 - 120	
159 Tb	3092318.00	1.79	3376351.50	91.6	69.5 - 120	
209 Bi	1541318.60	1.65	1729987.60	89.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000450

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\071SMPL.D\071SMPL.D#
Date Acquired: May 9 2018 08:54 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LCSWLE03IMW2
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	54.75	10.95	ppb	2.99	100.	
11 B	565.	113.	ppb	5.58	1000.	
23 Na	7,615.	1,523.	ppb	1.33	200000.	
25 Mg	5,445.	1,089.	ppb	1.87	200000.	
27 Al	2,122.	424.4	ppb	2.27	200000.	
28 Si	560.	112.	ppb	8.08	#VALUE!	
29 Si	831.	166.2	ppb	4.70	10000.	
39 K	10,240.	2,048.	ppb	1.96	200000.	
43 Ca	2,838.	567.6	ppb	9.48	#VALUE!	
44 Ca	2,528.	505.6	ppb	2.46	200000.	
51 V	526.	105.2	ppb	1.08	1000.	
52 Cr	207.5	41.5	ppb	2.86	2000.	
53 Cr	242.65	48.53	ppb	1.52	#VALUE!	
55 Mn	540.5	108.1	ppb	1.18	2000.	
56 Fe	1,096.5	219.3	ppb	2.69	#VALUE!	
57 Fe	1,054.	210.8	ppb	2.73	100000.	
59 Co	525.5	105.1	ppb	1.97	1000.	
60 Ni	536.	107.2	ppb	2.50	1000.	
63 Cu	262.2	52.44	ppb	0.15	#VALUE!	
65 Cu	262.95	52.59	ppb	1.27	2000.	
66 Zn	509.5	101.9	ppb	2.71	2000.	
68 Zn	579.5	115.9	ppb	2.97	#VALUE!	
75 As	103.1	20.62	ppb	3.42	1000.	
82 Se	100.	20.	ppb	3.10	1000.	
88 Sr	490.95	98.19	ppb	1.45	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	96.65	19.33	ppb	1.55	1000.	
107 Ag	50.7	10.14	ppb	0.34	100.	
109 Ag	49.99	9.998	ppb	2.84	#VALUE!	
111 Cd	241.05	48.21	ppb	0.36	#VALUE!	
114 Cd	240.2	48.04	ppb	1.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	499.8	99.96	ppb	3.11	1000.	
120 Sn	486.85	97.37	ppb	3.95	#VALUE!	
121 Sb	100.05	20.01	ppb	2.79	#VALUE!	
123 Sb	101.05	20.21	ppb	3.53	1000.	
135 Ba	2,023.5	404.7	ppb	3.41	2000.	
137 Ba	2,034.5	406.9	ppb	3.20	#VALUE!	
182 W	99.85	19.97	ppb	2.51	1000.	
203 Tl	100.55	20.11	ppb	3.28	1000.	
205 Tl	99.8	19.96	ppb	2.35	#VALUE!	
208 Pb	100.95	20.19	ppb	2.61	2000.	
232 Th	105.8	21.16	ppb	2.65	1000.	
238 U	121.8	24.36	ppb	2.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3581932.80	0.90	3477802.30	103.0	69.5 - 120	
45 Sc	2180321.30	1.11	2104691.00	103.6	69.5 - 120	
72 Ge	380007.66	0.78	391860.38	97.0	69.5 - 120	
159 Tb	3220922.00	2.63	3376351.50	95.4	69.5 - 120	
209 Bi	1613443.30	2.22	1729987.60	93.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000451

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\072SMPL.D\072SMPL.D#
Date Acquired: May 9 2018 08:58 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL3708-022
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	0.0011	0.0002	ppb	884.29	100.	
11 B	27.425	5.485	ppb	21.79	1000.	
23 Na	47.375	9.475	ppb	0.47	200000.	
25 Mg	12.18	2.436	ppb	1.06	200000.	
27 Al	9.345	1.869	ppb	7.43	200000.	
28 Si	-355.95	-71.19	ppb	35.53	#VALUE!	
29 Si	-96.1	-19.22	ppb	85.95	10000.	
39 K	30.12	6.024	ppb	43.24	200000.	
43 Ca	19.465	3.893	ppb	123.50	#VALUE!	
44 Ca	16.725	3.345	ppb	26.82	200000.	
51 V	0.4916	0.0983	ppb	225.59	1000.	
52 Cr	2.522	0.5044	ppb	26.63	2000.	
53 Cr	26.08	5.216	ppb	10.09	#VALUE!	
55 Mn	0.2828	0.0566	ppb	12.86	2000.	
56 Fe	69.05	13.81	ppb	9.78	#VALUE!	
57 Fe	49.57	9.914	ppb	25.02	100000.	
59 Co	0.0522	0.0104	ppb	48.63	1000.	
60 Ni	0.1413	0.0283	ppb	23.26	1000.	
63 Cu	0.4271	0.0854	ppb	30.49	#VALUE!	
65 Cu	0.3861	0.0772	ppb	27.27	2000.	
66 Zn	0.632	0.1264	ppb	45.69	2000.	
68 Zn	-0.0929	-0.0186	ppb	459.31	#VALUE!	
75 As	0.4119	0.0824	ppb	225.42	1000.	
82 Se	0.7125	0.1425	ppb	28.40	1000.	
88 Sr	0.0986	0.0197	ppb	29.39	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0658	0.0132	ppb	43.15	1000.	
107 Ag	0.0113	0.0023	ppb	43.27	100.	
109 Ag	0.0191	0.0038	ppb	66.16	#VALUE!	
111 Cd	0.2661	0.0532	ppb	51.83	#VALUE!	
114 Cd	0.0002	0.	ppb	11463.00	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.8525	0.3705	ppb	3.20	1000.	
120 Sn	1.7325	0.3465	ppb	4.66	#VALUE!	
121 Sb	0.0313	0.0063	ppb	58.49	#VALUE!	
123 Sb	0.0865	0.0173	ppb	43.57	1000.	
135 Ba	0.2778	0.0556	ppb	41.37	2000.	
137 Ba	0.2616	0.0523	ppb	10.21	#VALUE!	
182 W	0.1278	0.0256	ppb	65.75	1000.	
203 Tl	0.0256	0.0051	ppb	126.33	1000.	
205 Tl	0.0696	0.0139	ppb	109.63	#VALUE!	
208 Pb	-0.1677	-0.0335	ppb	40.80	2000.	
232 Th	0.395	0.079	ppb	33.89	1000.	
238 U	0.0046	0.0009	ppb	63.45	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3406276.80	3.26	3477802.30	97.9	69.5 - 120	
45 Sc	2107139.00	2.63	2104691.00	100.1	69.5 - 120	
72 Ge	368985.31	0.62	391860.38	94.2	69.5 - 120	
159 Tb	3118562.30	1.46	3376351.50	92.4	69.5 - 120	
209 Bi	1569647.30	1.92	1729987.60	90.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000452

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\073SMPL.D\073SMPL.D#
Date Acquired: May 9 2018 09:02 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	138.90	100.	
11 B	1.822	1.822	ppb	15.59	1000.	
23 Na	0.1819	0.1819	ppb	33.63	200000.	
25 Mg	0.2141	0.2141	ppb	52.59	200000.	
27 Al	0.4037	0.4037	ppb	21.26	200000.	
28 Si	-54.78	-54.78	ppb	40.38	#VALUE!	
29 Si	-13.57	-13.57	ppb	75.17	10000.	
39 K	2.985	2.985	ppb	41.88	200000.	
43 Ca	2.326	2.326	ppb	100.56	#VALUE!	
44 Ca	-0.9015	-0.9015	ppb	56.65	200000.	
51 V	0.0291	0.0291	ppb	169.19	1000.	
52 Cr	0.1748	0.1748	ppb	18.33	2000.	
53 Cr	-1.588	-1.588	ppb	9.97	#VALUE!	
55 Mn	0.0066	0.0066	ppb	49.44	2000.	
56 Fe	6.065	6.065	ppb	50.65	#VALUE!	
57 Fe	6.621	6.621	ppb	37.03	100000.	
59 Co	0.0066	0.0066	ppb	38.39	1000.	
60 Ni	0.0008	0.0008	ppb	1095.60	1000.	
63 Cu	0.0305	0.0305	ppb	46.86	#VALUE!	
65 Cu	0.0399	0.0399	ppb	73.30	2000.	
66 Zn	0.0604	0.0604	ppb	57.46	2000.	
68 Zn	-0.0377	-0.0377	ppb	206.40	#VALUE!	
75 As	0.1083	0.1083	ppb	11.92	1000.	
82 Se	0.1263	0.1263	ppb	101.74	1000.	
88 Sr	-0.0015	-0.0015	ppb	310.43	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0029	0.0029	ppb	58.70	1000.	
107 Ag	0.0005	0.0005	ppb	630.71	100.	
109 Ag	0.0023	0.0023	ppb	63.39	#VALUE!	
111 Cd	0.0331	0.0331	ppb	124.62	#VALUE!	
114 Cd	-0.0012	-0.0012	ppb	396.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.037	0.037	ppb	14.15	1000.	
120 Sn	0.0425	0.0425	ppb	33.11	#VALUE!	
121 Sb	0.0049	0.0049	ppb	33.28	#VALUE!	
123 Sb	0.0058	0.0058	ppb	135.34	1000.	
135 Ba	0.0267	0.0267	ppb	48.69	2000.	
137 Ba	0.0147	0.0147	ppb	50.56	#VALUE!	
182 W	0.0122	0.0122	ppb	46.03	1000.	
203 Tl	0.0027	0.0027	ppb	671.48	1000.	
205 Tl	0.	0.	ppb	5504.00	#VALUE!	
208 Pb	0.1579	0.1579	ppb	6.25	2000.	
232 Th	0.0039	0.0039	ppb	15.39	1000.	
238 U	0.0005	0.0005	ppb	255.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3405464.00	1.69	3477802.30	97.9	69.5 - 120	
45 Sc	2107544.00	0.77	2104691.00	100.1	69.5 - 120	
72 Ge	371841.59	0.23	391860.38	94.9	69.5 - 120	
159 Tb	3085286.50	0.23	3376351.50	91.4	69.5 - 120	
209 Bi	1550536.90	0.72	1729987.60	89.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000453

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\074SMPL.D\074SMPL.D#
Date Acquired: May 9 2018 09:06 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PBWLE03IMW1
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	58.24	100.	
11 B	1.649	1.649	ppb	3.80	1000.	
23 Na	10.49	10.49	ppb	3.18	200000.	
25 Mg	8.054	8.054	ppb	1.90	200000.	
27 Al	3.801	3.801	ppb	4.23	200000.	
28 Si	-54.97	-54.97	ppb	65.13	#VALUE!	
29 Si	-10.36	-10.36	ppb	254.34	10000.	
39 K	3.198	3.198	ppb	125.95	200000.	
43 Ca	2.818	2.818	ppb	145.81	#VALUE!	
44 Ca	2.203	2.203	ppb	44.05	200000.	
51 V	-0.017	-0.017	ppb	478.66	1000.	
52 Cr	0.3301	0.3301	ppb	11.85	2000.	
53 Cr	-0.4069	-0.4069	ppb	34.75	#VALUE!	
55 Mn	0.2622	0.2622	ppb	7.12	2000.	
56 Fe	14.13	14.13	ppb	38.80	#VALUE!	
57 Fe	16.48	16.48	ppb	5.94	100000.	
59 Co	0.0029	0.0029	ppb	31.40	1000.	
60 Ni	0.0259	0.0259	ppb	26.07	1000.	
63 Cu	0.0167	0.0167	ppb	81.07	#VALUE!	
65 Cu	0.0119	0.0119	ppb	50.14	2000.	
66 Zn	0.2644	0.2644	ppb	24.97	2000.	
68 Zn	0.319	0.319	ppb	16.24	#VALUE!	
75 As	0.1363	0.1363	ppb	61.42	1000.	
82 Se	0.0478	0.0478	ppb	178.39	1000.	
88 Sr	0.0121	0.0121	ppb	14.42	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0049	0.0049	ppb	87.14	1000.	
107 Ag	-0.0012	-0.0012	ppb	153.73	100.	
109 Ag	0.0026	0.0026	ppb	80.33	#VALUE!	
111 Cd	0.0262	0.0262	ppb	17.30	#VALUE!	
114 Cd	-0.0011	-0.0011	ppb	435.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0425	0.0425	ppb	64.48	1000.	
120 Sn	0.0553	0.0553	ppb	33.34	#VALUE!	
121 Sb	0.0028	0.0028	ppb	20.86	#VALUE!	
123 Sb	0.0059	0.0059	ppb	53.40	1000.	
135 Ba	0.0624	0.0624	ppb	19.00	2000.	
137 Ba	0.0617	0.0617	ppb	27.47	#VALUE!	
182 W	0.0065	0.0065	ppb	45.69	1000.	
203 Tl	0.0117	0.0117	ppb	65.37	1000.	
205 Tl	0.0043	0.0043	ppb	189.83	#VALUE!	
208 Pb	0.0333	0.0333	ppb	45.18	2000.	
232 Th	0.0069	0.0069	ppb	83.68	1000.	
238 U	-0.0005	-0.0005	ppb	59.54	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3465561.50	1.77	3477802.30	99.6	69.5 - 120	
45 Sc	2139976.80	3.42	2104691.00	101.7	69.5 - 120	
72 Ge	374110.34	1.64	391860.38	95.5	69.5 - 120	
159 Tb	3069759.80	1.23	3376351.50	90.9	69.5 - 120	
209 Bi	1533878.50	0.94	1729987.60	88.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000454

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\075SMPL.D\075SMPL.D#
Date Acquired: May 9 2018 09:10 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LCSWLE03IMW1
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 09 2018 05:11 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	56.5	11.3	ppb	2.40	100.	
11 B	556.5	111.3	ppb	5.97	1000.	
23 Na	7,790.	1,558.	ppb	1.08	200000.	
25 Mg	5,450.	1,090.	ppb	2.70	200000.	
27 Al	2,157.5	431.5	ppb	0.76	200000.	
28 Si	596.	119.2	ppb	21.74	#VALUE!	
29 Si	816.	163.2	ppb	14.49	10000.	
39 K	10,335.	2,067.	ppb	1.85	200000.	
43 Ca	2,962.5	592.5	ppb	3.55	#VALUE!	
44 Ca	2,583.5	516.7	ppb	1.12	200000.	
51 V	544.5	108.9	ppb	2.55	1000.	
52 Cr	211.05	42.21	ppb	0.87	2000.	
53 Cr	214.8	42.96	ppb	2.84	#VALUE!	
55 Mn	544.5	108.9	ppb	3.36	2000.	
56 Fe	1,092.5	218.5	ppb	5.54	#VALUE!	
57 Fe	1,066.	213.2	ppb	2.15	100000.	
59 Co	535.5	107.1	ppb	2.57	1000.	
60 Ni	544.5	108.9	ppb	1.47	1000.	
63 Cu	267.25	53.45	ppb	1.63	#VALUE!	
65 Cu	265.7	53.14	ppb	0.77	2000.	
66 Zn	539.5	107.9	ppb	1.82	2000.	
68 Zn	620.	124.	ppb	1.71	#VALUE!	
75 As	103.9	20.78	ppb	2.07	1000.	
82 Se	105.35	21.07	ppb	0.78	1000.	
88 Sr	493.7	98.74	ppb	2.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	96.75	19.35	ppb	0.63	1000.	
107 Ag	50.6	10.12	ppb	1.93	100.	
109 Ag	50.8	10.16	ppb	2.04	#VALUE!	
111 Cd	247.9	49.58	ppb	1.54	#VALUE!	
114 Cd	247.	49.4	ppb	1.52	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	507.5	101.5	ppb	0.56	1000.	
120 Sn	493.35	98.67	ppb	0.45	#VALUE!	
121 Sb	102.75	20.55	ppb	2.65	#VALUE!	
123 Sb	104.25	20.85	ppb	1.54	1000.	
135 Ba	2,083.5	416.7	ppb	0.78	2000.	
137 Ba	2,082.5	416.5	ppb	1.30	#VALUE!	
182 W	98.25	19.65	ppb	0.38	1000.	
203 Tl	101.7	20.34	ppb	1.21	1000.	
205 Tl	101.15	20.23	ppb	2.46	#VALUE!	
208 Pb	103.1	20.62	ppb	1.35	2000.	
232 Th	105.6	21.12	ppb	1.50	1000.	
238 U	123.65	24.73	ppb	1.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3510092.50	1.51	3477802.30	100.9	69.5 - 120	
45 Sc	2180996.00	0.92	2104691.00	103.6	69.5 - 120	
72 Ge	378794.19	1.59	391860.38	96.7	69.5 - 120	
159 Tb	3194130.50	1.15	3376351.50	94.6	69.5 - 120	
209 Bi	1573169.50	0.73	1729987.60	90.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000455

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\076_CCV.D\076_CCV.D#
Date Acquired: May 9 2018 09:15 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: May 09 2018 05:11 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	26.41	ppb	2.86	25	105.64	
11 B	30.39	ppb	0.52	25	121.56	Fail
23 Na	4,884.	ppb	2.83	5,000	97.68	
25 Mg	4,973.	ppb	1.19	5,000	99.46	
27 Al	481.6	ppb	2.11	500	96.32	
28 Si	394.	ppb	9.38	500	78.8	
29 Si	444.2	ppb	8.34	500	88.84	Fail
39 K	4,850.	ppb	0.98	5,000	97	
43 Ca	4,715.	ppb	1.07	5,000	94.3	
44 Ca	5,000.	ppb	0.15	5,000	100	
51 V	24.34	ppb	1.13	25	97.36	
52 Cr	24.67	ppb	1.79	25	98.68	
53 Cr	24.59	ppb	1.95	25	98.36	
55 Mn	24.74	ppb	0.38	25	98.96	
56 Fe	4,865.	ppb	0.86	5,000	97.3	
57 Fe	4,875.	ppb	0.92	5,000	97.5	
59 Co	24.09	ppb	1.32	25	96.36	
60 Ni	24.6	ppb	1.29	25	98.4	
63 Cu	25.11	ppb	0.51	25	100.44	
65 Cu	24.36	ppb	0.75	25	97.44	
66 Zn	24.53	ppb	1.28	25	98.12	
68 Zn	24.97	ppb	0.37	25	99.88	
75 As	24.87	ppb	3.04	25	99.48	
82 Se	24.64	ppb	1.35	25	98.56	
88 Sr	23.1	ppb	0.24	25	92.4	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	22.72	ppb	0.73	25	90.88	
107 Ag	23.25	ppb	1.41	25	93	
109 Ag	23.06	ppb	0.54	25	92.24	
111 Cd	23.46	ppb	0.10	25	93.84	
114 Cd	23.43	ppb	0.09	25	93.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.63	ppb	1.86	25	94.52	
120 Sn	23.5	ppb	1.38	25	94	
121 Sb	24.03	ppb	0.95	25	96.12	
123 Sb	24.14	ppb	0.70	25	96.56	
135 Ba	23.85	ppb	0.75	25	95.4	
137 Ba	24.38	ppb	0.35	25	97.52	
182 W	23.33	ppb	1.68	25	93.32	
203 Tl	23.77	ppb	0.48	25	95.08	
205 Tl	23.85	ppb	1.59	25	95.4	
208 Pb	24.01	ppb	1.05	25	96.04	
232 Th	25.22	ppb	1.54	25	100.88	
238 U	28.91	ppb	1.65	25	115.64	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3503094.00	1.34	3477802.30	100.7	80 - 120.4	
45 Sc	2194618.50	2.61	2104691.00	104.3	80 - 120.4	
72 Ge	381408.88	1.40	391860.38	97.3	80 - 120.4	
159 Tb	3217345.50	0.74	3376351.50	95.3	80 - 120.4	
209 Bi	1599800.30	0.80	1729987.60	92.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000456

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE09B.B\077_CCB.D\077_CCB.D#
Date Acquired: May 9 2018 09:19 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: May 09 2018 05:11 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0009	ppb	138.58	1.00	
11 B	3.251	ppb	11.19	1.00	
23 Na	0.3708	ppb	52.32	1.00	
25 Mg	0.0127	ppb	298.27	1.00	
27 Al	0.0462	ppb	51.19	1.00	
28 Si	-49.87	ppb	36.98	1.00	
29 Si	-6.494	ppb	204.65	1.00	
39 K	4.429	ppb	13.82	1.00	
43 Ca	0.348	ppb	459.20	1.00	
44 Ca	-0.6471	ppb	110.45	1.00	
51 V	0.0163	ppb	259.55	1.00	
52 Cr	0.2257	ppb	9.44	1.00	
53 Cr	-1.602	ppb	13.18	1.00	
55 Mn	0.0088	ppb	53.26	1.00	
56 Fe	8.022	ppb	42.63	1.00	
57 Fe	6.778	ppb	34.61	1.00	
59 Co	0.0059	ppb	110.38	1.00	
60 Ni	-0.0011	ppb	1518.10	1.00	
63 Cu	0.0263	ppb	43.51	1.00	
65 Cu	0.0457	ppb	59.08	1.00	
66 Zn	0.0795	ppb	98.76	1.00	
68 Zn	0.0814	ppb	43.11	1.00	
75 As	0.0143	ppb	886.95	1.00	
82 Se	0.1669	ppb	80.11	1.00	
88 Sr	-0.0021	ppb	188.46	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0276	ppb	42.67	1.00	
107 Ag	0.0021	ppb	22.03	1.00	
109 Ag	0.0033	ppb	69.71	1.00	
111 Cd	0.0609	ppb	57.18	1.00	
114 Cd	-0.0044	ppb	53.28	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0738	ppb	10.61	1.00	
120 Sn	0.0712	ppb	12.55	1.00	
121 Sb	0.0072	ppb	37.90	1.00	
123 Sb	0.0135	ppb	10.46	1.00	
135 Ba	0.037	ppb	30.24	1.00	
137 Ba	0.0207	ppb	53.63	1.00	
182 W	0.0518	ppb	51.51	1.00	
203 Tl	-0.0016	ppb	974.45	1.00	
205 Tl	-0.001	ppb	881.11	1.00	
208 Pb	0.1757	ppb	5.37	1.00	
232 Th	0.0445	ppb	13.16	1.00	
238 U	0.0043	ppb	34.29	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3311430.80	2.74	3477802.30	95.2	79.5 - 120	
45 Sc	2079832.60	0.27	2104691.00	98.8	79.5 - 120	
72 Ge	362136.69	0.52	391860.38	92.4	79.5 - 120	
159 Tb	3059372.80	0.25	3376351.50	90.6	79.5 - 120	
209 Bi	1538225.10	0.45	1729987.60	88.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE09B.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 4000457

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: JS **ANALYSIS DATE**: 05/10/2018

FILE NAME: JLE10C

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

REVIEWED
MD 5/15/18
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
JS (initals) on 5.10.18 (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17714	04/30/2018	04/30/2019	0 ug/L
Standard 1	MW17738	05/04/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17751	05/09/2018	05/15/2018	Varies by Element
ICSAB	MW17752	05/09/2018	05/15/2018	Varies by Element
CCV	MW17734	05/09/2018	06/21/2018	Varies by Element
Internal Standard	MW17712	04/27/2018	07/192018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

- Sc failed in LRS2; rejected associated analytes for all DoD 5.0 or higher samples w/affected analyte concentrations greater than the calibration concentration.
- Be RSD failed in 200.8 Method Tune; rejected B, Be and Na results for all 200.8 samples in this analytical run.

MD 5/15/18

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 MW17714 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17714(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17714 (pipet M18)

Post Spike: 0.08mL of MW17698(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	JLE10C	5/10/2018	6:28:00 14:43	JS
200.8 TUNE	1	JLE10C	5/10/2018	6:28:00 14:46	JS
Cal Blank	1	JLE10C	5/10/2018	6:28:00 18:28	JS
Cal Std	1	JLE10C	5/10/2018	6:32:00 18:32	JS
ICV	1	JLE10C	5/10/2018	6:36:00 18:36	JS
ICB	1	JLE10C	5/10/2018	6:40:00 18:40	JS
PQL	1	JLE10C	5/10/2018	6:44:00 18:44	JS
RINSE	1	JLE10C	5/10/2018	6:48:00 18:48	JS
ICSA	1	JLE10C	5/10/2018	6:52:00 18:52	JS
ICSAB	1	JLE10C	5/10/2018	6:56:00 18:56	JS
RINSE	1	JLE10C	5/10/2018	7:00:00 19:00	JS
LRS1	1	JLE10C	5/10/2018	7:04:00 19:04	JS
LRS2	1	JLE10C	5/10/2018	7:08:00 19:08	JS
RINSE	1	JLE10C	5/10/2018	7:12:00 19:12	JS
RINSE	1	JLE10C	5/10/2018	7:16:00 19:16	JS
CCV	1	JLE10C	5/10/2018	7:20:00 19:20	JS
CCB	1	JLE10C	5/10/2018	7:24:00 19:24	JS
LCSWLE03IMW1	5	JLE10C	5/10/2018	7:29:00 19:29	JS
SL3618-001	1	JLE10C	5/10/2018	7:33:00 19:33	JS
SL3721-001	1	JLE10C	5/10/2018	7:37:00 19:37	JS
PBWLE03IMW2	5	JLE10C	5/10/2018	7:41:00 19:41	JS
LCSWLE03IMW2	5	JLE10C	5/10/2018	7:45:00 19:45	JS
SL3708-022	5	JLE10C	5/10/2018	7:49:00 19:49	JS
PBWLE04IMW1	5	JLE10C	5/10/2018	7:53:00 19:53	JS
LCSWLE04IMW1	5	JLE10C	5/10/2018	7:57:00 19:57	JS
SL3809-001	5	JLE10C	5/10/2018	8:01:00 20:01	JS
SL3719-001	2	JLE10C	5/10/2018	8:05:00 20:05	JS
CCV	1	JLE10C	5/10/2018	8:10:00 20:10	JS
CCB	1	JLE10C	5/10/2018	8:14:00 20:14	JS
PBSLE04IMS1	5	JLE10C	5/10/2018	8:18:00 20:18	JS
LCSOLE04IMS1	5	JLE10C	5/10/2018	8:22:00 20:22	JS
SL3708-007	5	JLE10C	5/10/2018	8:26:00 20:26	JS
SL3708-019	5	JLE10C	5/10/2018	8:30:00 20:30	JS
SL3708-020	5	JLE10C	5/10/2018	8:35:00 20:35	JS
SL3708-021	5	JLE10C	5/10/2018	8:39:00 20:39	JS
SL3807-001	5	JLE10C	5/10/2018	8:43:00 20:43	JS
SL3807-002	5	JLE10C	5/10/2018	8:47:00 20:47	JS
RINSE	5	JLE10C	5/10/2018	8:52:00 20:52	JS
PBSLE07IMS1	5	JLE10C	5/10/2018	8:56:00 20:56	JS
CCV	1	JLE10C	5/10/2018	9:00:00 21:00	JS
CCB	1	JLE10C	5/10/2018	9:04:00 21:04	JS
LCSOLE07IMS1	5	JLE10C	5/10/2018	9:08:00 21:08	JS
SL3809-012	5	JLE10C	5/10/2018	9:12:00 21:12	JS
SL3809-013	5	JLE10C	5/10/2018	9:17:00 21:17	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3809-014	5	JLE10C	5/10/2018 9:21:00	21:21	JS
SL3809-015	5	JLE10C	5/10/2018 9:25:00	21:25	JS
SL3809-017	5	JLE10C	5/10/2018 9:30:00	21:30	JS
SL3809-017	10	JLE10C	5/10/2018 9:34:00	21:34	JS
SL3809-018	5	JLE10C	5/10/2018 9:38:00	21:38	JS
SL3809-019	5	JLE10C	5/10/2018 9:42:00	21:42	JS
RINSE	1	JLE10C	5/10/2018 9:47:00	21:47	JS
CCV	1	JLE10C	5/10/2018 9:51:00	21:51	JS
CCB	1	JLE10C	5/10/2018 9:55:00	21:55	JS
SL3809-020	5	JLE10C	5/10/2018 9:59:00	21:59	JS
SL3809-020	10	JLE10C	5/10/2018 10:04:0	22:04	JS
SL3809-056	5	JLE10C	5/10/2018 10:08:0	22:08	JS
SL3809-057	5	JLE10C	5/10/2018 10:12:0	22:12	JS
SL3809-058	5	JLE10C	5/10/2018 10:16:0	22:16	JS
SL3809-059	5	JLE10C	5/10/2018 10:21:0	22:21	JS
SL3809-060	5	JLE10C	5/10/2018 10:25:0	22:25	JS
SL3809-061	5	JLE10C	5/10/2018 10:29:0	22:29	JS
SL3809-062	5	JLE10C	5/10/2018 10:34:0	22:34	JS
RINSE	1	JLE10C	5/10/2018 10:38:0	22:38	JS
CCV	1	JLE10C	5/10/2018 10:42:0	22:42	JS
CCB	1	JLE10C	5/10/2018 10:46:0	22:46	JS
SL3809-063	5	JLE10C	5/10/2018 10:51:0	22:51	JS
SL3809-064	5	JLE10C	5/10/2018 10:55:0	22:55	JS
SL3809-065	5	JLE10C	5/10/2018 10:59:0	22:59	JS
RINSE	1	JLE10C	5/10/2018 11:03:0	23:03	JS
RINSE	1	JLE10C	5/10/2018 11:08:0	23:08	JS
PBSLE08IMS1	5	JLE10C	5/10/2018 11:12:0	23:12	JS
LCSOLE08IMS1	5	JLE10C	5/10/2018 11:16:0	23:16	JS
SL3809-016	5	JLE10C	5/10/2018 11:20:0	23:20	JS
SL3809-016L	25	JLE10C	5/10/2018 11:24:0	23:24	JS
SL3809-016A	5	JLE10C	5/10/2018 11:29:0	23:29	JS
CCV	1	JLE10C	5/10/2018 11:33:0	23:33	JS
CCB	1	JLE10C	5/10/2018 11:37:0	23:37	JS
SL3809-016S	5	JLE10C	5/10/2018 11:41:0	23:41	JS
SL3809-016P	5	JLE10C	5/10/2018 11:46:0	23:46	JS
SL3809-021	5	JLE10C	5/10/2018 11:50:0	23:50	JS
SL3809-022	5	JLE10C	5/10/2018 11:54:0	23:54	JS
SL3809-023	5	JLE10C	5/10/2018 11:59:0	23:59	JS
SL3809-025	5	JLE10C	5/11/2018 12:03:0	0:03	JS
SL3809-026	5	JLE10C	5/11/2018 12:07:0	0:07	JS
SL3809-027	5	JLE10C	5/11/2018 12:11:0	0:11	JS
SL3809-028	5	JLE10C	5/11/2018 12:16:0	0:16	JS
RINSE	1	JLE10C	5/11/2018 12:20:0	0:20	JS
CCV	1	JLE10C	5/11/2018 12:24:0	0:24	JS
CCB	1	JLE10C	5/11/2018 12:28:0	0:28	JS
SL3809-029	5	JLE10C	5/11/2018 12:33:0	0:33	JS
SL3809-030	5	JLE10C	5/11/2018 12:37:0	0:37	JS

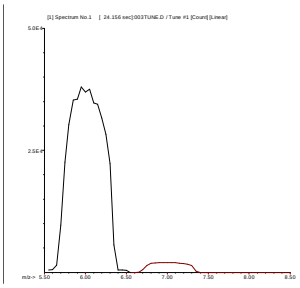
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3809-031	5	JLE10C	5/11/2018 12:41:0	0:41	JS
SL3809-032	5	JLE10C	5/11/2018 12:46:0	0:46	JS
SL3809-033	5	JLE10C	5/11/2018 12:50:0	0:50	JS
SL3809-034	5	JLE10C	5/11/2018 12:54:0	0:54	JS
SL3809-035	5	JLE10C	5/11/2018 12:59:0	0:59	JS
SL3809-036	5	JLE10C	5/11/2018 1:03:00	1:03	JS
SL3809-037	5	JLE10C	5/11/2018 1:07:00	1:07	JS
RINSE	1	JLE10C	5/11/2018 1:12:00	1:12	JS
CCV	1	JLE10C	5/11/2018 1:16:00	1:16	JS
CCB	1	JLE10C	5/11/2018 1:20:00	1:20	JS
SL3809-038	5	JLE10C	5/11/2018 1:24:00	1:24	JS
SL3809-039	5	JLE10C	5/11/2018 1:29:00	1:29	JS
SL3809-040	5	JLE10C	5/11/2018 1:33:00	1:33	JS
RINSE	1	JLE10C	5/11/2018 1:37:00	1:37	JS
PBWLE09IMW1	1	JLE10C	5/11/2018 1:42:00	1:42	JS
LSCWLE09IMW1	5	JLE10C	5/11/2018 1:46:00	1:46	JS
SL3836-002	1	JLE10C	5/11/2018 1:50:00	1:50	JS
SL3836-002L	5	JLE10C	5/11/2018 1:54:00	1:54	JS
SL3836-002S	5	JLE10C	5/11/2018 1:58:00	1:58	JS
SL3836-002P	5	JLE10C	5/11/2018 2:02:00	2:02	JS
CCV	1	JLE10C	5/11/2018 2:07:00	2:07	JS
CCB	1	JLE10C	5/11/2018 2:11:00	2:11	JS
SL3844-001	1	JLE10C	5/11/2018 2:15:00	2:15	JS
SL3855-001	1	JLE10C	5/11/2018 2:19:00	2:19	JS
SL3905-001	1	JLE10C	5/11/2018 2:24:00	2:24	JS
SL3910-002	1	JLE10C	5/11/2018 2:28:00	2:28	JS
SL3913-001	1	JLE10C	5/11/2018 2:32:00	2:32	JS
CCV	1	JLE10C	5/11/2018 2:36:00	2:36	JS
CCB	1	JLE10C	5/11/2018 2:41:00	2:41	JS
PQL	1	JLE10C	5/11/2018 2:45:00	2:45	JS
CCV	1	JLE10C	5/11/2018 2:49:00	2:49	JS
CCB	1	JLE10C	5/11/2018 2:53:00	2:53	JS

6020 QC Tune Report

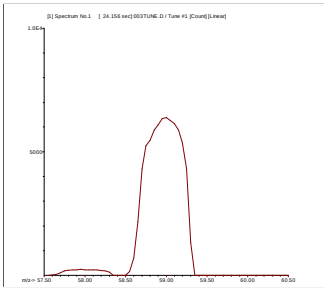
Data File: C:\ICPCHEM\1\DATA\JLE10A.B\003TUNE.D
Date Acquired: May 10 2018 02:43 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

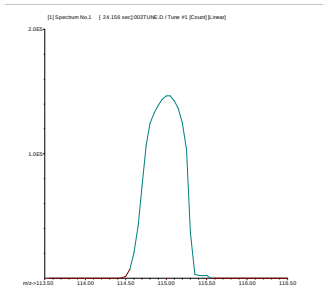
Element	Actual	Required	Flag
7 Li	3.55	5.00	
59 Co	2.85	5.00	
115 In	2.33	5.00	
205 Tl	2.05	5.00	



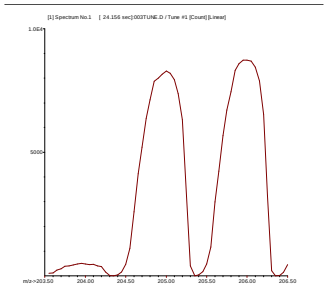
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



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:



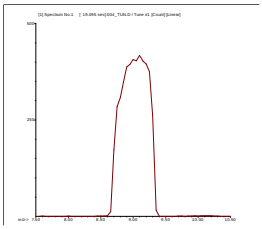
205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

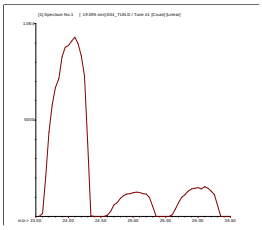
Data File: C:\ICPCHEM\1\DATA\JLE10A.B\004_TUN.D
Date Acquired: May 10 2018 02:46 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

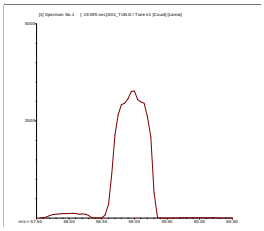
Element	Actual	Required	Flag
9 Be	6.17	5.00	RSDFail
24 Mg	2.33	5.00	
59 Co	2.53	5.00	
115 In	1.59	5.00	
208 Pb	1.70	5.00	



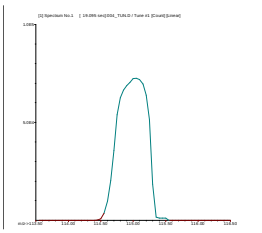
9 Be
Mass Calib.
Actual: 9.10
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.60
Required: 1.00
Flag:



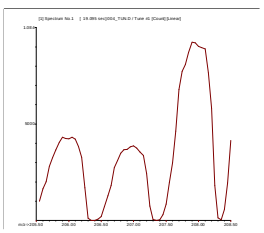
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:

Tune Result: Fail

Katahdin Analytical Services 4000463

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.I
Date Acquired: May 10 2018 06:28 pm
Operator: JS
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: May 10 2018 06:30 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1729334.00	A	73830.00	4.27
9	Be	11.11	P	1.93	17.33
11	B	153.34	P	15.28	9.96
23	Na	41078.71	P	1431.00	3.48
25	Mg	75.56	P	13.88	18.37
27	Al	1089.29	P	101.90	9.35
28	Si	1046879.00	A	9975.00	0.95
29	Si	85321.48	P	494.10	0.58
39	K	849936.50	A	9052.00	1.07
43	Ca	263.00	P	61.20	23.27
44	Ca	4678.56	P	262.30	5.61
45	Sc	2274967.00	A	71130.00	3.13
51	V	1010.65	P	184.70	18.28
52	Cr	7231.96	P	276.20	3.82
53	Cr	6394.91	P	8.81	0.14
55	Mn	1387.89	P	57.39	4.14
56	Fe	1364240.00	A	29480.00	2.16
57	Fe	9377.59	P	300.50	3.20
59	Co	148.90	P	36.72	24.66
60	Ni	61.73	P	6.94	11.24
63	Cu	350.01	P	62.28	17.79
65	Cu	162.23	P	8.39	5.17
66	Zn	848.94	P	51.68	6.09
68	Zn	1032.29	P	46.83	4.54
72	Ge	590563.19	P	9959.00	1.69
75	As	-40.77	P	75.46	185.09
82	Se	0.56	P	3.22	573.95
88	Sr	66.67	P	33.34	50.00
89	Y	4752403.00	A	34100.00	0.72
98	Mo	43.80	P	18.82	42.97
107	Ag	34.45	P	10.71	31.09
109	Ag	15.56	P	6.94	44.61
111	Cd	859.11	P	7.68	0.89
114	Cd	-2.83	P	8.62	304.85
115	In	4791905.00	A	112500.00	2.35
118	Sn	425.58	P	30.06	7.06
120	Sn	586.70	P	46.31	7.89
121	Sb	21.11	P	1.93	9.12
123	Sb	17.78	P	6.94	39.03
135	Ba	20.00	P	11.55	57.75
137	Ba	36.67	P	16.67	45.46
159	Tb	6367688.00	A	56290.00	0.88
182	W	34.45	P	13.47	39.11
203	Tl	673.37	P	28.48	4.23
205	Tl	1617.93	P	33.56	2.07
208	Pb	2940.23	P	145.30	4.94
209	Bi	2872959.00	A	6982.00	0.24
232	Th	20.00	P	3.33	16.66
238	U	10.00	P	3.33	33.33

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\016CALI.D\016CALI.D#
Date Acquired: May 10 2018 06:32 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 10 2018 06:31 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1781111.00	A	85360.00	4.79
9 Be	72665.59	P	650.10	0.89
11 B	32522.20	P	822.60	2.53
23 Na	45287832.00	A	289100.00	0.64
25 Mg	4098799.00	A	85060.00	2.08
27 Al	4152079.00	A	24870.00	0.60
28 Si	3352985.00	A	25980.00	0.77
29 Si	209688.09	P	1726.00	0.82
39 K	66520300.00	A	266600.00	0.40
43 Ca	121958.70	P	2036.00	1.67
44 Ca	2061030.00	A	30130.00	1.46
45 Sc	2430311.00	A	75540.00	3.11
51 V	463908.31	P	9723.00	2.10
52 Cr	413184.41	P	7578.00	1.83
53 Cr	54211.40	P	1491.00	2.75
55 Mn	547165.63	P	5072.00	0.93
56 Fe	88648712.00	A	2044000.00	2.31
57 Fe	2174333.00	A	15930.00	0.73
59 Co	468634.50	P	5641.00	1.20
60 Ni	105077.40	P	2803.00	2.67
63 Cu	254944.09	P	2278.00	0.89
65 Cu	121801.10	P	1091.00	0.90
66 Zn	66545.57	P	1085.00	1.63
68 Zn	48560.24	P	264.40	0.54
72 Ge	599660.69	P	17340.00	2.89
75 As	67947.17	P	1130.00	1.66
82 Se	5285.82	P	40.16	0.76
88 Sr	797103.31	A	10970.00	1.38
89 Y	5019899.00	A	115700.00	2.30
98 Mo	258813.09	P	1793.00	0.69
107 Ag	410485.81	P	2792.00	0.68
109 Ag	396364.59	P	5886.00	1.49
111 Cd	85337.49	P	658.70	0.77
114 Cd	187361.91	P	851.60	0.45
115 In	5010517.00	A	59140.00	1.18
118 Sn	255265.80	P	2027.00	0.79
120 Sn	347758.00	P	3610.00	1.04
121 Sb	319552.19	P	3094.00	0.97
123 Sb	243704.09	P	1631.00	0.67
135 Ba	73437.96	P	1027.00	1.40
137 Ba	127660.00	P	1805.00	1.41
159 Tb	6743512.00	A	217200.00	3.22
182 W	282712.59	P	3284.00	1.16
203 Tl	221879.30	P	1910.00	0.86
205 Tl	522778.81	P	5368.00	1.03
208 Pb	711606.38	P	8059.00	1.13
209 Bi	2945707.00	A	92430.00	3.14
232 Th	717673.88	P	5258.00	0.73
238 U	700284.38	P	3027.00	0.43

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1781111.40	4.79	1729334.00	103.0	79.5 - 120.4	
45 Sc	2430311.00	3.11	2274967.30	106.8	79.5 - 120.4	
72 Ge	599660.69	2.89	590563.19	101.5	79.5 - 120.4	
159 Tb	6743511.50	3.22	6367688.00	105.9	79.5 - 120.4	
209 Bi	2945707.50	3.14	2872959.00	102.5	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000465

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\017_ICV.D\017_ICV.D#
Date Acquired: May 10 2018 06:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.7	ppb	3.04	20	98.5	
11 B	22.29	ppb	3.02	20	111.45	Fail
23 Na	4,044.	ppb	2.98	4,000	101.1	
25 Mg	4,067.	ppb	3.71	4,000	101.675	
27 Al	417.5	ppb	3.80	400	104.375	
28 Si	407.1	ppb	6.17	400	101.775	
29 Si	385.2	ppb	7.00	400	96.3	
39 K	3,974.	ppb	5.41	4,000	99.35	
43 Ca	4,127.	ppb	2.94	4,000	103.175	
44 Ca	4,143.	ppb	1.73	4,000	103.575	
51 V	20.19	ppb	1.62	20	100.95	
52 Cr	19.86	ppb	2.10	20	99.3	
53 Cr	16.99	ppb	3.63	20	84.95	
55 Mn	19.62	ppb	1.11	20	98.1	
56 Fe	3,973.	ppb	0.92	4,000	99.325	
57 Fe	4,124.	ppb	1.13	4,000	103.1	
59 Co	20.08	ppb	1.20	20	100.4	
60 Ni	19.99	ppb	1.18	20	99.95	
63 Cu	19.74	ppb	1.01	20	98.7	
65 Cu	19.72	ppb	0.85	20	98.6	
66 Zn	20.1	ppb	0.64	20	100.5	
68 Zn	20.35	ppb	1.90	20	101.75	
75 As	19.93	ppb	0.51	20	99.65	
82 Se	20.31	ppb	0.94	20	101.55	
88 Sr	19.53	ppb	0.19	20	97.65	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.34	ppb	0.45	40	95.85	
107 Ag	20.05	ppb	0.29	20	100.25	
109 Ag	19.87	ppb	0.39	20	99.35	
111 Cd	19.88	ppb	0.52	20	99.4	
114 Cd	20.13	ppb	0.86	20	100.65	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.69	ppb	1.04	20	98.45	
120 Sn	19.97	ppb	2.43	20	99.85	
121 Sb	19.91	ppb	2.14	20	99.55	
123 Sb	19.95	ppb	1.69	20	99.75	
135 Ba	20.15	ppb	2.18	20	100.75	
137 Ba	19.74	ppb	1.52	20	98.7	
182 W	19.76	ppb	2.01	20	98.8	
203 Tl	20.25	ppb	3.82	20	101.25	
205 Tl	20.23	ppb	2.51	20	101.15	
208 Pb	19.62	ppb	2.51	20	98.1	
232 Th	19.59	ppb	3.42	20	97.95	
238 U	19.69	ppb	3.34	20	98.45	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1746699.60	1.20	1729334.00	101.0	80 - 120.4	
45 Sc	2362151.00	1.38	2274967.30	103.8	80 - 120.4	
72 Ge	602163.69	0.84	590563.19	102.0	80 - 120.4	
159 Tb	6631086.00	0.84	6367688.00	104.1	80 - 120.4	
209 Bi	2956290.50	1.62	2872959.00	102.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000466

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\018_ICB.D\018_ICB.D#
Date Acquired: May 10 2018 06:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0011	ppb	239.96	1.00	
11 B	1.751	ppb	11.84	1.00	
23 Na	0.179	ppb	275.59	1.00	
25 Mg	-0.008	ppb	411.01	1.00	
27 Al	-0.0445	ppb	34.04	1.00	
28 Si	-1.458	ppb	1269.50	1.00	
29 Si	-19.94	ppb	158.63	1.00	
39 K	-5.211	ppb	98.45	1.00	
43 Ca	-4.311	ppb	48.06	1.00	
44 Ca	-1.057	ppb	121.38	1.00	
51 V	0.095	ppb	65.06	1.00	
52 Cr	0.0002	ppb	4423.90	1.00	
53 Cr	-1.829	ppb	15.92	1.00	
55 Mn	-0.0031	ppb	180.92	1.00	
56 Fe	-4.394	ppb	96.63	1.00	
57 Fe	-0.832	ppb	167.43	1.00	
59 Co	-0.0015	ppb	249.24	1.00	
60 Ni	0.0029	ppb	294.69	1.00	
63 Cu	-0.0045	ppb	82.18	1.00	
65 Cu	-0.0107	ppb	93.82	1.00	
66 Zn	-0.0095	ppb	653.59	1.00	
68 Zn	-0.0312	ppb	233.66	1.00	
75 As	0.0029	ppb	2902.90	1.00	
82 Se	0.0614	ppb	116.93	1.00	
88 Sr	-0.001	ppb	219.77	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0603	ppb	47.20	1.00	
107 Ag	0.007	ppb	32.56	1.00	
109 Ag	0.0057	ppb	19.07	1.00	
111 Cd	-0.0202	ppb	63.03	1.00	
114 Cd	0.0012	ppb	97.55	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0292	ppb	61.97	1.00	
120 Sn	0.0189	ppb	19.38	1.00	
121 Sb	0.0026	ppb	110.50	1.00	
123 Sb	0.0049	ppb	122.45	1.00	
135 Ba	0.005	ppb	10.77	1.00	
137 Ba	-0.0031	ppb	125.05	1.00	
182 W	0.0623	ppb	27.05	1.00	
203 Tl	0.0136	ppb	59.50	1.00	
205 Tl	0.0011	ppb	841.82	1.00	
208 Pb	-0.0415	ppb	24.67	1.00	
232 Th	0.0501	ppb	2.87	1.00	
238 U	0.0039	ppb	30.04	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1745717.10	2.60	1729334.00	100.9	79.5 - 120	
45 Sc	2297165.50	3.68	2274967.30	101.0	79.5 - 120	
72 Ge	592537.69	3.44	590563.19	100.3	79.5 - 120	
159 Tb	6302002.50	2.78	6367688.00	99.0	79.5 - 120	
209 Bi	2825172.80	2.88	2872959.00	98.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000467

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\019_PQL.D\019_PQL.D#
Date Acquired: May 10 2018 06:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1865	ppb	8.97	0.20	93.25	
11 B	4.623	ppb	2.39	4.00	115.575	
23 Na	209.6	ppb	4.16	200.00	104.8	
25 Mg	19.91	ppb	3.29	20.00	99.55	
27 Al	20.02	ppb	2.49	20.00	100.1	
28 Si	94.14	ppb	4.89	100.00	94.14	
29 Si	68.99	ppb	6.65	100.00	68.99	Fail
39 K	188.8	ppb	2.43	200.00	94.4	
43 Ca	20.71	ppb	9.49	20.00	103.55	
44 Ca	18.18	ppb	8.87	20.00	90.9	
51 V	1.022	ppb	5.25	1.00	102.2	
52 Cr	0.9857	ppb	4.35	1.00	98.57	
53 Cr	-0.3098	ppb	34.38	---	#VALUE!	
55 Mn	0.3704	ppb	4.39	0.40	92.6	
56 Fe	14.44	ppb	18.81	20.00	72.2	
57 Fe	19.16	ppb	5.75	20.00	95.8	
59 Co	0.2027	ppb	9.33	0.20	101.35	
60 Ni	0.4262	ppb	6.24	0.40	106.55	
63 Cu	0.587	ppb	3.24	0.60	97.8333	
65 Cu	0.6143	ppb	3.75	0.60	102.383	
66 Zn	2.098	ppb	5.95	2.00	104.9	
68 Zn	2.065	ppb	11.33	2.00	103.25	
75 As	0.8977	ppb	13.20	1.00	89.77	
82 Se	0.9414	ppb	21.97	1.00	94.14	
88 Sr	1.001	ppb	2.04	1.00	100.1	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	1.008	ppb	3.61	1.00	100.8	
107 Ag	0.2009	ppb	4.89	0.20	100.45	
109 Ag	0.2148	ppb	2.52	0.20	107.4	
111 Cd	0.182	ppb	1.21	0.20	91	
114 Cd	0.1992	ppb	2.96	0.20	99.6	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.02	ppb	1.53	1.00	102	
120 Sn	1.016	ppb	2.24	1.00	101.6	
121 Sb	0.2192	ppb	6.26	0.20	109.6	
123 Sb	0.2197	ppb	6.71	0.20	109.85	
135 Ba	0.389	ppb	3.26	0.40	97.25	
137 Ba	0.4098	ppb	3.16	0.40	102.45	
182 W	1.052	ppb	3.45	1.00	105.2	
203 Tl	0.2136	ppb	3.09	0.20	106.8	
205 Tl	0.1973	ppb	3.19	0.20	98.65	
208 Pb	0.1654	ppb	11.95	0.20	82.7	
232 Th	0.2195	ppb	5.91	0.20	109.75	
238 U	0.2009	ppb	1.33	0.20	100.45	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1764228.30	1.58	1729334.00	102.0	80 - 120.4	
45 Sc	2351187.80	0.48	2274967.30	103.4	80 - 120.4	
72 Ge	598807.50	0.90	590563.19	101.4	80 - 120.4	
159 Tb	6399823.50	1.05	6367688.00	100.5	80 - 120.4	
209 Bi	2870511.00	0.82	2872959.00	99.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000468

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\020SMPL.D\020SMPL.D#
Date Acquired: May 10 2018 06:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	67.38	100.	
11 B	0.5142	0.5142	ppb	17.89	1000.	
23 Na	0.4205	0.4205	ppb	80.05	200000.	
25 Mg	0.0059	0.0059	ppb	497.81	200000.	
27 Al	0.3308	0.3308	ppb	27.32	200000.	
28 Si	-0.9571	-0.9571	ppb	2514.90	#VALUE!	
29 Si	-22.73	-22.73	ppb	135.28	10000.	
39 K	-3.43	-3.43	ppb	186.85	200000.	
43 Ca	0.2247	0.2247	ppb	2930.60	#VALUE!	
44 Ca	-0.3362	-0.3362	ppb	242.62	200000.	
51 V	0.1385	0.1385	ppb	45.90	1000.	
52 Cr	-0.0189	-0.0189	ppb	225.33	2000.	
53 Cr	-1.822	-1.822	ppb	8.10	#VALUE!	
55 Mn	-0.0061	-0.0061	ppb	55.57	2000.	
56 Fe	-5.813	-5.813	ppb	55.74	#VALUE!	
57 Fe	0.3782	0.3782	ppb	600.21	100000.	
59 Co	-0.0009	-0.0009	ppb	251.91	1000.	
60 Ni	0.0048	0.0048	ppb	95.25	1000.	
63 Cu	0.0894	0.0894	ppb	0.74	#VALUE!	
65 Cu	0.0931	0.0931	ppb	15.35	2000.	
66 Zn	-0.0184	-0.0184	ppb	287.93	2000.	
68 Zn	-0.037	-0.037	ppb	150.63	#VALUE!	
75 As	0.0916	0.0916	ppb	30.28	1000.	
82 Se	0.0117	0.0117	ppb	1431.70	1000.	
88 Sr	0.0008	0.0008	ppb	237.27	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0105	0.0105	ppb	45.49	1000.	
107 Ag	0.0028	0.0028	ppb	31.42	100.	
109 Ag	0.0019	0.0019	ppb	52.69	#VALUE!	
111 Cd	-0.0166	-0.0166	ppb	58.34	#VALUE!	
114 Cd	0.	0.	ppb	9893.10	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0062	0.0062	ppb	95.56	1000.	
120 Sn	0.0103	0.0103	ppb	62.75	#VALUE!	
121 Sb	0.0029	0.0029	ppb	94.60	#VALUE!	
123 Sb	0.0029	0.0029	ppb	144.09	1000.	
135 Ba	0.0045	0.0045	ppb	83.47	2000.	
137 Ba	-0.0011	-0.0011	ppb	56.24	#VALUE!	
182 W	0.0107	0.0107	ppb	21.83	1000.	
203 Tl	0.0009	0.0009	ppb	1867.50	1000.	
205 Tl	-0.0059	-0.0059	ppb	20.65	#VALUE!	
208 Pb	0.0776	0.0776	ppb	24.26	2000.	
232 Th	0.01	0.01	ppb	21.26	1000.	
238 U	0.0009	0.0009	ppb	156.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1761663.50	1.91	1729334.00	101.9	69.5 - 120	
45 Sc	2330740.00	4.68	2274967.30	102.5	69.5 - 120	
72 Ge	599504.50	1.53	590563.19	101.5	69.5 - 120	
159 Tb	6444362.50	2.69	6367688.00	101.2	69.5 - 120	
209 Bi	2869159.80	2.33	2872959.00	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000469

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\021ICSA.D\021ICSA.D#
Date Acquired: May 10 2018 06:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0019	ppb	92.49		
11 B	0.8925	ppb	14.13		
23 Na	99,950.	ppb	2.53		
25 Mg	95,210.	ppb	3.18		
27 Al	95,740.	ppb	3.54		
28 Si	-8.244	ppb	208.64		
29 Si	-6.903	ppb	358.54		
39 K	96,500.	ppb	3.70		
43 Ca	105,500.	ppb	4.41		
44 Ca	97,550.	ppb	3.36		
51 V	0.3363	ppb	9.55		
52 Cr	0.8415	ppb	2.42		
53 Cr	0.1942	ppb	64.93		
55 Mn	0.3651	ppb	7.37		
56 Fe	100,100.	ppb	3.21		
57 Fe	97,360.	ppb	2.99		
59 Co	0.0851	ppb	18.15		
60 Ni	-0.3374	ppb	1.98		
63 Cu	3.685	ppb	2.47		
65 Cu	1.041	ppb	2.22		
66 Zn	2.166	ppb	7.68		
68 Zn	0.5131	ppb	14.61		
75 As	0.1018	ppb	63.44		
82 Se	0.1537	ppb	64.80		
88 Sr	0.9247	ppb	5.60		
89 Y	--------	---	--------		
98 Mo	1,913.	ppb	0.60		
107 Ag	0.0267	ppb	27.97		
109 Ag	0.0284	ppb	10.24		
111 Cd	0.0089	ppb	726.60		
114 Cd	0.0215	ppb	63.64		
115 In	--------	---	--------		
118 Sn	0.0633	ppb	9.74		
120 Sn	0.0658	ppb	25.16		
121 Sb	0.046	ppb	6.45		
123 Sb	0.0497	ppb	5.50		
135 Ba	0.1032	ppb	6.04		
137 Ba	0.0846	ppb	17.25		
182 W	0.2373	ppb	6.73		
203 Tl	-0.0037	ppb	103.40		
205 Tl	-0.0086	ppb	132.37		
208 Pb	0.0971	ppb	23.03		
232 Th	0.0572	ppb	19.29		
238 U	0.0007	ppb	77.55		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1773623.50	4.59	1729334.00	102.6	69.5 - 120.4	
45 Sc	2519145.30	4.88	2274967.30	110.7	69.5 - 120.4	
72 Ge	628978.75	2.70	590563.19	106.5	69.5 - 120.4	
159 Tb	6373178.00	0.38	6367688.00	100.1	69.5 - 120.4	
209 Bi	2544576.00	0.60	2872959.00	88.6	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000470

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\022ICSB.D\022ICSB.D#
Date Acquired: May 10 2018 06:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	20.4	ppb	1.50	20.00	79.5 - 120	
11 B	23.49	ppb	2.32	20.00	79.5 - 120	
23 Na	103,400.	ppb	0.58	#########	79.5 - 120	
25 Mg	99,640.	ppb	3.35	#########	79.5 - 120	
27 Al	99,080.	ppb	2.47	#########	79.5 - 120	
28 Si	558.5	ppb	3.83	---	##### - #####	
29 Si	548.5	ppb	2.17	---	##### - #####	
39 K	101,000.	ppb	1.65	#########	79.5 - 120	
43 Ca	108,700.	ppb	2.22	#########	79.5 - 120	
44 Ca	100,400.	ppb	2.40	#########	79.5 - 120	
51 V	21.9	ppb	1.31	20.00	79.5 - 120	
52 Cr	21.8	ppb	2.02	20.00	79.5 - 120	
53 Cr	21.94	ppb	2.00	---	##### - #####	
55 Mn	20.66	ppb	1.50	20.00	79.5 - 120	
56 Fe	103,300.	ppb	2.97	#########	79.5 - 120	
57 Fe	100,000.	ppb	3.87	#########	79.5 - 120	
59 Co	20.76	ppb	1.51	20.00	79.5 - 120	
60 Ni	19.34	ppb	0.22	20.00	79.5 - 120	
63 Cu	22.98	ppb	2.20	20.00	79.5 - 120	
65 Cu	20.57	ppb	2.19	20.00	79.5 - 120	
66 Zn	20.72	ppb	1.80	20.00	79.5 - 120	
68 Zn	19.11	ppb	0.79	20.00	79.5 - 120	
75 As	20.13	ppb	2.58	20.00	79.5 - 120	
82 Se	19.36	ppb	3.87	20.00	79.5 - 120	
88 Sr	21.07	ppb	2.81	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,941.	ppb	3.88	2000.00	79.5 - 120	
107 Ag	18.31	ppb	1.16	20.00	79.5 - 120	
109 Ag	18.15	ppb	2.62	20.00	79.5 - 120	
111 Cd	18.26	ppb	0.75	20.00	79.5 - 120	
114 Cd	18.09	ppb	2.00	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.98	ppb	1.94	20.00	79.5 - 120	
120 Sn	22.12	ppb	1.33	20.00	79.5 - 120	
121 Sb	22.16	ppb	1.69	20.00	79.5 - 120	
123 Sb	21.97	ppb	1.89	20.00	79.5 - 120	
135 Ba	22.19	ppb	1.62	20.00	79.5 - 120	
137 Ba	21.74	ppb	1.98	20.00	79.5 - 120	
182 W	20.26	ppb	1.46	20.00	79.5 - 120	
203 Tl	20.97	ppb	2.61	20.00	79.5 - 120	
205 Tl	21.15	ppb	3.04	20.00	79.5 - 120	
208 Pb	21.06	ppb	3.40	20.00	79.5 - 120	
232 Th	22.53	ppb	1.48	20.00	79.5 - 120	
238 U	22.12	ppb	2.97	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1908229.40	1.79	1729334.00	110.3	69.5 - 120	
45 Sc	2680944.50	0.65	2274967.30	117.8	69.5 - 120	
72 Ge	657149.25	1.94	590563.19	111.3	69.5 - 120	
159 Tb	6301713.00	1.44	6367688.00	99.0	69.5 - 120	
209 Bi	2481115.30	2.23	2872959.00	86.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000471

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\023SMPL.D\023SMPL.D#
Date Acquired: May 10 2018 07:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	80.58	100.	
11 B	0.6366	0.6366	ppb	2.76	1000.	
23 Na	5.973	5.973	ppb	7.92	200000.	
25 Mg	0.3352	0.3352	ppb	40.36	200000.	
27 Al	0.562	0.562	ppb	20.14	200000.	
28 Si	19.42	19.42	ppb	91.40	#VALUE!	
29 Si	-55.48	-55.48	ppb	36.32	10000.	
39 K	-6.267	-6.267	ppb	59.14	200000.	
43 Ca	-1.748	-1.748	ppb	257.27	#VALUE!	
44 Ca	1.909	1.909	ppb	70.67	200000.	
51 V	0.1316	0.1316	ppb	44.92	1000.	
52 Cr	0.0328	0.0328	ppb	22.87	2000.	
53 Cr	2.955	2.955	ppb	9.23	#VALUE!	
55 Mn	0.0085	0.0085	ppb	46.48	2000.	
56 Fe	7.14	7.14	ppb	74.58	#VALUE!	
57 Fe	5.396	5.396	ppb	35.56	100000.	
59 Co	0.0004	0.0004	ppb	718.66	1000.	
60 Ni	0.0161	0.0161	ppb	18.61	1000.	
63 Cu	0.1115	0.1115	ppb	8.98	#VALUE!	
65 Cu	0.1158	0.1158	ppb	15.98	2000.	
66 Zn	0.1063	0.1063	ppb	36.62	2000.	
68 Zn	0.037	0.037	ppb	155.29	#VALUE!	
75 As	0.0112	0.0112	ppb	871.02	1000.	
82 Se	-0.0325	-0.0325	ppb	265.44	1000.	
88 Sr	0.0029	0.0029	ppb	51.81	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.073	1.073	ppb	50.78	1000.	
107 Ag	0.0033	0.0033	ppb	30.15	100.	
109 Ag	0.0022	0.0022	ppb	62.11	#VALUE!	
111 Cd	-0.0767	-0.0767	ppb	14.34	#VALUE!	
114 Cd	0.0006	0.0006	ppb	372.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.03	0.03	ppb	10.31	1000.	
120 Sn	0.022	0.022	ppb	59.23	#VALUE!	
121 Sb	0.0017	0.0017	ppb	91.91	#VALUE!	
123 Sb	0.0024	0.0024	ppb	90.26	1000.	
135 Ba	0.0081	0.0081	ppb	29.23	2000.	
137 Ba	0.0203	0.0203	ppb	26.81	#VALUE!	
182 W	0.0087	0.0087	ppb	49.74	1000.	
203 Tl	-0.0021	-0.0021	ppb	132.30	1000.	
205 Tl	-0.0047	-0.0047	ppb	241.84	#VALUE!	
208 Pb	0.0389	0.0389	ppb	19.13	2000.	
232 Th	0.0111	0.0111	ppb	28.51	1000.	
238 U	0.0013	0.0013	ppb	51.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2007881.90	2.80	1729334.00	116.1	69.5 - 120	
45 Sc	2658498.50	3.72	2274967.30	116.9	69.5 - 120	
72 Ge	665262.00	1.09	590563.19	112.6	69.5 - 120	
159 Tb	6115422.00	1.69	6367688.00	96.0	69.5 - 120	
209 Bi	2676831.00	1.45	2872959.00	93.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000472

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\024SMPL.D\024SMPL.D#
Date Acquired: May 10 2018 07:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	1.13	100.	>LDR
11 B	0.3469	0.3469	ppb	15.09	1000.	
23 Na	5.099	5.099	ppb	1.81	200000.	
25 Mg	0.9764	0.9764	ppb	24.06	200000.	
27 Al	2.815	2.815	ppb	2.18	200000.	
28 Si	-15.62	-15.62	ppb	71.70	#VALUE!	
29 Si	-62.29	-62.29	ppb	29.86	10000.	
39 K	-7.279	-7.279	ppb	51.85	200000.	
43 Ca	1,157.	1,157.	ppb	5.03	#VALUE!	
44 Ca	-412.5	-412.5	ppb	5.24	200000.	LOW
51 V	1,055.	1,055.	ppb	1.44	1000.	>LDR
52 Cr	2,093.	2,093.	ppb	1.60	2000.	>LDR
53 Cr	2,186.	2,186.	ppb	1.71	#VALUE!	
55 Mn	2,025.	2,025.	ppb	1.22	2000.	>LDR
56 Fe	0.4054	0.4054	ppb	802.42	#VALUE!	
57 Fe	-0.7898	-0.7898	ppb	158.77	100000.	
59 Co	1,038.	1,038.	ppb	2.21	1000.	>LDR
60 Ni	1,046.	1,046.	ppb	2.96	1000.	>LDR
63 Cu	2,012.	2,012.	ppb	2.40	#VALUE!	
65 Cu	1,997.	1,997.	ppb	3.10	2000.	
66 Zn	2,011.	2,011.	ppb	2.20	2000.	>LDR
68 Zn	2,015.	2,015.	ppb	2.05	#VALUE!	
75 As	1,031.	1,031.	ppb	1.98	1000.	>LDR
82 Se	1,049.	1,049.	ppb	1.83	1000.	>LDR
88 Sr	1,896.	1,896.	ppb	1.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	963.4	963.4	ppb	1.05	1000.	
107 Ag	100.7	100.7	ppb	1.24	100.	>LDR
109 Ag	98.	98.	ppb	2.15	#VALUE!	
111 Cd	977.1	977.1	ppb	3.37	#VALUE!	
114 Cd	947.4	947.4	ppb	1.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,058.	1,058.	ppb	3.35	1000.	>LDR
120 Sn	1,072.	1,072.	ppb	2.52	#VALUE!	
121 Sb	1,075.	1,075.	ppb	2.22	#VALUE!	
123 Sb	1,073.	1,073.	ppb	1.83	1000.	>LDR
135 Ba	2,131.	2,131.	ppb	1.77	2000.	>LDR
137 Ba	2,076.	2,076.	ppb	2.75	#VALUE!	
182 W	980.7	980.7	ppb	2.15	1000.	
203 Tl	1,002.	1,002.	ppb	1.92	1000.	>LDR
205 Tl	994.8	994.8	ppb	2.03	#VALUE!	
208 Pb	1,967.	1,967.	ppb	0.65	2000.	
232 Th	993.1	993.1	ppb	0.78	1000.	
238 U	976.8	976.8	ppb	1.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1962585.10	3.28	1729334.00	113.5	69.5 - 120	
45 Sc	2612171.80	3.22	2274967.30	114.8	69.5 - 120	
72 Ge	648663.25	3.46	590563.19	109.8	69.5 - 120	
159 Tb	6401563.00	1.62	6367688.00	100.5	69.5 - 120	
209 Bi	2803417.80	1.06	2872959.00	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

14 :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 4000473

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\025SMPL.D\025SMPL.D#
Date Acquired: May 10 2018 07:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	0.0065	0.0065	ppb	82.04	100.	
11 B	0.8056	0.8056	ppb	16.42	1000.	
23 Na	207,100.	207,100.	ppb	2.89	200000.	>LDR
25 Mg	196,100.	196,100.	ppb	0.70	200000.	
27 Al	197,100.	197,100.	ppb	1.20	200000.	
28 Si	10,880.	10,880.	ppb	0.97	#VALUE!	
29 Si	11,840.	11,840.	ppb	0.90	10000.	>LDR
39 K	201,500.	201,500.	ppb	1.11	200000.	>LDR
43 Ca	209,100.	209,100.	ppb	1.48	#VALUE!	
44 Ca	199,600.	199,600.	ppb	1.14	200000.	
51 V	0.3193	0.3193	ppb	7.42	1000.	
52 Cr	3.225	3.225	ppb	2.12	2000.	
53 Cr	1.957	1.957	ppb	29.01	#VALUE!	
55 Mn	7.73	7.73	ppb	1.62	2000.	
56 Fe	102,700.	102,700.	ppb	2.29	#VALUE!	
57 Fe	99,690.	99,690.	ppb	2.59	100000.	
59 Co	2.913	2.913	ppb	3.46	1000.	
60 Ni	3.138	3.138	ppb	3.32	1000.	
63 Cu	9.439	9.439	ppb	2.69	#VALUE!	
65 Cu	3.19	3.19	ppb	5.50	2000.	
66 Zn	3.437	3.437	ppb	0.34	2000.	
68 Zn	1.235	1.235	ppb	3.50	#VALUE!	
75 As	0.2073	0.2073	ppb	49.59	1000.	
82 Se	0.4038	0.4038	ppb	37.05	1000.	
88 Sr	6.56	6.56	ppb	0.41	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.52	1.52	ppb	44.51	1000.	
107 Ag	0.3501	0.3501	ppb	2.84	100.	
109 Ag	0.3314	0.3314	ppb	1.51	#VALUE!	
111 Cd	-0.0063	-0.0063	ppb	157.54	#VALUE!	
114 Cd	-0.0065	-0.0065	ppb	32.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.7023	0.7023	ppb	25.52	1000.	
120 Sn	0.7148	0.7148	ppb	22.40	#VALUE!	
121 Sb	0.1943	0.1943	ppb	16.71	#VALUE!	
123 Sb	0.2098	0.2098	ppb	15.57	1000.	
135 Ba	0.2626	0.2626	ppb	13.68	2000.	
137 Ba	0.2704	0.2704	ppb	12.79	#VALUE!	
182 W	1.259	1.259	ppb	40.73	1000.	
203 Tl	0.0426	0.0426	ppb	50.48	1000.	
205 Tl	0.0326	0.0326	ppb	25.93	#VALUE!	
208 Pb	0.3996	0.3996	ppb	4.40	2000.	
232 Th	1.329	1.329	ppb	28.68	1000.	
238 U	0.1333	0.1333	ppb	21.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2009945.40	3.63	1729334.00	116.2	69.5 - 120	
45 Sc	2812562.30	4.48	2274967.30	123.6	69.5 - 120	IS Fai
72 Ge	649551.00	2.11	590563.19	110.0	69.5 - 120	
159 Tb	5434172.50	2.55	6367688.00	85.3	69.5 - 120	
209 Bi	2041288.30	3.81	2872959.00	71.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

3 :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 4000474

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\026SMPL.D\026SMPL.D#
Date Acquired: May 10 2018 07:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	53.87	100.	
11 B	0.2893	0.2893	ppb	21.96	1000.	
23 Na	13.24	13.24	ppb	12.89	200000.	
25 Mg	0.4063	0.4063	ppb	56.29	200000.	
27 Al	0.7009	0.7009	ppb	9.09	200000.	
28 Si	54.79	54.79	ppb	35.19	#VALUE!	
29 Si	-40.52	-40.52	ppb	43.49	10000.	
39 K	1.523	1.523	ppb	264.67	200000.	
43 Ca	-7.229	-7.229	ppb	75.93	#VALUE!	
44 Ca	4.41	4.41	ppb	44.33	200000.	
51 V	0.1568	0.1568	ppb	20.00	1000.	
52 Cr	0.0813	0.0813	ppb	44.72	2000.	
53 Cr	5.173	5.173	ppb	4.28	#VALUE!	
55 Mn	0.013	0.013	ppb	25.56	2000.	
56 Fe	21.16	21.16	ppb	33.69	#VALUE!	
57 Fe	5.855	5.855	ppb	48.78	100000.	
59 Co	-0.0034	-0.0034	ppb	16.36	1000.	
60 Ni	0.0195	0.0195	ppb	58.76	1000.	
63 Cu	0.1452	0.1452	ppb	6.76	#VALUE!	
65 Cu	0.1262	0.1262	ppb	12.36	2000.	
66 Zn	0.0726	0.0726	ppb	26.89	2000.	
68 Zn	0.1078	0.1078	ppb	58.93	#VALUE!	
75 As	0.0464	0.0464	ppb	286.76	1000.	
82 Se	0.0061	0.0061	ppb	1735.20	1000.	
88 Sr	0.0008	0.0008	ppb	147.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2129	0.2129	ppb	49.55	1000.	
107 Ag	0.0025	0.0025	ppb	17.52	100.	
109 Ag	0.0028	0.0028	ppb	33.98	#VALUE!	
111 Cd	-0.0677	-0.0677	ppb	12.03	#VALUE!	
114 Cd	-0.0002	-0.0002	ppb	673.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1177	0.1177	ppb	13.96	1000.	
120 Sn	0.13	0.13	ppb	11.74	#VALUE!	
121 Sb	0.0308	0.0308	ppb	44.78	#VALUE!	
123 Sb	0.0206	0.0206	ppb	19.08	1000.	
135 Ba	0.0155	0.0155	ppb	102.98	2000.	
137 Ba	0.0153	0.0153	ppb	46.15	#VALUE!	
182 W	0.2077	0.2077	ppb	39.55	1000.	
203 Tl	-0.0095	-0.0095	ppb	102.23	1000.	
205 Tl	0.0013	0.0013	ppb	620.18	#VALUE!	
208 Pb	0.0823	0.0823	ppb	20.37	2000.	
232 Th	0.04	0.04	ppb	56.21	1000.	
238 U	0.006	0.006	ppb	44.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2131613.50	3.53	1729334.00	123.3	69.5 - 120	IS Fai
45 Sc	2794353.00	3.55	2274967.30	122.8	69.5 - 120	IS Fai
72 Ge	685743.88	3.52	590563.19	116.1	69.5 - 120	
159 Tb	5785932.50	1.80	6367688.00	90.9	69.5 - 120	
209 Bi	2463613.30	2.64	2872959.00	85.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000475

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\027SMPL.D\027SMPL.D#
Date Acquired: May 10 2018 07:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	1248.40	100.	
11 B	0.2224	0.2224	ppb	22.15	1000.	
23 Na	6.686	6.686	ppb	12.40	200000.	
25 Mg	0.1219	0.1219	ppb	32.81	200000.	
27 Al	0.4702	0.4702	ppb	29.67	200000.	
28 Si	17.53	17.53	ppb	61.27	#VALUE!	
29 Si	-74.64	-74.64	ppb	15.06	10000.	
39 K	-5.168	-5.168	ppb	64.67	200000.	
43 Ca	-3.523	-3.523	ppb	120.44	#VALUE!	
44 Ca	1.512	1.512	ppb	81.35	200000.	
51 V	0.1267	0.1267	ppb	41.35	1000.	
52 Cr	0.0721	0.0721	ppb	21.06	2000.	
53 Cr	5.39	5.39	ppb	3.31	#VALUE!	
55 Mn	0.0016	0.0016	ppb	254.40	2000.	
56 Fe	6.059	6.059	ppb	29.05	#VALUE!	
57 Fe	3.148	3.148	ppb	43.87	100000.	
59 Co	0.0027	0.0027	ppb	59.07	1000.	
60 Ni	0.0226	0.0226	ppb	36.50	1000.	
63 Cu	0.1194	0.1194	ppb	6.19	#VALUE!	
65 Cu	0.1205	0.1205	ppb	15.61	2000.	
66 Zn	0.0875	0.0875	ppb	24.67	2000.	
68 Zn	0.0965	0.0965	ppb	71.65	#VALUE!	
75 As	0.0247	0.0247	ppb	189.16	1000.	
82 Se	0.0678	0.0678	ppb	46.76	1000.	
88 Sr	0.0027	0.0027	ppb	111.12	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0828	0.0828	ppb	44.28	1000.	
107 Ag	0.0003	0.0003	ppb	203.14	100.	
109 Ag	0.0008	0.0008	ppb	151.26	#VALUE!	
111 Cd	-0.0677	-0.0677	ppb	23.19	#VALUE!	
114 Cd	-0.0015	-0.0015	ppb	94.75	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0716	0.0716	ppb	27.84	1000.	
120 Sn	0.0761	0.0761	ppb	12.20	#VALUE!	
121 Sb	0.0122	0.0122	ppb	34.58	#VALUE!	
123 Sb	0.0147	0.0147	ppb	50.56	1000.	
135 Ba	0.0163	0.0163	ppb	100.37	2000.	
137 Ba	0.0078	0.0078	ppb	71.32	#VALUE!	
182 W	0.093	0.093	ppb	38.93	1000.	
203 Tl	-0.0031	-0.0031	ppb	707.52	1000.	
205 Tl	-0.0157	-0.0157	ppb	58.48	#VALUE!	
208 Pb	0.0485	0.0485	ppb	35.25	2000.	
232 Th	0.0311	0.0311	ppb	47.54	1000.	
238 U	0.0019	0.0019	ppb	39.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2132787.30	3.35	1729334.00	123.3	69.5 - 120	IS Fai
45 Sc	2845807.30	2.12	2274967.30	125.1	69.5 - 120	IS Fai
72 Ge	697410.25	1.69	590563.19	118.1	69.5 - 120	
159 Tb	6099743.50	2.10	6367688.00	95.8	69.5 - 120	
209 Bi	2614637.30	2.16	2872959.00	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000476

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\028_CCV.D\028_CCV.D#
Date Acquired: May 10 2018 07:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.42	ppb	0.65	25	97.68	
11 B	24.47	ppb	3.92	25	97.88	
23 Na	5,493.	ppb	0.46	5,000	109.86	
25 Mg	5,400.	ppb	2.58	5,000	108	
27 Al	512.2	ppb	2.74	500	102.44	
28 Si	559.1	ppb	7.19	500	111.82	
29 Si	483.1	ppb	8.46	500	96.62	
39 K	5,136.	ppb	4.53	5,000	102.72	
43 Ca	5,190.	ppb	0.64	5,000	103.8	
44 Ca	5,077.	ppb	1.50	5,000	101.54	
51 V	25.67	ppb	1.97	25	102.68	
52 Cr	25.75	ppb	2.16	25	103	
53 Cr	25.51	ppb	0.91	25	102.04	
55 Mn	25.35	ppb	1.34	25	101.4	
56 Fe	5,125.	ppb	2.01	5,000	102.5	
57 Fe	5,206.	ppb	2.49	5,000	104.12	
59 Co	25.92	ppb	1.59	25	103.68	
60 Ni	25.82	ppb	0.92	25	103.28	
63 Cu	25.72	ppb	1.50	25	102.88	
65 Cu	25.48	ppb	0.81	25	101.92	
66 Zn	25.06	ppb	0.39	25	100.24	
68 Zn	25.1	ppb	1.79	25	100.4	
75 As	24.94	ppb	1.27	25	99.76	
82 Se	24.98	ppb	0.57	25	99.92	
88 Sr	23.6	ppb	0.73	25	94.4	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.8	ppb	1.11	25	95.2	
107 Ag	24.15	ppb	0.93	25	96.6	
109 Ag	23.65	ppb	0.50	25	94.6	
111 Cd	23.68	ppb	1.16	25	94.72	
114 Cd	23.4	ppb	0.79	25	93.6	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	26.71	ppb	1.14	25	106.84	
120 Sn	26.9	ppb	1.60	25	107.6	
121 Sb	27.41	ppb	1.03	25	109.64	
123 Sb	26.97	ppb	1.82	25	107.88	
135 Ba	26.51	ppb	0.82	25	106.04	
137 Ba	26.57	ppb	1.95	25	106.28	
182 W	24.14	ppb	1.78	25	96.56	
203 Tl	24.85	ppb	4.02	25	99.4	
205 Tl	25.27	ppb	0.73	25	101.08	
208 Pb	25.27	ppb	2.38	25	101.08	
232 Th	24.82	ppb	2.23	25	99.28	
238 U	24.6	ppb	2.77	25	98.4	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2133875.50	2.96	1729334.00	123.4	80 - 120.4	ISFail
45 Sc	2703783.30	4.32	2274967.30	118.8	80 - 120.4	
72 Ge	670422.88	2.91	590563.19	113.5	80 - 120.4	
159 Tb	6359487.50	1.65	6367688.00	99.9	80 - 120.4	
209 Bi	2734107.80	2.15	2872959.00	95.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\029_CCB.D\029_CCB.D#
Date Acquired: May 10 2018 07:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.002	ppb	37.31	1.00	
11 B	1.193	ppb	14.10	1.00	
23 Na	3.45	ppb	5.04	1.00	
25 Mg	0.1106	ppb	105.70	1.00	
27 Al	0.0375	ppb	219.58	1.00	
28 Si	37.87	ppb	30.61	1.00	
29 Si	-31.78	ppb	12.74	1.00	
39 K	1.473	ppb	136.80	1.00	
43 Ca	-4.207	ppb	63.89	1.00	
44 Ca	1.308	ppb	94.57	1.00	
51 V	0.0719	ppb	47.68	1.00	
52 Cr	0.0105	ppb	351.71	1.00	
53 Cr	0.4427	ppb	38.47	1.00	
55 Mn	-0.0065	ppb	20.27	1.00	
56 Fe	5.306	ppb	89.58	1.00	
57 Fe	2.488	ppb	20.19	1.00	
59 Co	0.0053	ppb	63.01	1.00	
60 Ni	-0.0021	ppb	282.96	1.00	
63 Cu	-0.0001	ppb	6383.00	1.00	
65 Cu	-0.0002	ppb	5127.80	1.00	
66 Zn	0.0319	ppb	69.76	1.00	
68 Zn	0.0542	ppb	43.74	1.00	
75 As	-0.0707	ppb	24.81	1.00	
82 Se	-0.0156	ppb	428.60	1.00	
88 Sr	0.0021	ppb	146.07	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0684	ppb	41.96	1.00	
107 Ag	0.0047	ppb	13.38	1.00	
109 Ag	0.0026	ppb	76.11	1.00	
111 Cd	-0.049	ppb	23.38	1.00	
114 Cd	0.0026	ppb	78.17	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0499	ppb	32.05	1.00	
120 Sn	0.0584	ppb	27.24	1.00	
121 Sb	0.0127	ppb	42.53	1.00	
123 Sb	0.0165	ppb	30.82	1.00	
135 Ba	-0.0007	ppb	415.55	1.00	
137 Ba	0.0005	ppb	686.25	1.00	
182 W	0.0802	ppb	35.17	1.00	
203 Tl	-0.0022	ppb	237.50	1.00	
205 Tl	0.004	ppb	205.62	1.00	
208 Pb	-0.0573	ppb	12.06	1.00	
232 Th	0.1068	ppb	10.89	1.00	
238 U	0.0038	ppb	36.08	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1940704.40	5.70	1729334.00	112.2	79.5 - 120	
45 Sc	2519557.50	0.82	2274967.30	110.8	79.5 - 120	
72 Ge	633017.00	1.24	590563.19	107.2	79.5 - 120	
159 Tb	5946772.00	0.61	6367688.00	93.4	79.5 - 120	
209 Bi	2610746.50	1.92	2872959.00	90.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000478

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\030SMPL.D\030SMPL.D#
Date Acquired: May 10 2018 07:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE03IMW1
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	1.97	100.	
11 B	524.5	104.9	ppb	3.34	1000.	
23 Na	8,520.	1,704.	ppb	3.14	200000.	
25 Mg	5,395.	1,079.	ppb	2.46	200000.	
27 Al	2,289.	457.8	ppb	1.26	200000.	
28 Si	1,201.5	240.3	ppb	0.55	#VALUE!	
29 Si	801.5	160.3	ppb	7.98	10000.	
39 K	10,530.	2,106.	ppb	3.47	200000.	
43 Ca	2,972.	594.4	ppb	6.77	#VALUE!	
44 Ca	2,484.	496.8	ppb	4.73	200000.	
51 V	582.	116.4	ppb	0.99	1000.	
52 Cr	221.9	44.38	ppb	2.00	2000.	
53 Cr	228.45	45.69	ppb	0.54	#VALUE!	
55 Mn	553.5	110.7	ppb	1.47	2000.	
56 Fe	1,141.	228.2	ppb	2.87	#VALUE!	
57 Fe	1,125.5	225.1	ppb	3.36	100000.	
59 Co	576.	115.2	ppb	0.88	1000.	
60 Ni	563.	112.6	ppb	2.33	1000.	
63 Cu	274.7	54.94	ppb	1.84	#VALUE!	
65 Cu	276.5	55.3	ppb	1.73	2000.	
66 Zn	560.	112.	ppb	2.86	2000.	
68 Zn	604.	120.8	ppb	2.98	#VALUE!	
75 As	106.65	21.33	ppb	2.93	1000.	
82 Se	106.25	21.25	ppb	0.48	1000.	
88 Sr	496.15	99.23	ppb	1.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.75	20.15	ppb	1.36	1000.	
107 Ag	52.5	10.5	ppb	1.61	100.	
109 Ag	52.	10.4	ppb	1.18	#VALUE!	
111 Cd	250.75	50.15	ppb	1.85	#VALUE!	
114 Cd	249.85	49.97	ppb	1.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	558.5	111.7	ppb	4.07	1000.	
120 Sn	565.	113.	ppb	3.02	#VALUE!	
121 Sb	114.25	22.85	ppb	2.98	#VALUE!	
123 Sb	112.95	22.59	ppb	3.15	1000.	
135 Ba	2,278.5	455.7	ppb	2.49	2000.	
137 Ba	2,306.	461.2	ppb	3.01	#VALUE!	
182 W	101.	20.2	ppb	2.01	1000.	
203 Tl	105.5	21.1	ppb	2.72	1000.	
205 Tl	104.7	20.94	ppb	3.25	#VALUE!	
208 Pb	105.25	21.05	ppb	3.45	2000.	
232 Th	101.45	20.29	ppb	2.35	1000.	
238 U	103.35	20.67	ppb	3.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2042906.90	2.64	1729334.00	118.1	69.5 - 120	
45 Sc	2664890.50	0.21	2274967.30	117.1	69.5 - 120	
72 Ge	657306.31	1.19	590563.19	111.3	69.5 - 120	
159 Tb	6390270.50	1.19	6367688.00	100.4	69.5 - 120	
209 Bi	2764806.30	1.67	2872959.00	96.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000479

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\031SMPL.D\031SMPL.D#
Date Acquired: May 10 2018 07:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3618-001
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	0.0741	0.0741	ppb	15.96	100.	
11 B	68.54	68.54	ppb	0.72	1000.	
23 Na	58,410.	58,410.	ppb	0.89	200000.	
25 Mg	536.	536.	ppb	3.14	200000.	
27 Al	732.6	732.6	ppb	1.27	200000.	
28 Si	7,565.	7,565.	ppb	0.98	#VALUE!	
29 Si	8,286.	8,286.	ppb	1.82	10000.	
39 K	1,837.	1,837.	ppb	2.45	200000.	
43 Ca	1,141.	1,141.	ppb	4.74	#VALUE!	
44 Ca	1,156.	1,156.	ppb	1.94	200000.	
51 V	1.158	1.158	ppb	7.88	1000.	
52 Cr	2.228	2.228	ppb	2.25	2000.	
53 Cr	11.36	11.36	ppb	31.69	#VALUE!	
55 Mn	16.79	16.79	ppb	0.76	2000.	
56 Fe	1,101.	1,101.	ppb	0.67	#VALUE!	
57 Fe	1,107.	1,107.	ppb	1.59	100000.	
59 Co	0.2979	0.2979	ppb	2.76	1000.	
60 Ni	1.453	1.453	ppb	2.21	1000.	
63 Cu	14.13	14.13	ppb	0.99	#VALUE!	
65 Cu	12.52	12.52	ppb	0.80	2000.	
66 Zn	10.2	10.2	ppb	2.93	2000.	
68 Zn	10.1	10.1	ppb	3.13	#VALUE!	
75 As	33.17	33.17	ppb	0.77	1000.	
82 Se	0.036	0.036	ppb	215.97	1000.	
88 Sr	6.772	6.772	ppb	2.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.685	1.685	ppb	1.94	1000.	
107 Ag	0.0037	0.0037	ppb	23.84	100.	
109 Ag	0.0057	0.0057	ppb	22.35	#VALUE!	
111 Cd	-0.0774	-0.0774	ppb	14.47	#VALUE!	
114 Cd	0.0078	0.0078	ppb	16.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.339	0.339	ppb	8.50	1000.	
120 Sn	0.3639	0.3639	ppb	6.89	#VALUE!	
121 Sb	0.0755	0.0755	ppb	8.85	#VALUE!	
123 Sb	0.081	0.081	ppb	8.21	1000.	
135 Ba	2.875	2.875	ppb	4.41	2000.	
137 Ba	2.861	2.861	ppb	1.28	#VALUE!	
182 W	5.832	5.832	ppb	1.36	1000.	
203 Tl	0.0002	0.0002	ppb	2213.90	1000.	
205 Tl	0.0116	0.0116	ppb	71.13	#VALUE!	
208 Pb	0.4138	0.4138	ppb	4.79	2000.	
232 Th	0.7439	0.7439	ppb	16.95	1000.	
238 U	0.3805	0.3805	ppb	1.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2023037.60	2.84	1729334.00	117.0	69.5 - 120	
45 Sc	2732831.50	1.77	2274967.30	120.1	69.5 - 120	
72 Ge	663169.25	1.67	590563.19	112.3	69.5 - 120	
159 Tb	6161521.00	1.63	6367688.00	96.8	69.5 - 120	
209 Bi	2583467.30	1.99	2872959.00	89.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000480

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\032SMPL.D\032SMPL.D#
Date Acquired: May 10 2018 07:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3721-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	70.18	100.	
11 B	12.84	12.84	ppb	2.61	1000.	
23 Na	2,839.	2,839.	ppb	2.20	200000.	
25 Mg	28.72	28.72	ppb	0.75	200000.	
27 Al	32.54	32.54	ppb	4.37	200000.	
28 Si	513.9	513.9	ppb	2.29	#VALUE!	
29 Si	450.	450.	ppb	6.10	10000.	
39 K	8,396.	8,396.	ppb	0.97	200000.	
43 Ca	14.73	14.73	ppb	23.33	#VALUE!	
44 Ca	23.62	23.62	ppb	8.46	200000.	
51 V	0.1593	0.1593	ppb	115.00	1000.	
52 Cr	0.2331	0.2331	ppb	13.51	2000.	
53 Cr	13.65	13.65	ppb	3.62	#VALUE!	
55 Mn	0.1355	0.1355	ppb	11.45	2000.	
56 Fe	8.31	8.31	ppb	30.48	#VALUE!	
57 Fe	3.721	3.721	ppb	12.82	100000.	
59 Co	0.0018	0.0018	ppb	264.79	1000.	
60 Ni	0.0184	0.0184	ppb	59.76	1000.	
63 Cu	0.1536	0.1536	ppb	10.63	#VALUE!	
65 Cu	0.067	0.067	ppb	9.32	2000.	
66 Zn	1.019	1.019	ppb	3.87	2000.	
68 Zn	1.015	1.015	ppb	13.13	#VALUE!	
75 As	2.503	2.503	ppb	6.14	1000.	
82 Se	0.0123	0.0123	ppb	777.45	1000.	
88 Sr	0.1748	0.1748	ppb	4.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0868	0.0868	ppb	13.30	1000.	
107 Ag	0.0064	0.0064	ppb	22.12	100.	
109 Ag	0.0088	0.0088	ppb	25.92	#VALUE!	
111 Cd	-0.0974	-0.0974	ppb	25.38	#VALUE!	
114 Cd	0.0002	0.0002	ppb	706.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0704	0.0704	ppb	21.22	1000.	
120 Sn	0.0647	0.0647	ppb	13.77	#VALUE!	
121 Sb	0.7442	0.7442	ppb	2.63	#VALUE!	
123 Sb	0.7407	0.7407	ppb	1.35	1000.	
135 Ba	2.782	2.782	ppb	2.16	2000.	
137 Ba	2.716	2.716	ppb	1.63	#VALUE!	
182 W	0.0415	0.0415	ppb	24.23	1000.	
203 Tl	0.0033	0.0033	ppb	286.18	1000.	
205 Tl	0.005	0.005	ppb	235.19	#VALUE!	
208 Pb	-0.0663	-0.0663	ppb	13.87	2000.	
232 Th	0.0689	0.0689	ppb	30.45	1000.	
238 U	0.005	0.005	ppb	21.32	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2024251.30	1.31	1729334.00	117.1	69.5 - 120	
45 Sc	2682200.50	2.32	2274967.30	117.9	69.5 - 120	
72 Ge	668191.13	1.69	590563.19	113.1	69.5 - 120	
159 Tb	6172333.50	0.79	6367688.00	96.9	69.5 - 120	
209 Bi	2646675.30	0.98	2872959.00	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000481

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\033SMPL.D\033SMPL.D#
Date Acquired: May 10 2018 07:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE03IMW2
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	-0.0192	-0.0038	ppb	52.92	100.	
11 B	11.325	2.265	ppb	14.44	1000.	
23 Na	62.6	12.52	ppb	4.08	200000.	
25 Mg	12.72	2.544	ppb	1.04	200000.	
27 Al	9.41	1.882	ppb	6.93	200000.	
28 Si	-17.37	-3.474	ppb	312.03	#VALUE!	
29 Si	-333.55	-66.71	ppb	13.42	10000.	
39 K	-26.23	-5.246	ppb	96.74	200000.	
43 Ca	-11.475	-2.295	ppb	64.49	#VALUE!	
44 Ca	23.755	4.751	ppb	36.20	200000.	
51 V	1.3755	0.2751	ppb	9.85	1000.	
52 Cr	2.5195	0.5039	ppb	14.55	2000.	
53 Cr	117.3	23.46	ppb	2.94	#VALUE!	
55 Mn	0.2814	0.0563	ppb	2.98	2000.	
56 Fe	72.3	14.46	ppb	16.02	#VALUE!	
57 Fe	20.055	4.011	ppb	54.08	100000.	
59 Co	0.004	0.0008	ppb	731.78	1000.	
60 Ni	0.0702	0.014	ppb	21.05	1000.	
63 Cu	0.695	0.139	ppb	16.82	#VALUE!	
65 Cu	0.685	0.137	ppb	11.91	2000.	
66 Zn	0.5395	0.1079	ppb	20.06	2000.	
68 Zn	0.543	0.1086	ppb	48.28	#VALUE!	
75 As	1.639	0.3278	ppb	18.98	1000.	
82 Se	0.1444	0.0289	ppb	47.47	1000.	
88 Sr	0.0405	0.0081	ppb	17.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0867	0.0173	ppb	30.49	1000.	
107 Ag	0.0167	0.0033	ppb	48.16	100.	
109 Ag	0.014	0.0028	ppb	51.34	#VALUE!	
111 Cd	-0.4594	-0.0919	ppb	7.93	#VALUE!	
114 Cd	0.0025	0.0005	ppb	554.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.0875	0.2175	ppb	10.31	1000.	
120 Sn	1.064	0.2128	ppb	1.81	#VALUE!	
121 Sb	0.0257	0.0051	ppb	50.22	#VALUE!	
123 Sb	0.036	0.0072	ppb	41.15	1000.	
135 Ba	0.1821	0.0364	ppb	31.19	2000.	
137 Ba	0.1277	0.0255	ppb	25.51	#VALUE!	
182 W	0.1174	0.0235	ppb	26.78	1000.	
203 Tl	-0.0123	-0.0025	ppb	396.55	1000.	
205 Tl	-0.0296	-0.0059	ppb	70.24	#VALUE!	
208 Pb	-0.195	-0.039	ppb	33.50	2000.	
232 Th	0.3209	0.0642	ppb	34.35	1000.	
238 U	0.0059	0.0012	ppb	98.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1912733.80	0.58	1729334.00	110.6	69.5 - 120	
45 Sc	2501718.50	0.73	2274967.30	110.0	69.5 - 120	
72 Ge	631270.81	1.26	590563.19	106.9	69.5 - 120	
159 Tb	6112657.00	1.25	6367688.00	96.0	69.5 - 120	
209 Bi	2691316.80	1.23	2872959.00	93.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000482

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\034SMPL.D\034SMPL.D#
Date Acquired: May 10 2018 07:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE03IMW2
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	52.	10.4	ppb	2.05	100.	
11 B	542.	108.4	ppb	5.68	1000.	
23 Na	8,255.	1,651.	ppb	1.11	200000.	
25 Mg	5,180.	1,036.	ppb	0.88	200000.	
27 Al	2,179.	435.8	ppb	3.06	200000.	
28 Si	1,085.	217.	ppb	6.77	#VALUE!	
29 Si	756.	151.2	ppb	11.32	10000.	
39 K	10,185.	2,037.	ppb	0.43	200000.	
43 Ca	2,829.5	565.9	ppb	5.50	#VALUE!	
44 Ca	2,467.5	493.5	ppb	0.51	200000.	
51 V	560.5	112.1	ppb	0.84	1000.	
52 Cr	216.8	43.36	ppb	0.89	2000.	
53 Cr	296.9	59.38	ppb	4.54	#VALUE!	
55 Mn	533.5	106.7	ppb	1.06	2000.	
56 Fe	1,108.	221.6	ppb	1.29	#VALUE!	
57 Fe	1,097.	219.4	ppb	0.34	100000.	
59 Co	550.	110.	ppb	1.09	1000.	
60 Ni	535.5	107.1	ppb	1.08	1000.	
63 Cu	270.2	54.04	ppb	2.39	#VALUE!	
65 Cu	266.65	53.33	ppb	1.52	2000.	
66 Zn	520.	104.	ppb	0.28	2000.	
68 Zn	574.	114.8	ppb	1.49	#VALUE!	
75 As	103.7	20.74	ppb	2.03	1000.	
82 Se	101.1	20.22	ppb	0.94	1000.	
88 Sr	499.25	99.85	ppb	0.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.95	20.39	ppb	0.15	1000.	
107 Ag	53.6	10.72	ppb	1.16	100.	
109 Ag	52.05	10.41	ppb	1.12	#VALUE!	
111 Cd	250.	50.	ppb	0.63	#VALUE!	
114 Cd	249.35	49.87	ppb	0.80	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	551.5	110.3	ppb	2.63	1000.	
120 Sn	559.5	111.9	ppb	1.80	#VALUE!	
121 Sb	111.55	22.31	ppb	2.13	#VALUE!	
123 Sb	111.75	22.35	ppb	1.52	1000.	
135 Ba	2,268.	453.6	ppb	1.97	2000.	
137 Ba	2,276.5	455.3	ppb	1.76	#VALUE!	
182 W	104.95	20.99	ppb	0.71	1000.	
203 Tl	107.75	21.55	ppb	2.69	1000.	
205 Tl	107.95	21.59	ppb	1.83	#VALUE!	
208 Pb	107.2	21.44	ppb	1.50	2000.	
232 Th	105.5	21.1	ppb	2.49	1000.	
238 U	105.8	21.16	ppb	2.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1920857.90	6.10	1729334.00	111.1	69.5 - 120	
45 Sc	2523120.30	4.20	2274967.30	110.9	69.5 - 120	
72 Ge	629891.13	2.53	590563.19	106.7	69.5 - 120	
159 Tb	6285040.50	0.69	6367688.00	98.7	69.5 - 120	
209 Bi	2721975.80	1.69	2872959.00	94.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000483

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\035SMPL.D\035SMPL.D#
Date Acquired: May 10 2018 07:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-022
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	145.64	100.	
11 B	28.405	5.681	ppb	16.34	1000.	
23 Na	64.6	12.92	ppb	9.51	200000.	
25 Mg	12.71	2.542	ppb	12.43	200000.	
27 Al	12.21	2.442	ppb	11.49	200000.	
28 Si	37.07	7.414	ppb	49.89	#VALUE!	
29 Si	-215.5	-43.1	ppb	12.33	10000.	
39 K	2.136	0.4272	ppb	1113.80	200000.	
43 Ca	14.79	2.958	ppb	155.58	#VALUE!	
44 Ca	26.885	5.377	ppb	36.21	200000.	
51 V	0.954	0.1908	ppb	46.55	1000.	
52 Cr	2.278	0.4556	ppb	20.65	2000.	
53 Cr	76.25	15.25	ppb	2.48	#VALUE!	
55 Mn	0.2356	0.0471	ppb	10.48	2000.	
56 Fe	48.23	9.646	ppb	51.19	#VALUE!	
57 Fe	21.815	4.363	ppb	19.90	100000.	
59 Co	-0.0083	-0.0017	ppb	85.83	1000.	
60 Ni	0.1348	0.027	ppb	19.35	1000.	
63 Cu	0.7955	0.1591	ppb	7.19	#VALUE!	
65 Cu	0.768	0.1536	ppb	11.77	2000.	
66 Zn	0.652	0.1304	ppb	26.24	2000.	
68 Zn	0.794	0.1588	ppb	61.73	#VALUE!	
75 As	2.0775	0.4155	ppb	29.89	1000.	
82 Se	-0.1305	-0.0261	ppb	263.59	1000.	
88 Sr	0.0767	0.0153	ppb	32.53	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1039	0.0208	ppb	38.78	1000.	
107 Ag	0.008	0.0016	ppb	145.30	100.	
109 Ag	0.0133	0.0027	ppb	75.57	#VALUE!	
111 Cd	-0.3042	-0.0608	ppb	42.64	#VALUE!	
114 Cd	0.0077	0.0015	ppb	163.76	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.005	0.201	ppb	4.62	1000.	
120 Sn	1.0635	0.2127	ppb	8.03	#VALUE!	
121 Sb	0.0636	0.0127	ppb	27.97	#VALUE!	
123 Sb	0.0688	0.0138	ppb	8.15	1000.	
135 Ba	0.1515	0.0303	ppb	31.20	2000.	
137 Ba	0.1597	0.0319	ppb	25.60	#VALUE!	
182 W	0.1365	0.0273	ppb	22.28	1000.	
203 Tl	-0.0018	-0.0004	ppb	1415.60	1000.	
205 Tl	-0.0379	-0.0076	ppb	103.47	#VALUE!	
208 Pb	-0.2262	-0.0452	ppb	22.35	2000.	
232 Th	0.758	0.1516	ppb	32.72	1000.	
238 U	0.0117	0.0023	ppb	27.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1765558.50	2.91	1729334.00	102.1	69.5 - 120	
45 Sc	2393349.00	0.44	2274967.30	105.2	69.5 - 120	
72 Ge	611123.25	0.82	590563.19	103.5	69.5 - 120	
159 Tb	6268826.00	1.99	6367688.00	98.4	69.5 - 120	
209 Bi	2727941.00	1.10	2872959.00	95.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000484

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\036SMPL.D\036SMPL.D#
Date Acquired: May 10 2018 07:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE04IMW1
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	0.0064	0.0013	ppb	181.22	100.	
11 B	11.625	2.325	ppb	14.21	1000.	
23 Na	32.59	6.518	ppb	2.42	200000.	
25 Mg	12.065	2.413	ppb	2.91	200000.	
27 Al	10.185	2.037	ppb	14.37	200000.	
28 Si	10.69	2.138	ppb	356.27	#VALUE!	
29 Si	-220.65	-44.13	ppb	5.75	10000.	
39 K	-15.71	-3.142	ppb	74.22	200000.	
43 Ca	-28.285	-5.657	ppb	67.86	#VALUE!	
44 Ca	-0.68	-0.136	ppb	653.38	200000.	
51 V	0.9835	0.1967	ppb	28.73	1000.	
52 Cr	1.9785	0.3957	ppb	24.57	2000.	
53 Cr	72.4	14.48	ppb	2.41	#VALUE!	
55 Mn	0.3309	0.0662	ppb	6.38	2000.	
56 Fe	61.7	12.34	ppb	29.94	#VALUE!	
57 Fe	15.085	3.017	ppb	24.34	100000.	
59 Co	0.0141	0.0028	ppb	142.16	1000.	
60 Ni	0.0784	0.0157	ppb	26.55	1000.	
63 Cu	0.5505	0.1101	ppb	3.12	#VALUE!	
65 Cu	0.5885	0.1177	ppb	11.58	2000.	
66 Zn	1.8005	0.3601	ppb	7.52	2000.	
68 Zn	1.8925	0.3785	ppb	35.01	#VALUE!	
75 As	0.3427	0.0685	ppb	152.76	1000.	
82 Se	0.113	0.0226	ppb	693.23	1000.	
88 Sr	0.0484	0.0097	ppb	40.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0386	0.0077	ppb	34.41	1000.	
107 Ag	0.0093	0.0019	ppb	140.22	100.	
109 Ag	0.0141	0.0028	ppb	67.84	#VALUE!	
111 Cd	-0.2984	-0.0597	ppb	28.29	#VALUE!	
114 Cd	0.0043	0.0009	ppb	73.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9155	0.1831	ppb	17.59	1000.	
120 Sn	0.9525	0.1905	ppb	9.59	#VALUE!	
121 Sb	0.0355	0.0071	ppb	39.55	#VALUE!	
123 Sb	0.0438	0.0088	ppb	62.96	1000.	
135 Ba	0.1883	0.0377	ppb	34.56	2000.	
137 Ba	0.2378	0.0476	ppb	40.99	#VALUE!	
182 W	0.0523	0.0105	ppb	38.43	1000.	
203 Tl	0.0252	0.005	ppb	168.42	1000.	
205 Tl	-0.0633	-0.0127	ppb	48.56	#VALUE!	
208 Pb	-0.2582	-0.0516	ppb	27.56	2000.	
232 Th	0.2565	0.0513	ppb	29.44	1000.	
238 U	0.0015	0.0003	ppb	226.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1796455.40	3.27	1729334.00	103.9	69.5 - 120	
45 Sc	2390231.80	1.27	2274967.30	105.1	69.5 - 120	
72 Ge	609730.25	0.90	590563.19	103.2	69.5 - 120	
159 Tb	6184298.00	1.34	6367688.00	97.1	69.5 - 120	
209 Bi	2718114.30	1.07	2872959.00	94.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000485

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\037SMPL.D\037SMPL.D#
Date Acquired: May 10 2018 07:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE04IMW1
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	50.25	10.05	ppb	4.16	100.	
11 B	540.5	108.1	ppb	1.07	1000.	
23 Na	8,175.	1,635.	ppb	4.09	200000.	
25 Mg	5,155.	1,031.	ppb	1.26	200000.	
27 Al	2,156.	431.2	ppb	3.53	200000.	
28 Si	1,107.	221.4	ppb	6.45	#VALUE!	
29 Si	855.5	171.1	ppb	10.91	10000.	
39 K	10,440.	2,088.	ppb	4.11	200000.	
43 Ca	3,032.5	606.5	ppb	6.56	#VALUE!	
44 Ca	2,439.	487.8	ppb	1.41	200000.	
51 V	540.5	108.1	ppb	2.54	1000.	
52 Cr	208.65	41.73	ppb	1.51	2000.	
53 Cr	266.6	53.32	ppb	1.19	#VALUE!	
55 Mn	520.	104.	ppb	0.90	2000.	
56 Fe	1,089.	217.8	ppb	3.55	#VALUE!	
57 Fe	1,062.	212.4	ppb	2.14	100000.	
59 Co	538.5	107.7	ppb	2.21	1000.	
60 Ni	520.	104.	ppb	0.57	1000.	
63 Cu	257.25	51.45	ppb	0.66	#VALUE!	
65 Cu	259.7	51.94	ppb	0.94	2000.	
66 Zn	498.8	99.76	ppb	0.83	2000.	
68 Zn	551.5	110.3	ppb	0.31	#VALUE!	
75 As	103.7	20.74	ppb	1.66	1000.	
82 Se	101.05	20.21	ppb	1.42	1000.	
88 Sr	490.45	98.09	ppb	2.25	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.65	20.13	ppb	1.25	1000.	
107 Ag	51.35	10.27	ppb	1.72	100.	
109 Ag	50.25	10.05	ppb	1.44	#VALUE!	
111 Cd	251.65	50.33	ppb	1.56	#VALUE!	
114 Cd	250.3	50.06	ppb	1.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	526.5	105.3	ppb	1.15	1000.	
120 Sn	535.	107.	ppb	1.15	#VALUE!	
121 Sb	109.3	21.86	ppb	1.10	#VALUE!	
123 Sb	108.3	21.66	ppb	1.37	1000.	
135 Ba	2,155.5	431.1	ppb	1.27	2000.	
137 Ba	2,153.	430.6	ppb	1.54	#VALUE!	
182 W	103.65	20.73	ppb	0.93	1000.	
203 Tl	104.75	20.95	ppb	1.76	1000.	
205 Tl	104.1	20.82	ppb	0.17	#VALUE!	
208 Pb	105.1	21.02	ppb	0.70	2000.	
232 Th	101.75	20.35	ppb	1.36	1000.	
238 U	102.15	20.43	ppb	0.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1913154.40	0.52	1729334.00	110.6	69.5 - 120	
45 Sc	2450839.30	4.05	2274967.30	107.7	69.5 - 120	
72 Ge	628181.63	2.57	590563.19	106.4	69.5 - 120	
159 Tb	6480556.00	0.54	6367688.00	101.8	69.5 - 120	
209 Bi	2864766.50	1.04	2872959.00	99.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000486

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\038SMPL.D\038SMPL.D#
Date Acquired: May 10 2018 08:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-001
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	320.65	100.	
11 B	27.93	5.586	ppb	16.96	1000.	
23 Na	30.66	6.132	ppb	11.92	200000.	
25 Mg	14.085	2.817	ppb	7.53	200000.	
27 Al	9.455	1.891	ppb	17.10	200000.	
28 Si	3.8205	0.7641	ppb	1745.80	#VALUE!	
29 Si	-221.25	-44.25	ppb	25.47	10000.	
39 K	-8.36	-1.672	ppb	147.73	200000.	
43 Ca	-3.204	-0.6408	ppb	714.58	#VALUE!	
44 Ca	16.3	3.26	ppb	20.21	200000.	
51 V	1.4665	0.2933	ppb	42.31	1000.	
52 Cr	2.15	0.43	ppb	11.80	2000.	
53 Cr	61.2	12.24	ppb	1.45	#VALUE!	
55 Mn	0.1651	0.033	ppb	12.46	2000.	
56 Fe	41.375	8.275	ppb	32.94	#VALUE!	
57 Fe	18.78	3.756	ppb	16.85	100000.	
59 Co	0.0052	0.001	ppb	227.64	1000.	
60 Ni	0.141	0.0282	ppb	32.19	1000.	
63 Cu	0.661	0.1322	ppb	7.11	#VALUE!	
65 Cu	0.6585	0.1317	ppb	19.31	2000.	
66 Zn	0.7675	0.1535	ppb	29.95	2000.	
68 Zn	0.9005	0.1801	ppb	31.19	#VALUE!	
75 As	0.524	0.1048	ppb	332.54	1000.	
82 Se	0.2773	0.0555	ppb	92.32	1000.	
88 Sr	0.0683	0.0137	ppb	16.10	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1811	0.0362	ppb	36.62	1000.	
107 Ag	0.0164	0.0033	ppb	42.34	100.	
109 Ag	0.0187	0.0037	ppb	66.36	#VALUE!	
111 Cd	-0.2489	-0.0498	ppb	33.87	#VALUE!	
114 Cd	-0.0033	-0.0007	ppb	181.98	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.0485	0.2097	ppb	8.98	1000.	
120 Sn	1.0125	0.2025	ppb	4.37	#VALUE!	
121 Sb	0.0365	0.0073	ppb	49.22	#VALUE!	
123 Sb	0.0575	0.0115	ppb	10.68	1000.	
135 Ba	0.1427	0.0285	ppb	21.69	2000.	
137 Ba	0.0707	0.0141	ppb	45.87	#VALUE!	
182 W	0.1467	0.0293	ppb	19.84	1000.	
203 Tl	-0.0029	-0.0006	ppb	1040.50	1000.	
205 Tl	-0.0517	-0.0103	ppb	58.71	#VALUE!	
208 Pb	-0.1993	-0.0399	ppb	25.07	2000.	
232 Th	0.795	0.159	ppb	36.97	1000.	
238 U	0.009	0.0018	ppb	56.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1776549.80	2.49	1729334.00	102.7	69.5 - 120	
45 Sc	2387239.30	2.34	2274967.30	104.9	69.5 - 120	
72 Ge	613361.56	1.45	590563.19	103.9	69.5 - 120	
159 Tb	6295458.50	0.27	6367688.00	98.9	69.5 - 120	
209 Bi	2764960.80	0.68	2872959.00	96.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000487

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\039SMPL.D\039SMPL.D#
Date Acquired: May 10 2018 08:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3719-001
Misc Info: AQ
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 2.00
Autodil Factor: Undiluted
Final Dil Factor: 2.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0053	-0.0027	ppb	58.60	100.	
11 B	14.992	7.496	ppb	3.65	1000.	
23 Na	16,702.	8,351.	ppb	2.22	200000.	
25 Mg	2,988.	1,494.	ppb	0.93	200000.	
27 Al	2.458	1.229	ppb	6.07	200000.	
28 Si	8,288.	4,144.	ppb	1.52	#VALUE!	
29 Si	8,618.	4,309.	ppb	0.99	10000.	
39 K	3,010.	1,505.	ppb	1.71	200000.	
43 Ca	17,730.	8,865.	ppb	2.82	#VALUE!	
44 Ca	17,374.	8,687.	ppb	1.83	200000.	
51 V	0.2718	0.1359	ppb	39.99	1000.	
52 Cr	0.1297	0.0648	ppb	14.08	2000.	
53 Cr	3.94	1.97	ppb	58.68	#VALUE!	
55 Mn	1.758	0.879	ppb	3.47	2000.	
56 Fe	-11.748	-5.874	ppb	57.18	#VALUE!	
57 Fe	4.496	2.248	ppb	70.37	100000.	
59 Co	0.0344	0.0172	ppb	28.29	1000.	
60 Ni	0.916	0.458	ppb	3.92	1000.	
63 Cu	2,202.	1,101.	ppb	1.82	#VALUE!	
65 Cu	2,232.	1,116.	ppb	2.38	2000.	
66 Zn	155.1	77.55	ppb	1.64	2000.	
68 Zn	151.64	75.82	ppb	1.37	#VALUE!	
75 As	0.0959	0.0479	ppb	142.91	1000.	
82 Se	0.3684	0.1842	ppb	16.28	1000.	
88 Sr	77.8	38.9	ppb	1.84	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2252	0.1126	ppb	5.68	1000.	
107 Ag	0.0317	0.0159	ppb	18.76	100.	
109 Ag	0.0364	0.0182	ppb	5.14	#VALUE!	
111 Cd	-0.1327	-0.0664	ppb	19.72	#VALUE!	
114 Cd	0.0136	0.0068	ppb	30.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0156	-0.0078	ppb	94.59	1000.	
120 Sn	-0.0114	-0.0057	ppb	76.94	#VALUE!	
121 Sb	0.136	0.068	ppb	3.39	#VALUE!	
123 Sb	0.15	0.075	ppb	9.34	1000.	
135 Ba	6.508	3.254	ppb	2.20	2000.	
137 Ba	6.598	3.299	ppb	0.86	#VALUE!	
182 W	0.0252	0.0126	ppb	56.24	1000.	
203 Tl	0.0058	0.0029	ppb	291.03	1000.	
205 Tl	-0.0162	-0.0081	ppb	64.00	#VALUE!	
208 Pb	2.052	1.026	ppb	0.88	2000.	
232 Th	0.0086	0.0043	ppb	29.42	1000.	
238 U	0.2156	0.1078	ppb	5.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1924808.30	1.99	1729334.00	111.3	69.5 - 120	
45 Sc	2604751.00	1.88	2274967.30	114.5	69.5 - 120	
72 Ge	665400.13	0.93	590563.19	112.7	69.5 - 120	
159 Tb	6800868.50	0.91	6367688.00	106.8	69.5 - 120	
209 Bi	2990943.50	2.20	2872959.00	104.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000488

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\040_CCV.D\040_CCV.D#
Date Acquired: May 10 2018 08:10 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.32	ppb	4.92	25	101.28	
11 B	26.25	ppb	6.33	25	105	
23 Na	5,138.	ppb	2.40	5,000	102.76	
25 Mg	5,135.	ppb	1.24	5,000	102.7	
27 Al	507.9	ppb	2.41	500	101.58	
28 Si	516.3	ppb	1.03	500	103.26	
29 Si	468.	ppb	2.06	500	93.6	
39 K	4,994.	ppb	1.91	5,000	99.88	
43 Ca	5,142.	ppb	1.15	5,000	102.84	
44 Ca	5,115.	ppb	0.27	5,000	102.3	
51 V	25.45	ppb	0.51	25	101.8	
52 Cr	25.45	ppb	0.50	25	101.8	
53 Cr	25.99	ppb	3.42	25	103.96	
55 Mn	24.85	ppb	0.68	25	99.4	
56 Fe	4,952.	ppb	0.40	5,000	99.04	
57 Fe	5,115.	ppb	1.16	5,000	102.3	
59 Co	25.41	ppb	1.90	25	101.64	
60 Ni	25.38	ppb	2.05	25	101.52	
63 Cu	25.37	ppb	1.22	25	101.48	
65 Cu	25.47	ppb	2.18	25	101.88	
66 Zn	25.28	ppb	1.82	25	101.12	
68 Zn	24.78	ppb	1.36	25	99.12	
75 As	24.95	ppb	1.66	25	99.8	
82 Se	25.22	ppb	1.31	25	100.88	
88 Sr	24.08	ppb	1.17	25	96.32	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.25	ppb	0.33	25	97	
107 Ag	24.53	ppb	1.01	25	98.12	
109 Ag	24.44	ppb	1.12	25	97.76	
111 Cd	24.31	ppb	1.69	25	97.24	
114 Cd	24.3	ppb	1.30	25	97.2	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.54	ppb	0.94	25	102.16	
120 Sn	25.65	ppb	1.05	25	102.6	
121 Sb	26.17	ppb	1.24	25	104.68	
123 Sb	26.21	ppb	0.51	25	104.84	
135 Ba	25.97	ppb	2.24	25	103.88	
137 Ba	25.83	ppb	1.70	25	103.32	
182 W	24.33	ppb	1.35	25	97.32	
203 Tl	25.11	ppb	1.43	25	100.44	
205 Tl	25.28	ppb	0.85	25	101.12	
208 Pb	25.16	ppb	1.27	25	100.64	
232 Th	24.54	ppb	0.61	25	98.16	
238 U	24.73	ppb	2.11	25	98.92	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1892974.40	4.05	1729334.00	109.5	80 - 120.4	
45 Sc	2532496.50	1.02	2274967.30	111.3	80 - 120.4	
72 Ge	634285.44	0.69	590563.19	107.4	80 - 120.4	
159 Tb	6536835.50	0.56	6367688.00	102.7	80 - 120.4	
209 Bi	2848214.00	1.31	2872959.00	99.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000489

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\041_CCB.D\041_CCB.D#
Date Acquired: May 10 2018 08:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0006	ppb	292.71	1.00	
11 B	2.342	ppb	5.43	1.00	
23 Na	0.5462	ppb	74.57	1.00	
25 Mg	-0.0137	ppb	746.52	1.00	
27 Al	-0.0018	ppb	2976.60	1.00	
28 Si	27.01	ppb	41.76	1.00	
29 Si	-17.91	ppb	55.37	1.00	
39 K	-1.058	ppb	156.71	1.00	
43 Ca	-3.894	ppb	52.57	1.00	
44 Ca	-1.529	ppb	34.47	1.00	
51 V	0.1088	ppb	65.40	1.00	
52 Cr	0.0858	ppb	31.98	1.00	
53 Cr	1.535	ppb	28.37	1.00	
55 Mn	-0.0051	ppb	121.14	1.00	
56 Fe	5.278	ppb	50.83	1.00	
57 Fe	1.342	ppb	112.22	1.00	
59 Co	0.0002	ppb	1254.70	1.00	
60 Ni	0.0026	ppb	316.14	1.00	
63 Cu	-0.0097	ppb	74.31	1.00	
65 Cu	-0.009	ppb	29.02	1.00	
66 Zn	-0.0084	ppb	715.45	1.00	
68 Zn	0.0048	ppb	547.11	1.00	
75 As	-0.0101	ppb	1143.00	1.00	
82 Se	-0.0138	ppb	522.99	1.00	
88 Sr	0.0022	ppb	33.22	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0352	ppb	60.71	1.00	
107 Ag	0.0017	ppb	60.38	1.00	
109 Ag	0.003	ppb	39.61	1.00	
111 Cd	-0.0617	ppb	21.87	1.00	
114 Cd	-0.0006	ppb	236.36	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0421	ppb	27.04	1.00	
120 Sn	0.0343	ppb	18.22	1.00	
121 Sb	0.0097	ppb	27.34	1.00	
123 Sb	0.0069	ppb	74.48	1.00	
135 Ba	0.0042	ppb	150.02	1.00	
137 Ba	-0.0002	ppb	4071.20	1.00	
182 W	0.06	ppb	31.18	1.00	
203 Tl	-0.0041	ppb	162.95	1.00	
205 Tl	-0.0047	ppb	296.96	1.00	
208 Pb	-0.0365	ppb	40.59	1.00	
232 Th	0.0954	ppb	6.17	1.00	
238 U	0.0025	ppb	84.58	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1801631.90	3.43	1729334.00	104.2	79.5 - 120	
45 Sc	2362830.50	0.67	2274967.30	103.9	79.5 - 120	
72 Ge	601709.56	1.64	590563.19	101.9	79.5 - 120	
159 Tb	6031961.50	0.87	6367688.00	94.7	79.5 - 120	
209 Bi	2693124.80	0.97	2872959.00	93.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000490

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\042SMPL.D\042SMPL.D#
Date Acquired: May 10 2018 08:18 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE04IMS1
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	865.82	100.	
11 B	9.035	1.807	ppb	6.87	1000.	
23 Na	54.05	10.81	ppb	2.30	200000.	
25 Mg	24.46	4.892	ppb	6.48	200000.	
27 Al	9.745	1.949	ppb	1.77	200000.	
28 Si	-12.72	-2.544	ppb	212.34	#VALUE!	
29 Si	-176.3	-35.26	ppb	23.79	10000.	
39 K	23.075	4.615	ppb	72.63	200000.	
43 Ca	58.7	11.74	ppb	42.26	#VALUE!	
44 Ca	66.15	13.23	ppb	11.90	200000.	
51 V	1.135	0.227	ppb	16.86	1000.	
52 Cr	3.131	0.6262	ppb	16.58	2000.	
53 Cr	56.7	11.34	ppb	2.80	#VALUE!	
55 Mn	1.3675	0.2735	ppb	1.47	2000.	
56 Fe	48.115	9.623	ppb	29.35	#VALUE!	
57 Fe	33.405	6.681	ppb	15.72	100000.	
59 Co	0.0317	0.0063	ppb	46.98	1000.	
60 Ni	0.3993	0.0799	ppb	12.60	1000.	
63 Cu	1.0895	0.2179	ppb	5.19	#VALUE!	
65 Cu	1.173	0.2346	ppb	4.11	2000.	
66 Zn	0.967	0.1934	ppb	6.68	2000.	
68 Zn	0.819	0.1638	ppb	39.96	#VALUE!	
75 As	0.3312	0.0662	ppb	591.73	1000.	
82 Se	0.2824	0.0565	ppb	117.48	1000.	
88 Sr	0.1974	0.0395	ppb	19.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.14	0.028	ppb	7.36	1000.	
107 Ag	0.0839	0.0168	ppb	21.97	100.	
109 Ag	0.078	0.0156	ppb	12.87	#VALUE!	
111 Cd	-0.2273	-0.0455	ppb	50.01	#VALUE!	
114 Cd	-0.0105	-0.0021	ppb	761.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.575	9.515	ppb	2.19	1000.	
120 Sn	48.44	9.688	ppb	1.51	#VALUE!	
121 Sb	0.0354	0.0071	ppb	25.29	#VALUE!	
123 Sb	0.0378	0.0076	ppb	61.79	1000.	
135 Ba	0.3146	0.0629	ppb	26.19	2000.	
137 Ba	0.2642	0.0528	ppb	3.73	#VALUE!	
182 W	0.0937	0.0187	ppb	27.89	1000.	
203 Tl	-0.0269	-0.0054	ppb	363.54	1000.	
205 Tl	-0.0474	-0.0095	ppb	110.33	#VALUE!	
208 Pb	-0.1134	-0.0227	ppb	70.00	2000.	
232 Th	0.545	0.109	ppb	29.86	1000.	
238 U	0.0078	0.0016	ppb	44.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1784473.30	2.87	1729334.00	103.2	69.5 - 120	
45 Sc	2343137.00	0.55	2274967.30	103.0	69.5 - 120	
72 Ge	602197.81	0.50	590563.19	102.0	69.5 - 120	
159 Tb	6206731.00	1.12	6367688.00	97.5	69.5 - 120	
209 Bi	2760174.30	0.98	2872959.00	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000491

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\043SMPL.D\043SMPL.D#
Date Acquired: May 10 2018 08:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE04IMS1
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	52.35	10.47	ppb	5.25	100.	
11 B	558.	111.6	ppb	1.47	1000.	
23 Na	8,560.	1,712.	ppb	3.04	200000.	
25 Mg	5,405.	1,081.	ppb	2.12	200000.	
27 Al	2,303.	460.6	ppb	4.16	200000.	
28 Si	1,053.5	210.7	ppb	4.52	#VALUE!	
29 Si	852.	170.4	ppb	6.35	10000.	
39 K	10,820.	2,164.	ppb	1.60	200000.	
43 Ca	3,069.5	613.9	ppb	1.60	#VALUE!	
44 Ca	2,610.	522.	ppb	2.35	200000.	
51 V	552.	110.4	ppb	3.33	1000.	
52 Cr	218.5	43.7	ppb	2.59	2000.	
53 Cr	285.	57.	ppb	1.56	#VALUE!	
55 Mn	540.	108.	ppb	1.87	2000.	
56 Fe	1,113.5	222.7	ppb	1.52	#VALUE!	
57 Fe	1,122.	224.4	ppb	0.87	100000.	
59 Co	560.5	112.1	ppb	0.53	1000.	
60 Ni	548.5	109.7	ppb	0.21	1000.	
63 Cu	267.45	53.49	ppb	1.43	#VALUE!	
65 Cu	270.25	54.05	ppb	1.27	2000.	
66 Zn	523.	104.6	ppb	0.37	2000.	
68 Zn	571.5	114.3	ppb	0.32	#VALUE!	
75 As	106.5	21.3	ppb	2.70	1000.	
82 Se	103.65	20.73	ppb	0.88	1000.	
88 Sr	517.5	103.5	ppb	2.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	105.85	21.17	ppb	2.46	1000.	
107 Ag	53.4	10.68	ppb	1.13	100.	
109 Ag	53.1	10.62	ppb	1.28	#VALUE!	
111 Cd	260.45	52.09	ppb	2.13	#VALUE!	
114 Cd	261.2	52.24	ppb	1.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	595.	119.	ppb	0.27	1000.	
120 Sn	606.	121.2	ppb	1.78	#VALUE!	
121 Sb	112.7	22.54	ppb	1.81	#VALUE!	
123 Sb	112.2	22.44	ppb	0.84	1000.	
135 Ba	2,247.5	449.5	ppb	1.59	2000.	
137 Ba	2,243.5	448.7	ppb	1.15	#VALUE!	
182 W	108.45	21.69	ppb	2.41	1000.	
203 Tl	110.1	22.02	ppb	2.79	1000.	
205 Tl	111.55	22.31	ppb	0.63	#VALUE!	
208 Pb	111.1	22.22	ppb	1.47	2000.	
232 Th	107.6	21.52	ppb	1.80	1000.	
238 U	108.5	21.7	ppb	1.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1919505.00	2.19	1729334.00	111.0	69.5 - 120	
45 Sc	2433777.30	1.18	2274967.30	107.0	69.5 - 120	
72 Ge	617392.38	1.11	590563.19	104.5	69.5 - 120	
159 Tb	6419061.00	0.39	6367688.00	100.8	69.5 - 120	
209 Bi	2831666.00	1.09	2872959.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000492

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\044SMPL.D\044SMPL.D#
Date Acquired: May 10 2018 08:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-007
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	12.19	2.438	ppb	2.72	100.	
11 B	197.75	39.55	ppb	1.55	1000.	
23 Na	20,495.	4,099.	ppb	5.12	200000.	
25 Mg	124,150.	24,830.	ppb	4.04	200000.	
27 Al	263,000.	52,600.	ppb	2.28	200000.	
28 Si	3,510.5	702.1	ppb	7.61	#VALUE!	
29 Si	3,256.	651.2	ppb	9.99	10000.	
39 K	60,600.	12,120.	ppb	3.50	200000.	
43 Ca	608,500.	121,700.	ppb	3.79	#VALUE!	
44 Ca	560,000.	112,000.	ppb	2.34	200000.	
51 V	513.5	102.7	ppb	2.55	1000.	
52 Cr	258.05	51.61	ppb	3.84	2000.	
53 Cr	280.3	56.06	ppb	2.58	#VALUE!	
55 Mn	13,760.	2,752.	ppb	1.30	2000.	>LDR
56 Fe	271,550.	54,310.	ppb	1.45	#VALUE!	
57 Fe	265,650.	53,130.	ppb	0.92	100000.	
59 Co	102.	20.4	ppb	0.47	1000.	
60 Ni	263.	52.6	ppb	2.96	1000.	
63 Cu	174.75	34.95	ppb	1.66	#VALUE!	
65 Cu	176.7	35.34	ppb	2.74	2000.	
66 Zn	676.	135.2	ppb	2.07	2000.	
68 Zn	758.	151.6	ppb	2.84	#VALUE!	
75 As	36.04	7.208	ppb	2.04	1000.	
82 Se	4.8555	0.9711	ppb	5.56	1000.	
88 Sr	1,513.	302.6	ppb	1.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	18.665	3.733	ppb	0.42	1000.	
107 Ag	1.0525	0.2105	ppb	1.72	100.	
109 Ag	0.8605	0.1721	ppb	4.60	#VALUE!	
111 Cd	4.4295	0.8859	ppb	5.43	#VALUE!	
114 Cd	1.8555	0.3711	ppb	2.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.85	11.17	ppb	0.45	1000.	
120 Sn	56.35	11.27	ppb	0.08	#VALUE!	
121 Sb	2.9275	0.5855	ppb	1.41	#VALUE!	
123 Sb	2.8475	0.5695	ppb	2.10	1000.	
135 Ba	3,924.	784.8	ppb	0.19	2000.	
137 Ba	3,832.5	766.5	ppb	0.84	#VALUE!	
182 W	1.1985	0.2397	ppb	6.08	1000.	
203 Tl	4.523	0.9046	ppb	1.99	1000.	
205 Tl	4.4945	0.8989	ppb	2.30	#VALUE!	
208 Pb	164.7	32.94	ppb	0.86	2000.	
232 Th	121.5	24.3	ppb	1.08	1000.	
238 U	17.36	3.472	ppb	1.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1749662.60	1.26	1729334.00	101.2	69.5 - 120	
45 Sc	2422880.30	4.98	2274967.30	106.5	69.5 - 120	
72 Ge	600070.13	2.41	590563.19	101.6	69.5 - 120	
159 Tb	6771675.50	0.97	6367688.00	106.3	69.5 - 120	
209 Bi	2865284.00	1.12	2872959.00	99.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000493

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\045SMPL.D\045SMPL.D#
Date Acquired: May 10 2018 08:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-019
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	14.065	2.813	ppb	3.31	100.	
11 B	207.45	41.49	ppb	2.91	1000.	
23 Na	4,695.	939.	ppb	2.82	200000.	
25 Mg	110,700.	22,140.	ppb	2.01	200000.	
27 Al	311,300.	62,260.	ppb	3.82	200000.	
28 Si	4,363.	872.6	ppb	2.07	#VALUE!	
29 Si	4,184.	836.8	ppb	2.64	10000.	
39 K	76,650.	15,330.	ppb	1.50	200000.	
43 Ca	519,500.	103,900.	ppb	1.40	#VALUE!	
44 Ca	478,300.	95,660.	ppb	0.54	200000.	
51 V	653.5	130.7	ppb	4.32	1000.	
52 Cr	278.15	55.63	ppb	2.70	2000.	
53 Cr	305.45	61.09	ppb	1.61	#VALUE!	
55 Mn	11,570.	2,314.	ppb	2.19	2000.	>LDR
56 Fe	296,750.	59,350.	ppb	4.17	#VALUE!	
57 Fe	292,750.	58,550.	ppb	3.30	100000.	
59 Co	200.25	40.05	ppb	3.17	1000.	
60 Ni	323.	64.6	ppb	2.20	1000.	
63 Cu	184.9	36.98	ppb	2.69	#VALUE!	
65 Cu	188.35	37.67	ppb	1.50	2000.	
66 Zn	726.5	145.3	ppb	2.84	2000.	
68 Zn	900.5	180.1	ppb	3.50	#VALUE!	
75 As	134.1	26.82	ppb	2.10	1000.	
82 Se	4.7935	0.9587	ppb	24.74	1000.	
88 Sr	1,709.5	341.9	ppb	1.21	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.595	3.319	ppb	0.92	1000.	
107 Ag	1.2305	0.2461	ppb	2.55	100.	
109 Ag	0.956	0.1912	ppb	1.28	#VALUE!	
111 Cd	6.19	1.238	ppb	2.32	#VALUE!	
114 Cd	3.1115	0.6223	ppb	1.74	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.8	11.56	ppb	1.91	1000.	
120 Sn	58.4	11.68	ppb	1.38	#VALUE!	
121 Sb	3.3685	0.6737	ppb	1.55	#VALUE!	
123 Sb	3.3615	0.6723	ppb	3.84	1000.	
135 Ba	6,975.	1,395.	ppb	1.32	2000.	
137 Ba	6,805.	1,361.	ppb	0.55	#VALUE!	
182 W	1.443	0.2886	ppb	4.73	1000.	
203 Tl	5.675	1.135	ppb	8.18	1000.	
205 Tl	5.655	1.131	ppb	2.92	#VALUE!	
208 Pb	253.95	50.79	ppb	0.89	2000.	
232 Th	139.4	27.88	ppb	0.80	1000.	
238 U	26.01	5.202	ppb	2.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1756891.00	2.64	1729334.00	101.6	69.5 - 120	
45 Sc	2451628.50	3.47	2274967.30	107.8	69.5 - 120	
72 Ge	613258.88	0.78	590563.19	103.8	69.5 - 120	
159 Tb	6659198.00	1.14	6367688.00	104.6	69.5 - 120	
209 Bi	2829968.00	0.27	2872959.00	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000494

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\046SMPL.D\046SMPL.D#
Date Acquired: May 10 2018 08:35 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-020
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	7.535	1.507	ppb	3.87	100.	
11 B	156.55	31.31	ppb	2.46	1000.	
23 Na	3,355.5	671.1	ppb	2.78	200000.	
25 Mg	110,100.	22,020.	ppb	1.21	200000.	
27 Al	163,050.	32,610.	ppb	0.33	200000.	
28 Si	2,902.5	580.5	ppb	2.65	#VALUE!	
29 Si	2,589.	517.8	ppb	2.42	10000.	
39 K	40,545.	8,109.	ppb	2.70	200000.	
43 Ca	1,567,500.	313,500.	ppb	2.64	#VALUE!	
44 Ca	1,504,000.	300,800.	ppb	2.04	200000.	>LDR
51 V	344.05	68.81	ppb	1.30	1000.	
52 Cr	153.75	30.75	ppb	0.56	2000.	
53 Cr	160.25	32.05	ppb	2.61	#VALUE!	
55 Mn	5,080.	1,016.	ppb	2.06	2000.	
56 Fe	147,500.	29,500.	ppb	0.71	#VALUE!	
57 Fe	145,300.	29,060.	ppb	2.04	100000.	
59 Co	80.05	16.01	ppb	1.46	1000.	
60 Ni	174.75	34.95	ppb	2.34	1000.	
63 Cu	94.45	18.89	ppb	2.16	#VALUE!	
65 Cu	96.6	19.32	ppb	1.04	2000.	
66 Zn	363.05	72.61	ppb	0.57	2000.	
68 Zn	478.15	95.63	ppb	0.40	#VALUE!	
75 As	60.4	12.08	ppb	1.88	1000.	
82 Se	5.07	1.014	ppb	16.05	1000.	
88 Sr	3,504.5	700.9	ppb	1.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.285	2.057	ppb	1.95	1000.	
107 Ag	0.5845	0.1169	ppb	4.68	100.	
109 Ag	0.4564	0.0913	ppb	16.17	#VALUE!	
111 Cd	4.247	0.8494	ppb	6.64	#VALUE!	
114 Cd	2.166	0.4332	ppb	3.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.85	9.77	ppb	1.45	1000.	
120 Sn	50.05	10.01	ppb	1.19	#VALUE!	
121 Sb	2.082	0.4164	ppb	2.98	#VALUE!	
123 Sb	2.037	0.4074	ppb	5.33	1000.	
135 Ba	4,288.5	857.7	ppb	2.69	2000.	
137 Ba	4,203.5	840.7	ppb	1.37	#VALUE!	
182 W	1.128	0.2256	ppb	5.53	1000.	
203 Tl	3.3125	0.6625	ppb	4.40	1000.	
205 Tl	3.3075	0.6615	ppb	2.23	#VALUE!	
208 Pb	114.15	22.83	ppb	1.99	2000.	
232 Th	67.7	13.54	ppb	2.97	1000.	
238 U	19.005	3.801	ppb	2.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1695583.00	3.26	1729334.00	98.0	69.5 - 120	
45 Sc	2445985.80	1.33	2274967.30	107.5	69.5 - 120	
72 Ge	602171.38	1.70	590563.19	102.0	69.5 - 120	
159 Tb	6670593.00	1.74	6367688.00	104.8	69.5 - 120	
209 Bi	2724328.00	2.06	2872959.00	94.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000495

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\047SMPL.D\047SMPL.D#
Date Acquired: May 10 2018 08:39 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-021
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	9.28	1.856	ppb	2.51	100.	
11 B	149.2	29.84	ppb	2.26	1000.	
23 Na	4,885.	977.	ppb	1.52	200000.	
25 Mg	84,850.	16,970.	ppb	3.18	200000.	
27 Al	198,550.	39,710.	ppb	2.81	200000.	
28 Si	3,713.	742.6	ppb	1.66	#VALUE!	
29 Si	3,403.5	680.7	ppb	1.91	10000.	
39 K	46,405.	9,281.	ppb	2.36	200000.	
43 Ca	528,500.	105,700.	ppb	2.67	#VALUE!	
44 Ca	482,950.	96,590.	ppb	1.12	200000.	
51 V	382.95	76.59	ppb	1.08	1000.	
52 Cr	187.15	37.43	ppb	1.44	2000.	
53 Cr	197.7	39.54	ppb	2.49	#VALUE!	
55 Mn	1,908.	381.6	ppb	1.73	2000.	
56 Fe	230,650.	46,130.	ppb	1.31	#VALUE!	
57 Fe	229,300.	45,860.	ppb	0.66	100000.	
59 Co	47.325	9.465	ppb	0.60	1000.	
60 Ni	138.15	27.63	ppb	1.82	1000.	
63 Cu	135.7	27.14	ppb	0.61	#VALUE!	
65 Cu	136.	27.2	ppb	0.31	2000.	
66 Zn	467.15	93.43	ppb	1.08	2000.	
68 Zn	499.45	99.89	ppb	1.41	#VALUE!	
75 As	31.44	6.288	ppb	2.48	1000.	
82 Se	3.378	0.6756	ppb	11.27	1000.	
88 Sr	1,168.5	233.7	ppb	1.42	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.2465	0.8493	ppb	1.97	1000.	
107 Ag	0.836	0.1672	ppb	4.26	100.	
109 Ag	0.6335	0.1267	ppb	5.19	#VALUE!	
111 Cd	2.976	0.5952	ppb	4.06	#VALUE!	
114 Cd	0.7105	0.1421	ppb	3.15	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.4	11.08	ppb	0.80	1000.	
120 Sn	55.85	11.17	ppb	1.33	#VALUE!	
121 Sb	2.338	0.4676	ppb	0.82	#VALUE!	
123 Sb	2.2835	0.4567	ppb	5.04	1000.	
135 Ba	1,791.5	358.3	ppb	1.38	2000.	
137 Ba	1,768.	353.6	ppb	1.05	#VALUE!	
182 W	0.5325	0.1065	ppb	12.45	1000.	
203 Tl	3.1115	0.6223	ppb	2.46	1000.	
205 Tl	3.055	0.611	ppb	3.23	#VALUE!	
208 Pb	115.15	23.03	ppb	0.95	2000.	
232 Th	88.45	17.69	ppb	0.31	1000.	
238 U	11.13	2.226	ppb	1.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1769102.90	3.25	1729334.00	102.3	69.5 - 120	
45 Sc	2473060.50	3.06	2274967.30	108.7	69.5 - 120	
72 Ge	623178.88	1.47	590563.19	105.5	69.5 - 120	
159 Tb	6886226.50	0.56	6367688.00	108.1	69.5 - 120	
209 Bi	2939080.30	1.64	2872959.00	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000496

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\048SMPL.D\048SMPL.D#
Date Acquired: May 10 2018 08:43 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	5.635	1.127	ppb	1.29	100.	
11 B	72.25	14.45	ppb	4.39	1000.	
23 Na	1,192.5	238.5	ppb	1.61	200000.	
25 Mg	25,520.	5,104.	ppb	1.27	200000.	
27 Al	101,300.	20,260.	ppb	1.29	200000.	
28 Si	3,489.	697.8	ppb	1.75	#VALUE!	
29 Si	3,084.5	616.9	ppb	4.26	10000.	
39 K	34,440.	6,888.	ppb	1.53	200000.	
43 Ca	26,470.	5,294.	ppb	1.35	#VALUE!	
44 Ca	26,325.	5,265.	ppb	1.92	200000.	
51 V	222.9	44.58	ppb	0.93	1000.	
52 Cr	113.7	22.74	ppb	1.69	2000.	
53 Cr	151.1	30.22	ppb	2.76	#VALUE!	
55 Mn	2,867.5	573.5	ppb	1.99	2000.	
56 Fe	96,900.	19,380.	ppb	0.22	#VALUE!	
57 Fe	96,800.	19,360.	ppb	1.42	100000.	
59 Co	54.7	10.94	ppb	1.57	1000.	
60 Ni	86.95	17.39	ppb	1.44	1000.	
63 Cu	96.4	19.28	ppb	1.41	#VALUE!	
65 Cu	96.8	19.36	ppb	1.47	2000.	
66 Zn	327.5	65.5	ppb	0.70	2000.	
68 Zn	366.75	73.35	ppb	2.46	#VALUE!	
75 As	26.69	5.338	ppb	6.87	1000.	
82 Se	5.325	1.065	ppb	9.23	1000.	
88 Sr	342.65	68.53	ppb	1.56	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.02	2.404	ppb	1.23	1000.	
107 Ag	0.5705	0.1141	ppb	4.36	100.	
109 Ag	0.4891	0.0978	ppb	8.23	#VALUE!	
111 Cd	2.991	0.5982	ppb	3.12	#VALUE!	
114 Cd	2.166	0.4332	ppb	8.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.82	9.764	ppb	0.61	1000.	
120 Sn	50.05	10.01	ppb	1.46	#VALUE!	
121 Sb	1.386	0.2772	ppb	3.41	#VALUE!	
123 Sb	1.413	0.2826	ppb	3.38	1000.	
135 Ba	1,725.	345.	ppb	1.13	2000.	
137 Ba	1,709.	341.8	ppb	1.21	#VALUE!	
182 W	0.8235	0.1647	ppb	2.51	1000.	
203 Tl	2.3105	0.4621	ppb	4.92	1000.	
205 Tl	2.293	0.4586	ppb	1.45	#VALUE!	
208 Pb	135.5	27.1	ppb	0.80	2000.	
232 Th	81.25	16.25	ppb	0.35	1000.	
238 U	18.41	3.682	ppb	1.73	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1778471.90	2.62	1729334.00	102.8	69.5 - 120	
45 Sc	2513771.50	1.19	2274967.30	110.5	69.5 - 120	
72 Ge	642858.19	1.70	590563.19	108.9	69.5 - 120	
159 Tb	6790310.50	0.94	6367688.00	106.6	69.5 - 120	
209 Bi	2899582.00	1.43	2872959.00	100.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000497

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\049SMPL.D\049SMPL.D#
Date Acquired: May 10 2018 08:47 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	7.575	1.515	ppb	3.73	100.	
11 B	147.	29.4	ppb	2.33	1000.	
23 Na	2,078.	415.6	ppb	2.79	200000.	
25 Mg	90,800.	18,160.	ppb	1.99	200000.	
27 Al	169,750.	33,950.	ppb	1.14	200000.	
28 Si	3,989.	797.8	ppb	4.40	#VALUE!	
29 Si	3,658.5	731.7	ppb	2.38	10000.	
39 K	46,455.	9,291.	ppb	1.65	200000.	
43 Ca	341,100.	68,220.	ppb	0.95	#VALUE!	
44 Ca	314,400.	62,880.	ppb	0.32	200000.	
51 V	453.35	90.67	ppb	1.88	1000.	
52 Cr	168.8	33.76	ppb	2.63	2000.	
53 Cr	182.15	36.43	ppb	1.11	#VALUE!	
55 Mn	2,960.5	592.1	ppb	0.88	2000.	
56 Fe	167,500.	33,500.	ppb	1.51	#VALUE!	
57 Fe	163,100.	32,620.	ppb	1.44	100000.	
59 Co	65.2	13.04	ppb	2.52	1000.	
60 Ni	148.65	29.73	ppb	1.09	1000.	
63 Cu	110.1	22.02	ppb	0.97	#VALUE!	
65 Cu	112.45	22.49	ppb	1.99	2000.	
66 Zn	415.7	83.14	ppb	2.24	2000.	
68 Zn	466.3	93.26	ppb	1.38	#VALUE!	
75 As	110.85	22.17	ppb	0.93	1000.	
82 Se	3.372	0.6744	ppb	13.63	1000.	
88 Sr	1,351.5	270.3	ppb	1.20	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.285	2.057	ppb	2.91	1000.	
107 Ag	0.744	0.1488	ppb	3.52	100.	
109 Ag	0.5905	0.1181	ppb	8.22	#VALUE!	
111 Cd	1.893	0.3786	ppb	4.84	#VALUE!	
114 Cd	0.1687	0.0337	ppb	56.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.7	10.34	ppb	2.03	1000.	
120 Sn	51.85	10.37	ppb	1.13	#VALUE!	
121 Sb	2.545	0.509	ppb	4.24	#VALUE!	
123 Sb	2.5835	0.5167	ppb	4.61	1000.	
135 Ba	2,348.	469.6	ppb	1.61	2000.	
137 Ba	2,320.5	464.1	ppb	2.03	#VALUE!	
182 W	0.769	0.1538	ppb	12.20	1000.	
203 Tl	2.921	0.5842	ppb	2.52	1000.	
205 Tl	2.8215	0.5643	ppb	1.67	#VALUE!	
208 Pb	110.65	22.13	ppb	1.58	2000.	
232 Th	75.9	15.18	ppb	2.51	1000.	
238 U	16.075	3.215	ppb	2.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1822559.40	3.12	1729334.00	105.4	69.5 - 120	
45 Sc	2523074.50	1.17	2274967.30	110.9	69.5 - 120	
72 Ge	629925.63	1.10	590563.19	106.7	69.5 - 120	
159 Tb	6778329.00	2.26	6367688.00	106.4	69.5 - 120	
209 Bi	2861047.80	2.91	2872959.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000498

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\050SMPL.D\050SMPL.D#
Date Acquired: May 10 2018 08:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	139.29	100.	
11 B	11.855	2.371	ppb	2.09	1000.	
23 Na	-1.16	-0.232	ppb	147.20	200000.	
25 Mg	1.3375	0.2675	ppb	30.77	200000.	
27 Al	3.7	0.74	ppb	20.05	200000.	
28 Si	-44.18	-8.836	ppb	201.79	#VALUE!	
29 Si	-552.5	-110.5	ppb	10.66	10000.	LOW
39 K	-74.05	-14.81	ppb	12.15	200000.	
43 Ca	-10.715	-2.143	ppb	143.30	#VALUE!	
44 Ca	-1.675	-0.335	ppb	277.52	200000.	
51 V	0.1003	0.0201	ppb	161.07	1000.	
52 Cr	-0.3615	-0.0723	ppb	55.27	2000.	
53 Cr	-9.09	-1.818	ppb	4.47	#VALUE!	
55 Mn	-0.0368	-0.0074	ppb	153.67	2000.	
56 Fe	-20.67	-4.134	ppb	22.44	#VALUE!	
57 Fe	7.445	1.489	ppb	87.78	100000.	
59 Co	-0.01	-0.002	ppb	156.35	1000.	
60 Ni	0.0335	0.0067	ppb	32.11	1000.	
63 Cu	0.4756	0.0951	ppb	16.27	#VALUE!	
65 Cu	0.4681	0.0936	ppb	24.37	2000.	
66 Zn	0.3678	0.0736	ppb	75.46	2000.	
68 Zn	0.3896	0.0779	ppb	46.01	#VALUE!	
75 As	-0.1149	-0.023	ppb	172.28	1000.	
82 Se	-0.1595	-0.0319	ppb	144.87	1000.	
88 Sr	0.0035	0.0007	ppb	193.68	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0067	0.0013	ppb	84.53	1000.	
107 Ag	0.0007	0.0001	ppb	538.87	100.	
109 Ag	0.0049	0.001	ppb	57.29	#VALUE!	
111 Cd	-0.3628	-0.0726	ppb	10.07	#VALUE!	
114 Cd	0.0029	0.0006	ppb	406.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.125	0.025	ppb	54.24	1000.	
120 Sn	0.1098	0.022	ppb	31.04	#VALUE!	
121 Sb	0.0071	0.0014	ppb	2.41	#VALUE!	
123 Sb	0.0046	0.0009	ppb	122.15	1000.	
135 Ba	0.0509	0.0102	ppb	58.57	2000.	
137 Ba	0.0357	0.0071	ppb	88.63	#VALUE!	
182 W	0.0193	0.0039	ppb	82.62	1000.	
203 Tl	-0.1058	-0.0212	ppb	66.43	1000.	
205 Tl	-0.0836	-0.0167	ppb	43.94	#VALUE!	
208 Pb	0.2644	0.0529	ppb	5.73	2000.	
232 Th	0.0666	0.0133	ppb	22.78	1000.	
238 U	-0.0012	-0.0002	ppb	211.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1842216.90	4.72	1729334.00	106.5	69.5 - 120	
45 Sc	2521319.50	1.27	2274967.30	110.8	69.5 - 120	
72 Ge	645720.00	1.53	590563.19	109.3	69.5 - 120	
159 Tb	6430583.00	0.70	6367688.00	101.0	69.5 - 120	
209 Bi	2809786.80	0.86	2872959.00	97.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000499

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\051SMPL.D\051SMPL.D#
Date Acquired: May 10 2018 08:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE07IMS1
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\DATA\JLE10C.B\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\DATA\JLE10C.B\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	-0.0102	-0.002	ppb	67.14	100.	
11 B	9.	1.8	ppb	7.48	1000.	
23 Na	37.37	7.474	ppb	11.35	200000.	
25 Mg	22.455	4.491	ppb	16.63	200000.	
27 Al	12.795	2.559	ppb	0.36	200000.	
28 Si	14.455	2.891	ppb	313.52	#VALUE!	
29 Si	-439.15	-87.83	ppb	8.69	10000.	
39 K	-14.525	-2.905	ppb	116.25	200000.	
43 Ca	59.3	11.86	ppb	10.49	#VALUE!	
44 Ca	57.9	11.58	ppb	16.18	200000.	
51 V	0.549	0.1098	ppb	114.57	1000.	
52 Cr	3.126	0.6252	ppb	19.16	2000.	
53 Cr	27.135	5.427	ppb	12.18	#VALUE!	
55 Mn	0.335	0.067	ppb	19.70	2000.	
56 Fe	38.115	7.623	ppb	29.98	#VALUE!	
57 Fe	22.695	4.539	ppb	62.57	100000.	
59 Co	0.034	0.0068	ppb	64.16	1000.	
60 Ni	0.3883	0.0777	ppb	16.36	1000.	
63 Cu	0.859	0.1718	ppb	4.42	#VALUE!	
65 Cu	0.7695	0.1539	ppb	10.16	2000.	
66 Zn	1.204	0.2408	ppb	10.42	2000.	
68 Zn	1.411	0.2822	ppb	20.84	#VALUE!	
75 As	0.617	0.1234	ppb	56.12	1000.	
82 Se	-0.3423	-0.0685	ppb	192.11	1000.	
88 Sr	0.2211	0.0442	ppb	17.68	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0719	0.0144	ppb	14.29	1000.	
107 Ag	0.0134	0.0027	ppb	38.65	100.	
109 Ag	0.0093	0.0019	ppb	56.20	#VALUE!	
111 Cd	-0.4579	-0.0916	ppb	19.71	#VALUE!	
114 Cd	-0.0858	-0.0172	ppb	105.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	42.595	8.519	ppb	3.87	1000.	
120 Sn	42.975	8.595	ppb	2.88	#VALUE!	
121 Sb	0.0229	0.0046	ppb	24.22	#VALUE!	
123 Sb	0.0229	0.0046	ppb	89.27	1000.	
135 Ba	0.4806	0.0961	ppb	9.22	2000.	
137 Ba	0.502	0.1004	ppb	12.49	#VALUE!	
182 W	0.0252	0.005	ppb	41.30	1000.	
203 Tl	-0.0538	-0.0108	ppb	125.67	1000.	
205 Tl	-0.0687	-0.0137	ppb	71.19	#VALUE!	
208 Pb	-0.0805	-0.0161	ppb	110.69	2000.	
232 Th	0.1156	0.0231	ppb	36.32	1000.	
238 U	0.0042	0.0008	ppb	18.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1724166.10	3.83	1729334.00	99.7	69.5 - 120	
45 Sc	2312317.80	0.69	2274967.30	101.6	69.5 - 120	
72 Ge	608874.13	0.40	590563.19	103.1	69.5 - 120	
159 Tb	6364603.00	2.34	6367688.00	100.0	69.5 - 120	
209 Bi	2816318.00	1.01	2872959.00	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000500

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\052_CCV.D\052_CCV.D#
Date Acquired: May 10 2018 09:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.94	ppb	2.50	25	99.76	
11 B	25.9	ppb	3.88	25	103.6	
23 Na	4,943.	ppb	3.08	5,000	98.86	
25 Mg	5,016.	ppb	2.24	5,000	100.32	
27 Al	511.1	ppb	1.07	500	102.22	
28 Si	524.7	ppb	7.12	500	104.94	
29 Si	431.1	ppb	9.10	500	86.22	Fail
39 K	4,929.	ppb	2.29	5,000	98.58	
43 Ca	5,097.	ppb	4.44	5,000	101.94	
44 Ca	5,148.	ppb	3.63	5,000	102.96	
51 V	25.53	ppb	2.54	25	102.12	
52 Cr	25.46	ppb	2.22	25	101.84	
53 Cr	23.7	ppb	1.85	25	94.8	
55 Mn	25.16	ppb	0.58	25	100.64	
56 Fe	5,023.	ppb	2.62	5,000	100.46	
57 Fe	5,166.	ppb	4.17	5,000	103.32	
59 Co	25.55	ppb	2.11	25	102.2	
60 Ni	25.26	ppb	1.59	25	101.04	
63 Cu	25.72	ppb	0.98	25	102.88	
65 Cu	25.67	ppb	1.57	25	102.68	
66 Zn	25.37	ppb	2.59	25	101.48	
68 Zn	25.22	ppb	1.41	25	100.88	
75 As	25.38	ppb	1.52	25	101.52	
82 Se	25.85	ppb	1.13	25	103.4	
88 Sr	24.45	ppb	1.98	25	97.8	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.65	ppb	2.16	25	98.6	
107 Ag	24.79	ppb	2.07	25	99.16	
109 Ag	24.5	ppb	1.55	25	98	
111 Cd	24.67	ppb	2.02	25	98.68	
114 Cd	24.62	ppb	1.90	25	98.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.57	ppb	2.60	25	102.28	
120 Sn	26.07	ppb	3.08	25	104.28	
121 Sb	26.52	ppb	2.89	25	106.08	
123 Sb	26.35	ppb	2.69	25	105.4	
135 Ba	26.36	ppb	2.55	25	105.44	
137 Ba	26.36	ppb	2.68	25	105.44	
182 W	24.39	ppb	3.46	25	97.56	
203 Tl	25.19	ppb	1.09	25	100.76	
205 Tl	25.03	ppb	1.16	25	100.12	
208 Pb	25.29	ppb	1.96	25	101.16	
232 Th	24.58	ppb	2.03	25	98.32	
238 U	24.73	ppb	0.81	25	98.92	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1818783.90	2.24	1729334.00	105.2	80 - 120.4	
45 Sc	2531420.50	3.58	2274967.30	111.3	80 - 120.4	
72 Ge	630552.25	2.66	590563.19	106.8	80 - 120.4	
159 Tb	6475192.00	2.85	6367688.00	101.7	80 - 120.4	
209 Bi	2813602.00	1.75	2872959.00	97.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000501

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\053_CCB.D\053_CCB.D#
Date Acquired: May 10 2018 09:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.002	ppb	38.98	1.00	
11 B	2.107	ppb	4.39	1.00	
23 Na	-0.8898	ppb	28.56	1.00	
25 Mg	-0.0437	ppb	54.51	1.00	
27 Al	-0.0082	ppb	561.56	1.00	
28 Si	13.77	ppb	80.03	1.00	
29 Si	-79.37	ppb	26.96	1.00	
39 K	-7.575	ppb	102.43	1.00	
43 Ca	-4.786	ppb	32.95	1.00	
44 Ca	-1.453	ppb	39.01	1.00	
51 V	0.1018	ppb	35.57	1.00	
52 Cr	0.0175	ppb	135.66	1.00	
53 Cr	-1.235	ppb	14.62	1.00	
55 Mn	-0.0076	ppb	28.78	1.00	
56 Fe	0.7173	ppb	187.37	1.00	
57 Fe	1.687	ppb	110.73	1.00	
59 Co	0.005	ppb	19.44	1.00	
60 Ni	-0.0027	ppb	467.97	1.00	
63 Cu	-0.015	ppb	23.40	1.00	
65 Cu	-0.0176	ppb	22.12	1.00	
66 Zn	-0.0195	ppb	194.46	1.00	
68 Zn	-0.0272	ppb	157.29	1.00	
75 As	0.0238	ppb	575.58	1.00	
82 Se	-0.0395	ppb	66.13	1.00	
88 Sr	0.0003	ppb	320.33	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0315	ppb	36.15	1.00	
107 Ag	0.0032	ppb	54.56	1.00	
109 Ag	0.0025	ppb	34.89	1.00	
111 Cd	-0.0765	ppb	12.67	1.00	
114 Cd	-0.0001	ppb	608.23	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0298	ppb	11.81	1.00	
120 Sn	0.0377	ppb	8.32	1.00	
121 Sb	0.0048	ppb	88.41	1.00	
123 Sb	0.0071	ppb	71.65	1.00	
135 Ba	0.0005	ppb	1999.60	1.00	
137 Ba	0.0012	ppb	270.65	1.00	
182 W	0.0439	ppb	35.80	1.00	
203 Tl	-0.018	ppb	9.64	1.00	
205 Tl	-0.016	ppb	27.80	1.00	
208 Pb	-0.0487	ppb	14.84	1.00	
232 Th	0.0706	ppb	20.76	1.00	
238 U	0.0023	ppb	68.15	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1847757.00	1.38	1729334.00	106.8	79.5 - 120	
45 Sc	2480169.80	3.64	2274967.30	109.0	79.5 - 120	
72 Ge	633408.00	1.46	590563.19	107.3	79.5 - 120	
159 Tb	6225764.50	2.22	6367688.00	97.8	79.5 - 120	
209 Bi	2721876.00	1.51	2872959.00	94.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000502

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: JS **ANALYSIS DATE**: 05/11/2018

FILE NAME: JLE11B

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

REVIEWED
JS 5.15.18
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 JS (initals) on 5.11.18 (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17756	05/11/2018	05/11/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17751	05/09/2018	05/15/2018	Varies by Element
ICSAB	MW17752	05/09/2018	05/15/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17712	04/27/2018	07/192018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

JS 5.15.18

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 MW17756 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17756 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17756 (pipet M18)

Post Spike: 0.08mL of MW17698(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	JLE11B	5/11/2018	6:17:00 15:24	JS
200.8 TUNE	1	JLE11B	5/11/2018	6:17:00 15:27	JS
Cal Blank	1	JLE11B	5/11/2018	6:17:00 18:17	JS
Cal Std	1	JLE11B	5/11/2018	6:21:00 18:21	JS
ICV	1	JLE11B	5/11/2018	6:25:00 18:25	JS
ICB	1	JLE11B	5/11/2018	6:29:00 18:29	JS
PQL	1	JLE11B	5/11/2018	6:33:00 18:33	JS
RINSE	1	JLE11B	5/11/2018	6:37:00 18:37	JS
ICSA	1	JLE11B	5/11/2018	6:41:00 18:41	JS
ICSAB	1	JLE11B	5/11/2018	6:45:00 18:45	JS
RINSE	1	JLE11B	5/11/2018	6:50:00 18:50	JS
LRS1	1	JLE11B	5/11/2018	6:54:00 18:54	JS
LRS2	1	JLE11B	5/11/2018	6:57:00 18:57	JS
RINSE	1	JLE11B	5/11/2018	7:01:00 19:01	JS
RINSE	1	JLE11B	5/11/2018	7:05:00 19:05	JS
CCV	1	JLE11B	5/11/2018	7:09:00 19:09	JS
CCB	1	JLE11B	5/11/2018	7:13:00 19:13	JS
SL4044-002	1	JLE11B	5/11/2018	7:17:00 19:17	JS
PBWLE09IMW1	1	JLE11B	5/11/2018	7:21:00 19:21	JS
LCSWLE09IMW1	5	JLE11B	5/11/2018	7:25:00 19:25	JS
SL3844-001	1	JLE11B	5/11/2018	7:29:00 19:29	JS
SL3855-001	1	JLE11B	5/11/2018	7:33:00 19:33	JS
PBWLE11IMW1	1	JLE11B	5/11/2018	7:38:00 19:38	JS
LCSWLE11IMW1	5	JLE11B	5/11/2018	7:42:00 19:42	JS
SL3997-001	1	JLE11B	5/11/2018	7:46:00 19:46	JS
SL3997-002	1	JLE11B	5/11/2018	7:50:00 19:50	JS
SL3998-001	1	JLE11B	5/11/2018	7:54:00 19:54	JS
CCV	1	JLE11B	5/11/2018	7:58:00 19:58	JS
CCB	1	JLE11B	5/11/2018	8:02:00 20:02	JS
SL4027-001	1	JLE11B	5/11/2018	8:06:00 20:06	JS
SL4028-001	1	JLE11B	5/11/2018	8:10:00 20:10	JS
SL4030-001	1	JLE11B	5/11/2018	8:14:00 20:14	JS
SL4038-001	1	JLE11B	5/11/2018	8:19:00 20:19	JS
SL4038-002	1	JLE11B	5/11/2018	8:23:00 20:23	JS
SL4038-003	1	JLE11B	5/11/2018	8:27:00 20:27	JS
SL4044-001	1	JLE11B	5/11/2018	8:31:00 20:31	JS
SL4055-001	1	JLE11B	5/11/2018	8:35:00 20:35	JS
SL4056-001	1	JLE11B	5/11/2018	8:39:00 20:39	JS
SL4057-001	1	JLE11B	5/11/2018	8:44:00 20:44	JS
CCV	1	JLE11B	5/11/2018	8:48:00 20:48	JS
CCB	1	JLE11B	5/11/2018	8:52:00 20:52	JS
SL4060-001	1	JLE11B	5/11/2018	8:56:00 20:56	JS
SL4061-001	1	JLE11B	5/11/2018	9:00:00 21:00	JS
SL4065-001	1	JLE11B	5/11/2018	9:04:00 21:04	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL4066-001	1	JLE11B	5/11/2018	9:09:00 21:09	JS
PBSLE04IMS1	5	JLE11B	5/11/2018	9:13:00 21:13	JS
LCSOLE04IMS1	5	JLE11B	5/11/2018	9:17:00 21:17	JS
SL3708-007	10	JLE11B	5/11/2018	9:21:00 21:21	JS
SL3708-019	10	JLE11B	5/11/2018	9:25:00 21:25	JS
SL3708-020	10	JLE11B	5/11/2018	9:29:00 21:29	JS
TEST	10	JLE11B	5/11/2018	9:33:00 21:33	JS
CCV	1	JLE11B	5/11/2018	9:38:00 21:38	JS
CCB	1	JLE11B	5/11/2018	9:42:00 21:42	JS
SL3807-001	10	JLE11B	5/11/2018	9:46:00 21:46	JS
SL3807-002	10	JLE11B	5/11/2018	9:50:00 21:50	JS
RINSE	1	JLE11B	5/11/2018	9:54:00 21:54	JS
PBSLE11IMS2	5	JLE11B	5/11/2018	9:58:00 21:58	JS
LCSOLE11IMS2	5	JLE11B	5/11/2018	10:03:0 22:03	JS
LC2OLE11IMS2	5	JLE11B	5/11/2018	10:07:0 22:07	JS
SL3756-001	5	JLE11B	5/11/2018	10:11:0 22:11	JS
SL3756-003	5	JLE11B	5/11/2018	10:15:0 22:15	JS
SL3756-004	5	JLE11B	5/11/2018	10:19:0 22:19	JS
SL3756-005	5	JLE11B	5/11/2018	10:23:0 22:23	JS
CCV	1	JLE11B	5/11/2018	10:28:0 22:28	JS
CCB	1	JLE11B	5/11/2018	10:32:0 22:32	JS
SL3756-006	5	JLE11B	5/11/2018	10:36:0 22:36	JS
SL3756-007	5	JLE11B	5/11/2018	10:40:0 22:40	JS
SL3756-008	5	JLE11B	5/11/2018	10:44:0 22:44	JS
SL3756-009	5	JLE11B	5/11/2018	10:48:0 22:48	JS
SL3756-010	5	JLE11B	5/11/2018	10:53:0 22:53	JS
SL3756-011	5	JLE11B	5/11/2018	10:57:0 22:57	JS
SL3756-012	5	JLE11B	5/11/2018	11:01:0 23:01	JS
SL3756-013	5	JLE11B	5/11/2018	11:05:0 23:05	JS
SL3756-014	5	JLE11B	5/11/2018	11:09:0 23:09	JS
SL3756-029	5	JLE11B	5/11/2018	11:14:0 23:14	JS
CCV	1	JLE11B	5/11/2018	11:18:0 23:18	JS
CCB	1	JLE11B	5/11/2018	11:22:0 23:22	JS
SL3756-030	5	JLE11B	5/11/2018	11:26:0 23:26	JS
RINSE	1	JLE11B	5/11/2018	11:31:0 23:31	JS
PBSLE09IMS1	5	JLE11B	5/11/2018	11:35:0 23:35	JS
LCSOLE09IMS1	5	JLE11B	5/11/2018	11:39:0 23:39	JS
SL3809-049	5	JLE11B	5/11/2018	11:43:0 23:43	JS
SL3809-050	5	JLE11B	5/11/2018	11:48:0 23:48	JS
SL3809-051	5	JLE11B	5/11/2018	11:52:0 23:52	JS
SL3809-052	5	JLE11B	5/11/2018	11:56:0 23:56	JS
SL3809-053	5	JLE11B	5/12/2018	12:01:0 0:01	JS
RINSE	1	JLE11B	5/12/2018	12:05:0 0:05	JS
CCV	1	JLE11B	5/12/2018	12:09:0 0:09	JS
CCB	1	JLE11B	5/12/2018	12:13:0 0:13	JS
SL3809-054	5	JLE11B	5/12/2018	12:18:0 0:18	JS
SL3809-055	5	JLE11B	5/12/2018	12:22:0 0:22	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3951-001	5	JLE11B	5/12/2018	12:26:0 0:26	JS
SL3951-001L	25	JLE11B	5/12/2018	12:31:0 0:31	JS
SL3951-001A	5	JLE11B	5/12/2018	12:35:0 0:35	JS
SL3951-001S	5	JLE11B	5/12/2018	12:39:0 0:39	JS
SL3951-001P	5	JLE11B	5/12/2018	12:43:0 0:43	JS
SL3951-002	5	JLE11B	5/12/2018	12:48:0 0:48	JS
RINSE	1	JLE11B	5/12/2018	12:52:0 0:52	JS
PBSLE08IMS1	5	JLE11B	5/12/2018	12:56:0 0:56	JS
CCV	1	JLE11B	5/12/2018	1:00:00 1:00	JS
CCB	1	JLE11B	5/12/2018	1:04:00 1:04	JS
LCSOLE08IMS1	5	JLE11B	5/12/2018	1:08:00 1:08	JS
SL3809-016	5	JLE11B	5/12/2018	1:13:00 1:13	JS
SL3809-016L	25	JLE11B	5/12/2018	1:17:00 1:17	JS
SL3809-016A	5	JLE11B	5/12/2018	1:21:00 1:21	JS
SL3809-016S	5	JLE11B	5/12/2018	1:25:00 1:25	JS
SL3809-016P	5	JLE11B	5/12/2018	1:30:00 1:30	JS
SL3809-021	5	JLE11B	5/12/2018	1:34:00 1:34	JS
SL3809-022	5	JLE11B	5/12/2018	1:38:00 1:38	JS
SL3809-023	5	JLE11B	5/12/2018	1:43:00 1:43	JS
RINSE	1	JLE11B	5/12/2018	1:47:00 1:47	JS
CCV	1	JLE11B	5/12/2018	1:51:00 1:51	JS
CCB	1	JLE11B	5/12/2018	1:55:00 1:55	JS
SL3809-025	5	JLE11B	5/12/2018	2:00:00 2:00	JS
SL3809-026	5	JLE11B	5/12/2018	2:04:00 2:04	JS
SL3809-027	5	JLE11B	5/12/2018	2:08:00 2:08	JS
SL3809-028	5	JLE11B	5/12/2018	2:13:00 2:13	JS
SL3809-028	10	JLE11B	5/12/2018	2:17:00 2:17	JS
SL3809-029	5	JLE11B	5/12/2018	2:21:00 2:21	JS
SL3809-030	5	JLE11B	5/12/2018	2:25:00 2:25	JS
SL3809-031	5	JLE11B	5/12/2018	2:30:00 2:30	JS
SL3809-032	10	JLE11B	5/12/2018	2:34:00 2:34	JS
RINSE	1	JLE11B	5/12/2018	2:38:00 2:38	JS
CCV	1	JLE11B	5/12/2018	2:43:00 2:43	JS
CCB	1	JLE11B	5/12/2018	2:47:00 2:47	JS
SL3809-033	10	JLE11B	5/12/2018	2:51:00 2:51	JS
SL3809-034	10	JLE11B	5/12/2018	2:55:00 2:55	JS
SL3809-035	5	JLE11B	5/12/2018	3:00:00 3:00	JS
SL3809-036	5	JLE11B	5/12/2018	3:04:00 3:04	JS
SL3809-037	5	JLE11B	5/12/2018	3:09:00 3:09	JS
SL3809-038	5	JLE11B	5/12/2018	3:13:00 3:13	JS
SL3809-039	5	JLE11B	5/12/2018	3:17:00 3:17	JS
SL3809-040	5	JLE11B	5/12/2018	3:22:00 3:22	JS
SL3809-048	5	JLE11B	5/12/2018	3:26:00 3:26	JS
RINSE	1	JLE11B	5/12/2018	3:30:00 3:30	JS
CCV	1	JLE11B	5/12/2018	3:35:00 3:35	JS
CCB	1	JLE11B	5/12/2018	3:39:00 3:39	JS
PQL	1	JLE11B	5/12/2018	3:43:00 3:43	JS

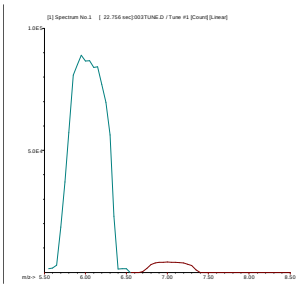
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
CCV	1	JLE11B	5/12/2018 3:47:00	3:47	JS
CCB	1	JLE11B	5/12/2018 3:51:00	3:51	JS

6020 QC Tune Report

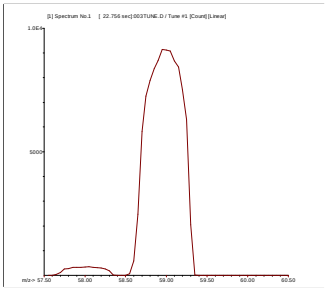
Data File: C:\ICPCHEM\1\DATA\JLE11A.B\003TUNE.D
Date Acquired: May 11 2018 03:24 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

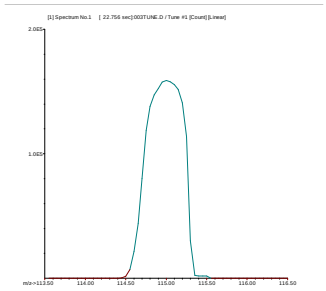
Element	Actual	Required	Flag
7 Li	2.24	5.00	
59 Co	2.52	5.00	
115 In	1.40	5.00	
205 Tl	1.74	5.00	



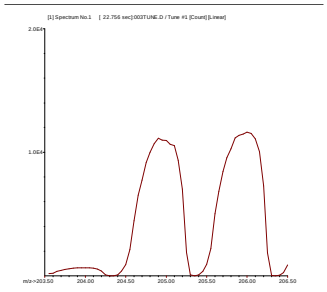
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



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:



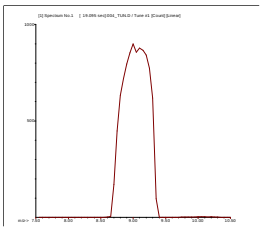
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

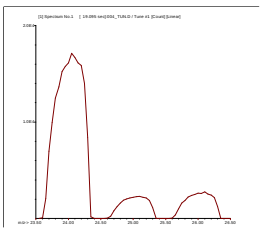
Data File: C:\ICPCHEM\1\DATA\JLE11A.B\004_TUN.D
Date Acquired: May 11 2018 03:27 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

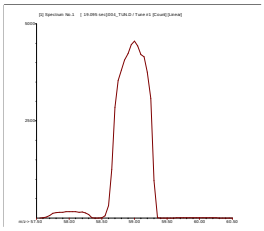
Element	Actual	Required	Flag
9 Be	3.13	5.00	
24 Mg	3.04	5.00	
59 Co	1.06	5.00	
115 In	1.50	5.00	
208 Pb	1.43	5.00	



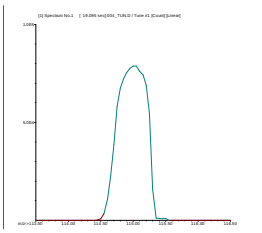
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



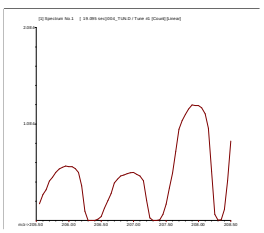
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
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 4000509

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.I
Date Acquired: May 11 2018 06:17 pm
Operator: JS
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: May 11 2018 06:20 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2844111.00	A	139300.00	4.90
9	Be	6.30	P	2.31	36.74
11	B	260.01	P	56.08	21.57
23	Na	35374.57	P	242.20	0.68
25	Mg	93.34	P	6.67	7.14
27	Al	1567.27	P	218.70	13.95
28	Si	1278140.00	A	12690.00	0.99
29	Si	101211.10	P	418.30	0.41
39	K	808431.00	A	11770.00	1.46
43	Ca	129.64	P	27.97	21.57
44	Ca	3503.88	P	44.91	1.28
45	Sc	2809797.00	A	79210.00	2.82
51	V	3077.00	P	322.50	10.48
52	Cr	8163.59	P	266.90	3.27
53	Cr	10389.43	P	228.40	2.20
55	Mn	1106.75	P	58.41	5.28
56	Fe	1699575.00	A	26100.00	1.54
57	Fe	8792.18	P	280.40	3.19
59	Co	124.45	P	27.76	22.31
60	Ni	58.51	P	5.09	8.71
63	Cu	303.35	P	26.03	8.58
65	Cu	183.34	P	45.83	25.00
66	Zn	983.40	P	29.63	3.01
68	Zn	1273.43	P	46.67	3.66
72	Ge	642252.38	P	6295.00	0.98
75	As	-250.96	P	242.20	96.51
82	Se	-15.90	P	10.25	64.45
88	Sr	88.90	P	11.11	12.50
89	Y	4985208.00	A	5424.00	0.11
98	Mo	48.08	P	16.61	34.55
107	Ag	33.33	P	5.77	17.32
109	Ag	18.89	P	5.09	26.96
111	Cd	857.36	P	24.03	2.80
114	Cd	0.74	P	2.95	399.24
115	In	4962449.00	A	44820.00	0.90
118	Sn	456.69	P	18.56	4.06
120	Sn	645.59	P	50.92	7.89
121	Sb	44.45	P	10.18	22.90
123	Sb	31.11	P	3.85	12.37
135	Ba	22.22	P	6.94	31.22
137	Ba	45.56	P	9.62	21.12
159	Tb	7051087.00	A	90010.00	1.28
182	W	38.89	P	1.93	4.95
203	Tl	408.91	P	20.09	4.91
205	Tl	996.74	P	53.34	5.35
208	Pb	1476.75	P	128.40	8.69
209	Bi	3594227.00	A	11450.00	0.32
232	Th	47.78	P	13.88	29.05
238	U	5.56	P	1.93	34.65

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\016CALI.D\016CALI.D#
Date Acquired: May 11 2018 06:21 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 11 2018 06:20 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2931355.00	A	70920.00	2.42
9 Be	106573.70	P	1622.00	1.52
11 B	54089.23	P	1565.00	2.89
23 Na	63601540.00	A	1718000.00	2.70
25 Mg	5438607.00	A	86330.00	1.59
27 Al	5354109.00	A	115400.00	2.16
28 Si	4284597.00	A	41870.00	0.98
29 Si	266486.41	P	998.80	0.37
39 K	80867672.00	A	1090000.00	1.35
43 Ca	150413.30	P	4180.00	2.78
44 Ca	2437266.00	A	6117.00	0.25
45 Sc	2812814.00	A	25690.00	0.91
51 V	517677.41	P	2932.00	0.57
52 Cr	456203.69	P	4227.00	0.93
53 Cr	59004.18	P	1272.00	2.16
55 Mn	589346.38	P	9749.00	1.65
56 Fe	97779520.00	A	768000.00	0.79
57 Fe	2406833.00	A	14720.00	0.61
59 Co	515124.69	P	2619.00	0.51
60 Ni	114913.50	P	1547.00	1.35
63 Cu	274185.00	P	5417.00	1.98
65 Cu	129263.30	P	1710.00	1.32
66 Zn	70025.76	P	676.60	0.97
68 Zn	50598.90	P	1237.00	2.44
72 Ge	622769.31	P	3436.00	0.55
75 As	67639.45	P	531.40	0.79
82 Se	5576.09	P	66.36	1.19
88 Sr	788962.69	A	5345.00	0.68
89 Y	4941294.00	A	21390.00	0.43
98 Mo	243432.09	P	1647.00	0.68
107 Ag	395281.50	P	1376.00	0.35
109 Ag	378730.09	P	2137.00	0.56
111 Cd	80254.87	P	833.30	1.04
114 Cd	176652.41	P	1112.00	0.63
115 In	4820432.00	A	32990.00	0.68
118 Sn	239066.09	P	1061.00	0.44
120 Sn	330234.09	P	1200.00	0.36
121 Sb	287803.41	P	1434.00	0.50
123 Sb	219236.30	P	2085.00	0.95
135 Ba	70655.81	P	216.40	0.31
137 Ba	123398.10	P	1256.00	1.02
159 Tb	7039091.00	A	39390.00	0.56
182 W	311043.59	P	1144.00	0.37
203 Tl	256375.20	P	948.90	0.37
205 Tl	600002.19	P	4261.00	0.71
208 Pb	821089.50	P	1934.00	0.24
209 Bi	3471543.00	A	47460.00	1.37
232 Th	830437.13	A	10630.00	1.28
238 U	770462.13	P	7400.00	0.96

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2931355.30	2.42	2844110.50	103.1	79.5 - 120.4	
45 Sc	2812814.00	0.91	2809797.00	100.1	79.5 - 120.4	
72 Ge	622769.25	0.55	642252.38	97.0	79.5 - 120.4	
159 Tb	7039091.50	0.56	7051087.50	99.8	79.5 - 120.4	
209 Bi	3471542.80	1.37	3594227.50	96.6	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000511

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\017_ICV.D\017_ICV.D#
Date Acquired: May 11 2018 06:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	20.96	ppb	3.05	20	104.8	
11 B	21.75	ppb	4.41	20	108.75	
23 Na	4,156.	ppb	5.35	4,000	103.9	
25 Mg	4,238.	ppb	1.60	4,000	105.95	
27 Al	414.2	ppb	1.79	400	103.55	
28 Si	432.6	ppb	5.03	400	108.15	
29 Si	413.3	ppb	3.95	400	103.325	
39 K	4,053.	ppb	1.13	4,000	101.325	
43 Ca	4,045.	ppb	2.09	4,000	101.125	
44 Ca	4,127.	ppb	2.18	4,000	103.175	
51 V	19.68	ppb	1.06	20	98.4	
52 Cr	19.91	ppb	1.13	20	99.55	
53 Cr	15.66	ppb	2.57	20	78.3	
55 Mn	19.92	ppb	1.46	20	99.6	
56 Fe	3,991.	ppb	0.61	4,000	99.775	
57 Fe	4,102.	ppb	0.98	4,000	102.55	
59 Co	20.2	ppb	1.26	20	101	
60 Ni	19.9	ppb	3.22	20	99.5	
63 Cu	20.28	ppb	0.33	20	101.4	
65 Cu	20.36	ppb	0.81	20	101.8	
66 Zn	20.31	ppb	2.01	20	101.55	
68 Zn	20.74	ppb	0.64	20	103.7	
75 As	20.28	ppb	1.08	20	101.4	
82 Se	20.95	ppb	1.64	20	104.75	
88 Sr	19.71	ppb	0.64	20	98.55	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	39.7	ppb	0.68	40	99.25	
107 Ag	20.44	ppb	0.80	20	102.2	
109 Ag	20.34	ppb	0.51	20	101.7	
111 Cd	20.53	ppb	0.25	20	102.65	
114 Cd	20.57	ppb	0.60	20	102.85	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.2	ppb	1.91	20	101	
120 Sn	20.14	ppb	1.40	20	100.7	
121 Sb	20.33	ppb	1.44	20	101.65	
123 Sb	20.33	ppb	0.81	20	101.65	
135 Ba	20.33	ppb	2.51	20	101.65	
137 Ba	20.54	ppb	1.76	20	102.7	
182 W	20.03	ppb	0.42	20	100.15	
203 Tl	20.52	ppb	0.95	20	102.6	
205 Tl	20.83	ppb	0.58	20	104.15	
208 Pb	20.27	ppb	0.77	20	101.35	
232 Th	19.97	ppb	0.52	20	99.85	
238 U	20.1	ppb	2.47	20	100.5	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2736177.00	6.27	2844110.50	96.2	80 - 120.4	
45 Sc	2715163.00	0.53	2809797.00	96.6	80 - 120.4	
72 Ge	617631.88	0.85	642252.38	96.2	80 - 120.4	
159 Tb	6926850.00	1.00	7051087.50	98.2	80 - 120.4	
209 Bi	3438285.30	0.40	3594227.50	95.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000512

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\018_ICB.D\018_ICB.D#
Date Acquired: May 11 2018 06:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	45.46	1.00	
11 B	1.592	ppb	14.79	1.00	
23 Na	-0.1731	ppb	100.29	1.00	
25 Mg	0.0312	ppb	314.80	1.00	
27 Al	0.0033	ppb	453.22	1.00	
28 Si	22.93	ppb	45.49	1.00	
29 Si	12.47	ppb	40.17	1.00	
39 K	0.3917	ppb	375.80	1.00	
43 Ca	1.051	ppb	214.56	1.00	
44 Ca	0.6982	ppb	45.26	1.00	
51 V	-0.0718	ppb	33.87	1.00	
52 Cr	-0.0611	ppb	14.96	1.00	
53 Cr	-4.619	ppb	4.91	1.00	
55 Mn	-0.0011	ppb	149.17	1.00	
56 Fe	-1.283	ppb	80.83	1.00	
57 Fe	1.667	ppb	36.53	1.00	
59 Co	0.0024	ppb	161.40	1.00	
60 Ni	0.0058	ppb	63.94	1.00	
63 Cu	0.0064	ppb	112.63	1.00	
65 Cu	-0.008	ppb	45.76	1.00	
66 Zn	-0.0432	ppb	49.47	1.00	
68 Zn	-0.0046	ppb	2369.90	1.00	
75 As	0.048	ppb	272.06	1.00	
82 Se	-0.0225	ppb	754.11	1.00	
88 Sr	0.0027	ppb	78.66	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0532	ppb	38.32	1.00	
107 Ag	0.0161	ppb	39.43	1.00	
109 Ag	0.0153	ppb	42.68	1.00	
111 Cd	-0.0343	ppb	27.88	1.00	
114 Cd	-0.0009	ppb	76.83	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0258	ppb	34.91	1.00	
120 Sn	0.0106	ppb	54.13	1.00	
121 Sb	0.0034	ppb	50.51	1.00	
123 Sb	0.0096	ppb	32.78	1.00	
135 Ba	0.0018	ppb	431.05	1.00	
137 Ba	-0.0015	ppb	262.14	1.00	
182 W	0.0498	ppb	18.59	1.00	
203 Tl	0.0023	ppb	306.83	1.00	
205 Tl	0.0008	ppb	230.86	1.00	
208 Pb	-0.0038	ppb	174.53	1.00	
232 Th	0.0534	ppb	10.41	1.00	
238 U	0.0046	ppb	60.53	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2675927.00	1.81	2844110.50	94.1	79.5 - 120	
45 Sc	2724571.30	1.54	2809797.00	97.0	79.5 - 120	
72 Ge	628654.81	0.42	642252.38	97.9	79.5 - 120	
159 Tb	6958238.50	0.68	7051087.50	98.7	79.5 - 120	
209 Bi	3518316.30	0.62	3594227.50	97.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000513

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\019_PQL.D\019_PQL.D#
Date Acquired: May 11 2018 06:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1957	ppb	7.68	0.20	97.85	
11 B	4.339	ppb	4.38	4.00	108.475	
23 Na	204.5	ppb	4.58	200.00	102.25	
25 Mg	19.64	ppb	4.58	20.00	98.2	
27 Al	19.77	ppb	2.79	20.00	98.85	
28 Si	112.7	ppb	10.52	100.00	112.7	
29 Si	106.	ppb	9.96	100.00	106	
39 K	200.4	ppb	4.05	200.00	100.2	
43 Ca	19.73	ppb	19.58	20.00	98.65	
44 Ca	19.82	ppb	7.96	20.00	99.1	
51 V	0.9221	ppb	7.51	1.00	92.21	
52 Cr	0.9501	ppb	5.48	1.00	95.01	
53 Cr	-3.128	ppb	3.97	---	#VALUE!	
55 Mn	0.3894	ppb	0.42	0.40	97.35	
56 Fe	16.43	ppb	14.73	20.00	82.15	
57 Fe	20.33	ppb	7.78	20.00	101.65	
59 Co	0.1962	ppb	3.90	0.20	98.1	
60 Ni	0.4064	ppb	11.16	0.40	101.6	
63 Cu	0.6246	ppb	0.76	0.60	104.1	
65 Cu	0.5771	ppb	6.32	0.60	96.1833	
66 Zn	2.015	ppb	2.51	2.00	100.75	
68 Zn	2.068	ppb	8.38	2.00	103.4	
75 As	0.9882	ppb	17.18	1.00	98.82	
82 Se	1.118	ppb	5.31	1.00	111.8	
88 Sr	0.9812	ppb	2.23	1.00	98.12	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9975	ppb	3.65	1.00	99.75	
107 Ag	0.2104	ppb	3.26	0.20	105.2	
109 Ag	0.2125	ppb	6.22	0.20	106.25	
111 Cd	0.2025	ppb	12.57	0.20	101.25	
114 Cd	0.2089	ppb	1.70	0.20	104.45	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	0.9798	ppb	4.59	1.00	97.98	
120 Sn	0.9935	ppb	1.41	1.00	99.35	
121 Sb	0.2096	ppb	11.21	0.20	104.8	
123 Sb	0.2008	ppb	8.78	0.20	100.4	
135 Ba	0.4165	ppb	0.34	0.40	104.125	
137 Ba	0.3766	ppb	5.49	0.40	94.15	
182 W	1.042	ppb	4.04	1.00	104.2	
203 Tl	0.1965	ppb	2.02	0.20	98.25	
205 Tl	0.2017	ppb	3.06	0.20	100.85	
208 Pb	0.2119	ppb	2.60	0.20	105.95	
232 Th	0.2129	ppb	4.36	0.20	106.45	
238 U	0.1866	ppb	2.14	0.20	93.3	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2742700.50	2.55	2844110.50	96.4	80 - 120.4	
45 Sc	2740519.50	2.09	2809797.00	97.5	80 - 120.4	
72 Ge	625656.56	0.05	642252.38	97.4	80 - 120.4	
159 Tb	6956509.00	1.69	7051087.50	98.7	80 - 120.4	
209 Bi	3496871.30	1.56	3594227.50	97.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000514

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\020SMPL.D\020SMPL.D#
Date Acquired: May 11 2018 06:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	101.53	100.	
11 B	0.4463	0.4463	ppb	17.07	1000.	
23 Na	0.031	0.031	ppb	537.94	200000.	
25 Mg	0.065	0.065	ppb	74.75	200000.	
27 Al	0.2511	0.2511	ppb	18.67	200000.	
28 Si	32.42	32.42	ppb	7.29	#VALUE!	
29 Si	15.78	15.78	ppb	33.64	10000.	
39 K	-1.391	-1.391	ppb	94.82	200000.	
43 Ca	-1.991	-1.991	ppb	61.78	#VALUE!	
44 Ca	0.5596	0.5596	ppb	32.36	200000.	
51 V	-0.1106	-0.1106	ppb	93.22	1000.	
52 Cr	-0.0481	-0.0481	ppb	23.31	2000.	
53 Cr	-3.924	-3.924	ppb	5.69	#VALUE!	
55 Mn	0.0107	0.0107	ppb	7.97	2000.	
56 Fe	4.922	4.922	ppb	40.39	#VALUE!	
57 Fe	1.782	1.782	ppb	22.42	100000.	
59 Co	-0.0034	-0.0034	ppb	72.08	1000.	
60 Ni	0.0079	0.0079	ppb	91.90	1000.	
63 Cu	0.0877	0.0877	ppb	15.52	#VALUE!	
65 Cu	0.0558	0.0558	ppb	21.98	2000.	
66 Zn	0.0401	0.0401	ppb	145.01	2000.	
68 Zn	0.1599	0.1599	ppb	19.13	#VALUE!	
75 As	0.1048	0.1048	ppb	65.13	1000.	
82 Se	0.1458	0.1458	ppb	110.36	1000.	
88 Sr	-0.0006	-0.0006	ppb	276.11	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0079	0.0079	ppb	53.65	1000.	
107 Ag	0.0046	0.0046	ppb	34.59	100.	
109 Ag	0.0043	0.0043	ppb	26.86	#VALUE!	
111 Cd	-0.0268	-0.0268	ppb	116.28	#VALUE!	
114 Cd	0.0005	0.0005	ppb	638.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0052	-0.0052	ppb	95.18	1000.	
120 Sn	-0.0009	-0.0009	ppb	384.77	#VALUE!	
121 Sb	0.0017	0.0017	ppb	74.69	#VALUE!	
123 Sb	0.0029	0.0029	ppb	68.41	1000.	
135 Ba	-0.0019	-0.0019	ppb	318.49	2000.	
137 Ba	0.0016	0.0016	ppb	126.57	#VALUE!	
182 W	0.0093	0.0093	ppb	92.57	1000.	
203 Tl	0.0079	0.0079	ppb	46.09	1000.	
205 Tl	0.0031	0.0031	ppb	186.68	#VALUE!	
208 Pb	0.0809	0.0809	ppb	11.28	2000.	
232 Th	0.0092	0.0092	ppb	32.66	1000.	
238 U	0.0005	0.0005	ppb	98.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2502433.00	1.25	2844110.50	88.0	69.5 - 120	
45 Sc	2621208.50	0.60	2809797.00	93.3	69.5 - 120	
72 Ge	597187.56	0.95	642252.38	93.0	69.5 - 120	
159 Tb	6804308.00	0.49	7051087.50	96.5	69.5 - 120	
209 Bi	3393525.00	0.83	3594227.50	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000515

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\021ICSA.D\021ICSA.D#
Date Acquired: May 11 2018 06:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0019	ppb	105.69		
11 B	0.7831	ppb	8.81		
23 Na	97,520.	ppb	2.82		
25 Mg	94,800.	ppb	1.54		
27 Al	96,990.	ppb	2.85		
28 Si	24.08	ppb	47.59		
29 Si	39.81	ppb	21.99		
39 K	96,810.	ppb	0.61		
43 Ca	99,610.	ppb	0.48		
44 Ca	95,750.	ppb	0.80		
51 V	0.1228	ppb	23.91		
52 Cr	0.8825	ppb	3.06		
53 Cr	-3.016	ppb	2.23		
55 Mn	0.3797	ppb	0.67		
56 Fe	96,110.	ppb	0.54		
57 Fe	92,660.	ppb	0.58		
59 Co	0.0776	ppb	4.75		
60 Ni	-0.3165	ppb	10.02		
63 Cu	4.186	ppb	1.25		
65 Cu	1.132	ppb	5.99		
66 Zn	2.127	ppb	1.44		
68 Zn	0.56	ppb	23.23		
75 As	0.2788	ppb	28.90		
82 Se	0.3681	ppb	11.46		
88 Sr	0.9284	ppb	1.75		
89 Y	--------	---	--------		
98 Mo	1,934.	ppb	0.43		
107 Ag	0.0379	ppb	12.24		
109 Ag	0.039	ppb	9.09		
111 Cd	0.0089	ppb	537.07		
114 Cd	0.0162	ppb	120.59		
115 In	--------	---	--------		
118 Sn	0.0388	ppb	42.66		
120 Sn	0.032	ppb	30.93		
121 Sb	0.0516	ppb	18.96		
123 Sb	0.0457	ppb	6.19		
135 Ba	0.1035	ppb	16.92		
137 Ba	0.0739	ppb	20.61		
182 W	0.2336	ppb	1.26		
203 Tl	0.0051	ppb	101.91		
205 Tl	0.0031	ppb	132.75		
208 Pb	0.1577	ppb	6.26		
232 Th	0.0536	ppb	20.12		
238 U	0.0011	ppb	89.67		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2632333.00	2.56	2844110.50	92.6	69.5 - 120.4	
45 Sc	2932201.50	3.17	2809797.00	104.4	69.5 - 120.4	
72 Ge	651694.56	2.88	642252.38	101.5	69.5 - 120.4	
159 Tb	6826769.50	1.05	7051087.50	96.8	69.5 - 120.4	
209 Bi	2913051.80	1.69	3594227.50	81.0	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\022ICSB.D\022ICSB.D#
Date Acquired: May 11 2018 06:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	21.24	ppb	1.17	20.00	79.5 - 120	
11 B	23.13	ppb	3.66	20.00	79.5 - 120	
23 Na	96,190.	ppb	3.92	#########	79.5 - 120	
25 Mg	95,470.	ppb	3.61	#########	79.5 - 120	
27 Al	96,230.	ppb	2.75	#########	79.5 - 120	
28 Si	513.8	ppb	5.10	---	##### - #####	
29 Si	504.8	ppb	7.41	---	##### - #####	
39 K	95,870.	ppb	3.26	#########	79.5 - 120	
43 Ca	99,650.	ppb	3.62	#########	79.5 - 120	
44 Ca	96,210.	ppb	1.56	#########	79.5 - 120	
51 V	20.51	ppb	2.16	20.00	79.5 - 120	
52 Cr	20.72	ppb	1.78	20.00	79.5 - 120	
53 Cr	19.06	ppb	3.34	---	##### - #####	
55 Mn	20.36	ppb	0.19	20.00	79.5 - 120	
56 Fe	97,540.	ppb	2.01	#########	79.5 - 120	
57 Fe	93,850.	ppb	0.21	#########	79.5 - 120	
59 Co	19.8	ppb	1.72	20.00	79.5 - 120	
60 Ni	18.82	ppb	0.42	20.00	79.5 - 120	
63 Cu	23.14	ppb	1.14	20.00	79.5 - 120	
65 Cu	20.35	ppb	2.74	20.00	79.5 - 120	
66 Zn	19.86	ppb	1.01	20.00	79.5 - 120	
68 Zn	18.55	ppb	0.66	20.00	79.5 - 120	
75 As	20.	ppb	1.14	20.00	79.5 - 120	
82 Se	19.19	ppb	1.36	20.00	79.5 - 120	
88 Sr	20.85	ppb	0.23	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,979.	ppb	1.04	2000.00	79.5 - 120	
107 Ag	18.47	ppb	0.10	20.00	79.5 - 120	
109 Ag	18.35	ppb	1.06	20.00	79.5 - 120	
111 Cd	18.5	ppb	0.84	20.00	79.5 - 120	
114 Cd	18.4	ppb	0.70	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.33	ppb	0.55	20.00	79.5 - 120	
120 Sn	21.19	ppb	0.27	20.00	79.5 - 120	
121 Sb	21.58	ppb	0.41	20.00	79.5 - 120	
123 Sb	21.4	ppb	0.55	20.00	79.5 - 120	
135 Ba	21.58	ppb	0.40	20.00	79.5 - 120	
137 Ba	21.36	ppb	0.30	20.00	79.5 - 120	
182 W	19.88	ppb	1.64	20.00	79.5 - 120	
203 Tl	21.39	ppb	2.15	20.00	79.5 - 120	
205 Tl	21.42	ppb	1.72	20.00	79.5 - 120	
208 Pb	21.46	ppb	1.53	20.00	79.5 - 120	
232 Th	22.17	ppb	1.03	20.00	79.5 - 120	
238 U	21.7	ppb	1.85	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2646425.80	0.63	2844110.50	93.0	69.5 - 120	
45 Sc	3035567.80	1.72	2809797.00	108.0	69.5 - 120	
72 Ge	664811.44	0.42	642252.38	103.5	69.5 - 120	
159 Tb	6890558.00	0.54	7051087.50	97.7	69.5 - 120	
209 Bi	2907023.80	1.18	3594227.50	80.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000517

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\023SMPL.D\023SMPL.D#
Date Acquired: May 11 2018 06:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	23.11	100.	
11 B	0.4741	0.4741	ppb	12.01	1000.	
23 Na	5.605	5.605	ppb	19.23	200000.	
25 Mg	1.254	1.254	ppb	137.40	200000.	
27 Al	1.454	1.454	ppb	115.13	200000.	
28 Si	41.11	41.11	ppb	8.56	#VALUE!	
29 Si	-22.61	-22.61	ppb	19.09	10000.	
39 K	-2.737	-2.737	ppb	59.55	200000.	
43 Ca	-0.1783	-0.1783	ppb	1157.60	#VALUE!	
44 Ca	2.675	2.675	ppb	90.92	200000.	
51 V	-0.0693	-0.0693	ppb	61.57	1000.	
52 Cr	0.0023	0.0023	ppb	1728.00	2000.	
53 Cr	-1.528	-1.528	ppb	29.31	#VALUE!	
55 Mn	0.0071	0.0071	ppb	67.43	2000.	
56 Fe	6.959	6.959	ppb	69.51	#VALUE!	
57 Fe	7.359	7.359	ppb	52.63	100000.	
59 Co	0.0019	0.0019	ppb	185.47	1000.	
60 Ni	0.0231	0.0231	ppb	12.68	1000.	
63 Cu	0.1141	0.1141	ppb	2.55	#VALUE!	
65 Cu	0.1077	0.1077	ppb	6.74	2000.	
66 Zn	0.1929	0.1929	ppb	15.43	2000.	
68 Zn	0.3248	0.3248	ppb	7.22	#VALUE!	
75 As	0.0217	0.0217	ppb	351.20	1000.	
82 Se	0.1498	0.1498	ppb	75.37	1000.	
88 Sr	0.0011	0.0011	ppb	224.60	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.138	1.138	ppb	55.63	1000.	
107 Ag	0.0088	0.0088	ppb	29.45	100.	
109 Ag	0.0091	0.0091	ppb	55.22	#VALUE!	
111 Cd	-0.0764	-0.0764	ppb	15.76	#VALUE!	
114 Cd	0.0016	0.0016	ppb	65.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0099	0.0099	ppb	92.88	1000.	
120 Sn	0.0021	0.0021	ppb	574.26	#VALUE!	
121 Sb	-0.0011	-0.0011	ppb	236.05	#VALUE!	
123 Sb	0.0018	0.0018	ppb	150.03	1000.	
135 Ba	0.0229	0.0229	ppb	53.60	2000.	
137 Ba	0.0254	0.0254	ppb	27.05	#VALUE!	
182 W	0.0079	0.0079	ppb	26.43	1000.	
203 Tl	0.0016	0.0016	ppb	159.18	1000.	
205 Tl	0.0041	0.0041	ppb	31.96	#VALUE!	
208 Pb	0.1048	0.1048	ppb	8.08	2000.	
232 Th	0.0122	0.0122	ppb	18.05	1000.	
238 U	0.0024	0.0024	ppb	48.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2781891.00	0.72	2844110.50	97.8	69.5 - 120	
45 Sc	2959036.50	0.59	2809797.00	105.3	69.5 - 120	
72 Ge	672289.44	1.03	642252.38	104.7	69.5 - 120	
159 Tb	7029585.00	0.72	7051087.50	99.7	69.5 - 120	
209 Bi	3327474.30	1.17	3594227.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000518

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\024SMPL.D\024SMPL.D#
Date Acquired: May 11 2018 06:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	106.	106.	ppb	3.08	100.	>LDR
11 B	0.1924	0.1924	ppb	21.44	1000.	
23 Na	3.99	3.99	ppb	16.53	200000.	
25 Mg	0.915	0.915	ppb	6.38	200000.	
27 Al	2.674	2.674	ppb	4.89	200000.	
28 Si	27.62	27.62	ppb	16.45	#VALUE!	
29 Si	2.321	2.321	ppb	278.80	10000.	
39 K	0.2438	0.2438	ppb	506.15	200000.	
43 Ca	1,281.	1,281.	ppb	1.85	#VALUE!	
44 Ca	-185.5	-185.5	ppb	14.54	200000.	LOW
51 V	1,023.	1,023.	ppb	0.37	1000.	>LDR
52 Cr	2,023.	2,023.	ppb	0.92	2000.	>LDR
53 Cr	2,252.	2,252.	ppb	0.81	#VALUE!	
55 Mn	2,011.	2,011.	ppb	0.93	2000.	>LDR
56 Fe	7.129	7.129	ppb	8.14	#VALUE!	
57 Fe	0.1383	0.1383	ppb	64.01	100000.	
59 Co	1,021.	1,021.	ppb	1.23	1000.	>LDR
60 Ni	1,030.	1,030.	ppb	1.21	1000.	>LDR
63 Cu	1,982.	1,982.	ppb	0.58	#VALUE!	
65 Cu	2,018.	2,018.	ppb	1.39	2000.	>LDR
66 Zn	2,028.	2,028.	ppb	1.34	2000.	>LDR
68 Zn	2,091.	2,091.	ppb	0.71	#VALUE!	
75 As	1,041.	1,041.	ppb	0.65	1000.	>LDR
82 Se	1,067.	1,067.	ppb	0.80	1000.	>LDR
88 Sr	1,921.	1,921.	ppb	0.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,007.	1,007.	ppb	0.32	1000.	>LDR
107 Ag	105.1	105.1	ppb	1.45	100.	>LDR
109 Ag	103.8	103.8	ppb	2.32	#VALUE!	
111 Cd	1,037.	1,037.	ppb	1.59	#VALUE!	
114 Cd	1,012.	1,012.	ppb	1.13	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,027.	1,027.	ppb	1.18	1000.	>LDR
120 Sn	1,019.	1,019.	ppb	0.99	#VALUE!	
121 Sb	1,034.	1,034.	ppb	1.01	#VALUE!	
123 Sb	1,042.	1,042.	ppb	1.25	1000.	>LDR
135 Ba	2,099.	2,099.	ppb	1.22	2000.	>LDR
137 Ba	2,046.	2,046.	ppb	0.62	#VALUE!	
182 W	987.	987.	ppb	0.09	1000.	
203 Tl	995.3	995.3	ppb	1.79	1000.	
205 Tl	997.4	997.4	ppb	1.16	#VALUE!	
208 Pb	1,982.	1,982.	ppb	0.93	2000.	
232 Th	965.9	965.9	ppb	0.19	1000.	
238 U	953.2	953.2	ppb	1.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2764505.30	1.44	2844110.50	97.2	69.5 - 120	
45 Sc	2812327.00	1.28	2809797.00	100.1	69.5 - 120	
72 Ge	628414.06	2.07	642252.38	97.8	69.5 - 120	
159 Tb	6909206.00	0.80	7051087.50	98.0	69.5 - 120	
209 Bi	3423627.50	0.82	3594227.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

16 :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 4000519

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\025SMPL.D\025SMPL.D#
Date Acquired: May 11 2018 06:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	0.0096	0.0096	ppb	50.31	100.	
11 B	0.5595	0.5595	ppb	4.10	1000.	
23 Na	202,600.	202,600.	ppb	3.44	200000.	>LDR
25 Mg	195,300.	195,300.	ppb	1.92	200000.	
27 Al	192,600.	192,600.	ppb	1.80	200000.	
28 Si	10,160.	10,160.	ppb	3.71	#VALUE!	
29 Si	10,280.	10,280.	ppb	1.86	10000.	>LDR
39 K	191,700.	191,700.	ppb	2.64	200000.	
43 Ca	192,300.	192,300.	ppb	3.51	#VALUE!	
44 Ca	189,400.	189,400.	ppb	2.55	200000.	
51 V	0.2004	0.2004	ppb	27.92	1000.	
52 Cr	3.062	3.062	ppb	3.95	2000.	
53 Cr	-2.006	-2.006	ppb	20.35	#VALUE!	
55 Mn	7.478	7.478	ppb	0.88	2000.	
56 Fe	95,530.	95,530.	ppb	1.27	#VALUE!	
57 Fe	92,110.	92,110.	ppb	0.08	100000.	
59 Co	2.759	2.759	ppb	1.26	1000.	
60 Ni	2.944	2.944	ppb	2.66	1000.	
63 Cu	10.15	10.15	ppb	1.31	#VALUE!	
65 Cu	3.176	3.176	ppb	2.69	2000.	
66 Zn	3.598	3.598	ppb	4.77	2000.	
68 Zn	1.21	1.21	ppb	3.10	#VALUE!	
75 As	0.5394	0.5394	ppb	8.25	1000.	
82 Se	0.4989	0.4989	ppb	50.49	1000.	
88 Sr	6.541	6.541	ppb	3.35	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.588	1.588	ppb	45.87	1000.	
107 Ag	0.3723	0.3723	ppb	4.50	100.	
109 Ag	0.3649	0.3649	ppb	4.56	#VALUE!	
111 Cd	0.0187	0.0187	ppb	177.21	#VALUE!	
114 Cd	0.0135	0.0135	ppb	265.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.6193	0.6193	ppb	25.14	1000.	
120 Sn	0.6304	0.6304	ppb	22.27	#VALUE!	
121 Sb	0.19	0.19	ppb	24.72	#VALUE!	
123 Sb	0.1966	0.1966	ppb	25.26	1000.	
135 Ba	0.2901	0.2901	ppb	32.51	2000.	
137 Ba	0.2913	0.2913	ppb	21.52	#VALUE!	
182 W	1.205	1.205	ppb	38.16	1000.	
203 Tl	0.0737	0.0737	ppb	54.01	1000.	
205 Tl	0.0566	0.0566	ppb	66.53	#VALUE!	
208 Pb	0.5269	0.5269	ppb	10.50	2000.	
232 Th	1.201	1.201	ppb	23.04	1000.	
238 U	0.1583	0.1583	ppb	38.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2721404.80	5.86	2844110.50	95.7	69.5 - 120	
45 Sc	3005638.50	4.95	2809797.00	107.0	69.5 - 120	
72 Ge	642207.88	3.89	642252.38	100.0	69.5 - 120	
159 Tb	6035088.00	1.07	7051087.50	85.6	69.5 - 120	
209 Bi	2362543.00	2.77	3594227.50	65.7	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

2 :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 4000520

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\026SMPL.D\026SMPL.D#
Date Acquired: May 11 2018 07:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	396.50	100.	
11 B	0.0896	0.0896	ppb	24.21	1000.	
23 Na	16.38	16.38	ppb	73.50	200000.	
25 Mg	5.566	5.566	ppb	164.07	200000.	
27 Al	6.547	6.547	ppb	160.68	200000.	
28 Si	59.83	59.83	ppb	17.23	#VALUE!	
29 Si	-12.02	-12.02	ppb	79.47	10000.	
39 K	4.87	4.87	ppb	179.69	200000.	
43 Ca	7.908	7.908	ppb	82.31	#VALUE!	
44 Ca	6.821	6.821	ppb	128.54	200000.	
51 V	-0.0549	-0.0549	ppb	40.28	1000.	
52 Cr	0.036	0.036	ppb	52.81	2000.	
53 Cr	-0.0637	-0.0637	ppb	504.63	#VALUE!	
55 Mn	0.0213	0.0213	ppb	29.90	2000.	
56 Fe	16.84	16.84	ppb	42.19	#VALUE!	
57 Fe	7.09	7.09	ppb	24.81	100000.	
59 Co	0.0026	0.0026	ppb	151.34	1000.	
60 Ni	0.0342	0.0342	ppb	17.99	1000.	
63 Cu	0.155	0.155	ppb	14.19	#VALUE!	
65 Cu	0.1306	0.1306	ppb	18.31	2000.	
66 Zn	0.1761	0.1761	ppb	11.47	2000.	
68 Zn	0.3532	0.3532	ppb	17.11	#VALUE!	
75 As	0.1769	0.1769	ppb	86.09	1000.	
82 Se	0.0245	0.0245	ppb	394.03	1000.	
88 Sr	0.0021	0.0021	ppb	204.35	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2251	0.2251	ppb	51.53	1000.	
107 Ag	0.0049	0.0049	ppb	86.17	100.	
109 Ag	0.0067	0.0067	ppb	12.41	#VALUE!	
111 Cd	-0.0687	-0.0687	ppb	21.68	#VALUE!	
114 Cd	0.0007	0.0007	ppb	383.66	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1051	0.1051	ppb	22.34	1000.	
120 Sn	0.0864	0.0864	ppb	24.29	#VALUE!	
121 Sb	0.0195	0.0195	ppb	9.29	#VALUE!	
123 Sb	0.0225	0.0225	ppb	18.91	1000.	
135 Ba	0.0339	0.0339	ppb	29.01	2000.	
137 Ba	0.0291	0.0291	ppb	8.20	#VALUE!	
182 W	0.2051	0.2051	ppb	46.87	1000.	
203 Tl	0.001	0.001	ppb	715.68	1000.	
205 Tl	0.0016	0.0016	ppb	418.78	#VALUE!	
208 Pb	0.1185	0.1185	ppb	9.94	2000.	
232 Th	0.0433	0.0433	ppb	73.16	1000.	
238 U	0.0069	0.0069	ppb	16.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3111777.80	1.91	2844110.50	109.4	69.5 - 120	
45 Sc	3177000.30	1.73	2809797.00	113.1	69.5 - 120	
72 Ge	714104.75	1.61	642252.38	111.2	69.5 - 120	
159 Tb	6805341.00	0.26	7051087.50	96.5	69.5 - 120	
209 Bi	3191624.00	0.53	3594227.50	88.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000521

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\027SMPL.D\027SMPL.D#
Date Acquired: May 11 2018 07:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	82.02	100.	
11 B	0.0732	0.0732	ppb	53.55	1000.	
23 Na	5.147	5.147	ppb	8.85	200000.	
25 Mg	0.2292	0.2292	ppb	6.25	200000.	
27 Al	0.4453	0.4453	ppb	1.32	200000.	
28 Si	58.17	58.17	ppb	18.27	#VALUE!	
29 Si	-2.456	-2.456	ppb	391.90	10000.	
39 K	-1.004	-1.004	ppb	245.22	200000.	
43 Ca	3.366	3.366	ppb	38.24	#VALUE!	
44 Ca	2.315	2.315	ppb	63.07	200000.	
51 V	-0.0324	-0.0324	ppb	63.94	1000.	
52 Cr	0.0505	0.0505	ppb	40.48	2000.	
53 Cr	0.6189	0.6189	ppb	8.64	#VALUE!	
55 Mn	0.011	0.011	ppb	35.51	2000.	
56 Fe	9.145	9.145	ppb	2.99	#VALUE!	
57 Fe	3.938	3.938	ppb	47.05	100000.	
59 Co	0.0028	0.0028	ppb	67.34	1000.	
60 Ni	0.0191	0.0191	ppb	34.31	1000.	
63 Cu	0.141	0.141	ppb	11.36	#VALUE!	
65 Cu	0.1157	0.1157	ppb	8.89	2000.	
66 Zn	0.2255	0.2255	ppb	16.84	2000.	
68 Zn	0.2499	0.2499	ppb	31.51	#VALUE!	
75 As	0.1267	0.1267	ppb	27.00	1000.	
82 Se	0.2225	0.2225	ppb	93.30	1000.	
88 Sr	0.0006	0.0006	ppb	233.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0908	0.0908	ppb	39.95	1000.	
107 Ag	0.0038	0.0038	ppb	16.35	100.	
109 Ag	0.0027	0.0027	ppb	38.34	#VALUE!	
111 Cd	-0.0693	-0.0693	ppb	27.26	#VALUE!	
114 Cd	0.0012	0.0012	ppb	70.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0403	0.0403	ppb	12.06	1000.	
120 Sn	0.0526	0.0526	ppb	28.15	#VALUE!	
121 Sb	0.0073	0.0073	ppb	30.12	#VALUE!	
123 Sb	0.0071	0.0071	ppb	18.23	1000.	
135 Ba	0.0381	0.0381	ppb	0.98	2000.	
137 Ba	0.0213	0.0213	ppb	50.96	#VALUE!	
182 W	0.0873	0.0873	ppb	42.59	1000.	
203 Tl	0.0015	0.0015	ppb	684.17	1000.	
205 Tl	-0.005	-0.005	ppb	174.91	#VALUE!	
208 Pb	0.1151	0.1151	ppb	8.79	2000.	
232 Th	0.0319	0.0319	ppb	56.94	1000.	
238 U	0.0031	0.0031	ppb	22.01	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2911613.30	0.80	2844110.50	102.4	69.5 - 120	
45 Sc	3008502.50	1.71	2809797.00	107.1	69.5 - 120	
72 Ge	677931.56	0.84	642252.38	105.6	69.5 - 120	
159 Tb	6792393.00	0.69	7051087.50	96.3	69.5 - 120	
209 Bi	3203547.80	1.21	3594227.50	89.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000522

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\028_CCV.D\028_CCV.D#
Date Acquired: May 11 2018 07:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	27.76	ppb	5.19	25	111.04	Fail
11 B	26.04	ppb	1.24	25	104.16	
23 Na	4,936.	ppb	2.99	5,000	98.72	
25 Mg	4,951.	ppb	3.17	5,000	99.02	
27 Al	494.1	ppb	1.07	500	98.82	
28 Si	519.3	ppb	0.68	500	103.86	
29 Si	472.6	ppb	1.17	500	94.52	
39 K	4,949.	ppb	2.47	5,000	98.98	
43 Ca	4,749.	ppb	2.15	5,000	94.98	
44 Ca	4,935.	ppb	1.03	5,000	98.7	
51 V	24.93	ppb	1.34	25	99.72	
52 Cr	25.01	ppb	1.08	25	100.04	
53 Cr	23.34	ppb	3.89	25	93.36	
55 Mn	24.8	ppb	0.73	25	99.2	
56 Fe	4,931.	ppb	1.33	5,000	98.62	
57 Fe	4,986.	ppb	0.94	5,000	99.72	
59 Co	24.99	ppb	0.79	25	99.96	
60 Ni	24.94	ppb	1.90	25	99.76	
63 Cu	25.28	ppb	0.78	25	101.12	
65 Cu	25.17	ppb	0.53	25	100.68	
66 Zn	24.66	ppb	1.59	25	98.64	
68 Zn	24.92	ppb	2.93	25	99.68	
75 As	24.92	ppb	1.93	25	99.68	
82 Se	24.99	ppb	1.25	25	99.96	
88 Sr	23.94	ppb	0.75	25	95.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.63	ppb	0.21	25	98.52	
107 Ag	24.76	ppb	1.12	25	99.04	
109 Ag	24.67	ppb	0.94	25	98.68	
111 Cd	24.68	ppb	0.97	25	98.72	
114 Cd	24.62	ppb	0.90	25	98.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.5	ppb	0.95	25	102	
120 Sn	25.33	ppb	1.27	25	101.32	
121 Sb	25.97	ppb	0.88	25	103.88	
123 Sb	25.86	ppb	0.64	25	103.44	
135 Ba	25.75	ppb	0.87	25	103	
137 Ba	25.49	ppb	0.55	25	101.96	
182 W	23.59	ppb	0.45	25	94.36	
203 Tl	24.61	ppb	2.46	25	98.44	
205 Tl	24.9	ppb	1.29	25	99.6	
208 Pb	24.77	ppb	1.68	25	99.08	
232 Th	23.55	ppb	1.86	25	94.2	
238 U	23.07	ppb	1.56	25	92.28	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2660030.30	3.69	2844110.50	93.5	80 - 120.4	
45 Sc	2924701.50	0.05	2809797.00	104.1	80 - 120.4	
72 Ge	649791.13	1.66	642252.38	101.2	80 - 120.4	
159 Tb	6926449.00	0.55	7051087.50	98.2	80 - 120.4	
209 Bi	3305539.00	1.59	3594227.50	92.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000523

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\029_CCB.D\029_CCB.D#
Date Acquired: May 11 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	77.43	1.00	
11 B	0.9267	ppb	14.28	1.00	
23 Na	2.341	ppb	2.54	1.00	
25 Mg	0.1353	ppb	60.24	1.00	
27 Al	0.0723	ppb	75.29	1.00	
28 Si	44.04	ppb	30.75	1.00	
29 Si	-4.201	ppb	238.28	1.00	
39 K	-2.272	ppb	26.22	1.00	
43 Ca	3.666	ppb	72.12	1.00	
44 Ca	0.9248	ppb	132.68	1.00	
51 V	-0.0141	ppb	613.80	1.00	
52 Cr	-0.0448	ppb	31.61	1.00	
53 Cr	-3.293	ppb	0.53	1.00	
55 Mn	0.0015	ppb	576.12	1.00	
56 Fe	-0.321	ppb	1072.00	1.00	
57 Fe	0.5402	ppb	207.89	1.00	
59 Co	-0.002	ppb	249.06	1.00	
60 Ni	-0.0009	ppb	428.44	1.00	
63 Cu	0.0208	ppb	19.51	1.00	
65 Cu	0.018	ppb	74.82	1.00	
66 Zn	-0.0094	ppb	562.40	1.00	
68 Zn	0.1326	ppb	96.68	1.00	
75 As	0.0655	ppb	116.40	1.00	
82 Se	0.0298	ppb	240.12	1.00	
88 Sr	0.0015	ppb	69.56	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0582	ppb	48.02	1.00	
107 Ag	0.0115	ppb	30.72	1.00	
109 Ag	0.0095	ppb	29.39	1.00	
111 Cd	-0.0303	ppb	57.37	1.00	
114 Cd	0.0012	ppb	55.03	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0389	ppb	29.88	1.00	
120 Sn	0.0443	ppb	13.07	1.00	
121 Sb	0.0099	ppb	6.61	1.00	
123 Sb	0.0103	ppb	57.86	1.00	
135 Ba	0.0036	ppb	241.98	1.00	
137 Ba	0.0097	ppb	118.30	1.00	
182 W	0.0714	ppb	36.22	1.00	
203 Tl	0.0053	ppb	137.64	1.00	
205 Tl	-0.0017	ppb	264.42	1.00	
208 Pb	-0.0118	ppb	41.28	1.00	
232 Th	0.0964	ppb	5.75	1.00	
238 U	0.0036	ppb	69.99	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2737194.30	2.73	2844110.50	96.2	79.5 - 120	
45 Sc	2883470.00	1.36	2809797.00	102.6	79.5 - 120	
72 Ge	652854.25	0.74	642252.38	101.7	79.5 - 120	
159 Tb	6877438.00	0.78	7051087.50	97.5	79.5 - 120	
209 Bi	3380464.30	0.18	3594227.50	94.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000524

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\030SMPL.D\030SMPL.D#
Date Acquired: May 11 2018 07:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4044-002
Misc Info: AQ
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0036	0.0036	ppb	66.29	100.	
11 B	14.33	14.33	ppb	1.50	1000.	
23 Na	15,270.	15,270.	ppb	1.39	200000.	
25 Mg	2,885.	2,885.	ppb	2.32	200000.	
27 Al	42.49	42.49	ppb	3.34	200000.	
28 Si	8,234.	8,234.	ppb	2.79	#VALUE!	
29 Si	8,732.	8,732.	ppb	1.57	10000.	
39 K	2,746.	2,746.	ppb	1.64	200000.	
43 Ca	14,650.	14,650.	ppb	0.86	#VALUE!	
44 Ca	14,620.	14,620.	ppb	1.13	200000.	
51 V	0.3516	0.3516	ppb	7.35	1000.	
52 Cr	1.029	1.029	ppb	4.13	2000.	
53 Cr	-2.241	-2.241	ppb	54.53	#VALUE!	
55 Mn	1.952	1.952	ppb	1.47	2000.	
56 Fe	5.52	5.52	ppb	35.25	#VALUE!	
57 Fe	3.012	3.012	ppb	69.32	100000.	
59 Co	0.0355	0.0355	ppb	24.99	1000.	
60 Ni	0.8047	0.8047	ppb	2.52	1000.	
63 Cu	1,805.	1,805.	ppb	0.50	#VALUE!	
65 Cu	1,831.	1,831.	ppb	0.94	2000.	
66 Zn	21.75	21.75	ppb	1.17	2000.	
68 Zn	22.18	22.18	ppb	0.61	#VALUE!	
75 As	0.3172	0.3172	ppb	27.29	1000.	
82 Se	0.3301	0.3301	ppb	9.98	1000.	
88 Sr	67.96	67.96	ppb	0.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.254	0.254	ppb	4.77	1000.	
107 Ag	0.0419	0.0419	ppb	12.84	100.	
109 Ag	0.0469	0.0469	ppb	11.95	#VALUE!	
111 Cd	-0.0792	-0.0792	ppb	24.55	#VALUE!	
114 Cd	0.0112	0.0112	ppb	47.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0028	-0.0028	ppb	216.93	1000.	
120 Sn	0.0047	0.0047	ppb	78.73	#VALUE!	
121 Sb	0.0593	0.0593	ppb	18.33	#VALUE!	
123 Sb	0.0537	0.0537	ppb	10.62	1000.	
135 Ba	6.441	6.441	ppb	0.58	2000.	
137 Ba	6.268	6.268	ppb	0.58	#VALUE!	
182 W	0.0351	0.0351	ppb	27.87	1000.	
203 Tl	0.0117	0.0117	ppb	78.69	1000.	
205 Tl	0.0094	0.0094	ppb	64.72	#VALUE!	
208 Pb	0.363	0.363	ppb	2.27	2000.	
232 Th	0.0639	0.0639	ppb	12.03	1000.	
238 U	0.3833	0.3833	ppb	1.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2595658.80	0.20	2844110.50	91.3	69.5 - 120	
45 Sc	2770126.80	0.88	2809797.00	98.6	69.5 - 120	
72 Ge	631551.00	0.35	642252.38	98.3	69.5 - 120	
159 Tb	6837805.50	0.80	7051087.50	97.0	69.5 - 120	
209 Bi	3348242.80	0.34	3594227.50	93.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000525

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\031SMPL.D\031SMPL.D#
Date Acquired: May 11 2018 07:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE09IMW1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	336.59	100.	
11 B	0.6679	0.6679	ppb	14.94	1000.	
23 Na	10.41	10.41	ppb	5.00	200000.	
25 Mg	7.884	7.884	ppb	4.84	200000.	
27 Al	4.835	4.835	ppb	0.77	200000.	
28 Si	57.93	57.93	ppb	9.52	#VALUE!	
29 Si	4.313	4.313	ppb	114.28	10000.	
39 K	-2.282	-2.282	ppb	20.89	200000.	
43 Ca	6.389	6.389	ppb	16.61	#VALUE!	
44 Ca	5.85	5.85	ppb	21.28	200000.	
51 V	-0.0633	-0.0633	ppb	189.60	1000.	
52 Cr	0.1218	0.1218	ppb	5.24	2000.	
53 Cr	6.264	6.264	ppb	3.39	#VALUE!	
55 Mn	0.0749	0.0749	ppb	5.50	2000.	
56 Fe	10.77	10.77	ppb	32.04	#VALUE!	
57 Fe	2.959	2.959	ppb	31.70	100000.	
59 Co	0.0051	0.0051	ppb	77.96	1000.	
60 Ni	0.0221	0.0221	ppb	46.38	1000.	
63 Cu	0.1084	0.1084	ppb	14.19	#VALUE!	
65 Cu	0.094	0.094	ppb	19.85	2000.	
66 Zn	0.6921	0.6921	ppb	2.98	2000.	
68 Zn	0.8131	0.8131	ppb	7.71	#VALUE!	
75 As	-0.0359	-0.0359	ppb	310.57	1000.	
82 Se	-0.0946	-0.0946	ppb	218.82	1000.	
88 Sr	0.0176	0.0176	ppb	22.38	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0202	0.0202	ppb	37.58	1000.	
107 Ag	0.0048	0.0048	ppb	22.84	100.	
109 Ag	0.0064	0.0064	ppb	6.77	#VALUE!	
111 Cd	-0.0731	-0.0731	ppb	27.34	#VALUE!	
114 Cd	-0.0012	-0.0012	ppb	212.45	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0554	0.0554	ppb	3.83	1000.	
120 Sn	0.0504	0.0504	ppb	9.36	#VALUE!	
121 Sb	0.0307	0.0307	ppb	25.31	#VALUE!	
123 Sb	0.0293	0.0293	ppb	6.82	1000.	
135 Ba	0.0536	0.0536	ppb	21.51	2000.	
137 Ba	0.0554	0.0554	ppb	29.20	#VALUE!	
182 W	0.0235	0.0235	ppb	31.50	1000.	
203 Tl	0.0052	0.0052	ppb	294.54	1000.	
205 Tl	-0.0009	-0.0009	ppb	390.16	#VALUE!	
208 Pb	0.0019	0.0019	ppb	126.82	2000.	
232 Th	0.0253	0.0253	ppb	29.72	1000.	
238 U	0.001	0.001	ppb	46.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2599309.30	3.54	2844110.50	91.4	69.5 - 120	
45 Sc	2729309.30	1.19	2809797.00	97.1	69.5 - 120	
72 Ge	621860.31	0.31	642252.38	96.8	69.5 - 120	
159 Tb	6717940.50	1.83	7051087.50	95.3	69.5 - 120	
209 Bi	3320114.00	2.14	3594227.50	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000526

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\032SMPL.D\032SMPL.D#
Date Acquired: May 11 2018 07:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE09IMW1
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	53.6	10.72	ppb	2.19	100.	
11 B	519.	103.8	ppb	6.71	1000.	
23 Na	8,040.	1,608.	ppb	5.96	200000.	
25 Mg	5,185.	1,037.	ppb	3.73	200000.	
27 Al	2,151.	430.2	ppb	2.97	200000.	
28 Si	1,264.5	252.9	ppb	1.34	#VALUE!	
29 Si	963.5	192.7	ppb	6.69	10000.	
39 K	10,405.	2,081.	ppb	4.93	200000.	
43 Ca	2,936.	587.2	ppb	5.54	#VALUE!	
44 Ca	2,512.5	502.5	ppb	2.96	200000.	
51 V	527.	105.4	ppb	2.29	1000.	
52 Cr	206.35	41.27	ppb	1.09	2000.	
53 Cr	240.55	48.11	ppb	1.76	#VALUE!	
55 Mn	533.	106.6	ppb	1.25	2000.	
56 Fe	1,073.5	214.7	ppb	0.50	#VALUE!	
57 Fe	1,035.5	207.1	ppb	0.28	100000.	
59 Co	545.5	109.1	ppb	0.72	1000.	
60 Ni	529.	105.8	ppb	0.93	1000.	
63 Cu	260.4	52.08	ppb	0.27	#VALUE!	
65 Cu	265.9	53.18	ppb	1.07	2000.	
66 Zn	532.5	106.5	ppb	1.01	2000.	
68 Zn	594.	118.8	ppb	0.34	#VALUE!	
75 As	107.45	21.49	ppb	0.75	1000.	
82 Se	107.8	21.56	ppb	0.53	1000.	
88 Sr	515.	103.	ppb	1.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	106.45	21.29	ppb	0.40	1000.	
107 Ag	53.5	10.7	ppb	1.78	100.	
109 Ag	53.55	10.71	ppb	0.65	#VALUE!	
111 Cd	269.05	53.81	ppb	0.43	#VALUE!	
114 Cd	269.5	53.9	ppb	0.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	536.5	107.3	ppb	2.59	1000.	
120 Sn	538.	107.6	ppb	2.48	#VALUE!	
121 Sb	110.15	22.03	ppb	3.67	#VALUE!	
123 Sb	110.25	22.05	ppb	1.86	1000.	
135 Ba	2,169.5	433.9	ppb	2.39	2000.	
137 Ba	2,200.	440.	ppb	1.59	#VALUE!	
182 W	102.3	20.46	ppb	2.59	1000.	
203 Tl	105.45	21.09	ppb	2.85	1000.	
205 Tl	106.6	21.32	ppb	2.44	#VALUE!	
208 Pb	107.45	21.49	ppb	2.88	2000.	
232 Th	97.35	19.47	ppb	2.84	1000.	
238 U	95.4	19.08	ppb	3.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2678651.80	1.69	2844110.50	94.2	69.5 - 120	
45 Sc	2755301.50	1.16	2809797.00	98.1	69.5 - 120	
72 Ge	621081.13	0.74	642252.38	96.7	69.5 - 120	
159 Tb	6870831.50	1.81	7051087.50	97.4	69.5 - 120	
209 Bi	3362659.00	2.25	3594227.50	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000527

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\033SMPL.D\033SMPL.D#
Date Acquired: May 11 2018 07:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3844-001
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0252	0.0252	ppb	18.86	100.	
11 B	65.91	65.91	ppb	1.72	1000.	
23 Na	183,400.	183,400.	ppb	0.97	200000.	
25 Mg	16,660.	16,660.	ppb	2.52	200000.	
27 Al	1,431.	1,431.	ppb	3.81	200000.	
28 Si	11,950.	11,950.	ppb	3.40	#VALUE!	
29 Si	13,000.	13,000.	ppb	1.81	10000.	>LDR
39 K	71,790.	71,790.	ppb	1.16	200000.	
43 Ca	33,530.	33,530.	ppb	1.75	#VALUE!	
44 Ca	32,340.	32,340.	ppb	1.90	200000.	
51 V	4.89	4.89	ppb	3.72	1000.	
52 Cr	16.05	16.05	ppb	2.93	2000.	
53 Cr	10.02	10.02	ppb	22.96	#VALUE!	
55 Mn	511.6	511.6	ppb	1.34	2000.	
56 Fe	832.3	832.3	ppb	1.51	#VALUE!	
57 Fe	820.4	820.4	ppb	0.84	100000.	
59 Co	0.6858	0.6858	ppb	4.10	1000.	
60 Ni	12.31	12.31	ppb	0.78	1000.	
63 Cu	181.7	181.7	ppb	0.77	#VALUE!	
65 Cu	178.	178.	ppb	0.87	2000.	
66 Zn	273.8	273.8	ppb	0.84	2000.	
68 Zn	271.	271.	ppb	0.84	#VALUE!	
75 As	1.404	1.404	ppb	14.45	1000.	
82 Se	1.652	1.652	ppb	1.63	1000.	
88 Sr	147.9	147.9	ppb	0.40	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.354	4.354	ppb	3.42	1000.	
107 Ag	0.0641	0.0641	ppb	4.65	100.	
109 Ag	0.0604	0.0604	ppb	9.01	#VALUE!	
111 Cd	0.171	0.171	ppb	8.56	#VALUE!	
114 Cd	0.2169	0.2169	ppb	2.71	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.636	4.636	ppb	0.60	1000.	
120 Sn	4.66	4.66	ppb	0.48	#VALUE!	
121 Sb	0.2445	0.2445	ppb	2.84	#VALUE!	
123 Sb	0.2603	0.2603	ppb	5.86	1000.	
135 Ba	63.76	63.76	ppb	0.39	2000.	
137 Ba	63.08	63.08	ppb	0.38	#VALUE!	
182 W	0.3578	0.3578	ppb	4.34	1000.	
203 Tl	0.0283	0.0283	ppb	20.34	1000.	
205 Tl	0.0182	0.0182	ppb	45.66	#VALUE!	
208 Pb	44.85	44.85	ppb	0.61	2000.	
232 Th	0.2807	0.2807	ppb	30.27	1000.	
238 U	0.1542	0.1542	ppb	5.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3827973.80	9.73	2844110.50	134.6	69.5 - 120	IS Fai
45 Sc	3509951.50	5.59	2809797.00	124.9	69.5 - 120	IS Fai
72 Ge	708694.00	4.80	642252.38	110.3	69.5 - 120	
159 Tb	6701818.00	1.89	7051087.50	95.0	69.5 - 120	
209 Bi	2945220.30	0.35	3594227.50	81.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.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 4000528

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\034SMPL.D\034SMPL.D#
Date Acquired: May 11 2018 07:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3855-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.01	0.01	ppb	8.49	100.	
11 B	194.	194.	ppb	5.76	1000.	
23 Na	121,200.	121,200.	ppb	3.69	200000.	
25 Mg	4,992.	4,992.	ppb	2.15	200000.	
27 Al	230.	230.	ppb	0.46	200000.	
28 Si	4,422.	4,422.	ppb	2.15	#VALUE!	
29 Si	4,641.	4,641.	ppb	0.97	10000.	
39 K	10,860.	10,860.	ppb	1.66	200000.	
43 Ca	27,110.	27,110.	ppb	1.27	#VALUE!	
44 Ca	27,000.	27,000.	ppb	1.64	200000.	
51 V	0.4186	0.4186	ppb	10.25	1000.	
52 Cr	1.573	1.573	ppb	3.59	2000.	
53 Cr	7.935	7.935	ppb	12.33	#VALUE!	
55 Mn	51.2	51.2	ppb	0.37	2000.	
56 Fe	450.2	450.2	ppb	1.34	#VALUE!	
57 Fe	445.1	445.1	ppb	0.34	100000.	
59 Co	0.4167	0.4167	ppb	1.99	1000.	
60 Ni	3.259	3.259	ppb	1.31	1000.	
63 Cu	31.99	31.99	ppb	0.75	#VALUE!	
65 Cu	28.23	28.23	ppb	0.80	2000.	
66 Zn	65.17	65.17	ppb	1.23	2000.	
68 Zn	62.99	62.99	ppb	0.39	#VALUE!	
75 As	1.195	1.195	ppb	9.97	1000.	
82 Se	0.5611	0.5611	ppb	9.30	1000.	
88 Sr	118.	118.	ppb	1.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.9841	0.9841	ppb	1.29	1000.	
107 Ag	0.0798	0.0798	ppb	5.72	100.	
109 Ag	0.092	0.092	ppb	2.59	#VALUE!	
111 Cd	0.0368	0.0368	ppb	50.80	#VALUE!	
114 Cd	0.0726	0.0726	ppb	20.51	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.702	3.702	ppb	2.06	1000.	
120 Sn	3.645	3.645	ppb	0.39	#VALUE!	
121 Sb	0.583	0.583	ppb	2.62	#VALUE!	
123 Sb	0.6023	0.6023	ppb	5.85	1000.	
135 Ba	16.48	16.48	ppb	1.90	2000.	
137 Ba	16.47	16.47	ppb	1.00	#VALUE!	
182 W	0.0702	0.0702	ppb	12.82	1000.	
203 Tl	0.0194	0.0194	ppb	33.90	1000.	
205 Tl	0.0112	0.0112	ppb	96.69	#VALUE!	
208 Pb	1.658	1.658	ppb	1.84	2000.	
232 Th	0.029	0.029	ppb	40.26	1000.	
238 U	2.185	2.185	ppb	1.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2730179.80	3.47	2844110.50	96.0	69.5 - 120	
45 Sc	2873332.80	0.97	2809797.00	102.3	69.5 - 120	
72 Ge	636786.06	0.35	642252.38	99.1	69.5 - 120	
159 Tb	6593341.50	0.82	7051087.50	93.5	69.5 - 120	
209 Bi	2974434.00	0.91	3594227.50	82.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000529

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\035SMPL.D\035SMPL.D#
Date Acquired: May 11 2018 07:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE11IMW1
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	139.16	100.	
11 B	8.183	8.183	ppb	16.13	1000.	
23 Na	16.61	16.61	ppb	1.52	200000.	
25 Mg	8.221	8.221	ppb	3.30	200000.	
27 Al	5.079	5.079	ppb	2.56	200000.	
28 Si	61.02	61.02	ppb	11.42	#VALUE!	
29 Si	33.01	33.01	ppb	6.85	10000.	
39 K	6.854	6.854	ppb	26.64	200000.	
43 Ca	4.088	4.088	ppb	38.63	#VALUE!	
44 Ca	3.471	3.471	ppb	32.73	200000.	
51 V	0.0068	0.0068	ppb	1855.50	1000.	
52 Cr	0.3424	0.3424	ppb	4.74	2000.	
53 Cr	9.221	9.221	ppb	3.65	#VALUE!	
55 Mn	0.094	0.094	ppb	6.62	2000.	
56 Fe	24.44	24.44	ppb	10.49	#VALUE!	
57 Fe	5.791	5.791	ppb	22.07	100000.	
59 Co	0.0023	0.0023	ppb	154.35	1000.	
60 Ni	0.0128	0.0128	ppb	18.06	1000.	
63 Cu	0.0516	0.0516	ppb	14.44	#VALUE!	
65 Cu	0.0384	0.0384	ppb	19.46	2000.	
66 Zn	0.5964	0.5964	ppb	13.75	2000.	
68 Zn	0.6599	0.6599	ppb	3.10	#VALUE!	
75 As	0.2156	0.2156	ppb	40.92	1000.	
82 Se	0.0639	0.0639	ppb	75.24	1000.	
88 Sr	0.0064	0.0064	ppb	48.69	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0073	0.0073	ppb	11.57	1000.	
107 Ag	0.0034	0.0034	ppb	32.28	100.	
109 Ag	0.0037	0.0037	ppb	62.83	#VALUE!	
111 Cd	-0.0334	-0.0334	ppb	0.76	#VALUE!	
114 Cd	0.0022	0.0022	ppb	60.73	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1795	0.1795	ppb	8.14	1000.	
120 Sn	0.1908	0.1908	ppb	1.21	#VALUE!	
121 Sb	0.0116	0.0116	ppb	33.81	#VALUE!	
123 Sb	0.0134	0.0134	ppb	13.41	1000.	
135 Ba	0.0335	0.0335	ppb	64.57	2000.	
137 Ba	0.0204	0.0204	ppb	10.89	#VALUE!	
182 W	0.0141	0.0141	ppb	41.68	1000.	
203 Tl	0.0181	0.0181	ppb	51.85	1000.	
205 Tl	0.0056	0.0056	ppb	126.42	#VALUE!	
208 Pb	0.1188	0.1188	ppb	7.46	2000.	
232 Th	0.0032	0.0032	ppb	74.79	1000.	
238 U	0.0009	0.0009	ppb	91.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2829275.50	2.58	2844110.50	99.5	69.5 - 120	
45 Sc	2786897.50	0.78	2809797.00	99.2	69.5 - 120	
72 Ge	631357.69	0.80	642252.38	98.3	69.5 - 120	
159 Tb	6534282.00	0.86	7051087.50	92.7	69.5 - 120	
209 Bi	3237179.30	1.33	3594227.50	90.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000530

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\036SMPL.D\036SMPL.D#
Date Acquired: May 11 2018 07:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE11IMW1
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	467.7	93.54	ppb	3.59	1000.	
23 Na	8,210.	1,642.	ppb	1.31	200000.	
25 Mg	5,525.	1,105.	ppb	3.61	200000.	
27 Al	2,181.	436.2	ppb	0.77	200000.	
28 Si	1,004.5	200.9	ppb	4.13	#VALUE!	
29 Si	808.5	161.7	ppb	7.39	10000.	
39 K	10,300.	2,060.	ppb	0.37	200000.	
43 Ca	2,811.5	562.3	ppb	5.43	#VALUE!	
44 Ca	2,471.	494.2	ppb	2.76	200000.	
51 V	533.5	106.7	ppb	1.60	1000.	
52 Cr	205.7	41.14	ppb	0.65	2000.	
53 Cr	250.25	50.05	ppb	1.45	#VALUE!	
55 Mn	530.5	106.1	ppb	1.68	2000.	
56 Fe	1,109.	221.8	ppb	2.36	#VALUE!	
57 Fe	1,023.5	204.7	ppb	0.92	100000.	
59 Co	545.	109.	ppb	2.09	1000.	
60 Ni	530.5	106.1	ppb	0.83	1000.	
63 Cu	265.3	53.06	ppb	0.33	#VALUE!	
65 Cu	267.5	53.5	ppb	0.22	2000.	
66 Zn	536.5	107.3	ppb	0.33	2000.	
68 Zn	593.5	118.7	ppb	1.91	#VALUE!	
75 As	105.95	21.19	ppb	1.21	1000.	
82 Se	107.3	21.46	ppb	1.11	1000.	
88 Sr	486.65	97.33	ppb	0.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	99.45	19.89	ppb	0.78	1000.	
107 Ag	51.2	10.24	ppb	0.46	100.	
109 Ag	51.1	10.22	ppb	1.10	#VALUE!	
111 Cd	257.75	51.55	ppb	0.79	#VALUE!	
114 Cd	257.05	51.41	ppb	1.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	508.5	101.7	ppb	1.45	1000.	
120 Sn	512.5	102.5	ppb	1.99	#VALUE!	
121 Sb	104.65	20.93	ppb	2.70	#VALUE!	
123 Sb	104.2	20.84	ppb	2.01	1000.	
135 Ba	2,106.	421.2	ppb	2.20	2000.	
137 Ba	2,127.5	425.5	ppb	1.35	#VALUE!	
182 W	99.05	19.81	ppb	2.32	1000.	
203 Tl	103.55	20.71	ppb	2.50	1000.	
205 Tl	104.95	20.99	ppb	0.39	#VALUE!	
208 Pb	105.35	21.07	ppb	0.32	2000.	
232 Th	99.15	19.83	ppb	1.80	1000.	
238 U	105.25	21.05	ppb	1.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3304482.80	6.00	2844110.50	116.2	69.5 - 120	
45 Sc	2998253.00	2.96	2809797.00	106.7	69.5 - 120	
72 Ge	639103.19	1.47	642252.38	99.5	69.5 - 120	
159 Tb	6918376.00	1.58	7051087.50	98.1	69.5 - 120	
209 Bi	3430764.80	1.01	3594227.50	95.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000531

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\037SMPL.D\037SMPL.D#
Date Acquired: May 11 2018 07:46 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3997-001
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0023	0.0023	ppb	47.29	100.	
11 B	12.44	12.44	ppb	8.02	1000.	
23 Na	9,040.	9,040.	ppb	3.45	200000.	
25 Mg	6,469.	6,469.	ppb	1.56	200000.	
27 Al	4.602	4.602	ppb	3.05	200000.	
28 Si	3,554.	3,554.	ppb	2.06	#VALUE!	
29 Si	3,620.	3,620.	ppb	4.88	10000.	
39 K	744.5	744.5	ppb	1.06	200000.	
43 Ca	19,530.	19,530.	ppb	1.72	#VALUE!	
44 Ca	19,210.	19,210.	ppb	1.38	200000.	
51 V	0.0404	0.0404	ppb	47.21	1000.	
52 Cr	0.4023	0.4023	ppb	12.64	2000.	
53 Cr	5.817	5.817	ppb	15.69	#VALUE!	
55 Mn	0.2107	0.2107	ppb	8.30	2000.	
56 Fe	12.53	12.53	ppb	35.17	#VALUE!	
57 Fe	4.725	4.725	ppb	65.71	100000.	
59 Co	0.0298	0.0298	ppb	5.18	1000.	
60 Ni	0.2908	0.2908	ppb	9.81	1000.	
63 Cu	0.485	0.485	ppb	4.46	#VALUE!	
65 Cu	0.2311	0.2311	ppb	4.80	2000.	
66 Zn	0.5377	0.5377	ppb	11.41	2000.	
68 Zn	0.9714	0.9714	ppb	11.52	#VALUE!	
75 As	0.2675	0.2675	ppb	58.88	1000.	
82 Se	0.2749	0.2749	ppb	75.26	1000.	
88 Sr	71.23	71.23	ppb	1.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0393	0.0393	ppb	30.03	1000.	
107 Ag	0.0096	0.0096	ppb	7.94	100.	
109 Ag	0.0099	0.0099	ppb	26.51	#VALUE!	
111 Cd	-0.0444	-0.0444	ppb	18.32	#VALUE!	
114 Cd	0.0086	0.0086	ppb	46.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1325	0.1325	ppb	21.29	1000.	
120 Sn	0.1311	0.1311	ppb	18.83	#VALUE!	
121 Sb	0.0155	0.0155	ppb	16.70	#VALUE!	
123 Sb	0.0195	0.0195	ppb	8.04	1000.	
135 Ba	14.29	14.29	ppb	0.87	2000.	
137 Ba	14.44	14.44	ppb	1.41	#VALUE!	
182 W	0.0547	0.0547	ppb	20.28	1000.	
203 Tl	0.0208	0.0208	ppb	3.82	1000.	
205 Tl	0.0166	0.0166	ppb	14.79	#VALUE!	
208 Pb	0.1027	0.1027	ppb	15.07	2000.	
232 Th	0.2462	0.2462	ppb	40.22	1000.	
238 U	0.0074	0.0074	ppb	24.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3158586.00	2.02	2844110.50	111.1	69.5 - 120	
45 Sc	2913932.80	0.16	2809797.00	103.7	69.5 - 120	
72 Ge	638246.50	0.98	642252.38	99.4	69.5 - 120	
159 Tb	6844421.50	0.90	7051087.50	97.1	69.5 - 120	
209 Bi	3393625.00	1.22	3594227.50	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000532

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\038SMPL.D\038SMPL.D#
Date Acquired: May 11 2018 07:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3997-002
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0051	0.0051	ppb	34.80	100.	
11 B	12.97	12.97	ppb	3.07	1000.	
23 Na	16,670.	16,670.	ppb	1.96	200000.	
25 Mg	11,500.	11,500.	ppb	2.45	200000.	
27 Al	5.547	5.547	ppb	3.17	200000.	
28 Si	3,125.	3,125.	ppb	4.02	#VALUE!	
29 Si	3,065.	3,065.	ppb	3.00	10000.	
39 K	1,088.	1,088.	ppb	1.43	200000.	
43 Ca	32,630.	32,630.	ppb	2.76	#VALUE!	
44 Ca	32,000.	32,000.	ppb	2.09	200000.	
51 V	-0.0545	-0.0545	ppb	173.79	1000.	
52 Cr	0.4012	0.4012	ppb	0.55	2000.	
53 Cr	4.881	4.881	ppb	10.40	#VALUE!	
55 Mn	0.5113	0.5113	ppb	3.33	2000.	
56 Fe	17.01	17.01	ppb	15.46	#VALUE!	
57 Fe	9.438	9.438	ppb	41.12	100000.	
59 Co	0.0572	0.0572	ppb	18.04	1000.	
60 Ni	0.5015	0.5015	ppb	6.70	1000.	
63 Cu	0.8229	0.8229	ppb	1.56	#VALUE!	
65 Cu	0.3208	0.3208	ppb	10.39	2000.	
66 Zn	1.605	1.605	ppb	10.86	2000.	
68 Zn	2.961	2.961	ppb	2.92	#VALUE!	
75 As	0.2156	0.2156	ppb	130.29	1000.	
82 Se	0.4305	0.4305	ppb	32.08	1000.	
88 Sr	128.5	128.5	ppb	1.54	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0277	0.0277	ppb	43.54	1000.	
107 Ag	0.0085	0.0085	ppb	17.81	100.	
109 Ag	0.0079	0.0079	ppb	22.18	#VALUE!	
111 Cd	0.0009	0.0009	ppb	2650.70	#VALUE!	
114 Cd	0.0277	0.0277	ppb	20.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0748	0.0748	ppb	15.67	1000.	
120 Sn	0.0718	0.0718	ppb	13.79	#VALUE!	
121 Sb	0.0156	0.0156	ppb	13.48	#VALUE!	
123 Sb	0.0227	0.0227	ppb	22.87	1000.	
135 Ba	42.28	42.28	ppb	2.04	2000.	
137 Ba	42.01	42.01	ppb	2.31	#VALUE!	
182 W	0.0194	0.0194	ppb	58.09	1000.	
203 Tl	0.0285	0.0285	ppb	29.48	1000.	
205 Tl	0.025	0.025	ppb	33.95	#VALUE!	
208 Pb	0.128	0.128	ppb	10.17	2000.	
232 Th	0.0948	0.0948	ppb	5.69	1000.	
238 U	0.0035	0.0035	ppb	30.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2866352.80	2.44	2844110.50	100.8	69.5 - 120	
45 Sc	2794496.00	1.48	2809797.00	99.5	69.5 - 120	
72 Ge	609509.69	0.95	642252.38	94.9	69.5 - 120	
159 Tb	6713810.50	1.00	7051087.50	95.2	69.5 - 120	
209 Bi	3358746.00	1.08	3594227.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000533

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\039SMPL.D\039SMPL.D#
Date Acquired: May 11 2018 07:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3998-001
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0057	0.0057	ppb	27.80	100.	
11 B	15.72	15.72	ppb	4.37	1000.	
23 Na	51,800.	51,800.	ppb	3.07	200000.	
25 Mg	18,500.	18,500.	ppb	2.98	200000.	
27 Al	6.19	6.19	ppb	2.53	200000.	
28 Si	2,353.	2,353.	ppb	2.01	#VALUE!	
29 Si	2,326.	2,326.	ppb	1.48	10000.	
39 K	1,615.	1,615.	ppb	4.60	200000.	
43 Ca	60,500.	60,500.	ppb	3.35	#VALUE!	
44 Ca	57,310.	57,310.	ppb	2.40	200000.	
51 V	-0.0277	-0.0277	ppb	313.98	1000.	
52 Cr	0.7114	0.7114	ppb	11.75	2000.	
53 Cr	3.247	3.247	ppb	3.90	#VALUE!	
55 Mn	0.6467	0.6467	ppb	2.02	2000.	
56 Fe	27.97	27.97	ppb	1.66	#VALUE!	
57 Fe	27.	27.	ppb	6.75	100000.	
59 Co	0.1587	0.1587	ppb	9.82	1000.	
60 Ni	0.6052	0.6052	ppb	8.42	1000.	
63 Cu	2.308	2.308	ppb	1.37	#VALUE!	
65 Cu	0.6703	0.6703	ppb	2.87	2000.	
66 Zn	2.072	2.072	ppb	1.41	2000.	
68 Zn	3.335	3.335	ppb	1.45	#VALUE!	
75 As	0.4455	0.4455	ppb	33.31	1000.	
82 Se	0.5939	0.5939	ppb	26.72	1000.	
88 Sr	232.1	232.1	ppb	0.81	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0267	0.0267	ppb	8.48	1000.	
107 Ag	0.0111	0.0111	ppb	16.45	100.	
109 Ag	0.0103	0.0103	ppb	7.32	#VALUE!	
111 Cd	0.0341	0.0341	ppb	98.07	#VALUE!	
114 Cd	0.0396	0.0396	ppb	22.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0531	0.0531	ppb	33.04	1000.	
120 Sn	0.0574	0.0574	ppb	15.91	#VALUE!	
121 Sb	0.0193	0.0193	ppb	14.86	#VALUE!	
123 Sb	0.0222	0.0222	ppb	19.55	1000.	
135 Ba	46.17	46.17	ppb	0.83	2000.	
137 Ba	45.74	45.74	ppb	1.39	#VALUE!	
182 W	0.0133	0.0133	ppb	17.17	1000.	
203 Tl	0.0194	0.0194	ppb	15.10	1000.	
205 Tl	0.0245	0.0245	ppb	43.65	#VALUE!	
208 Pb	0.1442	0.1442	ppb	3.00	2000.	
232 Th	0.0542	0.0542	ppb	13.80	1000.	
238 U	0.0036	0.0036	ppb	6.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3060444.00	3.56	2844110.50	107.6	69.5 - 120	
45 Sc	2869928.00	1.35	2809797.00	102.1	69.5 - 120	
72 Ge	618023.50	0.95	642252.38	96.2	69.5 - 120	
159 Tb	6832819.50	1.68	7051087.50	96.9	69.5 - 120	
209 Bi	3302295.30	1.29	3594227.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000534

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\040_CCV.D\040_CCV.D#
Date Acquired: May 11 2018 07:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.13	ppb	5.11	25	100.52	
11 B	24.86	ppb	2.79	25	99.44	
23 Na	5,580.	ppb	7.27	5,000	111.6	Fail
25 Mg	5,501.	ppb	4.91	5,000	110.02	
27 Al	521.2	ppb	0.95	500	104.24	
28 Si	465.6	ppb	1.97	500	93.12	
29 Si	463.	ppb	4.29	500	92.6	
39 K	5,091.	ppb	2.49	5,000	101.82	
43 Ca	4,877.	ppb	2.80	5,000	97.54	
44 Ca	5,046.	ppb	1.74	5,000	100.92	
51 V	25.76	ppb	1.11	25	103.04	
52 Cr	25.71	ppb	0.83	25	102.84	
53 Cr	28.09	ppb	11.53	25	112.36	
55 Mn	25.36	ppb	1.05	25	101.44	
56 Fe	4,986.	ppb	1.41	5,000	99.72	
57 Fe	5,072.	ppb	1.86	5,000	101.44	
59 Co	25.57	ppb	1.74	25	102.28	
60 Ni	25.87	ppb	1.09	25	103.48	
63 Cu	25.95	ppb	0.36	25	103.8	
65 Cu	25.82	ppb	1.64	25	103.28	
66 Zn	25.4	ppb	0.83	25	101.6	
68 Zn	26.04	ppb	1.75	25	104.16	
75 As	24.97	ppb	0.84	25	99.88	
82 Se	25.85	ppb	0.06	25	103.4	
88 Sr	23.49	ppb	0.48	25	93.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.1	ppb	1.01	25	96.4	
107 Ag	24.41	ppb	0.23	25	97.64	
109 Ag	24.41	ppb	0.65	25	97.64	
111 Cd	24.4	ppb	1.70	25	97.6	
114 Cd	24.39	ppb	1.22	25	97.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.95	ppb	1.41	25	99.8	
120 Sn	24.77	ppb	1.21	25	99.08	
121 Sb	25.12	ppb	1.13	25	100.48	
123 Sb	25.14	ppb	1.41	25	100.56	
135 Ba	25.43	ppb	1.79	25	101.72	
137 Ba	25.67	ppb	1.59	25	102.68	
182 W	25.03	ppb	1.96	25	100.12	
203 Tl	25.1	ppb	1.20	25	100.4	
205 Tl	25.28	ppb	1.46	25	101.12	
208 Pb	25.49	ppb	1.76	25	101.96	
232 Th	25.23	ppb	2.33	25	100.92	
238 U	26.95	ppb	1.72	25	107.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3708157.50	10.46	2844110.50	130.4	80 - 120.4	ISFail
45 Sc	3090825.50	2.92	2809797.00	110.0	80 - 120.4	
72 Ge	651285.38	2.12	642252.38	101.4	80 - 120.4	
159 Tb	6978229.00	1.67	7051087.50	99.0	80 - 120.4	
209 Bi	3580422.00	1.46	3594227.50	99.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\041_CCB.D\041_CCB.D#
Date Acquired: May 11 2018 08:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0015	ppb	37.14	1.00	
11 B	2.55	ppb	17.38	1.00	
23 Na	2.096	ppb	7.86	1.00	
25 Mg	0.1364	ppb	83.21	1.00	
27 Al	0.0183	ppb	164.57	1.00	
28 Si	4.418	ppb	210.03	1.00	
29 Si	12.24	ppb	157.11	1.00	
39 K	4.247	ppb	37.09	1.00	
43 Ca	-0.6794	ppb	279.66	1.00	
44 Ca	-0.442	ppb	201.33	1.00	
51 V	-0.0287	ppb	58.84	1.00	
52 Cr	0.1983	ppb	11.35	1.00	
53 Cr	-3.238	ppb	10.66	1.00	
55 Mn	0.005	ppb	137.58	1.00	
56 Fe	10.54	ppb	26.12	1.00	
57 Fe	2.123	ppb	82.90	1.00	
59 Co	0.0029	ppb	108.88	1.00	
60 Ni	-0.0054	ppb	141.80	1.00	
63 Cu	0.0124	ppb	65.32	1.00	
65 Cu	0.0014	ppb	449.35	1.00	
66 Zn	0.0026	ppb	2668.40	1.00	
68 Zn	0.1229	ppb	26.89	1.00	
75 As	0.1301	ppb	62.97	1.00	
82 Se	-0.1322	ppb	90.77	1.00	
88 Sr	0.0008	ppb	317.51	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0262	ppb	65.79	1.00	
107 Ag	0.0099	ppb	42.47	1.00	
109 Ag	0.0119	ppb	24.53	1.00	
111 Cd	0.0033	ppb	414.15	1.00	
114 Cd	0.0004	ppb	306.84	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0754	ppb	33.03	1.00	
120 Sn	0.0725	ppb	25.49	1.00	
121 Sb	0.0089	ppb	56.37	1.00	
123 Sb	0.0085	ppb	107.93	1.00	
135 Ba	0.0148	ppb	32.22	1.00	
137 Ba	0.0087	ppb	44.82	1.00	
182 W	0.0454	ppb	46.44	1.00	
203 Tl	0.0156	ppb	39.08	1.00	
205 Tl	0.0111	ppb	46.27	1.00	
208 Pb	0.1201	ppb	9.13	1.00	
232 Th	0.1107	ppb	15.79	1.00	
238 U	0.0043	ppb	29.01	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2805648.50	2.92	2844110.50	98.6	79.5 - 120	
45 Sc	2614487.30	2.31	2809797.00	93.0	79.5 - 120	
72 Ge	586771.06	0.89	642252.38	91.4	79.5 - 120	
159 Tb	6548914.50	1.08	7051087.50	92.9	79.5 - 120	
209 Bi	3461879.80	0.25	3594227.50	96.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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\JLE11B.B\042SMPL.D\042SMPL.D#
Date Acquired: May 11 2018 08:06 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4027-001
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0218	0.0218	ppb	15.12	100.	
11 B	3,801.	3,801.	ppb	3.85	1000.	>LDR
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	754.5	754.5	ppb	1.98	200000.	
27 Al	800.8	800.8	ppb	2.15	200000.	
28 Si	84,040.	84,040.	ppb	2.48	#VALUE!	
29 Si	84,130.	84,130.	ppb	2.08	10000.	>LDR
39 K	----	--------	ppb	--------	200000.	>LDR
43 Ca	9,832.	9,832.	ppb	1.39	#VALUE!	
44 Ca	9,914.	9,914.	ppb	1.64	200000.	
51 V	5.082	5.082	ppb	3.51	1000.	
52 Cr	21.41	21.41	ppb	1.91	2000.	
53 Cr	15.55	15.55	ppb	21.46	#VALUE!	
55 Mn	6.775	6.775	ppb	0.81	2000.	
56 Fe	110.5	110.5	ppb	4.07	#VALUE!	
57 Fe	80.71	80.71	ppb	0.35	100000.	
59 Co	19.21	19.21	ppb	1.67	1000.	
60 Ni	56.54	56.54	ppb	1.42	1000.	
63 Cu	188.	188.	ppb	1.07	#VALUE!	
65 Cu	138.8	138.8	ppb	1.54	2000.	
66 Zn	40.13	40.13	ppb	1.09	2000.	
68 Zn	41.19	41.19	ppb	0.78	#VALUE!	
75 As	0.7795	0.7795	ppb	33.75	1000.	
82 Se	0.572	0.572	ppb	35.59	1000.	
88 Sr	67.21	67.21	ppb	1.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.011	8.011	ppb	2.57	1000.	
107 Ag	0.0192	0.0192	ppb	15.70	100.	
109 Ag	0.0131	0.0131	ppb	23.98	#VALUE!	
111 Cd	0.0273	0.0273	ppb	136.32	#VALUE!	
114 Cd	0.0053	0.0053	ppb	284.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.127	3.127	ppb	3.01	1000.	
120 Sn	3.111	3.111	ppb	2.57	#VALUE!	
121 Sb	4.434	4.434	ppb	1.82	#VALUE!	
123 Sb	4.411	4.411	ppb	2.01	1000.	
135 Ba	6.052	6.052	ppb	1.23	2000.	
137 Ba	6.01	6.01	ppb	1.86	#VALUE!	
182 W	20.76	20.76	ppb	0.42	1000.	
203 Tl	0.0301	0.0301	ppb	9.72	1000.	
205 Tl	0.0289	0.0289	ppb	40.19	#VALUE!	
208 Pb	14.61	14.61	ppb	0.85	2000.	
232 Th	0.1725	0.1725	ppb	13.66	1000.	
238 U	0.5277	0.5277	ppb	3.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2747715.50	3.15	2844110.50	96.6	69.5 - 120	
45 Sc	2962147.80	1.73	2809797.00	105.4	69.5 - 120	
72 Ge	593431.88	0.91	642252.38	92.4	69.5 - 120	
159 Tb	5736164.00	0.99	7051087.50	81.4	69.5 - 120	
209 Bi	2317942.50	1.45	3594227.50	64.5	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

4 :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 4000537

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\043SMPL.D\043SMPL.D#
Date Acquired: May 11 2018 08:10 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4028-001
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	11.78	100.	
11 B	573.9	573.9	ppb	0.33	1000.	
23 Na	139,300.	139,300.	ppb	1.03	200000.	
25 Mg	178.4	178.4	ppb	1.32	200000.	
27 Al	273.7	273.7	ppb	2.72	200000.	
28 Si	22,360.	22,360.	ppb	2.94	#VALUE!	
29 Si	22,120.	22,120.	ppb	3.24	10000.	>LDR
39 K	46,390.	46,390.	ppb	1.68	200000.	
43 Ca	987.2	987.2	ppb	4.94	#VALUE!	
44 Ca	1,065.	1,065.	ppb	1.82	200000.	
51 V	0.48	0.48	ppb	6.83	1000.	
52 Cr	6.237	6.237	ppb	1.03	2000.	
53 Cr	12.02	12.02	ppb	1.89	#VALUE!	
55 Mn	7.532	7.532	ppb	0.62	2000.	
56 Fe	76.66	76.66	ppb	3.86	#VALUE!	
57 Fe	56.31	56.31	ppb	4.11	100000.	
59 Co	8.306	8.306	ppb	1.79	1000.	
60 Ni	41.72	41.72	ppb	0.35	1000.	
63 Cu	137.3	137.3	ppb	1.72	#VALUE!	
65 Cu	133.2	133.2	ppb	1.02	2000.	
66 Zn	21.5	21.5	ppb	1.48	2000.	
68 Zn	21.92	21.92	ppb	1.81	#VALUE!	
75 As	0.3501	0.3501	ppb	24.91	1000.	
82 Se	0.1454	0.1454	ppb	112.45	1000.	
88 Sr	2.49	2.49	ppb	0.50	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	2.232	2.232	ppb	0.35	1000.	
107 Ag	0.0169	0.0169	ppb	19.66	100.	
109 Ag	0.011	0.011	ppb	36.52	#VALUE!	
111 Cd	-0.0871	-0.0871	ppb	24.24	#VALUE!	
114 Cd	0.0031	0.0031	ppb	111.96	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.7721	0.7721	ppb	3.62	1000.	
120 Sn	0.7731	0.7731	ppb	1.89	#VALUE!	
121 Sb	2.547	2.547	ppb	1.70	#VALUE!	
123 Sb	2.526	2.526	ppb	1.49	1000.	
135 Ba	1.645	1.645	ppb	3.18	2000.	
137 Ba	1.615	1.615	ppb	3.51	#VALUE!	
182 W	5.189	5.189	ppb	1.97	1000.	
203 Tl	0.0117	0.0117	ppb	67.86	1000.	
205 Tl	0.0116	0.0116	ppb	27.00	#VALUE!	
208 Pb	7.391	7.391	ppb	1.69	2000.	
232 Th	0.0452	0.0452	ppb	14.09	1000.	
238 U	0.0941	0.0941	ppb	3.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2784158.30	3.97	2844110.50	97.9	69.5 - 120	
45 Sc	3039975.30	0.90	2809797.00	108.2	69.5 - 120	
72 Ge	649428.81	1.50	642252.38	101.1	69.5 - 120	
159 Tb	6921994.00	0.50	7051087.50	98.2	69.5 - 120	
209 Bi	3137191.80	1.08	3594227.50	87.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000538

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\044SMPL.D\044SMPL.D#
Date Acquired: May 11 2018 08:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4030-001
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0589	0.0589	ppb	9.39	100.	
11 B	33.43	33.43	ppb	5.96	1000.	
23 Na	13,450.	13,450.	ppb	2.12	200000.	
25 Mg	2,157.	2,157.	ppb	1.82	200000.	
27 Al	247.	247.	ppb	3.46	200000.	
28 Si	3,400.	3,400.	ppb	3.54	#VALUE!	
29 Si	3,491.	3,491.	ppb	5.96	10000.	
39 K	1,799.	1,799.	ppb	0.94	200000.	
43 Ca	7,558.	7,558.	ppb	0.24	#VALUE!	
44 Ca	7,602.	7,602.	ppb	1.19	200000.	
51 V	0.7699	0.7699	ppb	16.37	1000.	
52 Cr	1.496	1.496	ppb	1.09	2000.	
53 Cr	6.552	6.552	ppb	13.99	#VALUE!	
55 Mn	114.6	114.6	ppb	1.05	2000.	
56 Fe	1,768.	1,768.	ppb	1.13	#VALUE!	
57 Fe	1,758.	1,758.	ppb	0.79	100000.	
59 Co	1.131	1.131	ppb	5.04	1000.	
60 Ni	5.177	5.177	ppb	2.15	1000.	
63 Cu	7.789	7.789	ppb	1.24	#VALUE!	
65 Cu	7.418	7.418	ppb	0.55	2000.	
66 Zn	27.11	27.11	ppb	1.54	2000.	
68 Zn	26.79	26.79	ppb	0.70	#VALUE!	
75 As	2.846	2.846	ppb	7.89	1000.	
82 Se	0.4328	0.4328	ppb	61.58	1000.	
88 Sr	47.77	47.77	ppb	0.89	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.6353	0.6353	ppb	2.65	1000.	
107 Ag	0.0368	0.0368	ppb	12.06	100.	
109 Ag	0.039	0.039	ppb	6.38	#VALUE!	
111 Cd	0.1365	0.1365	ppb	8.86	#VALUE!	
114 Cd	0.2302	0.2302	ppb	4.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2073	0.2073	ppb	6.59	1000.	
120 Sn	0.2119	0.2119	ppb	6.18	#VALUE!	
121 Sb	0.2209	0.2209	ppb	2.59	#VALUE!	
123 Sb	0.2139	0.2139	ppb	7.98	1000.	
135 Ba	6.037	6.037	ppb	1.40	2000.	
137 Ba	5.981	5.981	ppb	1.38	#VALUE!	
182 W	0.5119	0.5119	ppb	3.22	1000.	
203 Tl	0.0308	0.0308	ppb	10.00	1000.	
205 Tl	0.0223	0.0223	ppb	29.45	#VALUE!	
208 Pb	1.53	1.53	ppb	1.48	2000.	
232 Th	0.1247	0.1247	ppb	0.88	1000.	
238 U	0.3105	0.3105	ppb	3.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2691823.50	2.78	2844110.50	94.6	69.5 - 120	
45 Sc	2880326.50	0.59	2809797.00	102.5	69.5 - 120	
72 Ge	645958.44	0.75	642252.38	100.6	69.5 - 120	
159 Tb	7083885.50	1.29	7051087.50	100.5	69.5 - 120	
209 Bi	3469002.50	0.84	3594227.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000539

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\045SMPL.D\045SMPL.D#
Date Acquired: May 11 2018 08:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4038-001
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0066	0.0066	ppb	5.27	100.	
11 B	49.77	49.77	ppb	0.96	1000.	
23 Na	39,680.	39,680.	ppb	2.03	200000.	
25 Mg	21,620.	21,620.	ppb	2.36	200000.	
27 Al	4.749	4.749	ppb	2.97	200000.	
28 Si	9,208.	9,208.	ppb	3.26	#VALUE!	
29 Si	9,454.	9,454.	ppb	2.93	10000.	
39 K	3,998.	3,998.	ppb	1.59	200000.	
43 Ca	76,090.	76,090.	ppb	1.34	#VALUE!	
44 Ca	72,600.	72,600.	ppb	0.74	200000.	
51 V	0.0426	0.0426	ppb	264.44	1000.	
52 Cr	0.307	0.307	ppb	21.13	2000.	
53 Cr	5.278	5.278	ppb	28.29	#VALUE!	
55 Mn	22.77	22.77	ppb	0.56	2000.	
56 Fe	20.16	20.16	ppb	7.89	#VALUE!	
57 Fe	7.323	7.323	ppb	50.72	100000.	
59 Co	0.1326	0.1326	ppb	1.34	1000.	
60 Ni	-0.1501	-0.1501	ppb	1.84	1000.	
63 Cu	9.588	9.588	ppb	0.80	#VALUE!	
65 Cu	8.261	8.261	ppb	1.11	2000.	
66 Zn	2.645	2.645	ppb	2.77	2000.	
68 Zn	8.719	8.719	ppb	2.32	#VALUE!	
75 As	0.3989	0.3989	ppb	57.13	1000.	
82 Se	0.2757	0.2757	ppb	70.26	1000.	
88 Sr	951.5	951.5	ppb	0.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3417	0.3417	ppb	6.26	1000.	
107 Ag	0.0049	0.0049	ppb	64.94	100.	
109 Ag	0.0019	0.0019	ppb	105.79	#VALUE!	
111 Cd	-0.0528	-0.0528	ppb	27.50	#VALUE!	
114 Cd	0.0009	0.0009	ppb	89.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0269	0.0269	ppb	51.90	1000.	
120 Sn	0.0326	0.0326	ppb	11.27	#VALUE!	
121 Sb	0.198	0.198	ppb	1.89	#VALUE!	
123 Sb	0.1994	0.1994	ppb	8.31	1000.	
135 Ba	189.3	189.3	ppb	1.71	2000.	
137 Ba	189.1	189.1	ppb	1.74	#VALUE!	
182 W	0.0287	0.0287	ppb	26.85	1000.	
203 Tl	0.018	0.018	ppb	28.46	1000.	
205 Tl	0.0135	0.0135	ppb	39.85	#VALUE!	
208 Pb	0.4075	0.4075	ppb	2.38	2000.	
232 Th	0.0174	0.0174	ppb	24.78	1000.	
238 U	15.77	15.77	ppb	1.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2695321.50	2.29	2844110.50	94.8	69.5 - 120	
45 Sc	2896299.00	1.34	2809797.00	103.1	69.5 - 120	
72 Ge	637607.38	0.79	642252.38	99.3	69.5 - 120	
159 Tb	7124118.00	1.43	7051087.50	101.0	69.5 - 120	
209 Bi	3318362.30	1.18	3594227.50	92.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000540

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\046SMPL.D\046SMPL.D#
Date Acquired: May 11 2018 08:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4038-002
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0031	0.0031	ppb	77.77	100.	
11 B	35.67	35.67	ppb	6.30	1000.	
23 Na	20,460.	20,460.	ppb	1.34	200000.	
25 Mg	23,010.	23,010.	ppb	1.47	200000.	
27 Al	4.305	4.305	ppb	4.67	200000.	
28 Si	10,450.	10,450.	ppb	2.13	#VALUE!	
29 Si	11,020.	11,020.	ppb	1.54	10000.	>LDR
39 K	2,720.	2,720.	ppb	1.76	200000.	
43 Ca	88,690.	88,690.	ppb	0.33	#VALUE!	
44 Ca	84,670.	84,670.	ppb	1.15	200000.	
51 V	0.156	0.156	ppb	36.58	1000.	
52 Cr	0.5299	0.5299	ppb	12.63	2000.	
53 Cr	3.445	3.445	ppb	24.69	#VALUE!	
55 Mn	5.889	5.889	ppb	1.54	2000.	
56 Fe	19.91	19.91	ppb	5.16	#VALUE!	
57 Fe	16.38	16.38	ppb	17.58	100000.	
59 Co	0.1484	0.1484	ppb	5.53	1000.	
60 Ni	-0.1898	-0.1898	ppb	9.20	1000.	
63 Cu	3.121	3.121	ppb	2.05	#VALUE!	
65 Cu	2.559	2.559	ppb	0.03	2000.	
66 Zn	3.072	3.072	ppb	2.87	2000.	
68 Zn	7.248	7.248	ppb	2.64	#VALUE!	
75 As	0.6398	0.6398	ppb	15.24	1000.	
82 Se	0.4968	0.4968	ppb	26.63	1000.	
88 Sr	590.	590.	ppb	1.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0509	0.0509	ppb	18.35	1000.	
107 Ag	0.0019	0.0019	ppb	112.59	100.	
109 Ag	0.0024	0.0024	ppb	30.09	#VALUE!	
111 Cd	-0.0423	-0.0423	ppb	37.85	#VALUE!	
114 Cd	0.0067	0.0067	ppb	105.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0189	0.0189	ppb	47.34	1000.	
120 Sn	0.0168	0.0168	ppb	56.83	#VALUE!	
121 Sb	0.116	0.116	ppb	7.67	#VALUE!	
123 Sb	0.1261	0.1261	ppb	5.35	1000.	
135 Ba	142.	142.	ppb	1.47	2000.	
137 Ba	140.5	140.5	ppb	1.25	#VALUE!	
182 W	0.0138	0.0138	ppb	14.28	1000.	
203 Tl	0.0151	0.0151	ppb	46.41	1000.	
205 Tl	0.0128	0.0128	ppb	48.31	#VALUE!	
208 Pb	0.3954	0.3954	ppb	6.98	2000.	
232 Th	0.0113	0.0113	ppb	36.75	1000.	
238 U	13.9	13.9	ppb	0.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2721533.50	3.63	2844110.50	95.7	69.5 - 120	
45 Sc	2841135.30	0.68	2809797.00	101.1	69.5 - 120	
72 Ge	630350.75	0.84	642252.38	98.1	69.5 - 120	
159 Tb	7082381.50	1.56	7051087.50	100.4	69.5 - 120	
209 Bi	3412292.30	1.48	3594227.50	94.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000541

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\047SMPL.D\047SMPL.D#
Date Acquired: May 11 2018 08:27 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4038-003
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0049	0.0049	ppb	40.00	100.	
11 B	78.5	78.5	ppb	2.59	1000.	
23 Na	124,800.	124,800.	ppb	3.79	200000.	
25 Mg	9,894.	9,894.	ppb	0.58	200000.	
27 Al	8.815	8.815	ppb	3.24	200000.	
28 Si	7,283.	7,283.	ppb	2.11	#VALUE!	
29 Si	7,577.	7,577.	ppb	2.33	10000.	
39 K	5,496.	5,496.	ppb	2.39	200000.	
43 Ca	33,310.	33,310.	ppb	0.24	#VALUE!	
44 Ca	32,840.	32,840.	ppb	1.18	200000.	
51 V	0.0066	0.0066	ppb	465.97	1000.	
52 Cr	0.384	0.384	ppb	8.22	2000.	
53 Cr	9.899	9.899	ppb	2.35	#VALUE!	
55 Mn	123.7	123.7	ppb	1.38	2000.	
56 Fe	204.2	204.2	ppb	4.86	#VALUE!	
57 Fe	197.5	197.5	ppb	3.61	100000.	
59 Co	0.1356	0.1356	ppb	12.15	1000.	
60 Ni	0.442	0.442	ppb	2.68	1000.	
63 Cu	44.46	44.46	ppb	0.88	#VALUE!	
65 Cu	40.22	40.22	ppb	0.25	2000.	
66 Zn	7.907	7.907	ppb	1.30	2000.	
68 Zn	11.04	11.04	ppb	2.83	#VALUE!	
75 As	1.23	1.23	ppb	15.59	1000.	
82 Se	0.3538	0.3538	ppb	72.33	1000.	
88 Sr	213.5	213.5	ppb	0.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.725	1.725	ppb	1.60	1000.	
107 Ag	0.0027	0.0027	ppb	8.62	100.	
109 Ag	0.0037	0.0037	ppb	36.98	#VALUE!	
111 Cd	-0.0158	-0.0158	ppb	27.33	#VALUE!	
114 Cd	0.0194	0.0194	ppb	9.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0926	0.0926	ppb	18.94	1000.	
120 Sn	0.1026	0.1026	ppb	20.15	#VALUE!	
121 Sb	0.2539	0.2539	ppb	1.46	#VALUE!	
123 Sb	0.2586	0.2586	ppb	4.79	1000.	
135 Ba	98.75	98.75	ppb	1.49	2000.	
137 Ba	98.06	98.06	ppb	0.49	#VALUE!	
182 W	0.0729	0.0729	ppb	6.63	1000.	
203 Tl	0.0092	0.0092	ppb	75.49	1000.	
205 Tl	0.0106	0.0106	ppb	22.30	#VALUE!	
208 Pb	0.8683	0.8683	ppb	0.82	2000.	
232 Th	0.0162	0.0162	ppb	20.19	1000.	
238 U	15.65	15.65	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2695622.80	2.43	2844110.50	94.8	69.5 - 120	
45 Sc	2908831.30	0.09	2809797.00	103.5	69.5 - 120	
72 Ge	630840.38	0.88	642252.38	98.2	69.5 - 120	
159 Tb	7118420.50	1.03	7051087.50	101.0	69.5 - 120	
209 Bi	3299173.80	0.65	3594227.50	91.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000542

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\048SMPL.D\048SMPL.D#
Date Acquired: May 11 2018 08:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4044-001
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0185	0.0185	ppb	24.25	100.	
11 B	54.32	54.32	ppb	3.80	1000.	
23 Na	15,200.	15,200.	ppb	1.46	200000.	
25 Mg	2,997.	2,997.	ppb	1.71	200000.	
27 Al	478.1	478.1	ppb	1.90	200000.	
28 Si	7,982.	7,982.	ppb	2.56	#VALUE!	
29 Si	8,375.	8,375.	ppb	3.45	10000.	
39 K	2,793.	2,793.	ppb	2.80	200000.	
43 Ca	15,970.	15,970.	ppb	2.65	#VALUE!	
44 Ca	15,730.	15,730.	ppb	1.83	200000.	
51 V	0.3149	0.3149	ppb	22.08	1000.	
52 Cr	0.5659	0.5659	ppb	4.00	2000.	
53 Cr	9.119	9.119	ppb	5.27	#VALUE!	
55 Mn	2.745	2.745	ppb	1.23	2000.	
56 Fe	18.75	18.75	ppb	7.48	#VALUE!	
57 Fe	12.91	12.91	ppb	20.27	100000.	
59 Co	0.0582	0.0582	ppb	10.13	1000.	
60 Ni	2.092	2.092	ppb	2.31	1000.	
63 Cu	924.4	924.4	ppb	0.70	#VALUE!	
65 Cu	948.6	948.6	ppb	0.58	2000.	
66 Zn	1,166.	1,166.	ppb	0.34	2000.	
68 Zn	1,146.	1,146.	ppb	0.62	#VALUE!	
75 As	0.4563	0.4563	ppb	7.87	1000.	
82 Se	0.2389	0.2389	ppb	47.80	1000.	
88 Sr	89.92	89.92	ppb	0.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2315	0.2315	ppb	8.08	1000.	
107 Ag	0.0402	0.0402	ppb	6.71	100.	
109 Ag	0.0321	0.0321	ppb	21.83	#VALUE!	
111 Cd	-0.0314	-0.0314	ppb	25.05	#VALUE!	
114 Cd	-0.0129	-0.0129	ppb	54.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0201	0.0201	ppb	5.28	1000.	
120 Sn	0.0127	0.0127	ppb	36.96	#VALUE!	
121 Sb	0.0626	0.0626	ppb	10.28	#VALUE!	
123 Sb	0.0686	0.0686	ppb	11.94	1000.	
135 Ba	8.948	8.948	ppb	0.12	2000.	
137 Ba	8.904	8.904	ppb	0.56	#VALUE!	
182 W	0.0138	0.0138	ppb	7.58	1000.	
203 Tl	0.0237	0.0237	ppb	17.56	1000.	
205 Tl	0.0314	0.0314	ppb	29.64	#VALUE!	
208 Pb	2.948	2.948	ppb	1.13	2000.	
232 Th	0.0347	0.0347	ppb	4.72	1000.	
238 U	0.4519	0.4519	ppb	2.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2675050.80	2.19	2844110.50	94.1	69.5 - 120	
45 Sc	2895015.50	2.12	2809797.00	103.0	69.5 - 120	
72 Ge	648313.00	0.86	642252.38	100.9	69.5 - 120	
159 Tb	7283897.50	0.31	7051087.50	103.3	69.5 - 120	
209 Bi	3591753.30	1.18	3594227.50	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000543

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\049SMPL.D\049SMPL.D#
Date Acquired: May 11 2018 08:35 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4055-001
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0025	0.0025	ppb	26.50	100.	
11 B	43.16	43.16	ppb	5.40	1000.	
23 Na	83,260.	83,260.	ppb	1.18	200000.	
25 Mg	8,697.	8,697.	ppb	1.67	200000.	
27 Al	9.181	9.181	ppb	3.03	200000.	
28 Si	2,944.	2,944.	ppb	0.62	#VALUE!	
29 Si	2,931.	2,931.	ppb	2.95	10000.	
39 K	3,796.	3,796.	ppb	2.07	200000.	
43 Ca	98,500.	98,500.	ppb	2.52	#VALUE!	
44 Ca	92,080.	92,080.	ppb	1.38	200000.	
51 V	0.0031	0.0031	ppb	1860.20	1000.	
52 Cr	0.3702	0.3702	ppb	7.39	2000.	
53 Cr	1.927	1.927	ppb	73.22	#VALUE!	
55 Mn	55.6	55.6	ppb	0.63	2000.	
56 Fe	59.74	59.74	ppb	5.57	#VALUE!	
57 Fe	65.1	65.1	ppb	10.52	100000.	
59 Co	0.2888	0.2888	ppb	1.45	1000.	
60 Ni	0.071	0.071	ppb	63.53	1000.	
63 Cu	6.266	6.266	ppb	2.07	#VALUE!	
65 Cu	3.294	3.294	ppb	2.03	2000.	
66 Zn	17.31	17.31	ppb	0.36	2000.	
68 Zn	17.83	17.83	ppb	0.80	#VALUE!	
75 As	0.3476	0.3476	ppb	25.73	1000.	
82 Se	0.4164	0.4164	ppb	53.12	1000.	
88 Sr	492.8	492.8	ppb	0.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.531	1.531	ppb	3.16	1000.	
107 Ag	0.0052	0.0052	ppb	69.54	100.	
109 Ag	0.0034	0.0034	ppb	25.49	#VALUE!	
111 Cd	0.0004	0.0004	ppb	1569.10	#VALUE!	
114 Cd	0.0151	0.0151	ppb	18.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1101	0.1101	ppb	16.78	1000.	
120 Sn	0.0966	0.0966	ppb	4.51	#VALUE!	
121 Sb	0.1289	0.1289	ppb	11.78	#VALUE!	
123 Sb	0.1216	0.1216	ppb	7.24	1000.	
135 Ba	24.23	24.23	ppb	0.83	2000.	
137 Ba	24.69	24.69	ppb	1.29	#VALUE!	
182 W	0.0084	0.0084	ppb	5.14	1000.	
203 Tl	0.0147	0.0147	ppb	47.56	1000.	
205 Tl	0.0057	0.0057	ppb	128.81	#VALUE!	
208 Pb	0.1943	0.1943	ppb	7.69	2000.	
232 Th	0.0099	0.0099	ppb	3.90	1000.	
238 U	0.3294	0.3294	ppb	2.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2660913.00	0.28	2844110.50	93.6	69.5 - 120	
45 Sc	2780671.80	1.94	2809797.00	99.0	69.5 - 120	
72 Ge	613966.94	0.54	642252.38	95.6	69.5 - 120	
159 Tb	6959347.00	0.78	7051087.50	98.7	69.5 - 120	
209 Bi	3299206.50	0.18	3594227.50	91.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000544

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\050SMPL.D\050SMPL.D#
Date Acquired: May 11 2018 08:39 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4056-001
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0037	0.0037	ppb	23.45	100.	
11 B	92.5	92.5	ppb	1.00	1000.	
23 Na	79,040.	79,040.	ppb	2.58	200000.	
25 Mg	4,286.	4,286.	ppb	3.10	200000.	
27 Al	51.39	51.39	ppb	2.44	200000.	
28 Si	5,772.	5,772.	ppb	0.74	#VALUE!	
29 Si	6,157.	6,157.	ppb	1.37	10000.	
39 K	9,027.	9,027.	ppb	1.48	200000.	
43 Ca	21,040.	21,040.	ppb	1.84	#VALUE!	
44 Ca	21,260.	21,260.	ppb	1.36	200000.	
51 V	0.3835	0.3835	ppb	16.18	1000.	
52 Cr	0.5768	0.5768	ppb	5.81	2000.	
53 Cr	9.816	9.816	ppb	9.35	#VALUE!	
55 Mn	40.39	40.39	ppb	0.58	2000.	
56 Fe	140.9	140.9	ppb	3.24	#VALUE!	
57 Fe	135.2	135.2	ppb	1.59	100000.	
59 Co	0.2592	0.2592	ppb	1.75	1000.	
60 Ni	3.219	3.219	ppb	1.87	1000.	
63 Cu	20.55	20.55	ppb	0.22	#VALUE!	
65 Cu	17.86	17.86	ppb	1.29	2000.	
66 Zn	145.2	145.2	ppb	0.46	2000.	
68 Zn	141.7	141.7	ppb	0.48	#VALUE!	
75 As	0.9112	0.9112	ppb	15.47	1000.	
82 Se	0.2562	0.2562	ppb	84.54	1000.	
88 Sr	86.83	86.83	ppb	0.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.552	1.552	ppb	0.33	1000.	
107 Ag	0.0181	0.0181	ppb	10.02	100.	
109 Ag	0.0185	0.0185	ppb	17.87	#VALUE!	
111 Cd	0.0453	0.0453	ppb	42.48	#VALUE!	
114 Cd	0.0873	0.0873	ppb	6.84	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3956	0.3956	ppb	7.55	1000.	
120 Sn	0.4077	0.4077	ppb	1.65	#VALUE!	
121 Sb	0.395	0.395	ppb	0.54	#VALUE!	
123 Sb	0.4064	0.4064	ppb	5.05	1000.	
135 Ba	15.86	15.86	ppb	1.13	2000.	
137 Ba	15.9	15.9	ppb	1.63	#VALUE!	
182 W	0.0661	0.0661	ppb	20.20	1000.	
203 Tl	0.0111	0.0111	ppb	23.36	1000.	
205 Tl	0.0097	0.0097	ppb	54.99	#VALUE!	
208 Pb	0.8771	0.8771	ppb	1.88	2000.	
232 Th	0.0195	0.0195	ppb	18.47	1000.	
238 U	0.0651	0.0651	ppb	6.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2646357.00	2.82	2844110.50	93.0	69.5 - 120	
45 Sc	2807630.50	0.76	2809797.00	99.9	69.5 - 120	
72 Ge	620444.06	0.22	642252.38	96.6	69.5 - 120	
159 Tb	7057753.00	0.56	7051087.50	100.1	69.5 - 120	
209 Bi	3382624.00	0.93	3594227.50	94.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000545

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\051SMPL.D\051SMPL.D#
Date Acquired: May 11 2018 08:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4057-001
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0046	0.0046	ppb	11.34	100.	
11 B	15.27	15.27	ppb	6.09	1000.	
23 Na	2,947.	2,947.	ppb	2.27	200000.	
25 Mg	5,793.	5,793.	ppb	1.45	200000.	
27 Al	61.97	61.97	ppb	0.89	200000.	
28 Si	4,233.	4,233.	ppb	0.55	#VALUE!	
29 Si	4,579.	4,579.	ppb	4.46	10000.	
39 K	841.7	841.7	ppb	1.95	200000.	
43 Ca	47,820.	47,820.	ppb	0.42	#VALUE!	
44 Ca	45,330.	45,330.	ppb	1.81	200000.	
51 V	0.4706	0.4706	ppb	1.66	1000.	
52 Cr	0.2008	0.2008	ppb	13.14	2000.	
53 Cr	-4.613	-4.613	ppb	31.00	#VALUE!	
55 Mn	14,260.	14,260.	ppb	0.58	2000.	>LDR
56 Fe	103.1	103.1	ppb	4.36	#VALUE!	
57 Fe	112.1	112.1	ppb	7.63	100000.	
59 Co	1.227	1.227	ppb	2.15	1000.	
60 Ni	0.4848	0.4848	ppb	11.08	1000.	
63 Cu	0.6378	0.6378	ppb	1.13	#VALUE!	
65 Cu	0.5631	0.5631	ppb	4.10	2000.	
66 Zn	2.42	2.42	ppb	3.95	2000.	
68 Zn	3.26	3.26	ppb	4.34	#VALUE!	
75 As	0.1868	0.1868	ppb	11.68	1000.	
82 Se	0.202	0.202	ppb	82.08	1000.	
88 Sr	263.	263.	ppb	0.77	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.4673	0.4673	ppb	3.41	1000.	
107 Ag	0.0033	0.0033	ppb	97.08	100.	
109 Ag	0.0035	0.0035	ppb	31.68	#VALUE!	
111 Cd	0.1111	0.1111	ppb	29.43	#VALUE!	
114 Cd	0.1002	0.1002	ppb	1.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0273	0.0273	ppb	23.63	1000.	
120 Sn	0.0295	0.0295	ppb	44.49	#VALUE!	
121 Sb	0.0552	0.0552	ppb	10.84	#VALUE!	
123 Sb	0.0492	0.0492	ppb	5.16	1000.	
135 Ba	27.81	27.81	ppb	1.51	2000.	
137 Ba	27.69	27.69	ppb	0.85	#VALUE!	
182 W	0.01	0.01	ppb	20.85	1000.	
203 Tl	0.0279	0.0279	ppb	19.38	1000.	
205 Tl	0.0171	0.0171	ppb	49.80	#VALUE!	
208 Pb	0.1696	0.1696	ppb	4.19	2000.	
232 Th	0.0153	0.0153	ppb	26.18	1000.	
238 U	0.2909	0.2909	ppb	3.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2772721.80	1.14	2844110.50	97.5	69.5 - 120	
45 Sc	2791117.50	1.60	2809797.00	99.3	69.5 - 120	
72 Ge	614213.94	0.16	642252.38	95.6	69.5 - 120	
159 Tb	6978810.50	0.59	7051087.50	99.0	69.5 - 120	
209 Bi	3536172.50	0.93	3594227.50	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000546

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\052_CCV.D\052_CCV.D#
Date Acquired: May 11 2018 08:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.94	ppb	2.93	25	99.76	
11 B	28.4	ppb	1.68	25	113.6	Fail
23 Na	5,040.	ppb	1.70	5,000	100.8	
25 Mg	5,145.	ppb	1.70	5,000	102.9	
27 Al	501.6	ppb	0.96	500	100.32	
28 Si	482.9	ppb	2.37	500	96.58	
29 Si	459.2	ppb	3.22	500	91.84	
39 K	4,860.	ppb	1.31	5,000	97.2	
43 Ca	4,760.	ppb	1.10	5,000	95.2	
44 Ca	4,978.	ppb	0.42	5,000	99.56	
51 V	25.36	ppb	1.46	25	101.44	
52 Cr	25.08	ppb	0.48	25	100.32	
53 Cr	21.81	ppb	2.62	25	87.24	
55 Mn	25.11	ppb	0.46	25	100.44	
56 Fe	4,953.	ppb	1.12	5,000	99.06	
57 Fe	5,066.	ppb	1.24	5,000	101.32	
59 Co	25.1	ppb	0.46	25	100.4	
60 Ni	25.19	ppb	0.72	25	100.76	
63 Cu	25.39	ppb	0.68	25	101.56	
65 Cu	25.32	ppb	0.67	25	101.28	
66 Zn	25.43	ppb	1.33	25	101.72	
68 Zn	25.55	ppb	1.01	25	102.2	
75 As	25.09	ppb	0.30	25	100.36	
82 Se	25.99	ppb	2.41	25	103.96	
88 Sr	24.3	ppb	0.53	25	97.2	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.74	ppb	1.01	25	98.96	
107 Ag	25.22	ppb	0.73	25	100.88	
109 Ag	24.94	ppb	1.25	25	99.76	
111 Cd	25.41	ppb	0.84	25	101.64	
114 Cd	25.31	ppb	1.18	25	101.24	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.85	ppb	1.97	25	95.4	
120 Sn	23.89	ppb	1.70	25	95.56	
121 Sb	24.15	ppb	1.40	25	96.6	
123 Sb	24.06	ppb	1.57	25	96.24	
135 Ba	24.72	ppb	1.53	25	98.88	
137 Ba	24.52	ppb	0.91	25	98.08	
182 W	24.81	ppb	1.21	25	99.24	
203 Tl	24.61	ppb	0.86	25	98.44	
205 Tl	25.	ppb	1.98	25	100	
208 Pb	24.97	ppb	2.15	25	99.88	
232 Th	25.12	ppb	0.85	25	100.48	
238 U	26.7	ppb	1.62	25	106.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2881501.50	1.28	2844110.50	101.3	80 - 120.4	
45 Sc	2738857.80	0.69	2809797.00	97.5	80 - 120.4	
72 Ge	595223.69	0.59	642252.38	92.7	80 - 120.4	
159 Tb	6933873.00	0.15	7051087.50	98.3	80 - 120.4	
209 Bi	3591840.30	0.69	3594227.50	99.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000547

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\053_CCB.D\053_CCB.D#
Date Acquired: May 11 2018 08:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	131.19	1.00	
11 B	6.104	ppb	10.37	1.00	Fail
23 Na	7.448	ppb	3.05	1.00	
25 Mg	0.152	ppb	137.43	1.00	
27 Al	0.0224	ppb	248.22	1.00	
28 Si	9.745	ppb	83.89	1.00	
29 Si	-2.966	ppb	374.92	1.00	
39 K	1.562	ppb	183.93	1.00	
43 Ca	3.037	ppb	159.33	1.00	
44 Ca	1.215	ppb	95.80	1.00	
51 V	-0.0455	ppb	52.12	1.00	
52 Cr	0.1285	ppb	16.88	1.00	
53 Cr	-4.609	ppb	6.64	1.00	
55 Mn	0.1028	ppb	129.77	1.00	
56 Fe	11.74	ppb	39.39	1.00	
57 Fe	1.716	ppb	68.07	1.00	
59 Co	0.0023	ppb	223.72	1.00	
60 Ni	0.0069	ppb	114.47	1.00	
63 Cu	0.0205	ppb	18.52	1.00	
65 Cu	0.0013	ppb	274.98	1.00	
66 Zn	-0.0112	ppb	371.62	1.00	
68 Zn	0.177	ppb	71.41	1.00	
75 As	0.0033	ppb	4986.40	1.00	
82 Se	-0.058	ppb	169.92	1.00	
88 Sr	0.0022	ppb	169.50	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0292	ppb	63.91	1.00	
107 Ag	0.0103	ppb	40.94	1.00	
109 Ag	0.0117	ppb	10.57	1.00	
111 Cd	0.0143	ppb	75.28	1.00	
114 Cd	-0.0011	ppb	294.97	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0549	ppb	25.50	1.00	
120 Sn	0.0539	ppb	17.28	1.00	
121 Sb	0.01	ppb	31.60	1.00	
123 Sb	0.0084	ppb	41.47	1.00	
135 Ba	0.0092	ppb	76.13	1.00	
137 Ba	0.0115	ppb	29.86	1.00	
182 W	0.0461	ppb	43.58	1.00	
203 Tl	0.0122	ppb	29.50	1.00	
205 Tl	-0.0006	ppb	243.76	1.00	
208 Pb	0.0472	ppb	3.26	1.00	
232 Th	0.0964	ppb	13.54	1.00	
238 U	0.0039	ppb	12.57	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2622576.80	3.58	2844110.50	92.2	79.5 - 120	
45 Sc	2586504.80	3.75	2809797.00	92.1	79.5 - 120	
72 Ge	576457.13	3.16	642252.38	89.8	79.5 - 120	
159 Tb	6679868.50	1.65	7051087.50	94.7	79.5 - 120	
209 Bi	3560855.80	0.82	3594227.50	99.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000548

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\054SMPL.D\054SMPL.D#
Date Acquired: May 11 2018 08:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4060-001
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0025	0.0025	ppb	100.45	100.	
11 B	316.3	316.3	ppb	5.82	1000.	
23 Na	134,700.	134,700.	ppb	4.46	200000.	
25 Mg	3,146.	3,146.	ppb	1.87	200000.	
27 Al	412.1	412.1	ppb	1.34	200000.	
28 Si	2,111.	2,111.	ppb	5.86	#VALUE!	
29 Si	2,074.	2,074.	ppb	5.14	10000.	
39 K	9,327.	9,327.	ppb	2.06	200000.	
43 Ca	11,420.	11,420.	ppb	1.67	#VALUE!	
44 Ca	11,450.	11,450.	ppb	0.55	200000.	
51 V	0.2225	0.2225	ppb	25.90	1000.	
52 Cr	0.9702	0.9702	ppb	2.06	2000.	
53 Cr	-2.544	-2.544	ppb	15.18	#VALUE!	
55 Mn	15.25	15.25	ppb	0.52	2000.	
56 Fe	58.74	58.74	ppb	4.82	#VALUE!	
57 Fe	46.94	46.94	ppb	9.59	100000.	
59 Co	37.89	37.89	ppb	0.45	1000.	
60 Ni	69.31	69.31	ppb	0.61	1000.	
63 Cu	37.34	37.34	ppb	1.20	#VALUE!	
65 Cu	33.23	33.23	ppb	0.96	2000.	
66 Zn	23.93	23.93	ppb	0.54	2000.	
68 Zn	23.9	23.9	ppb	0.36	#VALUE!	
75 As	1.765	1.765	ppb	8.35	1000.	
82 Se	6.848	6.848	ppb	2.79	1000.	
88 Sr	100.4	100.4	ppb	0.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,970.	1,970.	ppb	0.18	1000.	>LDR
107 Ag	0.0922	0.0922	ppb	8.12	100.	
109 Ag	0.0831	0.0831	ppb	3.87	#VALUE!	
111 Cd	0.1962	0.1962	ppb	7.77	#VALUE!	
114 Cd	0.1511	0.1511	ppb	10.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0394	0.0394	ppb	14.32	1000.	
120 Sn	0.0455	0.0455	ppb	12.43	#VALUE!	
121 Sb	0.4119	0.4119	ppb	1.28	#VALUE!	
123 Sb	0.4058	0.4058	ppb	3.70	1000.	
135 Ba	2.742	2.742	ppb	3.60	2000.	
137 Ba	2.653	2.653	ppb	2.07	#VALUE!	
182 W	37.99	37.99	ppb	2.08	1000.	
203 Tl	0.0235	0.0235	ppb	37.63	1000.	
205 Tl	0.0071	0.0071	ppb	82.79	#VALUE!	
208 Pb	0.9598	0.9598	ppb	3.09	2000.	
232 Th	0.0894	0.0894	ppb	26.02	1000.	
238 U	0.0523	0.0523	ppb	7.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2695303.00	3.45	2844110.50	94.8	69.5 - 120	
45 Sc	2671022.80	1.83	2809797.00	95.1	69.5 - 120	
72 Ge	577719.00	0.88	642252.38	90.0	69.5 - 120	
159 Tb	6563166.00	1.66	7051087.50	93.1	69.5 - 120	
209 Bi	3123846.50	0.55	3594227.50	86.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000549

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\055SMPL.D\055SMPL.D#
Date Acquired: May 11 2018 09:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4061-001
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	175.36	100.	
11 B	16.26	16.26	ppb	15.50	1000.	
23 Na	6,821.	6,821.	ppb	4.36	200000.	
25 Mg	328.4	328.4	ppb	4.67	200000.	
27 Al	1,126.	1,126.	ppb	4.39	200000.	
28 Si	1,063.	1,063.	ppb	0.75	#VALUE!	
29 Si	1,056.	1,056.	ppb	2.38	10000.	
39 K	200.1	200.1	ppb	7.04	200000.	
43 Ca	2,175.	2,175.	ppb	4.85	#VALUE!	
44 Ca	2,179.	2,179.	ppb	1.22	200000.	
51 V	-0.0053	-0.0053	ppb	524.33	1000.	
52 Cr	0.3606	0.3606	ppb	7.37	2000.	
53 Cr	-0.4515	-0.4515	ppb	146.16	#VALUE!	
55 Mn	1.25	1.25	ppb	2.01	2000.	
56 Fe	32.06	32.06	ppb	3.81	#VALUE!	
57 Fe	14.72	14.72	ppb	4.72	100000.	
59 Co	0.0166	0.0166	ppb	52.91	1000.	
60 Ni	0.1097	0.1097	ppb	18.51	1000.	
63 Cu	0.9018	0.9018	ppb	1.53	#VALUE!	
65 Cu	0.6627	0.6627	ppb	3.58	2000.	
66 Zn	1.707	1.707	ppb	4.42	2000.	
68 Zn	1.967	1.967	ppb	8.76	#VALUE!	
75 As	0.4414	0.4414	ppb	17.52	1000.	
82 Se	0.0911	0.0911	ppb	167.67	1000.	
88 Sr	7.36	7.36	ppb	1.50	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.265	2.265	ppb	58.54	1000.	
107 Ag	0.0033	0.0033	ppb	36.15	100.	
109 Ag	0.0037	0.0037	ppb	72.34	#VALUE!	
111 Cd	-0.0247	-0.0247	ppb	110.59	#VALUE!	
114 Cd	0.0049	0.0049	ppb	13.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0282	0.0282	ppb	29.51	1000.	
120 Sn	0.0251	0.0251	ppb	19.48	#VALUE!	
121 Sb	0.0266	0.0266	ppb	8.27	#VALUE!	
123 Sb	0.0276	0.0276	ppb	32.68	1000.	
135 Ba	1.617	1.617	ppb	0.62	2000.	
137 Ba	1.657	1.657	ppb	1.50	#VALUE!	
182 W	0.0712	0.0712	ppb	43.60	1000.	
203 Tl	0.0056	0.0056	ppb	125.15	1000.	
205 Tl	0.0117	0.0117	ppb	35.07	#VALUE!	
208 Pb	0.1663	0.1663	ppb	4.32	2000.	
232 Th	0.0228	0.0228	ppb	16.97	1000.	
238 U	0.0472	0.0472	ppb	10.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2663222.80	4.98	2844110.50	93.6	69.5 - 120	
45 Sc	2584467.80	2.97	2809797.00	92.0	69.5 - 120	
72 Ge	570156.75	0.83	642252.38	88.8	69.5 - 120	
159 Tb	6542575.50	1.27	7051087.50	92.8	69.5 - 120	
209 Bi	3424229.00	1.37	3594227.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000550

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\056SMPL.D\056SMPL.D#
Date Acquired: May 11 2018 09:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4065-001
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.035	0.035	ppb	12.20	100.	
11 B	13.08	13.08	ppb	3.54	1000.	
23 Na	2,320.	2,320.	ppb	1.26	200000.	
25 Mg	499.5	499.5	ppb	2.14	200000.	
27 Al	31.7	31.7	ppb	4.39	200000.	
28 Si	729.8	729.8	ppb	0.40	#VALUE!	
29 Si	728.	728.	ppb	3.19	10000.	
39 K	423.7	423.7	ppb	1.64	200000.	
43 Ca	2,198.	2,198.	ppb	3.89	#VALUE!	
44 Ca	2,170.	2,170.	ppb	1.27	200000.	
51 V	0.0118	0.0118	ppb	701.69	1000.	
52 Cr	0.3615	0.3615	ppb	3.23	2000.	
53 Cr	0.371	0.371	ppb	117.33	#VALUE!	
55 Mn	3.025	3.025	ppb	0.51	2000.	
56 Fe	37.43	37.43	ppb	8.82	#VALUE!	
57 Fe	15.52	15.52	ppb	9.70	100000.	
59 Co	0.0126	0.0126	ppb	18.87	1000.	
60 Ni	0.1144	0.1144	ppb	15.82	1000.	
63 Cu	0.4088	0.4088	ppb	7.10	#VALUE!	
65 Cu	0.3023	0.3023	ppb	5.95	2000.	
66 Zn	1.17	1.17	ppb	5.88	2000.	
68 Zn	1.356	1.356	ppb	4.99	#VALUE!	
75 As	0.3781	0.3781	ppb	35.86	1000.	
82 Se	-0.0298	-0.0298	ppb	361.90	1000.	
88 Sr	10.13	10.13	ppb	0.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.6785	0.6785	ppb	30.70	1000.	
107 Ag	0.0049	0.0049	ppb	18.87	100.	
109 Ag	0.0018	0.0018	ppb	86.94	#VALUE!	
111 Cd	-0.0347	-0.0347	ppb	17.88	#VALUE!	
114 Cd	0.0044	0.0044	ppb	97.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0346	0.0346	ppb	19.49	1000.	
120 Sn	0.0452	0.0452	ppb	33.29	#VALUE!	
121 Sb	0.0435	0.0435	ppb	17.22	#VALUE!	
123 Sb	0.0423	0.0423	ppb	9.94	1000.	
135 Ba	1.624	1.624	ppb	8.88	2000.	
137 Ba	1.567	1.567	ppb	2.66	#VALUE!	
182 W	0.0197	0.0197	ppb	21.30	1000.	
203 Tl	0.0111	0.0111	ppb	15.48	1000.	
205 Tl	0.0045	0.0045	ppb	78.75	#VALUE!	
208 Pb	0.111	0.111	ppb	2.56	2000.	
232 Th	0.0253	0.0253	ppb	13.08	1000.	
238 U	0.1728	0.1728	ppb	5.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2567440.30	1.99	2844110.50	90.3	69.5 - 120	
45 Sc	2534559.50	1.62	2809797.00	90.2	69.5 - 120	
72 Ge	567541.38	2.11	642252.38	88.4	69.5 - 120	
159 Tb	6457645.00	1.38	7051087.50	91.6	69.5 - 120	
209 Bi	3397901.50	0.46	3594227.50	94.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000551

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\057SMPL.D\057SMPL.D#
Date Acquired: May 11 2018 09:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4066-001
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	59.38	100.	
11 B	15.82	15.82	ppb	5.05	1000.	
23 Na	13,330.	13,330.	ppb	3.56	200000.	
25 Mg	5,403.	5,403.	ppb	1.97	200000.	
27 Al	6.518	6.518	ppb	5.23	200000.	
28 Si	5,958.	5,958.	ppb	0.89	#VALUE!	
29 Si	6,295.	6,295.	ppb	1.40	10000.	
39 K	2,344.	2,344.	ppb	4.30	200000.	
43 Ca	58,140.	58,140.	ppb	0.77	#VALUE!	
44 Ca	54,890.	54,890.	ppb	1.00	200000.	
51 V	0.0773	0.0773	ppb	65.52	1000.	
52 Cr	0.4239	0.4239	ppb	4.00	2000.	
53 Cr	-2.087	-2.087	ppb	8.83	#VALUE!	
55 Mn	10.21	10.21	ppb	0.93	2000.	
56 Fe	27.1	27.1	ppb	8.76	#VALUE!	
57 Fe	16.83	16.83	ppb	9.18	100000.	
59 Co	0.0699	0.0699	ppb	2.62	1000.	
60 Ni	1.535	1.535	ppb	3.94	1000.	
63 Cu	42.15	42.15	ppb	1.08	#VALUE!	
65 Cu	41.29	41.29	ppb	0.69	2000.	
66 Zn	10.85	10.85	ppb	2.12	2000.	
68 Zn	11.05	11.05	ppb	2.33	#VALUE!	
75 As	0.8922	0.8922	ppb	9.44	1000.	
82 Se	0.2987	0.2987	ppb	73.12	1000.	
88 Sr	246.2	246.2	ppb	1.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3896	0.3896	ppb	12.74	1000.	
107 Ag	2.674	2.674	ppb	0.04	100.	
109 Ag	2.633	2.633	ppb	1.92	#VALUE!	
111 Cd	0.0302	0.0302	ppb	35.36	#VALUE!	
114 Cd	0.0672	0.0672	ppb	8.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.197	0.197	ppb	12.59	1000.	
120 Sn	0.2138	0.2138	ppb	5.54	#VALUE!	
121 Sb	0.3219	0.3219	ppb	4.00	#VALUE!	
123 Sb	0.342	0.342	ppb	5.14	1000.	
135 Ba	5.133	5.133	ppb	0.46	2000.	
137 Ba	4.936	4.936	ppb	0.58	#VALUE!	
182 W	0.0285	0.0285	ppb	12.52	1000.	
203 Tl	0.0012	0.0012	ppb	125.96	1000.	
205 Tl	0.0058	0.0058	ppb	112.97	#VALUE!	
208 Pb	0.6204	0.6204	ppb	2.26	2000.	
232 Th	0.0232	0.0232	ppb	14.98	1000.	
238 U	0.6417	0.6417	ppb	2.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2559271.80	4.13	2844110.50	90.0	69.5 - 120	
45 Sc	2555737.80	1.84	2809797.00	91.0	69.5 - 120	
72 Ge	563363.19	1.11	642252.38	87.7	69.5 - 120	
159 Tb	6524538.00	0.93	7051087.50	92.5	69.5 - 120	
209 Bi	3393059.00	1.97	3594227.50	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000552

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\058SMPL.D\058SMPL.D#
Date Acquired: May 11 2018 09:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE04IMS1
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	-0.0048	-0.001	ppb	154.26	100.	
11 B	27.415	5.483	ppb	2.53	1000.	
23 Na	85.35	17.07	ppb	5.63	200000.	
25 Mg	24.635	4.927	ppb	6.97	200000.	
27 Al	7.67	1.534	ppb	8.70	200000.	
28 Si	-79.35	-15.87	ppb	42.74	#VALUE!	
29 Si	-23.27	-4.654	ppb	191.08	10000.	
39 K	31.77	6.354	ppb	12.44	200000.	
43 Ca	82.75	16.55	ppb	33.05	#VALUE!	
44 Ca	55.15	11.03	ppb	12.01	200000.	
51 V	0.3931	0.0786	ppb	101.50	1000.	
52 Cr	2.9415	0.5883	ppb	7.70	2000.	
53 Cr	38.235	7.647	ppb	12.80	#VALUE!	
55 Mn	1.492	0.2984	ppb	2.23	2000.	
56 Fe	137.1	27.42	ppb	15.56	#VALUE!	
57 Fe	23.035	4.607	ppb	23.03	100000.	
59 Co	0.0383	0.0077	ppb	26.91	1000.	
60 Ni	0.4005	0.0801	ppb	5.13	1000.	
63 Cu	0.893	0.1786	ppb	6.70	#VALUE!	
65 Cu	0.831	0.1662	ppb	8.43	2000.	
66 Zn	0.638	0.1276	ppb	75.67	2000.	
68 Zn	1.3445	0.2689	ppb	35.40	#VALUE!	
75 As	0.4899	0.098	ppb	130.45	1000.	
82 Se	0.6795	0.1359	ppb	34.18	1000.	
88 Sr	0.1612	0.0322	ppb	22.15	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.4612	0.0922	ppb	28.96	1000.	
107 Ag	0.223	0.0446	ppb	40.95	100.	
109 Ag	0.2135	0.0427	ppb	34.86	#VALUE!	
111 Cd	0.0607	0.0121	ppb	17.82	#VALUE!	
114 Cd	-0.0607	-0.0121	ppb	104.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.69	8.938	ppb	2.50	1000.	
120 Sn	45.1	9.02	ppb	1.53	#VALUE!	
121 Sb	0.0642	0.0128	ppb	47.14	#VALUE!	
123 Sb	0.0678	0.0136	ppb	65.31	1000.	
135 Ba	0.2836	0.0567	ppb	17.13	2000.	
137 Ba	0.299	0.0598	ppb	17.16	#VALUE!	
182 W	0.0608	0.0122	ppb	13.44	1000.	
203 Tl	0.008	0.0016	ppb	146.51	1000.	
205 Tl	0.0187	0.0037	ppb	212.92	#VALUE!	
208 Pb	0.0477	0.0095	ppb	49.11	2000.	
232 Th	0.1048	0.021	ppb	32.27	1000.	
238 U	0.0044	0.0009	ppb	61.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2704507.80	3.52	2844110.50	95.1	69.5 - 120	
45 Sc	2558535.50	1.94	2809797.00	91.1	69.5 - 120	
72 Ge	561896.25	0.90	642252.38	87.5	69.5 - 120	
159 Tb	6491962.50	0.94	7051087.50	92.1	69.5 - 120	
209 Bi	3483833.30	1.62	3594227.50	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000553

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\059SMPL.D\059SMPL.D#
Date Acquired: May 11 2018 09:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE04IMS1
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	50.05	10.01	ppb	3.12	100.	
11 B	509.5	101.9	ppb	1.55	1000.	
23 Na	8,035.	1,607.	ppb	5.60	200000.	
25 Mg	5,160.	1,032.	ppb	1.56	200000.	
27 Al	2,150.	430.	ppb	1.37	200000.	
28 Si	895.	179.	ppb	2.60	#VALUE!	
29 Si	897.	179.4	ppb	5.96	10000.	
39 K	10,480.	2,096.	ppb	5.40	200000.	
43 Ca	2,950.5	590.1	ppb	7.73	#VALUE!	
44 Ca	2,536.5	507.3	ppb	1.50	200000.	
51 V	536.5	107.3	ppb	0.43	1000.	
52 Cr	210.25	42.05	ppb	0.50	2000.	
53 Cr	271.3	54.26	ppb	2.18	#VALUE!	
55 Mn	535.5	107.1	ppb	1.44	2000.	
56 Fe	1,169.5	233.9	ppb	1.70	#VALUE!	
57 Fe	1,067.	213.4	ppb	1.34	100000.	
59 Co	538.	107.6	ppb	0.69	1000.	
60 Ni	522.	104.4	ppb	0.98	1000.	
63 Cu	257.2	51.44	ppb	0.63	#VALUE!	
65 Cu	263.05	52.61	ppb	1.11	2000.	
66 Zn	497.9	99.58	ppb	0.37	2000.	
68 Zn	554.5	110.9	ppb	0.47	#VALUE!	
75 As	101.5	20.3	ppb	1.53	1000.	
82 Se	99.75	19.95	ppb	2.67	1000.	
88 Sr	501.5	100.3	ppb	1.77	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.8	20.56	ppb	1.48	1000.	
107 Ag	52.65	10.53	ppb	1.93	100.	
109 Ag	52.45	10.49	ppb	1.18	#VALUE!	
111 Cd	256.2	51.24	ppb	1.43	#VALUE!	
114 Cd	257.25	51.45	ppb	0.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	527.	105.4	ppb	1.76	1000.	
120 Sn	529.5	105.9	ppb	1.46	#VALUE!	
121 Sb	99.45	19.89	ppb	2.55	#VALUE!	
123 Sb	99.25	19.85	ppb	1.88	1000.	
135 Ba	2,037.	407.4	ppb	1.51	2000.	
137 Ba	2,051.5	410.3	ppb	1.45	#VALUE!	
182 W	106.55	21.31	ppb	0.94	1000.	
203 Tl	102.85	20.57	ppb	1.54	1000.	
205 Tl	105.35	21.07	ppb	1.79	#VALUE!	
208 Pb	105.7	21.14	ppb	1.31	2000.	
232 Th	106.25	21.25	ppb	1.71	1000.	
238 U	113.85	22.77	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2871387.30	3.10	2844110.50	101.0	69.5 - 120	
45 Sc	2565921.80	1.67	2809797.00	91.3	69.5 - 120	
72 Ge	558860.31	2.15	642252.38	87.0	69.5 - 120	
159 Tb	6608554.50	1.03	7051087.50	93.7	69.5 - 120	
209 Bi	3549846.50	1.67	3594227.50	98.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000554

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\060SMPL.D\060SMPL.D#
Date Acquired: May 11 2018 09:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-007
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	12.87	1.287	ppb	6.21	100.	
11 B	235.4	23.54	ppb	2.80	1000.	
23 Na	20,380.	2,038.	ppb	2.17	200000.	
25 Mg	128,300.	12,830.	ppb	4.10	200000.	
27 Al	268,600.	26,860.	ppb	2.42	200000.	
28 Si	3,146.	314.6	ppb	4.89	#VALUE!	
29 Si	2,909.	290.9	ppb	4.73	10000.	
39 K	61,140.	6,114.	ppb	2.77	200000.	
43 Ca	588,000.	58,800.	ppb	2.07	#VALUE!	
44 Ca	559,000.	55,900.	ppb	1.46	200000.	
51 V	512.9	51.29	ppb	1.13	1000.	
52 Cr	265.9	26.59	ppb	1.55	2000.	
53 Cr	269.1	26.91	ppb	1.89	#VALUE!	
55 Mn	14,460.	1,446.	ppb	1.24	2000.	
56 Fe	280,300.	28,030.	ppb	1.97	#VALUE!	
57 Fe	271,300.	27,130.	ppb	1.35	100000.	
59 Co	104.2	10.42	ppb	1.42	1000.	
60 Ni	274.5	27.45	ppb	1.47	1000.	
63 Cu	184.1	18.41	ppb	0.93	#VALUE!	
65 Cu	184.5	18.45	ppb	1.88	2000.	
66 Zn	714.1	71.41	ppb	1.13	2000.	
68 Zn	816.7	81.67	ppb	1.47	#VALUE!	
75 As	37.57	3.757	ppb	3.40	1000.	
82 Se	5.772	0.5772	ppb	17.21	1000.	
88 Sr	1,550.	155.	ppb	1.84	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	18.72	1.872	ppb	2.81	1000.	
107 Ag	1.166	0.1166	ppb	5.44	100.	
109 Ag	0.9074	0.0907	ppb	6.81	#VALUE!	
111 Cd	4.602	0.4602	ppb	7.45	#VALUE!	
114 Cd	2.103	0.2103	ppb	12.04	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.92	5.292	ppb	2.52	1000.	
120 Sn	53.07	5.307	ppb	1.55	#VALUE!	
121 Sb	2.858	0.2858	ppb	1.60	#VALUE!	
123 Sb	2.744	0.2744	ppb	4.44	1000.	
135 Ba	3,771.	377.1	ppb	0.81	2000.	
137 Ba	3,804.	380.4	ppb	0.90	#VALUE!	
182 W	1.256	0.1256	ppb	11.22	1000.	
203 Tl	4.549	0.4549	ppb	2.14	1000.	
205 Tl	4.545	0.4545	ppb	4.92	#VALUE!	
208 Pb	162.3	16.23	ppb	0.18	2000.	
232 Th	123.5	12.35	ppb	0.31	1000.	
238 U	18.75	1.875	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2544775.30	2.89	2844110.50	89.5	69.5 - 120	
45 Sc	2552964.00	3.54	2809797.00	90.9	69.5 - 120	
72 Ge	541227.13	1.62	642252.38	84.3	69.5 - 120	
159 Tb	6668114.00	0.15	7051087.50	94.6	69.5 - 120	
209 Bi	3480791.50	0.11	3594227.50	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000555

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\061SMPL.D\061SMPL.D#
Date Acquired: May 11 2018 09:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-019
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	14.67	1.467	ppb	4.36	100.	
11 B	225.6	22.56	ppb	3.84	1000.	
23 Na	4,958.	495.8	ppb	3.51	200000.	
25 Mg	117,100.	11,710.	ppb	3.07	200000.	
27 Al	316,200.	31,620.	ppb	2.07	200000.	
28 Si	4,096.	409.6	ppb	1.12	#VALUE!	
29 Si	3,780.	378.	ppb	3.77	10000.	
39 K	78,430.	7,843.	ppb	1.63	200000.	
43 Ca	498,400.	49,840.	ppb	3.20	#VALUE!	
44 Ca	478,100.	47,810.	ppb	0.75	200000.	
51 V	658.4	65.84	ppb	1.56	1000.	
52 Cr	293.	29.3	ppb	0.46	2000.	
53 Cr	293.4	29.34	ppb	0.89	#VALUE!	
55 Mn	12,300.	1,230.	ppb	0.68	2000.	
56 Fe	310,200.	31,020.	ppb	0.94	#VALUE!	
57 Fe	298,700.	29,870.	ppb	0.54	100000.	
59 Co	207.7	20.77	ppb	0.83	1000.	
60 Ni	334.9	33.49	ppb	0.72	1000.	
63 Cu	198.6	19.86	ppb	0.85	#VALUE!	
65 Cu	201.7	20.17	ppb	0.95	2000.	
66 Zn	779.7	77.97	ppb	1.94	2000.	
68 Zn	977.5	97.75	ppb	0.76	#VALUE!	
75 As	139.4	13.94	ppb	1.28	1000.	
82 Se	7.845	0.7845	ppb	29.98	1000.	
88 Sr	1,799.	179.9	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.53	1.753	ppb	4.10	1000.	
107 Ag	1.259	0.1259	ppb	3.84	100.	
109 Ag	1.083	0.1083	ppb	8.64	#VALUE!	
111 Cd	6.571	0.6571	ppb	4.54	#VALUE!	
114 Cd	3.277	0.3277	ppb	4.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.02	5.502	ppb	2.13	1000.	
120 Sn	55.	5.5	ppb	2.69	#VALUE!	
121 Sb	3.225	0.3225	ppb	6.03	#VALUE!	
123 Sb	3.274	0.3274	ppb	4.83	1000.	
135 Ba	6,882.	688.2	ppb	1.75	2000.	
137 Ba	6,742.	674.2	ppb	0.91	#VALUE!	
182 W	1.493	0.1493	ppb	5.23	1000.	
203 Tl	5.522	0.5522	ppb	6.31	1000.	
205 Tl	5.673	0.5673	ppb	3.36	#VALUE!	
208 Pb	252.3	25.23	ppb	0.09	2000.	
232 Th	142.6	14.26	ppb	0.44	1000.	
238 U	28.6	2.86	ppb	1.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2591779.80	3.41	2844110.50	91.1	69.5 - 120	
45 Sc	2525621.00	1.05	2809797.00	89.9	69.5 - 120	
72 Ge	534704.00	1.12	642252.38	83.3	69.5 - 120	
159 Tb	6540553.00	0.94	7051087.50	92.8	69.5 - 120	
209 Bi	3464285.30	0.45	3594227.50	96.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000556

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\062SMPL.D\062SMPL.D#
Date Acquired: May 11 2018 09:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-020
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	7.549	0.7549	ppb	11.62	100.	
11 B	176.	17.6	ppb	5.31	1000.	
23 Na	3,470.	347.	ppb	2.94	200000.	
25 Mg	118,300.	11,830.	ppb	0.85	200000.	
27 Al	166,700.	16,670.	ppb	2.14	200000.	
28 Si	2,829.	282.9	ppb	3.92	#VALUE!	
29 Si	2,494.	249.4	ppb	5.98	10000.	
39 K	42,140.	4,214.	ppb	2.54	200000.	
43 Ca	1,577,000.	157,700.	ppb	2.60	#VALUE!	
44 Ca	1,520,000.	152,000.	ppb	2.12	200000.	
51 V	347.1	34.71	ppb	1.12	1000.	
52 Cr	158.7	15.87	ppb	1.35	2000.	
53 Cr	135.2	13.52	ppb	2.41	#VALUE!	
55 Mn	5,315.	531.5	ppb	0.26	2000.	
56 Fe	150,900.	15,090.	ppb	0.35	#VALUE!	
57 Fe	148,800.	14,880.	ppb	0.74	100000.	
59 Co	82.97	8.297	ppb	2.32	1000.	
60 Ni	182.	18.2	ppb	1.97	1000.	
63 Cu	99.06	9.906	ppb	0.53	#VALUE!	
65 Cu	102.5	10.25	ppb	0.85	2000.	
66 Zn	390.2	39.02	ppb	1.94	2000.	
68 Zn	516.9	51.69	ppb	1.45	#VALUE!	
75 As	63.92	6.392	ppb	1.80	1000.	
82 Se	9.438	0.9438	ppb	14.90	1000.	
88 Sr	3,638.	363.8	ppb	1.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.	1.1	ppb	2.12	1000.	
107 Ag	0.6658	0.0666	ppb	19.15	100.	
109 Ag	0.5644	0.0564	ppb	11.19	#VALUE!	
111 Cd	4.82	0.482	ppb	13.81	#VALUE!	
114 Cd	2.386	0.2386	ppb	4.59	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.54	4.754	ppb	0.97	1000.	
120 Sn	47.69	4.769	ppb	0.98	#VALUE!	
121 Sb	2.082	0.2082	ppb	7.44	#VALUE!	
123 Sb	2.127	0.2127	ppb	6.85	1000.	
135 Ba	4,276.	427.6	ppb	0.35	2000.	
137 Ba	4,270.	427.	ppb	0.85	#VALUE!	
182 W	1.248	0.1248	ppb	3.65	1000.	
203 Tl	3.187	0.3187	ppb	4.61	1000.	
205 Tl	3.227	0.3227	ppb	1.85	#VALUE!	
208 Pb	117.9	11.79	ppb	1.07	2000.	
232 Th	72.44	7.244	ppb	0.35	1000.	
238 U	21.21	2.121	ppb	1.45	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2409329.00	3.26	2844110.50	84.7	69.5 - 120	
45 Sc	2348966.30	3.10	2809797.00	83.6	69.5 - 120	
72 Ge	511186.47	1.34	642252.38	79.6	69.5 - 120	
159 Tb	6419857.00	0.28	7051087.50	91.0	69.5 - 120	
209 Bi	3346429.80	1.31	3594227.50	93.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000557

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\063SMPL.D\063SMPL.D#
Date Acquired: May 11 2018 09:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: TEST
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	248.9	24.89	ppb	2.57	100.	
11 B	278.6	27.86	ppb	4.75	1000.	
23 Na	46,540.	4,654.	ppb	2.05	200000.	
25 Mg	47,400.	4,740.	ppb	5.10	200000.	
27 Al	4,791.	479.1	ppb	2.65	200000.	
28 Si	4,851.	485.1	ppb	3.09	#VALUE!	
29 Si	4,345.	434.5	ppb	2.93	10000.	
39 K	48,200.	4,820.	ppb	0.89	200000.	
43 Ca	48,900.	4,890.	ppb	1.18	#VALUE!	
44 Ca	49,750.	4,975.	ppb	1.20	200000.	
51 V	245.5	24.55	ppb	0.81	1000.	
52 Cr	248.9	24.89	ppb	0.32	2000.	
53 Cr	218.	21.8	ppb	0.97	#VALUE!	
55 Mn	249.6	24.96	ppb	0.96	2000.	
56 Fe	49,060.	4,906.	ppb	1.31	#VALUE!	
57 Fe	50,480.	5,048.	ppb	0.58	100000.	
59 Co	249.4	24.94	ppb	0.60	1000.	
60 Ni	248.1	24.81	ppb	1.17	1000.	
63 Cu	250.5	25.05	ppb	0.87	#VALUE!	
65 Cu	248.8	24.88	ppb	0.68	2000.	
66 Zn	248.4	24.84	ppb	1.55	2000.	
68 Zn	255.8	25.58	ppb	0.63	#VALUE!	
75 As	250.8	25.08	ppb	0.71	1000.	
82 Se	264.2	26.42	ppb	0.75	1000.	
88 Sr	248.5	24.85	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	257.	25.7	ppb	0.44	1000.	
107 Ag	259.1	25.91	ppb	0.34	100.	
109 Ag	259.6	25.96	ppb	0.83	#VALUE!	
111 Cd	260.5	26.05	ppb	0.62	#VALUE!	
114 Cd	260.1	26.01	ppb	0.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	232.4	23.24	ppb	0.49	1000.	
120 Sn	232.1	23.21	ppb	0.40	#VALUE!	
121 Sb	235.7	23.57	ppb	0.54	#VALUE!	
123 Sb	238.	23.8	ppb	1.29	1000.	
135 Ba	245.3	24.53	ppb	1.44	2000.	
137 Ba	242.5	24.25	ppb	1.08	#VALUE!	
182 W	251.2	25.12	ppb	1.03	1000.	
203 Tl	246.4	24.64	ppb	2.24	1000.	
205 Tl	249.1	24.91	ppb	1.68	#VALUE!	
208 Pb	250.2	25.02	ppb	1.63	2000.	
232 Th	251.6	25.16	ppb	1.29	1000.	
238 U	269.2	26.92	ppb	0.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2288071.80	2.28	2844110.50	80.4	69.5 - 120	
45 Sc	2339113.00	0.84	2809797.00	83.2	69.5 - 120	
72 Ge	524915.63	1.08	642252.38	81.7	69.5 - 120	
159 Tb	6506648.00	0.35	7051087.50	92.3	69.5 - 120	
209 Bi	3505412.80	1.01	3594227.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000558

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\064_CCV.D\064_CCV.D#
Date Acquired: May 11 2018 09:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.62	ppb	2.29	25	102.48	
11 B	27.07	ppb	2.51	25	108.28	
23 Na	4,418.	ppb	0.81	5,000	88.36	Fail
25 Mg	4,745.	ppb	1.85	5,000	94.9	
27 Al	488.6	ppb	2.69	500	97.72	
28 Si	466.8	ppb	4.24	500	93.36	
29 Si	410.8	ppb	0.48	500	82.16	Fail
39 K	4,694.	ppb	2.51	5,000	93.88	
43 Ca	4,627.	ppb	1.27	5,000	92.54	
44 Ca	4,862.	ppb	2.19	5,000	97.24	
51 V	24.68	ppb	0.55	25	98.72	
52 Cr	24.81	ppb	1.11	25	99.24	
53 Cr	21.71	ppb	1.32	25	86.84	
55 Mn	25.15	ppb	0.54	25	100.6	
56 Fe	4,926.	ppb	1.13	5,000	98.52	
57 Fe	4,955.	ppb	1.23	5,000	99.1	
59 Co	24.68	ppb	0.88	25	98.72	
60 Ni	24.93	ppb	2.29	25	99.72	
63 Cu	25.	ppb	0.81	25	100	
65 Cu	25.21	ppb	0.67	25	100.84	
66 Zn	25.03	ppb	2.11	25	100.12	
68 Zn	25.02	ppb	2.55	25	100.08	
75 As	25.42	ppb	1.08	25	101.68	
82 Se	26.36	ppb	1.53	25	105.44	
88 Sr	24.94	ppb	1.16	25	99.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.5	ppb	0.84	25	102	
107 Ag	25.9	ppb	0.12	25	103.6	
109 Ag	25.82	ppb	1.17	25	103.28	
111 Cd	25.84	ppb	1.19	25	103.36	
114 Cd	25.93	ppb	1.07	25	103.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.51	ppb	0.41	25	94.04	
120 Sn	23.38	ppb	0.39	25	93.52	
121 Sb	23.75	ppb	0.96	25	95	
123 Sb	23.87	ppb	0.86	25	95.48	
135 Ba	24.55	ppb	1.97	25	98.2	
137 Ba	24.48	ppb	0.35	25	97.92	
182 W	25.04	ppb	0.92	25	100.16	
203 Tl	24.66	ppb	0.97	25	98.64	
205 Tl	24.82	ppb	0.66	25	99.28	
208 Pb	24.84	ppb	0.30	25	99.36	
232 Th	25.19	ppb	1.79	25	100.76	
238 U	26.9	ppb	0.64	25	107.6	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2331333.80	2.35	2844110.50	82.0	80 - 120.4	
45 Sc	2450939.80	1.30	2809797.00	87.2	80 - 120.4	
72 Ge	533232.50	1.98	642252.38	83.0	80 - 120.4	
159 Tb	6507687.00	1.03	7051087.50	92.3	80 - 120.4	
209 Bi	3479182.00	1.21	3594227.50	96.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000559

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\065_CCB.D\065_CCB.D#
Date Acquired: May 11 2018 09:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0021	ppb	101.09	1.00	
11 B	4.526	ppb	8.54	1.00	Fail
23 Na	2.289	ppb	8.30	1.00	
25 Mg	0.0965	ppb	117.92	1.00	
27 Al	0.0565	ppb	15.94	1.00	
28 Si	38.18	ppb	13.32	1.00	
29 Si	-0.2181	ppb	2948.20	1.00	
39 K	-0.674	ppb	377.60	1.00	
43 Ca	3.608	ppb	110.42	1.00	
44 Ca	1.459	ppb	56.87	1.00	
51 V	-0.0717	ppb	96.61	1.00	
52 Cr	0.1818	ppb	27.17	1.00	
53 Cr	-5.332	ppb	5.91	1.00	
55 Mn	0.0192	ppb	25.84	1.00	
56 Fe	23.76	ppb	12.37	1.00	
57 Fe	3.983	ppb	13.91	1.00	
59 Co	0.0039	ppb	99.01	1.00	
60 Ni	0.0102	ppb	74.42	1.00	
63 Cu	0.0186	ppb	68.67	1.00	
65 Cu	-0.0034	ppb	325.70	1.00	
66 Zn	-0.0179	ppb	16.07	1.00	
68 Zn	0.2414	ppb	26.90	1.00	
75 As	0.1334	ppb	38.39	1.00	
82 Se	0.2101	ppb	22.95	1.00	
88 Sr	-0.0006	ppb	73.91	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0304	ppb	50.30	1.00	
107 Ag	0.0117	ppb	23.16	1.00	
109 Ag	0.01	ppb	62.73	1.00	
111 Cd	-0.0496	ppb	54.68	1.00	
114 Cd	0.0002	ppb	674.91	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0534	ppb	14.38	1.00	
120 Sn	0.0465	ppb	14.00	1.00	
121 Sb	0.0129	ppb	25.43	1.00	
123 Sb	0.0046	ppb	59.07	1.00	
135 Ba	0.0059	ppb	240.02	1.00	
137 Ba	0.0059	ppb	98.19	1.00	
182 W	0.0592	ppb	30.97	1.00	
203 Tl	0.0078	ppb	15.75	1.00	
205 Tl	0.0073	ppb	41.44	1.00	
208 Pb	0.067	ppb	13.78	1.00	
232 Th	0.0987	ppb	24.01	1.00	
238 U	0.0037	ppb	55.77	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2258364.30	1.08	2844110.50	79.4	79.5 - 120	ISFail
45 Sc	2276785.00	1.30	2809797.00	81.0	79.5 - 120	
72 Ge	514889.16	0.50	642252.38	80.2	79.5 - 120	
159 Tb	6127510.50	0.39	7051087.50	86.9	79.5 - 120	
209 Bi	3335170.30	1.90	3594227.50	92.8	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000560

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: JS

ANALYSIS DATE: 05/14/2018

REVIEWED
MD 5/25/18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE14A

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

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 SS (initals) on 5.14.18 (date).
5.14.18

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17761	05/14/2018	05/14/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17763	05/14/2018	05/20/2018	Varies by Element
ICSAB	MW17764	05/14/2018	05/20/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17762	05/14/2018	08/142018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

10x diln. Post Spike: 0.1mL of MW17698 (pipet M16) into 10x diln. of sample (pipet M18)

Pb failed in final PQL due to sample carryover; accepted Pb results for all non-DW samples analyzed prior to CCV/CCB for analyte at 20:49/20:53.

MD 5/25/18

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 10x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17761 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

Post Spike: 0.08mL of MW17698 (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	JLE14A	5/14/2018	3:12:00 14:23	JS
200.8 TUNE	1	JLE14A	5/14/2018	3:12:00 14:26	JS
Cal Blank	1	JLE14A	5/14/2018	3:12:00 15:12	JS
Cal Std	1	JLE14A	5/14/2018	3:16:00 15:16	JS
ICV	1	JLE14A	5/14/2018	3:20:00 15:20	JS
ICB	1	JLE14A	5/14/2018	3:23:00 15:23	JS
PQL	1	JLE14A	5/14/2018	3:26:00 15:26	JS
RINSE	1	JLE14A	5/14/2018	3:30:00 15:30	JS
ICSA	1	JLE14A	5/14/2018	3:34:00 15:34	JS
ICSAB	1	JLE14A	5/14/2018	3:38:00 15:38	JS
RINSE	1	JLE14A	5/14/2018	3:41:00 15:41	JS
LRS1	1	JLE14A	5/14/2018	3:45:00 15:45	JS
LRS2	1	JLE14A	5/14/2018	3:48:00 15:48	JS
RINSE	1	JLE14A	5/14/2018	3:52:00 15:52	JS
RINSE	1	JLE14A	5/14/2018	3:56:00 15:56	JS
CCV	1	JLE14A	5/14/2018	4:00:00 16:00	JS
CCB	1	JLE14A	5/14/2018	4:03:00 16:03	JS
SL4088-001	1	JLE14A	5/14/2018	4:07:00 16:07	JS
SL4104-001	1	JLE14A	5/14/2018	4:11:00 16:11	JS
PBWLE11IMW1	1	JLE14A	5/14/2018	4:14:00 16:14	JS
LCSWLE11IMW1	5	JLE14A	5/14/2018	4:18:00 16:18	JS
SL4028-001	1	JLE14A	5/14/2018	4:22:00 16:22	JS
SL4027-001	25	JLE14A	5/14/2018	4:26:00 16:26	JS
RINSE	1	JLE14A	5/14/2018	4:30:00 16:30	JS
RISNE	1	JLE14A	5/14/2018	4:33:00 16:33	JS
PBSLE04IMS1	5	JLE14A	5/14/2018	4:37:00 16:37	JS
LCSOLE04IMS1	5	JLE14A	5/14/2018	4:41:00 16:41	JS
CCV	1	JLE14A	5/14/2018	4:45:00 16:45	JS
CCB	1	JLE14A	5/14/2018	4:49:00 16:49	JS
SL3708-007	10	JLE14A	5/14/2018	4:52:00 16:52	JS
SL3708-019	10	JLE14A	5/14/2018	4:56:00 16:56	JS
SL3708-020	10	JLE14A	5/14/2018	5:00:00 17:00	JS
SL3708-021	10	JLE14A	5/14/2018	5:04:00 17:04	JS
SL3807-001	10	JLE14A	5/14/2018	5:08:00 17:08	JS
SL3807-002	10	JLE14A	5/14/2018	5:12:00 17:12	JS
RINSE	1	JLE14A	5/14/2018	5:16:00 17:16	JS
PBSLE11IMS2	5	JLE14A	5/14/2018	5:20:00 17:20	JS
LCSOLE11IMS2	5	JLE14A	5/14/2018	5:24:00 17:24	JS
LC2OLE11IMS2	5	JLE14A	5/14/2018	5:28:00 17:28	JS
CCV	1	JLE14A	5/14/2018	5:32:00 17:32	JS
CCB	1	JLE14A	5/14/2018	5:36:00 17:36	JS
SL3756-001	5	JLE14A	5/14/2018	5:40:00 17:40	JS
SL3756-003	5	JLE14A	5/14/2018	5:44:00 17:44	JS
SL3756-004	5	JLE14A	5/14/2018	5:48:00 17:48	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3756-005	5	JLE14A	5/14/2018	5:52:00 17:52	JS
PBSLE09IMS1	5	JLE14A	5/14/2018	5:56:00 17:56	JS
LCSOLE09IMS1	5	JLE14A	5/14/2018	6:00:00 18:00	JS
SL3809-048	10	JLE14A	5/14/2018	6:04:00 18:04	JS
SL3951-001	10	JLE14A	5/14/2018	6:08:00 18:08	JS
SL3951-001L	50	JLE14A	5/14/2018	6:12:00 18:12	JS
SL3951-001A	10	JLE14A	5/14/2018	6:16:00 18:16	JS
CCV	1	JLE14A	5/14/2018	6:20:00 18:20	JS
CCB	1	JLE14A	5/14/2018	6:24:00 18:24	JS
SL3951-001S	10	JLE14A	5/14/2018	6:28:00 18:28	JS
SL3951-001P	10	JLE14A	5/14/2018	6:32:00 18:32	JS
SL3809-020	10	JLE14A	5/14/2018	6:37:00 18:37	JS
RINSE	1	JLE14A	5/14/2018	6:41:00 18:41	JS
PBWLE14IMW1	1	JLE14A	5/14/2018	6:45:00 18:45	JS
LCSWLE14IMW1	5	JLE14A	5/14/2018	6:49:00 18:49	JS
SL4085-001	1	JLE14A	5/14/2018	6:53:00 18:53	JS
SL4085-002	1	JLE14A	5/14/2018	6:57:00 18:57	JS
SL4096-002	1	JLE14A	5/14/2018	7:01:00 19:01	JS
SL4105-001	1	JLE14A	5/14/2018	7:05:00 19:05	JS
CCV	1	JLE14A	5/14/2018	7:09:00 19:09	JS
CCB	1	JLE14A	5/14/2018	7:13:00 19:13	JS
SL4105-003	1	JLE14A	5/14/2018	7:17:00 19:17	JS
SL4096-001	1	JLE14A	5/14/2018	7:22:00 19:22	JS
PBWLE07IMW1	5	JLE14A	5/14/2018	7:26:00 19:26	JS
LCSWLE07IMW1	5	JLE14A	5/14/2018	7:30:00 19:30	JS
SL3808-002	5	JLE14A	5/14/2018	7:34:00 19:34	JS
SL3808-003	5	JLE14A	5/14/2018	7:38:00 19:38	JS
SL3808-004	5	JLE14A	5/14/2018	7:42:00 19:42	JS
SL3808-004L	25	JLE14A	5/14/2018	7:47:00 19:47	JS
SL3808-004A	5	JLE14A	5/14/2018	7:51:00 19:51	JS
SL3808-004S	5	JLE14A	5/14/2018	7:55:00 19:55	JS
CCV	1	JLE14A	5/14/2018	7:59:00 19:59	JS
CCB	1	JLE14A	5/14/2018	8:03:00 20:03	JS
SL3808-004P	5	JLE14A	5/14/2018	8:07:00 20:07	JS
SL3808-005	5	JLE14A	5/14/2018	8:11:00 20:11	JS
SL3808-005L	25	JLE14A	5/14/2018	8:16:00 20:16	JS
SL3808-005A	5	JLE14A	5/14/2018	8:20:00 20:20	JS
SL3808-005S	5	JLE14A	5/14/2018	8:24:00 20:24	JS
SL3808-005P	5	JLE14A	5/14/2018	8:28:00 20:28	JS
SL3808-006	5	JLE14A	5/14/2018	8:33:00 20:33	JS
SL3808-007	5	JLE14A	5/14/2018	8:37:00 20:37	JS
SL3808-008	5	JLE14A	5/14/2018	8:41:00 20:41	JS
SL3808-009	5	JLE14A	5/14/2018	8:45:00 20:45	JS
CCV	1	JLE14A	5/14/2018	8:49:00 20:49	JS
CCB	1	JLE14A	5/14/2018	8:53:00 20:53	JS
SL3808-010	5	JLE14A	5/14/2018	8:58:00 20:58	JS
SL3808-011	5	JLE14A	5/14/2018	9:02:00 21:02	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3808-012	5	JLE14A	5/14/2018	9:06:00 21:06	JS
SL3808-013	5	JLE14A	5/14/2018	9:10:00 21:10	JS
SL3808-014	5	JLE14A	5/14/2018	9:14:00 21:14	JS
SL3808-015	5	JLE14A	5/14/2018	9:19:00 21:19	JS
SL3808-016	5	JLE14A	5/14/2018	9:23:00 21:23	JS
SL3808-017	5	JLE14A	5/14/2018	9:27:00 21:27	JS
SL3808-018	5	JLE14A	5/14/2018	9:31:00 21:31	JS
RINSE	1	JLE14A	5/14/2018	9:36:00 21:36	JS
CCV	1	JLE14A	5/14/2018	9:40:00 21:40	JS
CCB	1	JLE14A	5/14/2018	9:44:00 21:44	JS
PBSLE08IMS2	5	JLE14A	5/14/2018	9:48:00 21:48	JS
LCSOLE08IMS2	5	JLE14A	5/14/2018	9:52:00 21:52	JS
SL3809-024	5	JLE14A	5/14/2018	9:56:00 21:56	JS
SL3809-024L	25	JLE14A	5/14/2018	10:01:0 22:01	JS
SL3809-024A	5	JLE14A	5/14/2018	10:05:0 22:05	JS
SL3809-024S	5	JLE14A	5/14/2018	10:09:0 22:09	JS
SL3809-024P	5	JLE14A	5/14/2018	10:13:0 22:13	JS
SL3809-041	5	JLE14A	5/14/2018	10:18:0 22:18	JS
SL3809-042	5	JLE14A	5/14/2018	10:22:0 22:22	JS
RINSE	1	JLE14A	5/14/2018	10:26:0 22:26	JS
CCV	1	JLE14A	5/14/2018	10:31:0 22:31	JS
CCB	1	JLE14A	5/14/2018	10:35:0 22:35	JS
SL3809-043	5	JLE14A	5/14/2018	10:39:0 22:39	JS
SL3809-044	5	JLE14A	5/14/2018	10:43:0 22:43	JS
SL3809-046	5	JLE14A	5/14/2018	10:48:0 22:48	JS
SL3809-047	5	JLE14A	5/14/2018	10:52:0 22:52	JS
RINSE	1	JLE14A	5/14/2018	10:56:0 22:56	JS
PBWLE07IMW2	5	JLE14A	5/14/2018	11:00:0 23:00	JS
LCSWLE07IMW2	5	JLE14A	5/14/2018	11:04:0 23:04	JS
SL3841-002	5	JLE14A	5/14/2018	11:09:0 23:09	JS
SL3841-003	5	JLE14A	5/14/2018	11:13:0 23:13	JS
SL3841-004	5	JLE14A	5/14/2018	11:17:0 23:17	JS
CCV	1	JLE14A	5/14/2018	11:21:0 23:21	JS
CCB	1	JLE14A	5/14/2018	11:25:0 23:25	JS
SL3841-005	5	JLE14A	5/14/2018	11:30:0 23:30	JS
SL3841-006	5	JLE14A	5/14/2018	11:34:0 23:34	JS
SL3841-010	5	JLE14A	5/14/2018	11:38:0 23:38	JS
SL3841-011	5	JLE14A	5/14/2018	11:42:0 23:42	JS
SL3841-011L	25	JLE14A	5/14/2018	11:47:0 23:47	JS
SL3841-011A	5	JLE14A	5/14/2018	11:51:0 23:51	JS
SL3841-011S	5	JLE14A	5/14/2018	11:55:0 23:55	JS
SL3841-011P	5	JLE14A	5/14/2018	11:59:0 23:59	JS
SL3841-012	5	JLE14A	5/15/2018	12:04:0 0:04	JS
SL3841-013	5	JLE14A	5/15/2018	12:08:0 0:08	JS
CCV	1	JLE14A	5/15/2018	12:12:0 0:12	JS
CCB	1	JLE14A	5/15/2018	12:16:0 0:16	JS
SL3841-014	5	JLE14A	5/15/2018	12:21:0 0:21	JS

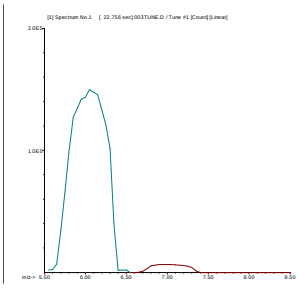
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-015	5	JLE14A	5/15/2018	12:25:0 0:25	JS
SL3841-016	5	JLE14A	5/15/2018	12:29:0 0:29	JS
SL3841-018	5	JLE14A	5/15/2018	12:33:0 0:33	JS
SL3841-019	5	JLE14A	5/15/2018	12:38:0 0:38	JS
SL3841-020	5	JLE14A	5/15/2018	12:42:0 0:42	JS
SL3841-008	5	JLE14A	5/15/2018	12:46:0 0:46	JS
SL3841-009	5	JLE14A	5/15/2018	12:50:0 0:50	JS
SL3841-017	5	JLE14A	5/15/2018	12:55:0 0:55	JS
RINSE	1	JLE14A	5/15/2018	12:59:0 0:59	JS
CCV	1	JLE14A	5/15/2018	1:03:00 1:03	JS
CCB	1	JLE14A	5/15/2018	1:07:00 1:07	JS
PQL	1	JLE14A	5/15/2018	1:11:00 1:11	JS
CCV	1	JLE14A	5/15/2018	1:16:00 1:16	JS
CCB	1	JLE14A	5/15/2018	1:20:00 1:20	JS

6020 QC Tune Report

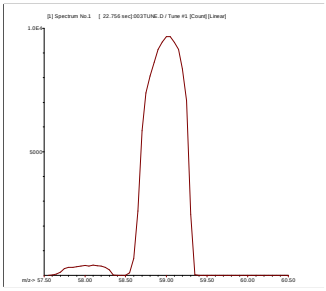
Data File: C:\ICPCHEM\1\DATA\JLE14A.B\003TUNE.D
Date Acquired: May 14 2018 02:23 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

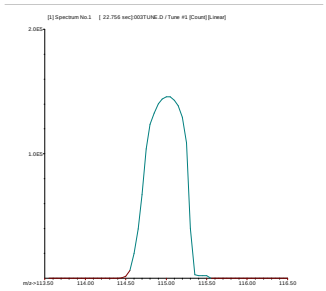
Element	Actual	Required	Flag
7 Li	2.74	5.00	
59 Co	2.02	5.00	
115 In	1.00	5.00	
205 Tl	0.68	5.00	



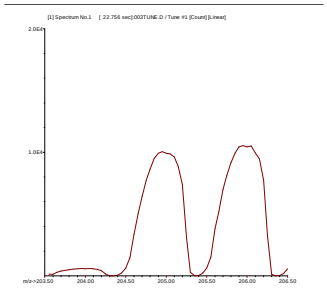
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



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:



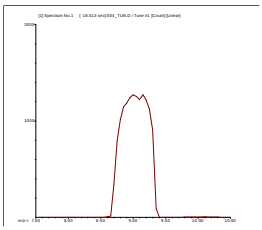
205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

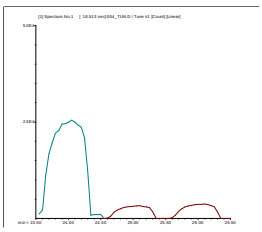
Data File: C:\ICPCHEM\1\DATA\JLE14A.B\004_TUN.D
Date Acquired: May 14 2018 02:26 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

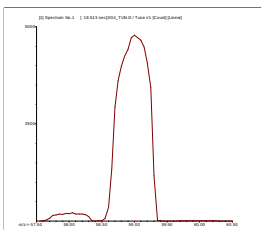
Element	Actual	Required	Flag
9 Be	1.13	5.00	
24 Mg	4.09	5.00	
59 Co	1.47	5.00	
115 In	1.15	5.00	
208 Pb	1.25	5.00	



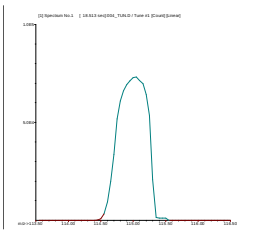
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



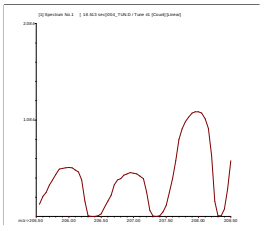
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
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 4000567

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.I
Date Acquired: May 14 2018 03:12 pm
Operator: JS
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: May 14 2018 03:14 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	4492941.00	A	63100.00	1.40
9	Be	8.52	P	3.39	39.84
11	B	363.35	P	23.33	6.42
23	Na	27923.40	P	1151.00	4.12
25	Mg	235.57	P	10.19	4.33
27	Al	2790.18	P	467.30	16.75
28	Si	1028041.00	A	9654.00	0.94
29	Si	87162.95	P	378.00	0.43
39	K	869563.19	A	7103.00	0.82
43	Ca	196.32	P	55.93	28.49
44	Ca	3096.37	P	46.37	1.50
45	Sc	3094961.00	A	25110.00	0.81
51	V	3827.64	P	97.58	2.55
52	Cr	9817.96	P	77.09	0.79
53	Cr	7332.00	P	146.30	2.00
55	Mn	1281.21	P	102.80	8.02
56	Fe	1940419.00	A	6890.00	0.36
57	Fe	9757.58	P	524.30	5.37
59	Co	126.68	P	13.33	10.52
60	Ni	57.42	P	15.40	26.82
63	Cu	493.36	P	50.45	10.23
65	Cu	236.67	P	24.04	10.16
66	Zn	951.17	P	86.57	9.10
68	Zn	1210.09	P	76.24	6.30
72	Ge	631723.63	P	4177.00	0.66
75	As	-79.20	P	79.24	100.05
82	Se	-8.77	P	41.39	471.73
88	Sr	81.49	P	16.97	20.83
89	Y	4547444.00	A	48600.00	1.07
98	Mo	22.20	P	1.96	8.81
107	Ag	33.33	P	8.82	26.46
109	Ag	24.45	P	12.62	51.63
111	Cd	941.05	P	13.84	1.47
114	Cd	10.19	P	20.58	202.01
115	In	4449646.00	A	16060.00	0.36
118	Sn	480.02	P	23.33	4.86
120	Sn	734.49	P	30.25	4.12
121	Sb	35.56	P	3.85	10.83
123	Sb	33.33	P	20.82	62.46
135	Ba	16.67	P	8.82	52.91
137	Ba	36.67	P	5.77	15.75
159	Tb	6220065.00	A	6427.00	0.10
182	W	33.33	P	5.77	17.32
203	Tl	280.01	P	44.10	15.75
205	Tl	720.04	P	45.10	6.26
208	Pb	2367.94	P	207.20	8.75
209	Bi	3318257.00	A	46850.00	1.41
232	Th	17.78	P	7.70	43.30
238	U	8.89	P	5.09	57.28

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\018CALI.D\018CALI.D#
Date Acquired: May 14 2018 03:16 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 14 2018 03:15 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	4392296.00	A	175800.00	4.00
9 Be	155583.41	P	3385.00	2.18
11 B	78512.41	P	4006.00	5.10
23 Na	87351000.00	A	3325000.00	3.81
25 Mg	7282041.00	A	107400.00	1.47
27 Al	6936554.00	A	372500.00	5.37
28 Si	4907787.00	A	166600.00	3.39
29 Si	297128.00	P	4726.00	1.59
39 K	97162120.00	A	1541000.00	1.59
43 Ca	173829.09	P	3799.00	2.19
44 Ca	2787016.00	A	27020.00	0.97
45 Sc	3192133.00	A	13830.00	0.43
51 V	537061.69	P	11930.00	2.22
52 Cr	473225.50	P	4999.00	1.06
53 Cr	61469.20	P	1430.00	2.33
55 Mn	600436.38	P	5586.00	0.93
56 Fe	98280152.00	A	1630000.00	1.66
57 Fe	2402100.00	A	33670.00	1.40
59 Co	526513.63	P	3691.00	0.70
60 Ni	120150.60	P	2336.00	1.94
63 Cu	285760.41	P	394.70	0.14
65 Cu	132106.20	P	1202.00	0.91
66 Zn	67576.40	P	847.30	1.25
68 Zn	49902.06	P	100.30	0.20
72 Ge	614107.69	P	3683.00	0.60
75 As	66479.13	P	1104.00	1.66
82 Se	5359.70	P	46.96	0.88
88 Sr	727325.00	P	2674.00	0.37
89 Y	4523317.00	A	45600.00	1.01
98 Mo	225425.09	P	869.60	0.39
107 Ag	365532.31	P	1726.00	0.47
109 Ag	347452.41	P	1654.00	0.48
111 Cd	72763.38	P	725.70	1.00
114 Cd	160262.80	P	1032.00	0.64
115 In	4357767.00	A	51820.00	1.19
118 Sn	217639.41	P	1337.00	0.61
120 Sn	299108.00	P	2144.00	0.72
121 Sb	254592.59	P	442.80	0.17
123 Sb	193107.09	P	1885.00	0.98
135 Ba	65242.41	P	142.10	0.22
137 Ba	114025.60	P	749.70	0.66
159 Tb	6276308.00	A	43250.00	0.69
182 W	283551.31	P	2614.00	0.92
203 Tl	237673.80	P	1898.00	0.80
205 Tl	563718.38	P	6126.00	1.09
208 Pb	771226.19	P	5415.00	0.70
209 Bi	3189297.00	A	6814.00	0.21
232 Th	792938.38	M	906.20	0.11
238 U	753721.63	P	14960.00	1.98

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4392296.00	4.00	4492941.00	97.8	79.5 - 120.4	
45 Sc	3192133.50	0.43	3094960.50	103.1	79.5 - 120.4	
72 Ge	614107.75	0.60	631723.63	97.2	79.5 - 120.4	
159 Tb	6276308.00	0.69	6220065.50	100.9	79.5 - 120.4	
209 Bi	3189297.50	0.21	3318256.50	96.1	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000569

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\019_ICV.D\019_ICV.D#
Date Acquired: May 14 2018 03:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.07	ppb	2.37	20	95.35	
11 B	21.69	ppb	1.86	20	108.45	
23 Na	4,031.	ppb	1.06	4,000	100.775	
25 Mg	4,031.	ppb	2.23	4,000	100.775	
27 Al	412.6	ppb	1.43	400	103.15	
28 Si	388.7	ppb	5.27	400	97.175	
29 Si	373.9	ppb	3.98	400	93.475	
39 K	3,962.	ppb	1.32	4,000	99.05	
43 Ca	3,896.	ppb	1.89	4,000	97.4	
44 Ca	3,999.	ppb	0.40	4,000	99.975	
51 V	19.56	ppb	1.01	20	97.8	
52 Cr	19.14	ppb	0.86	20	95.7	
53 Cr	16.39	ppb	3.43	20	81.95	
55 Mn	19.33	ppb	0.84	20	96.65	
56 Fe	3,920.	ppb	0.32	4,000	98	
57 Fe	3,963.	ppb	1.52	4,000	99.075	
59 Co	19.7	ppb	1.34	20	98.5	
60 Ni	19.36	ppb	2.27	20	96.8	
63 Cu	19.53	ppb	1.36	20	97.65	
65 Cu	19.99	ppb	1.35	20	99.95	
66 Zn	20.57	ppb	1.51	20	102.85	
68 Zn	20.19	ppb	0.43	20	100.95	
75 As	19.33	ppb	1.13	20	96.65	
82 Se	20.14	ppb	2.10	20	100.7	
88 Sr	19.35	ppb	0.51	20	96.75	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	37.59	ppb	0.47	40	93.975	
107 Ag	19.39	ppb	0.94	20	96.95	
109 Ag	19.53	ppb	0.47	20	97.65	
111 Cd	19.55	ppb	0.17	20	97.75	
114 Cd	19.6	ppb	0.25	20	98	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.83	ppb	1.26	20	99.15	
120 Sn	20.15	ppb	1.25	20	100.75	
121 Sb	20.01	ppb	0.97	20	100.05	
123 Sb	19.92	ppb	0.55	20	99.6	
135 Ba	19.88	ppb	0.74	20	99.4	
137 Ba	19.9	ppb	0.47	20	99.5	
182 W	19.44	ppb	1.81	20	97.2	
203 Tl	19.76	ppb	1.16	20	98.8	
205 Tl	19.79	ppb	0.59	20	98.95	
208 Pb	19.34	ppb	1.19	20	96.7	
232 Th	19.15	ppb	1.38	20	95.75	
238 U	19.17	ppb	2.33	20	95.85	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4554242.00	2.43	4492941.00	101.4	80 - 120.4	
45 Sc	3280234.30	0.99	3094960.50	106.0	80 - 120.4	
72 Ge	646170.63	0.77	631723.63	102.3	80 - 120.4	
159 Tb	6296521.00	0.37	6220065.50	101.2	80 - 120.4	
209 Bi	3282468.30	1.21	3318256.50	98.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000570

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\020_ICB.D\020_ICB.D#
Date Acquired: May 14 2018 03:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0024	ppb	203.14	1.00	
11 B	1.625	ppb	21.03	1.00	
23 Na	0.4833	ppb	128.20	1.00	
25 Mg	0.3642	ppb	185.28	1.00	
27 Al	0.0388	ppb	267.78	1.00	
28 Si	0.4705	ppb	1145.80	1.00	
29 Si	-12.3	ppb	72.41	1.00	
39 K	-0.4823	ppb	405.56	1.00	
43 Ca	0.4224	ppb	175.83	1.00	
44 Ca	1.092	ppb	121.52	1.00	
51 V	-0.1244	ppb	39.87	1.00	
52 Cr	-0.0797	ppb	32.14	1.00	
53 Cr	-1.143	ppb	27.94	1.00	
55 Mn	0.0099	ppb	42.69	1.00	
56 Fe	-6.95	ppb	44.73	1.00	
57 Fe	0.6893	ppb	106.86	1.00	
59 Co	0.0012	ppb	255.72	1.00	
60 Ni	0.0018	ppb	262.78	1.00	
63 Cu	-0.0053	ppb	73.02	1.00	
65 Cu	-0.0111	ppb	172.65	1.00	
66 Zn	0.0008	ppb	4280.90	1.00	
68 Zn	0.0718	ppb	116.03	1.00	
75 As	-0.074	ppb	72.76	1.00	
82 Se	0.1465	ppb	172.08	1.00	
88 Sr	0.0017	ppb	63.36	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0746	ppb	30.42	1.00	
107 Ag	0.0062	ppb	69.51	1.00	
109 Ag	0.0045	ppb	73.59	1.00	
111 Cd	-0.0299	ppb	32.39	1.00	
114 Cd	-0.0009	ppb	254.81	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0363	ppb	20.14	1.00	
120 Sn	0.0206	ppb	14.13	1.00	
121 Sb	0.005	ppb	48.38	1.00	
123 Sb	0.0025	ppb	141.07	1.00	
135 Ba	0.0042	ppb	89.05	1.00	
137 Ba	0.0043	ppb	164.01	1.00	
182 W	0.0606	ppb	26.73	1.00	
203 Tl	0.0088	ppb	126.55	1.00	
205 Tl	0.0054	ppb	107.50	1.00	
208 Pb	-0.0174	ppb	30.95	1.00	
232 Th	0.0573	ppb	11.13	1.00	
238 U	0.0064	ppb	24.96	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4481757.00	3.35	4492941.00	99.8	79.5 - 120	
45 Sc	3096233.80	1.70	3094960.50	100.0	79.5 - 120	
72 Ge	631557.81	0.62	631723.63	100.0	79.5 - 120	
159 Tb	6238624.50	1.48	6220065.50	100.3	79.5 - 120	
209 Bi	3309879.00	1.87	3318256.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000571

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\021_PQL.D\021_PQL.D#
Date Acquired: May 14 2018 03:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1904	ppb	3.58	0.20	95.2	
11 B	4.479	ppb	2.96	4.00	111.975	
23 Na	211.1	ppb	3.65	200.00	105.55	
25 Mg	20.57	ppb	3.21	20.00	102.85	
27 Al	20.37	ppb	1.79	20.00	101.85	
28 Si	107.4	ppb	3.22	100.00	107.4	
29 Si	90.32	ppb	7.79	100.00	90.32	
39 K	198.1	ppb	2.73	200.00	99.05	
43 Ca	14.45	ppb	15.68	20.00	72.25	
44 Ca	20.4	ppb	6.09	20.00	102	
51 V	0.9234	ppb	3.39	1.00	92.34	
52 Cr	0.8888	ppb	4.56	1.00	88.88	
53 Cr	-0.9714	ppb	9.47	---	#VALUE!	
55 Mn	0.4067	ppb	4.84	0.40	101.675	
56 Fe	15.81	ppb	22.02	20.00	79.05	
57 Fe	19.66	ppb	12.74	20.00	98.3	
59 Co	0.1998	ppb	5.49	0.20	99.9	
60 Ni	0.3995	ppb	2.10	0.40	99.875	
63 Cu	0.6149	ppb	8.58	0.60	102.483	
65 Cu	0.5779	ppb	5.29	0.60	96.3167	
66 Zn	2.082	ppb	4.59	2.00	104.1	
68 Zn	1.961	ppb	6.74	2.00	98.05	
75 As	0.9836	ppb	28.33	1.00	98.36	
82 Se	0.9533	ppb	34.25	1.00	95.33	
88 Sr	0.9733	ppb	6.85	1.00	97.33	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9958	ppb	1.59	1.00	99.58	
107 Ag	0.1996	ppb	1.54	0.20	99.8	
109 Ag	0.2023	ppb	4.06	0.20	101.15	
111 Cd	0.1522	ppb	19.26	0.20	76.1	
114 Cd	0.2013	ppb	5.68	0.20	100.65	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.01	ppb	4.66	1.00	101	
120 Sn	1.028	ppb	4.57	1.00	102.8	
121 Sb	0.2139	ppb	1.88	0.20	106.95	
123 Sb	0.2206	ppb	6.49	0.20	110.3	
135 Ba	0.4154	ppb	4.29	0.40	103.85	
137 Ba	0.4108	ppb	4.25	0.40	102.7	
182 W	0.9916	ppb	1.89	1.00	99.16	
203 Tl	0.2199	ppb	5.96	0.20	109.95	
205 Tl	0.2031	ppb	6.07	0.20	101.55	
208 Pb	0.2184	ppb	7.78	0.20	109.2	
232 Th	0.2097	ppb	5.51	0.20	104.85	
238 U	0.2019	ppb	3.11	0.20	100.95	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4444047.50	1.03	4492941.00	98.9	80 - 120.4	
45 Sc	3077699.80	1.28	3094960.50	99.4	80 - 120.4	
72 Ge	629745.25	1.20	631723.63	99.7	80 - 120.4	
159 Tb	6219506.00	1.88	6220065.50	100.0	80 - 120.4	
209 Bi	3244998.80	1.68	3318256.50	97.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000572

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\022SMPL.D\022SMPL.D#
Date Acquired: May 14 2018 03:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	137.77	100.	
11 B	0.436	0.436	ppb	18.90	1000.	
23 Na	0.7888	0.7888	ppb	32.44	200000.	
25 Mg	0.0542	0.0542	ppb	190.30	200000.	
27 Al	0.4346	0.4346	ppb	23.72	200000.	
28 Si	1.401	1.401	ppb	356.46	#VALUE!	
29 Si	-11.54	-11.54	ppb	9.58	10000.	
39 K	-0.8045	-0.8045	ppb	117.92	200000.	
43 Ca	-2.125	-2.125	ppb	183.53	#VALUE!	
44 Ca	1.18	1.18	ppb	33.25	200000.	
51 V	-0.0835	-0.0835	ppb	66.90	1000.	
52 Cr	-0.0481	-0.0481	ppb	23.69	2000.	
53 Cr	-1.862	-1.862	ppb	4.98	#VALUE!	
55 Mn	-0.0058	-0.0058	ppb	18.09	2000.	
56 Fe	-0.139	-0.139	ppb	3915.10	#VALUE!	
57 Fe	0.8098	0.8098	ppb	124.10	100000.	
59 Co	-0.0014	-0.0014	ppb	122.85	1000.	
60 Ni	0.0139	0.0139	ppb	129.62	1000.	
63 Cu	0.1345	0.1345	ppb	8.17	#VALUE!	
65 Cu	0.1353	0.1353	ppb	10.85	2000.	
66 Zn	0.0079	0.0079	ppb	406.56	2000.	
68 Zn	0.0125	0.0125	ppb	657.67	#VALUE!	
75 As	0.0086	0.0086	ppb	1671.70	1000.	
82 Se	0.1142	0.1142	ppb	105.34	1000.	
88 Sr	-0.0008	-0.0008	ppb	64.71	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0104	0.0104	ppb	43.62	1000.	
107 Ag	0.0019	0.0019	ppb	88.65	100.	
109 Ag	0.001	0.001	ppb	18.07	#VALUE!	
111 Cd	-0.0329	-0.0329	ppb	30.45	#VALUE!	
114 Cd	-0.0021	-0.0021	ppb	39.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0033	-0.0033	ppb	179.33	1000.	
120 Sn	-0.014	-0.014	ppb	70.57	#VALUE!	
121 Sb	-0.0008	-0.0008	ppb	128.72	#VALUE!	
123 Sb	0.001	0.001	ppb	451.61	1000.	
135 Ba	0.0134	0.0134	ppb	60.19	2000.	
137 Ba	0.0033	0.0033	ppb	45.96	#VALUE!	
182 W	0.0088	0.0088	ppb	17.26	1000.	
203 Tl	0.0046	0.0046	ppb	34.34	1000.	
205 Tl	-0.0047	-0.0047	ppb	55.81	#VALUE!	
208 Pb	0.1539	0.1539	ppb	7.46	2000.	
232 Th	0.0085	0.0085	ppb	28.43	1000.	
238 U	0.001	0.001	ppb	97.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4664009.00	4.81	4492941.00	103.8	69.5 - 120	
45 Sc	3153090.30	2.15	3094960.50	101.9	69.5 - 120	
72 Ge	638596.25	1.79	631723.63	101.1	69.5 - 120	
159 Tb	6112078.50	0.70	6220065.50	98.3	69.5 - 120	
209 Bi	3190041.30	1.55	3318256.50	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000573

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\023ICSA.D\023ICSA.D#
Date Acquired: May 14 2018 03:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	78.58		
11 B	0.6987	ppb	12.46		
23 Na	102,200.	ppb	1.42		
25 Mg	99,940.	ppb	3.06		
27 Al	99,860.	ppb	3.13		
28 Si	20.08	ppb	6.03		
29 Si	54.59	ppb	8.16		
39 K	99,380.	ppb	1.26		
43 Ca	101,500.	ppb	1.80		
44 Ca	97,280.	ppb	1.99		
51 V	0.1946	ppb	38.18		
52 Cr	1.129	ppb	3.48		
53 Cr	0.434	ppb	116.18		
55 Mn	0.3535	ppb	3.80		
56 Fe	96,200.	ppb	2.31		
57 Fe	92,940.	ppb	0.97		
59 Co	0.0926	ppb	8.26		
60 Ni	-0.2361	ppb	5.15		
63 Cu	4.21	ppb	2.84		
65 Cu	1.045	ppb	3.45		
66 Zn	2.543	ppb	6.28		
68 Zn	0.4309	ppb	15.97		
75 As	0.0733	ppb	175.10		
82 Se	0.1863	ppb	114.06		
88 Sr	0.9453	ppb	3.25		
89 Y	--------	---	--------		
98 Mo	1,890.	ppb	1.29		
107 Ag	0.0248	ppb	24.67		
109 Ag	0.0172	ppb	15.52		
111 Cd	0.0345	ppb	32.33		
114 Cd	0.017	ppb	103.35		
115 In	--------	---	--------		
118 Sn	0.0491	ppb	18.29		
120 Sn	0.0273	ppb	62.33		
121 Sb	0.0373	ppb	5.28		
123 Sb	0.045	ppb	9.56		
135 Ba	0.0925	ppb	7.74		
137 Ba	0.0878	ppb	13.09		
182 W	0.2336	ppb	1.86		
203 Tl	0.0088	ppb	3.85		
205 Tl	-0.0024	ppb	154.03		
208 Pb	0.0625	ppb	19.23		
232 Th	0.0469	ppb	13.67		
238 U	0.0013	ppb	50.10		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4353064.00	1.58	4492941.00	96.9	69.5 - 120.4	
45 Sc	3237120.30	3.31	3094960.50	104.6	69.5 - 120.4	
72 Ge	639350.69	1.73	631723.63	101.2	69.5 - 120.4	
159 Tb	6088915.50	0.18	6220065.50	97.9	69.5 - 120.4	
209 Bi	2721698.50	0.92	3318256.50	82.0	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000574

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\024ICSB.D\024ICSB.D#
Date Acquired: May 14 2018 03:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	19.25	ppb	5.62	20.00	79.5 - 120	
11 B	22.54	ppb	4.29	20.00	79.5 - 120	
23 Na	105,400.	ppb	1.28	#########	79.5 - 120	
25 Mg	101,300.	ppb	1.35	#########	79.5 - 120	
27 Al	100,600.	ppb	1.78	#########	79.5 - 120	
28 Si	532.8	ppb	1.77	---	##### - #####	
29 Si	557.7	ppb	2.74	---	##### - #####	
39 K	98,850.	ppb	0.87	#########	79.5 - 120	
43 Ca	101,400.	ppb	1.51	#########	79.5 - 120	
44 Ca	96,790.	ppb	0.63	#########	79.5 - 120	
51 V	20.78	ppb	1.14	20.00	79.5 - 120	
52 Cr	20.93	ppb	1.68	20.00	79.5 - 120	
53 Cr	21.48	ppb	1.61	---	##### - #####	
55 Mn	19.71	ppb	0.89	20.00	79.5 - 120	
56 Fe	96,320.	ppb	0.83	#########	79.5 - 120	
57 Fe	93,950.	ppb	0.96	#########	79.5 - 120	
59 Co	19.52	ppb	2.01	20.00	79.5 - 120	
60 Ni	18.27	ppb	1.76	20.00	79.5 - 120	
63 Cu	22.58	ppb	1.15	20.00	79.5 - 120	
65 Cu	19.98	ppb	1.71	20.00	79.5 - 120	
66 Zn	19.69	ppb	0.24	20.00	79.5 - 120	
68 Zn	17.97	ppb	2.46	20.00	79.5 - 120	
75 As	19.69	ppb	0.59	20.00	79.5 - 120	
82 Se	19.38	ppb	2.06	20.00	79.5 - 120	
88 Sr	21.04	ppb	0.92	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,912.	ppb	1.01	2000.00	79.5 - 120	
107 Ag	17.84	ppb	2.04	20.00	79.5 - 120	
109 Ag	18.	ppb	1.71	20.00	79.5 - 120	
111 Cd	18.08	ppb	1.66	20.00	79.5 - 120	
114 Cd	18.01	ppb	1.07	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.12	ppb	1.37	20.00	79.5 - 120	
120 Sn	21.19	ppb	1.03	20.00	79.5 - 120	
121 Sb	20.82	ppb	0.90	20.00	79.5 - 120	
123 Sb	21.	ppb	0.69	20.00	79.5 - 120	
135 Ba	21.12	ppb	1.60	20.00	79.5 - 120	
137 Ba	20.93	ppb	0.48	20.00	79.5 - 120	
182 W	20.21	ppb	1.42	20.00	79.5 - 120	
203 Tl	21.27	ppb	0.95	20.00	79.5 - 120	
205 Tl	21.31	ppb	2.14	20.00	79.5 - 120	
208 Pb	21.15	ppb	1.50	20.00	79.5 - 120	
232 Th	22.13	ppb	1.43	20.00	79.5 - 120	
238 U	21.82	ppb	1.98	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4469143.00	4.45	4492941.00	99.5	69.5 - 120	
45 Sc	3342195.80	1.59	3094960.50	108.0	69.5 - 120	
72 Ge	656262.25	1.58	631723.63	103.9	69.5 - 120	
159 Tb	6200078.50	1.32	6220065.50	99.7	69.5 - 120	
209 Bi	2746144.30	1.36	3318256.50	82.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000575

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\025SMPL.D\025SMPL.D#
Date Acquired: May 14 2018 03:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	141.83	100.	
11 B	0.382	0.382	ppb	15.94	1000.	
23 Na	8.213	8.213	ppb	75.02	200000.	
25 Mg	6.045	6.045	ppb	95.60	200000.	
27 Al	7.325	7.325	ppb	91.90	200000.	
28 Si	5.261	5.261	ppb	74.40	#VALUE!	
29 Si	-28.5	-28.5	ppb	17.73	10000.	
39 K	1.954	1.954	ppb	276.97	200000.	
43 Ca	4.073	4.073	ppb	73.39	#VALUE!	
44 Ca	5.841	5.841	ppb	83.19	200000.	
51 V	-0.0922	-0.0922	ppb	40.17	1000.	
52 Cr	-0.0064	-0.0064	ppb	162.19	2000.	
53 Cr	1.336	1.336	ppb	10.42	#VALUE!	
55 Mn	0.0023	0.0023	ppb	272.38	2000.	
56 Fe	3.359	3.359	ppb	74.96	#VALUE!	
57 Fe	8.593	8.593	ppb	28.02	100000.	
59 Co	-0.0001	-0.0001	ppb	2888.70	1000.	
60 Ni	0.0223	0.0223	ppb	32.26	1000.	
63 Cu	0.1581	0.1581	ppb	7.33	#VALUE!	
65 Cu	0.1542	0.1542	ppb	5.98	2000.	
66 Zn	0.1394	0.1394	ppb	66.61	2000.	
68 Zn	0.12	0.12	ppb	52.58	#VALUE!	
75 As	0.0177	0.0177	ppb	1054.70	1000.	
82 Se	-0.0035	-0.0035	ppb	2385.10	1000.	
88 Sr	0.0009	0.0009	ppb	220.73	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.214	1.214	ppb	34.62	1000.	
107 Ag	0.0055	0.0055	ppb	76.14	100.	
109 Ag	0.0046	0.0046	ppb	54.44	#VALUE!	
111 Cd	-0.0689	-0.0689	ppb	29.71	#VALUE!	
114 Cd	-0.0003	-0.0003	ppb	869.80	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0071	0.0071	ppb	83.16	1000.	
120 Sn	0.0003	0.0003	ppb	1882.80	#VALUE!	
121 Sb	0.0066	0.0066	ppb	54.91	#VALUE!	
123 Sb	0.	0.	ppb	18969.00	1000.	
135 Ba	0.0284	0.0284	ppb	47.20	2000.	
137 Ba	0.0404	0.0404	ppb	22.28	#VALUE!	
182 W	0.0115	0.0115	ppb	42.11	1000.	
203 Tl	0.0107	0.0107	ppb	46.22	1000.	
205 Tl	-0.0026	-0.0026	ppb	78.42	#VALUE!	
208 Pb	0.1394	0.1394	ppb	5.86	2000.	
232 Th	0.0109	0.0109	ppb	17.75	1000.	
238 U	0.0029	0.0029	ppb	12.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4698673.50	1.50	4492941.00	104.6	69.5 - 120	
45 Sc	3332540.80	0.94	3094960.50	107.7	69.5 - 120	
72 Ge	670699.69	0.52	631723.63	106.2	69.5 - 120	
159 Tb	6211803.50	0.10	6220065.50	99.9	69.5 - 120	
209 Bi	3211532.50	0.71	3318256.50	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000576

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\026SMPL.D\026SMPL.D#
Date Acquired: May 14 2018 03:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	95.75	95.75	ppb	1.77	100.	
11 B	0.175	0.175	ppb	8.77	1000.	
23 Na	3.2	3.2	ppb	10.04	200000.	
25 Mg	1.057	1.057	ppb	3.53	200000.	
27 Al	3.751	3.751	ppb	4.63	200000.	
28 Si	-1.858	-1.858	ppb	250.54	#VALUE!	
29 Si	-6.36	-6.36	ppb	38.52	10000.	
39 K	0.6925	0.6925	ppb	195.81	200000.	
43 Ca	1,593.	1,593.	ppb	0.51	#VALUE!	
44 Ca	124.7	124.7	ppb	5.32	200000.	
51 V	1,078.	1,078.	ppb	1.16	1000.	>LDR
52 Cr	2,077.	2,077.	ppb	1.39	2000.	>LDR
53 Cr	2,120.	2,120.	ppb	0.82	#VALUE!	
55 Mn	2,032.	2,032.	ppb	1.22	2000.	>LDR
56 Fe	-0.0508	-0.0508	ppb	4049.60	#VALUE!	
57 Fe	0.1191	0.1191	ppb	359.78	100000.	
59 Co	1,039.	1,039.	ppb	0.61	1000.	>LDR
60 Ni	1,024.	1,024.	ppb	1.53	1000.	>LDR
63 Cu	2,000.	2,000.	ppb	1.87	#VALUE!	
65 Cu	2,058.	2,058.	ppb	1.60	2000.	>LDR
66 Zn	2,093.	2,093.	ppb	1.70	2000.	>LDR
68 Zn	2,096.	2,096.	ppb	1.45	#VALUE!	
75 As	1,059.	1,059.	ppb	1.27	1000.	>LDR
82 Se	1,095.	1,095.	ppb	0.44	1000.	>LDR
88 Sr	1,972.	1,972.	ppb	0.44	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,002.	1,002.	ppb	0.85	1000.	>LDR
107 Ag	107.2	107.2	ppb	0.35	100.	>LDR
109 Ag	107.5	107.5	ppb	0.42	#VALUE!	
111 Cd	1,050.	1,050.	ppb	2.14	#VALUE!	
114 Cd	1,014.	1,014.	ppb	0.93	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,038.	1,038.	ppb	1.19	1000.	>LDR
120 Sn	1,039.	1,039.	ppb	0.51	#VALUE!	
121 Sb	1,050.	1,050.	ppb	1.03	#VALUE!	
123 Sb	1,065.	1,065.	ppb	0.70	1000.	>LDR
135 Ba	2,124.	2,124.	ppb	1.24	2000.	>LDR
137 Ba	2,091.	2,091.	ppb	1.79	#VALUE!	
182 W	1,008.	1,008.	ppb	1.62	1000.	>LDR
203 Tl	1,013.	1,013.	ppb	1.22	1000.	>LDR
205 Tl	993.6	993.6	ppb	1.44	#VALUE!	
208 Pb	1,981.	1,981.	ppb	1.72	2000.	
232 Th	980.6	980.6	ppb	2.04	1000.	
238 U	964.8	964.8	ppb	0.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4737063.50	1.51	4492941.00	105.4	69.5 - 120	
45 Sc	3138263.00	0.98	3094960.50	101.4	69.5 - 120	
72 Ge	617598.38	1.73	631723.63	97.8	69.5 - 120	
159 Tb	6094814.50	1.26	6220065.50	98.0	69.5 - 120	
209 Bi	3233750.00	0.83	3318256.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

17 :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 4000577

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\027SMPL.D\027SMPL.D#
Date Acquired: May 14 2018 03:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	0.0075	0.0075	ppb	17.13	100.	
11 B	0.5894	0.5894	ppb	7.38	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	204,300.	204,300.	ppb	2.12	200000.	>LDR
27 Al	203,300.	203,300.	ppb	0.75	200000.	>LDR
28 Si	10,460.	10,460.	ppb	2.09	#VALUE!	
29 Si	10,650.	10,650.	ppb	2.02	10000.	>LDR
39 K	194,500.	194,500.	ppb	2.89	200000.	
43 Ca	196,100.	196,100.	ppb	1.72	#VALUE!	
44 Ca	192,800.	192,800.	ppb	0.82	200000.	
51 V	0.1165	0.1165	ppb	63.26	1000.	
52 Cr	3.045	3.045	ppb	2.51	2000.	
53 Cr	1.139	1.139	ppb	13.92	#VALUE!	
55 Mn	7.572	7.572	ppb	0.51	2000.	
56 Fe	98,020.	98,020.	ppb	0.62	#VALUE!	
57 Fe	94,840.	94,840.	ppb	0.63	100000.	
59 Co	2.848	2.848	ppb	0.73	1000.	
60 Ni	3.123	3.123	ppb	4.92	1000.	
63 Cu	10.14	10.14	ppb	1.18	#VALUE!	
65 Cu	3.067	3.067	ppb	2.95	2000.	
66 Zn	3.9	3.9	ppb	1.40	2000.	
68 Zn	1.192	1.192	ppb	3.20	#VALUE!	
75 As	0.2336	0.2336	ppb	28.20	1000.	
82 Se	0.4522	0.4522	ppb	1.83	1000.	
88 Sr	6.963	6.963	ppb	0.99	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.52	1.52	ppb	41.95	1000.	
107 Ag	0.3507	0.3507	ppb	3.43	100.	
109 Ag	0.361	0.361	ppb	4.13	#VALUE!	
111 Cd	0.0216	0.0216	ppb	80.42	#VALUE!	
114 Cd	-0.0068	-0.0068	ppb	68.05	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.5872	0.5872	ppb	17.00	1000.	
120 Sn	0.5519	0.5519	ppb	14.27	#VALUE!	
121 Sb	0.173	0.173	ppb	15.17	#VALUE!	
123 Sb	0.1852	0.1852	ppb	6.51	1000.	
135 Ba	0.2458	0.2458	ppb	8.38	2000.	
137 Ba	0.2546	0.2546	ppb	7.39	#VALUE!	
182 W	1.228	1.228	ppb	36.19	1000.	
203 Tl	0.0425	0.0425	ppb	22.16	1000.	
205 Tl	0.046	0.046	ppb	11.64	#VALUE!	
208 Pb	0.4767	0.4767	ppb	3.33	2000.	
232 Th	1.034	1.034	ppb	22.76	1000.	
238 U	0.1286	0.1286	ppb	19.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4356302.50	4.05	4492941.00	97.0	69.5 - 120	
45 Sc	3386027.50	5.69	3094960.50	109.4	69.5 - 120	
72 Ge	633735.94	3.61	631723.63	100.3	69.5 - 120	
159 Tb	5556815.00	1.03	6220065.50	89.3	69.5 - 120	
209 Bi	2277712.30	1.60	3318256.50	68.6	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

4 :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 4000578

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\028SMPL.D\028SMPL.D#
Date Acquired: May 14 2018 03:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	44.51	100.	
11 B	0.1114	0.1114	ppb	33.73	1000.	
23 Na	15.13	15.13	ppb	65.08	200000.	
25 Mg	6.106	6.106	ppb	106.06	200000.	
27 Al	6.494	6.494	ppb	112.26	200000.	
28 Si	19.67	19.67	ppb	8.81	#VALUE!	
29 Si	-24.68	-24.68	ppb	27.35	10000.	
39 K	5.93	5.93	ppb	136.17	200000.	
43 Ca	4.335	4.335	ppb	115.89	#VALUE!	
44 Ca	6.913	6.913	ppb	78.88	200000.	
51 V	0.012	0.012	ppb	621.75	1000.	
52 Cr	0.0059	0.0059	ppb	83.39	2000.	
53 Cr	3.468	3.468	ppb	10.12	#VALUE!	
55 Mn	-0.0026	-0.0026	ppb	201.16	2000.	
56 Fe	8.523	8.523	ppb	84.65	#VALUE!	
57 Fe	7.524	7.524	ppb	46.48	100000.	
59 Co	0.0017	0.0017	ppb	114.89	1000.	
60 Ni	0.0248	0.0248	ppb	16.62	1000.	
63 Cu	0.193	0.193	ppb	11.24	#VALUE!	
65 Cu	0.1661	0.1661	ppb	2.58	2000.	
66 Zn	0.1708	0.1708	ppb	23.37	2000.	
68 Zn	0.2252	0.2252	ppb	32.61	#VALUE!	
75 As	-0.0605	-0.0605	ppb	158.49	1000.	
82 Se	-0.0989	-0.0989	ppb	299.71	1000.	
88 Sr	0.0027	0.0027	ppb	47.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2214	0.2214	ppb	48.51	1000.	
107 Ag	0.0019	0.0019	ppb	95.69	100.	
109 Ag	0.0027	0.0027	ppb	105.00	#VALUE!	
111 Cd	-0.0817	-0.0817	ppb	3.81	#VALUE!	
114 Cd	-0.0008	-0.0008	ppb	367.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0741	0.0741	ppb	31.44	1000.	
120 Sn	0.0713	0.0713	ppb	15.16	#VALUE!	
121 Sb	0.0211	0.0211	ppb	26.27	#VALUE!	
123 Sb	0.0243	0.0243	ppb	24.59	1000.	
135 Ba	0.0428	0.0428	ppb	27.66	2000.	
137 Ba	0.0433	0.0433	ppb	59.15	#VALUE!	
182 W	0.2225	0.2225	ppb	38.54	1000.	
203 Tl	0.0061	0.0061	ppb	49.96	1000.	
205 Tl	0.0043	0.0043	ppb	84.25	#VALUE!	
208 Pb	0.1451	0.1451	ppb	7.34	2000.	
232 Th	0.0378	0.0378	ppb	56.06	1000.	
238 U	0.0056	0.0056	ppb	20.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4675134.00	0.31	4492941.00	104.1	69.5 - 120	
45 Sc	3493044.50	1.14	3094960.50	112.9	69.5 - 120	
72 Ge	694221.38	1.26	631723.63	109.9	69.5 - 120	
159 Tb	6229378.00	0.52	6220065.50	100.1	69.5 - 120	
209 Bi	3102786.50	1.17	3318256.50	93.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000579

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\029SMPL.D\029SMPL.D#
Date Acquired: May 14 2018 03:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	555.95	100.	
11 B	0.1167	0.1167	ppb	8.58	1000.	
23 Na	4.542	4.542	ppb	9.13	200000.	
25 Mg	1.038	1.038	ppb	9.53	200000.	
27 Al	1.248	1.248	ppb	8.46	200000.	
28 Si	15.76	15.76	ppb	39.66	#VALUE!	
29 Si	-17.75	-17.75	ppb	13.71	10000.	
39 K	-0.7393	-0.7393	ppb	244.29	200000.	
43 Ca	-2.352	-2.352	ppb	108.55	#VALUE!	
44 Ca	1.545	1.545	ppb	60.63	200000.	
51 V	-0.0589	-0.0589	ppb	136.21	1000.	
52 Cr	0.0041	0.0041	ppb	552.64	2000.	
53 Cr	4.153	4.153	ppb	5.69	#VALUE!	
55 Mn	0.0009	0.0009	ppb	56.62	2000.	
56 Fe	-3.143	-3.143	ppb	59.66	#VALUE!	
57 Fe	2.474	2.474	ppb	58.04	100000.	
59 Co	-0.003	-0.003	ppb	89.84	1000.	
60 Ni	0.0169	0.0169	ppb	80.76	1000.	
63 Cu	0.183	0.183	ppb	10.08	#VALUE!	
65 Cu	0.159	0.159	ppb	1.77	2000.	
66 Zn	0.125	0.125	ppb	9.12	2000.	
68 Zn	0.1245	0.1245	ppb	75.23	#VALUE!	
75 As	0.123	0.123	ppb	78.81	1000.	
82 Se	-0.0321	-0.0321	ppb	97.66	1000.	
88 Sr	0.0009	0.0009	ppb	133.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0997	0.0997	ppb	43.55	1000.	
107 Ag	0.0014	0.0014	ppb	126.29	100.	
109 Ag	0.0004	0.0004	ppb	165.19	#VALUE!	
111 Cd	-0.0852	-0.0852	ppb	21.00	#VALUE!	
114 Cd	-0.0038	-0.0038	ppb	17.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0279	0.0279	ppb	10.55	1000.	
120 Sn	0.0178	0.0178	ppb	35.91	#VALUE!	
121 Sb	0.0106	0.0106	ppb	32.13	#VALUE!	
123 Sb	0.0082	0.0082	ppb	13.76	1000.	
135 Ba	0.0389	0.0389	ppb	28.69	2000.	
137 Ba	0.0362	0.0362	ppb	46.25	#VALUE!	
182 W	0.0977	0.0977	ppb	23.18	1000.	
203 Tl	0.0014	0.0014	ppb	390.83	1000.	
205 Tl	-0.002	-0.002	ppb	116.99	#VALUE!	
208 Pb	0.1315	0.1315	ppb	5.38	2000.	
232 Th	0.0262	0.0262	ppb	63.84	1000.	
238 U	0.0026	0.0026	ppb	17.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4631282.00	2.10	4492941.00	103.1	69.5 - 120	
45 Sc	3366437.80	1.56	3094960.50	108.8	69.5 - 120	
72 Ge	667159.63	1.04	631723.63	105.6	69.5 - 120	
159 Tb	6194958.00	1.25	6220065.50	99.6	69.5 - 120	
209 Bi	3183284.00	0.98	3318256.50	95.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\030_CCV.D\030_CCV.D#
Date Acquired: May 14 2018 04:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.14	ppb	3.55	25	92.56	
11 B	24.09	ppb	5.13	25	96.36	
23 Na	5,302.	ppb	3.99	5,000	106.04	
25 Mg	5,259.	ppb	1.70	5,000	105.18	
27 Al	507.1	ppb	1.73	500	101.42	
28 Si	510.4	ppb	3.60	500	102.08	
29 Si	475.5	ppb	5.01	500	95.1	
39 K	4,848.	ppb	1.05	5,000	96.96	
43 Ca	4,937.	ppb	2.37	5,000	98.74	
44 Ca	5,012.	ppb	0.17	5,000	100.24	
51 V	25.17	ppb	2.31	25	100.68	
52 Cr	24.55	ppb	1.37	25	98.2	
53 Cr	25.08	ppb	3.43	25	100.32	
55 Mn	24.45	ppb	0.38	25	97.8	
56 Fe	4,872.	ppb	1.05	5,000	97.44	
57 Fe	4,950.	ppb	1.41	5,000	99	
59 Co	24.75	ppb	0.55	25	99	
60 Ni	24.2	ppb	1.31	25	96.8	
63 Cu	24.74	ppb	1.21	25	98.96	
65 Cu	24.9	ppb	0.84	25	99.6	
66 Zn	24.98	ppb	0.42	25	99.92	
68 Zn	24.58	ppb	0.94	25	98.32	
75 As	24.37	ppb	1.42	25	97.48	
82 Se	24.52	ppb	0.47	25	98.08	
88 Sr	24.07	ppb	1.57	25	96.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.94	ppb	0.82	25	95.76	
107 Ag	24.29	ppb	1.00	25	97.16	
109 Ag	24.38	ppb	0.50	25	97.52	
111 Cd	24.38	ppb	0.59	25	97.52	
114 Cd	24.37	ppb	0.40	25	97.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.11	ppb	0.41	25	100.44	
120 Sn	25.29	ppb	1.06	25	101.16	
121 Sb	25.67	ppb	1.42	25	102.68	
123 Sb	25.82	ppb	1.29	25	103.28	
135 Ba	25.39	ppb	2.94	25	101.56	
137 Ba	25.26	ppb	1.51	25	101.04	
182 W	24.11	ppb	0.96	25	96.44	
203 Tl	24.42	ppb	0.87	25	97.68	
205 Tl	24.41	ppb	1.63	25	97.64	
208 Pb	24.55	ppb	1.56	25	98.2	
232 Th	23.91	ppb	0.96	25	95.64	
238 U	23.76	ppb	1.86	25	95.04	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4779091.00	2.93	4492941.00	106.4	80 - 120.4	
45 Sc	3299230.00	1.20	3094960.50	106.6	80 - 120.4	
72 Ge	642495.13	1.01	631723.63	101.7	80 - 120.4	
159 Tb	6194052.50	0.76	6220065.50	99.6	80 - 120.4	
209 Bi	3159346.30	0.63	3318256.50	95.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000581

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\031_CCB.D\031_CCB.D#
Date Acquired: May 14 2018 04:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	82.34	1.00	
11 B	0.9984	ppb	17.72	1.00	
23 Na	2.923	ppb	22.36	1.00	
25 Mg	0.9045	ppb	69.93	1.00	
27 Al	0.5653	ppb	91.53	1.00	
28 Si	9.482	ppb	32.21	1.00	
29 Si	-7.587	ppb	107.46	1.00	
39 K	1.493	ppb	111.19	1.00	
43 Ca	-1.615	ppb	99.38	1.00	
44 Ca	1.587	ppb	61.22	1.00	
51 V	-0.0448	ppb	284.02	1.00	
52 Cr	-0.0665	ppb	48.82	1.00	
53 Cr	1.351	ppb	26.80	1.00	
55 Mn	0.0035	ppb	265.35	1.00	
56 Fe	-7.403	ppb	18.97	1.00	
57 Fe	-0.6607	ppb	172.24	1.00	
59 Co	0.0004	ppb	612.17	1.00	
60 Ni	0.0009	ppb	864.46	1.00	
63 Cu	0.0158	ppb	45.58	1.00	
65 Cu	0.0148	ppb	45.24	1.00	
66 Zn	0.0134	ppb	185.36	1.00	
68 Zn	-0.0111	ppb	259.04	1.00	
75 As	0.0498	ppb	163.80	1.00	
82 Se	0.1398	ppb	102.36	1.00	
88 Sr	0.0036	ppb	78.30	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0664	ppb	28.45	1.00	
107 Ag	0.0059	ppb	42.48	1.00	
109 Ag	0.0038	ppb	87.51	1.00	
111 Cd	-0.0311	ppb	72.58	1.00	
114 Cd	-0.0004	ppb	622.65	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0411	ppb	10.96	1.00	
120 Sn	0.038	ppb	6.52	1.00	
121 Sb	0.007	ppb	87.78	1.00	
123 Sb	0.0116	ppb	89.66	1.00	
135 Ba	0.0128	ppb	73.91	1.00	
137 Ba	0.0015	ppb	109.77	1.00	
182 W	0.0789	ppb	41.16	1.00	
203 Tl	0.0015	ppb	648.05	1.00	
205 Tl	0.0004	ppb	2219.10	1.00	
208 Pb	-0.0389	ppb	10.84	1.00	
232 Th	0.0825	ppb	10.85	1.00	
238 U	0.0039	ppb	81.62	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4777584.00	0.61	4492941.00	106.3	79.5 - 120	
45 Sc	3181318.30	0.72	3094960.50	102.8	79.5 - 120	
72 Ge	641312.81	0.76	631723.63	101.5	79.5 - 120	
159 Tb	6051368.00	0.87	6220065.50	97.3	79.5 - 120	
209 Bi	3203150.30	1.83	3318256.50	96.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\032SMPL.D\032SMPL.D#
Date Acquired: May 14 2018 04:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4088-001
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: May 14 2018 03:18 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	0.3216	0.3216	ppb	4.29	100.	
11 B	5.6	5.6	ppb	3.36	1000.	
23 Na	145,100.	145,100.	ppb	1.21	200000.	
25 Mg	1,500.	1,500.	ppb	1.50	200000.	
27 Al	676.1	676.1	ppb	1.42	200000.	
28 Si	2,520.	2,520.	ppb	0.37	#VALUE!	
29 Si	2,541.	2,541.	ppb	0.88	10000.	
39 K	2,537.	2,537.	ppb	2.41	200000.	
43 Ca	27,600.	27,600.	ppb	1.58	#VALUE!	
44 Ca	27,060.	27,060.	ppb	0.44	200000.	
51 V	0.1489	0.1489	ppb	39.07	1000.	
52 Cr	0.7271	0.7271	ppb	3.40	2000.	
53 Cr	-1.31	-1.31	ppb	41.38	#VALUE!	
55 Mn	110.2	110.2	ppb	0.80	2000.	
56 Fe	25.5	25.5	ppb	17.24	#VALUE!	
57 Fe	45.32	45.32	ppb	13.92	100000.	
59 Co	0.2846	0.2846	ppb	3.84	1000.	
60 Ni	4.26	4.26	ppb	1.31	1000.	
63 Cu	42.7	42.7	ppb	0.61	#VALUE!	
65 Cu	38.14	38.14	ppb	1.34	2000.	
66 Zn	9.262	9.262	ppb	1.63	2000.	
68 Zn	12.81	12.81	ppb	3.85	#VALUE!	
75 As	0.1692	0.1692	ppb	21.84	1000.	
82 Se	0.4385	0.4385	ppb	12.97	1000.	
88 Sr	102.3	102.3	ppb	1.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0514	0.0514	ppb	28.99	1000.	
107 Ag	0.0857	0.0857	ppb	30.50	100.	
109 Ag	0.0985	0.0985	ppb	31.47	#VALUE!	
111 Cd	0.3008	0.3008	ppb	5.49	#VALUE!	
114 Cd	0.2808	0.2808	ppb	1.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.012	0.012	ppb	66.62	1000.	
120 Sn	-0.0025	-0.0025	ppb	348.39	#VALUE!	
121 Sb	0.0173	0.0173	ppb	17.88	#VALUE!	
123 Sb	0.0173	0.0173	ppb	12.30	1000.	
135 Ba	103.4	103.4	ppb	1.42	2000.	
137 Ba	102.7	102.7	ppb	1.11	#VALUE!	
182 W	0.0442	0.0442	ppb	35.36	1000.	
203 Tl	0.0286	0.0286	ppb	33.65	1000.	
205 Tl	0.0228	0.0228	ppb	12.23	#VALUE!	
208 Pb	0.7485	0.7485	ppb	1.61	2000.	
232 Th	0.0609	0.0609	ppb	23.39	1000.	
238 U	0.0337	0.0337	ppb	11.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4617807.50	5.03	4492941.00	102.8	69.5 - 120	
45 Sc	3355415.30	2.28	3094960.50	108.4	69.5 - 120	
72 Ge	640903.63	0.87	631723.63	101.5	69.5 - 120	
159 Tb	5966605.50	1.34	6220065.50	95.9	69.5 - 120	
209 Bi	2855604.30	1.36	3318256.50	86.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000583

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\033SMPL.D\033SMPL.D#
Date Acquired: May 14 2018 04:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4104-001
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: May 14 2018 03:18 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	43.78	100.	
11 B	3.64	3.64	ppb	7.88	1000.	
23 Na	3,835.	3,835.	ppb	2.60	200000.	
25 Mg	1,086.	1,086.	ppb	2.13	200000.	
27 Al	2.171	2.171	ppb	4.59	200000.	
28 Si	6,355.	6,355.	ppb	2.81	#VALUE!	
29 Si	6,681.	6,681.	ppb	4.03	10000.	
39 K	642.	642.	ppb	4.31	200000.	
43 Ca	4,776.	4,776.	ppb	1.87	#VALUE!	
44 Ca	4,891.	4,891.	ppb	2.01	200000.	
51 V	0.1554	0.1554	ppb	20.36	1000.	
52 Cr	0.7197	0.7197	ppb	2.78	2000.	
53 Cr	12.12	12.12	ppb	20.41	#VALUE!	
55 Mn	0.2532	0.2532	ppb	3.47	2000.	
56 Fe	-4.797	-4.797	ppb	73.96	#VALUE!	
57 Fe	2.634	2.634	ppb	113.21	100000.	
59 Co	0.0054	0.0054	ppb	79.04	1000.	
60 Ni	0.0363	0.0363	ppb	27.72	1000.	
63 Cu	0.2341	0.2341	ppb	2.10	#VALUE!	
65 Cu	0.1398	0.1398	ppb	7.70	2000.	
66 Zn	0.2374	0.2374	ppb	35.02	2000.	
68 Zn	0.3812	0.3812	ppb	18.95	#VALUE!	
75 As	0.3111	0.3111	ppb	83.48	1000.	
82 Se	0.2328	0.2328	ppb	117.78	1000.	
88 Sr	33.35	33.35	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.5272	0.5272	ppb	2.73	1000.	
107 Ag	0.0057	0.0057	ppb	6.97	100.	
109 Ag	0.0027	0.0027	ppb	42.66	#VALUE!	
111 Cd	-0.084	-0.084	ppb	25.74	#VALUE!	
114 Cd	-0.0011	-0.0011	ppb	480.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0079	-0.0079	ppb	103.61	1000.	
120 Sn	-0.0155	-0.0155	ppb	68.26	#VALUE!	
121 Sb	0.0061	0.0061	ppb	26.39	#VALUE!	
123 Sb	0.0071	0.0071	ppb	39.30	1000.	
135 Ba	0.8492	0.8492	ppb	6.68	2000.	
137 Ba	0.8386	0.8386	ppb	1.23	#VALUE!	
182 W	0.0261	0.0261	ppb	27.19	1000.	
203 Tl	0.0023	0.0023	ppb	410.98	1000.	
205 Tl	0.0031	0.0031	ppb	97.65	#VALUE!	
208 Pb	0.0159	0.0159	ppb	84.42	2000.	
232 Th	0.0421	0.0421	ppb	31.64	1000.	
238 U	0.0023	0.0023	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4686413.50	5.12	4492941.00	104.3	69.5 - 120	
45 Sc	3264231.80	3.84	3094960.50	105.5	69.5 - 120	
72 Ge	645425.00	1.56	631723.63	102.2	69.5 - 120	
159 Tb	6166778.00	1.86	6220065.50	99.1	69.5 - 120	
209 Bi	3249049.30	1.03	3318256.50	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000584

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\034SMPL.D\034SMPL.D#
Date Acquired: May 14 2018 04:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE11IMW1
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	1184.50	100.	
11 B	0.3897	0.3897	ppb	5.43	1000.	
23 Na	12.14	12.14	ppb	2.07	200000.	
25 Mg	8.983	8.983	ppb	3.89	200000.	
27 Al	5.288	5.288	ppb	3.53	200000.	
28 Si	-5.42	-5.42	ppb	133.95	#VALUE!	
29 Si	-9.229	-9.229	ppb	201.65	10000.	
39 K	-2.116	-2.116	ppb	161.67	200000.	
43 Ca	-0.4333	-0.4333	ppb	707.82	#VALUE!	
44 Ca	3.	3.	ppb	1.80	200000.	
51 V	0.0311	0.0311	ppb	84.20	1000.	
52 Cr	0.0818	0.0818	ppb	34.03	2000.	
53 Cr	10.41	10.41	ppb	2.71	#VALUE!	
55 Mn	0.0901	0.0901	ppb	9.33	2000.	
56 Fe	0.9356	0.9356	ppb	234.18	#VALUE!	
57 Fe	4.645	4.645	ppb	43.42	100000.	
59 Co	-0.003	-0.003	ppb	32.99	1000.	
60 Ni	0.0239	0.0239	ppb	61.62	1000.	
63 Cu	0.0368	0.0368	ppb	24.77	#VALUE!	
65 Cu	0.0305	0.0305	ppb	37.44	2000.	
66 Zn	0.642	0.642	ppb	9.73	2000.	
68 Zn	0.6056	0.6056	ppb	2.76	#VALUE!	
75 As	-0.0715	-0.0715	ppb	135.62	1000.	
82 Se	-0.1396	-0.1396	ppb	148.28	1000.	
88 Sr	0.0092	0.0092	ppb	61.90	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0176	0.0176	ppb	43.24	1000.	
107 Ag	-0.0008	-0.0008	ppb	122.39	100.	
109 Ag	-0.0017	-0.0017	ppb	28.38	#VALUE!	
111 Cd	-0.0113	-0.0113	ppb	109.88	#VALUE!	
114 Cd	-0.0022	-0.0022	ppb	190.62	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1388	0.1388	ppb	5.46	1000.	
120 Sn	0.1244	0.1244	ppb	5.28	#VALUE!	
121 Sb	0.003	0.003	ppb	119.01	#VALUE!	
123 Sb	0.0013	0.0013	ppb	115.84	1000.	
135 Ba	0.0367	0.0367	ppb	12.83	2000.	
137 Ba	0.0341	0.0341	ppb	21.62	#VALUE!	
182 W	0.0183	0.0183	ppb	30.28	1000.	
203 Tl	0.0014	0.0014	ppb	380.58	1000.	
205 Tl	-0.0007	-0.0007	ppb	763.95	#VALUE!	
208 Pb	0.0058	0.0058	ppb	92.57	2000.	
232 Th	0.0129	0.0129	ppb	48.41	1000.	
238 U	0.0002	0.0002	ppb	146.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4954067.00	4.51	4492941.00	110.3	69.5 - 120	
45 Sc	3286522.50	3.34	3094960.50	106.2	69.5 - 120	
72 Ge	641809.88	1.93	631723.63	101.6	69.5 - 120	
159 Tb	6141080.50	1.72	6220065.50	98.7	69.5 - 120	
209 Bi	3253345.30	1.22	3318256.50	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000585

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\035SMPL.D\035SMPL.D#
Date Acquired: May 14 2018 04:18 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE11IMW1
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	47.585	9.517	ppb	8.22	100.	
11 B	490.9	98.18	ppb	1.06	1000.	
23 Na	8,335.	1,667.	ppb	0.08	200000.	
25 Mg	5,665.	1,133.	ppb	3.57	200000.	
27 Al	2,166.5	433.3	ppb	2.79	200000.	
28 Si	1,066.5	213.3	ppb	3.31	#VALUE!	
29 Si	950.5	190.1	ppb	6.98	10000.	
39 K	10,090.	2,018.	ppb	3.48	200000.	
43 Ca	2,841.	568.2	ppb	6.83	#VALUE!	
44 Ca	2,580.	516.	ppb	3.58	200000.	
51 V	541.	108.2	ppb	1.38	1000.	
52 Cr	205.5	41.1	ppb	2.31	2000.	
53 Cr	235.25	47.05	ppb	3.16	#VALUE!	
55 Mn	521.5	104.3	ppb	0.88	2000.	
56 Fe	1,041.	208.2	ppb	3.51	#VALUE!	
57 Fe	1,070.	214.	ppb	4.04	100000.	
59 Co	532.	106.4	ppb	2.25	1000.	
60 Ni	518.5	103.7	ppb	2.31	1000.	
63 Cu	259.5	51.9	ppb	2.21	#VALUE!	
65 Cu	265.4	53.08	ppb	2.12	2000.	
66 Zn	542.5	108.5	ppb	2.10	2000.	
68 Zn	603.	120.6	ppb	2.72	#VALUE!	
75 As	106.75	21.35	ppb	3.01	1000.	
82 Se	108.05	21.61	ppb	3.77	1000.	
88 Sr	503.5	100.7	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.2	20.24	ppb	3.84	1000.	
107 Ag	52.2	10.44	ppb	3.05	100.	
109 Ag	52.4	10.48	ppb	2.66	#VALUE!	
111 Cd	261.3	52.26	ppb	3.18	#VALUE!	
114 Cd	262.2	52.44	ppb	3.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	521.	104.2	ppb	3.94	1000.	
120 Sn	524.	104.8	ppb	4.13	#VALUE!	
121 Sb	108.5	21.7	ppb	4.12	#VALUE!	
123 Sb	108.95	21.79	ppb	3.93	1000.	
135 Ba	2,139.5	427.9	ppb	4.21	2000.	
137 Ba	2,158.	431.6	ppb	4.03	#VALUE!	
182 W	103.2	20.64	ppb	5.81	1000.	
203 Tl	104.45	20.89	ppb	2.35	1000.	
205 Tl	104.25	20.85	ppb	3.59	#VALUE!	
208 Pb	105.45	21.09	ppb	3.28	2000.	
232 Th	98.55	19.71	ppb	2.17	1000.	
238 U	101.6	20.32	ppb	3.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4804903.00	10.29	4492941.00	106.9	69.5 - 120	
45 Sc	3145366.30	3.68	3094960.50	101.6	69.5 - 120	
72 Ge	608951.25	2.61	631723.63	96.4	69.5 - 120	
159 Tb	6037850.50	2.98	6220065.50	97.1	69.5 - 120	
209 Bi	3200861.80	1.22	3318256.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000586

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\036SMPL.D\036SMPL.D#
Date Acquired: May 14 2018 04:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4028-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0035	0.0035	ppb	55.70	100.	
11 B	563.8	563.8	ppb	2.27	1000.	
23 Na	150,700.	150,700.	ppb	0.50	200000.	
25 Mg	195.1	195.1	ppb	0.72	200000.	
27 Al	295.7	295.7	ppb	1.68	200000.	
28 Si	24,680.	24,680.	ppb	0.60	#VALUE!	
29 Si	24,620.	24,620.	ppb	2.99	10000.	>LDR
39 K	48,120.	48,120.	ppb	3.96	200000.	
43 Ca	1,051.	1,051.	ppb	0.29	#VALUE!	
44 Ca	1,098.	1,098.	ppb	0.98	200000.	
51 V	0.7133	0.7133	ppb	13.54	1000.	
52 Cr	6.615	6.615	ppb	8.53	2000.	
53 Cr	16.38	16.38	ppb	5.43	#VALUE!	
55 Mn	7.324	7.324	ppb	0.86	2000.	
56 Fe	61.91	61.91	ppb	13.21	#VALUE!	
57 Fe	55.46	55.46	ppb	1.42	100000.	
59 Co	8.197	8.197	ppb	1.95	1000.	
60 Ni	40.16	40.16	ppb	0.60	1000.	
63 Cu	131.3	131.3	ppb	2.56	#VALUE!	
65 Cu	132.5	132.5	ppb	0.52	2000.	
66 Zn	21.37	21.37	ppb	0.26	2000.	
68 Zn	21.1	21.1	ppb	0.84	#VALUE!	
75 As	0.3353	0.3353	ppb	52.43	1000.	
82 Se	0.0612	0.0612	ppb	102.01	1000.	
88 Sr	2.529	2.529	ppb	0.85	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.139	2.139	ppb	1.63	1000.	
107 Ag	0.0132	0.0132	ppb	5.37	100.	
109 Ag	0.011	0.011	ppb	19.90	#VALUE!	
111 Cd	-0.0373	-0.0373	ppb	117.29	#VALUE!	
114 Cd	-0.0025	-0.0025	ppb	80.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9024	0.9024	ppb	4.48	1000.	
120 Sn	0.8946	0.8946	ppb	7.66	#VALUE!	
121 Sb	2.505	2.505	ppb	1.14	#VALUE!	
123 Sb	2.519	2.519	ppb	1.77	1000.	
135 Ba	1.653	1.653	ppb	3.87	2000.	
137 Ba	1.596	1.596	ppb	3.34	#VALUE!	
182 W	5.192	5.192	ppb	0.30	1000.	
203 Tl	0.0117	0.0117	ppb	36.96	1000.	
205 Tl	0.0022	0.0022	ppb	87.51	#VALUE!	
208 Pb	7.193	7.193	ppb	0.25	2000.	
232 Th	0.2086	0.2086	ppb	31.49	1000.	
238 U	0.0975	0.0975	ppb	5.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4497600.50	2.67	4492941.00	100.1	69.5 - 120	
45 Sc	3241483.50	0.37	3094960.50	104.7	69.5 - 120	
72 Ge	628529.13	1.41	631723.63	99.5	69.5 - 120	
159 Tb	5964664.00	0.82	6220065.50	95.9	69.5 - 120	
209 Bi	2812955.30	1.78	3318256.50	84.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000587

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\037SMPL.D\037SMPL.D#
Date Acquired: May 14 2018 04:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4027-001
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0127	0.0005	ppb	164.87	100.	
11 B	3,732.5	149.3	ppb	1.83	1000.	
23 Na	1,408,000.	56,320.	ppb	2.36	200000.	
25 Mg	844.25	33.77	ppb	1.56	200000.	
27 Al	871.5	34.86	ppb	2.06	200000.	
28 Si	81,200.	3,248.	ppb	2.64	#VALUE!	
29 Si	86,925.	3,477.	ppb	2.07	10000.	
39 K	431,500.	17,260.	ppb	1.67	200000.	
43 Ca	10,230.	409.2	ppb	1.98	#VALUE!	
44 Ca	10,295.	411.8	ppb	1.68	200000.	
51 V	4.5075	0.1803	ppb	9.12	1000.	
52 Cr	21.29	0.8516	ppb	4.38	2000.	
53 Cr	232.2	9.288	ppb	2.41	#VALUE!	
55 Mn	6.55	0.262	ppb	1.86	2000.	
56 Fe	158.4	6.336	ppb	45.64	#VALUE!	
57 Fe	125.375	5.015	ppb	24.73	100000.	
59 Co	19.7475	0.7899	ppb	5.13	1000.	
60 Ni	57.15	2.286	ppb	8.03	1000.	
63 Cu	191.85	7.674	ppb	0.31	#VALUE!	
65 Cu	151.675	6.067	ppb	1.65	2000.	
66 Zn	49.25	1.97	ppb	1.31	2000.	
68 Zn	52.575	2.103	ppb	3.18	#VALUE!	
75 As	0.8568	0.0343	ppb	222.12	1000.	
82 Se	4.5425	0.1817	ppb	93.34	1000.	
88 Sr	68.6	2.744	ppb	2.40	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.115	0.3246	ppb	3.33	1000.	
107 Ag	0.0206	0.0008	ppb	109.12	100.	
109 Ag	0.0384	0.0015	ppb	30.81	#VALUE!	
111 Cd	-1.3383	-0.0535	ppb	18.27	#VALUE!	
114 Cd	0.0195	0.0008	ppb	269.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.06	0.1624	ppb	15.67	1000.	
120 Sn	3.09	0.1236	ppb	9.92	#VALUE!	
121 Sb	4.3275	0.1731	ppb	2.88	#VALUE!	
123 Sb	4.295	0.1718	ppb	3.20	1000.	
135 Ba	6.16	0.2464	ppb	3.91	2000.	
137 Ba	6.0575	0.2423	ppb	16.05	#VALUE!	
182 W	21.945	0.8778	ppb	1.48	1000.	
203 Tl	0.1601	0.0064	ppb	66.85	1000.	
205 Tl	0.0252	0.001	ppb	248.26	#VALUE!	
208 Pb	16.825	0.673	ppb	1.74	2000.	
232 Th	0.5393	0.0216	ppb	35.81	1000.	
238 U	0.526	0.021	ppb	9.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4764936.00	3.55	4492941.00	106.1	69.5 - 120	
45 Sc	3362311.80	1.74	3094960.50	108.6	69.5 - 120	
72 Ge	655194.25	1.51	631723.63	103.7	69.5 - 120	
159 Tb	6082687.00	0.65	6220065.50	97.8	69.5 - 120	
209 Bi	2980553.30	0.17	3318256.50	89.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000588

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\038SMPL.D\038SMPL.D#
Date Acquired: May 14 2018 04:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	66.65	100.	
11 B	4.519	4.519	ppb	14.00	1000.	
23 Na	15.12	15.12	ppb	10.98	200000.	
25 Mg	0.7485	0.7485	ppb	19.60	200000.	
27 Al	1.042	1.042	ppb	7.84	200000.	
28 Si	4.427	4.427	ppb	88.46	#VALUE!	
29 Si	-13.2	-13.2	ppb	62.88	10000.	
39 K	-0.624	-0.624	ppb	382.85	200000.	
43 Ca	24.82	24.82	ppb	11.97	#VALUE!	
44 Ca	28.8	28.8	ppb	3.46	200000.	
51 V	0.0319	0.0319	ppb	129.70	1000.	
52 Cr	0.1511	0.1511	ppb	18.77	2000.	
53 Cr	7.956	7.956	ppb	1.33	#VALUE!	
55 Mn	0.0384	0.0384	ppb	5.55	2000.	
56 Fe	3.574	3.574	ppb	86.40	#VALUE!	
57 Fe	3.326	3.326	ppb	34.73	100000.	
59 Co	0.0026	0.0026	ppb	47.98	1000.	
60 Ni	0.0124	0.0124	ppb	16.69	1000.	
63 Cu	0.1841	0.1841	ppb	3.19	#VALUE!	
65 Cu	0.1805	0.1805	ppb	1.91	2000.	
66 Zn	0.1586	0.1586	ppb	15.56	2000.	
68 Zn	0.168	0.168	ppb	23.55	#VALUE!	
75 As	0.0962	0.0962	ppb	14.77	1000.	
82 Se	0.1686	0.1686	ppb	91.87	1000.	
88 Sr	0.0168	0.0168	ppb	31.07	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0375	0.0375	ppb	12.34	1000.	
107 Ag	-0.0004	-0.0004	ppb	143.16	100.	
109 Ag	-0.0012	-0.0012	ppb	68.42	#VALUE!	
111 Cd	-0.03	-0.03	ppb	49.97	#VALUE!	
114 Cd	-0.0034	-0.0034	ppb	96.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0112	0.0112	ppb	116.77	1000.	
120 Sn	0.0034	0.0034	ppb	219.38	#VALUE!	
121 Sb	0.0008	0.0008	ppb	156.28	#VALUE!	
123 Sb	-0.0012	-0.0012	ppb	227.02	1000.	
135 Ba	0.0717	0.0717	ppb	18.88	2000.	
137 Ba	0.0587	0.0587	ppb	22.77	#VALUE!	
182 W	0.0155	0.0155	ppb	22.02	1000.	
203 Tl	-0.0018	-0.0018	ppb	123.68	1000.	
205 Tl	-0.0004	-0.0004	ppb	514.25	#VALUE!	
208 Pb	0.1331	0.1331	ppb	5.79	2000.	
232 Th	0.0118	0.0118	ppb	19.77	1000.	
238 U	0.	0.	ppb	2899.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5020043.00	2.40	4492941.00	111.7	69.5 - 120	
45 Sc	3318592.50	1.83	3094960.50	107.2	69.5 - 120	
72 Ge	654051.75	0.66	631723.63	103.5	69.5 - 120	
159 Tb	6254588.00	1.18	6220065.50	100.6	69.5 - 120	
209 Bi	3238309.80	1.34	3318256.50	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000589

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\039SMPL.D\039SMPL.D#
Date Acquired: May 14 2018 04:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RISNE
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	252.44	100.	
11 B	2.42	2.42	ppb	10.42	1000.	
23 Na	5.05	5.05	ppb	7.56	200000.	
25 Mg	0.4762	0.4762	ppb	11.29	200000.	
27 Al	0.8725	0.8725	ppb	2.01	200000.	
28 Si	4.279	4.279	ppb	119.19	#VALUE!	
29 Si	-2.942	-2.942	ppb	148.61	10000.	
39 K	1.716	1.716	ppb	44.18	200000.	
43 Ca	12.35	12.35	ppb	45.25	#VALUE!	
44 Ca	17.3	17.3	ppb	12.74	200000.	
51 V	0.044	0.044	ppb	27.38	1000.	
52 Cr	0.0557	0.0557	ppb	66.25	2000.	
53 Cr	7.444	7.444	ppb	5.62	#VALUE!	
55 Mn	0.0272	0.0272	ppb	34.09	2000.	
56 Fe	-1.589	-1.589	ppb	271.68	#VALUE!	
57 Fe	3.982	3.982	ppb	21.38	100000.	
59 Co	-0.0027	-0.0027	ppb	16.01	1000.	
60 Ni	0.0113	0.0113	ppb	59.88	1000.	
63 Cu	0.1612	0.1612	ppb	11.84	#VALUE!	
65 Cu	0.1965	0.1965	ppb	17.87	2000.	
66 Zn	0.3958	0.3958	ppb	6.24	2000.	
68 Zn	0.4182	0.4182	ppb	12.21	#VALUE!	
75 As	0.0431	0.0431	ppb	569.07	1000.	
82 Se	-0.0846	-0.0846	ppb	221.97	1000.	
88 Sr	0.0123	0.0123	ppb	41.17	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0109	0.0109	ppb	55.91	1000.	
107 Ag	0.0017	0.0017	ppb	49.61	100.	
109 Ag	-0.0012	-0.0012	ppb	41.45	#VALUE!	
111 Cd	-0.0218	-0.0218	ppb	179.87	#VALUE!	
114 Cd	-0.0017	-0.0017	ppb	198.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0052	0.0052	ppb	119.82	1000.	
120 Sn	-0.0123	-0.0123	ppb	53.27	#VALUE!	
121 Sb	0.0014	0.0014	ppb	156.72	#VALUE!	
123 Sb	0.0016	0.0016	ppb	193.43	1000.	
135 Ba	0.0177	0.0177	ppb	38.67	2000.	
137 Ba	0.0048	0.0048	ppb	83.59	#VALUE!	
182 W	0.008	0.008	ppb	35.34	1000.	
203 Tl	-0.0015	-0.0015	ppb	562.90	1000.	
205 Tl	0.0017	0.0017	ppb	210.20	#VALUE!	
208 Pb	0.1397	0.1397	ppb	7.44	2000.	
232 Th	0.0079	0.0079	ppb	35.63	1000.	
238 U	0.0002	0.0002	ppb	47.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4855947.50	2.03	4492941.00	108.1	69.5 - 120	
45 Sc	3177009.80	0.83	3094960.50	102.7	69.5 - 120	
72 Ge	634195.00	1.19	631723.63	100.4	69.5 - 120	
159 Tb	6122523.00	1.33	6220065.50	98.4	69.5 - 120	
209 Bi	3234714.30	2.38	3318256.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000590

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\040SMPL.D\040SMPL.D#
Date Acquired: May 14 2018 04:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE04IMS1
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	-0.0007	-0.0001	ppb	124.74	100.	
11 B	10.07	2.014	ppb	2.04	1000.	
23 Na	69.05	13.81	ppb	4.52	200000.	
25 Mg	23.485	4.697	ppb	3.61	200000.	
27 Al	9.92	1.984	ppb	6.95	200000.	
28 Si	-60.3	-12.06	ppb	33.07	#VALUE!	
29 Si	-49.615	-9.923	ppb	25.13	10000.	
39 K	31.315	6.263	ppb	25.48	200000.	
43 Ca	51.8	10.36	ppb	33.02	#VALUE!	
44 Ca	56.8	11.36	ppb	12.03	200000.	
51 V	0.631	0.1262	ppb	45.84	1000.	
52 Cr	2.706	0.5412	ppb	5.90	2000.	
53 Cr	107.4	21.48	ppb	2.18	#VALUE!	
55 Mn	1.3275	0.2655	ppb	6.10	2000.	
56 Fe	30.185	6.037	ppb	11.41	#VALUE!	
57 Fe	30.74	6.148	ppb	16.06	100000.	
59 Co	-0.0071	-0.0014	ppb	108.70	1000.	
60 Ni	0.3889	0.0778	ppb	19.16	1000.	
63 Cu	1.16	0.232	ppb	9.28	#VALUE!	
65 Cu	1.1645	0.2329	ppb	5.87	2000.	
66 Zn	0.7545	0.1509	ppb	36.69	2000.	
68 Zn	0.901	0.1802	ppb	22.14	#VALUE!	
75 As	0.9225	0.1845	ppb	100.54	1000.	
82 Se	-0.1373	-0.0275	ppb	322.00	1000.	
88 Sr	0.1742	0.0348	ppb	14.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1315	0.0263	ppb	21.89	1000.	
107 Ag	0.0331	0.0066	ppb	36.56	100.	
109 Ag	0.0203	0.0041	ppb	17.07	#VALUE!	
111 Cd	0.034	0.0068	ppb	418.34	#VALUE!	
114 Cd	-0.0821	-0.0164	ppb	15.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.14	8.628	ppb	0.68	1000.	
120 Sn	43.93	8.786	ppb	1.98	#VALUE!	
121 Sb	0.0464	0.0093	ppb	60.85	#VALUE!	
123 Sb	0.0243	0.0049	ppb	76.79	1000.	
135 Ba	0.2755	0.0551	ppb	13.68	2000.	
137 Ba	0.2984	0.0597	ppb	33.69	#VALUE!	
182 W	0.0546	0.0109	ppb	43.37	1000.	
203 Tl	0.0063	0.0013	ppb	567.23	1000.	
205 Tl	-0.0076	-0.0015	ppb	182.45	#VALUE!	
208 Pb	0.1783	0.0357	ppb	44.34	2000.	
232 Th	0.2306	0.0461	ppb	11.66	1000.	
238 U	0.0018	0.0004	ppb	34.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4747934.00	0.82	4492941.00	105.7	69.5 - 120	
45 Sc	3122076.30	0.30	3094960.50	100.9	69.5 - 120	
72 Ge	617412.69	0.78	631723.63	97.7	69.5 - 120	
159 Tb	6130698.00	0.55	6220065.50	98.6	69.5 - 120	
209 Bi	3269302.80	1.00	3318256.50	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000591

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\041SMPL.D\041SMPL.D#
Date Acquired: May 14 2018 04:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE04IMS1
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	47.475	9.495	ppb	2.97	100.	
11 B	521.5	104.3	ppb	1.99	1000.	
23 Na	8,640.	1,728.	ppb	1.65	200000.	
25 Mg	5,855.	1,171.	ppb	1.06	200000.	
27 Al	2,265.5	453.1	ppb	2.94	200000.	
28 Si	1,059.	211.8	ppb	3.19	#VALUE!	
29 Si	1,078.	215.6	ppb	6.15	10000.	
39 K	10,735.	2,147.	ppb	3.52	200000.	
43 Ca	2,909.	581.8	ppb	5.18	#VALUE!	
44 Ca	2,680.5	536.1	ppb	3.42	200000.	
51 V	555.	111.	ppb	2.05	1000.	
52 Cr	212.75	42.55	ppb	1.67	2000.	
53 Cr	307.8	61.56	ppb	2.89	#VALUE!	
55 Mn	534.	106.8	ppb	1.37	2000.	
56 Fe	1,121.5	224.3	ppb	3.42	#VALUE!	
57 Fe	1,123.5	224.7	ppb	3.14	100000.	
59 Co	550.5	110.1	ppb	0.17	1000.	
60 Ni	528.5	105.7	ppb	0.72	1000.	
63 Cu	264.15	52.83	ppb	2.63	#VALUE!	
65 Cu	272.15	54.43	ppb	0.79	2000.	
66 Zn	512.	102.4	ppb	1.93	2000.	
68 Zn	574.	114.8	ppb	2.77	#VALUE!	
75 As	103.4	20.68	ppb	1.16	1000.	
82 Se	101.4	20.28	ppb	1.12	1000.	
88 Sr	518.5	103.7	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.9	20.58	ppb	1.95	1000.	
107 Ag	53.1	10.62	ppb	1.53	100.	
109 Ag	53.	10.6	ppb	2.19	#VALUE!	
111 Cd	261.3	52.26	ppb	1.43	#VALUE!	
114 Cd	259.45	51.89	ppb	1.99	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	565.5	113.1	ppb	2.65	1000.	
120 Sn	570.	114.	ppb	3.30	#VALUE!	
121 Sb	106.4	21.28	ppb	3.02	#VALUE!	
123 Sb	107.75	21.55	ppb	2.37	1000.	
135 Ba	2,154.5	430.9	ppb	3.23	2000.	
137 Ba	2,158.	431.6	ppb	2.07	#VALUE!	
182 W	108.35	21.67	ppb	3.73	1000.	
203 Tl	107.5	21.5	ppb	2.01	1000.	
205 Tl	107.2	21.44	ppb	1.81	#VALUE!	
208 Pb	108.	21.6	ppb	1.84	2000.	
232 Th	104.45	20.89	ppb	0.69	1000.	
238 U	106.3	21.26	ppb	2.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4724471.50	3.73	4492941.00	105.2	69.5 - 120	
45 Sc	3018500.30	2.20	3094960.50	97.5	69.5 - 120	
72 Ge	592091.56	1.17	631723.63	93.7	69.5 - 120	
159 Tb	5988898.50	2.35	6220065.50	96.3	69.5 - 120	
209 Bi	3227712.80	1.37	3318256.50	97.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000592

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\042_CCV.D\042_CCV.D#
Date Acquired: May 14 2018 04:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.76	ppb	1.65	25	91.04	
11 B	28.54	ppb	5.19	25	114.16	Fail
23 Na	5,107.	ppb	3.98	5,000	102.14	
25 Mg	5,149.	ppb	2.15	5,000	102.98	
27 Al	503.3	ppb	2.20	500	100.66	
28 Si	492.9	ppb	3.72	500	98.58	
29 Si	468.	ppb	3.49	500	93.6	
39 K	4,878.	ppb	1.45	5,000	97.56	
43 Ca	4,790.	ppb	2.58	5,000	95.8	
44 Ca	4,893.	ppb	2.26	5,000	97.86	
51 V	25.05	ppb	0.97	25	100.2	
52 Cr	24.65	ppb	1.44	25	98.6	
53 Cr	28.25	ppb	7.25	25	113	
55 Mn	24.54	ppb	1.17	25	98.16	
56 Fe	4,895.	ppb	0.89	5,000	97.9	
57 Fe	4,931.	ppb	1.75	5,000	98.62	
59 Co	24.38	ppb	2.03	25	97.52	
60 Ni	24.47	ppb	0.97	25	97.88	
63 Cu	24.51	ppb	1.90	25	98.04	
65 Cu	24.74	ppb	1.55	25	98.96	
66 Zn	24.91	ppb	2.59	25	99.64	
68 Zn	24.28	ppb	2.19	25	97.12	
75 As	24.38	ppb	2.29	25	97.52	
82 Se	25.09	ppb	2.27	25	100.36	
88 Sr	24.44	ppb	2.11	25	97.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.98	ppb	1.66	25	95.92	
107 Ag	24.55	ppb	0.92	25	98.2	
109 Ag	24.63	ppb	1.59	25	98.52	
111 Cd	24.67	ppb	1.29	25	98.68	
114 Cd	24.71	ppb	2.03	25	98.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.34	ppb	1.16	25	97.36	
120 Sn	24.41	ppb	1.52	25	97.64	
121 Sb	24.67	ppb	1.50	25	98.68	
123 Sb	24.99	ppb	1.02	25	99.96	
135 Ba	24.76	ppb	0.83	25	99.04	
137 Ba	24.7	ppb	1.35	25	98.8	
182 W	24.5	ppb	1.13	25	98	
203 Tl	24.57	ppb	2.61	25	98.28	
205 Tl	24.45	ppb	1.88	25	97.8	
208 Pb	24.44	ppb	1.72	25	97.76	
232 Th	24.06	ppb	2.37	25	96.24	
238 U	24.3	ppb	1.82	25	97.2	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4703443.50	1.20	4492941.00	104.7	80 - 120.4	
45 Sc	3147044.50	1.61	3094960.50	101.7	80 - 120.4	
72 Ge	609165.81	1.27	631723.63	96.4	80 - 120.4	
159 Tb	6157993.00	0.95	6220065.50	99.0	80 - 120.4	
209 Bi	3260452.30	0.88	3318256.50	98.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000593

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\043_CCB.D\043_CCB.D#
Date Acquired: May 14 2018 04:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0004	ppb	244.08	1.00	
11 B	3.044	ppb	11.00	1.00	
23 Na	1.96	ppb	3.69	1.00	
25 Mg	0.0625	ppb	102.15	1.00	
27 Al	0.114	ppb	28.09	1.00	
28 Si	-10.33	ppb	71.35	1.00	
29 Si	-13.34	ppb	59.72	1.00	
39 K	-1.108	ppb	96.84	1.00	
43 Ca	-0.3326	ppb	631.99	1.00	
44 Ca	0.5745	ppb	139.50	1.00	
51 V	0.0066	ppb	714.82	1.00	
52 Cr	0.035	ppb	38.66	1.00	
53 Cr	4.038	ppb	10.31	1.00	
55 Mn	0.0013	ppb	520.97	1.00	
56 Fe	-4.53	ppb	89.51	1.00	
57 Fe	0.5267	ppb	85.00	1.00	
59 Co	-0.0022	ppb	77.97	1.00	
60 Ni	-0.0003	ppb	1758.00	1.00	
63 Cu	0.0081	ppb	38.14	1.00	
65 Cu	0.0103	ppb	1.27	1.00	
66 Zn	0.0423	ppb	134.55	1.00	
68 Zn	-0.0178	ppb	189.80	1.00	
75 As	-0.0144	ppb	532.96	1.00	
82 Se	-0.0077	ppb	1015.30	1.00	
88 Sr	0.0032	ppb	112.30	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.039	ppb	43.16	1.00	
107 Ag	0.0041	ppb	16.81	1.00	
109 Ag	0.0036	ppb	73.16	1.00	
111 Cd	-0.0073	ppb	203.22	1.00	
114 Cd	-0.0031	ppb	145.24	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0353	ppb	11.09	1.00	
120 Sn	0.0304	ppb	39.93	1.00	
121 Sb	0.0021	ppb	157.07	1.00	
123 Sb	0.0057	ppb	24.27	1.00	
135 Ba	0.0124	ppb	52.17	1.00	
137 Ba	-0.0012	ppb	331.83	1.00	
182 W	0.0494	ppb	38.31	1.00	
203 Tl	0.0052	ppb	186.94	1.00	
205 Tl	-0.0025	ppb	304.84	1.00	
208 Pb	-0.0224	ppb	17.37	1.00	
232 Th	0.0829	ppb	2.47	1.00	
238 U	0.0035	ppb	60.37	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4712421.00	2.30	4492941.00	104.9	79.5 - 120	
45 Sc	3125634.50	1.29	3094960.50	101.0	79.5 - 120	
72 Ge	615452.94	0.65	631723.63	97.4	79.5 - 120	
159 Tb	6123339.00	1.02	6220065.50	98.4	79.5 - 120	
209 Bi	3309427.50	1.34	3318256.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000594

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\044SMPL.D\044SMPL.D#
Date Acquired: May 14 2018 04:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-007
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	11.72	1.172	ppb	7.25	100.	
11 B	184.3	18.43	ppb	5.26	1000.	
23 Na	21,630.	2,163.	ppb	3.49	200000.	
25 Mg	129,800.	12,980.	ppb	2.78	200000.	
27 Al	273,400.	27,340.	ppb	1.59	200000.	
28 Si	3,364.	336.4	ppb	2.04	#VALUE!	
29 Si	3,209.	320.9	ppb	4.34	10000.	
39 K	62,190.	6,219.	ppb	2.52	200000.	
43 Ca	588,100.	58,810.	ppb	2.37	#VALUE!	
44 Ca	554,600.	55,460.	ppb	0.76	200000.	
51 V	509.4	50.94	ppb	1.04	1000.	
52 Cr	260.7	26.07	ppb	1.07	2000.	
53 Cr	283.6	28.36	ppb	3.19	#VALUE!	
55 Mn	13,700.	1,370.	ppb	1.20	2000.	
56 Fe	272,200.	27,220.	ppb	0.94	#VALUE!	
57 Fe	263,500.	26,350.	ppb	1.27	100000.	
59 Co	104.2	10.42	ppb	1.70	1000.	
60 Ni	267.4	26.74	ppb	1.02	1000.	
63 Cu	177.9	17.79	ppb	1.59	#VALUE!	
65 Cu	185.3	18.53	ppb	0.36	2000.	
66 Zn	708.8	70.88	ppb	0.56	2000.	
68 Zn	816.	81.6	ppb	0.39	#VALUE!	
75 As	36.97	3.697	ppb	3.84	1000.	
82 Se	7.016	0.7016	ppb	9.97	1000.	
88 Sr	1,508.	150.8	ppb	0.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.95	1.795	ppb	1.77	1000.	
107 Ag	1.13	0.113	ppb	5.93	100.	
109 Ag	0.9151	0.0915	ppb	2.91	#VALUE!	
111 Cd	5.375	0.5375	ppb	5.45	#VALUE!	
114 Cd	1.491	0.1491	ppb	8.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.03	5.403	ppb	1.04	1000.	
120 Sn	54.25	5.425	ppb	2.21	#VALUE!	
121 Sb	2.916	0.2916	ppb	5.66	#VALUE!	
123 Sb	2.817	0.2817	ppb	3.81	1000.	
135 Ba	3,820.	382.	ppb	0.94	2000.	
137 Ba	3,744.	374.4	ppb	1.44	#VALUE!	
182 W	1.239	0.1239	ppb	12.07	1000.	
203 Tl	4.371	0.4371	ppb	6.53	1000.	
205 Tl	4.505	0.4505	ppb	3.66	#VALUE!	
208 Pb	158.5	15.85	ppb	1.00	2000.	
232 Th	116.	11.6	ppb	0.98	1000.	
238 U	16.73	1.673	ppb	0.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4596578.00	4.36	4492941.00	102.3	69.5 - 120	
45 Sc	3129128.80	1.99	3094960.50	101.1	69.5 - 120	
72 Ge	593802.00	0.28	631723.63	94.0	69.5 - 120	
159 Tb	6118795.50	0.26	6220065.50	98.4	69.5 - 120	
209 Bi	3159649.00	0.91	3318256.50	95.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000595

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\045SMPL.D\045SMPL.D#
Date Acquired: May 14 2018 04:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-019
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	13.98	1.398	ppb	3.53	100.	
11 B	203.4	20.34	ppb	8.40	1000.	
23 Na	5,113.	511.3	ppb	3.35	200000.	
25 Mg	122,700.	12,270.	ppb	0.72	200000.	
27 Al	338,100.	33,810.	ppb	0.87	200000.	
28 Si	4,577.	457.7	ppb	3.20	#VALUE!	
29 Si	4,327.	432.7	ppb	3.41	10000.	
39 K	78,870.	7,887.	ppb	0.95	200000.	
43 Ca	513,100.	51,310.	ppb	3.33	#VALUE!	
44 Ca	483,800.	48,380.	ppb	1.54	200000.	
51 V	670.8	67.08	ppb	0.71	1000.	
52 Cr	290.4	29.04	ppb	1.41	2000.	
53 Cr	312.5	31.25	ppb	0.97	#VALUE!	
55 Mn	11,750.	1,175.	ppb	0.62	2000.	
56 Fe	304,500.	30,450.	ppb	1.57	#VALUE!	
57 Fe	298,400.	29,840.	ppb	0.60	100000.	
59 Co	207.3	20.73	ppb	1.58	1000.	
60 Ni	334.7	33.47	ppb	3.02	1000.	
63 Cu	194.2	19.42	ppb	1.01	#VALUE!	
65 Cu	203.9	20.39	ppb	1.42	2000.	
66 Zn	783.1	78.31	ppb	1.75	2000.	
68 Zn	1,007.	100.7	ppb	0.64	#VALUE!	
75 As	139.2	13.92	ppb	0.78	1000.	
82 Se	6.313	0.6313	ppb	47.68	1000.	
88 Sr	1,765.	176.5	ppb	1.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.48	1.648	ppb	2.18	1000.	
107 Ag	1.207	0.1207	ppb	6.48	100.	
109 Ag	0.9985	0.0999	ppb	4.90	#VALUE!	
111 Cd	7.41	0.741	ppb	3.66	#VALUE!	
114 Cd	2.976	0.2976	ppb	8.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.27	5.627	ppb	1.89	1000.	
120 Sn	56.51	5.651	ppb	1.43	#VALUE!	
121 Sb	3.412	0.3412	ppb	2.24	#VALUE!	
123 Sb	3.261	0.3261	ppb	0.94	1000.	
135 Ba	6,854.	685.4	ppb	1.84	2000.	
137 Ba	6,738.	673.8	ppb	1.34	#VALUE!	
182 W	1.412	0.1412	ppb	7.49	1000.	
203 Tl	5.564	0.5564	ppb	1.76	1000.	
205 Tl	5.585	0.5585	ppb	1.41	#VALUE!	
208 Pb	248.8	24.88	ppb	0.42	2000.	
232 Th	134.4	13.44	ppb	0.42	1000.	
238 U	25.57	2.557	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4598611.50	4.38	4492941.00	102.4	69.5 - 120	
45 Sc	3114014.80	2.89	3094960.50	100.6	69.5 - 120	
72 Ge	595082.31	1.41	631723.63	94.2	69.5 - 120	
159 Tb	6107695.50	1.30	6220065.50	98.2	69.5 - 120	
209 Bi	3160861.00	0.34	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000596

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\046SMPL.D\046SMPL.D#
Date Acquired: May 14 2018 05:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-020
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	6.908	0.6908	ppb	5.35	100.	
11 B	148.2	14.82	ppb	0.41	1000.	
23 Na	3,770.	377.	ppb	0.88	200000.	
25 Mg	125,700.	12,570.	ppb	2.83	200000.	
27 Al	177,700.	17,770.	ppb	2.60	200000.	
28 Si	3,059.	305.9	ppb	3.28	#VALUE!	
29 Si	2,858.	285.8	ppb	3.67	10000.	
39 K	43,030.	4,303.	ppb	1.69	200000.	
43 Ca	1,602,000.	160,200.	ppb	1.46	#VALUE!	
44 Ca	1,562,000.	156,200.	ppb	1.61	200000.	
51 V	359.9	35.99	ppb	1.22	1000.	
52 Cr	157.3	15.73	ppb	1.91	2000.	
53 Cr	164.	16.4	ppb	1.84	#VALUE!	
55 Mn	5,292.	529.2	ppb	1.06	2000.	
56 Fe	154,100.	15,410.	ppb	0.08	#VALUE!	
57 Fe	152,100.	15,210.	ppb	1.12	100000.	
59 Co	84.11	8.411	ppb	1.19	1000.	
60 Ni	182.6	18.26	ppb	0.69	1000.	
63 Cu	99.99	9.999	ppb	1.28	#VALUE!	
65 Cu	104.4	10.44	ppb	1.21	2000.	
66 Zn	393.	39.3	ppb	1.21	2000.	
68 Zn	542.	54.2	ppb	1.03	#VALUE!	
75 As	63.74	6.374	ppb	0.75	1000.	
82 Se	5.95	0.595	ppb	13.97	1000.	
88 Sr	3,594.	359.4	ppb	1.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.94	1.094	ppb	1.85	1000.	
107 Ag	0.6867	0.0687	ppb	7.52	100.	
109 Ag	0.4121	0.0412	ppb	6.69	#VALUE!	
111 Cd	5.058	0.5058	ppb	1.81	#VALUE!	
114 Cd	2.035	0.2035	ppb	4.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.68	5.068	ppb	2.71	1000.	
120 Sn	50.71	5.071	ppb	1.06	#VALUE!	
121 Sb	2.031	0.2031	ppb	2.95	#VALUE!	
123 Sb	2.142	0.2142	ppb	7.63	1000.	
135 Ba	4,424.	442.4	ppb	1.05	2000.	
137 Ba	4,353.	435.3	ppb	1.35	#VALUE!	
182 W	1.244	0.1244	ppb	3.29	1000.	
203 Tl	3.488	0.3488	ppb	2.37	1000.	
205 Tl	3.213	0.3213	ppb	2.35	#VALUE!	
208 Pb	117.	11.7	ppb	1.12	2000.	
232 Th	67.94	6.794	ppb	1.76	1000.	
238 U	19.13	1.913	ppb	0.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4829804.00	4.18	4492941.00	107.5	69.5 - 120	
45 Sc	3120462.30	1.80	3094960.50	100.8	69.5 - 120	
72 Ge	590034.13	0.92	631723.63	93.4	69.5 - 120	
159 Tb	6066736.00	0.95	6220065.50	97.5	69.5 - 120	
209 Bi	3074171.50	0.70	3318256.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000597

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\047SMPL.D\047SMPL.D#
Date Acquired: May 14 2018 05:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-021
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	8.798	0.8798	ppb	2.39	100.	
11 B	144.6	14.46	ppb	3.46	1000.	
23 Na	5,347.	534.7	ppb	3.30	200000.	
25 Mg	92,300.	9,230.	ppb	1.89	200000.	
27 Al	212,100.	21,210.	ppb	0.74	200000.	
28 Si	3,896.	389.6	ppb	2.45	#VALUE!	
29 Si	3,575.	357.5	ppb	2.41	10000.	
39 K	48,670.	4,867.	ppb	1.37	200000.	
43 Ca	525,500.	52,550.	ppb	1.64	#VALUE!	
44 Ca	496,300.	49,630.	ppb	0.19	200000.	
51 V	388.7	38.87	ppb	1.65	1000.	
52 Cr	197.5	19.75	ppb	1.23	2000.	
53 Cr	204.4	20.44	ppb	1.05	#VALUE!	
55 Mn	2,006.	200.6	ppb	1.30	2000.	
56 Fe	236,900.	23,690.	ppb	1.03	#VALUE!	
57 Fe	232,700.	23,270.	ppb	1.95	100000.	
59 Co	50.12	5.012	ppb	2.27	1000.	
60 Ni	145.	14.5	ppb	0.75	1000.	
63 Cu	144.9	14.49	ppb	1.90	#VALUE!	
65 Cu	147.	14.7	ppb	1.46	2000.	
66 Zn	510.7	51.07	ppb	0.81	2000.	
68 Zn	553.8	55.38	ppb	1.06	#VALUE!	
75 As	33.25	3.325	ppb	1.63	1000.	
82 Se	5.18	0.518	ppb	41.37	1000.	
88 Sr	1,237.	123.7	ppb	1.18	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.349	0.4349	ppb	5.66	1000.	
107 Ag	0.8161	0.0816	ppb	11.53	100.	
109 Ag	0.6946	0.0695	ppb	4.04	#VALUE!	
111 Cd	3.761	0.3761	ppb	4.11	#VALUE!	
114 Cd	0.3952	0.0395	ppb	91.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.2	5.62	ppb	3.19	1000.	
120 Sn	56.1	5.61	ppb	1.34	#VALUE!	
121 Sb	2.179	0.2179	ppb	2.26	#VALUE!	
123 Sb	2.291	0.2291	ppb	4.28	1000.	
135 Ba	1,808.	180.8	ppb	1.59	2000.	
137 Ba	1,799.	179.9	ppb	1.15	#VALUE!	
182 W	0.6111	0.0611	ppb	5.93	1000.	
203 Tl	3.173	0.3173	ppb	6.96	1000.	
205 Tl	3.118	0.3118	ppb	2.23	#VALUE!	
208 Pb	118.2	11.82	ppb	0.74	2000.	
232 Th	90.29	9.029	ppb	0.55	1000.	
238 U	11.3	1.13	ppb	2.45	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4571476.50	1.77	4492941.00	101.7	69.5 - 120	
45 Sc	3070011.50	0.48	3094960.50	99.2	69.5 - 120	
72 Ge	594391.63	0.96	631723.63	94.1	69.5 - 120	
159 Tb	6179867.50	1.07	6220065.50	99.4	69.5 - 120	
209 Bi	3215048.80	0.28	3318256.50	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000598

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\048SMPL.D\048SMPL.D#
Date Acquired: May 14 2018 05:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	5.19	0.519	ppb	5.07	100.	
11 B	69.05	6.905	ppb	5.28	1000.	
23 Na	1,259.	125.9	ppb	3.87	200000.	
25 Mg	27,070.	2,707.	ppb	2.08	200000.	
27 Al	108,600.	10,860.	ppb	2.38	200000.	
28 Si	3,689.	368.9	ppb	6.04	#VALUE!	
29 Si	3,174.	317.4	ppb	5.14	10000.	
39 K	34,780.	3,478.	ppb	0.93	200000.	
43 Ca	26,630.	2,663.	ppb	1.92	#VALUE!	
44 Ca	26,310.	2,631.	ppb	0.99	200000.	
51 V	222.8	22.28	ppb	0.68	1000.	
52 Cr	113.6	11.36	ppb	0.93	2000.	
53 Cr	147.9	14.79	ppb	2.06	#VALUE!	
55 Mn	2,920.	292.	ppb	0.33	2000.	
56 Fe	97,930.	9,793.	ppb	1.09	#VALUE!	
57 Fe	97,590.	9,759.	ppb	1.89	100000.	
59 Co	55.56	5.556	ppb	2.23	1000.	
60 Ni	86.37	8.637	ppb	2.32	1000.	
63 Cu	97.5	9.75	ppb	0.63	#VALUE!	
65 Cu	101.4	10.14	ppb	1.58	2000.	
66 Zn	343.7	34.37	ppb	0.90	2000.	
68 Zn	392.9	39.29	ppb	0.46	#VALUE!	
75 As	28.14	2.814	ppb	2.83	1000.	
82 Se	4.386	0.4386	ppb	13.35	1000.	
88 Sr	348.4	34.84	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.75	1.175	ppb	0.63	1000.	
107 Ag	0.5349	0.0535	ppb	10.33	100.	
109 Ag	0.5028	0.0503	ppb	21.38	#VALUE!	
111 Cd	3.006	0.3006	ppb	4.16	#VALUE!	
114 Cd	1.939	0.1939	ppb	8.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.14	4.714	ppb	0.37	1000.	
120 Sn	47.6	4.76	ppb	1.22	#VALUE!	
121 Sb	1.456	0.1456	ppb	7.63	#VALUE!	
123 Sb	1.349	0.1349	ppb	6.50	1000.	
135 Ba	1,676.	167.6	ppb	0.92	2000.	
137 Ba	1,665.	166.5	ppb	0.66	#VALUE!	
182 W	0.7759	0.0776	ppb	3.35	1000.	
203 Tl	2.305	0.2305	ppb	3.80	1000.	
205 Tl	2.294	0.2294	ppb	5.93	#VALUE!	
208 Pb	132.7	13.27	ppb	2.54	2000.	
232 Th	78.45	7.845	ppb	3.02	1000.	
238 U	17.94	1.794	ppb	1.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4676636.00	3.23	4492941.00	104.1	69.5 - 120	
45 Sc	3108395.50	0.94	3094960.50	100.4	69.5 - 120	
72 Ge	612528.19	0.41	631723.63	97.0	69.5 - 120	
159 Tb	6199708.00	0.22	6220065.50	99.7	69.5 - 120	
209 Bi	3293176.30	1.47	3318256.50	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000599

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\049SMPL.D\049SMPL.D#
Date Acquired: May 14 2018 05:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	7.072	0.7072	ppb	4.78	100.	
11 B	146.1	14.61	ppb	5.03	1000.	
23 Na	2,241.	224.1	ppb	0.64	200000.	
25 Mg	97,100.	9,710.	ppb	1.21	200000.	
27 Al	182,900.	18,290.	ppb	3.09	200000.	
28 Si	4,335.	433.5	ppb	2.89	#VALUE!	
29 Si	4,052.	405.2	ppb	2.86	10000.	
39 K	48,210.	4,821.	ppb	0.70	200000.	
43 Ca	328,500.	32,850.	ppb	0.67	#VALUE!	
44 Ca	319,700.	31,970.	ppb	0.41	200000.	
51 V	455.1	45.51	ppb	1.30	1000.	
52 Cr	172.1	17.21	ppb	0.48	2000.	
53 Cr	184.3	18.43	ppb	0.75	#VALUE!	
55 Mn	3,056.	305.6	ppb	1.14	2000.	
56 Fe	172,500.	17,250.	ppb	0.48	#VALUE!	
57 Fe	168,200.	16,820.	ppb	1.44	100000.	
59 Co	67.84	6.784	ppb	1.22	1000.	
60 Ni	149.8	14.98	ppb	1.38	1000.	
63 Cu	114.9	11.49	ppb	0.51	#VALUE!	
65 Cu	120.2	12.02	ppb	0.44	2000.	
66 Zn	447.2	44.72	ppb	0.39	2000.	
68 Zn	510.1	51.01	ppb	0.43	#VALUE!	
75 As	115.6	11.56	ppb	1.60	1000.	
82 Se	3.431	0.3431	ppb	34.42	1000.	
88 Sr	1,418.	141.8	ppb	0.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.44	1.044	ppb	1.04	1000.	
107 Ag	0.744	0.0744	ppb	8.88	100.	
109 Ag	0.6254	0.0625	ppb	9.06	#VALUE!	
111 Cd	2.308	0.2308	ppb	10.79	#VALUE!	
114 Cd	-0.0201	-0.002	ppb	622.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.5	5.05	ppb	1.58	1000.	
120 Sn	50.89	5.089	ppb	1.03	#VALUE!	
121 Sb	2.475	0.2475	ppb	4.72	#VALUE!	
123 Sb	2.638	0.2638	ppb	7.02	1000.	
135 Ba	2,290.	229.	ppb	0.78	2000.	
137 Ba	2,287.	228.7	ppb	0.55	#VALUE!	
182 W	0.8114	0.0811	ppb	8.06	1000.	
203 Tl	2.778	0.2778	ppb	2.66	1000.	
205 Tl	2.757	0.2757	ppb	0.91	#VALUE!	
208 Pb	107.5	10.75	ppb	0.44	2000.	
232 Th	72.66	7.266	ppb	1.59	1000.	
238 U	15.62	1.562	ppb	0.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4726084.00	1.50	4492941.00	105.2	69.5 - 120	
45 Sc	3085480.80	0.94	3094960.50	99.7	69.5 - 120	
72 Ge	602808.56	0.69	631723.63	95.4	69.5 - 120	
159 Tb	6243403.00	0.44	6220065.50	100.4	69.5 - 120	
209 Bi	3269470.30	0.94	3318256.50	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000600

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\050SMPL.D\050SMPL.D#
Date Acquired: May 14 2018 05:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	201.45	100.	
11 B	1.225	1.225	ppb	10.15	1000.	
23 Na	26.21	26.21	ppb	4.23	200000.	
25 Mg	2.064	2.064	ppb	17.41	200000.	
27 Al	2.881	2.881	ppb	30.51	200000.	
28 Si	-1.093	-1.093	ppb	375.75	#VALUE!	
29 Si	-25.51	-25.51	ppb	33.90	10000.	
39 K	-1.136	-1.136	ppb	42.53	200000.	
43 Ca	9.212	9.212	ppb	23.14	#VALUE!	
44 Ca	15.87	15.87	ppb	11.82	200000.	
51 V	-0.1784	-0.1784	ppb	33.99	1000.	
52 Cr	-0.0966	-0.0966	ppb	27.53	2000.	
53 Cr	-1.595	-1.595	ppb	4.77	#VALUE!	
55 Mn	0.1228	0.1228	ppb	13.90	2000.	
56 Fe	1.206	1.206	ppb	317.25	#VALUE!	
57 Fe	5.609	5.609	ppb	59.41	100000.	
59 Co	0.006	0.006	ppb	24.27	1000.	
60 Ni	7.349	7.349	ppb	1.76	1000.	
63 Cu	4.345	4.345	ppb	0.86	#VALUE!	
65 Cu	4.551	4.551	ppb	1.23	2000.	
66 Zn	0.6473	0.6473	ppb	4.42	2000.	
68 Zn	0.7208	0.7208	ppb	11.44	#VALUE!	
75 As	0.0091	0.0091	ppb	425.43	1000.	
82 Se	0.0981	0.0981	ppb	124.22	1000.	
88 Sr	0.0318	0.0318	ppb	23.05	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0088	0.0088	ppb	41.83	1000.	
107 Ag	0.0012	0.0012	ppb	249.79	100.	
109 Ag	-0.0006	-0.0006	ppb	206.25	#VALUE!	
111 Cd	-0.0669	-0.0669	ppb	2.48	#VALUE!	
114 Cd	-0.0024	-0.0024	ppb	139.29	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0128	0.0128	ppb	39.69	1000.	
120 Sn	0.0122	0.0122	ppb	97.95	#VALUE!	
121 Sb	0.0025	0.0025	ppb	15.63	#VALUE!	
123 Sb	0.	0.	ppb	7059.50	1000.	
135 Ba	0.1646	0.1646	ppb	11.08	2000.	
137 Ba	0.1401	0.1401	ppb	8.29	#VALUE!	
182 W	0.0032	0.0032	ppb	76.18	1000.	
203 Tl	0.0016	0.0016	ppb	168.04	1000.	
205 Tl	-0.0058	-0.0058	ppb	72.82	#VALUE!	
208 Pb	0.1801	0.1801	ppb	4.91	2000.	
232 Th	0.0132	0.0132	ppb	33.40	1000.	
238 U	0.0035	0.0035	ppb	5.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4879572.50	3.71	4492941.00	108.6	69.5 - 120	
45 Sc	3131826.50	0.85	3094960.50	101.2	69.5 - 120	
72 Ge	630687.06	0.59	631723.63	99.8	69.5 - 120	
159 Tb	6201667.50	0.88	6220065.50	99.7	69.5 - 120	
209 Bi	3315243.30	0.20	3318256.50	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000601

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\051SMPL.D\051SMPL.D#
Date Acquired: May 14 2018 05:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE11IMS2
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	-0.0039	-0.0008	ppb	121.37	100.	
11 B	4.913	0.9826	ppb	16.64	1000.	
23 Na	105.8	21.16	ppb	1.26	200000.	
25 Mg	22.07	4.414	ppb	4.87	200000.	
27 Al	18.305	3.661	ppb	6.44	200000.	
28 Si	-20.18	-4.036	ppb	135.06	#VALUE!	
29 Si	-103.6	-20.72	ppb	0.41	10000.	
39 K	11.93	2.386	ppb	34.21	200000.	
43 Ca	-6.335	-1.267	ppb	352.49	#VALUE!	
44 Ca	7.375	1.475	ppb	47.40	200000.	
51 V	-0.2545	-0.0509	ppb	67.42	1000.	
52 Cr	0.5635	0.1127	ppb	21.05	2000.	
53 Cr	-6.455	-1.291	ppb	10.91	#VALUE!	
55 Mn	0.1482	0.0296	ppb	32.68	2000.	
56 Fe	13.03	2.606	ppb	115.96	#VALUE!	
57 Fe	6.47	1.294	ppb	20.05	100000.	
59 Co	-0.0094	-0.0019	ppb	112.97	1000.	
60 Ni	0.3674	0.0735	ppb	13.79	1000.	
63 Cu	0.5645	0.1129	ppb	14.13	#VALUE!	
65 Cu	0.5845	0.1169	ppb	5.94	2000.	
66 Zn	0.6765	0.1353	ppb	36.79	2000.	
68 Zn	0.5745	0.1149	ppb	61.81	#VALUE!	
75 As	0.1774	0.0355	ppb	168.51	1000.	
82 Se	0.1575	0.0315	ppb	171.86	1000.	
88 Sr	0.0456	0.0091	ppb	48.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0791	0.0158	ppb	8.22	1000.	
107 Ag	0.0028	0.0006	ppb	155.10	100.	
109 Ag	-0.0031	-0.0006	ppb	128.57	#VALUE!	
111 Cd	-0.2371	-0.0474	ppb	38.49	#VALUE!	
114 Cd	-0.0878	-0.0176	ppb	91.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.5	8.9	ppb	0.65	1000.	
120 Sn	44.55	8.91	ppb	1.03	#VALUE!	
121 Sb	-0.0003	-0.0001	ppb	1736.00	#VALUE!	
123 Sb	-0.0005	-0.0001	ppb	3683.90	1000.	
135 Ba	0.0763	0.0153	ppb	60.61	2000.	
137 Ba	0.0749	0.015	ppb	76.44	#VALUE!	
182 W	0.024	0.0048	ppb	51.10	1000.	
203 Tl	0.0585	0.0117	ppb	48.71	1000.	
205 Tl	0.0274	0.0055	ppb	22.29	#VALUE!	
208 Pb	0.563	0.1126	ppb	37.44	2000.	
232 Th	0.0823	0.0165	ppb	26.94	1000.	
238 U	0.0008	0.0002	ppb	328.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5100677.50	6.14	4492941.00	113.5	69.5 - 120	
45 Sc	3261646.00	1.46	3094960.50	105.4	69.5 - 120	
72 Ge	633628.88	0.87	631723.63	100.3	69.5 - 120	
159 Tb	6077184.00	0.11	6220065.50	97.7	69.5 - 120	
209 Bi	3185726.30	1.20	3318256.50	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000602

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\052SMPL.D\052SMPL.D#
Date Acquired: May 14 2018 05:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE11IMS2
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	45.555	9.111	ppb	3.78	100.	
11 B	492.8	98.56	ppb	3.29	1000.	
23 Na	8,730.	1,746.	ppb	0.44	200000.	
25 Mg	6,045.	1,209.	ppb	4.40	200000.	
27 Al	2,278.5	455.7	ppb	4.31	200000.	
28 Si	891.5	178.3	ppb	5.06	#VALUE!	
29 Si	780.	156.	ppb	5.60	10000.	
39 K	10,435.	2,087.	ppb	1.60	200000.	
43 Ca	3,020.	604.	ppb	4.07	#VALUE!	
44 Ca	2,636.5	527.3	ppb	2.12	200000.	
51 V	557.5	111.5	ppb	0.71	1000.	
52 Cr	213.3	42.66	ppb	0.50	2000.	
53 Cr	207.65	41.53	ppb	2.41	#VALUE!	
55 Mn	531.	106.2	ppb	0.70	2000.	
56 Fe	1,125.5	225.1	ppb	2.33	#VALUE!	
57 Fe	1,083.	216.6	ppb	0.95	100000.	
59 Co	545.	109.	ppb	1.58	1000.	
60 Ni	530.5	106.1	ppb	0.48	1000.	
63 Cu	262.65	52.53	ppb	0.35	#VALUE!	
65 Cu	271.85	54.37	ppb	0.06	2000.	
66 Zn	507.	101.4	ppb	0.49	2000.	
68 Zn	569.	113.8	ppb	1.59	#VALUE!	
75 As	102.45	20.49	ppb	1.26	1000.	
82 Se	98.15	19.63	ppb	0.16	1000.	
88 Sr	514.5	102.9	ppb	1.46	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.5	20.3	ppb	0.57	1000.	
107 Ag	51.9	10.38	ppb	0.88	100.	
109 Ag	51.95	10.39	ppb	1.00	#VALUE!	
111 Cd	252.95	50.59	ppb	0.72	#VALUE!	
114 Cd	251.6	50.32	ppb	0.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	583.	116.6	ppb	1.91	1000.	
120 Sn	586.5	117.3	ppb	1.68	#VALUE!	
121 Sb	108.75	21.75	ppb	2.55	#VALUE!	
123 Sb	109.25	21.85	ppb	2.92	1000.	
135 Ba	2,196.5	439.3	ppb	1.51	2000.	
137 Ba	2,187.	437.4	ppb	0.76	#VALUE!	
182 W	105.4	21.08	ppb	1.75	1000.	
203 Tl	107.05	21.41	ppb	2.47	1000.	
205 Tl	106.25	21.25	ppb	2.36	#VALUE!	
208 Pb	107.45	21.49	ppb	1.60	2000.	
232 Th	102.05	20.41	ppb	2.99	1000.	
238 U	102.35	20.47	ppb	2.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5171522.50	3.57	4492941.00	115.1	69.5 - 120	
45 Sc	3259848.80	2.46	3094960.50	105.3	69.5 - 120	
72 Ge	621268.13	0.61	631723.63	98.3	69.5 - 120	
159 Tb	5961187.00	1.63	6220065.50	95.8	69.5 - 120	
209 Bi	3098841.50	1.99	3318256.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000603

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\053SMPL.D\053SMPL.D#
Date Acquired: May 14 2018 05:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LC2OLE11IMS2
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	44.805	8.961	ppb	3.65	100.	
11 B	507.5	101.5	ppb	3.33	1000.	
23 Na	8,675.	1,735.	ppb	2.67	200000.	
25 Mg	6,015.	1,203.	ppb	0.84	200000.	
27 Al	2,321.5	464.3	ppb	2.24	200000.	
28 Si	897.	179.4	ppb	6.39	#VALUE!	
29 Si	772.	154.4	ppb	10.47	10000.	
39 K	10,965.	2,193.	ppb	3.11	200000.	
43 Ca	3,011.	602.2	ppb	4.71	#VALUE!	
44 Ca	2,691.	538.2	ppb	1.65	200000.	
51 V	550.5	110.1	ppb	3.19	1000.	
52 Cr	213.95	42.79	ppb	2.76	2000.	
53 Cr	213.65	42.73	ppb	0.62	#VALUE!	
55 Mn	540.5	108.1	ppb	1.30	2000.	
56 Fe	1,149.5	229.9	ppb	3.03	#VALUE!	
57 Fe	1,106.5	221.3	ppb	1.20	100000.	
59 Co	554.5	110.9	ppb	2.12	1000.	
60 Ni	537.	107.4	ppb	1.53	1000.	
63 Cu	265.95	53.19	ppb	1.51	#VALUE!	
65 Cu	272.1	54.42	ppb	2.63	2000.	
66 Zn	518.5	103.7	ppb	2.61	2000.	
68 Zn	586.	117.2	ppb	1.02	#VALUE!	
75 As	103.35	20.67	ppb	1.86	1000.	
82 Se	100.4	20.08	ppb	2.27	1000.	
88 Sr	519.5	103.9	ppb	1.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	103.95	20.79	ppb	1.79	1000.	
107 Ag	52.45	10.49	ppb	2.35	100.	
109 Ag	52.6	10.52	ppb	1.81	#VALUE!	
111 Cd	256.5	51.3	ppb	1.77	#VALUE!	
114 Cd	255.15	51.03	ppb	1.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	582.	116.4	ppb	1.33	1000.	
120 Sn	586.	117.2	ppb	1.02	#VALUE!	
121 Sb	108.55	21.71	ppb	0.77	#VALUE!	
123 Sb	109.8	21.96	ppb	1.71	1000.	
135 Ba	2,190.5	438.1	ppb	1.91	2000.	
137 Ba	2,188.	437.6	ppb	1.37	#VALUE!	
182 W	104.55	20.91	ppb	1.03	1000.	
203 Tl	106.85	21.37	ppb	2.56	1000.	
205 Tl	106.75	21.35	ppb	1.60	#VALUE!	
208 Pb	107.5	21.5	ppb	1.14	2000.	
232 Th	102.35	20.47	ppb	2.33	1000.	
238 U	102.7	20.54	ppb	1.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5252613.50	3.78	4492941.00	116.9	69.5 - 120	
45 Sc	3202045.50	3.34	3094960.50	103.5	69.5 - 120	
72 Ge	620392.94	1.29	631723.63	98.2	69.5 - 120	
159 Tb	6053057.00	1.06	6220065.50	97.3	69.5 - 120	
209 Bi	3123357.50	1.13	3318256.50	94.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000604

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\054_CCV.D\054_CCV.D#
Date Acquired: May 14 2018 05:32 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.08	ppb	4.57	25	92.32	
11 B	29.5	ppb	3.07	25	118	Fail
23 Na	5,166.	ppb	2.80	5,000	103.32	
25 Mg	5,154.	ppb	0.92	5,000	103.08	
27 Al	506.	ppb	2.52	500	101.2	
28 Si	500.5	ppb	1.87	500	100.1	
29 Si	473.7	ppb	4.59	500	94.74	
39 K	4,993.	ppb	2.86	5,000	99.86	
43 Ca	4,894.	ppb	2.22	5,000	97.88	
44 Ca	4,998.	ppb	0.77	5,000	99.96	
51 V	25.26	ppb	0.45	25	101.04	
52 Cr	24.84	ppb	1.16	25	99.36	
53 Cr	24.35	ppb	1.52	25	97.4	
55 Mn	24.75	ppb	1.09	25	99	
56 Fe	4,960.	ppb	1.44	5,000	99.2	
57 Fe	5,048.	ppb	2.37	5,000	100.96	
59 Co	25.15	ppb	0.69	25	100.6	
60 Ni	24.53	ppb	1.20	25	98.12	
63 Cu	24.88	ppb	1.97	25	99.52	
65 Cu	25.61	ppb	0.94	25	102.44	
66 Zn	24.81	ppb	0.75	25	99.24	
68 Zn	24.68	ppb	2.10	25	98.72	
75 As	24.56	ppb	1.85	25	98.24	
82 Se	25.35	ppb	1.65	25	101.4	
88 Sr	24.4	ppb	2.24	25	97.6	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.29	ppb	1.82	25	97.16	
107 Ag	24.69	ppb	1.03	25	98.76	
109 Ag	24.81	ppb	1.34	25	99.24	
111 Cd	24.85	ppb	0.73	25	99.4	
114 Cd	24.64	ppb	1.55	25	98.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.92	ppb	0.89	25	99.68	
120 Sn	24.9	ppb	0.92	25	99.6	
121 Sb	25.39	ppb	0.94	25	101.56	
123 Sb	25.34	ppb	0.80	25	101.36	
135 Ba	25.8	ppb	1.39	25	103.2	
137 Ba	25.13	ppb	1.70	25	100.52	
182 W	24.65	ppb	0.35	25	98.6	
203 Tl	24.62	ppb	1.31	25	98.48	
205 Tl	24.52	ppb	1.47	25	98.08	
208 Pb	24.62	ppb	1.84	25	98.48	
232 Th	24.04	ppb	1.53	25	96.16	
238 U	23.91	ppb	1.87	25	95.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4698694.50	4.18	4492941.00	104.6	80 - 120.4	
45 Sc	3158179.00	1.26	3094960.50	102.0	80 - 120.4	
72 Ge	615455.00	1.53	631723.63	97.4	80 - 120.4	
159 Tb	6124527.50	0.52	6220065.50	98.5	80 - 120.4	
209 Bi	3224862.00	0.69	3318256.50	97.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000605

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\055_CCB.D\055_CCB.D#
Date Acquired: May 14 2018 05:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.	ppb	2655.90	1.00	
11 B	2.938	ppb	16.87	1.00	
23 Na	1.084	ppb	47.39	1.00	
25 Mg	0.2821	ppb	69.20	1.00	
27 Al	0.109	ppb	68.24	1.00	
28 Si	-6.522	ppb	55.60	1.00	
29 Si	-24.98	ppb	11.44	1.00	
39 K	-3.412	ppb	51.64	1.00	
43 Ca	-2.088	ppb	89.90	1.00	
44 Ca	-0.2322	ppb	162.88	1.00	
51 V	-0.1629	ppb	67.59	1.00	
52 Cr	-0.0844	ppb	33.60	1.00	
53 Cr	-0.2948	ppb	107.94	1.00	
55 Mn	-0.0017	ppb	442.32	1.00	
56 Fe	-5.924	ppb	24.56	1.00	
57 Fe	0.0791	ppb	596.69	1.00	
59 Co	-0.0014	ppb	35.40	1.00	
60 Ni	0.0037	ppb	229.47	1.00	
63 Cu	0.0169	ppb	32.99	1.00	
65 Cu	-0.0046	ppb	126.60	1.00	
66 Zn	0.0273	ppb	214.83	1.00	
68 Zn	0.0461	ppb	158.68	1.00	
75 As	-0.0784	ppb	36.95	1.00	
82 Se	0.1182	ppb	166.84	1.00	
88 Sr	0.003	ppb	124.46	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0319	ppb	31.17	1.00	
107 Ag	0.0061	ppb	22.94	1.00	
109 Ag	0.0054	ppb	54.35	1.00	
111 Cd	-0.0486	ppb	34.19	1.00	
114 Cd	-0.0015	ppb	145.69	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0456	ppb	10.53	1.00	
120 Sn	0.0393	ppb	26.67	1.00	
121 Sb	0.0037	ppb	67.52	1.00	
123 Sb	0.0069	ppb	44.88	1.00	
135 Ba	0.0194	ppb	20.30	1.00	
137 Ba	0.0078	ppb	103.29	1.00	
182 W	0.0527	ppb	35.47	1.00	
203 Tl	0.0089	ppb	112.34	1.00	
205 Tl	-0.0027	ppb	69.88	1.00	
208 Pb	-0.0232	ppb	18.86	1.00	
232 Th	0.0673	ppb	8.76	1.00	
238 U	0.0036	ppb	15.84	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4846041.00	0.85	4492941.00	107.9	79.5 - 120	
45 Sc	3195603.30	1.09	3094960.50	103.3	79.5 - 120	
72 Ge	628458.88	1.38	631723.63	99.5	79.5 - 120	
159 Tb	6120629.50	0.72	6220065.50	98.4	79.5 - 120	
209 Bi	3283907.80	0.96	3318256.50	99.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000606

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MSR98 HCL: MSR96 H2O2: MSR85 Filter Paper: 15243044

Boiling Stones: MSR90

REVIEWED 5.2.18 JS 5.3.18 KATAHDIN ANALYTICAL METALS SECTION

Pipet	LCS / Spike
M11	☑ ☒
M15	☒ ☒
M13	☒ ☒
____	☐ ☐

LCS/Spiking Information:

CLPP-SPK-1 (ID/Vol): MS2088 / 0.1 mL

CLPP-SPK-INT1 (ID/Vol): MW17684 / 1.0 mL

CLPP-SPK-INT2 (ID/Vol): MW17685 / 1.0 mL

_____ Spike (ID/Vol): NA / _____ mL

LCSS: NA Balance ID: Bal15

Heat Source ID: D

Start Time: 0733 /Temp. 95 °C

End Time: 1412 /Temp. 94 °C

Thermometer ID/Pos: TLC11 / 6:7

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE02IMS1	LE02IMS1	1.0	g	0.1	L	SL	IM	AMJ	05/02/2018	
PBSLE02IMS1	LE02IMS1	1.0	g		L	SL	IM	AMJ	05/02/2018	
SL3708-001	LE02IMS1	1.69	g		L	SL	IM	AMJ	05/02/2018	A
SL3708-002	LE02IMS1	1.42	g		L	SL	IM	AMJ	05/02/2018	
SL3708-003	LE02IMS1	2.01	g		L	SL	IM	AMJ	05/02/2018	
SL3708-004	LE02IMS1	2.00	g		L	SL	IM	AMJ	05/02/2018	
SL3708-005	LE02IMS1	1.65	g		L	SL	IM	AMJ	05/02/2018	
SL3708-005P	LE02IMS1	1.68	g		L	SL	IM	AMJ	05/02/2018	
SL3708-005S	LE02IMS1	1.62	g		L	SL	IM	AMJ	05/02/2018	
SL3708-006	LE02IMS1	1.19	g		L	SL	IM	AMJ	05/02/2018	
~~SL3708-007~~	LE02IMS1	1.54	g		L	SL	IM	AMJ	05/02/2018	sample dropped JS 5.2.18
SL3708-008	LE02IMS1	1.23	g		L	SL	IM	AMJ	05/02/2018	
SL3708-009	LE02IMS1	1.35	g		L	SL	IM	AMJ	05/02/2018	
SL3708-010	LE02IMS1	1.22	g		L	SL	IM	AMJ	05/02/2018	
SL3708-011	LE02IMS1	1.40	g		L	SL	IM	AMJ	05/02/2018	
SL3708-012	LE02IMS1	1.87	g		L	SL	IM	AMJ	05/02/2018	
SL3708-013	LE02IMS1	1.30	g		L	SL	IM	AMJ	05/02/2018	
SL3708-014	LE02IMS1	1.86	g		L	SL	IM	AMJ	05/02/2018	
SL3708-015	LE02IMS1	1.37	g		L	SL	IM	AMJ	05/02/2018	
SL3708-016	LE02IMS1	1.90	g		L	SL	IM	AMJ	05/02/2018	
SL3708-017	LE02IMS1	1.76	g		L	SL	IM	AMJ	05/02/2018	
SL3708-018	LE02IMS1	1.33	g		L	SL	IM	AMJ	05/02/2018	

JSS 5.2.18

JSS 5.2.18

Digestion performed by: AMJ On: 5/2/18

Katahdin Analytical Services 4000608

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MR2009 Boiling Stones: M8690 **Method:** 7471

KMNO4: MR2002 NH2OH-HCl: MR1994

Standards/Spiking Information:

1ppm A : MW17721

Pipet 1ppm B : MW17722

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

1 S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: NA

Heat Source ID : B

Start Time: 1234 /Temp. 93 °C

End Time: 1304 /Temp. 94 °C

Thermometer ID/Pos: HC11 / 1:6

REVIEWED
AMJ 5/4/18
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE03HGS1	LE03HGS1	0.6	g	0.1	L	SL	HG	JS	05/03/2018	
PBSLE03HGS1	LE03HGS1	1	g		L	SL	HG	JS	05/03/2018	
SL3707-001	LE03HGS1	0.66	g		L	SL	HG	JS	05/03/2018	G
SL3708-001	LE03HGS1	0.78	g		L	SL	HG	JS	05/03/2018	A
SL3708-002	LE03HGS1	0.68	g		L	SL	HG	JS	05/03/2018	
SL3708-003	LE03HGS1	0.79	g		L	SL	HG	JS	05/03/2018	
SL3708-004	LE03HGS1	0.95	g		L	SL	HG	JS	05/03/2018	
SL3708-005	LE03HGS1	0.63	g		L	SL	HG	JS	05/03/2018	
SL3708-005P	LE03HGS1	0.64	g		L	SL	HG	JS	05/03/2018	
SL3708-005S	LE03HGS1	0.61	g		L	SL	HG	JS	05/03/2018	
SL3708-006	LE03HGS1	061	g		L	SL	HG	JS	05/03/2018	
SL3708-007	LE03HGS1	0.63	g		L	SL	HG	JS	05/03/2018	
SL3708-008	LE03HGS1	0.84	g		L	SL	HG	JS	05/03/2018	
SL3708-009	LE03HGS1	0.72	g		L	SL	HG	JS	05/03/2018	
SL3708-010	LE03HGS1	0.86	g		L	SL	HG	JS	05/03/2018	
SL3708-011	LE03HGS1	067	g		L	SL	HG	JS	05/03/2018	
SL3708-012	LE03HGS1	0.78	g		L	SL	HG	JS	05/03/2018	
SL3708-013	LE03HGS1	064	g		L	SL	HG	JS	05/03/2018	
SL3708-014	LE03HGS1	0.62	g		L	SL	HG	JS	05/03/2018	
SL3708-015	LE03HGS1	0.77	g		L	SL	HG	JS	05/03/2018	
SL3708-016	LE03HGS1	0.70	g		L	SL	HG	JS	05/03/2018	
SL3708-018	LE03HGS1	0.86	g		L	SL	HG	JS	05/03/2018	
SL3708-019	LE03HGS1	0.62	g		L	SL	HG	JS	05/03/2018	
SL3708-017	1	0.73	g	1	L	1	1	1	1	↑

JS 5.3.18

AMJ 5/4/18

QA-067-Revision 2 - 05/10/2017 **Digestion performed by:** JS **On:** 5.3.18 **Page:** LE022 **Revision:** 00

Katahdin Analytical Services, Inc. | **Metals Preparation Benchsheet**

Reagent Information: | **Method:** 3010-MS

HNO3: MS198 HCL: MS199

REVIEWED
ams 5/3/18
KATAHDIN ANALYTICAL
METALS SECTION

Pipet	LCS/Spiking Information:
M11	CLPP-SPK-1 (ID/Vol): MS2088 / 0.05 mL
M15	CLPP-SPK-INT1 (ID/Vol): MW17723 / 0.5 mL
2	CLPP-SPK-INT2 (ID/Vol): MW17685 / 0.5 mL
N/A	N/A Spike (ID/Vol): N/A / mL

Heat Source ID : D
Start Time: 0800 /Temp. 94 °C
End Time: 1459 /Temp. 95 °C
Thermometer ID/Pos: ALC11 / 16

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLE03IMW2	LE03IMW2	0.05	L	0.05	L	AQ	IM	JS	05/03/2018	
PBWLE03IMW2	LE03IMW2	"	L	"	L	AQ	IM	JS	05/03/2018	
SL3708-022	LE03IMW2	"	L	"	L	AQ	IM	JS	05/03/2018	4

ams
5/3/18

QA-064-Revision 3 - 06/15/2017 | Digestion performed by: JS On: 5/3/18 | Page: LE019 | Revision: 00

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MS#98 HCL: MS#99 H2O2: MS#85 Filter Paper: 15243044

Boiling Stones: 175190

Pipet	LCS / Spike	LCS/Spiking Information:
MH	☑ ☑	CLPP-SPK-1 (ID/Vol): MS#124 / 0.1 mL
MS	☑ ☑	CLPP-SPK-INT1 (ID/Vol): MW17723 / 1.0 mL
L	☑ ☑	CLPP-SPK-INT2 (ID/Vol): MW17724 / 1.0 mL
MF	☐ ☐	N/A Spike (ID/Vol): N/A / mL

LCSS: N/A Balance ID: Bal15

Heat Source ID : 0

Start Time: 0752 /Temp. 93 °C

End Time: 1416 /Temp. 94 °C

Thermometer ID/Pos: AuC11 16.5

REVIEWED
amj 5/4/18
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE04IMS1	LE04IMS1	1.0	g	0.1	L	SL	IM	~~AMJ~~ JS	05/04/2018	
PBSLE04IMS1	LE04IMS1	"	g		L	SL	IM	AMJ	05/04/2018	
SL3708-007	LE04IMS1	1.92	g		L	SL	IM	AMJ	05/04/2018	
SL3708-019	LE04IMS1	1.89	g		L	SL	IM	AMJ	05/04/2018	A
SL3708-020	LE04IMS1	1.30	g		L	SL	IM	AMJ	05/04/2018	
SL3708-021	LE04IMS1	1.35	g		L	SL	IM	AMJ	05/04/2018	
SL3801-001	LE04IMS1	1.03	g		L	SL	IM	AMJ	05/04/2018	
SL3801-002	LE04IMS1	1.04	g		L	SL	IM	AMJ	05/04/2018	
SL3801-003	LE04IMS1	1.06	g		L	SL	IM	AMJ	05/04/2018	
SL3801-004	LE04IMS1	1.08	g		L	SL	IM	AMJ	05/04/2018	
SL3801-004P	LE04IMS1	1.07	g		L	SL	IM	AMJ	05/04/2018	
SL3801-004S	LE04IMS1	1.09	g		L	SL	IM	AMJ	05/04/2018	
SL3801-005	LE04IMS1	1.19	g		L	SL	IM	AMJ	05/04/2018	
SL3801-006	LE04IMS1	1.01	g		L	SL	IM	AMJ	05/04/2018	
SL3801-007	LE04IMS1	1.02	g		L	SL	IM	AMJ	05/04/2018	
SL3801-008	LE04IMS1	1.08	g		L	SL	IM	AMJ	05/04/2018	
SL3801-009	LE04IMS1	1.17	g		L	SL	IM	AMJ	05/04/2018	
SL3801-010	LE04IMS1	1.10	g		L	SL	IM	AMJ	05/04/2018	
SL3801-011	LE04IMS1	1.07	g		L	SL	IM	AMJ	05/04/2018	
SL3801-012	LE04IMS1	1.18	g		L	SL	IM	~~AMJ~~	05/04/2018	
SL3807-001	L	1.35	g	0.1	L	SL	IM	JS 4-18	L	E
L-002		1.11	g	L	L	SL	IM	JS		L

Samples Switched to GO10 5-14-18 JS 5/4/18

amj 5/4/18

QA-065-Revision 2 - 06/16/2017 Digestion performed by: JS On: 5.4.18 Page: LE023 Revision: 00

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MR2010 Boiling Stones: MS190 **Method:** 7471

KMNO4: MR2002 NH2OH-HCl: MR1994

Standards/Spiking Information:

1ppm A : MW1721 Heat Source ID : B

Pipet 1ppm B : MW1702 Start Time: 0959 /Temp. 95 °C

M15 LCSO = 500uL of 1ppm A to 100mL End Time: 1009 /Temp. 94 °C

M11 Spike(S/P) = 100uL of 1ppm A to 100mL Thermometer ID/Pos: A1025 16.5

M15 ICV = 600uL of 1ppm B to 100 mL

1 S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: MA

REVIEWED
ams 5/4/18
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LC2OLE04HGS1	LE04HGS1	0.6	g	0.1	L	SL	HG	JS	05/04/2018	N/A
LCSOLE04HGS1	LE04HGS1	1	g	1	L	SL	HG	JS	05/04/2018	
PBSLE04HGS1	LE04HGS1	1	g	1	L	SL	HG	JS	05/04/2018	
SL3708-020	LE04HGS1	0.84	g	1	L	SL	HG	JS	05/04/2018	A
SL3708-021	LE04HGS1	0.73	g	1	L	SL	HG	JS	05/04/2018	1
SL3760-001	LE04HGS1	1.33	g	1	L	SL	HG	JS	05/04/2018	1
SL3782-001	LE04HGS1	1.27	g	1	L	SL	HG	JS	05/04/2018	1
SL3807-001	LE04HGS1	0.80	g	1	L	SL	HG	JS	05/04/2018	E
SL3807-002	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	E
SL3809-002	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	A
SL3809-002P	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-002S	LE04HGS1	0.61	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-003	LE04HGS1	0.75	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-004	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-005	LE04HGS1	0.73	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-006	LE04HGS1	0.89	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-007	LE04HGS1	0.84	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-008	LE04HGS1	0.67	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-009	LE04HGS1	0.86	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-010	LE04HGS1	0.90	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-011	LE04HGS1	0.84	g	1	L	SL	HG	JS	05/04/2018	1
SL3838-001	LE04HGS1	0.87	g	1	L	SL	HG	JS	05/04/2018	1
SL3838-002	LE04HGS1	0.63	g	1	L	SL	HG	JS	05/04/2018	1
SL3838-003	LE04HGS1	0.68	g	1	L	SL	HG	JS	05/04/2018	1

ams 5/4/18

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information: **Method:** 7470

HNO3: MS1098 H2SO4: MS1043

KMNO4: MR2028 K2S2O8: MR1963 NH2OH-HCl: MR1994

REVIEWED
amj 5/7/18
KATAHDIN ANALYTICAL
METALS SECTION

Standards/Spiking Information:

1ppm A : MW17721

Pipet 1ppm B : MW17722

MH LCSW = 125uL of 1ppm A to 25mL

J Spike(S/P) = 25uL of 1ppm A to 25mL

MH5 ICV = 600uL of 1ppm B to 100 mL

J S10.0 = 1000uL of 1ppm A to 100 mL

Heat Source ID : 93

Start Time: 0855 /Temp. 93 °C

End Time: 1055 /Temp. 94 °C

Thermometer ID/Pos: ALC25 12:3

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLE07HGW2	LE07HGW2	0.025	L	0.025	L	AQ	HG	JS	05/07/2018	
PBWLE07HGW2	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3265-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	A
SL3265-002	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3265-003	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3380-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3380-002	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3380-003	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3380-003P	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3380-003S	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3604-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3708-022	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	A
SL3764-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3764-002	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3764-003	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3809-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	D
SL3810-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	A
SL3810-002	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3810-003	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3810-004	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3810-005	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	

amj
5/7/18

 Digestion performed by: JS On: 5-7-18 Page: LE042 Revision: 00

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

QC Summary Section

Quality Control Report

Blank Sample Summary Report

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG227475	SW3540C	02-MAY-18	01-MAY-18	100 %	1 %	N/A
MBLANK	WG227522	SW3540C	03-MAY-18	02-MAY-18	100 %	1 %	N/A
MBLANK	WG227596	SW3540C	04-MAY-18	03-MAY-18	100 %	1 %	N/A

Quality Control Report

Laboratory Control Sample Summary Report

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG227475-2	LCS	WG227475	02-MAY-18	01-MAY-18	%	90	90.	100	90-110	
WG227522-2	LCS	WG227522	03-MAY-18	02-MAY-18	%	90	90.	100	90-110	
WG227596-2	LCS	WG227596	04-MAY-18	03-MAY-18	%	90	90.	100	90-110	
WG227522-5	LCSD	WG227522	03-MAY-18	02-MAY-18	%	90	90.	100	90-110	0

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
WG227475-3	SL3708-5	WG227475	02-MAY-18	%	79.	77.	3	20
WG227475-4	SL3708-6	WG227475	02-MAY-18	%	79.	79.	1	20

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

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: SL3708-1
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS03A	SL	30-APR-18 11:20:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	82. %	1		N/A	SW3540C	WG227475	02-MAY-18 11:23:44	SW3540C	01-MAY-18	

Katahdin Analytical Services 5000008

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3708-2
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS103A	SL	30-APR-18 12:00:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	86. %	1		N/A	SW3540C	WG227475	02-MAY-18 11:23:54	SW3540C	01-MAY-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: SL3708-3
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS04A	SL	30-APR-18 11:30:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227475	02-MAY-18 11:24:04	SW3540C	01-MAY-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: SL3708-4
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS04B	SL	30-APR-18 11:35:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	72. %	1		N/A	SW3540C	WG227475	02-MAY-18 11:24:15	SW3540C	01-MAY-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: SL3708-5
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS05B	SL	30-APR-18 11:37:00	01-MAY-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	WG227475	02-MAY-18 11:24:25	SW3540C	01-MAY-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: SL3708-6
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS03B	SL	30-APR-18 11:40:00	01-MAY-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	WG227475	02-MAY-18 11:24:39	SW3540C	01-MAY-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: SL3708-7
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS06B	SL	30-APR-18 11:42:00	01-MAY-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	WG227475	02-MAY-18 11:24:48	SW3540C	01-MAY-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: SL3708-8
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS08B	SL	30-APR-18 11:50:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227475	02-MAY-18 11:25:00	SW3540C	01-MAY-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: SL3708-9
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS09C	SL	30-APR-18 12:57:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227475	02-MAY-18 11:25:10	SW3540C	01-MAY-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: SL3708-10
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS08C	SL	30-APR-18 13:00:00	01-MAY-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	WG227475	02-MAY-18 11:25:20	SW3540C	01-MAY-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: SL3708-11
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS04C	SL	30-APR-18 13:17:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227475	02-MAY-18 11:25:31	SW3540C	01-MAY-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: SL3708-12
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS02C	SL	30-APR-18 13:20:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227475	02-MAY-18 11:25:41	SW3540C	01-MAY-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: SL3708-13
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS06C	SL	30-APR-18 13:30:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	84. %	1		N/A	SW3540C	WG227475	02-MAY-18 11:25:52	SW3540C	01-MAY-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: SL3708-14
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS07B	SL	30-APR-18 11:45:00	01-MAY-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	WG227522	03-MAY-18 08:43:05	SW3540C	02-MAY-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: SL3708-15
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS09B	SL	30-APR-18 11:55:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227522	03-MAY-18 08:43:14	SW3540C	02-MAY-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: SL3708-16
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS11C	SL	30-APR-18 12:50:00	01-MAY-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	WG227522	03-MAY-18 08:43:23	SW3540C	02-MAY-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: SL3708-17
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS111C	SL	30-APR-18 12:00:00	01-MAY-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	WG227522	03-MAY-18 08:43:31	SW3540C	02-MAY-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: SL3708-18
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS10C	SL	30-APR-18 12:55:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227522	03-MAY-18 08:43:40	SW3540C	02-MAY-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: SL3708-19
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS03C	SL	30-APR-18 13:10:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227522	03-MAY-18 08:43:48	SW3540C	02-MAY-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: SL3708-20
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS05C	SL	30-APR-18 13:15:00	01-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	83. %	1		N/A	SW3540C	WG227522	03-MAY-18 08:43:58	SW3540C	02-MAY-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: SL3708-21
Report Date: 13-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3708

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS07C	SL	30-APR-18 13:25:00	01-MAY-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	WG227596	04-MAY-18 12:50:41	SW3540C	03-MAY-18	

Katahdin Analytical Services 5000028

Raw Data Section

TOTAL SOLIDS BATCH REPORT
May 02 2018, 11:29 am
Batch: WG227475

Sample	Matrix	Type	Prep Date	Tare	Initial	Final1	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL3452-7	SL	SAMP	01-MAY-18	1.3 g	20.6901 g	18.0453 g	18.0453 g	WAS	02-MAY-18	86.3600	86. %		
SL3452-8	SL	SAMP	01-MAY-18	1.3 g	20.3594 g	17.7842 g	17.7842 g	WAS	02-MAY-18	86.4880	86. %		
SL3708-1	SL	SAMP	01-MAY-18	1.3 g	21.8038 g	18.1709 g	18.1709 g	WAS	02-MAY-18	82.2820	82. %		
SL3708-10	SL	SAMP	01-MAY-18	1.3 g	33.0823 g	26.0724 g	26.0724 g	WAS	02-MAY-18	77.9440	78. %		
SL3708-11	SL	SAMP	01-MAY-18	1.3 g	27.897 g	22.5971 g	22.5971 g	WAS	02-MAY-18	80.0730	80. %		
SL3708-12	SL	SAMP	01-MAY-18	1.3 g	29.7193 g	24.2094 g	24.2094 g	WAS	02-MAY-18	80.6120	81. %		
SL3708-13	SL	SAMP	01-MAY-18	1.3 g	25.6494 g	21.6572 g	21.6572 g	WAS	02-MAY-18	83.6040	84. %		
SL3708-2	SL	SAMP	01-MAY-18	1.3 g	19.8956 g	17.2595 g	17.2595 g	WAS	02-MAY-18	85.8240	86. %		
SL3708-3	SL	SAMP	01-MAY-18	1.3 g	27.9168 g	22.6151 g	22.6151 g	WAS	02-MAY-18	80.0810	80. %		
SL3708-4	SL	SAMP	01-MAY-18	1.3 g	40.2043 g	29.2021 g	29.2021 g	WAS	02-MAY-18	71.7200	72. %		
SL3708-5	SL	SAMP	01-MAY-18	1.3 g	31.9609 g	25.6697 g	25.6697 g	WAS	02-MAY-18	79.4810	79. %		
SL3708-6	SL	SAMP	01-MAY-18	1.3 g	28.1644 g	22.4192 g	22.4192 g	WAS	02-MAY-18	78.6140	79. %		
SL3708-7	SL	SAMP	01-MAY-18	1.3 g	31.7754 g	24.4082 g	24.4082 g	WAS	02-MAY-18	75.8260	76. %		
SL3708-8	SL	SAMP	01-MAY-18	1.3 g	25.4354 g	20.9125 g	20.9125 g	WAS	02-MAY-18	81.2600	81. %		
SL3708-9	SL	SAMP	01-MAY-18	1.3 g	33.2661 g	27.2145 g	27.2145 g	WAS	02-MAY-18	81.0690	81. %		
SL3709-1	SL	SAMP	01-MAY-18	1.3 g	21.1007 g	8.0563 g	8.0563 g	WAS	02-MAY-18	34.1220	34. %		
SL3709-2	SL	SAMP	01-MAY-18	1.3 g	18.5598 g	7.2629 g	7.2629 g	WAS	02-MAY-18	34.5480	34. %		
SL3709-3	SL	SAMP	01-MAY-18	1.3 g	21.4959 g	8.9319 g	8.9319 g	WAS	02-MAY-18	37.7890	38. %		
SL3709-4	SL	SAMP	01-MAY-18	1.3 g	23.554 g	9.0685 g	9.0685 g	WAS	02-MAY-18	34.9080	35. %		
SL3709-5	SL	SAMP	01-MAY-18	1.3 g	25.296 g	9.6635 g	9.6635 g	WAS	02-MAY-18	34.8540	35. %		
WG227475-1	SL	MBLANK	01-MAY-18	1.3 g	5.7121 g	5.7103 g	5.7103 g	WAS	02-MAY-18	99.9590	100 %		
WG227475-2	SL	LCS	01-MAY-18	1.3 g	6.2601 g	5.7584 g	5.7584 g	WAS	02-MAY-18	89.8850	90. %	100	
WG227475-3	SL	DUP	01-MAY-18	1.3 g	30.3263 g	23.6149 g	23.6149 g	WAS	02-MAY-18	76.8780	77. %		3
WG227475-4	SL	DUP	01-MAY-18	1.3 g	24.8639 g	19.9959 g	19.9959 g	WAS	02-MAY-18	79.3410	79. %		1

Comments:

SL3452-7	Jar is labeled SP24B
SL3452-8	Jar is labeled SP123B
SL3708-5	MS/MSD
WG227475-1	SL3708-5
WG227475-2	SL3708-5
WG227475-3	SL3708-5
WG227475-4	SL3708-6

Entered by: _____ Date: 5-2-18 Accepted by: JAP Date: 5-3-18

Katahdin Analytical Services 5000030

Katahdin
ANALYTICAL SERVICES

Prep time: 18:37

Katahdin Analytical Services

Work Group Report (wk02)

01-MAY-18 06:22 PM

Work Group: WG227475 R471521
Department: 100 Wetlab Prep
Operator:
Created: 01-MAY-18
Due:

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR	Location
11	SL3452-7	[redacted]	TS	Solid	WIP	U	05-MAY-18		
12	SL3452-8	[redacted]	TS	Solid	WIP	U	05-MAY-18		
13	SL3708-1	[redacted]	TS	Solid	WIP	U	13-MAY-18		
14	SL3708-2	[redacted]	TS	Solid	WIP	U	13-MAY-18		
15	SL3708-3	[redacted]	TS	Solid	WIP	U	13-MAY-18		
16	SL3708-4	[redacted]	TS	Solid	WIP	U	13-MAY-18		
17	SL3708-5	[redacted]	TS	Solid	WIP	U	13-MAY-18		
18	SL3708-6	[redacted]	TS	Solid	WIP	U	13-MAY-18		
19	SL3708-7	[redacted]	TS	Solid	WIP	U	13-MAY-18		
20	SL3708-8	[redacted]	TS	Solid	WIP	U	13-MAY-18		
21	SL3708-9	[redacted]	TS	Solid	WIP	U	13-MAY-18		
22	SL3708-10	[redacted]	TS	Solid	WIP	U	13-MAY-18		
23	SL3708-11	[redacted]	TS	Solid	WIP	U	13-MAY-18		
24	SL3708-12	[redacted]	TS	Solid	WIP	U	13-MAY-18		
25	SL3708-13	[redacted]	TS	Solid	WIP	U	13-MAY-18		
26	SL3709-1	[redacted]	TS	Solid	WIP	U	08-MAY-18		
27	SL3709-2	[redacted]	TS	Solid	WIP	U	08-MAY-18		
28	SL3709-3	[redacted]	TS	Solid	WIP	U	08-MAY-18		
29	SL3709-4	[redacted]	TS	Solid	WIP	U	08-MAY-18		
30	SL3709-5	[redacted]	TS	Solid	WIP	U	08-MAY-18		
31	WG227475-1	MBLANK	TS	Solid	WIP	U	01-MAY-18		
32	WG227475-2	LCS	TS	Solid	WIP	U	01-MAY-18		
33	WG227475-3	DUP	TS	Solid	WIP	U	01-MAY-18		
34	WG227475-4	DUP	TS	Solid	WIP	U	01-MAY-18		

Comments:

SL3452-7	Jar is labeled SP24B
SL3452-8	Jar is labeled SP123B
SL3708-5	MS/MSD
WG227475-1	SL3708-5
WG227475-2	SL3708-5
WG227475-3	SL3708-5
WG227475-4	SL3708-6

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:	WB		In: ✓
DATE IN:	5/1/18		DATE OUT:	5/2/18		Out (TS):
TIME IN:	18:51		TIME OUT:	655		Balance ID: OHAUS
TEMP IN:	104°C		TEMP OUT:	104		S/N 1124016031

TOTAL SOLIDS BATCH REPORT
May 03 2018, 08:48 am
Batch: WG227522

Sample	Matrix	Type	Prep Date	Tare	Initial	Final1	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL3708-14	SL	SAMP	02-MAY-18	1.3 g	27.3518 g	21.9137 g	21.9137 g	WAS	03-MAY-18	79.1260	79. %		
SL3708-15	SL	SAMP	02-MAY-18	1.3 g	24.9479 g	20.1187 g	20.1187 g	WAS	03-MAY-18	79.5790	80. %		
SL3708-16	SL	SAMP	02-MAY-18	1.3 g	17.9335 g	14.0496 g	14.0496 g	WAS	03-MAY-18	76.6500	77. %		
SL3708-17	SL	SAMP	02-MAY-18	1.3 g	24.1382 g	18.8566 g	18.8566 g	WAS	03-MAY-18	76.8740	77. %		
SL3708-18	SL	SAMP	02-MAY-18	1.3 g	17.5296 g	14.3332 g	14.3332 g	WAS	03-MAY-18	80.3050	80. %		
SL3708-19	SL	SAMP	02-MAY-18	1.3 g	21.9515 g	17.758 g	17.758 g	WAS	03-MAY-18	79.6940	80. %		
SL3708-20	SL	SAMP	02-MAY-18	1.3 g	22.2938 g	18.7013 g	18.7013 g	WAS	03-MAY-18	82.8880	83. %		
SL3745-1	SL	SAMP	02-MAY-18	1.3 g	16.0944 g	6.3553 g	6.3553 g	WAS	03-MAY-18	34.1700	34. %		
SL3745-2	SL	SAMP	02-MAY-18	1.3 g	16.4016 g	6.5541 g	6.5541 g	WAS	03-MAY-18	34.7920	35. %		
SL3745-3	SL	SAMP	02-MAY-18	1.3 g	16.8097 g	6.285 g	6.285 g	WAS	03-MAY-18	32.1410	32. %		
SL3745-4	SL	SAMP	02-MAY-18	1.3 g	18.1347 g	6.6689 g	6.6689 g	WAS	03-MAY-18	31.8920	32. %		
SL3745-5	SL	SAMP	02-MAY-18	1.3 g	14.7313 g	5.5243 g	5.5243 g	WAS	03-MAY-18	31.4510	31. %		
SL3745-6	SL	SAMP	02-MAY-18	1.3 g	15.1708 g	5.7997 g	5.7997 g	WAS	03-MAY-18	32.4400	32. %		
SL3745-7	SL	SAMP	02-MAY-18	1.3 g	15.8505 g	6.4345 g	6.4345 g	WAS	03-MAY-18	35.2870	35. %		
SL3745-8	SL	SAMP	02-MAY-18	1.3 g	19.9557 g	7.7719 g	7.7719 g	WAS	03-MAY-18	34.6910	35. %		
SL3746-13	SL	SAMP	02-MAY-18	1.3 g	26.8825 g	24.2721 g	24.2721 g	WAS	03-MAY-18	89.7960	90. %		
SL3746-16	SL	SAMP	02-MAY-18	1.3 g	28.8971 g	26.0461 g	26.0461 g	WAS	03-MAY-18	89.6690	90. %		
SL3746-3	SL	SAMP	02-MAY-18	1.3 g	24.4241 g	22.8724 g	22.8724 g	WAS	03-MAY-18	93.2900	93. %		
SL3746-7	SL	SAMP	02-MAY-18	1.3 g	34.1818 g	31.8118 g	31.8118 g	WAS	03-MAY-18	92.7920	93. %		
SL3746-9	SL	SAMP	02-MAY-18	1.3 g	23.8862 g	21.5963 g	21.5963 g	WAS	03-MAY-18	89.8620	90. %		
WG227522-1	SL	MBLANK	02-MAY-18	1.3 g	5.7421 g	5.7418 g	5.7418 g	WAS	03-MAY-18	99.9930	100 %		
WG227522-2	SL	LCS	02-MAY-18	1.3 g	6.1919 g	5.6933 g	5.6933 g	WAS	03-MAY-18	89.8080	90. %	100	
WG227522-3	SL	DUP	02-MAY-18	1.3 g	29.5535 g	26.66 g	26.66 g	WAS	03-MAY-18	89.7590	90. %		0
WG227522-4	SL	DUP	02-MAY-18	1.3 g	16.0532 g	6.5775 g	6.5775 g	WAS	03-MAY-18	35.7720	36. %		1
WG227522-5	SL	LCSD	02-MAY-18	1.3 g	6.2561 g	5.7523 g	5.7523 g	WAS	03-MAY-18	89.8350	90. %	100	0

Comments:

SL3745-7	MS/MSD
SL3746-16	MS/MSD
WG227522-1	SL3746-16
WG227522-2	SL3746-16
WG227522-3	SL3746-16
WG227522-4	SL3745-7
WG227522-5	SL3745-7

Entered by: _____ Date: 5-3-18 Accepted by: JLR Date: 5-3-18

Katahdin Analytical Services 5000032

prep time: 14:03

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Work Group Report (wk02)

02-MAY-18 02:00 PM

Work Group: WG227522 R471658
Department: 100 Wetlab Prep

Operator:

Created: 02-MAY-18
Due:

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR Location
1	SL3708-14	[redacted]	TS	Solid	WIP	U	13-MAY-18	
2	SL3708-15	[redacted]	TS	Solid	WIP	U	13-MAY-18	
3	SL3708-16	[redacted]	TS	Solid	WIP	U	13-MAY-18	
4	SL3708-17	[redacted]	TS	Solid	WIP	U	13-MAY-18	
5	SL3708-18	[redacted]	TS	Solid	WIP	U	13-MAY-18	
6	SL3708-19	[redacted]	TS	Solid	WIP	U	13-MAY-18	
7	SL3708-20	[redacted]	TS	Solid	WIP	U	13-MAY-18	
8	SL3745-1	[redacted]	TS	Solid	WIP	U	09-MAY-18	
9	SL3745-2	[redacted]	TS	Solid	WIP	U	09-MAY-18	
10	SL3745-3	[redacted]	TS	Solid	WIP	U	09-MAY-18	
11	SL3745-4	[redacted]	TS	Solid	WIP	U	09-MAY-18	
12	SL3745-5	[redacted]	TS	Solid	WIP	U	09-MAY-18	
13	SL3745-6	[redacted]	TS	Solid	WIP	U	09-MAY-18	
14	SL3745-7	[redacted]	TS	Solid	WIP	U	09-MAY-18	
15	SL3745-8	[redacted]	TS	Solid	WIP	U	09-MAY-18	
16	SL3746-3	[redacted]	TS	Solid	WIP	U	15-MAY-18	
17	SL3746-7	[redacted]	TS	Solid	WIP	U	15-MAY-18	
18	SL3746-9	[redacted]	TS	Solid	WIP	U	15-MAY-18	
19	SL3746-13	[redacted]	TS	Solid	WIP	U	15-MAY-18	
20	SL3746-16	[redacted]	TS	Solid	WIP	U	15-MAY-18	
21	WG227522-1	MBLANK	TS	Solid	WIP	U	02-MAY-18	
22	WG227522-2	LCS	TS	Solid	WIP	U	02-MAY-18	
23	WG227522-3	DUP	TS	Solid	WIP	U	02-MAY-18	
24	WG227522-4	DUP	TS	Solid	WIP	U	02-MAY-18	
25	WG227522-5	LCSD	TS	Solid	WIP	U	02-MAY-18	

Comments:

SL3745-7	MS/MSD
SL3746-16	MS/MSD
WG227522-1	SL3746-16
WG227522-2	SL3746-16
WG227522-3	SL3746-16
WG227522-4	SL3745-7
WG227522-5	SL3745-7

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:	WD		In: ✓
DATE IN:	5/2/18		DATE OUT:	5/3/18		Out (TS): ✓
TIME IN:	14:27		TIME OUT:	630		Balance ID: OHAUS
TEMP IN:	104C		TEMP OUT:	104		S/N 1124016031

TOTAL SOLIDS BATCH REPORT
May 04 2018, 12:57 pm
Batch: WG227596

Sample	Matrix	Type	Prep Date	Tare	Initial	Finall	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL0233-17	SL	SAMP	03-MAY-18	1.3 g	12.4235 g	11.4829 g	11.4829 g	BF	04-MAY-18	91.5440	92. %		
SL2889-23	SL	SAMP	03-MAY-18	1.3 g	12.5356 g	12.0192 g	12.0192 g	BF	04-MAY-18	95.4040	95. %		
SL3707-1	SL	SAMP	03-MAY-18	1.3 g	17.5948 g	15.3962 g	15.3962 g	BF	04-MAY-18	86.5070	86. %		
SL3708-21	SL	SAMP	03-MAY-18	1.3 g	18.3502 g	14.6271 g	14.6271 g	BF	04-MAY-18	78.1640	78. %		
SL3763-1	SL	SAMP	03-MAY-18	1.3 g	24.6006 g	23.0785 g	23.0785 g	BF	04-MAY-18	93.4680	93. %		
SL3781-1	SL	SAMP	03-MAY-18	1.3 g	19.5497 g	17.1245 g	17.1245 g	BF	04-MAY-18	86.7110	87. %		
SL3781-2	SL	SAMP	03-MAY-18	1.3 g	12.1165 g	11.4955 g	11.4955 g	BF	04-MAY-18	94.2590	94. %		
SL3781-3	SL	SAMP	03-MAY-18	1.3 g	9.5828 g	9.271 g	9.271 g	BF	04-MAY-18	96.2360	96. %		
SL3799-1	SL	SAMP	03-MAY-18	1.3 g	15.5224 g	6.9374 g	6.9374 g	BF	04-MAY-18	39.6370	40. %		
SL3803-1	SL	SAMP	03-MAY-18	1.3 g	12.0626 g	4.4016 g	4.4016 g	BF	04-MAY-18	28.8180	29. %		
SL3803-2	SL	SAMP	03-MAY-18	1.3 g	15.1189 g	5.5283 g	5.5283 g	BF	04-MAY-18	30.5980	30. %		
SL3803-3	SL	SAMP	03-MAY-18	1.3 g	11.2273 g	5.0653 g	5.0653 g	BF	04-MAY-18	37.9290	38. %		
SL3803-4	SL	SAMP	03-MAY-18	1.3 g	10.7485 g	5.1284 g	5.1284 g	BF	04-MAY-18	40.5190	40. %		
SL3803-5	SL	SAMP	03-MAY-18	1.3 g	14.9238 g	8.1265 g	8.1265 g	BF	04-MAY-18	50.1070	50. %		
SL3803-6	SL	SAMP	03-MAY-18	1.3 g	13.6673 g	5.1503 g	5.1503 g	BF	04-MAY-18	31.1330	31. %		
SL3803-7	SL	SAMP	03-MAY-18	1.3 g	14.5094 g	5.454 g	5.454 g	BF	04-MAY-18	31.4470	31. %		
SL3803-8	SL	SAMP	03-MAY-18	1.3 g	12.1669 g	4.8897 g	4.8897 g	BF	04-MAY-18	33.0330	33. %		
WG227596-1	SL	MBLANK	03-MAY-18	1.3 g	5.6779 g	5.6767 g	5.6767 g	BF	04-MAY-18	99.9720	100 %		
WG227596-2	SL	LCS	03-MAY-18	1.3 g	6.3363 g	5.8312 g	5.8312 g	BF	04-MAY-18	89.9710	90. %	100	
WG227596-3	SL	DUP	03-MAY-18	1.3 g	12.6806 g	5.5411 g	5.5411 g	BF	04-MAY-18	37.2660	37. %		2
WG227596-4	SL	DUP	03-MAY-18	1.3 g	10.833 g	10.0164 g	10.0164 g	BF	04-MAY-18	91.4340	91. %		0

Comments:

SL0233-17	Originally TK1355-38, taken off hold 5/7
SL2889-23	Taken off hold 5/3
SL3803-3	MS/MSD
WG227596-1	SL3803-3
WG227596-2	SL3803-3
WG227596-3	SL3803-3
WG227596-4	SL0233-17

Entered by: SL Date: 5.4.18 Accepted by: [signature] Date: 05-07-18

Katahdin Analytical Services 5000034

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Work Group Report (wk02)

03-MAY-18 02:17 PM

R471842

Work Group: WG227596
Department: 100 Wetlab Prep

Operator:

Created: 03-MAY-18
Due:

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR Location
1	SL0233-17	[redacted]	TS	Solid	WIP	U	15-DEC-17	
2	SL2889-23		TS	Solid	WIP	U	18-APR-18	
3	SL3707-1		TS	Solid	WIP	U	08-MAY-18	
4	SL3708-21		TS	Solid	WIP	U	13-MAY-18	
5	SL3763-1		TS	Solid	WIP	U	14-MAY-18	
6	SL3781-1		TS	Solid	WIP	U	14-MAY-18	
7	SL3781-2		TS	Solid	WIP	U	14-MAY-18	
8	SL3781-3		TS	Solid	WIP	U	14-MAY-18	
9	SL3799-1		TS	Solid	WIP	U	15-MAY-18	
10	SL3803-1		TS	Solid	WIP	U	10-MAY-18	
11	SL3803-2		TS	Solid	WIP	U	10-MAY-18	
12	SL3803-3		TS	Solid	WIP	U	10-MAY-18	
13	SL3803-4		TS	Solid	WIP	U	10-MAY-18	
14	SL3803-5		TS	Solid	WIP	U	10-MAY-18	
15	SL3803-6		TS	Solid	WIP	U	10-MAY-18	
16	SL3803-7		TS	Solid	WIP	U	10-MAY-18	
17	SL3803-8		TS	Solid	WIP	U	10-MAY-18	
18	WG227596-1	MBLANK	TS	Solid	WIP	U	03-MAY-18	
19	WG227596-2	LCS	TS	Solid	WIP	U	03-MAY-18	
20	WG227596-3	DUP	TS	Solid	WIP	U	03-MAY-18	
21	WG227596-4	DUP	TS	Solid	WIP	U	03-MAY-18	

Comments:

SL0233-17	Originally TK1355-38, taken off hold 5/7
SL2889-23	Taken off hold 5/3
SL3803-3	MS/MSD
WG227596-1	SL3803-3
WG227596-2	SL3803-3
WG227596-3	SL3803-3
WG227596-4	SL0233-17

Pipette w 5

Start: 14:30

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:	BF		ANALYST OUT:	SC		In: BF 17WA3
DATE IN:	5-3-18		DATE OUT:	5-4-18		Out (TS): ✓
TIME IN:	1510		TIME OUT:	844		Balance ID: ✓
TEMP IN:	104		TEMP OUT:	105		S/N 1124016031

ATI, INC.
CORNHUSKER
ARMY AMMUNITION PLANT
SL3807

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

Katahdin
ANALYTICAL SERVICES

Lab. ID. 2001(non-air)
Lab. ID. 11121 (air only)

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SAMPLE DATA PACKAGE

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
ATI, INC.
CORNHUSKER ARMY AMMUNITION PLANT
SL3807

Sample Receipt

The following samples were received on May 03, 2018 and were logged in under Katahdin Analytical Services work order number SL3807 for a hardcopy due date of May 15, 2018.

KATAHDIN	ATI
Sample No.	Sample Identification
SL3807-1	CHAAP-BKRD-SS07
SL3807-2	CHAAP-BKRD-SB07
SL3807-5	CHAAP-TB-050218

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 NELAP standards unless otherwise noted in this narrative or in the Report of Analysis.

We certify that the test results provided in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation L2223.

Analytes which are reported but not listed on our ANAB scope of accreditation will be "^" flagged and the following language will be included in the case narrative for all DoD compliant work: "^" Indicates this analyte is not included on Katahdin Analytical Services DoD-ELAP Scope of Accreditation.

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 SL3807 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.

8270D SIM Analysis

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 target analyte benzo(a)anthracene was detected below ½ of the LOQ in the method blank WG228026-1. 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 was acceptable, no further action was taken.

The independent check standard (file U0848) associated with the initial calibration on 05/14/18 had high concentrations for the target analytes fluoranthene, pyrene, and benzo(k)fluoranthene that exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

8260B Analysis

The independent check standard WG228096-9 (file D1272.A) associated with the initial calibration on 5-10-18 had a high concentration for dichlorodifluoromethane that exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

Sample SL3807-1 had a low recovery for the surrogate p-bromofluorobenzene that was outside of the DoD QSM acceptance limits. Due to analyst oversight, the sample was not reanalyzed. There were no target analytes detected above the MDL in the sample.

8330B Analysis

The closing calibration verification standard (CV) (file HLE10344) had a high response for the target analyte tetryl that resulted in a %D that exceeded the DoD QSM acceptance limit of ± 20%. Since this analyte was not detected above the MDL in the associated samples, no further action was taken.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SL3807 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 SL3807-(1, 2) were digested for ICP-MS analysis on 05/04/18 (QC Batch LE04IMS1) in accordance with USEPA Method 3050B. The measured concentrations of chromium and manganese (0.31 and 0.14 mg/kg, respectively) in the preparation blank associated with this batch (PBSLE04IMS1) are outside the project acceptance criteria. All samples in Katahdin Work

Order SL3807 that were digested in this batch are greater than ten times that of the blank concentrations for chromium and manganese and results were reported without corrective action. A "B" flag has been applied to the qualifier column on Form 1s in this package designating this contamination.

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 SL3807 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 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.

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.

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 SL3807-(1, 2) were digested for mercury analysis on 05/04/18 (QC Batch LE04HGS1) in accordance with USEPA Method 7471B.

Mercury analysis of the Katahdin Work Order SL3807 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Method 7471B. All samples were analyzed within holding times. All analytical run QC criteria were met.

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 SL3807 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for hexavalent chromium and total solids 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.

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.

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
05218

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: ATM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Fedex	
KAS Work Order#: 523807	KIMS Review By: ATM	Received By: JCB	
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 5.3.18	

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): 5.3
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?	✓			#	JCB
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.

SL3807 | ~~SL3808~~ ~~(VOA TB)~~ 5-3-18

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 / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY | Work Order #: 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			Page 1 of 1
1	CHAAP-BKRD-SS07	925	5/2/2018	S	5	X	X	X		X	X				
2	CHAAP-BKRD-SB07	930	5/2/2018	S	5	X	X	X		X	X				
3	CHAAP-TB-050218	900	5/2/2018	W	3	X									
4	-End of Samples														
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															

SL3807-1
SL3807-2
SL3807-3

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/2/2018 1715	5-3-18			
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)

May. 04, 2018
09:22 AM

Login Number: SL3807

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	:	FDS, DOD 5.0, ND to LOD w/ J flags. Report all valid runs. Summary needs all forms. GC/MS IS eval window +/- 10s. Metals ICSA - 2 sigfigs. 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. No explo soil prep needed (8330B Mod). Reprep failing hex cr matrix QC & parent samples, include info in narrative.
CHECK NO.	:	
CLIENT PO#	:	PN:16-027
CLIENT PROJECT MANAGE	:	
CONTRACT	:	W9182F-16-D-0014
COOLER TEMPERATURE	:	5.3
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	ATI-(ERIS)
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	Cornhusker Army Ammunition Plant
QC LEVEL	:	IV
REPORT INSTRUCTIONS	:	SDS needs all forms. 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, rsullivan@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
SL3807-1	CHAAP-BKRD-SS07	02-MAY-18 09:25	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	30-MAY-18	50g Glass		
Solid	S	SW8260-S	16-MAY-18	40 mL Vial+DI+MEOH		
Solid	S	SW8270SIMPAH-S	16-MAY-18	4oz Glass		
Solid	S	SW8330-S	16-MAY-18	4oz Glass		
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	16-MAY-18				

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3807-2	CHAAP-BKRD-SB07	02-MAY-18 09:30	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	30-MAY-18	50g Glass		
Solid	S	SW8260-S	16-MAY-18	40 mL Vial+DI+MEOH		
Solid	S	SW8270SIMPAH-S	16-MAY-18	4oz Glass		
Solid	S	SW8330-S	16-MAY-18	4oz Glass		
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	16-MAY-18				

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3807-5	CHAAP-TB-050218	02-MAY-18 09:00	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		

AMH 5/4/18

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

May. 04, 2018

09:22 AM

Login Number: SL3807

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

Total Samples: *3* ***Total Analyses:*** *13*

AMH 5/4/18

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.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-1
Client ID: CHAAP-BKRD-SS07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: W3889.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 76.
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	0.77	2.8
1,1,1-Trichloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	0.46	2.8
1,1,2,2-Tetrachloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	0.92	2.8
Freon-113	U	2.8	ug/Kgdrywt	1	5	5.5	0.99	2.8
1,1,2-Trichloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	1.1	2.8
1,1-Dichloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	1.9	2.8
1,1-Dichloroethene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
1,1-Dichloropropene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
1,2,3-Trichlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.84	2.8
1,2,3-Trichloropropane	U	2.8	ug/Kgdrywt	1	5	5.5	1.3	2.8
1,2,4-Trichlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.87	2.8
1,2,4-Trimethylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.96	2.8
1,2-Dibromo-3-Chloropropane	U	2.8	ug/Kgdrywt	1	5	5.5	1.6	2.8
1,2-Dibromoethane	U	2.8	ug/Kgdrywt	1	5	5.5	1.3	2.8
1,2-Dichlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.86	2.8
1,2-Dichloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	1.1	2.8
1,2-Dichloropropane	U	2.8	ug/Kgdrywt	1	5	5.5	1.5	2.8
1,3,5-Trimethylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.74	2.8
1,3-Dichlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.68	2.8
1,3-Dichloropropane	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
1,4-Dichlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.48	2.8
2,2-Dichloropropane	U	2.8	ug/Kgdrywt	1	5	5.5	0.55	2.8
2-Butanone	U	14	ug/Kgdrywt	1	25	28.	6.5	14.
2-Chlorotoluene	U	2.8	ug/Kgdrywt	1	5	5.5	1.2	2.8
2-Hexanone	U	14	ug/Kgdrywt	1	25	28.	5.3	14.
4-Chlorotoluene	U	2.8	ug/Kgdrywt	1	5	5.5	0.54	2.8
P-Isopropyltoluene	U	2.8	ug/Kgdrywt	1	5	5.5	0.84	2.8
4-Methyl-2-Pentanone	U	14	ug/Kgdrywt	1	25	28.	6.5	14.
Acetone	U	14	ug/Kgdrywt	1	25	28.	5.6	14.
Benzene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
Bromobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.81	2.8
Bromochloromethane	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
Bromodichloromethane	U	2.8	ug/Kgdrywt	1	5	5.5	0.66	2.8
Bromoform	U	2.8	ug/Kgdrywt	1	5	5.5	0.77	2.8
Bromomethane	U	5.5	ug/Kgdrywt	1	10	11.	1.2	5.5

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-1
Client ID: CHAAP-BKRD-SS07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: W3889.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 76.
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Carbon Disulfide	U	2.8	ug/Kgdrywt	1	5	5.5	0.86	2.8
Carbon Tetrachloride	U	2.8	ug/Kgdrywt	1	5	5.5	1.4	2.8
Chlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.56	2.8
Dibromochloromethane	U	2.8	ug/Kgdrywt	1	5	5.5	7.7	2.8
Chloroethane	U	5.5	ug/Kgdrywt	1	10	11.	1.4	5.5
Chloroform	U	2.8	ug/Kgdrywt	1	5	5.5	0.38	2.8
Chloromethane	U	5.5	ug/Kgdrywt	1	10	11.	1.5	5.5
cis-1,2-Dichloroethene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
cis-1,3-Dichloropropene	U	2.8	ug/Kgdrywt	1	5	5.5	0.79	2.8
Dibromomethane	U	2.8	ug/Kgdrywt	1	5	5.5	0.56	2.8
Dichlorodifluoromethane	U	5.5	ug/Kgdrywt	1	10	11.	1.0	5.5
Ethylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.72	2.8
Hexachlorobutadiene	U	2.8	ug/Kgdrywt	1	5	5.5	0.81	2.8
Isopropylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
m+p-Xylenes	U	5.5	ug/Kgdrywt	1	10	11.	1.9	5.5
Methyl tert-butyl Ether	U	2.8	ug/Kgdrywt	1	5	5.5	1.2	2.8
Methylene Chloride	U	14	ug/Kgdrywt	1	25	28.	8.7	14.
N-Butylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
N-Propylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.91	2.8
Naphthalene	U	2.8	ug/Kgdrywt	1	5	5.5	0.97	2.8
o-Xylene	U	2.8	ug/Kgdrywt	1	5	5.5	1.4	2.8
sec-Butylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
Styrene	U	2.8	ug/Kgdrywt	1	5	5.5	0.56	2.8
tert-Butylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.99	2.8
Tetrachloroethene	U	2.8	ug/Kgdrywt	1	5	5.5	1.3	2.8
Toluene	U	2.8	ug/Kgdrywt	1	5	5.5	1.5	2.8
trans-1,2-Dichloroethene	U	2.8	ug/Kgdrywt	1	5	5.5	0.78	2.8
trans-1,3-Dichloropropene	U	2.8	ug/Kgdrywt	1	5	5.5	0.95	2.8
Trichloroethene	U	2.8	ug/Kgdrywt	1	5	5.5	0.65	2.8
Trichlorofluoromethane	U	5.5	ug/Kgdrywt	1	10	11.	1.0	5.5
Vinyl Chloride	U	5.5	ug/Kgdrywt	1	10	11.	0.96	5.5
1,2-Dichloroethane-D4		95.2	%					
p-Bromofluorobenzene	*	75.1	%					
Dibromofluoromethane		97.9	%					
Toluene-D8		98.0	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-2
Client ID: CHAAP-BKRD-SB07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: W3890.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 82.
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.64	2.3
1,1,1-Trichloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.39	2.3
1,1,2,2-Tetrachloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.77	2.3
Freon-113	U	2.3	ug/Kgdrywt	1	5	4.6	0.83	2.3
1,1,2-Trichloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.89	2.3
1,1-Dichloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	1.6	2.3
1,1-Dichloroethene	U	2.3	ug/Kgdrywt	1	5	4.6	0.86	2.3
1,1-Dichloropropene	U	2.3	ug/Kgdrywt	1	5	4.6	0.84	2.3
1,2,3-Trichlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.70	2.3
1,2,3-Trichloropropane	U	2.3	ug/Kgdrywt	1	5	4.6	1.1	2.3
1,2,4-Trichlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.73	2.3
1,2,4-Trimethylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.80	2.3
1,2-Dibromo-3-Chloropropane	U	2.3	ug/Kgdrywt	1	5	4.6	1.4	2.3
1,2-Dibromoethane	U	2.3	ug/Kgdrywt	1	5	4.6	1.1	2.3
1,2-Dichlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.72	2.3
1,2-Dichloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.92	2.3
1,2-Dichloropropane	U	2.3	ug/Kgdrywt	1	5	4.6	1.3	2.3
1,3,5-Trimethylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.62	2.3
1,3-Dichlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.57	2.3
1,3-Dichloropropane	U	2.3	ug/Kgdrywt	1	5	4.6	0.86	2.3
1,4-Dichlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.40	2.3
2,2-Dichloropropane	U	2.3	ug/Kgdrywt	1	5	4.6	0.46	2.3
2-Butanone	U	12	ug/Kgdrywt	1	25	23.	5.4	12.
2-Chlorotoluene	U	2.3	ug/Kgdrywt	1	5	4.6	1.0	2.3
2-Hexanone	U	12	ug/Kgdrywt	1	25	23.	4.4	12.
4-Chlorotoluene	U	2.3	ug/Kgdrywt	1	5	4.6	0.45	2.3
P-Isopropyltoluene	U	2.3	ug/Kgdrywt	1	5	4.6	0.70	2.3
4-Methyl-2-Pentanone	U	12	ug/Kgdrywt	1	25	23.	5.4	12.
Acetone	U	12	ug/Kgdrywt	1	25	23.	4.7	12.
Benzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.85	2.3
Bromobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.68	2.3
Bromochloromethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.84	2.3
Bromodichloromethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.55	2.3
Bromoform	U	2.3	ug/Kgdrywt	1	5	4.6	0.64	2.3
Bromomethane	U	4.6	ug/Kgdrywt	1	10	9.2	1.0	4.6

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-2
Client ID: CHAAP-BKRD-SB07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: W3890.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 82.
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Carbon Disulfide	U	2.3	ug/Kgdrywt	1	5	4.6	0.72	2.3
Carbon Tetrachloride	U	2.3	ug/Kgdrywt	1	5	4.6	1.2	2.3
Chlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.47	2.3
Dibromochloromethane	U	2.3	ug/Kgdrywt	1	5	4.6	6.4	2.3
Chloroethane	U	4.6	ug/Kgdrywt	1	10	9.2	1.2	4.6
Chloroform	U	2.3	ug/Kgdrywt	1	5	4.6	0.32	2.3
Chloromethane	U	4.6	ug/Kgdrywt	1	10	9.2	1.3	4.6
cis-1,2-Dichloroethene	U	2.3	ug/Kgdrywt	1	5	4.6	0.84	2.3
cis-1,3-Dichloropropene	U	2.3	ug/Kgdrywt	1	5	4.6	0.66	2.3
Dibromomethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.47	2.3
Dichlorodifluoromethane	U	4.6	ug/Kgdrywt	1	10	9.2	0.85	4.6
Ethylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.60	2.3
Hexachlorobutadiene	U	2.3	ug/Kgdrywt	1	5	4.6	0.68	2.3
Isopropylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.85	2.3
m+p-Xylenes	U	4.6	ug/Kgdrywt	1	10	9.2	1.6	4.6
Methyl tert-butyl Ether	U	2.3	ug/Kgdrywt	1	5	4.6	1.0	2.3
Methylene Chloride	U	12	ug/Kgdrywt	1	25	23.	7.3	12.
N-Butylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.85	2.3
N-Propylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.76	2.3
Naphthalene	U	2.3	ug/Kgdrywt	1	5	4.6	0.81	2.3
o-Xylene	U	2.3	ug/Kgdrywt	1	5	4.6	1.2	2.3
sec-Butylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.84	2.3
Styrene	U	2.3	ug/Kgdrywt	1	5	4.6	0.47	2.3
tert-Butylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.83	2.3
Tetrachloroethene	U	2.3	ug/Kgdrywt	1	5	4.6	1.1	2.3
Toluene	U	2.3	ug/Kgdrywt	1	5	4.6	1.3	2.3
trans-1,2-Dichloroethene	U	2.3	ug/Kgdrywt	1	5	4.6	0.65	2.3
trans-1,3-Dichloropropene	U	2.3	ug/Kgdrywt	1	5	4.6	0.79	2.3
Trichloroethene	U	2.3	ug/Kgdrywt	1	5	4.6	0.54	2.3
Trichlorofluoromethane	U	4.6	ug/Kgdrywt	1	10	9.2	0.84	4.6
Vinyl Chloride	U	4.6	ug/Kgdrywt	1	10	9.2	0.80	4.6
1,2-Dichloroethane-D4		99.0	%					
p-Bromofluorobenzene		96.7	%					
Dibromofluoromethane		96.7	%					
Toluene-D8		101.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-5
Client ID: CHAAP-TB-050218
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: D1291.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-5
Client ID: CHAAP-TB-050218
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: D1291.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-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		106.	%					
1,2-Dichloroethane-d4		112.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		102.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228234-2
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: D1290.D

Sample Date:
Received Date:
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-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: WG228234-2
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: D1290.D

Sample Date:
Received Date:
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-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		103.	%					
1,2-Dichloroethane-d4		108.	%					

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Report of Analytical Results

Client:
Lab ID: WG228234-2
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: D1290.D

Sample Date:
Received Date:
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		101.	%					
P-Bromofluorobenzene		102.	%					

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Report of Analytical Results

Client:
Lab ID: WG227905-9
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: W3888.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.70	2.5
1,1,1-Trichloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.42	2.5
1,1,2,2-Tetrachloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.84	2.5
Freon-113	U	2.5	ug/Kgdrywt	1	5	5.0	0.90	2.5
1,1,2-Trichloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.97	2.5
1,1-Dichloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	1.7	2.5
1,1-Dichloroethene	U	2.5	ug/Kgdrywt	1	5	5.0	0.93	2.5
1,1-Dichloropropene	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
1,2,3-Trichlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.76	2.5
1,2,3-Trichloropropane	U	2.5	ug/Kgdrywt	1	5	5.0	1.2	2.5
1,2,4-Trichlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.79	2.5
1,2,4-Trimethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.87	2.5
1,2-Dibromo-3-Chloropropane	U	2.5	ug/Kgdrywt	1	5	5.0	1.5	2.5
1,2-Dibromoethane	U	2.5	ug/Kgdrywt	1	5	5.0	1.2	2.5
1,2-Dichlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.78	2.5
1,2-Dichloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	1.0	2.5
1,2-Dichloropropane	U	2.5	ug/Kgdrywt	1	5	5.0	1.4	2.5
1,3,5-Trimethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.67	2.5
1,3-Dichlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.62	2.5
1,3-Dichloropropane	U	2.5	ug/Kgdrywt	1	5	5.0	0.94	2.5
1,4-Dichlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.44	2.5
2,2-Dichloropropane	U	2.5	ug/Kgdrywt	1	5	5.0	0.50	2.5
2-Butanone	U	12	ug/Kgdrywt	1	25	25.	5.9	12.
2-Chlorotoluene	U	2.5	ug/Kgdrywt	1	5	5.0	1.1	2.5
2-Hexanone	U	12	ug/Kgdrywt	1	25	25.	4.8	12.
4-Chlorotoluene	U	2.5	ug/Kgdrywt	1	5	5.0	0.49	2.5
P-Isopropyltoluene	U	2.5	ug/Kgdrywt	1	5	5.0	0.76	2.5
4-Methyl-2-Pentanone	U	12	ug/Kgdrywt	1	25	25.	5.9	12.
Acetone	U	12	ug/Kgdrywt	1	25	25.	5.1	12.
Benzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
Bromobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.74	2.5
Bromochloromethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
Bromodichloromethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.60	2.5
Bromoform	U	2.5	ug/Kgdrywt	1	5	5.0	0.70	2.5

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227905-9
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: W3888.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromomethane	U	5.0	ug/Kgdrywt	1	10	10.	1.1	5.0
Carbon Disulfide	U	2.5	ug/Kgdrywt	1	5	5.0	0.78	2.5
Carbon Tetrachloride	U	2.5	ug/Kgdrywt	1	5	5.0	1.3	2.5
Chlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.51	2.5
Dibromochloromethane	U	2.5	ug/Kgdrywt	1	5	5.0	7.0	2.5
Chloroethane	U	5.0	ug/Kgdrywt	1	10	10.	1.3	5.0
Chloroform	U	2.5	ug/Kgdrywt	1	5	5.0	0.35	2.5
Chloromethane	U	5.0	ug/Kgdrywt	1	10	10.	1.4	5.0
cis-1,2-Dichloroethene	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
cis-1,3-Dichloropropene	U	2.5	ug/Kgdrywt	1	5	5.0	0.72	2.5
Dibromomethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.51	2.5
Dichlorodifluoromethane	U	5.0	ug/Kgdrywt	1	10	10.	0.92	5.0
Ethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.65	2.5
Hexachlorobutadiene	U	2.5	ug/Kgdrywt	1	5	5.0	0.74	2.5
Isopropylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
m+p-Xylenes	U	5.0	ug/Kgdrywt	1	10	10.	1.7	5.0
Methyl tert-butyl Ether	U	2.5	ug/Kgdrywt	1	5	5.0	1.1	2.5
Methylene Chloride	U	12	ug/Kgdrywt	1	25	25.	7.9	12.
N-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
N-Propylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.83	2.5
Naphthalene	U	2.5	ug/Kgdrywt	1	5	5.0	0.88	2.5
o-Xylene	U	2.5	ug/Kgdrywt	1	5	5.0	1.3	2.5
sec-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
Styrene	U	2.5	ug/Kgdrywt	1	5	5.0	0.51	2.5
tert-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.90	2.5
Tetrachloroethene	U	2.5	ug/Kgdrywt	1	5	5.0	1.2	2.5
Toluene	U	2.5	ug/Kgdrywt	1	5	5.0	1.4	2.5
trans-1,2-Dichloroethene	U	2.5	ug/Kgdrywt	1	5	5.0	0.71	2.5
trans-1,3-Dichloropropene	U	2.5	ug/Kgdrywt	1	5	5.0	0.86	2.5
Trichloroethene	U	2.5	ug/Kgdrywt	1	5	5.0	0.59	2.5
Trichlorofluoromethane	U	5.0	ug/Kgdrywt	1	10	10.	0.91	5.0
Vinyl Chloride	U	5.0	ug/Kgdrywt	1	10	10.	0.87	5.0
1,2-Dichloroethane-D4		98.1	%					
p-Bromofluorobenzene		95.3	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227905-9
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: W3888.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromofluoromethane		97.4	%					
Toluene-D8		99.7	%					

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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:** SL3807

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-TB-050218	SL3807-5		102.		106.		112.		100.	
Laboratory Control S	WG228234-1		102.		101.		101.		99.4	
Method Blank Sample	WG228234-2		102.		103.		108.		101.	

		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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ANALYTICAL SERVICES

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** SL
Lab Code: KAS **SDG:** SL3807

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-BKRD-SS07	SL3807-1		75.1	*	97.9		95.2		98.0	
CHAAP-BKRD-SB07	SL3807-2		96.7		96.7		99.0		101.	
Laboratory Control S	WG227905-8		100.		96.2		97.1		101.	
Method Blank Sample	WG227905-9		95.3		97.4		98.1		99.7	

		QC Limits
TOL	TOLUENE-D8	85-125
DCA	1,2-DICHLOROETHANE-D4	71-136
DBF	DIBROMOFLUOROMETHANE	78-125
BFB	P-BROMOFLUOROBENZENE	79-125

= 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 Recovery Report

Client:
Lab ID: WG228234-1
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: D1288.D

Sample Date:
Received Date:
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	98.8	50.0	49.4	ug/L	78-125
1,1,1-Trichloroethane	97.8	50.0	48.9	ug/L	74-131
1,1,2,2-Tetrachloroethane	94.4	50.0	47.2	ug/L	71-121
Freon-113	90.2	50.0	45.1	ug/L	70-136
1,1,2-Trichloroethane	96.0	50.0	48.0	ug/L	80-120
1,1-Dichloroethane	103.	50.0	51.5	ug/L	77-125
1,1-Dichloroethene	95.4	50.0	47.7	ug/L	71-131
1,1-Dichloropropene	96.0	50.0	48.0	ug/L	79-125
1,2,3-Trichlorobenzene	94.0	50.0	47.0	ug/L	69-129
1,2,3-Trichloropropane	91.2	50.0	45.6	ug/L	73-122
1,2,4-Trichlorobenzene	95.0	50.0	47.5	ug/L	69-130
1,2,4-Trimethylbenzene	95.6	50.0	47.8	ug/L	76-124
1,2-Dibromo-3-Chloropropane	94.6	50.0	47.3	ug/L	62-128
1,2-Dichlorobenzene	93.4	50.0	46.7	ug/L	80-120
1,2-Dichloroethane	95.2	50.0	47.6	ug/L	73-128
1,2-Dichloropropane	97.8	50.0	48.9	ug/L	78-122
1,3,5-Trimethylbenzene	96.0	50.0	48.0	ug/L	75-124
1,3-Dichlorobenzene	92.4	50.0	46.2	ug/L	80-120
1,3-Dichloropropane	93.0	50.0	46.5	ug/L	80-120
1,4-Dichlorobenzene	89.8	50.0	44.9	ug/L	79-120
2,2-Dichloropropane	103.	50.0	51.5	ug/L	60-139
2-Butanone	100.	50.0	50.2	ug/L	56-143
2-Chlorotoluene	95.0	50.0	47.5	ug/L	79-122
2-Hexanone	97.4	50.0	48.7	ug/L	57-139
4-Chlorotoluene	94.0	50.0	47.0	ug/L	78-122
P-Isopropyltoluene	97.2	50.0	48.6	ug/L	77-127
4-Methyl-2-Pentanone	98.8	50.0	49.4	ug/L	67-130
Acetone	96.8	50.0	48.4	ug/L	39-160
Benzene	95.4	50.0	47.7	ug/L	79-120
Bromobenzene	93.4	50.0	46.7	ug/L	80-120
Bromoform	93.0	50.0	46.5	ug/L	66-130
Bromomethane	98.4	50.0	49.2	ug/L	53-141
Carbon Disulfide	96.2	50.0	48.1	ug/L	64-133
Carbon Tetrachloride	99.2	50.0	49.6	ug/L	72-136
Chlorobenzene	93.0	50.0	46.5	ug/L	82-120

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LCS Recovery Report

Client:
Lab ID: WG228234-1
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: D1288.D

Sample Date:
Received Date:
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	100.	50.0	50.2	ug/L	78-123
Dibromochloromethane	104.	50.0	52.2	ug/L	74-126
Chloroethane	111.	50.0	55.6	ug/L	60-138
Chloroform	97.2	50.0	48.6	ug/L	79-124
Chloromethane	111.	50.0	55.3	ug/L	50-139
cis-1,2-Dichloroethene	96.4	50.0	48.2	ug/L	78-123
cis-1,3-Dichloropropene	100.	50.0	50.0	ug/L	75-124
Dibromomethane	99.2	50.0	49.6	ug/L	79-123
Bromodichloromethane	103.	50.0	51.3	ug/L	79-125
Dichlorodifluoromethane	137.	50.0	68.4	ug/L	32-152
Ethylbenzene	93.8	50.0	46.9	ug/L	79-121
1,2-Dibromoethane	97.4	50.0	48.7	ug/L	77-121
Hexachlorobutadiene	86.8	50.0	43.4	ug/L	66-134
Isopropylbenzene	101.	50.0	50.4	ug/L	72-131
Methyl tert-butyl Ether	98.8	50.0	49.4	ug/L	71-124
Methylene Chloride	94.8	50.0	47.4	ug/L	74-124
m+p-Xylenes	95.4	100.	95.4	ug/L	80-121
Naphthalene	88.8	50.0	44.4	ug/L	61-128
N-Butylbenzene	96.6	50.0	48.3	ug/L	75-128
N-Propylbenzene	93.2	50.0	46.6	ug/L	76-126
o-Xylene	97.2	50.0	48.6	ug/L	78-122
sec-Butylbenzene	94.6	50.0	47.3	ug/L	77-126
Styrene	99.2	50.0	49.6	ug/L	78-123
tert-Butylbenzene	95.2	50.0	47.6	ug/L	78-124
Tetrachloroethene	93.6	50.0	46.8	ug/L	74-129
Toluene	94.2	50.0	47.1	ug/L	80-121
trans-1,2-Dichloroethene	94.8	50.0	47.4	ug/L	75-124
trans-1,3-Dichloropropene	108.	50.0	53.8	ug/L	73-127
Trichloroethene	95.2	50.0	47.6	ug/L	79-123
Trichlorofluoromethane	102.	50.0	51.1	ug/L	65-141
Vinyl Chloride	110.	50.0	54.8	ug/L	58-137
Dibromofluoromethane	101.				80-120
1,2-Dichloroethane-d4	101.				81-120
Toluene-d8	99.4				89-120
P-Bromofluorobenzene	102.				85-120

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LCS Recovery Report

Client:
Lab ID: WG227905-8
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: W3886.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 17-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	102.	50.0	51.1	ug/Kgdrywt	78-125
1,1,1-Trichloroethane	100.	50.0	50.2	ug/Kgdrywt	73-130
1,1,2,2-Tetrachloroethane	97.4	50.0	48.7	ug/Kgdrywt	70-125
Freon-113	96.0	50.0	48.0	ug/Kgdrywt	66-136
1,1,2-Trichloroethane	96.6	50.0	48.3	ug/Kgdrywt	78-125
1,1-Dichloroethane	102.	50.0	51.1	ug/Kgdrywt	76-125
1,1-Dichloroethene	93.0	50.0	46.5	ug/Kgdrywt	70-131
1,1-Dichloropropene	100.	50.0	50.1	ug/Kgdrywt	76-125
1,2,3-Trichlorobenzene	97.2	50.0	48.6	ug/Kgdrywt	66-130
1,2,3-Trichloropropane	92.2	50.0	46.1	ug/Kgdrywt	73-125
1,2,4-Trichlorobenzene	101.	50.0	50.6	ug/Kgdrywt	67-129
1,2,4-Trimethylbenzene	96.2	50.0	48.1	ug/Kgdrywt	75-125
1,2-Dibromo-3-Chloropropane	96.6	50.0	48.3	ug/Kgdrywt	61-132
1,2-Dibromoethane	99.6	50.0	49.8	ug/Kgdrywt	78-125
1,2-Dichlorobenzene	95.8	50.0	47.9	ug/Kgdrywt	78-125
1,2-Dichloroethane	97.0	50.0	48.5	ug/Kgdrywt	73-128
1,2-Dichloropropane	96.8	50.0	48.4	ug/Kgdrywt	76-125
1,3,5-Trimethylbenzene	97.4	50.0	48.7	ug/Kgdrywt	73-125
1,3-Dichlorobenzene	98.4	50.0	49.2	ug/Kgdrywt	77-125
1,3-Dichloropropane	93.2	50.0	46.6	ug/Kgdrywt	77-125
1,4-Dichlorobenzene	96.4	50.0	48.2	ug/Kgdrywt	75-120
2,2-Dichloropropane	96.0	50.0	48.0	ug/Kgdrywt	67-133
2-Butanone	98.4	50.0	49.2	ug/Kgdrywt	51-148
2-Chlorotoluene	97.4	50.0	48.7	ug/Kgdrywt	75-125
2-Hexanone	104.	50.0	51.9	ug/Kgdrywt	53-145
4-Chlorotoluene	96.2	50.0	48.1	ug/Kgdrywt	72-125
P-Isopropyltoluene	100.	50.0	50.0	ug/Kgdrywt	73-127
4-Methyl-2-Pentanone	102.	50.0	51.1	ug/Kgdrywt	65-135
Acetone	96.0	50.0	48.0	ug/Kgdrywt	36-164
Benzene	97.8	50.0	48.9	ug/Kgdrywt	77-125
Bromobenzene	95.6	50.0	47.8	ug/Kgdrywt	78-125
Bromochloromethane	89.6	50.0	44.8	ug/Kgdrywt	78-125
Bromodichloromethane	105.	50.0	52.3	ug/Kgdrywt	75-127
Bromoform	102.	50.0	51.2	ug/Kgdrywt	67-132
Bromomethane	88.6	50.0	44.3	ug/Kgdrywt	53-143

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LCS Recovery Report

Client:
Lab ID: WG227905-8
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: W3886.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 17-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Carbon Disulfide	87.6	50.0	43.8	ug/Kgdrywt	63-132
Carbon Tetrachloride	97.8	50.0	48.9	ug/Kgdrywt	70-135
Chlorobenzene	98.6	50.0	49.3	ug/Kgdrywt	79-125
Dibromochloromethane	104.	50.0	52.1	ug/Kgdrywt	74-126
Chloroethane	105.	50.0	52.7	ug/Kgdrywt	59-139
Chloroform	96.0	50.0	48.0	ug/Kgdrywt	78-125
Chloromethane	92.6	50.0	46.3	ug/Kgdrywt	50-136
cis-1,2-Dichloroethene	94.8	50.0	47.4	ug/Kgdrywt	77-125
cis-1,3-Dichloropropene	101.	50.0	50.3	ug/Kgdrywt	74-126
Dibromomethane	98.8	50.0	49.4	ug/Kgdrywt	78-125
Dichlorodifluoromethane	91.6	50.0	45.8	ug/Kgdrywt	29-149
Ethylbenzene	100.	50.0	50.0	ug/Kgdrywt	76-125
Hexachlorobutadiene	97.2	50.0	48.6	ug/Kgdrywt	61-135
Isopropylbenzene	102.	50.0	51.0	ug/Kgdrywt	68-134
m+p-Xylenes	99.1	100.	99.1	ug/Kgdrywt	77-125
Methyl tert-butyl Ether	97.6	50.0	48.8	ug/Kgdrywt	73-125
Methylene Chloride	90.4	50.0	45.2	ug/Kgdrywt	70-128
N-Butylbenzene	103.	50.0	51.6	ug/Kgdrywt	70-128
N-Propylbenzene	98.6	50.0	49.3	ug/Kgdrywt	73-125
Naphthalene	97.6	50.0	48.8	ug/Kgdrywt	62-129
o-Xylene	98.2	50.0	49.1	ug/Kgdrywt	77-125
sec-Butylbenzene	98.8	50.0	49.4	ug/Kgdrywt	73-126
Styrene	99.8	50.0	49.9	ug/Kgdrywt	76-125
tert-Butylbenzene	97.6	50.0	48.8	ug/Kgdrywt	73-125
Tetrachloroethene	100.	50.0	50.2	ug/Kgdrywt	73-128
Toluene	99.6	50.0	49.8	ug/Kgdrywt	77-125
trans-1,2-Dichloroethene	96.2	50.0	48.1	ug/Kgdrywt	74-125
trans-1,3-Dichloropropene	94.2	50.0	47.1	ug/Kgdrywt	71-130
Trichloroethene	98.6	50.0	49.3	ug/Kgdrywt	77-125
Trichlorofluoromethane	94.0	50.0	47.0	ug/Kgdrywt	62-140
Vinyl Chloride	94.2	50.0	47.1	ug/Kgdrywt	56-135
1,2-Dichloroethane-D4	97.1				71-136
p-Bromofluorobenzene	100.				79-125
Dibromofluoromethane	96.2				78-125
Toluene-D8	101.				85-125

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : D1290.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL3807
Lab Sample ID : WG228234-2
Date Analyzed : 14-MAY-18
Time Analyzed : 13:19

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	WG228234-1	D1288.D	05/14/18	12:00
CHAAP-TB-050218	SL3807-5	D1291.D	05/14/18	13:55

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : W3888.D
Instrument ID : GCMS-W
Heated Purge : Yes

SDG : SL3807
Lab Sample ID : WG227905-9
Date Analyzed : 09-MAY-18
Time Analyzed : 15:00

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	WG227905-8	W3886.D	05/09/18	13:37
CHAAP-BKRD-SS07	SL3807-1	W3889.D	05/09/18	15:38
CHAAP-BKRD-SB07	SL3807-2	W3890.D	05/09/18	16:15

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB173A.D
Instrument ID : GCMS-D

SDG : SL3807
Date Analyzed : 10-MAY-18
Time Analyzed : 07:31
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	50.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.3		
173	Less than 2.0% of mass 174	0.4	0.51	1
174	Greater than 50.0% of mass 95	73.1		
175	5.0 - 9.0% of mass 174	4.9	6.77	1
176	95.0 - 101.0% of mass 174	70.3	96.24	1
177	5.0 - 9.0% of mass 176	5.1	7.24	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	WG227999-4	D1259.D	05/10/18	08:36
Initial Calibration	WG227999-3	D1260.D	05/10/18	09:12
Initial Calibration	WG227999-2	D1261.D	05/10/18	09:47
Initial Calibration	WG227999-1	D1262.D	05/10/18	10:22
Initial Calibration	WG227999-6	D1263.D	05/10/18	10:58
Initial Calibration	WG227999-5	D1264.D	05/10/18	11:34

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB174A.D
Instrument ID : GCMS-D

SDG : SL3807
Date Analyzed : 11-MAY-18
Time Analyzed : 07:52
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.6		
75	30.0 - 60.0% of mass 95	51.3		
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	0.56	1
174	Greater than 50.0% of mass 95	71.1		
175	5.0 - 9.0% of mass 174	4.9	6.91	1
176	95.0 - 101.0% of mass 174	69.3	97.35	1
177	5.0 - 9.0% of mass 176	4.4	6.41	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
Independent Source	WG228096-9	D1272A.D	05/11/18	09:03

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB176.D
Instrument ID : GCMS-D

SDG : SL3807
Date Analyzed : 14-MAY-18
Time Analyzed : 10:56
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	52.5		
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	0.65	1
174	Greater than 50.0% of mass 95	71.6		
175	5.0 - 9.0% of mass 174	4.8	6.67	1
176	95.0 - 101.0% of mass 174	68.3	95.39	1
177	5.0 - 9.0% of mass 176	4.2	6.13	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	WG228234-4	D1287.D	05/14/18	11:19
Laboratory Control S	WG228234-1	D1288.D	05/14/18	12:00
Method Blank Sample	WG228234-2	D1290.D	05/14/18	13:19
CHAAP-TB-050218	SL3807-5	D1291.D	05/14/18	13:55
Continuing Calibrati	WG228234-5	D1296.D	05/14/18	18:02

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : WB833A.D
Instrument ID : GCMS-W

SDG : SL3807
Date Analyzed : 09-MAY-18
Time Analyzed : 08:05
Heated Purge : Yes

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	19.7		
75	30.0 - 60.0% of mass 95	50.7		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.3		
173	Less than 2.0% of mass 174	0.2	0.34	1
174	Greater than 50.0% of mass 95	72.6		
175	5.0 - 9.0% of mass 174	5.2	7.15	1
176	95.0 - 101.0% of mass 174	72.9	100.33	1
177	5.0 - 9.0% of mass 176	4.5	6.11	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	WG227905-4	W3878.D	05/09/18	08:35
Initial Calibration	WG227905-3	W3879.D	05/09/18	09:12
Initial Calibration	WG227905-2	W3880.D	05/09/18	09:49
Initial Calibration	WG227905-1	W3881.D	05/09/18	10:26
Initial Calibration	WG227905-6	W3882.D	05/09/18	11:04
Initial Calibration	WG227905-5	W3883.D	05/09/18	11:41
Laboratory Control S	WG227905-8	W3886.D	05/09/18	13:37
Independent Source	WG227905-7	W3886A.D	05/09/18	13:37
Method Blank Sample	WG227905-9	W3888.D	05/09/18	15:00
CHAAP-BKRD-SS07	SL3807-1	W3889.D	05/09/18	15:38
CHAAP-BKRD-SB07	SL3807-2	W3890.D	05/09/18	16:15
Continuing Calibrati	WG227905-11	W3895.D	05/09/18	19:21

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SL3807
Project : Cornhusker Army Ammunition Plant **Instrument ID:** GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d **Column ID:**
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

	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	0.56036	0.59912	0.62483	0.60950	0.62453	0.61277	AVG		0.60519		3.96777	15.00000	O
Chloromethane	0.71127	0.68264	0.67802	0.59645	0.63672	0.59762	AVG		0.65045		7.33830	15.00000	O
Vinyl chloride	0.46959	0.49687	0.51239	0.48848	0.56664	0.51577	AVG		0.50829		6.52407	15.00000	O
Bromomethane	0.30260	0.26788	0.26498	0.23963	0.24674	0.25289	AVG		0.26245		8.53203	15.00000	O
Chloroethane	0.23847	0.26206	0.25226	0.22731	0.18302	+++++	AVG		0.23262		13.2063	15.00000	O
Trichlorofluoromethane	0.76041	0.78015	0.80338	0.79947	0.79324	0.79504	AVG		0.78861		2.01768	15.00000	O
1,1-Dichloroethene	0.34469	0.32839	0.33955	0.33016	0.34879	0.33647	AVG		0.33801		2.36567	15.00000	O
Carbon Disulfide	0.99826	0.97103	1.06246	1.03232	1.12397	1.08371	AVG		1.04529		5.38727	15.00000	O
Freon-113	0.30122	0.29262	0.30001	0.28888	0.30027	0.29087	AVG		0.29565		1.84828	15.00000	O
Methylene Chloride	0.61362	0.55548	0.57546	0.53776	0.55687	0.54615	AVG		0.56422		4.83685	15.00000	O
Acetone	0.17382	0.14952	0.15679	0.15230	0.15231	0.15542	AVG		0.15669		5.59790	15.00000	O
trans-1,2-Dichloroethene	0.53235	0.50919	0.52822	0.49421	0.53192	0.50130	AVG		0.51620		3.25004	15.00000	O
Methyl tert-butyl ether	1.17857	1.21878	1.34740	1.37229	1.46092	1.43232	AVG		1.33505		8.53040	15.00000	O
1,1-Dichloroethane	0.96520	0.94646	0.98243	0.94643	0.99564	0.95460	AVG		0.96513		2.09263	15.00000	O
cis-1,2-Dichloroethene	0.54551	0.52174	0.56593	0.53592	0.57367	0.55414	AVG		0.54948		3.49762	15.00000	O
2,2-Dichloropropane	0.51306	0.56999	0.66803	0.68445	0.69207	0.68747	AVG		0.63584		11.9021	15.00000	O
Bromochloromethane	0.25010	0.27752	0.28551	0.27723	0.28805	0.24706	AVG		0.27091		6.58674	15.00000	O
Chloroform	1.04357	0.98020	1.02330	0.98855	1.03325	1.00142	AVG		1.01172		2.51944	15.00000	O
Carbon Tetrachloride	0.37895	0.39537	0.44336	0.44346	0.46738	0.45689	AVG		0.43090		8.22438	15.00000	O
1,1,1-Trichloroethane	0.78735	0.78923	0.84489	0.82921	0.88442	0.85946	AVG		0.83243		4.65205	15.00000	O
1,1-Dichloropropene	0.43243	0.43097	0.47757	0.45493	0.48549	0.46283	AVG		0.45737		4.94117	15.00000	O
2-Butanone	0.21658	0.23388	0.24827	0.25015	0.25362	0.25502	AVG		0.24292		6.15404	15.00000	O
Benzene	1.19928	1.19823	1.27774	1.22214	1.26810	1.23664	AVG		1.23369		2.73880	15.00000	O
1,2-Dichloroethane	0.59710	0.48606	0.51110	0.51053	0.49204	0.49744	AVG		0.51571		7.96933	15.00000	O
Trichloroethene	0.33988	0.33083	0.34805	0.33016	0.34010	0.32904	AVG		0.33634		2.24769	15.00000	O
Dibromomethane	0.21127	0.21183	0.23563	0.23446	0.23435	0.23663	AVG		0.22736		5.40021	15.00000	O
1,2-Dichloropropane	0.30665	0.31790	0.34807	0.33817	0.34525	0.34515	AVG		0.33353		5.14493	15.00000	O
Bromodichloromethane	0.43827	0.41371	0.47751	0.46910	0.48560	0.48922	AVG		0.46224		6.47849	15.00000	O
cis-1,3-dichloropropene	0.40927	0.46214	0.57360	0.58801	0.60037	0.59327	AVG		0.53778		15.1155	15.00000	W
Toluene	0.76506	0.74235	0.77132	0.74148	0.76806	0.73442	AVG		0.75378		2.13553	15.00000	O
4-methyl-2-pentanone	0.26774	0.29231	0.32726	0.32637	0.30872	0.30419	AVG		0.30443		7.36532	15.00000	O
Tetrachloroethene	0.26361	0.27417	0.27963	0.26259	0.28530	0.27048	AVG		0.27263		3.27508	15.00000	O
trans-1,3-Dichloropropene	0.35692	0.40341	0.49142	0.51215	0.51535	0.51716	AVG		0.46607		14.7546	15.00000	O
1,1,2-Trichloroethane	0.26522	0.25564	0.26624	0.27058	0.26863	0.26663	AVG		0.26549		1.95539	15.00000	O
Dibromochloromethane	0.30045	0.33006	0.38445	0.40073	0.41646	0.42129	AVG		0.37557		13.1454	15.00000	O
1,3-Dichloropropane	0.57494	0.59960	0.63036	0.61601	0.62439	0.62201	AVG		0.61122		3.37716	15.00000	O
1,2-Dibromoethane	0.29121	0.29925	0.32787	0.33305	0.33514	0.33418	AVG		0.32012		6.12463	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

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ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d
Column ID:
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

2-Hexanone	0.17592	0.21419	0.24851	0.25061	0.24841	0.24695	AVG		0.23077		13.0938	15.00000	O
Chlorobenzene	0.94896	0.92088	0.94262	0.89588	0.93169	0.90524	AVG		0.92421		2.25981	15.00000	O
Ethylbenzene	1.53365	1.56731	1.65724	1.56248	1.61363	1.56803	AVG		1.58372		2.79162	15.00000	O
1,1,1,2-Tetrachloroethane	0.28742	0.30973	0.34276	0.33853	0.35068	0.34685	AVG		0.32933		7.64384	15.00000	O
m+p-Xylenes	1.11930	1.22345	1.27593	1.20484	1.22419	1.17647	AVG		1.20403		4.37803	15.00000	O
o-Xylene	1.03413	1.15571	1.29155	1.24563	1.29555	1.26663	AVG		1.21487		8.40901	15.00000	O
Styrene	0.72024	0.89322	0.98448	0.96404	0.99464	0.95801	AVG		0.91910		11.2786	15.00000	O
Bromoform	1584	9268	45859	120673	252742	364795	LNR	0.02359	0.25784		0.99968	0.99000	O
Isopropylbenzene	2.17850	2.61226	2.81289	2.72321	2.87585	2.72617	AVG		2.65481		9.41391	15.00000	O
Bromobenzene	0.75667	0.73016	0.76879	0.73878	0.76032	0.73115	AVG		0.74765		2.19406	15.00000	O
N-Propylbenzene	3.29934	3.43179	3.63045	3.44994	3.61382	3.40826	AVG		3.47227		3.66998	15.00000	O
1,1,2,2-Tetrachloroethane	0.85905	0.85152	0.88887	0.86825	0.88535	0.86536	AVG		0.86973		1.68771	15.00000	O
1,3,5-Trimethylbenzene	2.06442	2.25303	2.42670	2.33047	2.44030	2.30345	AVG		2.30306		5.96370	15.00000	O
2-Chlorotoluene	1.97476	2.02601	2.17288	2.08126	2.16779	2.05598	AVG		2.07978		3.78004	15.00000	O
1,2,3-Trichloropropane	0.75585	0.73651	0.76927	0.75552	0.74559	0.73112	AVG		0.74898		1.87631	15.00000	O
4-Chlorotoluene	2.13480	2.15903	2.31262	2.19625	2.27703	2.17938	AVG		2.20985		3.16148	15.00000	O
tert-Butylbenzene	1.84017	2.12417	2.30255	2.21466	2.31209	2.21065	AVG		2.16738		8.05122	15.00000	O
1,2,4-Trimethylbenzene	2.04309	2.33581	2.54040	2.41743	2.55079	2.42936	AVG		2.38615		7.81732	15.00000	O
P-Isopropyltoluene	1.82971	2.14413	2.36353	2.27462	2.40797	2.30971	AVG		2.22161		9.54932	15.00000	O
1,3-Dichlorobenzene	1.37362	1.31865	1.35917	1.29679	1.35357	1.29820	AVG		1.33333		2.48399	15.00000	O
1,4-Dichlorobenzene	1.50533	1.35595	1.40068	1.33379	1.38029	1.32567	AVG		1.38362		4.76389	15.00000	O
N-Butylbenzene	1.81494	1.96843	2.16719	2.10347	2.22662	2.14011	AVG		2.07013		7.33830	15.00000	O
sec-Butylbenzene	2.44542	2.68142	2.87797	2.75294	2.90061	2.74913	AVG		2.73458		6.01129	15.00000	O
1,2-Dichlorobenzene	1.21625	1.20840	1.30227	1.26609	1.31735	1.27885	AVG		1.26487		3.51843	15.00000	O
1,2-Dibromo-3-Chloropropane	0.11325	0.11876	0.13743	0.14316	0.15391	0.16240	AVG		0.13815		13.9524	15.00000	O
Hexachlorobutadiene	0.33751	0.28488	0.29239	0.27408	0.30171	0.29236	AVG		0.29715		7.33877	15.00000	O
1,2,4-Trichlorobenzene	0.68629	0.68828	0.75962	0.74157	0.80620	0.78164	AVG		0.74393		6.57699	15.00000	O
Naphthalene	5588	33699	172641	424409	938571	1336967	LNR	0.02224	1.84187		0.99939	0.99000	O
1,2,3-Trichlorobenzene	0.55970	0.58317	0.62336	0.60235	0.64596	0.63136	AVG		0.60765		5.30849	15.00000	O
Dibromofluoromethane	0.59327	0.58023	0.58757	0.58775	0.58840	0.58990	AVG		0.58785		0.72990	15.00000	
1,2-Dichloroethane-D4	0.76439	0.74846	0.73661	0.74720	0.71646	0.74655	AVG		0.74328		2.13794	15.00000	
Toluene-D8	1.21612	1.19459	1.22020	1.22926	1.22849	1.22746	AVG		1.21935		1.08305	15.00000	
P-Bromofluorobenzene	0.48224	0.47486	0.49316	0.48863	0.48436	0.49716	AVG		0.48673		1.64465	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

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ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-W
Lab File IDs : W3881.D W3880.D W3879.D W3878.D W3883.D W3882.D
Column ID:
Calibration Date(s): 09-MAY-18 08:35 09-MAY-18 11:41

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	5.0000	10.0000	20.0000	50.0000	100.0000	150.0000	New	b	m1	m2	%RSD	%RSD	
Dichlorodifluoromethane	0.39165	0.44068	0.39104	0.43667	0.38974	0.40012	AVG		0.40832		5.83650	15.00000	O
Chloromethane	0.67538	0.67772	0.57481	0.62691	0.56421	0.58664	AVG		0.61761		8.15355	15.00000	O
Vinyl chloride	0.50572	0.52688	0.47614	0.54272	0.48431	0.52094	AVG		0.50945		5.04133	15.00000	O
Bromomethane	0.19036	0.20765	0.16752	0.17542	0.17463	0.18447	AVG		0.18334		7.82917	15.00000	O
Chloroethane	17789	33897	56878	150314	252542	341500	QUA	0.00370	3.15914	3.39616	0.99664	0.99000	O
Trichlorofluoromethane	0.58237	0.64673	0.56017	0.62774	0.57632	0.60422	AVG		0.59959		5.49505	15.00000	O
1,1-Dichloroethene	0.37078	0.37875	0.32340	0.38104	0.34399	0.38134	AVG		0.36322		6.63039	15.00000	O
Carbon Disulfide	1.57033	1.48345	1.24502	1.44961	1.30278	1.35423	AVG		1.40090		8.68375	15.00000	O
Freon-113	0.31641	0.28291	0.28424	0.33314	0.28643	0.30506	AVG		0.30136		6.81070	15.00000	O
Methylene Chloride	0.49762	0.51769	0.45284	0.49476	0.46676	0.48720	AVG		0.48614		4.76855	15.00000	O
Acetone	0.16611	0.17857	0.17856	0.23045	0.15461	0.16214	AVG		0.17840		15.2290	15.00000	W
trans-1,2-Dichloroethene	0.40132	0.42104	0.36952	0.43634	0.39111	0.42130	AVG		0.40677		5.97280	15.00000	O
Methyl tert-butyl ether	1.00158	1.08358	0.98979	1.07500	1.13534	1.15802	AVG		1.07388		6.34995	15.00000	O
1,1-Dichloroethane	0.73207	0.77302	0.67495	0.77996	0.73890	0.77065	AVG		0.74493		5.29394	15.00000	O
cis-1,2-Dichloroethene	0.45952	0.45943	0.41682	0.47101	0.44506	0.46947	AVG		0.45355		4.46415	15.00000	O
2,2-Dichloropropane	14769	33266	64118	195369	471829	724548	LNR	0.10047	0.42156		0.99742	0.99000	O
Bromochloromethane	0.21584	0.22631	0.19530	0.22135	0.21394	0.22995	AVG		0.21711		5.65858	15.00000	O
Chloroform	0.72006	0.77407	0.67016	0.75713	0.70341	0.74035	AVG		0.72753		5.19253	15.00000	O
Carbon Tetrachloride	13384	35246	65296	215011	481164	758481	LNR	0.09807	0.23562		0.99774	0.99000	O
1,1,1-Trichloroethane	0.51119	0.53056	0.45972	0.57934	0.54962	0.59133	AVG		0.53696		8.96383	15.00000	O
1,1-Dichloropropene	0.30732	0.30791	0.25873	0.31469	0.29274	0.31114	AVG		0.29876		7.02516	15.00000	O
2-Butanone	0.25054	0.26422	0.25758	0.29400	0.25728	0.27087	AVG		0.26575		5.82117	15.00000	O
Benzene	0.91664	0.94087	0.81405	0.99800	0.89858	0.91727	AVG		0.91423		6.56728	15.00000	O
1,2-Dichloroethane	0.31845	0.34571	0.29484	0.34453	0.32056	0.34138	AVG		0.32758		6.12208	15.00000	O
Trichloroethene	0.23426	0.23897	0.20264	0.24295	0.21609	0.22945	AVG		0.22739		6.72057	15.00000	O
Dibromomethane	0.13455	0.14460	0.13087	0.15079	0.14511	0.14761	AVG		0.14226		5.48191	15.00000	O
1,2-Dichloropropane	0.23375	0.24398	0.21335	0.25054	0.24186	0.25254	AVG		0.23934		6.00856	15.00000	O
Bromodichloromethane	0.26259	0.29527	0.26499	0.30442	0.29746	0.31256	AVG		0.28955		7.20491	15.00000	O
cis-1,3-dichloropropene	0.27496	0.32050	0.30245	0.37881	0.37694	0.40357	AVG		0.34287		14.8041(	15.00000	O
Toluene	0.56968	0.58642	0.50373	0.60021	0.55494	0.57990	AVG		0.56581		6.01589	15.00000	O
4-methyl-2-pentanone	0.25854	0.30072	0.26810	0.29801	0.29033	0.28791	AVG		0.28393		5.96068	15.00000	O
Tetrachloroethene	0.18004	0.17645	0.16039	0.19085	0.17024	0.17708	AVG		0.17584		5.77190	15.00000	O
trans-1,3-Dichloropropene	20294	46706	95412	303944	702776	1113820	LNR	0.10894	0.34653		0.99729	0.99000	O
1,1,2-Trichloroethane	0.16640	0.19403	0.16670	0.18821	0.17803	0.19051	AVG		0.18065		6.72651	15.00000	O
Dibromochloromethane	0.18825	0.21397	0.19925	0.23078	0.23521	0.24936	AVG		0.21947		10.5552	15.00000	O
1,3-Dichloropropane	0.40278	0.43398	0.38768	0.43124	0.41842	0.43438	AVG		0.41808		4.60112	15.00000	O
1,2-Dibromoethane	0.19344	0.21241	0.19344	0.22351	0.22333	0.23310	AVG		0.21321		7.81129	15.00000	O

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 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-W
Lab File IDs : W3881.D W3880.D W3879.D W3878.D W3883.D W3882.D
Column ID:
Calibration Date(s): 09-MAY-18 08:35 09-MAY-18 11:41

2-Hexanone	0.18475	0.21512	0.20788	0.22694	0.22269	0.22313	AVG		0.21342		7.31399	15.00000	O
Chlorobenzene	0.64653	0.69784	0.61221	0.70424	0.66012	0.68339	AVG		0.66739		5.22240	15.00000	O
Ethylbenzene	0.35034	0.37281	0.32749	0.38237	0.35325	0.37731	AVG		0.36059		5.76173	15.00000	O
1,1,1,2-Tetrachloroethane	0.16342	0.19586	0.18316	0.21582	0.22066	0.23402	AVG		0.20216		12.9843	15.00000	O
m+p-Xylenes	0.44039	0.46825	0.41243	0.46811	0.43294	0.44697	AVG		0.44485		4.82728	15.00000	O
o-Xylene	0.43983	0.45083	0.41102	0.46991	0.44941	0.46786	AVG		0.44814		4.80534	15.00000	O
Styrene	0.70262	0.76399	0.70315	0.79999	0.76174	0.79385	AVG		0.75422		5.65276	15.00000	O
Bromoform	0.11818	0.14059	0.13674	0.15757	0.16378	0.17720	AVG		0.14901		14.2622(	15.00000	O
Isopropylbenzene	2.01356	1.99681	1.72424	1.99013	1.79464	1.85934	AVG		1.89645		6.41330	15.00000	O
Bromobenzene	0.51968	0.54763	0.47728	0.53499	0.50387	0.53008	AVG		0.51892		4.85065	15.00000	O
N-Propylbenzene	2.64206	2.63660	2.27588	2.63385	2.30898	2.33399	AVG		2.47189		7.37769	15.00000	O
1,1,2,2-Tetrachloroethane	0.58164	0.63956	0.57066	0.62023	0.60130	0.63435	AVG		0.60796		4.63732	15.00000	O
1,3,5-Trimethylbenzene	1.83284	1.83741	1.60671	1.84935	1.65749	1.69791	AVG		1.74695		6.06461	15.00000	O
2-Chlorotoluene	1.58363	1.60968	1.41129	1.57867	1.44554	1.49431	AVG		1.52052		5.38753	15.00000	O
1,2,3-Trichloropropane	0.52371	0.54129	0.49035	0.52815	0.50702	0.53347	AVG		0.52067		3.60332	15.00000	O
4-Chlorotoluene	1.64788	1.66102	1.49409	1.70157	1.52703	1.56999	AVG		1.60026		5.13582	15.00000	O
tert-Butylbenzene	1.73224	1.74962	1.56518	1.83767	1.68759	1.75988	AVG		1.72203		5.28794	15.00000	O
1,2,4-Trimethylbenzene	1.90548	1.98574	1.73862	1.97410	1.76156	1.79876	AVG		1.86071		5.84136	15.00000	O
P-Isopropyltoluene	1.99179	2.05330	1.79019	2.07275	1.82768	1.84882	AVG		1.93076		6.38555	15.00000	O
1,3-Dichlorobenzene	1.05740	1.11018	0.99032	1.09045	0.99896	1.03472	AVG		1.04700		4.61228	15.00000	O
1,4-Dichlorobenzene	1.04363	1.11247	1.00161	1.11784	1.02711	1.04922	AVG		1.05865		4.42322	15.00000	O
N-Butylbenzene	1.86545	1.95634	1.74509	2.03364	1.75559	1.78670	AVG		1.85713		6.32059	15.00000	O
sec-Butylbenzene	2.42834	2.42108	2.06628	2.42654	2.14510	2.17072	AVG		2.27634		7.32782	15.00000	O
1,2-Dichlorobenzene	1.06346	1.10292	0.97830	1.08477	0.99944	1.02240	AVG		1.04188		4.75180	15.00000	O
1,2-Dibromo-3-Chloropropane	5294	13521	28199	80060	172230	294080	QUA	0.00825	8.26473	-3.94624	0.99916	0.99000	O
Hexachlorobutadiene	0.35612	0.36101	0.30832	0.35667	0.31376	0.32132	AVG		0.33620		7.20501	15.00000	O
1,2,4-Trichlorobenzene	0.61149	0.67897	0.64305	0.71264	0.64650	0.68244	AVG		0.66251		5.40837	15.00000	O
Naphthalene	1.67795	1.80359	1.72848	1.85869	1.81959	1.79958	AVG		1.78132		3.70313	15.00000	O
1,2,3-Trichlorobenzene	0.62078	0.67233	0.61194	0.66417	0.62082	0.63911	AVG		0.63819		3.92353	15.00000	O
Dibromofluoromethane	0.55220	0.54709	0.56041	0.56286	0.55147	0.55065	AVG		0.55411		1.10660	15.00000	
1,2-Dichloroethane-D4	0.69728	0.70312	0.70873	0.68489	0.66861	0.68870	AVG		0.69189		2.08458	15.00000	
Toluene-D8	1.19373	1.21329	1.17407	1.20296	1.19983	1.18929	AVG		1.19553		1.11704	15.00000	
P-Bromofluorobenzene	0.50654	0.52131	0.50976	0.52850	0.52955	0.53992	AVG		0.52260		2.43182	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
SDG: SL3807
Lab ID : WG228234-4
Analytical Date: 05/14/18 11:19
Lab File ID : D1287.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.62391	0.62391	0.010	3.09389	20.00000	Averaged
2	Chloromethane	0.65045	0.62005	0.62005	0.100	-4.67427	20.00000	Averaged
3	Vinyl chloride	0.50829	0.50248	0.50248	0.010	-1.14423	20.00000	Averaged
4	Bromomethane	0.26245	0.27454	0.27454	0.010	4.60681	20.00000	Averaged
5	Chloroethane	0.23262	0.24058	0.24058	0.010	3.41946	20.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.81988	0.81988	0.010	3.96496	20.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.35305	0.35305	0.100	4.44865	20.00000	Averaged
10	Carbon Disulfide	1.04529	1.13729	1.13729	0.010	8.80095	20.00000	Averaged
11	Freon-113	0.29565	0.29341	0.29341	0.010	-0.75775	20.00000	Averaged
14	Methylene Chloride	0.56422	0.57139	0.57139	0.010	1.26936	20.00000	Averaged
15	Acetone	0.15669	0.15160	0.15160	0.010	-3.25019	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.51701	0.51701	0.010	0.15780	20.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.37646	1.37646	0.010	3.10236	20.00000	Averaged
25	1,1-Dichloroethane	0.96513	1.00126	1.00126	0.100	3.74370	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.56887	0.56887	0.010	3.52813	20.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.74529	0.74529	0.010	17.21189	20.00000	Averaged
33	Bromochloromethane	0.27091	0.29539	0.29539	0.010	9.03653	20.00000	Averaged
34	Chloroform	1.01172	1.05628	1.05628	0.010	4.40448	20.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.46187	0.46187	0.010	7.18751	20.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.88728	0.88728	0.010	6.58903	20.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.47804	0.47804	0.010	4.52053	20.00000	Averaged
40	2-Butanone	0.24292	0.23786	0.23786	0.010	-2.08416	20.00000	Averaged
41	Benzene	1.23369	1.26869	1.26869	0.010	2.83698	20.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.51792	0.51792	0.010	0.42827	20.00000	Averaged
48	Trichloroethene	0.33634	0.34238	0.34238	0.010	1.79484	20.00000	Averaged
50	Dibromomethane	0.22736	0.23720	0.23720	0.010	4.32754	20.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.34983	0.34983	0.010	4.88597	20.00000	Averaged
52	Bromodichloromethane	0.46224	0.49242	0.49242	0.010	6.53005	20.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.60327	0.60327	0.010	12.17813	20.00000	Averaged
57	Toluene	0.75378	0.76740	0.76740	0.010	1.80712	20.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.30016	0.30016	0.010	-1.40420	20.00000	Averaged
59	Tetrachloroethene	0.27263	0.27205	0.27205	0.010	-0.21195	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.50859	0.50859	0.010	9.12246	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26414	0.26414	0.010	-0.50861	20.00000	Averaged
62	Dibromochloromethane	0.37557	0.39494	0.39494	0.010	5.15663	20.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.60807	0.60807	0.010	-0.51426	20.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.32865	0.32865	0.010	2.66566	20.00000	Averaged
65	2-Hexanone	0.23077	0.22625	0.22625	0.010	-1.95742	20.00000	Averaged
67	Chlorobenzene	0.92421	0.91157	0.91157	0.300	-1.36796	20.00000	Averaged
68	Ethylbenzene	1.58372	1.61481	1.61481	0.010	1.96276	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.34462	0.34462	0.010	4.64448	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG228234-4
Analytical Date: 05/14/18 11:19
Lab File ID : D1287.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.20403	1.23913	1.23913	0.010	2.91515	20.00000	Averaged
72 o-Xylene	1.21487	1.28276	1.28276	0.010	5.58817	20.00000	Averaged
73 Styrene	0.91910	0.97235	0.97235	0.010	5.79316	20.00000	Averaged
74 Bromoform	50.00000	46.84350	0.23548	0.100	-6.31299	20.00000	Linear
75 Isopropylbenzene	2.65481	2.78983	2.78983	0.010	5.08572	20.00000	Averaged
79 Bromobenzene	0.74765	0.74159	0.74159	0.010	-0.80942	20.00000	Averaged
80 N-Propylbenzene	3.47227	3.54236	3.54236	0.010	2.01867	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.86973	0.81969	0.81969	0.300	-5.75343	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.30306	2.39736	2.39736	0.010	4.09444	20.00000	Averaged
83 2-Chlorotoluene	2.07978	2.12025	2.12025	0.010	1.94587	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74898	0.71578	0.71578	0.010	-4.43188	20.00000	Averaged
85 4-Chlorotoluene	2.20985	2.24912	2.24912	0.010	1.77718	20.00000	Averaged
86 tert-Butylbenzene	2.16738	2.24920	2.24920	0.010	3.77511	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.38615	2.48993	2.48993	0.010	4.34951	20.00000	Averaged
89 P-Isopropyltoluene	2.22161	2.35134	2.35134	0.010	5.83929	20.00000	Averaged
90 1,3-Dichlorobenzene	1.33333	1.32193	1.32193	0.010	-0.85486	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38362	1.34846	1.34846	0.010	-2.54147	20.00000	Averaged
93 N-Butylbenzene	2.07013	2.21627	2.21627	0.010	7.05978	20.00000	Averaged
94 sec-Butylbenzene	2.73458	2.83067	2.83067	0.010	3.51379	20.00000	Averaged
95 1,2-Dichlorobenzene	1.26487	1.26246	1.26246	0.010	-0.19039	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.13815	0.13326	0.13326	0.010	-3.53931	20.00000	Averaged
98 Hexachlorobutadiene	0.29715	0.29479	0.29479	0.010	-0.79621	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.74393	0.74278	0.74278	0.010	-0.15539	20.00000	Averaged
101 Naphthalene	50.00000	44.12384	1.58446	0.010	-11.75232	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60765	0.58158	0.58158	0.010	-4.29076	20.00000	Averaged
37 Dibromofluoromethane	0.58785	0.61099	0.61099	0.010	3.93565	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.74328	0.75738	0.75738	0.010	1.89788	20.00000	Averaged
55 Toluene-D8	1.21935	1.23358	1.23358	0.010	1.16653	20.00000	Averaged
76 P-Bromofluorobenzene	0.48673	0.50646	0.50646	0.010	4.05341	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228234-4
Lab File ID : D1287.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3807
Analytical Date: 05/14/18 11:19
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

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 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG228234-5
Analytical Date: 05/14/18 18:02
Lab File ID : D1296.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.57204	0.57204	0.010	-5.47725	50.00000	Averaged
2	Chloromethane	0.65045	0.56193	0.56193	0.100	-13.60934	50.00000	Averaged
3	Vinyl chloride	0.50829	0.46017	0.46017	0.010	-9.46743	50.00000	Averaged
4	Bromomethane	0.26245	0.22993	0.22993	0.010	-12.39304	50.00000	Averaged
5	Chloroethane	0.23262	0.22639	0.22639	0.010	-2.68009	50.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.80636	0.80636	0.010	2.24966	50.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.32071	0.32071	0.100	-5.11652	50.00000	Averaged
10	Carbon Disulfide	1.04529	1.03323	1.03323	0.010	-1.15395	50.00000	Averaged
11	Freon-113	0.29565	0.27836	0.27836	0.010	-5.84539	50.00000	Averaged
14	Methylene Chloride	0.56422	0.52913	0.52913	0.010	-6.21940	50.00000	Averaged
15	Acetone	0.15669	0.16069	0.16069	0.010	2.55056	50.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.46746	0.46746	0.010	-9.44224	50.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.30950	1.30950	0.010	-1.91315	50.00000	Averaged
25	1,1-Dichloroethane	0.96513	0.94513	0.94513	0.100	-2.07207	50.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.52357	0.52357	0.010	-4.71620	50.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.57524	0.57524	0.010	-9.53134	50.00000	Averaged
33	Bromochloromethane	0.27091	0.28061	0.28061	0.010	3.58037	50.00000	Averaged
34	Chloroform	1.01172	1.01217	1.01217	0.010	0.04523	50.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.41714	0.41714	0.010	-3.19345	50.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.82147	0.82147	0.010	-1.31659	50.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.42856	0.42856	0.010	-6.29815	50.00000	Averaged
40	2-Butanone	0.24292	0.25679	0.25679	0.010	5.70704	50.00000	Averaged
41	Benzene	1.23369	1.16865	1.16865	0.010	-5.27205	50.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.51750	0.51750	0.010	0.34764	50.00000	Averaged
48	Trichloroethene	0.33634	0.32490	0.32490	0.010	-3.40186	50.00000	Averaged
50	Dibromomethane	0.22736	0.23298	0.23298	0.010	2.47254	50.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.33775	0.33775	0.010	1.26611	50.00000	Averaged
52	Bromodichloromethane	0.46224	0.47169	0.47169	0.010	2.04525	50.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.55394	0.55394	0.010	3.00597	50.00000	Averaged
57	Toluene	0.75378	0.70938	0.70938	0.010	-5.88978	50.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.33063	0.33063	0.010	8.60512	50.00000	Averaged
59	Tetrachloroethene	0.27263	0.24130	0.24130	0.010	-11.49111	50.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.50782	0.50782	0.010	8.95783	50.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26268	0.26268	0.010	-1.05728	50.00000	Averaged
62	Dibromochloromethane	0.37557	0.38514	0.38514	0.010	2.54836	50.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.59586	0.59586	0.010	-2.51313	50.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.32865	0.32865	0.010	2.66526	50.00000	Averaged
65	2-Hexanone	0.23077	0.24955	0.24955	0.010	8.14087	50.00000	Averaged
67	Chlorobenzene	0.92421	0.86521	0.86521	0.300	-6.38362	50.00000	Averaged
68	Ethylbenzene	1.58372	1.50715	1.50715	0.010	-4.83491	50.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.32797	0.32797	0.010	-0.41192	50.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG228234-5
Analytical Date: 05/14/18 18:02
Lab File ID : D1296.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.20403	1.15989	1.15989	0.010	-3.66636	50.00000	Averaged
72 o-Xylene	1.21487	1.19449	1.19449	0.010	-1.67768	50.00000	Averaged
73 Styrene	0.91910	0.91753	0.91753	0.010	-0.17088	50.00000	Averaged
74 Bromoform	50.00000	47.05071	0.23655	0.100	-5.89857	50.00000	Linear
75 Isopropylbenzene	2.65481	2.52821	2.52821	0.010	-4.76893	50.00000	Averaged
79 Bromobenzene	0.74765	0.69948	0.69948	0.010	-6.44223	50.00000	Averaged
80 N-Propylbenzene	3.47227	3.24608	3.24608	0.010	-6.51398	50.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.86973	0.83271	0.83271	0.300	-4.25647	50.00000	Averaged
82 1,3,5-Trimethylbenzene	2.30306	2.19289	2.19289	0.010	-4.78372	50.00000	Averaged
83 2-Chlorotoluene	2.07978	1.94989	1.94989	0.010	-6.24523	50.00000	Averaged
84 1,2,3-Trichloropropane	0.74898	0.73764	0.73764	0.010	-1.51395	50.00000	Averaged
85 4-Chlorotoluene	2.20985	2.09179	2.09179	0.010	-5.34240	50.00000	Averaged
86 tert-Butylbenzene	2.16738	2.05387	2.05387	0.010	-5.23719	50.00000	Averaged
88 1,2,4-Trimethylbenzene	2.38615	2.29318	2.29318	0.010	-3.89595	50.00000	Averaged
89 P-Isopropyltoluene	2.22161	2.11210	2.11210	0.010	-4.92937	50.00000	Averaged
90 1,3-Dichlorobenzene	1.33333	1.21793	1.21793	0.010	-8.65517	50.00000	Averaged
92 1,4-Dichlorobenzene	1.38362	1.26100	1.26100	0.010	-8.86233	50.00000	Averaged
93 N-Butylbenzene	2.07013	1.93878	1.93878	0.010	-6.34492	50.00000	Averaged
94 sec-Butylbenzene	2.73458	2.53312	2.53312	0.010	-7.36714	50.00000	Averaged
95 1,2-Dichlorobenzene	1.26487	1.19103	1.19103	0.010	-5.83727	50.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.13815	0.14106	0.14106	0.010	2.10452	50.00000	Averaged
98 Hexachlorobutadiene	0.29715	0.24857	0.24857	0.010	-16.34927	50.00000	Averaged
99 1,2,4-Trichlorobenzene	0.74393	0.69445	0.69445	0.010	-6.65136	50.00000	Averaged
101 Naphthalene	50.00000	44.77185	1.60833	0.010	-10.45631	50.00000	Linear
102 1,2,3-Trichlorobenzene	0.60765	0.56843	0.56843	0.010	-6.45467	50.00000	Averaged
37 Dibromofluoromethane	0.58785	0.61417	0.61417	0.010	4.47720	50.00000	Averaged
45 1,2-Dichloroethane-D4	0.74328	0.80787	0.80787	0.010	8.69002	50.00000	Averaged
55 Toluene-D8	1.21935	1.24391	1.24391	0.010	2.01364	50.00000	Averaged
76 P-Bromofluorobenzene	0.48673	0.51970	0.51970	0.010	6.77393	50.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228234-5
Lab File ID : D1296.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3807
Analytical Date: 05/14/18 18:02
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG227905-11
Analytical Date: 05/09/18 19:21
Lab File ID : W3895.D
Instrument ID: GCMS-W
Initial Calibration Date(s): 05/09/18 08:35 05/09/18 11:41
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.40832	0.38316	0.38316	0.010	-6.16116	50.00000	Averaged
2	Chloromethane	0.61761	0.58239	0.58239	0.100	-5.70381	50.00000	Averaged
3	Vinyl chloride	0.50945	0.51371	0.51371	0.010	0.83671	50.00000	Averaged
4	Bromomethane	0.18334	0.17114	0.17114	0.010	-6.65746	50.00000	Averaged
5	Chloroethane	50.00000	54.68970	0.26790	0.010	9.37940	50.00000	Quadratic
6	Trichlorofluoromethane	0.59959	0.61991	0.61991	0.010	3.38879	50.00000	Averaged
9	1,1-Dichloroethene	0.36322	0.34719	0.34719	0.010	-4.41324	50.00000	Averaged
10	Carbon Disulfide	1.40090	1.30996	1.30996	0.010	-6.49205	50.00000	Averaged
11	Freon-113	0.30136	0.28815	0.28815	0.010	-4.38422	50.00000	Averaged
14	Methylene Chloride	0.48614	0.45918	0.45918	0.010	-5.54636	50.00000	Averaged
15	Acetone	0.17840	0.15298	0.15298	0.010	-14.25204	50.00000	Averaged
17	trans-1,2-Dichloroethene	0.40677	0.38774	0.38774	0.010	-4.67997	50.00000	Averaged
19	Methyl tert-butyl ether	1.07388	0.93647	0.93647	0.010	-12.79624	50.00000	Averaged
25	1,1-Dichloroethane	0.74493	0.73414	0.73414	0.100	-1.44833	50.00000	Averaged
29	cis-1,2-Dichloroethene	0.45355	0.44145	0.44145	0.010	-2.66880	50.00000	Averaged
32	2,2-Dichloropropane	50.00000	36.31402	0.26382	0.010	-27.37196	50.00000	Linear
33	Bromochloromethane	0.21711	0.20582	0.20582	0.010	-5.20333	50.00000	Averaged
34	Chloroform	0.72753	0.70250	0.70250	0.010	-3.44005	50.00000	Averaged
35	Carbon Tetrachloride	50.00000	45.65140	0.19202	0.010	-8.69720	50.00000	Linear
38	1,1,1-Trichloroethane	0.53696	0.50730	0.50730	0.010	-5.52321	50.00000	Averaged
39	1,1-Dichloropropene	0.29876	0.30594	0.30594	0.010	2.40551	50.00000	Averaged
40	2-Butanone	0.26575	0.25446	0.25446	0.010	-4.24805	50.00000	Averaged
41	Benzene	0.91423	0.92846	0.92846	0.010	1.55651	50.00000	Averaged
47	1,2-Dichloroethane	0.32758	0.33324	0.33324	0.010	1.72790	50.00000	Averaged
48	Trichloroethene	0.22739	0.22920	0.22920	0.010	0.79422	50.00000	Averaged
50	Dibromomethane	0.14226	0.14705	0.14705	0.010	3.36880	50.00000	Averaged
51	1,2-Dichloropropane	0.23934	0.24672	0.24672	0.010	3.08602	50.00000	Averaged
52	Bromodichloromethane	0.28955	0.29840	0.29840	0.010	3.05776	50.00000	Averaged
53	cis-1,3-dichloropropene	0.34287	0.33747	0.33747	0.010	-1.57514	50.00000	Averaged
57	Toluene	0.56581	0.56143	0.56143	0.010	-0.77532	50.00000	Averaged
58	4-methyl-2-pentanone	0.28393	0.30884	0.30884	0.010	8.77196	50.00000	Averaged
59	Tetrachloroethene	0.17584	0.16982	0.16982	0.010	-3.42579	50.00000	Averaged
60	trans-1,3-Dichloropropene	50.00000	42.96251	0.26000	0.010	-14.07498	50.00000	Linear
61	1,1,2-Trichloroethane	0.18065	0.18187	0.18187	0.010	0.67939	50.00000	Averaged
62	Dibromochloromethane	0.21947	0.22903	0.22903	0.010	4.35618	50.00000	Averaged
63	1,3-Dichloropropane	0.41808	0.42624	0.42624	0.010	1.95211	50.00000	Averaged
64	1,2-Dibromoethane	0.21321	0.22162	0.22162	0.010	3.94881	50.00000	Averaged
65	2-Hexanone	0.21342	0.23141	0.23141	0.010	8.42755	50.00000	Averaged
67	Chlorobenzene	0.66739	0.67167	0.67167	0.300	0.64118	50.00000	Averaged
68	Ethylbenzene	0.36059	0.35911	0.35911	0.010	-0.41184	50.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.20216	0.20948	0.20948	0.010	3.62296	50.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG227905-11
Analytical Date: 05/09/18 19:21
Lab File ID : W3895.D
Instrument ID: GCMS-W
Initial Calibration Date(s): 05/09/18 08:35 05/09/18 11:41
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	0.44485	0.43815	0.43815	0.010	-1.50486	50.00000	Averaged
72 o-Xylene	0.44814	0.44827	0.44827	0.010	0.02707	50.00000	Averaged
73 Styrene	0.75422	0.76219	0.76219	0.010	1.05677	50.00000	Averaged
74 Bromoform	0.14901	0.15239	0.15239	0.100	2.26706	50.00000	Averaged
75 Isopropylbenzene	1.89645	1.86214	1.86214	0.010	-1.80946	50.00000	Averaged
79 Bromobenzene	0.51892	0.51122	0.51122	0.010	-1.48318	50.00000	Averaged
80 N-Propylbenzene	2.47189	2.38185	2.38185	0.010	-3.64273	50.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.60796	0.61669	0.61669	0.300	1.43610	50.00000	Averaged
82 1,3,5-Trimethylbenzene	1.74695	1.68603	1.68603	0.010	-3.48750	50.00000	Averaged
83 2-Chlorotoluene	1.52052	1.48790	1.48790	0.010	-2.14549	50.00000	Averaged
84 1,2,3-Trichloropropane	0.52067	0.53311	0.53311	0.010	2.38989	50.00000	Averaged
85 4-Chlorotoluene	1.60026	1.54519	1.54519	0.010	-3.44135	50.00000	Averaged
86 tert-Butylbenzene	1.72203	1.68103	1.68103	0.010	-2.38097	50.00000	Averaged
88 1,2,4-Trimethylbenzene	1.86071	1.78298	1.78298	0.010	-4.17733	50.00000	Averaged
89 P-Isopropyltoluene	1.93076	1.81574	1.81574	0.010	-5.95707	50.00000	Averaged
90 1,3-Dichlorobenzene	1.04700	0.99241	0.99241	0.010	-5.21470	50.00000	Averaged
92 1,4-Dichlorobenzene	1.05865	0.99768	0.99768	0.010	-5.75843	50.00000	Averaged
93 N-Butylbenzene	1.85713	1.71789	1.71789	0.010	-7.49752	50.00000	Averaged
94 sec-Butylbenzene	2.27634	2.17913	2.17913	0.010	-4.27050	50.00000	Averaged
95 1,2-Dichlorobenzene	1.04188	1.00313	1.00313	0.010	-3.71972	50.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	50.00000	55.61445	0.14340	0.010	11.22890	50.00000	Quadratic
98 Hexachlorobutadiene	0.33620	0.29866	0.29866	0.010	-11.16662	50.00000	Averaged
99 1,2,4-Trichlorobenzene	0.66251	0.57810	0.57810	0.010	-12.74155	50.00000	Averaged
101 Naphthalene	1.78132	1.74949	1.74949	0.010	-1.78663	50.00000	Averaged
102 1,2,3-Trichlorobenzene	0.63819	0.57580	0.57580	0.010	-9.77678	50.00000	Averaged
37 Dibromofluoromethane	0.55411	0.52445	0.52445	0.010	-5.35250	50.00000	Averaged
45 1,2-Dichloroethane-D4	0.69189	0.65862	0.65862	0.010	-4.80797	50.00000	Averaged
55 Toluene-D8	1.19553	1.19906	1.19906	0.010	0.29573	50.00000	Averaged
76 P-Bromofluorobenzene	0.52260	0.51697	0.51697	0.010	-1.07743	50.00000	Averaged

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 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227905-11
Lab File ID : W3895.D
Initial Calibration Date(s): 05/09/18 08:35 05/09/18 11:41

SDG: SL3807
Analytical Date: 05/09/18 19:21
Instrument ID: GCMS-W
Column ID:

*** = Compound out of QC criteria**

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3807
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	336775		7.32		538592		8.10		490295		11.54	
	Upper Limit	673550		7.48		1077184		8.26		980590		11.70	
	Lower Limit	168387.5		7.15		269296		7.93		245147.5		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228234-4	313685		7.32		513882		8.10		474147		11.54	
Laboratory Control S	WG228234-1	320895		7.32		527447		8.10		479337		11.54	
Method Blank Sample	WG228234-2	300847		7.32		492779		8.10		458750		11.54	
CHAAP-TB-050218	SL3807-5	287874		7.32		481254		8.10		448837		11.55	
Continuing Calibrati	WG228234-5	287605		7.32		473756		8.10		442963		11.55	

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 : WG227999-4
Lab File ID : D1259.d

SDG: SL3807
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	249538		13.88	
	Upper Limit	499076		14.04	
	Lower Limit	124769		13.71	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG228234-4	242975		13.88	
Laboratory Control S	WG228234-1	245661		13.88	
Method Blank Sample	WG228234-2	228819		13.88	
CHAAP-TB-050218	SL3807-5	220840		13.88	
Continuing Calibrati	WG228234-5	230771		13.88	

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.
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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227905-4
Lab File ID : W3878.D

SDG: SL3807
Analytical Date: 05/09/18 08:35
Instrument ID: GCMS-W

		PENTAFLUOROBENZENE		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	557582	8.07	1039313	8.95	1034004	13.39
	Upper Limit	1115164	8.24	2078626	9.11	2068008	13.55
	Lower Limit	278791	7.91	519656.5	8.78	517002	13.22
Client Sample ID	Lab Sample ID						
Laboratory Control S	WG227905-8	624123	8.07	1143915	8.94	1106082	13.39
Method Blank Sample	WG227905-9	546460	8.07	1009274	8.94	974283	13.39
CHAAP-BKRD-SS07	SL3807-1	540091	8.07	984071	8.94	857013	13.39
CHAAP-BKRD-SB07	SL3807-2	534263	8.07	974699	8.95	938402	13.39
Continuing Calibrati	WG227905-11	545189	8.07	966151	8.95	941503	13.38

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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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227905-4
Lab File ID : W3878.D

SDG: SL3807
Analytical Date: 05/09/18 08:35
Instrument ID: GCMS-W

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	590048		16.44	
	Upper Limit	1180096		16.60	
	Lower Limit	295024		16.27	
Client Sample ID	Lab Sample ID				
Laboratory Control S	WG227905-8	646751		16.44	
Method Blank Sample	WG227905-9	513864		16.44	
CHAAP-BKRD-SS07	SL3807-1	326675		16.44	
CHAAP-BKRD-SB07	SL3807-2	498435		16.44	
Continuing Calibrati	WG227905-11	543283		16.44	

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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-1
Client ID: CHAAP-BKRD-SS07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: U0851.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 11-MAY-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG228026

Analysis Date: 14-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 76.
Report Date: 15-MAY-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	J	9.9	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		61.0	%					
Fluorene-D10		65.0	%					
Pyrene-D10		44.6	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-2
Client ID: CHAAP-BKRD-SB07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: U0852.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 11-MAY-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG228026

Analysis Date: 14-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 82.
Report Date: 15-MAY-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	J	8.6	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	U	12	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		52.0	%					
Fluorene-D10		63.5	%					
Pyrene-D10		67.0	%					

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228026-1
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: U0849.D

Sample Date:
Received Date:
Extract Date: 11-MAY-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG228026

Analysis Date: 14-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 15-MAY-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	J	6.9	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		72.5	%					
Fluorene-D10		76.7	%					
Pyrene-D10		90.7	%					

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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:** SL3807

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-BKRD-SS07	SL3807-1		61.0		65.0		44.6	
CHAAP-BKRD-SB07	SL3807-2		52.0		63.5		67.0	
Method Blank Sample	WG228026-1		72.5		76.7		90.7	
Laboratory Control S	WG228026-2		106.		75.9		82.4	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	19-125
FLO	FLUORENE-D10	20-125
PYR	PYRENE-D10	31-128

= 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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LCS Recovery Report

Client:
Lab ID: WG228026-2
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: U0850.D

Sample Date:
Received Date:
Extract Date: 11-MAY-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG228026

Analysis Date: 14-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 15-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	80.5	66.7	53.7	ug/Kgdrywt	38-125
2-Methylnaphthalene	76.3	66.7	50.9	ug/Kgdrywt	39-125
Acenaphthylene	76.3	66.7	50.9	ug/Kgdrywt	39-125
Acenaphthene	79.0	66.7	52.7	ug/Kgdrywt	44-125
Fluorene	76.3	66.7	50.9	ug/Kgdrywt	47-125
Phenanthrene	82.8	66.7	55.2	ug/Kgdrywt	49-125
Anthracene	83.2	66.7	55.5	ug/Kgdrywt	50-125
Fluoranthene	87.6	66.7	58.4	ug/Kgdrywt	55-125
Pyrene	85.2	66.7	56.8	ug/Kgdrywt	55-125
Benzo(a)anthracene	92.0	66.7	61.4	ug/Kgdrywt	54-125
Chrysene	91.8	66.7	61.2	ug/Kgdrywt	57-125
Benzo(b)Fluoranthene	82.6	66.7	55.1	ug/Kgdrywt	53-128
Benzo(k)fluoranthene	78.6	66.7	52.4	ug/Kgdrywt	56-125
Benzo(a)pyrene	77.5	66.7	51.7	ug/Kgdrywt	50-125
Indeno(1,2,3-cd)pyrene	85.2	66.7	56.8	ug/Kgdrywt	49-130
Dibenzo(a,h)anthracene	82.3	66.7	54.9	ug/Kgdrywt	50-129
Benzo(g,h,i)perylene	88.6	66.7	59.1	ug/Kgdrywt	49-127
2-Methylnaphthalene-D10	106.				19-125
Fluorene-D10	75.9				20-125
Pyrene-D10	82.4				31-128

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : U0849.D
Instrument ID : GCMS-U
Matrix : SL

SDG : SL3807
Lab Sample ID : WG228026-1
Date Extracted : 11-MAY-18
Date Analyzed : 14-MAY-18
Time Analyzed : 17:12

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	WG228026-2	U0850.D	05/14/18	17:43
CHAAP-BKRD-SS07	SL3807-1	U0851.D	05/14/18	18:14
CHAAP-BKRD-SB07	SL3807-2	U0852.D	05/14/18	18:44

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : UD898.D
Instrument ID : GCMS-U

SDG : SL3807
Date Analyzed : 14-MAY-18
Time Analyzed : 12:41

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	31.8		
68	Less than 2.0% of mass 69	0.5	1.48	1
69	Less than 100.0% of mass 198	35.8		
70	Less than 2.0% of mass 69	0.0	0.0	1
127	40.0 - 60.0% of mass 198	44.2		
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	6.8		
275	10.0 - 30.0% of mass 198	20.9		
365	1.0 - 100.0% of mass 198	3.0		
441	0.0 - 100.0% of mass 443	11.0	83.19	2
442	40.0 - 100.0% of mass 198	66.1		
443	17.0 - 23.0% of mass 442	13.2	19.95	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	WG228239-4	U0842.D	05/14/18	13:33
Initial Calibration	WG228239-2	U0843.D	05/14/18	14:06
Initial Calibration	WG228239-3	U0844.D	05/14/18	14:37
Initial Calibration	WG228239-5	U0845.D	05/14/18	15:08
Initial Calibration	WG228239-6	U0846.D	05/14/18	15:39
Initial Calibration	WG228239-7	U0847.D	05/14/18	16:11
Independent Source	WG228239-8	U0848.D	05/14/18	16:41
Method Blank Sample	WG228026-1	U0849.D	05/14/18	17:12
Laboratory Control S	WG228026-2	U0850.D	05/14/18	17:43
CHAAP-BKRD-SS07	SL3807-1	U0851.D	05/14/18	18:14
CHAAP-BKRD-SB07	SL3807-2	U0852.D	05/14/18	18:44
Continuing Calibrati	WG228239-9	U0863.D	05/15/18	00:31

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-U
Lab File IDs : U0843.D U0844.D U0842.D U0845.D U0846.D U0847.D
Column ID:
Calibration Date(s): 14-MAY-18 13:33, 14-MAY-18 16:11

	0.200000(Level 1	0.500000(Level 2	2.0000 Level 3	7.0000 Level 4	10.0000 Level 5	15.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.78697	0.90845	0.84788	0.78421	0.72706	0.71848	AVG		0.79551		9.11971	15.00000	O
2-Methylnaphthalene	0.16711	0.21812	0.20286	0.20401	0.19433	0.18682	AVG		0.19554		8.91943	15.00000	O
Acenaphthylene	1.69046	1.79295	1.69299	1.55541	1.45196	1.48043	AVG		1.61070		8.40221	15.00000	O
Acenaphthene	1.09033	1.16338	1.02771	0.98722	0.91450	0.90530	AVG		1.01474		9.92911	15.00000	O
Fluorene	1.26662	1.28711	1.26308	1.16541	1.08490	1.01660	AVG		1.18062		9.41894	15.00000	O
Phenanthrene	1.08282	1.04535	0.98487	0.94677	0.90114	0.87569	AVG		0.97277		8.32082	15.00000	O
Anthracene	1.05407	1.10512	1.04293	0.98217	0.94647	0.91824	AVG		1.00817		7.05353	15.00000	O
Fluoranthene	0.91132	0.89669	0.94560	0.93421	0.91488	0.90362	AVG		0.91772		2.03203	15.00000	O
Pyrene	12894	33085	154388	440473	682416	780339	LNR	-0.37598	1.65924		0.99757	0.99000	O
Benzo(a)anthracene	2545	6349	58340	226115	406671	459703	LNR	0.23324	0.99992		0.99930	0.99000	O
Chrysene	12178	22317	92854	298737	466592	522972	LNR	-0.36739	1.11844		0.99828	0.99000	O
Benzo(b)fluoranthene	0.94112	0.83178	0.97840	1.08371	1.15114	1.15033	AVG		1.02275		12.48923	15.00000	O
Benzo(k)fluoranthene	6624	11773	58457	222744	360026	424692	LNR	-0.24545	1.68882		0.99870	0.99000	O
Benzo(a)pyrene	1.34487	1.13424	0.96474	1.11786	1.15790	1.15523	AVG		1.14581		10.58604	15.00000	O
Indeno(1,2,3-cd)pyrene	1148	2124	17036	91727	143234	187105	LNR	0.25048	0.74096		0.99866	0.99000	O
Dibenzo(a,h)anthracene	730	1502	11140	62770	100445	132758	LNR	0.32290	0.52444		0.99798	0.99000	O
Benzo(g,h,i)perylene	0.75826	0.61225	0.65243	0.77323	0.70151	0.70935	AVG		0.70117		8.74547	15.00000	O
2-Methylnaphthalene-D10	1.05617	1.13537	1.02370	0.96917	0.88253	0.89805	AVG		0.99417		9.75037	15.00000	
Fluorene-D10	0.83007	0.91303	0.82407	0.81199	0.75510	0.76167	AVG		0.81599		7.00881	15.00000	
Pyrene-D10	8342	18889	104027	302895	475134	510101	LNR	-0.40650	1.10944		0.99602	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant **SDG:** SL3807
Lab ID : WG228239-9 **Analytical Date:** 05/15/18 00:31
Lab File ID : U0863.D **Instrument ID:** GCMS-U
Initial Calibration Date(s): 05/14/18 13:33 05/14/18 16:11 **Column ID:**

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	0.79551	0.84956	0.84956	0.010	6.79380	20.00000	Averaged
33 2-Methylnaphthalene	0.19554	0.19941	0.19941	0.010	1.97856	20.00000	Averaged
45 Acenaphthylene	1.61070	1.64682	1.64682	0.010	2.24226	20.00000	Averaged
48 Acenaphthene	1.01474	1.02789	1.02789	0.010	1.29596	20.01000	Averaged
56 Fluorene	1.18062	1.21058	1.21058	0.010	2.53774	20.00000	Averaged
66 Phenanthrene	0.97277	1.02961	1.02961	0.010	5.84255	20.00000	Averaged
67 Anthracene	1.00817	1.05341	1.05341	0.010	4.48738	20.00000	Averaged
70 Fluoranthene	0.91772	0.96215	0.96215	0.010	4.84081	20.01000	Averaged
72 Pyrene	2.00000	2.19527	2.07078	0.010	9.76348	20.00000	Linear
74 Benzo(a)anthracene	2.00000	1.98168	0.89747	0.010	-0.91619	20.00000	Linear
77 Chrysene	2.00000	2.15328	1.36852	0.010	7.66418	20.00000	Linear
80 Benzo(b)fluoranthene	1.02275	1.00950	1.00950	0.010	-1.29545	20.00000	Averaged
81 Benzo(k)fluoranthene	2.00000	1.68436	1.58810	0.010	-15.78182	20.00000	Linear
82 Benzo(a)pyrene	1.14581	1.02706	1.02706	0.010	-10.36400	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	1.93732	0.64350	0.010	-3.13378	20.00000	Linear
85 Dibenzo(a,h)anthracene	2.00000	1.89544	0.42929	0.010	-5.22822	20.00000	Linear
86 Benzo(g,h,i)perylene	0.70117	0.72844	0.72844	0.010	3.88890	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.99417	1.01503	1.01503	0.010	2.09893	20.00000	Averaged
55 Fluorene-D10	0.81599	0.83821	0.83821	0.010	2.72339	20.00000	Averaged
71 Pyrene-D10	2.00000	2.20045	1.40103	0.010	10.02263	20.00000	Linear

*** = Compound out of QC criteria**

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228239-4
Lab File ID : U0842.D

SDG: SL3807
Analytical Date: 05/14/18 13:33
Instrument ID: GCMS-U

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	28814		5.99		80891		7.62		36551		9.94	
	Upper Limit	57628		6.16		161782		7.79		73102		10.10	
	Lower Limit	14407		5.83		40445.5		7.45		18275.5		9.77	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG228026-1	21798		6.00		80954		7.65		36142		9.95	
Laboratory Control S	WG228026-2	22344		6.01		80592		7.62		35095		9.95	
CHAAP-BKRD-SS07	SL3807-1	21729		6.01		82233		7.63		38150		9.95	
CHAAP-BKRD-SB07	SL3807-2	23174		6.01		88214		7.63		41355		9.95	
Continuing Calibrati	WG228239-9	33987		6.00		94358		7.62		42336		9.94	

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 : WG228239-4
Lab File ID : U0842.D

SDG: SL3807
Analytical Date: 05/14/18 13:33
Instrument ID: GCMS-U

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	62249		11.93		28137		15.70		12677		18.73	
	Upper Limit	124498		12.10		56274		15.86		25354		18.90	
	Lower Limit	31124.5		11.77		14068.5		15.53		6338.5		18.56	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG228026-1	58303		11.96		24858		15.73		12898		18.74	
Laboratory Control S	WG228026-2	53823		11.93		26182		15.70		16219		18.72	
CHAAP-BKRD-SS07	SL3807-1	61437		11.94		27625		15.72		13977		18.72	
CHAAP-BKRD-SB07	SL3807-2	66158		11.94		29463		15.72		16746		18.73	
Continuing Calibrati	WG228239-9	65477		11.93		31529		15.70		18658		18.72	

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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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-1
Client ID: CHAAP-BKRD-SS07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: HLE10342.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG227928

Analysis Date: 11-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 76.
Report Date: 18-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	62	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	8.2	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	990	150	490
PETN	U	490	ug/Kgdrywt	1	800	990	130	490
1,2-Dinitrobenzene		91.7	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-2
Client ID: CHAAP-BKRD-SB07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: HLE10343.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG227928

Analysis Date: 11-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 82.
Report Date: 18-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	52	ug/Kgdrywt	1	100	100	9.0	52.
RDX	U	52	ug/Kgdrywt	1	100	100	7.1	52.
1,3,5-Trinitrobenzene	U	52	ug/Kgdrywt	1	100	100	7.0	52.
1,3-Dinitrobenzene	U	52	ug/Kgdrywt	1	100	100	6.5	52.
Tetryl	U	52	ug/Kgdrywt	1	100	100	5.6	52.
Nitrobenzene	U	52	ug/Kgdrywt	1	100	100	23.	52.
2,4,6-Trinitrotoluene	U	52	ug/Kgdrywt	1	100	100	7.0	52.
2-Am-DNT	U	52	ug/Kgdrywt	1	100	100	22.	52.
4-Am-DNT	U	52	ug/Kgdrywt	1	100	100	18.	52.
2,6-Dinitrotoluene	U	52	ug/Kgdrywt	1	100	100	28.	52.
2,4-Dinitrotoluene	U	52	ug/Kgdrywt	1	100	100	16.	52.
2-Nitrotoluene	U	52	ug/Kgdrywt	1	100	100	12.	52.
3-Nitrotoluene	U	52	ug/Kgdrywt	1	100	100	8.3	52.
4-Nitrotoluene	U	52	ug/Kgdrywt	1	100	100	28.	52.
Nitroglycerin	U	420	ug/Kgdrywt	1	800	840	130	420
PETN	U	420	ug/Kgdrywt	1	800	840	110	420
1,2-Dinitrobenzene		95.2	%					

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Report of Analytical Results

Client:
Lab ID: WG227928-1
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: HLE10318.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG227928

Analysis Date: 11-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 18-MAY-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		97.4	%					

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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:** SL3807

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-BKRD-SS07	SL3807-1	B	91.7	
CHAAP-BKRD-SB07	SL3807-2	B	95.2	
Method Blank Sample	WG227928-1	B	97.4	
Laboratory Control S	WG227928-2	B	105.	

		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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LCS Recovery Report

Client:
Lab ID: WG227928-2
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: HLE10319.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG227928

Analysis Date: 11-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	106.	1000	1060	ug/Kgdrywt	74-125
RDX	105.	1000	1050	ug/Kgdrywt	67-129
1,3,5-Trinitrobenzene	108.	1000	1080	ug/Kgdrywt	80-125
1,3-Dinitrobenzene	108.	1000	1080	ug/Kgdrywt	73-125
Tetryl	124.	1000	1240	ug/Kgdrywt	68-135
Nitrobenzene	104.	1000	1040	ug/Kgdrywt	67-129
2,4,6-Trinitrotoluene	109.	1000	1090	ug/Kgdrywt	71-125
2-Am-DNT	108.	1000	1080	ug/Kgdrywt	71-125
4-Am-DNT	113.	1000	1130	ug/Kgdrywt	64-127
2,6-Dinitrotoluene	105.	1000	1050	ug/Kgdrywt	79-125
2,4-Dinitrotoluene	109.	1000	1090	ug/Kgdrywt	75-125
2-Nitrotoluene	110.	1000	1100	ug/Kgdrywt	70-125
3-Nitrotoluene	107.	1000	1070	ug/Kgdrywt	67-129
4-Nitrotoluene	111.	1000	1110	ug/Kgdrywt	71-125
Nitroglycerin	90.1	1000	901.	ug/Kgdrywt	73-125
PETN	90.8	1000	908.	ug/Kgdrywt	72-128
1,2-Dinitrobenzene	105.				78-125

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10318.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL3807
Lab Sample ID : WG227928-1
Date Extracted : 09-MAY-18
Date Analyzed : 11-MAY-18
Time Analyzed : 02:44

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	WG227928-2	HLE10319.	05/11/18	03:15
CHAAP-BKRD-SS07	SL3807-1	HLE10342.	05/11/18	18:11
CHAAP-BKRD-SB07	SL3807-2	HLE10343.	05/11/18	18:42

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
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

	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

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
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

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-4
Lab File ID : HLE10311.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3807
Analytical Date: 05/10/18 23:07
Instrument ID: HPLC02
Column ID: A

	Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130	NITROGLYCERIN	5513	5249	0.010	-4.79207	20.00000	Averaged
140	PETN	2876	2971	0.010	3.30897	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
SDG: SL3807
Lab ID : WG227995-4
Analytical Date: 05/10/18 23:07
Lab File ID : HLE10311.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
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	0.24615	5336	0.010	-1.53810	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3816	3816	0.010	3.44667	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7536	7536	0.010	1.23978	20.00000	Averaged
7	nitrobenzene	6867	6648	6648	0.010	-3.18413	20.00000	Averaged
9	TETRYL	2535	2824	2824	0.010	11.41923	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2476	2476	0.010	-1.99327	20.00000	Averaged
11	4-AM-DNT	4303	4304	4304	0.010	0.02988	20.00000	Averaged
12	2-AM-DNT	5761	5812	5812	0.010	0.89027	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23894	2888	0.010	-4.42405	20.00000	Linear
14	2,4-dinitrotoluene	4619	4680	4680	0.010	1.33160	20.00000	Averaged
15	2-nitrotoluene	2890	2928	2928	0.010	1.32991	20.00000	Averaged
16	4-nitrotoluene	2342	2344	2344	0.010	0.06709	20.00000	Averaged
17	3-nitrotoluene	3326	3184	3184	0.010	-4.25911	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4764	4764	0.010	2.95135	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 : WG227995-5
Lab File ID : HLE10322.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3807
Analytical Date: 05/11/18 04:48
Instrument ID: HPLC02
Column ID: A

	Compound	$\overline{\text{RRF}}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130	NITROGLYCERIN	5513	5324	0.010	-3.43170	20.00000	Averaged
140	PETN	2876	3031	0.010	5.37793	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
SDG: SL3807
Lab ID : WG227995-5
Analytical Date: 05/11/18 04:48
Lab File ID : HLE10322.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5372	5372	0.010	-0.34584	20.00000	Averaged
4	RDX	0.50000	0.49544	5436	0.010	-0.91136	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3860	3860	0.010	4.63945	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7686	7686	0.010	3.25490	20.00000	Averaged
7	nitrobenzene	6867	6746	6746	0.010	-1.75694	20.00000	Averaged
9	TETRYL	2535	2736	2736	0.010	7.94724	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2562	2562	0.010	1.41084	20.00000	Averaged
11	4-AM-DNT	4303	4384	4384	0.010	1.88917	20.00000	Averaged
12	2-AM-DNT	5761	5906	5906	0.010	2.52201	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.48923	2880	0.010	-2.15387	20.00000	Linear
14	2,4-dinitrotoluene	4619	4750	4750	0.010	2.84724	20.00000	Averaged
15	2-nitrotoluene	2890	2978	2978	0.010	3.06027	20.00000	Averaged
16	4-nitrotoluene	2342	2450	2450	0.010	4.59230	20.00000	Averaged
17	3-nitrotoluene	3326	3336	3336	0.010	0.31143	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4834	4834	0.010	4.46407	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 : WG227995-6
Lab File ID : HLE10333.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3807
Analytical Date: 05/11/18 13:15
Instrument ID: HPLC02
Column ID: A

	Compound	$\overline{RRF}$/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130	NITROGLYCERIN	5513	5303	0.010	-3.81261	20.00000	Averaged
140	PETN	2876	3082	0.010	7.16871	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
SDG: SL3807
Lab ID : WG227995-6
Analytical Date: 05/11/18 13:15
Lab File ID : HLE10333.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5308	5308	0.010	-1.53308	20.00000	Averaged
4	RDX	0.25000	0.24940	5408	0.010	-0.24122	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3904	3904	0.010	5.83224	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7856	7856	0.010	5.53871	20.00000	Averaged
7	nitrobenzene	6867	6664	6664	0.010	-2.95112	20.00000	Averaged
9	TETRYL	2535	3028	3028	0.010	19.46793	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2616	2616	0.010	3.54831	20.00000	Averaged
11	4-AM-DNT	4303	4380	4380	0.010	1.79621	20.00000	Averaged
12	2-AM-DNT	5761	5880	5880	0.010	2.07068	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.24556	2964	0.010	-1.77473	20.00000	Linear
14	2,4-dinitrotoluene	4619	4772	4772	0.010	3.32359	20.00000	Averaged
15	2-nitrotoluene	2890	2980	2980	0.010	3.12948	20.00000	Averaged
16	4-nitrotoluene	2342	2464	2464	0.010	5.18997	20.00000	Averaged
17	3-nitrotoluene	3326	3308	3308	0.010	-0.53051	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4896	4896	0.010	5.80390	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 : WG227995-7
Lab File ID : HLE10344.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3807
Analytical Date: 05/11/18 19:13
Instrument ID: HPLC02
Column ID: A

Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5392	0.010	-2.19830	20.00000	Averaged
140 PETN	2876	3139	0.010	9.15074	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
SDG: SL3807
Lab ID : WG227995-7
Analytical Date: 05/11/18 19:13
Lab File ID : HLE10344.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	HMX	5391	5390	5390	0.010	-0.01193	20.00000	Averaged	
4	RDX	0.50000	0.50121	5500	0.010	0.24142	20.00000	Linear	
5	1,3,5-trinitrobenzene	3689	3926	3926	0.010	6.42863	20.00000	Averaged	
6	1,3-dinitrobenzene	7444	7924	7924	0.010	6.45223	20.00000	Averaged	
7	nitrobenzene	6867	6770	6770	0.010	-1.40743	20.00000	Averaged	
9	TETRYL	2535	3222	3222	0.010	27.12208	20.00000	Averaged	*
10	2,4,6-trinitrotoluene	2526	2648	2648	0.010	4.81495	20.00000	Averaged	
11	4-AM-DNT	4303	4442	4442	0.010	3.23716	20.00000	Averaged	
12	2-AM-DNT	5761	5978	5978	0.010	3.77185	20.00000	Averaged	
13	2,6-dinitrotoluene	0.50000	0.50527	2972	0.010	1.05320	20.00000	Linear	
14	2,4-dinitrotoluene	4619	4848	4848	0.010	4.96915	20.00000	Averaged	
15	2-nitrotoluene	2890	3028	3028	0.010	4.79063	20.00000	Averaged	
16	4-nitrotoluene	2342	2480	2480	0.010	5.87303	20.00000	Averaged	
17	3-nitrotoluene	3326	3356	3356	0.010	0.91282	20.00000	Averaged	
2	1,2-dinitrobenzene	4627	4950	4950	0.010	6.97086	20.00000	Averaged	

*** = Compound out of QC criteria**

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL3807
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		
Continuing Calibrati	WG227995-4	05/10/18	23:07	8.522	
Method Blank Sample	WG227928-1	05/11/18	02:44	8.525	
Laboratory Control S	WG227928-2	05/11/18	03:15	8.529	
Continuing Calibrati	WG227995-5	05/11/18	04:48	8.521	
Continuing Calibrati	WG227995-6	05/11/18	13:15	8.381	
CHAAP-BKRD-SS07	SL3807-1	05/11/18	18:11	8.425	
CHAAP-BKRD-SB07	SL3807-2	05/11/18	18:42	8.424	
Continuing Calibrati	WG227995-7	05/11/18	19:13	8.398	

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-BKRD-SS07

Matrix: SOIL **SDG Name:** SL3807

Percent Solids: 76.5 **Lab Sample ID:** SL3807-001

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	9520			MS	5	9.7	0.48	3.9
7440-36-0	ANTIMONY, TOTAL	0.14			MS	5	0.097	0.019	0.048
7440-38-2	ARSENIC, TOTAL	2.58			MS	5	0.48	0.15	0.39
7440-39-3	BARIUM, TOTAL	167			MS	5	0.19	0.035	0.097
7440-41-7	BERYLLIUM, TOTAL	0.545			MS	5	0.097	0.0039	0.019
7440-43-9	CADMIUM, TOTAL	0.210			MS	5	0.097	0.0073	0.019
7440-70-2	CALCIUM, TOTAL	2460			MS	5	9.7	3.7	7.7
7440-47-3	CHROMIUM, TOTAL	11.0		B	MS	5	0.48	0.047	0.39
7440-48-4	COBALT, TOTAL	5.29			MS	5	0.097	0.0053	0.029
7440-50-8	COPPER, TOTAL	9.37			MS	5	0.29	0.068	0.19
7439-89-6	IRON, TOTAL	9370			MS	5	9.7	2.3	5.8
7439-92-1	LEAD, TOTAL	13.1			MS	5	0.097	0.0068	0.048
7439-95-4	MAGNESIUM, TOTAL	2280			MS	5	9.7	1.3	7.7
7439-96-5	MANGANESE, TOTAL	278		B	MS	5	0.19	0.041	0.097
7439-97-6	MERCURY, TOTAL	0.018	J		CV	1	0.033	0.0051	0.017
7440-02-0	NICKEL, TOTAL	8.42			MS	5	0.19	0.026	0.12
7440-09-7	POTASSIUM, TOTAL	3280			MS	5	97	4.4	39
7782-49-2	SELENIUM, TOTAL	0.515			MS	5	0.48	0.038	0.29
7440-22-4	SILVER, TOTAL	0.055	J		MS	5	0.097	0.0063	0.039
7440-23-5	SODIUM, TOTAL	109			MS	5	97	2.5	39
7440-28-0	THALLIUM, TOTAL	0.224			MS	5	0.097	0.0092	0.039
7440-62-2	VANADIUM, TOTAL	21.6			MS	5	0.48	0.11	0.39
7440-66-6	ZINC, TOTAL	31.7			MS	5	0.97	0.13	0.77

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-BKRD-SB07

Matrix: SOIL **SDG Name:** SL3807

Percent Solids: 81.6 **Lab Sample ID:** SL3807-002

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	18900			MS	5	11	0.55	4.4
7440-36-0	ANTIMONY, TOTAL	0.285			MS	5	0.11	0.022	0.055
7440-38-2	ARSENIC, TOTAL	12.2			MS	5	0.55	0.17	0.44
7440-39-3	BARIUM, TOTAL	259			MS	5	0.22	0.040	0.11
7440-41-7	BERYLLIUM, TOTAL	0.836			MS	5	0.11	0.0045	0.022
7440-43-9	CADMIUM, TOTAL	0.019	J		MS	5	0.11	0.0083	0.022
7440-70-2	CALCIUM, TOTAL	35000			MS	5	11	4.2	8.8
7440-47-3	CHROMIUM, TOTAL	18.6		B	MS	5	0.55	0.054	0.44
7440-48-4	COBALT, TOTAL	7.20			MS	5	0.11	0.0061	0.033
7440-50-8	COPPER, TOTAL	12.4			MS	5	0.33	0.077	0.22
7439-89-6	IRON, TOTAL	18000			MS	5	11	2.6	6.6
7439-92-1	LEAD, TOTAL	12.2			MS	5	0.11	0.0077	0.055
7439-95-4	MAGNESIUM, TOTAL	9910			MS	5	11	1.5	8.8
7439-96-5	MANGANESE, TOTAL	327		B	MS	5	0.22	0.046	0.11
7439-97-6	MERCURY, TOTAL	0.012	J		CV	1	0.041	0.0063	0.021
7440-02-0	NICKEL, TOTAL	16.4			MS	5	0.22	0.029	0.13
7440-09-7	POTASSIUM, TOTAL	5180			MS	5	110	5.0	44
7782-49-2	SELENIUM, TOTAL	0.37	J		MS	5	0.55	0.043	0.33
7440-22-4	SILVER, TOTAL	0.0821	J		MS	5	0.11	0.0072	0.044
7440-23-5	SODIUM, TOTAL	223			MS	5	110	2.8	44
7440-28-0	THALLIUM, TOTAL	0.322			MS	5	0.11	0.010	0.044
7440-62-2	VANADIUM, TOTAL	50.0			MS	5	0.55	0.12	0.44
7440-66-6	ZINC, TOTAL	45.9			MS	5	1.1	0.14	0.88

Comments:

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICV

File: HLE04A May 04, 2018 13:02

Analyte	True	Found	%R (1)
MERCURY	6.0	5.76	96.0

SAMPLE: CCV

File: HLE04A May 04, 2018 13:08

Analyte	True	Found	%R (1)
MERCURY	5.0	5.10	102.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: HLE04A May 04, 2018 13:31

Analyte	True	Found	%R (1)
MERCURY	5.0	5.07	101.4

SAMPLE: CCV

File: HLE04A May 04, 2018 13:57

Analyte	True	Found	%R (1)
MERCURY	5.0	5.23	104.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: HLE04A May 04, 2018 14:23

Analyte	True	Found	%R (1)
MERCURY	5.0	5.20	104.0

SAMPLE: CCV

File: HLE04A May 04, 2018 14:49

Analyte	True	Found	%R (1)
MERCURY	5.0	5.11	102.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: HLE04A May 04, 2018 15:15

Analyte	True	Found	%R (1)
MERCURY	5.0	5.04	100.8

SAMPLE: CCV

File: HLE04A May 04, 2018 15:25

Analyte	True	Found	%R (1)
MERCURY	5.0	5.03	100.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICV

File: JLE10C May 10, 2018 18:36

Analyte	True	Found	%R (1)
ALUMINUM	400.0	417.50	104.4
ANTIMONY	20.0	19.95	99.8
ARSENIC	20.0	19.93	99.6
BARIUM	20.0	20.15	100.7
BERYLLIUM	20.0	19.70	98.5
CADMIUM	20.0	20.13	100.6
CALCIUM	4000.0	4143.00	103.6
CHROMIUM	20.0	19.86	99.3
COBALT	20.0	20.08	100.4
COPPER	20.0	19.72	98.6
IRON	4000.0	4124.00	103.1
LEAD	20.0	19.62	98.1
MAGNESIUM	4000.0	4067.00	101.7
MANGANESE	20.0	19.62	98.1
MOLYBDENUM	40.0	38.34	95.9
NICKEL	20.0	19.99	99.9
POTASSIUM	4000.0	3974.00	99.4
SELENIUM	20.0	20.31	101.5
SILVER	20.0	20.05	100.3
SODIUM	4000.0	4044.00	101.1
THALLIUM	20.0	20.25	101.3
VANADIUM	20.0	20.19	101.0
ZINC	20.0	20.10	100.5

SAMPLE: CCV

File: JLE10C May 10, 2018 19:20

Analyte	True	Found	%R (1)
ALUMINUM	500.0	512.20	102.4
ANTIMONY	25.0	26.97	107.9
ARSENIC	25.0	24.94	99.8
BARIUM	25.0	26.51	106.0
BERYLLIUM	25.0	24.42	97.7
CADMIUM	25.0	23.40	93.6
CALCIUM	5000.0	5077.00	101.5
CHROMIUM	25.0	25.75	103.0
COBALT	25.0	25.92	103.7
COPPER	25.0	25.48	101.9
IRON	5000.0	5206.00	104.1
LEAD	25.0	25.27	101.1
MAGNESIUM	5000.0	5400.00	108.0
MANGANESE	25.0	25.35	101.4
MOLYBDENUM	25.0	23.80	95.2
NICKEL	25.0	25.82	103.3
POTASSIUM	5000.0	5136.00	102.7
SELENIUM	25.0	24.98	99.9
SILVER	25.0	24.15	96.6
SODIUM	5000.0	5493.00	109.9
THALLIUM	25.0	24.85	99.4
VANADIUM	25.0	25.67	102.7
ZINC	25.0	25.06	100.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: JLE10C May 10, 2018 20:10

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.90	101.6
ANTIMONY	25.0	26.21	104.8
ARSENIC	25.0	24.95	99.8
BARIUM	25.0	25.97	103.9
BERYLLIUM	25.0	25.32	101.3
CADMIUM	25.0	24.30	97.2
CALCIUM	5000.0	5115.00	102.3
CHROMIUM	25.0	25.45	101.8
COBALT	25.0	25.41	101.6
COPPER	25.0	25.47	101.9
IRON	5000.0	5115.00	102.3
LEAD	25.0	25.16	100.6
MAGNESIUM	5000.0	5135.00	102.7
MANGANESE	25.0	24.85	99.4
MOLYBDENUM	25.0	24.25	97.0
NICKEL	25.0	25.38	101.5
POTASSIUM	5000.0	4994.00	99.9
SELENIUM	25.0	25.22	100.9
SILVER	25.0	24.53	98.1
SODIUM	5000.0	5138.00	102.8
THALLIUM	25.0	25.11	100.4
VANADIUM	25.0	25.45	101.8
ZINC	25.0	25.28	101.1

SAMPLE: CCV

File: JLE10C May 10, 2018 21:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	511.10	102.2
ANTIMONY	25.0	26.35	105.4
ARSENIC	25.0	25.38	101.5
BARIUM	25.0	26.36	105.4
BERYLLIUM	25.0	24.94	99.8
CADMIUM	25.0	24.62	98.5
CALCIUM	5000.0	5148.00	103.0
CHROMIUM	25.0	25.46	101.8
COBALT	25.0	25.55	102.2
COPPER	25.0	25.67	102.7
IRON	5000.0	5166.00	103.3
LEAD	25.0	25.29	101.2
MAGNESIUM	5000.0	5016.00	100.3
MANGANESE	25.0	25.16	100.6
MOLYBDENUM	25.0	24.65	98.6
NICKEL	25.0	25.26	101.0
POTASSIUM	5000.0	4929.00	98.6
SELENIUM	25.0	25.85	103.4
SILVER	25.0	24.79	99.2
SODIUM	5000.0	4943.00	98.9
THALLIUM	25.0	25.19	100.8
VANADIUM	25.0	25.53	102.1
ZINC	25.0	25.37	101.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICV

File: JLE11B May 11, 2018 18:25

Analyte	True	Found	%R (1)
ALUMINUM	400.0	414.20	103.5
CALCIUM	4000.0	4127.00	103.2
IRON	4000.0	4102.00	102.6
MAGNESIUM	4000.0	4238.00	106.0
MOLYBDENUM	40.0	39.70	99.3
POTASSIUM	4000.0	4053.00	101.3
SODIUM	4000.0	4156.00	103.9

SAMPLE: CCV

File: JLE11B May 11, 2018 19:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.10	98.8
CALCIUM	5000.0	4935.00	98.7
IRON	5000.0	4986.00	99.7
MAGNESIUM	5000.0	4951.00	99.0
MOLYBDENUM	25.0	24.63	98.5
POTASSIUM	5000.0	4949.00	99.0
SODIUM	5000.0	4936.00	98.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: JLE11B May 11, 2018 19:58

Analyte	True	Found	%R (1)
ALUMINUM	500.0	521.20	104.2
CALCIUM	5000.0	5046.00	100.9
IRON	5000.0	5072.00	101.4
MAGNESIUM	5000.0	5501.00	110.0
MOLYBDENUM	25.0	24.10	96.4
POTASSIUM	5000.0	5091.00	101.8
SODIUM	5000.0	5580.00	111.6•

SAMPLE: CCV

File: JLE11B May 11, 2018 20:48

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.60	100.3
CALCIUM	5000.0	4978.00	99.6
IRON	5000.0	5066.00	101.3
MAGNESIUM	5000.0	5145.00	102.9
MOLYBDENUM	25.0	24.74	99.0
POTASSIUM	5000.0	4860.00	97.2
SODIUM	5000.0	5040.00	100.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: JLE11B May 11, 2018 21:38

Analyte	True	Found	%R (1)
ALUMINUM	500.0	488.60	97.7
CALCIUM	5000.0	4862.00	97.2
IRON	5000.0	4955.00	99.1
MAGNESIUM	5000.0	4745.00	94.9
MOLYBDENUM	25.0	25.50	102.0
POTASSIUM	5000.0	4694.00	93.9
SODIUM	5000.0	4418.00	88.4•

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICV

File: JLE14A May 14, 2018 15:20

Analyte	True	Found	%R (1)
ALUMINUM	400.0	412.60	103.2
CALCIUM	4000.0	3999.00	100.0
IRON	4000.0	3963.00	99.1
MAGNESIUM	4000.0	4031.00	100.8
MOLYBDENUM	40.0	37.59	94.0
POTASSIUM	4000.0	3962.00	99.1
SODIUM	4000.0	4031.00	100.8

SAMPLE: CCV

File: JLE14A May 14, 2018 16:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.10	101.4
CALCIUM	5000.0	5012.00	100.2
IRON	5000.0	4950.00	99.0
MAGNESIUM	5000.0	5259.00	105.2
MOLYBDENUM	25.0	23.94	95.8
POTASSIUM	5000.0	4848.00	97.0
SODIUM	5000.0	5302.00	106.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 16:45

Analyte	True	Found	%R (1)
ALUMINUM	500.0	503.30	100.7
CALCIUM	5000.0	4893.00	97.9
IRON	5000.0	4931.00	98.6
MAGNESIUM	5000.0	5149.00	103.0
MOLYBDENUM	25.0	23.98	95.9
POTASSIUM	5000.0	4878.00	97.6
SODIUM	5000.0	5107.00	102.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICV

File: JLE15C May 15, 2018 18:44

Analyte	True	Found	%R (1)
ALUMINUM	400.0	400.10	100.0
CALCIUM	4000.0	4046.00	101.2
IRON	4000.0	3993.00	99.8
MAGNESIUM	4000.0	3846.00	96.2
MOLYBDENUM	40.0	38.80	97.0
POTASSIUM	4000.0	3913.00	97.8
SODIUM	4000.0	3902.00	97.5

SAMPLE: CCV

File: JLE15C May 15, 2018 19:29

Analyte	True	Found	%R (1)
ALUMINUM	500.0	490.70	98.1
CALCIUM	5000.0	4941.00	98.8
IRON	5000.0	4942.00	98.8
MAGNESIUM	5000.0	4845.00	96.9
MOLYBDENUM	25.0	24.72	98.9
POTASSIUM	5000.0	4833.00	96.7
SODIUM	5000.0	4828.00	96.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 20:19

Analyte	True	Found	%R (1)
ALUMINUM	500.0	479.70	95.9
CALCIUM	5000.0	4918.00	98.4
IRON	5000.0	4875.00	97.5
MAGNESIUM	5000.0	4686.00	93.7
MOLYBDENUM	25.0	24.66	98.6
POTASSIUM	5000.0	4757.00	95.1
SODIUM	5000.0	4618.00	92.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: PQL

File: HLE04A May 04, 2018 13:06

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.17	85.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: PQL

File: JLE10C May 10, 2018 18:44

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.02	100.1
ANTIMONY	0.2	0.22	110.0
ARSENIC	1.0	0.90	90.0
BARIUM	0.4	0.39	97.5
BERYLLIUM	0.2	0.19	95.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	18.18	90.9
CHROMIUM	1.0	0.99	99.0
COBALT	0.2	0.20	100.0
COPPER	0.6	0.61	101.7
IRON	20.0	19.16	95.8
LEAD	0.2	0.17	85.0
MAGNESIUM	20.0	19.91	99.6
MANGANESE	0.4	0.37	92.5
MOLYBDENUM	1.0	1.01	101.0
NICKEL	0.4	0.43	107.5
POTASSIUM	200.0	188.80	94.4
SELENIUM	1.0	0.94	94.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	209.60	104.8
THALLIUM	0.2	0.21	105.0
VANADIUM	1.0	1.02	102.0
ZINC	2.0	2.10	105.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: PQL

File: JLE11B May 11, 2018 18:33

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.77	98.8
CALCIUM	20.0	19.82	99.1
IRON	20.0	20.33	101.6
MAGNESIUM	20.0	19.64	98.2
MOLYBDENUM	1.0	1.00	100.0
POTASSIUM	200.0	200.40	100.2
SODIUM	200.0	204.50	102.3

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: PQL

File: JLE14A May 14, 2018 15:26

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.37	101.8
CALCIUM	20.0	20.40	102.0
IRON	20.0	19.66	98.3
MAGNESIUM	20.0	20.57	102.8
MOLYBDENUM	1.0	1.00	100.0
POTASSIUM	200.0	198.10	99.0
SODIUM	200.0	211.10	105.5

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: PQL

File: JLE15C May 15, 2018 18:52

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.29	96.4
CALCIUM	20.0	19.83	99.1
IRON	20.0	19.56	97.8
MAGNESIUM	20.0	19.19	96.0
MOLYBDENUM	1.0	0.97	97.0
POTASSIUM	200.0	191.10	95.5
SODIUM	200.0	194.10	97.0

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICB

File: HLE04A May 04, 2018 13:04

Analyte	Result	C
MERCURY	-0.045	U

SAMPLE: CCB

File: HLE04A May 04, 2018 13:10

Analyte	Result	C
MERCURY	-0.037	U

SAMPLE: CCB

File: HLE04A May 04, 2018 13:33

Analyte	Result	C
MERCURY	-0.033	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCB

File: HLE04A May 04, 2018 13:59

Analyte	Result	C
MERCURY	-0.034	U

SAMPLE: CCB

File: HLE04A May 04, 2018 14:25

Analyte	Result	C
MERCURY	-0.053	U

SAMPLE: CCB

File: HLE04A May 04, 2018 14:51

Analyte	Result	C
MERCURY	-0.035	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCB

File: HLE04A May 04, 2018 15:17

Analyte	Result	C
MERCURY	-0.034	U

SAMPLE: CCB

File: HLE04A May 04, 2018 15:28

Analyte	Result	C
MERCURY	-0.034	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICB

File: JLE10C May 10, 2018 18:40

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	-0.041	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.060	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.007	J
SODIUM	4.400	U
THALLIUM	0.014	J
VANADIUM	0.095	J
ZINC	0.270	U

SAMPLE: CCB

File: JLE10C May 10, 2018 19:24

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.017	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	U
COPPER	0.030	U
IRON	4.300	U
LEAD	-0.057	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.068	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.005	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.072	J
ZINC	0.270	U

SAMPLE: CCB

File: JLE10C May 10, 2018 20:14

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.086	J
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
LEAD	-0.036	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.035	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	0.109	J
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCB

File: JLE10C May 10, 2018 21:04

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	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	U
COPPER	0.030	U
IRON	4.300	U
LEAD	-0.049	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	J
SODIUM	4.400	U
THALLIUM	-0.018	U
VANADIUM	0.102	J
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICB

File: JLE11B May 11, 2018 18:29

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.053	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE11B May 11, 2018 19:13

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.058	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE11B May 11, 2018 20:02

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:** SL3807

Concentration Units: ug/L

SAMPLE: CCB

File: JLE11B May 11, 2018 20:52

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	7.448	J

SAMPLE: CCB

File: JLE11B May 11, 2018 21:42

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:** SL3807

Concentration Units: ug/L

SAMPLE: ICB

File: JLE14A May 14, 2018 15:23

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.075	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE14A May 14, 2018 16:03

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.066	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE14A May 14, 2018 16:49

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.039	J
POTASSIUM	7.900	U
SODIUM	4.400	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICB

File: JLE15C May 15, 2018 18:48

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.056	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE15C May 15, 2018 19:33

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.051	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE15C May 15, 2018 20:23

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

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLE04HGS1

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04HGS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
MERCURY	0.017	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLE04IMS1

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04IMS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
ALUMINUM	0.77	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.10	U
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	5.5	J
CHROMIUM	0.31	B
COBALT	0.030	U
COPPER	0.12	J
IRON	3.3	J
LEAD	0.050	U
MAGNESIUM	2.5	J
MANGANESE	0.14	B
NICKEL	0.040	J
POTASSIUM	40	U
SELENIUM	0.30	U
SILVER	0.0084	J
SODIUM	6.9	J
THALLIUM	0.040	U
VANADIUM	0.11	J
ZINC	0.80	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE10C May 10, 2018 18:52

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95740.00	95.7
ANTIMONY	0	0.05	
ARSENIC	0	0.10	
BARIUM	0	0.10	
BERYLLIUM	0	0.00	
CADMIUM	0	0.02	
CALCIUM	100000.00	97550.00	97.5
CHROMIUM	0	0.84	
COBALT	0	0.09	
COPPER	0	1.04	
IRON	100000.00	97360.00	97.4
LEAD	0	0.10	
MAGNESIUM	100000.00	95210.00	95.2
MANGANESE	0	0.37	
MOLYBDENUM	2000.00	1913.00	95.7
NICKEL	0	-0.34	
POTASSIUM	100000.00	96500.00	96.5
SELENIUM	0	0.15	
SILVER	0	0.03	
SODIUM	100000.00	99950.00	100.0
THALLIUM	0	0.00	
VANADIUM	0	0.34	
ZINC	0	2.17	

SAMPLE: ICSAB

File: JLE10C May 10, 2018 18:56

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	99080.00	99.1
ANTIMONY	20.00	21.97	110.0
ARSENIC	20.00	20.13	100.0
BARIUM	21.00	22.19	104.8
BERYLLIUM	20.00	20.40	100.0
CADMIUM	20.00	18.09	90.0
CALCIUM	100000.00	100400.00	100.4
CHROMIUM	20.00	21.80	110.0
COBALT	20.00	20.76	105.0
COPPER	20.00	20.57	105.0
IRON	100000.00	100000.00	100.0
LEAD	20.00	21.06	105.0
MAGNESIUM	100000.00	99640.00	99.6
MANGANESE	20.00	20.66	105.0
MOLYBDENUM	2000.00	1941.00	97.0
NICKEL	20.00	19.34	95.0
POTASSIUM	100000.00	101000.00	101.0
SELENIUM	20.00	19.36	95.0
SILVER	20.00	18.31	90.0
SODIUM	100000.00	103400.00	103.4
THALLIUM	20.00	20.97	105.0
VANADIUM	20.00	21.90	110.0
ZINC	20.00	20.72	105.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE11B May 11, 2018 18:41

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	96990.00	97.0
CALCIUM	100000.00	95750.00	95.8
IRON	100000.00	92660.00	92.7
MAGNESIUM	100000.00	94800.00	94.8
MOLYBDENUM	2000.00	1934.00	96.7
POTASSIUM	100000.00	96810.00	96.8
SODIUM	100000.00	97520.00	97.5

SAMPLE: ICSAB

File: JLE11B May 11, 2018 18:45

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	96230.00	96.2
CALCIUM	100000.00	96210.00	96.2
IRON	100000.00	93850.00	93.8
MAGNESIUM	100000.00	95470.00	95.5
MOLYBDENUM	2000.00	1979.00	99.0
POTASSIUM	100000.00	95870.00	95.9
SODIUM	100000.00	96190.00	96.2

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE14A May 14, 2018 15:34

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	99860.00	99.9
CALCIUM	100000.00	97280.00	97.3
IRON	100000.00	92940.00	92.9
MAGNESIUM	100000.00	99940.00	99.9
MOLYBDENUM	2000.00	1890.00	94.5
POTASSIUM	100000.00	99380.00	99.4
SODIUM	100000.00	102200.00	102.2

SAMPLE: ICSAB

File: JLE14A May 14, 2018 15:38

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	100600.00	100.6
CALCIUM	100000.00	96790.00	96.8
IRON	100000.00	93950.00	94.0
MAGNESIUM	100000.00	101300.00	101.3
MOLYBDENUM	2000.00	1912.00	95.6
POTASSIUM	100000.00	98850.00	98.9
SODIUM	100000.00	105400.00	105.4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE15C May 15, 2018 19:00

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	91500.00	91.5
CALCIUM	100000.00	95500.00	95.5
IRON	100000.00	90640.00	90.6
MAGNESIUM	100000.00	89100.00	89.1
MOLYBDENUM	2000.00	1911.00	95.5
POTASSIUM	100000.00	95450.00	95.5
SODIUM	100000.00	92410.00	92.4

SAMPLE: ICSAB

File: JLE15C May 15, 2018 19:04

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	93940.00	93.9
CALCIUM	100000.00	96200.00	96.2
IRON	100000.00	91150.00	91.1
MAGNESIUM	100000.00	91850.00	91.8
MOLYBDENUM	2000.00	1960.00	98.0
POTASSIUM	100000.00	97210.00	97.2
SODIUM	100000.00	94170.00	94.2

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OLE04HGS1

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.865	104.8	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLE04HGS1

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.902	108.4	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLE04IMS1

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04IMS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200	215	107.5	78	124
ANTIMONY	10.0	11.2	112.2	72	124
ARSENIC	10.0	10.6	106.5	82	118
BARIUM	200	225	112.4	86	116
BERYLLIUM	5.00	5.24	104.8	80	120
CADMIUM	25.0	26.1	104.5	84	116
CALCIUM	250	254	101.5	86	118
CHROMIUM	20.0	21.8	109.3	83	119
COBALT	50.0	56.0	112.1	84	115
COPPER	25.0	27.0	108.1	84	119
IRON	100	112	112.2	81	124
LEAD	10.0	11.1	111.1	84	118
MAGNESIUM	500	516	103.2	80	123
MANGANESE	50.0	54.0	108.0	85	116
NICKEL	50.0	54.8	109.7	84	119
POTASSIUM	1000	1050	104.8	85	119
SELENIUM	10.0	10.4	103.6	80	119
SILVER	5.00	5.34	106.8	83	118
SODIUM	750	864	115.2	79	125
THALLIUM	10.0	11.0	110.1	83	118
VANADIUM	50.0	55.2	110.4	82	116
ZINC	50.0	52.3	104.6	82	119

7D

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04HGS1 **Lab Sample ID:** LCSOLE04HGS1

Concentration Units: mg/Kg drywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
MERCURY	20.0	0.902	0.865	4.2	

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INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 4/6/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
MERCURY	0.20	0.025	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:** 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:** 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:** LE04HGS1

Matrix: SOIL **SDG Name:** SL3807

Method: CV **Prep Date:** 05/04/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OLE04HGS1	LC2OLE04HGS1	0.6	0.1	
LCSOLE04HGS1	LCSOLE04HGS1	0.6	0.1	
PBSLE04HGS1	PBSLE04HGS1	0.6	0.1	
CHAAP-BKRD-SS07	SL3807-001	0.8	0.1	E
CHAAP-BKRD-SB07	SL3807-002	0.6	0.1	E

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LE04IMS1

Matrix: SOIL **SDG Name:** SL3807

Method: MS **Prep Date:** 05/04/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOLE04IMS1	LCSOLE04IMS1	1	0.1	
PBSLE04IMS1	PBSLE04IMS1	1	0.1	
CHAAP-BKRD-SS07	SL3807-001	1.35	0.1	E
CHAAP-BKRD-SB07	SL3807-002	1.11	0.1	E

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: CETAC M6100 **File Name:** HLE04A

Date: 5/4/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	12:47	Hg
Standard #1 (0.2 ppb		1	12:50	Hg
Standard #2 (0.5 ppb		1	12:52	Hg
Standard #3 (1.0 ppb		1	12:54	Hg
Standard #4 (5.0 ppb		1	12:56	Hg
Standard #5 (10.0 pp		1	12:58	Hg
ICV		1	13:02	HG
ICB		1	13:04	HG
PQL		1	13:06	HG
CCV		1	13:08	HG
CCB		1	13:10	HG
ZZZZZZ		1	13:12	
ZZZZZZ		1	13:14	
ZZZZZZ		1	13:16	
ZZZZZZ		1	13:19	
ZZZZZZ		1	13:21	
ZZZZZZ		1	13:23	
ZZZZZZ		1	13:25	
ZZZZZZ		1	13:27	
ZZZZZZ		5	13:29	
CCV		1	13:31	HG
CCB		1	13:33	HG
ZZZZZZ		1	13:36	
ZZZZZZ		1	13:38	
ZZZZZZ		1	13:40	
ZZZZZZ		1	13:42	
ZZZZZZ		1	13:44	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: CETAC M6100 **File Name:** HLE04A

Date: 5/4/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	13:46	
ZZZZZZ		1	13:48	
ZZZZZZ		1	13:51	
ZZZZZZ		1	13:53	
ZZZZZZ		1	13:55	
CCV		1	13:57	HG
CCB		1	13:59	HG
ZZZZZZ		1	14:01	
ZZZZZZ		1	14:03	
ZZZZZZ		1	14:06	
ZZZZZZ		1	14:08	
ZZZZZZ		1	14:10	
ZZZZZZ		1	14:12	
ZZZZZZ		1	14:14	
PBSLE04HGS1		1	14:16	HG
LCSOLE04HGS1		1	14:18	HG
ZZZZZZ		1	14:21	
CCV		1	14:23	HG
CCB		1	14:25	HG
ZZZZZZ		1	14:27	
ZZZZZZ		1	14:29	
ZZZZZZ		1	14:31	
SL3807-001	CHAAP-BKRD-SS07	1	14:34	HG
SL3807-002	CHAAP-BKRD-SB07	1	14:36	HG
ZZZZZZ		1	14:38	
ZZZZZZ		5	14:40	
ZZZZZZ		1	14:42	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: CETAC M6100 **File Name:** HLE04A

Date: 5/4/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	14:44	
ZZZZZZ		1	14:47	
CCV		1	14:49	HG
CCB		1	14:51	HG
ZZZZZZ		1	14:53	
ZZZZZZ		1	14:55	
ZZZZZZ		1	14:57	
ZZZZZZ		1	14:59	
ZZZZZZ		1	15:02	
ZZZZZZ		1	15:04	
ZZZZZZ		1	15:06	
ZZZZZZ		1	15:08	
ZZZZZZ		1	15:10	
ZZZZZZ		1	15:13	
CCV		1	15:15	HG
CCB		1	15:17	HG
ZZZZZZ		1	15:19	
ZZZZZZ		1	15:21	
LC2OLE04HGS1		1	15:23	HG
CCV		1	15:25	HG
CCB		1	15:28	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE10C

Date: 5/10/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:43	
200.8 TUNE		1	14:46	
Cal Blank		1	18:28	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		1	18:32	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	18:36	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	18:40	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	18:44	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	18:48	
ICSA		1	18:52	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	18:56	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	19:00	
ZZZZZZ		1	19:04	
ZZZZZZ		1	19:08	
ZZZZZZ		1	19:12	
ZZZZZZ		1	19:16	
CCV		1	19:20	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	19:24	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	19:29	
ZZZZZZ		1	19:33	
ZZZZZZ		1	19:37	
ZZZZZZ		5	19:41	
ZZZZZZ		5	19:45	
ZZZZZZ		5	19:49	
ZZZZZZ		5	19:53	
ZZZZZZ		5	19:57	
ZZZZZZ		5	20:01	
ZZZZZZ		2	20:05	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE10C

Date: 5/10/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	20:10	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	20:14	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PBSLE04IMS1		5	20:18	Sb As Ba Be Cd Cr Co Cu Fe Pb Mn Ni Se Ag Tl V Zn
LCSOLE04IMS1		5	20:22	Sb As Ba Be Cd Cr Co Cu Fe Pb Mn Ni Se Ag Tl V Zn
ZZZZZZ		5	20:26	
ZZZZZZ		5	20:30	
ZZZZZZ		5	20:35	
ZZZZZZ		5	20:39	
SL3807-001	CHAAP-BKRD-SS07	5	20:43	Sb As Ba Be Cd Cr Co Cu Fe Pb Mn Ni Se Ag Tl V Zn
SL3807-002	CHAAP-BKRD-SB07	5	20:47	Sb As Ba Be Cd Cr Co Cu Fe Pb Mn Ni Se Ag Tl V Zn
ZZZZZZ		5	20:52	
ZZZZZZ		5	20:56	
CCV		1	21:00	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	21:04	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:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE11B

Date: 5/11/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
6020 TUNE		1	15:24							
200.8 TUNE		1	15:27							
Cal Blank		1	18:17	Al	Ca	Fe	Mg	Mo	K	Na
Cal Std		1	18:21	Al	Ca	Fe	Mg	Mo	K	Na
ICV		1	18:25	Al	Ca	Fe	Mg	Mo	K	Na
ICB		1	18:29	Al	Ca	Fe	Mg	Mo	K	Na
PQL		1	18:33	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	18:37							
ICSA		1	18:41	Al	Ca	Fe	Mg	Mo	K	Na
ICSAB		1	18:45	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	18:50							
ZZZZZZ		1	18:54							
ZZZZZZ		1	18:57							
ZZZZZZ		1	19:01							
ZZZZZZ		1	19:05							
CCV		1	19:09	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	19:13	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	19:17							
ZZZZZZ		1	19:21							
ZZZZZZ		5	19:25							
ZZZZZZ		1	19:29							
ZZZZZZ		1	19:33							
ZZZZZZ		1	19:38							
ZZZZZZ		5	19:42							
ZZZZZZ		1	19:46							
ZZZZZZ		1	19:50							
ZZZZZZ		1	19:54							

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE11B

Date: 5/11/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
CCV		1	19:58	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	20:02	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	20:06							
ZZZZZZ		1	20:10							
ZZZZZZ		1	20:14							
ZZZZZZ		1	20:19							
ZZZZZZ		1	20:23							
ZZZZZZ		1	20:27							
ZZZZZZ		1	20:31							
ZZZZZZ		1	20:35							
ZZZZZZ		1	20:39							
ZZZZZZ		1	20:44							
CCV		1	20:48	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	20:52	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	20:56							
ZZZZZZ		1	21:00							
ZZZZZZ		1	21:04							
ZZZZZZ		1	21:09							
PBSLE04IMS1		5	21:13	Al	Ca		Mg		K	
LCSOLE04IMS1		5	21:17	Al	Ca		Mg		K	
ZZZZZZ		10	21:21							
ZZZZZZ		10	21:25							
ZZZZZZ		10	21:29							
ZZZZZZ		10	21:33							
CCV		1	21:38	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	21:42	Al	Ca	Fe	Mg	Mo	K	Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
6020 TUNE		1	14:23							
200.8 TUNE		1	14:26							
Cal Blank		1	15:12	Al	Ca	Fe	Mg	Mo	K	Na
Cal Std		1	15:16	Al	Ca	Fe	Mg	Mo	K	Na
ICV		1	15:20	Al	Ca	Fe	Mg	Mo	K	Na
ICB		1	15:23	Al	Ca	Fe	Mg	Mo	K	Na
PQL		1	15:26	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	15:30							
ICSA		1	15:34	Al	Ca	Fe	Mg	Mo	K	Na
ICSAB		1	15:38	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	15:41							
ZZZZZZ		1	15:45							
ZZZZZZ		1	15:48							
ZZZZZZ		1	15:52							
ZZZZZZ		1	15:56							
CCV		1	16:00	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	16:03	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	16:07							
ZZZZZZ		1	16:11							
ZZZZZZ		1	16:14							
ZZZZZZ		5	16:18							
ZZZZZZ		1	16:22							
ZZZZZZ		25	16:26							
ZZZZZZ		1	16:30							
ZZZZZZ		1	16:33							
PBSLE04IMS1		5	16:37							Na
LCSOLE04IMS1		5	16:41							Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
CCV		1	16:45	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	16:49	Al	Ca	Fe	Mg	Mo	K	Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
6020 TUNE		1	14:18							
200.8 TUNE		1	14:21							
Cal Blank		1	18:36	Al	Ca	Fe	Mg	Mo	K	Na
Cal Std		1	18:40	Al	Ca	Fe	Mg	Mo	K	Na
ICV		1	18:44	Al	Ca	Fe	Mg	Mo	K	Na
ICB		1	18:48	Al	Ca	Fe	Mg	Mo	K	Na
PQL		1	18:52	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	18:56							
ICSA		1	19:00	Al	Ca	Fe	Mg	Mo	K	Na
ICSAB		1	19:04	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	19:08							
ZZZZZZ		1	19:13							
ZZZZZZ		1	19:16							
ZZZZZZ		1	19:21							
ZZZZZZ		1	19:25							
CCV		1	19:29	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	19:33	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	19:37							
ZZZZZZ		5	19:41							
ZZZZZZ		1	19:45							
ZZZZZZ		1	19:50							
SL3807-001	CHAAP-BKRD-SS07	5	19:54	Al	Ca		Mg		K	Na
SL3807-002	CHAAP-BKRD-SB07	5	19:58	Al	Ca		Mg		K	Na
ZZZZZZ		1	20:02							
ZZZZZZ		5	20:07							
ZZZZZZ		5	20:11							
ZZZZZZ		5	20:15							

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
CCV		1	20:19	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	20:23	Al	Ca	Fe	Mg	Mo	K	Na

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3807-1
Report Date: 16-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3807

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SS07	SL	02-MAY-18 09:25:00	03-MAY-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	WG228391	15-MAY-18 16:40:00	SW846 3060A	14-MAY-18	
Total Solids	76. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:20:16	SW3540C	04-MAY-18	

Katahdin Analytical Services A0000133

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3807-2
Report Date: 16-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3807

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SB07	SL	02-MAY-18 09:30:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	0.60 mg/Kgdrywt	0.57	0.17	0.34	SW846 7196A	WG228391	15-MAY-18 16:40:00	SW846 3060A	14-MAY-18	
Total Solids	82. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:20:30	SW3540C	04-MAY-18	

Katahdin Analytical Services A0000134

Quality Control Report

Blank Sample Summary Report

Chromium, Hexavalent

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG228391	SW846 7196A	15-MAY-18	14-MAY-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	WG227675	SW3540C	06-MAY-18	04-MAY-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
WG228391-2	LCS	WG228391	15-MAY-18	14-MAY-18	mg/Kgdrywt	40	36.	90	80-120	

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG227675-2	LCS	WG227675	06-MAY-18	04-MAY-18	%	90	90.	100	90-110	

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:** SL3807

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-TB-050218	SL3807-5		102.		106.		112.		100.	
Laboratory Control S	WG228234-1		102.		101.		101.		99.4	
Method Blank Sample	WG228234-2		102.		103.		108.		101.	

		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.

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:** SL
Lab Code: KAS **SDG:** SL3807

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-BKRD-SS07	SL3807-1		75.1	*	97.9		95.2		98.0	
CHAAP-BKRD-SB07	SL3807-2		96.7		96.7		99.0		101.	
Laboratory Control S	WG227905-8		100.		96.2		97.1		101.	
Method Blank Sample	WG227905-9		95.3		97.4		98.1		99.7	

		QC Limits
TOL	TOLUENE-D8	85-125
DCA	1,2-DICHLOROETHANE-D4	71-136
DBF	DIBROMOFLUOROMETHANE	78-125
BFB	P-BROMOFLUOROBENZENE	79-125

= 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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P.O. Box 540, Scarborough, ME 04070
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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : D1290.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL3807
Lab Sample ID : WG228234-2
Date Analyzed : 14-MAY-18
Time Analyzed : 13:19

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	WG228234-1	D1288.D	05/14/18	12:00
CHAAP-TB-050218	SL3807-5	D1291.D	05/14/18	13:55

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : W3888.D
Instrument ID : GCMS-W
Heated Purge : Yes

SDG : SL3807
Lab Sample ID : WG227905-9
Date Analyzed : 09-MAY-18
Time Analyzed : 15:00

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	WG227905-8	W3886.D	05/09/18	13:37
CHAAP-BKRD-SS07	SL3807-1	W3889.D	05/09/18	15:38
CHAAP-BKRD-SB07	SL3807-2	W3890.D	05/09/18	16:15

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB173A.D
Instrument ID : GCMS-D

SDG : SL3807
Date Analyzed : 10-MAY-18
Time Analyzed : 07:31
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	50.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.3		
173	Less than 2.0% of mass 174	0.4	0.51	1
174	Greater than 50.0% of mass 95	73.1		
175	5.0 - 9.0% of mass 174	4.9	6.77	1
176	95.0 - 101.0% of mass 174	70.3	96.24	1
177	5.0 - 9.0% of mass 176	5.1	7.24	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	WG227999-4	D1259.D	05/10/18	08:36
Initial Calibration	WG227999-3	D1260.D	05/10/18	09:12
Initial Calibration	WG227999-2	D1261.D	05/10/18	09:47
Initial Calibration	WG227999-1	D1262.D	05/10/18	10:22
Initial Calibration	WG227999-6	D1263.D	05/10/18	10:58
Initial Calibration	WG227999-5	D1264.D	05/10/18	11:34

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB174A.D
Instrument ID : GCMS-D

SDG : SL3807
Date Analyzed : 11-MAY-18
Time Analyzed : 07:52
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.6		
75	30.0 - 60.0% of mass 95	51.3		
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	0.56	1
174	Greater than 50.0% of mass 95	71.1		
175	5.0 - 9.0% of mass 174	4.9	6.91	1
176	95.0 - 101.0% of mass 174	69.3	97.35	1
177	5.0 - 9.0% of mass 176	4.4	6.41	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
Independent Source	WG228096-9	D1272A.D	05/11/18	09:03

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB176.D
Instrument ID : GCMS-D

SDG : SL3807
Date Analyzed : 14-MAY-18
Time Analyzed : 10:56
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	52.5		
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	0.65	1
174	Greater than 50.0% of mass 95	71.6		
175	5.0 - 9.0% of mass 174	4.8	6.67	1
176	95.0 - 101.0% of mass 174	68.3	95.39	1
177	5.0 - 9.0% of mass 176	4.2	6.13	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	WG228234-4	D1287.D	05/14/18	11:19
Laboratory Control S	WG228234-1	D1288.D	05/14/18	12:00
Method Blank Sample	WG228234-2	D1290.D	05/14/18	13:19
CHAAP-TB-050218	SL3807-5	D1291.D	05/14/18	13:55
Continuing Calibrati	WG228234-5	D1296.D	05/14/18	18:02

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P.O. Box 540, Scarborough, ME 04070
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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : WB833A.D
Instrument ID : GCMS-W

SDG : SL3807
Date Analyzed : 09-MAY-18
Time Analyzed : 08:05
Heated Purge : Yes

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	19.7		
75	30.0 - 60.0% of mass 95	50.7		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.3		
173	Less than 2.0% of mass 174	0.2	0.34	1
174	Greater than 50.0% of mass 95	72.6		
175	5.0 - 9.0% of mass 174	5.2	7.15	1
176	95.0 - 101.0% of mass 174	72.9	100.33	1
177	5.0 - 9.0% of mass 176	4.5	6.11	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	WG227905-4	W3878.D	05/09/18	08:35
Initial Calibration	WG227905-3	W3879.D	05/09/18	09:12
Initial Calibration	WG227905-2	W3880.D	05/09/18	09:49
Initial Calibration	WG227905-1	W3881.D	05/09/18	10:26
Initial Calibration	WG227905-6	W3882.D	05/09/18	11:04
Initial Calibration	WG227905-5	W3883.D	05/09/18	11:41
Laboratory Control S	WG227905-8	W3886.D	05/09/18	13:37
Independent Source	WG227905-7	W3886A.D	05/09/18	13:37
Method Blank Sample	WG227905-9	W3888.D	05/09/18	15:00
CHAAP-BKRD-SS07	SL3807-1	W3889.D	05/09/18	15:38
CHAAP-BKRD-SB07	SL3807-2	W3890.D	05/09/18	16:15
Continuing Calibrati	WG227905-11	W3895.D	05/09/18	19:21

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P.O. Box 540, Scarborough, ME 04070
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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3807
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	336775		7.32		538592		8.10		490295		11.54	
	Upper Limit	673550		7.48		1077184		8.26		980590		11.70	
	Lower Limit	168387.5		7.15		269296		7.93		245147.5		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228234-4	313685		7.32		513882		8.10		474147		11.54	
Laboratory Control S	WG228234-1	320895		7.32		527447		8.10		479337		11.54	
Method Blank Sample	WG228234-2	300847		7.32		492779		8.10		458750		11.54	
CHAAP-TB-050218	SL3807-5	287874		7.32		481254		8.10		448837		11.55	
Continuing Calibrati	WG228234-5	287605		7.32		473756		8.10		442963		11.55	

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.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3807
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	249538		13.88	
	Upper Limit	499076		14.04	
	Lower Limit	124769		13.71	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG228234-4	242975		13.88	
Laboratory Control S	WG228234-1	245661		13.88	
Method Blank Sample	WG228234-2	228819		13.88	
CHAAP-TB-050218	SL3807-5	220840		13.88	
Continuing Calibrati	WG228234-5	230771		13.88	

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 : WG227905-4
Lab File ID : W3878.D

SDG: SL3807
Analytical Date: 05/09/18 08:35
Instrument ID: GCMS-W

		PENTAFLUOROBENZENE		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	557582	8.07	1039313	8.95	1034004	13.39
	Upper Limit	1115164	8.24	2078626	9.11	2068008	13.55
	Lower Limit	278791	7.91	519656.5	8.78	517002	13.22
Client Sample ID	Lab Sample ID						
Laboratory Control S	WG227905-8	624123	8.07	1143915	8.94	1106082	13.39
Method Blank Sample	WG227905-9	546460	8.07	1009274	8.94	974283	13.39
CHAAP-BKRD-SS07	SL3807-1	540091	8.07	984071	8.94	857013	13.39
CHAAP-BKRD-SB07	SL3807-2	534263	8.07	974699	8.95	938402	13.39
Continuing Calibrati	WG227905-11	545189	8.07	966151	8.95	941503	13.38

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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P.O. Box 540, Scarborough, ME 04070
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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227905-4
Lab File ID : W3878.D

SDG: SL3807
Analytical Date: 05/09/18 08:35
Instrument ID: GCMS-W

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	590048		16.44	
	Upper Limit	1180096		16.60	
	Lower Limit	295024		16.27	
Client Sample ID	Lab Sample ID				
Laboratory Control S	WG227905-8	646751		16.44	
Method Blank Sample	WG227905-9	513864		16.44	
CHAAP-BKRD-SS07	SL3807-1	326675		16.44	
CHAAP-BKRD-SB07	SL3807-2	498435		16.44	
Continuing Calibrati	WG227905-11	543283		16.44	

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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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).

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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.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-1
Client ID: CHAAP-BKRD-SS07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: W3889.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 76.
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	0.77	2.8
1,1,1-Trichloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	0.46	2.8
1,1,2,2-Tetrachloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	0.92	2.8
Freon-113	U	2.8	ug/Kgdrywt	1	5	5.5	0.99	2.8
1,1,2-Trichloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	1.1	2.8
1,1-Dichloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	1.9	2.8
1,1-Dichloroethene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
1,1-Dichloropropene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
1,2,3-Trichlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.84	2.8
1,2,3-Trichloropropane	U	2.8	ug/Kgdrywt	1	5	5.5	1.3	2.8
1,2,4-Trichlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.87	2.8
1,2,4-Trimethylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.96	2.8
1,2-Dibromo-3-Chloropropane	U	2.8	ug/Kgdrywt	1	5	5.5	1.6	2.8
1,2-Dibromoethane	U	2.8	ug/Kgdrywt	1	5	5.5	1.3	2.8
1,2-Dichlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.86	2.8
1,2-Dichloroethane	U	2.8	ug/Kgdrywt	1	5	5.5	1.1	2.8
1,2-Dichloropropane	U	2.8	ug/Kgdrywt	1	5	5.5	1.5	2.8
1,3,5-Trimethylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.74	2.8
1,3-Dichlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.68	2.8
1,3-Dichloropropane	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
1,4-Dichlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.48	2.8
2,2-Dichloropropane	U	2.8	ug/Kgdrywt	1	5	5.5	0.55	2.8
2-Butanone	U	14	ug/Kgdrywt	1	25	28.	6.5	14.
2-Chlorotoluene	U	2.8	ug/Kgdrywt	1	5	5.5	1.2	2.8
2-Hexanone	U	14	ug/Kgdrywt	1	25	28.	5.3	14.
4-Chlorotoluene	U	2.8	ug/Kgdrywt	1	5	5.5	0.54	2.8
P-Isopropyltoluene	U	2.8	ug/Kgdrywt	1	5	5.5	0.84	2.8
4-Methyl-2-Pentanone	U	14	ug/Kgdrywt	1	25	28.	6.5	14.
Acetone	U	14	ug/Kgdrywt	1	25	28.	5.6	14.
Benzene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
Bromobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.81	2.8
Bromochloromethane	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
Bromodichloromethane	U	2.8	ug/Kgdrywt	1	5	5.5	0.66	2.8
Bromoform	U	2.8	ug/Kgdrywt	1	5	5.5	0.77	2.8
Bromomethane	U	5.5	ug/Kgdrywt	1	10	11.	1.2	5.5

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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: SL3807-1
Client ID: CHAAP-BKRD-SS07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: W3889.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 76.
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Carbon Disulfide	U	2.8	ug/Kgdrywt	1	5	5.5	0.86	2.8
Carbon Tetrachloride	U	2.8	ug/Kgdrywt	1	5	5.5	1.4	2.8
Chlorobenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.56	2.8
Dibromochloromethane	U	2.8	ug/Kgdrywt	1	5	5.5	7.7	2.8
Chloroethane	U	5.5	ug/Kgdrywt	1	10	11.	1.4	5.5
Chloroform	U	2.8	ug/Kgdrywt	1	5	5.5	0.38	2.8
Chloromethane	U	5.5	ug/Kgdrywt	1	10	11.	1.5	5.5
cis-1,2-Dichloroethene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
cis-1,3-Dichloropropene	U	2.8	ug/Kgdrywt	1	5	5.5	0.79	2.8
Dibromomethane	U	2.8	ug/Kgdrywt	1	5	5.5	0.56	2.8
Dichlorodifluoromethane	U	5.5	ug/Kgdrywt	1	10	11.	1.0	5.5
Ethylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.72	2.8
Hexachlorobutadiene	U	2.8	ug/Kgdrywt	1	5	5.5	0.81	2.8
Isopropylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
m+p-Xylenes	U	5.5	ug/Kgdrywt	1	10	11.	1.9	5.5
Methyl tert-butyl Ether	U	2.8	ug/Kgdrywt	1	5	5.5	1.2	2.8
Methylene Chloride	U	14	ug/Kgdrywt	1	25	28.	8.7	14.
N-Butylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
N-Propylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.91	2.8
Naphthalene	U	2.8	ug/Kgdrywt	1	5	5.5	0.97	2.8
o-Xylene	U	2.8	ug/Kgdrywt	1	5	5.5	1.4	2.8
sec-Butylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	1.0	2.8
Styrene	U	2.8	ug/Kgdrywt	1	5	5.5	0.56	2.8
tert-Butylbenzene	U	2.8	ug/Kgdrywt	1	5	5.5	0.99	2.8
Tetrachloroethene	U	2.8	ug/Kgdrywt	1	5	5.5	1.3	2.8
Toluene	U	2.8	ug/Kgdrywt	1	5	5.5	1.5	2.8
trans-1,2-Dichloroethene	U	2.8	ug/Kgdrywt	1	5	5.5	0.78	2.8
trans-1,3-Dichloropropene	U	2.8	ug/Kgdrywt	1	5	5.5	0.95	2.8
Trichloroethene	U	2.8	ug/Kgdrywt	1	5	5.5	0.65	2.8
Trichlorofluoromethane	U	5.5	ug/Kgdrywt	1	10	11.	1.0	5.5
Vinyl Chloride	U	5.5	ug/Kgdrywt	1	10	11.	0.96	5.5
1,2-Dichloroethane-D4		95.2	%					
p-Bromofluorobenzene	*	75.1	%					
Dibromofluoromethane		97.9	%					
Toluene-D8		98.0	%					

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Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3889.D
Report Date: 15-May-2018 15:41

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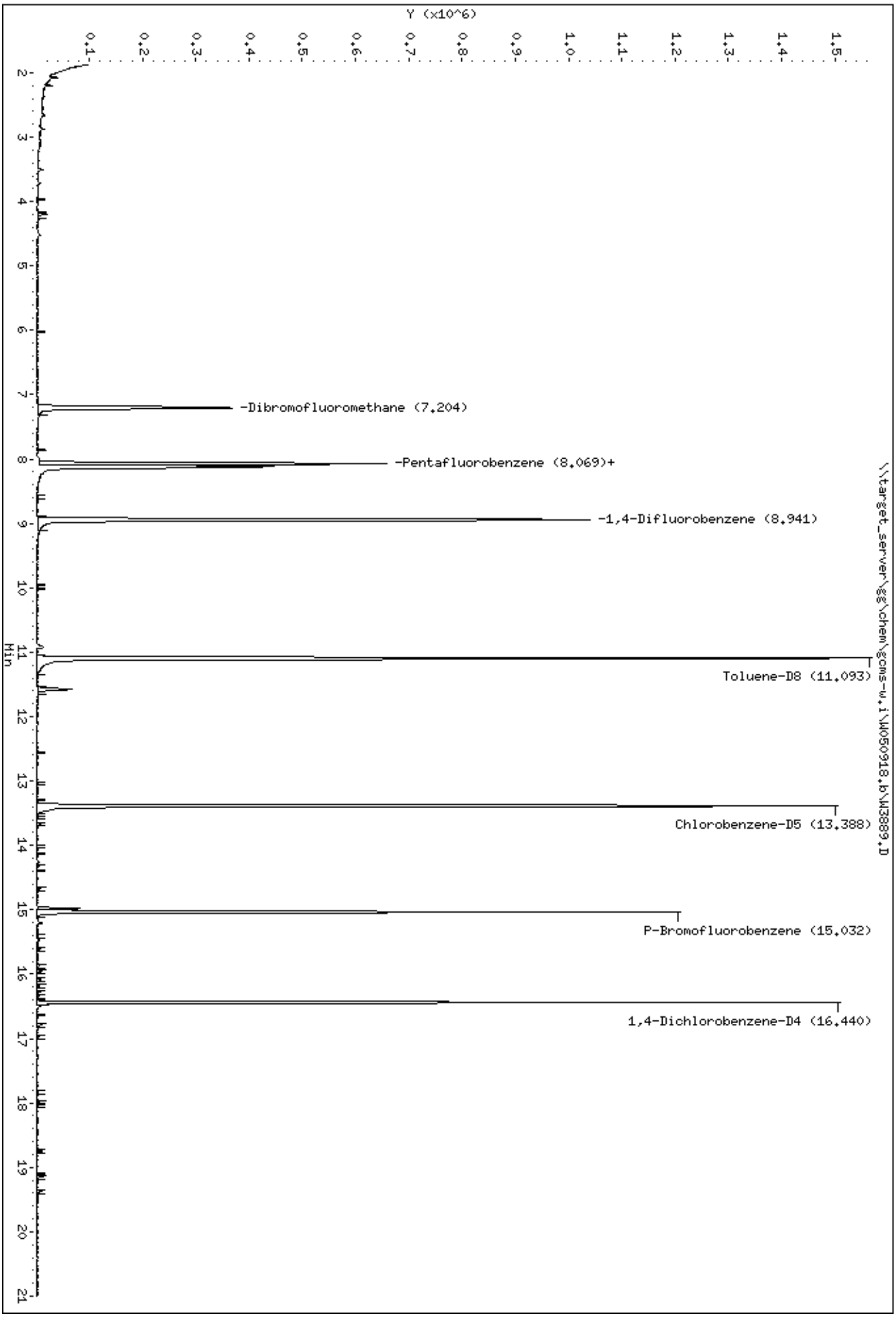
Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3889.D
Lab Smp Id: SL3807-1 Client Smp ID: CHAAP-BKRD-SS07
Inj Date : 09-MAY-2018 15:38 MS Autotune Date: 10-APR-2016 11:00
Operator : JSS Inst ID: gcms-w.i
Smp Info : SL3807-1
Misc Info : WG227905,WG227905-4
Comment : SW846 5035
Method : \\target_server\gg\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 15-May-2018 15:32 hgould Quant Type: ISTD
Cal Date : 09-MAY-2018 09:49 Cal File: W3880.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SW8260-S.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	23.476	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	6.150	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/kg)	FINAL (ug/Kgdrywt)	REVIEW COD
$ 37 Dibromofluoromethane	113	7.204	7.203	(0.893)	293090	48.9672	52.0	
* 42 Pentafluorobenzene	168	8.069	8.074	(1.000)	540091	50.0000		
$ 45 1,2-Dichloroethane-D4	65	8.119	8.125	(1.006)	355612	47.5821	50.6	
* 49 1,4-Difluorobenzene	114	8.941	8.947	(1.000)	984071	50.0000		
$ 55 Toluene-D8	98	11.093	11.091	(1.241)	1153522	49.0241	52.1	
* 66 Chlorobenzene-D5	117	13.387	13.386	(1.000)	857013	50.0000		
$ 76 P-Bromofluorobenzene	95	15.031	15.030	(1.681)	386023	37.5310	39.9	
* 91 1,4-Dichlorobenzene-D4	152	16.439	16.437	(1.000)	326675	50.0000		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Date : 09-MAY-2018 15:38
Client ID: CHAAP-BKRD-SS07
Sample Info: SL3807-1
Instrument: gcms-w.i
\\target_server\gc\chem\gcms-w.i\W050918.b\W3889.D
Y (x10^6)
Min
-Dibromofluoromethane (7.204)
-Pentafluorobenzene (8.069)+
-1,4-Difluorobenzene (8.941)
Toluene-D8 (11.093)
Chlorobenzene-D5 (13.388)
P-Bromofluorobenzene (15.032)
1,4-Dichlorobenzene-D4 (16.440)

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-2
Client ID: CHAAP-BKRD-SB07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: W3890.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 82.
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.64	2.3
1,1,1-Trichloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.39	2.3
1,1,2,2-Tetrachloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.77	2.3
Freon-113	U	2.3	ug/Kgdrywt	1	5	4.6	0.83	2.3
1,1,2-Trichloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.89	2.3
1,1-Dichloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	1.6	2.3
1,1-Dichloroethene	U	2.3	ug/Kgdrywt	1	5	4.6	0.86	2.3
1,1-Dichloropropene	U	2.3	ug/Kgdrywt	1	5	4.6	0.84	2.3
1,2,3-Trichlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.70	2.3
1,2,3-Trichloropropane	U	2.3	ug/Kgdrywt	1	5	4.6	1.1	2.3
1,2,4-Trichlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.73	2.3
1,2,4-Trimethylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.80	2.3
1,2-Dibromo-3-Chloropropane	U	2.3	ug/Kgdrywt	1	5	4.6	1.4	2.3
1,2-Dibromoethane	U	2.3	ug/Kgdrywt	1	5	4.6	1.1	2.3
1,2-Dichlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.72	2.3
1,2-Dichloroethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.92	2.3
1,2-Dichloropropane	U	2.3	ug/Kgdrywt	1	5	4.6	1.3	2.3
1,3,5-Trimethylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.62	2.3
1,3-Dichlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.57	2.3
1,3-Dichloropropane	U	2.3	ug/Kgdrywt	1	5	4.6	0.86	2.3
1,4-Dichlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.40	2.3
2,2-Dichloropropane	U	2.3	ug/Kgdrywt	1	5	4.6	0.46	2.3
2-Butanone	U	12	ug/Kgdrywt	1	25	23.	5.4	12.
2-Chlorotoluene	U	2.3	ug/Kgdrywt	1	5	4.6	1.0	2.3
2-Hexanone	U	12	ug/Kgdrywt	1	25	23.	4.4	12.
4-Chlorotoluene	U	2.3	ug/Kgdrywt	1	5	4.6	0.45	2.3
P-Isopropyltoluene	U	2.3	ug/Kgdrywt	1	5	4.6	0.70	2.3
4-Methyl-2-Pentanone	U	12	ug/Kgdrywt	1	25	23.	5.4	12.
Acetone	U	12	ug/Kgdrywt	1	25	23.	4.7	12.
Benzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.85	2.3
Bromobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.68	2.3
Bromochloromethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.84	2.3
Bromodichloromethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.55	2.3
Bromoform	U	2.3	ug/Kgdrywt	1	5	4.6	0.64	2.3
Bromomethane	U	4.6	ug/Kgdrywt	1	10	9.2	1.0	4.6

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-2
Client ID: CHAAP-BKRD-SB07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: W3890.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 82.
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Carbon Disulfide	U	2.3	ug/Kgdrywt	1	5	4.6	0.72	2.3
Carbon Tetrachloride	U	2.3	ug/Kgdrywt	1	5	4.6	1.2	2.3
Chlorobenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.47	2.3
Dibromochloromethane	U	2.3	ug/Kgdrywt	1	5	4.6	6.4	2.3
Chloroethane	U	4.6	ug/Kgdrywt	1	10	9.2	1.2	4.6
Chloroform	U	2.3	ug/Kgdrywt	1	5	4.6	0.32	2.3
Chloromethane	U	4.6	ug/Kgdrywt	1	10	9.2	1.3	4.6
cis-1,2-Dichloroethene	U	2.3	ug/Kgdrywt	1	5	4.6	0.84	2.3
cis-1,3-Dichloropropene	U	2.3	ug/Kgdrywt	1	5	4.6	0.66	2.3
Dibromomethane	U	2.3	ug/Kgdrywt	1	5	4.6	0.47	2.3
Dichlorodifluoromethane	U	4.6	ug/Kgdrywt	1	10	9.2	0.85	4.6
Ethylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.60	2.3
Hexachlorobutadiene	U	2.3	ug/Kgdrywt	1	5	4.6	0.68	2.3
Isopropylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.85	2.3
m+p-Xylenes	U	4.6	ug/Kgdrywt	1	10	9.2	1.6	4.6
Methyl tert-butyl Ether	U	2.3	ug/Kgdrywt	1	5	4.6	1.0	2.3
Methylene Chloride	U	12	ug/Kgdrywt	1	25	23.	7.3	12.
N-Butylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.85	2.3
N-Propylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.76	2.3
Naphthalene	U	2.3	ug/Kgdrywt	1	5	4.6	0.81	2.3
o-Xylene	U	2.3	ug/Kgdrywt	1	5	4.6	1.2	2.3
sec-Butylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.84	2.3
Styrene	U	2.3	ug/Kgdrywt	1	5	4.6	0.47	2.3
tert-Butylbenzene	U	2.3	ug/Kgdrywt	1	5	4.6	0.83	2.3
Tetrachloroethene	U	2.3	ug/Kgdrywt	1	5	4.6	1.1	2.3
Toluene	U	2.3	ug/Kgdrywt	1	5	4.6	1.3	2.3
trans-1,2-Dichloroethene	U	2.3	ug/Kgdrywt	1	5	4.6	0.65	2.3
trans-1,3-Dichloropropene	U	2.3	ug/Kgdrywt	1	5	4.6	0.79	2.3
Trichloroethene	U	2.3	ug/Kgdrywt	1	5	4.6	0.54	2.3
Trichlorofluoromethane	U	4.6	ug/Kgdrywt	1	10	9.2	0.84	4.6
Vinyl Chloride	U	4.6	ug/Kgdrywt	1	10	9.2	0.80	4.6
1,2-Dichloroethane-D4		99.0	%					
p-Bromofluorobenzene		96.7	%					
Dibromofluoromethane		96.7	%					
Toluene-D8		101.	%					

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Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3890.D
Report Date: 15-May-2018 14:48

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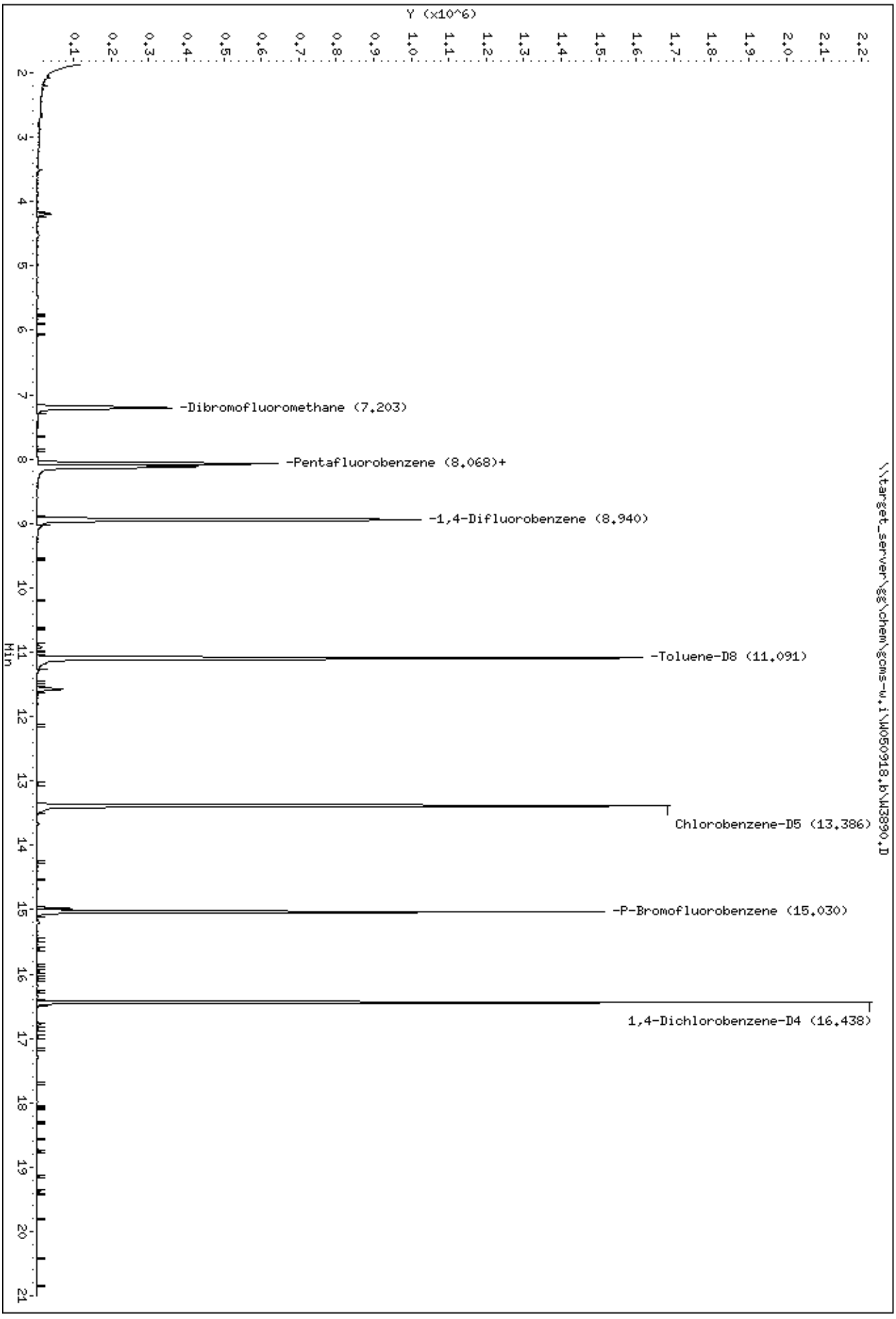
Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3890.D
Lab Smp Id: SL3807-2 Client Smp ID: CHAAP-BKRD-SB07
Inj Date : 09-MAY-2018 16:15 MS Autotune Date: 10-APR-2016 11:00
Operator : JSS Inst ID: gcms-w.i
Smp Info : SL3807-2
Misc Info : WG227905,WG227905-4
Comment : SW846 5035
Method : \\target_server\gg\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 10-May-2018 08:26 jsampson Quant Type: ISTD
Cal Date : 09-MAY-2018 09:49 Cal File: W3880.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SW8260-S.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	18.378	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	6.690	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/kg)	FINAL (ug/Kgdrywt)	REVIEW COD
$ 37 Dibromofluoromethane	113	7.202	7.203	(0.892)	286209	48.3392	44.3	
* 42 Pentafluorobenzene	168	8.074	8.074	(1.000)	534263	50.0000		
$ 45 1,2-Dichloroethane-D4	65	8.117	8.125	(1.005)	366130	49.5238	45.3	
* 49 1,4-Difluorobenzene	114	8.946	8.947	(1.000)	974699	50.0000		
$ 55 Toluene-D8	98	11.091	11.091	(1.240)	1182644	50.7451	46.5	
* 66 Chlorobenzene-D5	117	13.385	13.386	(1.000)	938402	50.0000		
$ 76 P-Bromofluorobenzene	95	15.029	15.030	(1.680)	492414	48.3352	44.2	
* 91 1,4-Dichlorobenzene-D4	152	16.437	16.437	(1.000)	498435	50.0000		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Date : 09-MAY-2018 16:15
Client ID: CHAAP-BKRD-SB07
Sample Info: SL3807-2
Instrument: gcms-w.i
\\target_server\gg\chem\gcms-w.i\W050918.b\W3890.D
Y (x10^6)
Min
-Dibromofluoromethane (7.203)
-Pentafluorobenzene (8.068)+
-1,4-Difluorobenzene (8.940)
-Toluene-D8 (11.091)
Chlorobenzene-D5 (13.386)
-P-Bromofluorobenzene (15.030)
1,4-Dichlorobenzene-D4 (16.438)

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-5
Client ID: CHAAP-TB-050218
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: D1291.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-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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Tel:(207) 874-2400 Fax:(207) 775-4029
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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-5
Client ID: CHAAP-TB-050218
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: D1291.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-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		106.	%					
1,2-Dichloroethane-d4		112.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		102.	%					

600 Technology Way
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Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1291.d
Report Date: 15-May-2018 14:17

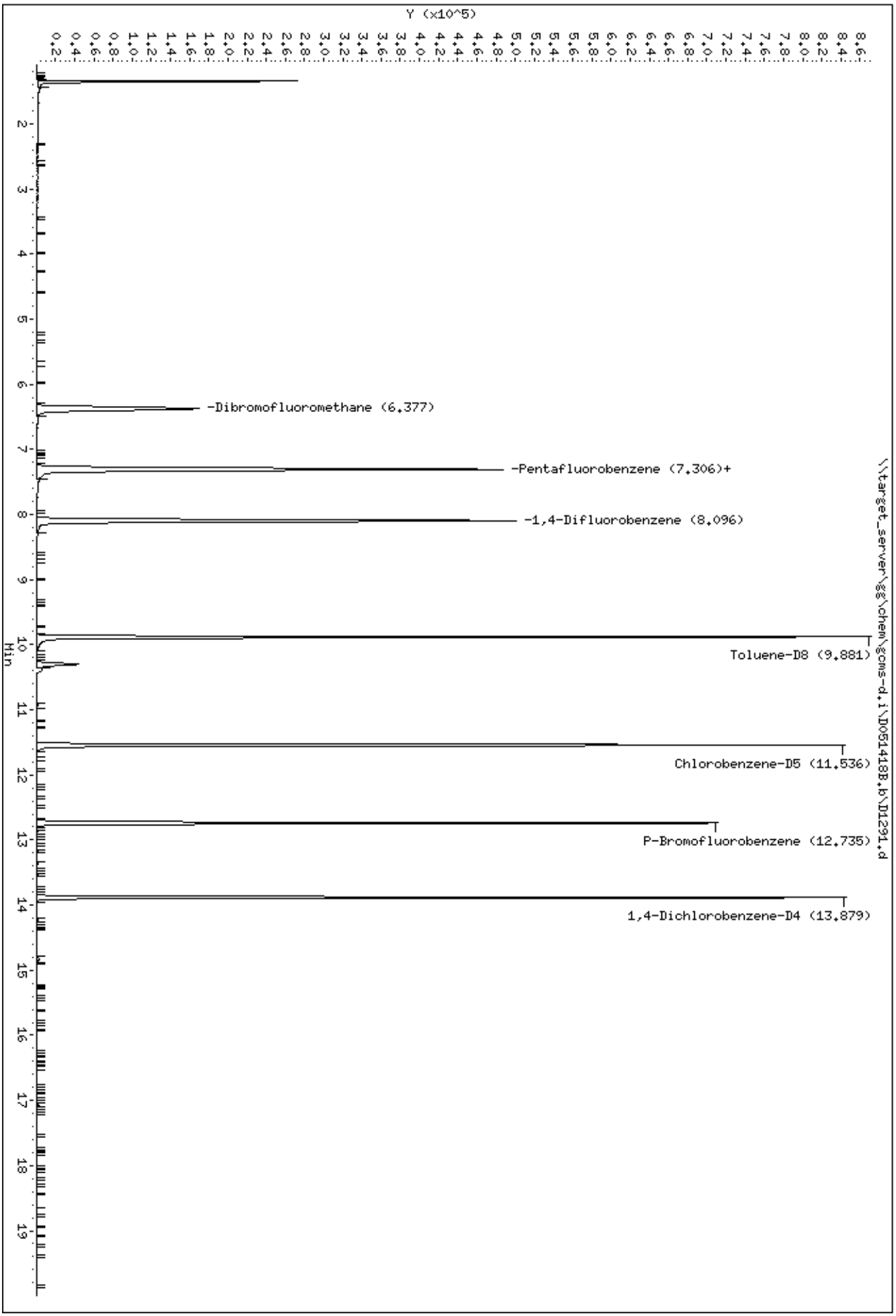
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051418B.b\D1291.d
Lab Smp Id: SL3807-5
Inj Date : 14-MAY-2018 13:55 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3807-5
Misc Info : WG228234,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051418B.b\D8A05(21)D.m
Meth Date : 15-May-2018 07:11 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: TARGET_SERVER

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
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	179569	53.0555	53.0	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	287874	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	239625	55.9949	56.0	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	481254	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	587020	50.0172	50.0	
* 66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	448837	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	240278	51.2883	51.3	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	220840	50.0000		


Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1291.d
Date : 14-MAY-2018 13:55
Client ID:
Sample Info: SL3807-5
Instrument: gcms-d.i
\\target_server\gg\chem\gcms-d.i\D051418B.b\D1291.d
Y (x10^5)
Min
-Dibromofluoromethane (6.377)
-Pentafluorobenzene (7.306)+
-1,4-Difluorobenzene (8.096)
Toluene-D8 (9.881)
Chlorobenzene-D5 (11.536)
P-Bromofluorobenzene (12.735)
1,4-Dichlorobenzene-D4 (13.879)

Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d
Column ID:
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

	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	0.56036	0.59912	0.62483	0.60950	0.62453	0.61277	AVG		0.60519		3.96777	15.00000	O
Chloromethane	0.71127	0.68264	0.67802	0.59645	0.63672	0.59762	AVG		0.65045		7.33830	15.00000	O
Vinyl chloride	0.46959	0.49687	0.51239	0.48848	0.56664	0.51577	AVG		0.50829		6.52407	15.00000	O
Bromomethane	0.30260	0.26788	0.26498	0.23963	0.24674	0.25289	AVG		0.26245		8.53203	15.00000	O
Chloroethane	0.23847	0.26206	0.25226	0.22731	0.18302	+++++	AVG		0.23262		13.2063	15.00000	O
Trichlorofluoromethane	0.76041	0.78015	0.80338	0.79947	0.79324	0.79504	AVG		0.78861		2.01768	15.00000	O
1,1-Dichloroethene	0.34469	0.32839	0.33955	0.33016	0.34879	0.33647	AVG		0.33801		2.36567	15.00000	O
Carbon Disulfide	0.99826	0.97103	1.06246	1.03232	1.12397	1.08371	AVG		1.04529		5.38727	15.00000	O
Freon-113	0.30122	0.29262	0.30001	0.28888	0.30027	0.29087	AVG		0.29565		1.84828	15.00000	O
Methylene Chloride	0.61362	0.55548	0.57546	0.53776	0.55687	0.54615	AVG		0.56422		4.83685	15.00000	O
Acetone	0.17382	0.14952	0.15679	0.15230	0.15231	0.15542	AVG		0.15669		5.59790	15.00000	O
trans-1,2-Dichloroethene	0.53235	0.50919	0.52822	0.49421	0.53192	0.50130	AVG		0.51620		3.25004	15.00000	O
Methyl tert-butyl ether	1.17857	1.21878	1.34740	1.37229	1.46092	1.43232	AVG		1.33505		8.53040	15.00000	O
1,1-Dichloroethane	0.96520	0.94646	0.98243	0.94643	0.99564	0.95460	AVG		0.96513		2.09263	15.00000	O
cis-1,2-Dichloroethene	0.54551	0.52174	0.56593	0.53592	0.57367	0.55414	AVG		0.54948		3.49762	15.00000	O
2,2-Dichloropropane	0.51306	0.56999	0.66803	0.68445	0.69207	0.68747	AVG		0.63584		11.9021	15.00000	O
Bromochloromethane	0.25010	0.27752	0.28551	0.27723	0.28805	0.24706	AVG		0.27091		6.58674	15.00000	O
Chloroform	1.04357	0.98020	1.02330	0.98855	1.03325	1.00142	AVG		1.01172		2.51944	15.00000	O
Carbon Tetrachloride	0.37895	0.39537	0.44336	0.44346	0.46738	0.45689	AVG		0.43090		8.22438	15.00000	O
1,1,1-Trichloroethane	0.78735	0.78923	0.84489	0.82921	0.88442	0.85946	AVG		0.83243		4.65205	15.00000	O
1,1-Dichloropropene	0.43243	0.43097	0.47757	0.45493	0.48549	0.46283	AVG		0.45737		4.94117	15.00000	O
2-Butanone	0.21658	0.23388	0.24827	0.25015	0.25362	0.25502	AVG		0.24292		6.15404	15.00000	O
Benzene	1.19928	1.19823	1.27774	1.22214	1.26810	1.23664	AVG		1.23369		2.73880	15.00000	O
1,2-Dichloroethane	0.59710	0.48606	0.51110	0.51053	0.49204	0.49744	AVG		0.51571		7.96933	15.00000	O
Trichloroethene	0.33988	0.33083	0.34805	0.33016	0.34010	0.32904	AVG		0.33634		2.24769	15.00000	O
Dibromomethane	0.21127	0.21183	0.23563	0.23446	0.23435	0.23663	AVG		0.22736		5.40021	15.00000	O
1,2-Dichloropropane	0.30665	0.31790	0.34807	0.33817	0.34525	0.34515	AVG		0.33353		5.14493	15.00000	O
Bromodichloromethane	0.43827	0.41371	0.47751	0.46910	0.48560	0.48922	AVG		0.46224		6.47849	15.00000	O
cis-1,3-dichloropropene	0.40927	0.46214	0.57360	0.58801	0.60037	0.59327	AVG		0.53778		15.1155	15.00000	W
Toluene	0.76506	0.74235	0.77132	0.74148	0.76806	0.73442	AVG		0.75378		2.13553	15.00000	O
4-methyl-2-pentanone	0.26774	0.29231	0.32726	0.32637	0.30872	0.30419	AVG		0.30443		7.36532	15.00000	O
Tetrachloroethene	0.26361	0.27417	0.27963	0.26259	0.28530	0.27048	AVG		0.27263		3.27508	15.00000	O
trans-1,3-Dichloropropene	0.35692	0.40341	0.49142	0.51215	0.51535	0.51716	AVG		0.46607		14.7546	15.00000	O
1,1,2-Trichloroethane	0.26522	0.25564	0.26624	0.27058	0.26863	0.26663	AVG		0.26549		1.95539	15.00000	O
Dibromochloromethane	0.30045	0.33006	0.38445	0.40073	0.41646	0.42129	AVG		0.37557		13.1454	15.00000	O
1,3-Dichloropropane	0.57494	0.59960	0.63036	0.61601	0.62439	0.62201	AVG		0.61122		3.37716	15.00000	O
1,2-Dibromoethane	0.29121	0.29925	0.32787	0.33305	0.33514	0.33418	AVG		0.32012		6.12463	15.00000	O

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d
Column ID:
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

2-Hexanone	0.17592	0.21419	0.24851	0.25061	0.24841	0.24695	AVG		0.23077		13.0938	15.00000	O
Chlorobenzene	0.94896	0.92088	0.94262	0.89588	0.93169	0.90524	AVG		0.92421		2.25981	15.00000	O
Ethylbenzene	1.53365	1.56731	1.65724	1.56248	1.61363	1.56803	AVG		1.58372		2.79162	15.00000	O
1,1,1,2-Tetrachloroethane	0.28742	0.30973	0.34276	0.33853	0.35068	0.34685	AVG		0.32933		7.64384	15.00000	O
m+p-Xylenes	1.11930	1.22345	1.27593	1.20484	1.22419	1.17647	AVG		1.20403		4.37803	15.00000	O
o-Xylene	1.03413	1.15571	1.29155	1.24563	1.29555	1.26663	AVG		1.21487		8.40901	15.00000	O
Styrene	0.72024	0.89322	0.98448	0.96404	0.99464	0.95801	AVG		0.91910		11.2786	15.00000	O
Bromoform	1584	9268	45859	120673	252742	364795	LNR	0.02359	0.25784		0.99968	0.99000	O
Isopropylbenzene	2.17850	2.61226	2.81289	2.72321	2.87585	2.72617	AVG		2.65481		9.41391	15.00000	O
Bromobenzene	0.75667	0.73016	0.76879	0.73878	0.76032	0.73115	AVG		0.74765		2.19406	15.00000	O
N-Propylbenzene	3.29934	3.43179	3.63045	3.44994	3.61382	3.40826	AVG		3.47227		3.66998	15.00000	O
1,1,2,2-Tetrachloroethane	0.85905	0.85152	0.88887	0.86825	0.88535	0.86536	AVG		0.86973		1.68771	15.00000	O
1,3,5-Trimethylbenzene	2.06442	2.25303	2.42670	2.33047	2.44030	2.30345	AVG		2.30306		5.96370	15.00000	O
2-Chlorotoluene	1.97476	2.02601	2.17288	2.08126	2.16779	2.05598	AVG		2.07978		3.78004	15.00000	O
1,2,3-Trichloropropane	0.75585	0.73651	0.76927	0.75552	0.74559	0.73112	AVG		0.74898		1.87631	15.00000	O
4-Chlorotoluene	2.13480	2.15903	2.31262	2.19625	2.27703	2.17938	AVG		2.20985		3.16148	15.00000	O
tert-Butylbenzene	1.84017	2.12417	2.30255	2.21466	2.31209	2.21065	AVG		2.16738		8.05122	15.00000	O
1,2,4-Trimethylbenzene	2.04309	2.33581	2.54040	2.41743	2.55079	2.42936	AVG		2.38615		7.81732	15.00000	O
P-Isopropyltoluene	1.82971	2.14413	2.36353	2.27462	2.40797	2.30971	AVG		2.22161		9.54932	15.00000	O
1,3-Dichlorobenzene	1.37362	1.31865	1.35917	1.29679	1.35357	1.29820	AVG		1.33333		2.48399	15.00000	O
1,4-Dichlorobenzene	1.50533	1.35595	1.40068	1.33379	1.38029	1.32567	AVG		1.38362		4.76389	15.00000	O
N-Butylbenzene	1.81494	1.96843	2.16719	2.10347	2.22662	2.14011	AVG		2.07013		7.33830	15.00000	O
sec-Butylbenzene	2.44542	2.68142	2.87797	2.75294	2.90061	2.74913	AVG		2.73458		6.01129	15.00000	O
1,2-Dichlorobenzene	1.21625	1.20840	1.30227	1.26609	1.31735	1.27885	AVG		1.26487		3.51843	15.00000	O
1,2-Dibromo-3-Chloropropane	0.11325	0.11876	0.13743	0.14316	0.15391	0.16240	AVG		0.13815		13.9524	15.00000	O
Hexachlorobutadiene	0.33751	0.28488	0.29239	0.27408	0.30171	0.29236	AVG		0.29715		7.33877	15.00000	O
1,2,4-Trichlorobenzene	0.68629	0.68828	0.75962	0.74157	0.80620	0.78164	AVG		0.74393		6.57699	15.00000	O
Naphthalene	5588	33699	172641	424409	938571	1336967	LNR	0.02224	1.84187		0.99939	0.99000	O
1,2,3-Trichlorobenzene	0.55970	0.58317	0.62336	0.60235	0.64596	0.63136	AVG		0.60765		5.30849	15.00000	O
Dibromofluoromethane	0.59327	0.58023	0.58757	0.58775	0.58840	0.58990	AVG		0.58785		0.72990	15.00000	
1,2-Dichloroethane-D4	0.76439	0.74846	0.73661	0.74720	0.71646	0.74655	AVG		0.74328		2.13794	15.00000	
Toluene-D8	1.21612	1.19459	1.22020	1.22926	1.22849	1.22746	AVG		1.21935		1.08305	15.00000	
P-Bromofluorobenzene	0.48224	0.47486	0.49316	0.48863	0.48436	0.49716	AVG		0.48673		1.64465	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 15-May-2018 14:00

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG228096-1
Level: LOW Operator: JSS
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-d.i\D051118.b\D8A05(21)D.m
Misc Info: WG228096,WG227999-4<SL3807-5

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	70.3	140.69*	80-120
	2	Chloromethane	50.0	56.4	112.89	80-120
	3	Vinyl chloride	50.0	56.0	111.99	80-120
	4	Bromomethane	50.0	49.8	99.69	80-120
	5	Chloroethane	50.0	55.5	111.05	80-120
	6	Trichlorofluoromet	50.0	51.4	102.80	80-120
	7	Diethyl Ether	50.0	49.9	99.88	80-120
	8	Tertiary-butyl alc	250	242	96.63	80-120
	9	1,1-Dichloroethene	50.0	49.1	98.17	80-120
	10	Carbon Disulfide	50.0	49.8	99.50	80-120
	11	Freon-113	50.0	48.6	97.15	80-120
	12	Iodomethane	50.0	54.1	108.26	80-120
	13	Acrolein	250	239	95.77	80-120
	14	Methylene Chloride	50.0	47.8	95.62	80-120
	15	Acetone	50.0	47.9	95.75	80-120
	16	Isobutyl Alcohol	1000	879	87.89	80-120
	17	trans-1,2-Dichloro	50.0	48.6	97.15	80-120
	18	Allyl Chloride	50.0	51.5	102.93	80-120
	19	Methyl tert-butyl	50.0	49.1	98.18	80-120
	20	Acetonitrile	500	467	93.50	80-120
	21	Di-isopropyl ether	50.0	52.0	104.07	80-120
	22	Chloroprene	50.0	51.1	102.12	80-120
	23	Propionitrile	500	475	94.99	80-120
	24	Methacrylonitrile	500	485	96.94	80-120
	25	1,1-Dichloroethane	50.0	52.7	105.45	80-120
	26	Acrylonitrile	250	237	94.91	80-120
	27	Ethyl tertiary-but	50.0	53.5	106.97	80-120
	28	Vinyl Acetate	50.0	55.3	110.64	80-120
	29	cis-1,2-Dichloroet	50.0	49.7	99.49	80-120
M	30	1,2-Dichloroethyle	100	98.3	98.32	80-120
	31	Methyl Methacrylat	50.0	47.7	95.39	80-120
	32	2,2-Dichloropropan	50.0	57.8	115.72	80-120
	33	Bromochloromethane	50.0	51.2	102.35	80-120
	34	Chloroform	50.0	49.3	98.58	80-120
	35	Carbon Tetrachlori	50.0	51.9	103.73	80-120
	36	Tetrahydrofuran	50.0	45.9	91.83	80-120
	38	1,1,1-Trichloroeth	50.0	50.0	100.01	80-120
	39	1,1-Dichloropropen	50.0	50.9	101.85	80-120
	40	2-Butanone	50.0	47.9	95.83	80-120
	41	Benzene	50.0	50.1	100.13	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 15-May-2018 14:00

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	43	Cyclohexane	50.0	49.8	99.63	80-120
	44	Ethyl Methacrylate	50.0	44.8	89.64	80-120
	46	Tertiary-amyl meth	50.0	51.9	103.83	80-120
	47	1,2-Dichloroethane	50.0	47.8	95.53	80-120
	48	Trichloroethene	50.0	49.2	98.46	80-120
	50	Dibromomethane	50.0	49.5	98.92	80-120
	51	1,2-Dichloropropan	50.0	50.8	101.57	80-120
	52	Bromodichlorometha	50.0	51.6	103.18	80-120
	53	cis-1,3-dichloropr	50.0	51.4	102.79	80-120
	54	1,4-Dioxane	1000	836	83.56	80-120
	56	2-Chloroethylvinyl	50.0	49.7	99.40	80-120
	57	Toluene	50.0	49.7	99.42	80-120
	58	4-methyl-2-pentano	50.0	48.4	96.92	80-120
	59	Tetrachloroethene	50.0	50.0	100.12	80-120
	60	trans-1,3-Dichloro	50.0	54.9	109.80	80-120
	61	1,1,2-Trichloroeth	50.0	48.3	96.62	80-120
	62	Dibromochlorometha	50.0	51.8	103.71	80-120
	63	1,3-Dichloropropan	50.0	46.3	92.56	80-120
	64	1,2-Dibromoethane	50.0	48.8	97.71	80-120
	65	2-Hexanone	50.0	48.9	97.85	80-120
	67	Chlorobenzene	50.0	48.3	96.62	80-120
	152	1-Chlorohexane	50.0	0.00	0.00*	80-120
	68	Ethylbenzene	50.0	49.0	98.07	80-120
	69	1,1,1,2-Tetrachlor	50.0	50.4	100.76	80-120
M	70	Xylenes (total)	150	149	99.28	80-120
	71	m+p-Xylenes	100	98.9	98.87	80-120
	72	o-Xylene	50.0	50.0	100.10	80-120
	73	Styrene	50.0	51.2	102.34	80-120
	74	Bromoform	50.0	46.1	92.24	80-120
	75	Isopropylbenzene	50.0	53.7	107.46	80-120
	77	cis-1,4-Dichloro-2	50.0	47.4	94.92	80-120
	78	trans-1,4-Dichloro	50.0	46.1	92.30	80-120
	79	Bromobenzene	50.0	48.3	96.54	80-120
	80	N-Propylbenzene	50.0	49.8	99.62	80-120
	81	1,1,2,2-Tetrachlor	50.0	47.2	94.32	80-120
	82	1,3,5-Trimethylben	50.0	50.5	101.02	80-120
	83	2-Chlorotoluene	50.0	49.7	99.47	80-120
	84	1,2,3-Trichloropro	50.0	45.1	90.28	80-120
	85	4-Chlorotoluene	50.0	50.0	100.01	80-120
	86	tert-Butylbenzene	50.0	50.4	100.73	80-120
	87	Pentachloroethane	50.0	50.8	101.66	80-120
	88	1,2,4-Trimethylben	50.0	50.6	101.25	80-120
	89	P-Isopropyltoluene	50.0	51.7	103.39	80-120
	90	1,3-Dichlorobenzen	50.0	48.5	96.95	80-120
	92	1,4-Dichlorobenzen	50.0	47.0	94.04	80-120
	93	N-Butylbenzene	50.0	52.1	104.25	80-120
	94	sec-Butylbenzene	50.0	50.4	100.89	80-120
	95	1,2-Dichlorobenzen	50.0	48.6	97.14	80-120
	96	1,2-Dibromo-3-Chlo	50.0	47.1	94.24	80-120
	97	1,3,5-Trichloroben	50.0	50.1	100.21	80-120
	98	Hexachlorobutadien	50.0	47.3	94.67	80-120
	99	1,2,4-Trichloroben	50.0	49.8	99.60	80-120
	100	1,2,3-Trimethylben	50.0	50.7	101.32	80-120
	101	Naphthalene	50.0	43.6	87.15	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 15-May-2018 14:00

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
102 1,2,3-Trichloroben	50.0	47.5	95.05	80-120
103 Methyl Acetate	50.0	43.4	86.80	80-120
104 Methylcyclohexane	50.0	51.4	102.89	80-120
M 153 Total Alkylbenzene	350	356	101.59	80-120

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 37 Dibromofluorometha	50.0	50.0	100.00	68-128
$ 45 1,2-Dichloroethane	50.0	49.1	98.15	67-135
$ 55 Toluene-D8	50.0	50.5	101.05	65-128
$ 76 P-Bromofluorobenze	50.0	50.6	101.19	56-133

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 15-May-2018 14:00

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Lab Smp Id: WG228096-1
Inj Date : 11-MAY-2018 09:03 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228096-1,SL3807
Misc Info : WG228096,WG227999-4<SL3807-5
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051118.b\D8A05(21)D.m
Meth Date : 11-May-2018 11:59 hgould Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 2 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)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	290279	70.3435	70.3(R)	
2	Chloromethane	50	1.663	1.663	(0.227)	250348	56.4450	56.4	
3	Vinyl chloride	62	1.728	1.728	(0.236)	194068	55.9936	56.0	
4	Bromomethane	94	2.025	2.025	(0.277)	89198	49.8427	49.8	
5	Chloroethane	64	2.146	2.137	(0.293)	88073	55.5252	55.5	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	276404	51.4016	51.4	
7	Diethyl Ether	59	2.583	2.583	(0.353)	88785	49.9397	49.9	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	55890	241.579	242	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	113132	49.0857	49.1	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	354605	49.7513	49.8	
11	Freon-113	151	2.834	2.835	(0.387)	97922	48.5742	48.6	
12	Iodomethane	142	2.936	2.937	(0.401)	129926	54.1316	54.1	
13	Acrolein	56	3.159	3.160	(0.432)	138380	239.437	239	
14	Methylene Chloride	84	3.447	3.448	(0.471)	183931	47.8081	47.8	
15	Acetone	43	3.522	3.522	(0.482)	51154	47.8765	47.9	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	127110	878.937	879	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	170975	48.5751	48.6	
18	Allyl Chloride	41	3.317	3.318	(0.454)	264916	51.4643	51.5	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	446871	49.0889	49.1	
20	Acetonitrile	39	4.135	4.136	(0.565)	45430	467.491	467	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	566089	52.0364	52.0	
22	Chloroprene	53	4.479	4.480	(0.612)	278000	51.0617	51.1	
23	Propionitrile	54	7.147	7.148	(0.977)	235956	474.940	475	

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Report Date: 15-May-2018 14:00

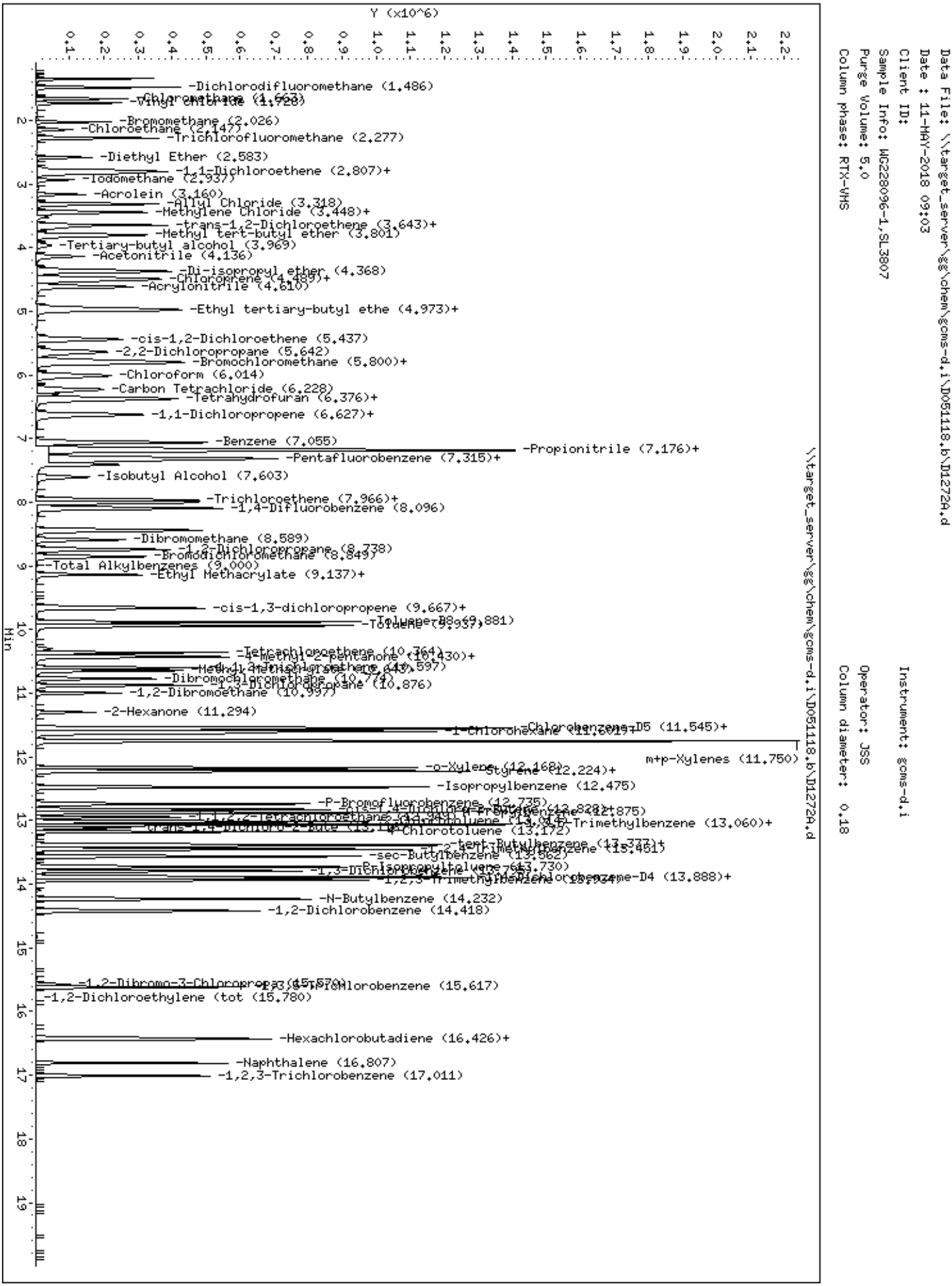
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	1074019	484.679	485	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	346983	52.7255	52.7	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	274543	237.263	237	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	490820	53.4841	53.5	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	434924	55.3223	55.3	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	186385	49.7455	49.7	
M	30	1,2-Dichloroethylene (total)	96				357360	98.3206	98.3	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	159288	47.6940	47.7	
	32	2,2-Dichloropropane	77	5.641	5.642	(0.771)	250856	57.8589	57.8	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	94530	51.1729	51.2	
	34	Chloroform	83	6.013	6.014	(0.822)	340025	49.2890	49.3	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	246702	51.8642	51.9	
	36	Tetrahydrofuran	42	6.311	6.302	(0.863)	45316	45.9171	45.9	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	200430	50.0024	50.0	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	283832	50.0049	50.0	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	257110	50.9244	50.9	
	40	2-Butanone	43	6.655	6.655	(0.910)	79368	47.9154	47.9	
	41	Benzene	78	7.054	7.055	(0.871)	681802	50.0640	50.1	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	340936	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	279289	49.8153	49.8	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	116806	44.8203	44.8	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	248710	49.0726	49.1	
	46	Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	395310	51.9163	51.9	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	271927	47.7661	47.8	
	48	Trichloroethene	95	8.003	8.003	(0.989)	182778	49.2282	49.2	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	551947	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	124139	49.4612	49.5	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	186977	50.7837	50.8	
	52	Bromodichloromethane	83	8.849	8.859	(1.093)	263238	51.5890	51.6	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	305103	51.3946	51.4	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	31501	835.561	836	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	680110	50.5269	50.5	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	113920	49.6986	49.7	
	57	Toluene	92	9.936	9.937	(1.227)	413639	49.7106	49.7	
	58	4-methyl-2-pentanone	43	10.410	10.411	(1.286)	162853	48.4592	48.4	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	137048	50.0596	50.0	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	282459	54.9007	54.9	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	141584	48.3100	48.3	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	195572	51.8565	51.8	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	284044	46.2786	46.3	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	172635	48.8533	48.8	
	65	2-Hexanone	43	11.294	11.294	(0.979)	113379	48.9272	48.9	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	502089	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	448359	48.3108	48.3	
	152	1-Chlorohexane	91	11.600	11.601	(1.006)	779805			(aR)
	68	Ethylbenzene	91	11.600	11.601	(1.006)	779805	49.0338	49.0	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	166601	50.3778	50.4	
M	70	Xylenes (total)	106				1805989	148.921	149	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	1195394	98.8696	98.9	
	72	o-Xylene	91	12.167	12.168	(1.055)	610595	50.0511	50.0	
	73	Styrene	104	12.223	12.224	(1.060)	472288	51.1719	51.2	
	74	Bromoform	173	12.233	12.233	(1.060)	116357	46.1186	46.1	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	720827	53.7298	53.7	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	271852	50.5958	50.6	

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 15-May-2018 14:00

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	67240	47.4576	47.4	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	53183	46.1480	46.1	
	79	Bromobenzene	156	12.828	12.828	(0.924)	182376	48.2714	48.3	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	873990	49.8094	49.8	
	81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	207265	47.1583	47.2	
	82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	587855	50.5107	50.5	
	83	2-Chlorotoluene	91	13.013	13.014	(0.938)	522710	49.7349	49.7	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	170845	45.1391	45.1	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	558434	50.0065	50.0	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	551640	50.3661	50.4	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	133479	50.8300	50.8	
	88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	610413	50.6227	50.6	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	580336	51.6927	51.7	
	90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	326603	48.4730	48.5	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	252669	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	328765	47.0205	47.0	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	545299	52.1262	52.1	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	697075	50.4437	50.4	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	310464	48.5718	48.6	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	32894	47.1176	47.1	
	97	1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	216110	50.1058	50.1	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	71083	47.3372	47.3	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	187210	49.7982	49.8	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	614250	50.6617	50.7	
	101	Naphthalene	128	16.806	16.806	(1.211)	395237	43.5753	43.6	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	145941	47.5271	47.5	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	132158	43.3998	43.4	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	271041	51.4435	51.4	
M	153	Total Alkylbenzenes	100				4446608	355.571	356	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Date : 11-MAY-2018 09:03
Client ID:
Sample Info: WG228096-1,SL3807
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.486)
-Chloromethane (1.663)
-Vinyl chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)
-Tetrahydrofuran (6.376)+
-1,1-Dichloropropene (6.627)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.603)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.364)
-4-Methyl-2-pentanone (10.430)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.828)+
-1,1,2,2-Tetrachloroethane (12.943)
-1,2-Dichlorotoluene (13.014)
-1,3,5-Trimethylbenzene (13.060)+
-trans-1,4-Dichloro-2-Bute (13.1[illegible])
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.562)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
-1,2,3-Trimethylbenzene (13.934)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.570)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Lab Smp Id: WG227999-4
Inj Date : 10-MAY-2018 08:36
Operator : JSS   Inst ID: gcms-d.i
Smp Info : WG227999-4
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson   Quant Type: ISTD
Cal Date : 10-MAY-2018 08:36   Cal File: D1259.d
Als bottle: 2   Calibration Sample, Level: 4
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)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	205265	50.0000	50.0	
2	Chloromethane	50	1.663	1.663	(0.227)	200868	50.0000	50.0	
3	Vinyl chloride	62	1.728	1.728	(0.236)	164507	50.0000	50.0	
4	Bromomethane	94	2.025	2.025	(0.277)	80701	50.0000	50.0	
5	Chloroethane	64	2.137	2.137	(0.292)	76551	50.0000	50.0	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	269243	50.0000	50.0	
7	Diethyl Ether	59	2.583	2.583	(0.353)	88081	50.0000	50.0	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	57486	250.000	250	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	111190	50.0000	50.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	347658	50.0000	50.0	
11	Freon-113	151	2.834	2.835	(0.387)	97287	50.0000	50.0	
12	Iodomethane	142	2.936	2.937	(0.401)	117174	50.0000	50.0	
13	Acrolein	56	3.159	3.160	(0.432)	148286	250.000	250	
14	Methylene Chloride	84	3.448	3.448	(0.471)	181105	50.0000	50.0	
15	Acetone	43	3.522	3.522	(0.482)	256461	250.000	250	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	130741	1000.00	1000	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	166437	50.0000	50.0	
18	Allyl Chloride	41	3.317	3.318	(0.454)	261537	50.0000	50.0	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	462152	50.0000	50.0	
20	Acetonitrile	39	4.135	4.136	(0.565)	47913	500.000	500	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	556590	50.0000	50.0	
22	Chloroprene	53	4.479	4.480	(0.612)	273657	50.0000	50.0	
23	Propionitrile	54	7.148	7.148	(0.977)	249358	500.000	500	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Report Date: 15-May-2018 13:58

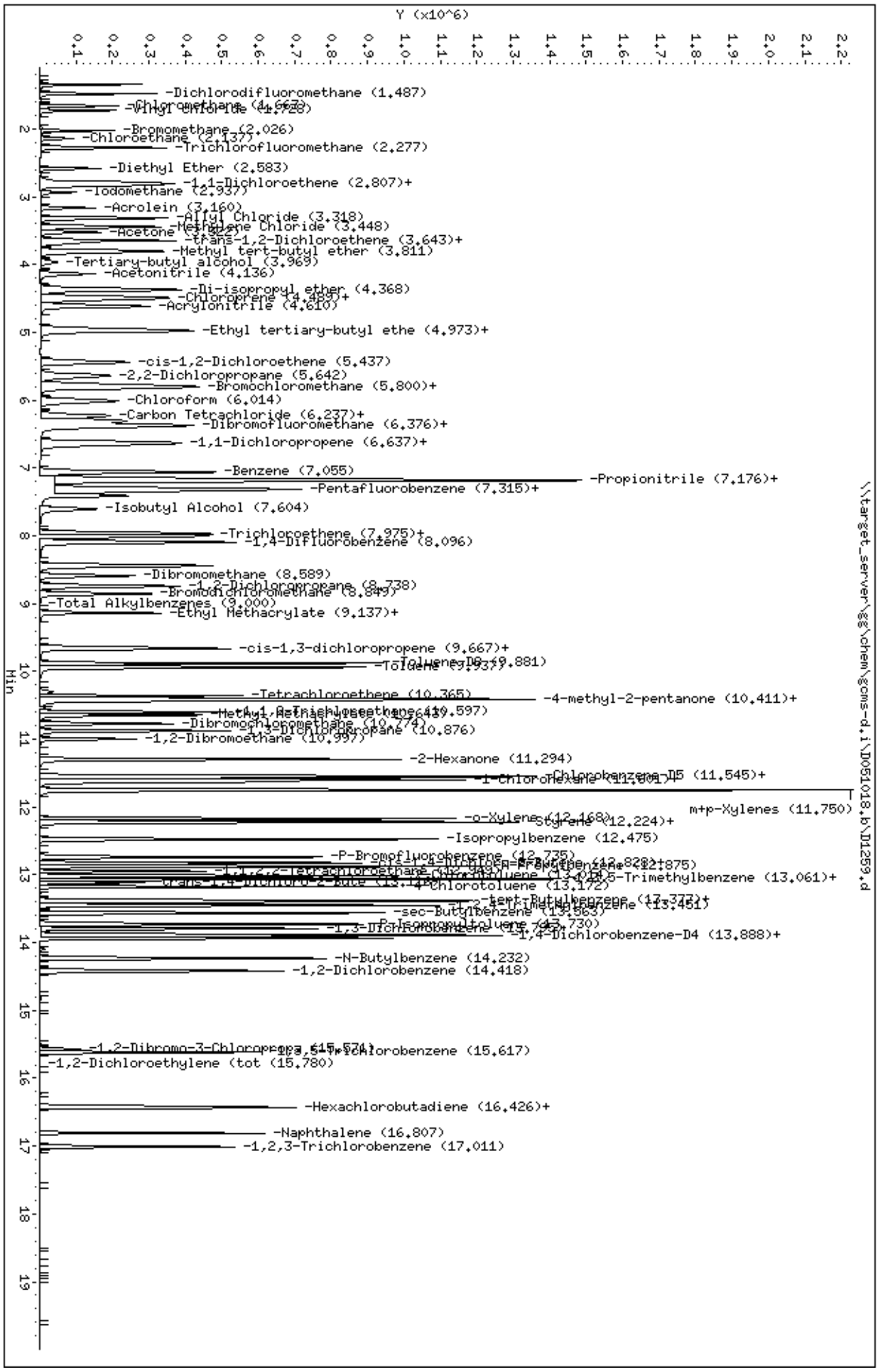
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	1135416	500.000	500	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	318734	50.0000	50.0	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	293845	250.000	250	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	480909	50.0000	50.0	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	414877	50.0000	50.0	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	180483	50.0000	50.0	
M	30	1,2-Dichloroethylene (total)	96				346920	50.0000	100	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	163385	50.0000	50.0	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	230506	50.0000	50.0	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	93363	50.0000	50.0	
	34	Chloroform	83	6.013	6.014	(0.822)	332919	50.0000	50.0	
	35	Carbon Tetrachloride	117	6.236	6.237	(0.770)	238844	50.0000	50.0	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	254617	250.000	250	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	197939	50.0000	50.0	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	279256	50.0000	50.0	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	245020	50.0000	50.0	
	40	2-Butanone	43	6.655	6.655	(0.910)	421224	250.000	250	
	41	Benzene	78	7.055	7.055	(0.871)	658237	50.0000	50.0	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	336775	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	280807	50.0000	50.0	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	123543	50.0000	50.0	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	251639	50.0000	50.0	
	46	Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	393838	50.0000	50.0	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	274965	50.0000	50.0	
	48	Trichloroethene	95	8.003	8.003	(0.989)	177822	50.0000	50.0	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	538592	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	126276	50.0000	50.0	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	182136	50.0000	50.0	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	252656	50.0000	50.0	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	316695	50.0000	50.0	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	30855	1000.00	1000	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	662072	50.0000	50.0	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	115077	50.0000	50.0	
	57	Toluene	92	9.936	9.937	(1.227)	399355	50.0000	50.0	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	878900	250.000	250	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	128749	50.0000	50.0	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	275842	50.0000	50.0	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	145731	50.0000	50.0	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	196474	50.0000	50.0	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	302025	50.0000	50.0	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	179377	50.0000	50.0	
	65	2-Hexanone	43	11.294	11.294	(0.979)	614370	250.000	250	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	490295	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	439244	50.0000	50.0	
	152	1-Chlorohexane	91	11.600	11.601	(1.006)	766077	50.0000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.006)	766077	50.0000	50.0	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	165978	50.0000	50.0	
M	70	Xylenes (total)	106				1792184	150.000	150	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	1181457	100.000	100	
	72	o-Xylene	91	12.168	12.168	(1.055)	610727	50.0000	50.0	
	73	Styrene	104	12.223	12.224	(1.060)	472662	50.0000	50.0	
	74	Bromoform	173	12.233	12.233	(1.060)	120673	50.0000	50.0	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	679544	50.0000	50.0	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	263172	50.0000	50.0	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Report Date: 15-May-2018 13:58

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	71457	50.0000	50.0	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	57450	50.0000	50.0	
	79	Bromobenzene	156	12.828	12.828	(0.924)	184354	50.0000	50.0	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	860890	50.0000	50.0	
	81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	216662	50.0000	50.0	
	82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	581540	50.0000	50.0	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	519353	50.0000	50.0	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	188530	50.0000	50.0	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	548049	50.0000	50.0	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	552641	50.0000	50.0	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	134768	50.0000	50.0	
	88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	603241	50.0000	50.0	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	567605	50.0000	50.0	
	90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	323599	50.0000	50.0	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	249538	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	332832	50.0000	50.0	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	524896	50.0000	50.0	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	686964	50.0000	50.0	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	315938	50.0000	50.0	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	35723	50.0000	50.0	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	213333	50.0000	50.0	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	68393	50.0000	50.0	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	185050	50.0000	50.0	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	606167	50.0000	50.0	
	101	Naphthalene	128	16.806	16.806	(1.211)	424409	50.0000	50.0	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	150309	50.0000	50.0	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	151020	50.0000	50.0	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	267359	50.0000	50.0	
M	153	Total Alkylbenzenes	100				4377777	50.0000	350	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Vinyl Chloride (1.726)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.521)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
-Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-Methyl Methacrylate (10.597)
-1,1,2-Trichloroethane (10.774)
-Dibromochloromethane (10.876)
-1,3-Dichloropropane (10.997)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.828)
-1,1,2,2-Tetrachloroethane (12.949)
-Bromoform (12.875)
-Chlorotoluene (13.042)
-1,3,5-Trimethylbenzene (13.061)+
-trans-1,4-Dichloro-2-Butene (13.144)
-2-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.461)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.747)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.574)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)
Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Date : 10-MAY-2018 08:36
Client ID:
Sample Info: WG227999-4
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
Lab Smp Id: WG227999-3
Inj Date : 10-MAY-2018 09:12 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-3
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 09:12 Cal File: D1260.d
Als bottle: 3 Calibration Sample, Level: 3
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)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	84413	20.0000	20.2	
2	Chloromethane	50	1.663	1.663	(0.227)	91598	20.0000	21.3	
3	Vinyl chloride	62	1.737	1.728	(0.238)	69223	20.0000	20.5	
4	Bromomethane	94	2.025	2.025	(0.277)	35798	20.0000	21.0	
5	Chloroethane	64	2.146	2.137	(0.293)	34079	20.0000	21.0	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	108535	20.0000	20.0	
7	Diethyl Ether	59	2.583	2.583	(0.353)	36055	20.0000	20.2	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	24219	100.000	102	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	45872	20.0000	20.3	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	143535	20.0000	20.3	
11	Freon-113	151	2.834	2.835	(0.387)	40531	20.0000	20.4	
12	Iodomethane	142	2.936	2.937	(0.401)	39174	20.0000	18.2	
13	Acrolein	56	3.169	3.160	(0.433)	59975	100.000	100	
14	Methylene Chloride	84	3.448	3.448	(0.471)	77743	20.0000	20.7	
15	Acetone	43	3.522	3.522	(0.482)	105910	100.000	101	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	53334	400.000	403	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	71361	20.0000	20.7	
18	Allyl Chloride	41	3.317	3.318	(0.454)	106956	20.0000	20.2	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	182030	20.0000	19.8	
20	Acetonitrile	39	4.136	4.136	(0.565)	19176	200.000	200	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	225154	20.0000	20.1	
22	Chloroprene	53	4.479	4.480	(0.612)	112767	20.0000	20.3	
23	Propionitrile	54	7.148	7.148	(0.977)	102465	200.000	202	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
Report Date: 15-May-2018 13:58

							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24 Methacrylonitrile	41	7.185	7.185	(0.982)	468996	200.000	203	
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	132724	20.0000	20.4	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	119222	100.000	100	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	187993	20.0000	19.7	
	28 Vinyl Acetate	43	4.981	4.982	(0.615)	160831	20.0000	19.6	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	76455	20.0000	20.5	
M	30 1,2-Dichloroethylene (total)	96				147816	20.0000	41.2	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	62346	20.0000	19.4	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	90249	20.0000	19.8	
	33 Bromochloromethane	128	5.818	5.809	(0.795)	38571	20.0000	20.3	
	34 Chloroform	83	6.013	6.014	(0.822)	138245	20.0000	20.3	
	35 Carbon Tetrachloride	117	6.227	6.237	(0.769)	96214	20.0000	20.0	
	36 Tetrahydrofuran	42	6.311	6.302	(0.863)	101489	100.000	99.7	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	198446	50.0000	50.0	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	114142	20.0000	20.2	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	103638	20.0000	20.5	
	40 2-Butanone	43	6.655	6.655	(0.910)	167706	100.000	99.6	
	41 Benzene	78	7.064	7.055	(0.873)	277282	20.0000	20.4	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	337743	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	117727	20.0000	20.4	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	47502	20.0000	19.5	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	248784	50.0000	49.6	
	46 Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	152422	20.0000	19.6	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	110914	20.0000	20.0	
	48 Trichloroethene	95	8.003	8.003	(0.989)	75531	20.0000	20.5	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	542524	50.0000		
	50 Dibromomethane	93	8.588	8.589	(1.061)	51134	20.0000	20.0	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	75534	20.0000	20.3	
	52 Bromodichloromethane	83	8.858	8.859	(1.094)	103624	20.0000	20.2	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	124476	20.0000	19.8	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	15064	400.000	438	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	661986	50.0000	49.8	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	45950	20.0000	19.9	
	57 Toluene	92	9.936	9.937	(1.227)	167383	20.0000	20.4	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	355093	100.000	100	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	55209	20.0000	20.6	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	106643	20.0000	19.6	
	61 1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	57777	20.0000	19.8	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	75905	20.0000	19.6	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	124456	20.0000	20.2	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	71151	20.0000	19.8	
	65 2-Hexanone	43	11.294	11.294	(0.979)	245331	100.000	99.6	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	493594	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.002)	186108	20.0000	20.5	
	152 1-Chlorohexane	91	11.600	11.601	(1.006)	327201	20.0000	(a)	
	68 Ethylbenzene	91	11.600	11.601	(1.006)	327201	20.0000	20.6	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	67674	20.0000	20.1	
M	70 Xylenes (total)	106				758834	60.0000	61.5	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	503834	40.0000	41.1	
	72 o-Xylene	91	12.168	12.168	(1.055)	255000	20.0000	20.4	
	73 Styrene	104	12.223	12.224	(1.060)	194373	20.0000	20.2	
	74 Bromoform	173	12.233	12.233	(1.060)	45859	20.0000	19.4	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	284164	20.0000	20.3	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	267550	50.0000	50.2	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
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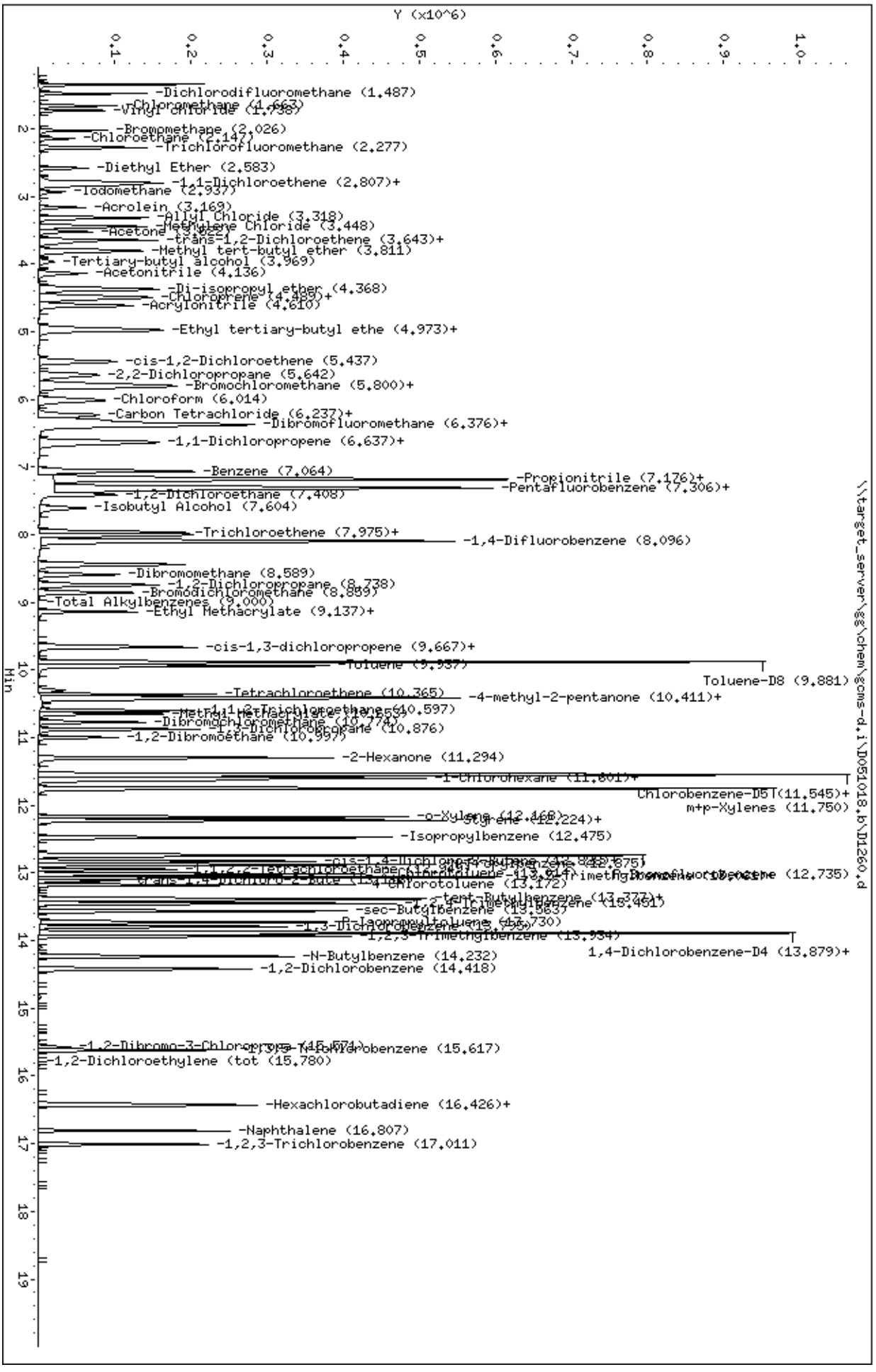
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	26464	20.0000	19.1	
78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	21890	20.0000	19.4	
79	Bromobenzene	156	12.828	12.828	(0.924)	77665	20.0000	20.4	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	366755	20.0000	20.5	
81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	89795	20.0000	20.2	
82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	245150	20.0000	20.4	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	219509	20.0000	20.4	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	77713	20.0000	20.2	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	233626	20.0000	20.5	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	232608	20.0000	20.4	
87	Pentachloroethane	117	13.395	13.395	(0.965)	54517	20.0000	20.0	
88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	256636	20.0000	20.5	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	238769	20.0000	20.4	
90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	137306	20.0000	20.5	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	252555	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	141500	20.0000	20.5	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	218934	20.0000	20.3	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	290738	20.0000	20.4	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	131558	20.0000	20.3	
96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	13883	20.0000	19.6	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	88974	20.0000	20.3	
98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	29538	20.0000	20.6	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	76738	20.0000	20.2	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	252128	20.0000	20.3	
101	Naphthalene	128	16.806	16.806	(1.211)	172641	20.0000	20.0	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	62973	20.0000	20.3	
103	Methyl Acetate	43	3.689	3.690	(0.504)	59535	20.0000	19.8	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	108970	20.0000	20.2	
M 153	Total Alkylbenzenes	100				1849590	20.0000	143	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\target_server\gg\chem\gcms-d,i\D051018.b\D1260.d
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Client ID:
Sample Info: WG227999-3
Purge Volume: 5.0
Column phase: RTX-VMS

Instrument: gcms-d,i
Operator: JSS
Column diameter: 0.18

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Lab Smp Id: WG227999-2
Inj Date : 10-MAY-2018 09:47 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-2
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
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Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 09:47 Cal File: D1261.d
Als bottle: 4 Calibration Sample, Level: 2
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)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	20386	5.00000	4.9	
2	Chloromethane	50	1.663	1.663	(0.227)	23228	5.00000	5.2	
3	Vinyl chloride	62	1.728	1.728	(0.236)	16907	5.00000	5.0	
4	Bromomethane	94	2.025	2.025	(0.277)	9115	5.00000	5.2	
5	Chloroethane	64	2.146	2.137	(0.293)	8917	5.00000	5.3	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	26546	5.00000	4.9	
7	Diethyl Ether	59	2.583	2.583	(0.353)	8541	5.00000	4.8	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	5201	25.0000	22.8	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	11174	5.00000	4.9	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	33041	5.00000	4.8	
11	Freon-113	151	2.834	2.835	(0.387)	9957	5.00000	5.0	
12	Iodomethane	142	2.936	2.937	(0.401)	7675	5.00000	3.9	
13	Acrolein	56	3.169	3.160	(0.433)	13775	25.0000	23.6	
14	Methylene Chloride	84	3.448	3.448	(0.471)	18901	5.00000	5.0	
15	Acetone	43	3.522	3.522	(0.482)	25439	25.0000	24.4	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	10042	100.000	82.1	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	17326	5.00000	5.0	
18	Allyl Chloride	41	3.318	3.318	(0.454)	24958	5.00000	4.8	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	41471	5.00000	4.6	
20	Acetonitrile	39	4.136	4.136	(0.565)	5235	50.0000	52.7	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	51510	5.00000	4.7	
22	Chloroprene	53	4.480	4.480	(0.612)	27045	5.00000	4.9	
23	Propionitrile	54	7.148	7.148	(0.977)	25000	50.0000	49.3	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Report Date: 15-May-2018 13:58

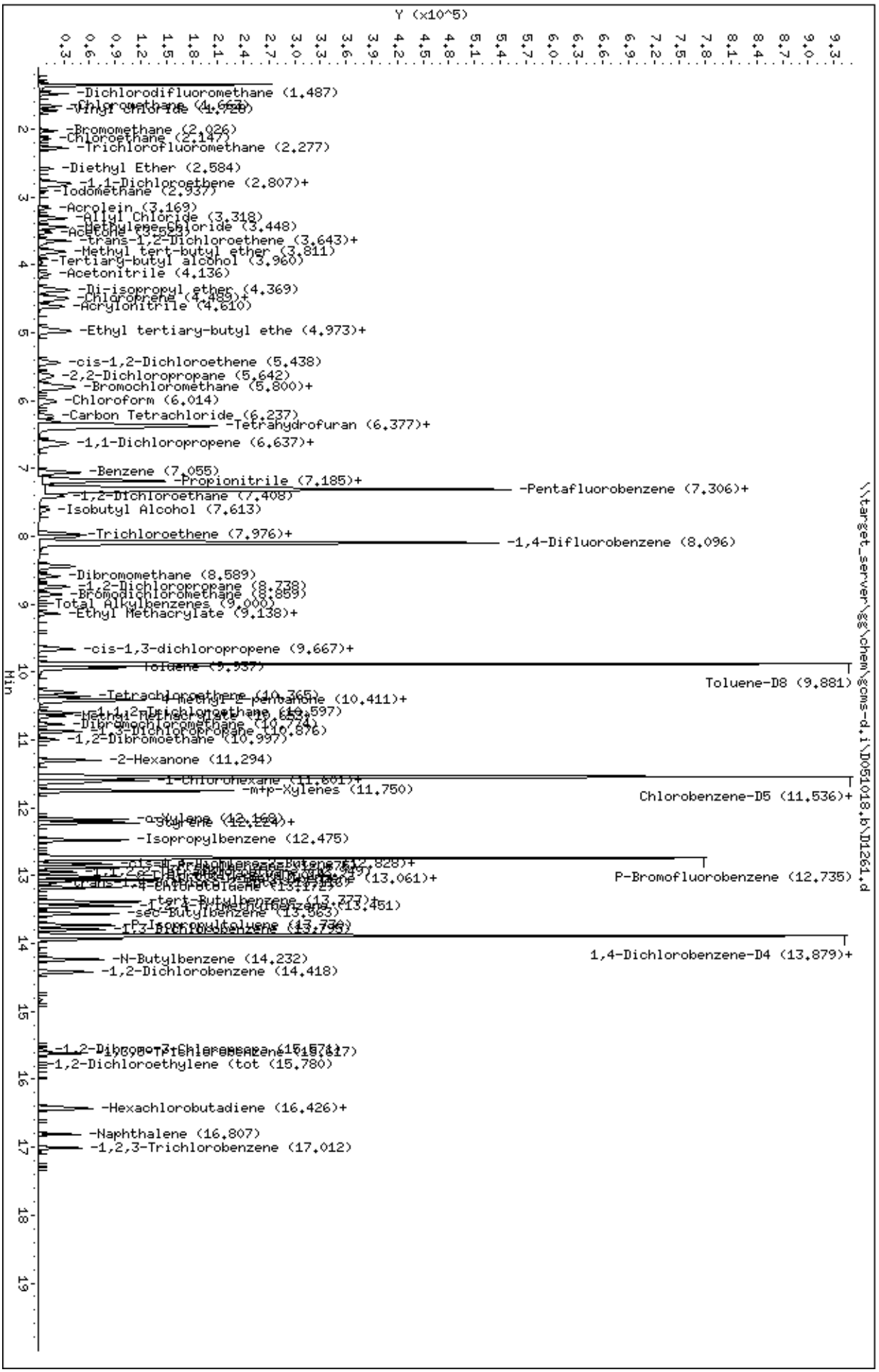
								AMOUNTS		
			QUANT SIG					CAL-AMT	ON-COL	
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	113134	50.0000	49.0	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	32205	5.00000	4.9	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	28279	25.0000	24.1	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	41609	5.00000	4.5	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	35205	5.00000	4.4(T)	
	29	cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	17753	5.00000	4.8	
M	30	1,2-Dichloroethylene (total)	96				35079	5.00000	9.8	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	13467	5.00000	4.4	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	19395	5.00000	4.4	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	9443	5.00000	5.0	
	34	Chloroform	83	6.014	6.014	(0.822)	33353	5.00000	4.9	
	35	Carbon Tetrachloride	117	6.237	6.237	(0.770)	21838	5.00000	4.6	
	36	Tetrahydrofuran	42	6.320	6.302	(0.864)	21606	25.0000	22.2	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	197433	50.0000	49.6	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	26855	5.00000	4.8	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	23804	5.00000	4.7	
	40	2-Butanone	43	6.655	6.655	(0.910)	39791	25.0000	24.0	
	41	Benzene	78	7.064	7.055	(0.873)	66183	5.00000	4.9	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	340267	50.0000		
	43	Cyclohexane	56	5.800	5.791	(0.793)	25832	5.00000	4.6	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	9701	5.00000	4.2	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	254675	50.0000	50.3	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	34327	5.00000	4.6	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	26847	5.00000	4.8	
	48	Trichloroethene	95	8.003	8.003	(0.989)	18273	5.00000	4.9	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	552341	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	11700	5.00000	4.6	
	51	1,2-Dichloropropane	63	8.747	8.738	(1.080)	17559	5.00000	4.7	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	22851	5.00000	4.6	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	25526	5.00000	4.3	
	54	1,4-Dioxane	88	9.146	9.137	(1.130)	3134	100.000	92.8	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	659819	50.0000	49.2	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	9432	5.00000	4.3	
	57	Toluene	92	9.937	9.937	(1.227)	41003	5.00000	4.9	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	80728	25.0000	23.2	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	13430	5.00000	5.0	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	22282	5.00000	4.3	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	14120	5.00000	4.8	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	16168	5.00000	4.4	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.943)	29371	5.00000	4.9	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	16529	5.00000	4.7	
	65	2-Hexanone	43	11.294	11.294	(0.979)	52460	25.0000	22.5	
*	66	Chlorobenzene-D5	117	11.536	11.536	(1.000)	489845	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	45109	5.00000	5.0	
	152	1-Chlorohexane	91	11.601	11.601	(1.006)	76774	5.00000	(a)	
	68	Ethylbenzene	91	11.601	11.601	(1.006)	76774	5.00000	4.9	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	15172	5.00000	4.7	
M	70	Xylenes (total)	106				176472	15.0000	14.6	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	119860	10.0000	9.9	
	72	o-Xylene	91	12.168	12.168	(1.055)	56612	5.00000	4.7	
	73	Styrene	104	12.223	12.224	(1.060)	43754	5.00000	4.7	
	74	Bromoform	173	12.233	12.233	(1.060)	9268	5.00000	4.2	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	65417	5.00000	4.8	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	262284	50.0000	48.9	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Report Date: 15-May-2018 13:58

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77	cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	5618	5.00000	4.4	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	4670	5.00000	4.4	
	79	Bromobenzene	156	12.828	12.828	(0.924)	18285	5.00000	4.9	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	85940	5.00000	4.9	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	21324	5.00000	4.9	
	82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	56421	5.00000	4.8	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	50736	5.00000	4.8	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	18444	5.00000	4.9	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	54067	5.00000	4.8	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	53194	5.00000	4.8	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	12263	5.00000	4.7	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	58494	5.00000	4.8	
	89	P-Isopropyltoluene	119	13.730	13.730	(0.989)	53694	5.00000	4.7	
	90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	33022	5.00000	5.0	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	250423	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	33956	5.00000	5.0	
	93	N-Butylbenzene	91	14.232	14.232	(1.025)	49294	5.00000	4.7	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	67149	5.00000	4.8	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	30261	5.00000	4.8	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	2974	5.00000	4.5	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	20445	5.00000	4.8	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	7134	5.00000	5.0	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	17236	5.00000	4.7	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	60106	5.00000	4.9	
	101	Naphthalene	128	16.807	16.806	(1.211)	33699	5.00000	4.2	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	14604	5.00000	4.8	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	14486	5.00000	4.8	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	25302	5.00000	4.8	
M	153	Total Alkylbenzenes	100				424186	5.00000	33.6	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).


Y (x10^5)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.662)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.960)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.377)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.306)+
-1,2-Dichloroethane (7.408)
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-Methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Tetrahydrofuran (10.652)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-1-Chlorohexane (11.601)+
-m+p-Xylenes (11.750)
Chlorobenzene-D5 (11.536)+
-o-Xylene (12.169)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
P-Bromofluorobenzene (12.735)
-trans-1,4-Dichlorobutene (13.061)+
-tert-Butylbenzene (13.277)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-p-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
1,4-Dichlorobenzene-D4 (13.879)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)
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Sample Info: WG227999-2
Purge Volume: 5.0
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Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
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Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Lab Smp Id: WG227999-1
Inj Date : 10-MAY-2018 10:22 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-1
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 10:22 Cal File: D1262.d
Als bottle: 5 Calibration Sample, Level: 1
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	1.486	1.487	(0.203)	3661	1.00000	0.94(a)	
2	Chloromethane	50	1.663	1.663	(0.227)	4647	1.00000	1.1	
3	Vinyl chloride	62	1.737	1.728	(0.238)	3068	1.00000	0.95(a)	
4	Bromomethane	94	2.025	2.025	(0.277)	1977	1.00000	1.1	
5	Chloroethane	64	2.155	2.137	(0.295)	1558	1.00000	0.97(a)	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	4968	1.00000	0.97(a)	
7	Diethyl Ether	59	2.583	2.583	(0.353)	1616	1.00000	0.96(a)	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	904	5.00000	4.3(a)	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	2252	1.00000	1.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	6522	1.00000	0.98(a)	
11	Freon-113	151	2.834	2.835	(0.387)	1968	1.00000	1.0	
12	Iodomethane	142	2.936	2.937	(0.401)	1352	1.00000	0.77(Ta)	
13	Acrolein	56	3.169	3.160	(0.433)	2399	5.00000	4.4(a)	
14	Methylene Chloride	84	3.448	3.448	(0.471)	4009	1.00000	1.1(a)	
15	Acetone	43	3.522	3.522	(0.482)	5678	5.00000	5.5	
16	Isobutyl Alcohol	43	7.622	7.604	(1.042)	1874	20.0000	16.8(a)	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	3478	1.00000	1.0	
18	Allyl Chloride	41	3.317	3.318	(0.454)	4226	1.00000	0.88(a)	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	7700	1.00000	0.92(a)	
20	Acetonitrile	39	4.145	4.136	(0.567)	834	10.0000	9.0(a)	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	8582	1.00000	0.85(a)	
22	Chloroprene	53	4.489	4.480	(0.614)	4419	1.00000	0.87(a)	
23	Propionitrile	54	7.147	7.148	(0.977)	4357	10.0000	9.2(a)	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Report Date: 15-May-2018 13:58

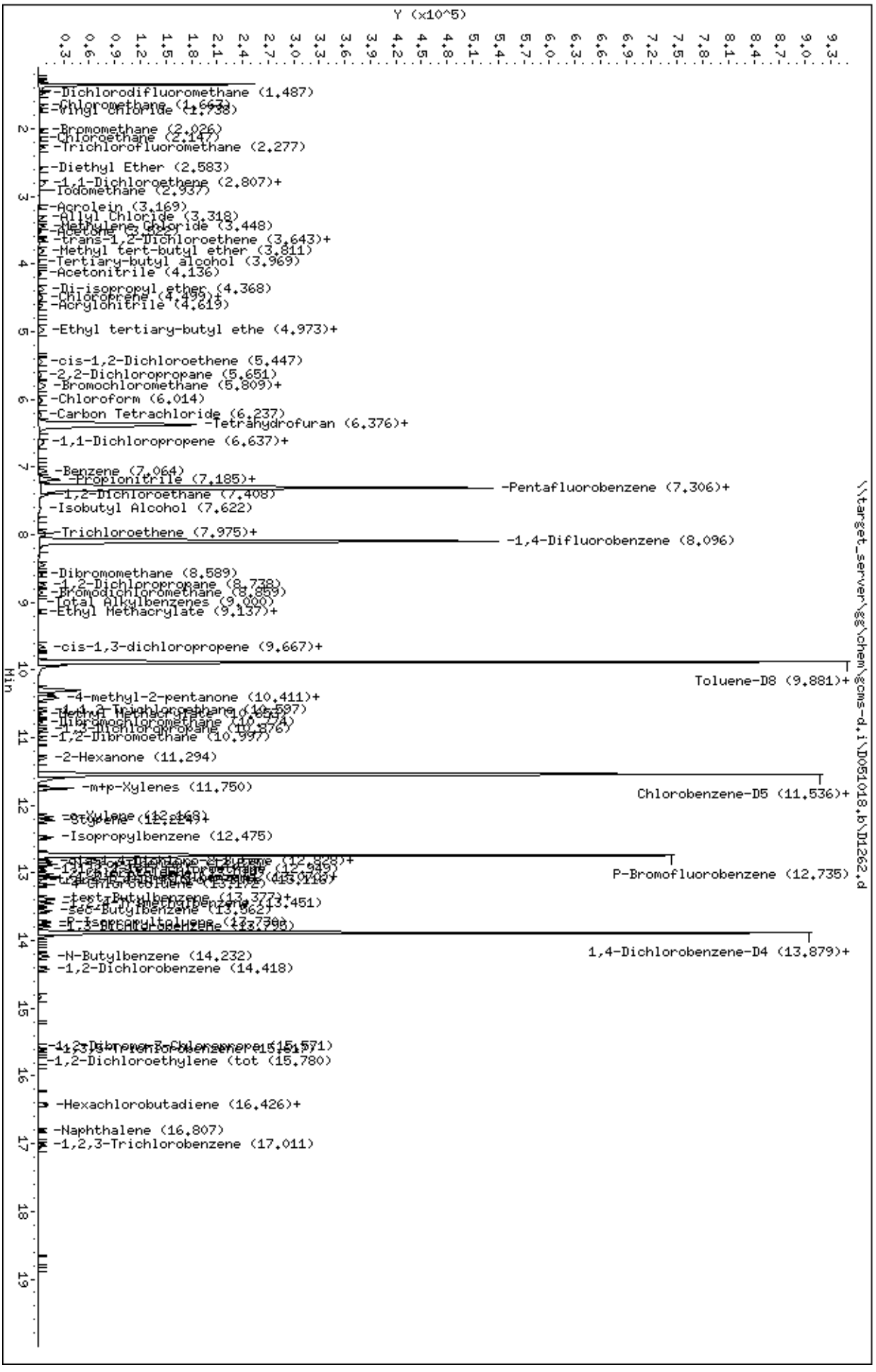
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	19831	10.0000	9.2(a)	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	6306	1.00000	1.0	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	4888	5.00000	4.5(a)	
	27	Ethyl tertiary-butyl ether	59	4.972	4.963	(0.680)	6769	1.00000	0.82(a)	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	6222	1.00000	0.86(a)	
	29	cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	3564	1.00000	1.0	
M	30	1,2-Dichloroethylene (total)	96				7042	1.00000	2.0	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	1876	1.00000	0.70(a)	
	32	2,2-Dichloropropane	77	5.641	5.642	(0.771)	3352	1.00000	0.84(a)	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	1634	1.00000	0.92(a)	
	34	Chloroform	83	6.013	6.014	(0.822)	6818	1.00000	1.0	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	4025	1.00000	0.91(a)	
	36	Tetrahydrofuran	42	6.320	6.302	(0.864)	4032	5.00000	4.5(a)	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	193802	50.0000	50.5	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	5144	1.00000	0.97(a)	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	4593	1.00000	0.96(a)	
	40	2-Butanone	43	6.664	6.655	(0.911)	7075	5.00000	4.6(a)	
	41	Benzene	78	7.064	7.055	(0.873)	12738	1.00000	0.98(a)	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	326667	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	4742	1.00000	0.91(a)	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	1453	1.00000	0.72(a)	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	249701	50.0000	51.0	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	6032	1.00000	0.87(a)	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	6342	1.00000	1.1	
	48	Trichloroethene	95	8.003	8.003	(0.989)	3610	1.00000	1.0	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	531069	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	2244	1.00000	0.95(a)	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	3257	1.00000	0.94(Ta)	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	4655	1.00000	0.97(a)	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	4347	1.00000	0.80(a)	
	54	1,4-Dioxane	88	9.156	9.137	(1.131)	335	20.0000	11.7(a)	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	645843	50.0000	50.0	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	1470	1.00000	0.75(a)	
	57	Toluene	92	9.936	9.937	(1.227)	8126	1.00000	1.0	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	14219	5.00000	4.4(a)	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	2569	1.00000	0.98(a)	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	3791	1.00000	0.81(a)	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	2817	1.00000	1.0	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	2928	1.00000	0.85(a)	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	5603	1.00000	0.95(a)	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	3093	1.00000	0.93(Ta)	
	65	2-Hexanone	43	11.294	11.294	(0.979)	8572	5.00000	4.0(a)	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	487270	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	9248	1.00000	1.0	
	152	1-Chlorohexane	91	11.600	11.601	(1.006)	14946	1.00000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.006)	14946	1.00000	0.97(a)	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	2801	1.00000	0.90(a)	
M	70	Xylenes (total)	106				31894	5.00000	2.7(a)	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	21816	2.00000	1.8(a)	
	72	o-Xylene	91	12.168	12.168	(1.055)	10078	1.00000	0.88(a)	
	73	Styrene	104	12.223	12.224	(1.060)	7019	1.00000	0.81(a)	
	74	Bromoform	173	12.233	12.233	(1.060)	1584	1.00000	0.78(Ta)	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	10618	1.00000	0.84(a)	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	256101	50.0000	49.7	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Report Date: 15-May-2018 13:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77 cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	853	1.00000	0.74(a)	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	659	1.00000	0.70(a)	
	79 Bromobenzene	156	12.828	12.828	(0.924)	3688	1.00000	1.0	
	80 N-Propylbenzene	91	12.874	12.875	(0.928)	16081	1.00000	0.96(a)	
	81 1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	4187	1.00000	0.99(a)	
	82 1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	10062	1.00000	0.91(a)	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	9625	1.00000	0.96(a)	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	3684	1.00000	1.0	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	10405	1.00000	0.97(a)	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	8969	1.00000	0.87(a)	
	87 Pentachloroethane	117	13.385	13.395	(0.964)	2228	1.00000	0.90(a)	
	88 1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	9958	1.00000	0.88(a)	
	89 P-Isopropyltoluene	119	13.729	13.730	(0.989)	8918	1.00000	0.85(a)	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	6695	1.00000	1.0	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	243700	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	7337	1.00000	1.1	
	93 N-Butylbenzene	91	14.231	14.232	(1.025)	8846	1.00000	0.90(a)	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	11919	1.00000	0.91(a)	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	5928	1.00000	0.97(a)	
	96 1,2-Dibromo-3-Chloropropane	75	15.579	15.571	(1.123)	552	1.00000	0.88(a)	
	97 1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	3851	1.00000	0.94(a)	
	98 Hexachlorobutadiene	225	16.416	16.416	(1.183)	1645	1.00000	1.1	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	3345	1.00000	0.95(a)	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	10485	1.00000	0.91(a)	
	101 Naphthalene	128	16.806	16.806	(1.211)	5588	1.00000	0.78(a)	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	2728	1.00000	0.94(a)	
	103 Methyl Acetate	43	3.699	3.690	(0.506)	2933	1.00000	1.0	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	4349	1.00000	0.88(a)	
M	153 Total Alkylbenzenes	100				74753	1.00000	6.3(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).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Client ID:
Sample Info: WG227999-1
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
Y (x10^5)
Min
\\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.499)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.651)
-Bromochloromethane (5.809)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.306)+
-1,2-Dichloroethane (7.408)
-Isobutyl Alcohol (7.622)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
Toluene-D8 (9.881)+
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Dibromochloromethane (10.777)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-m+p-Xylenes (11.750)
Chlorobenzene-D5 (11.536)+
-o-Xylene (12.168)
-Styrene (12.214)+
-Isopropylbenzene (12.475)
P-Bromofluorobenzene (12.735)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.662)+
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.796)
1,4-Dichlorobenzene-D4 (13.879)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Lab Smp Id: WG227999-6
Inj Date : 10-MAY-2018 10:58 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-6
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 10:58 Cal File: D1263.d
Als bottle: 6 Calibration Sample, Level: 6
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	1.486	1.487	(0.203)	596950	150.000	153(A)	
2	Chloromethane	50	1.653	1.663	(0.226)	582189	150.000	137	
3	Vinyl chloride	62	1.728	1.728	(0.236)	502451	150.000	156(A)	
4	Bromomethane	94	2.025	2.025	(0.277)	246357	150.000	143	
5	Chloroethane	64	2.118	2.137	(0.290)	96313	150.000	60.5	
6	Trichlorofluoromethane	101	2.267	2.277	(0.310)	774508	150.000	151(A)	
7	Diethyl Ether	59	2.583	2.583	(0.353)	261729	150.000	156(A)	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	179580	750.000	837(A)	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	327785	150.000	150(A)	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	1055732	150.000	158(A)	
11	Freon-113	151	2.825	2.835	(0.386)	283360	150.000	148	
12	Iodomethane	142	2.936	2.937	(0.401)	353876	150.000	190(A)	
13	Acrolein	56	3.159	3.160	(0.432)	429690	750.000	789(A)	
14	Methylene Chloride	84	3.448	3.448	(0.471)	532048	150.000	145	
15	Acetone	43	3.522	3.522	(0.482)	757058	750.000	740	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	422162	3000.00	3610(A)	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	488356	150.000	146	
18	Allyl Chloride	41	3.317	3.318	(0.454)	761617	150.000	157(A)	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	1395338	150.000	164(A)	
20	Acetonitrile	39	4.135	4.136	(0.565)	141782	1500.00	1530(A)	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	1654918	150.000	162(A)	
22	Chloroprene	53	4.479	4.480	(0.612)	801519	150.000	156(A)	
23	Propionitrile	54	7.157	7.148	(0.978)	711090	1500.00	1510(A)	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Report Date: 15-May-2018 13:58

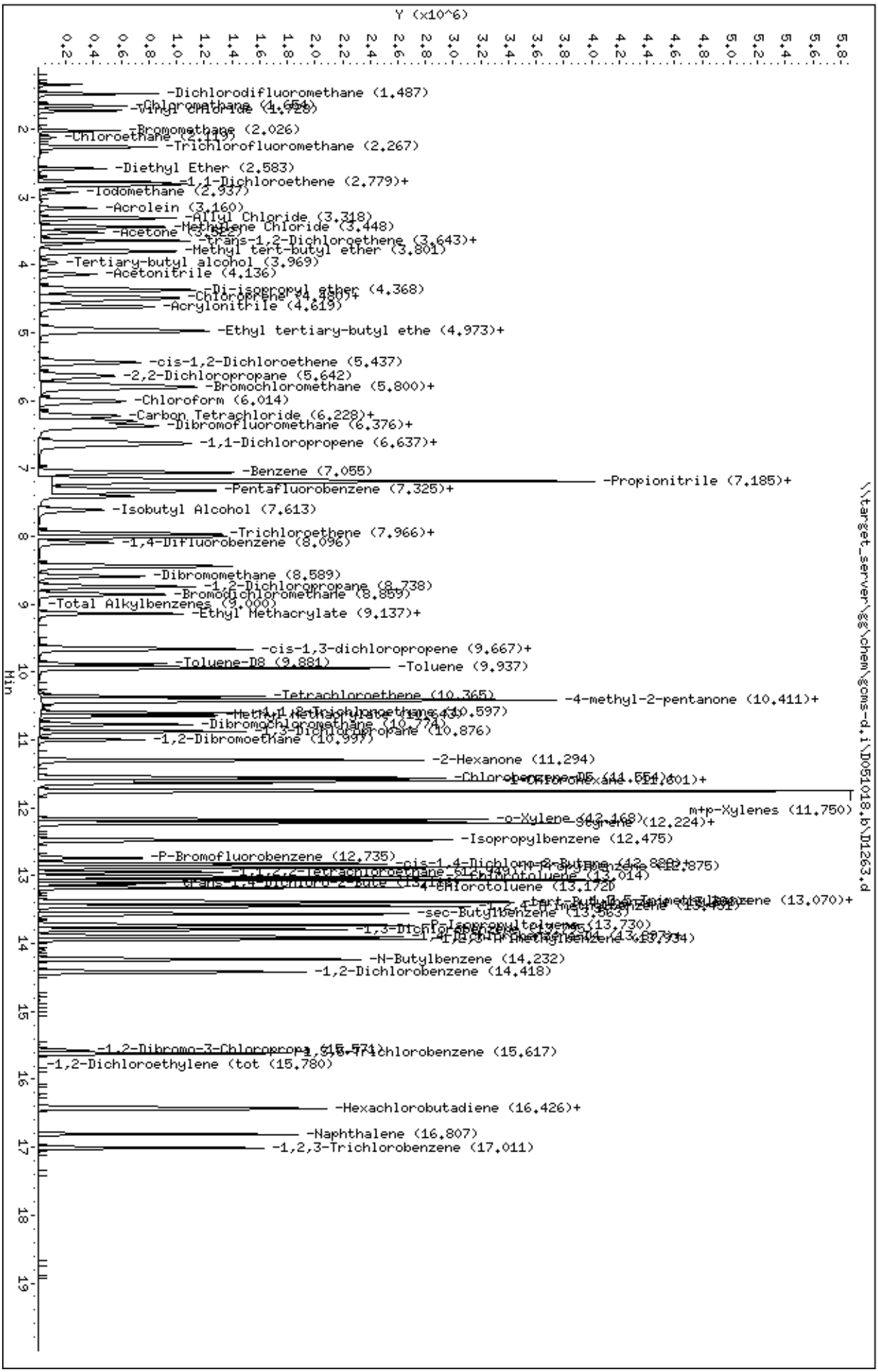
								AMOUNTS		
			QUANT SIG					CAL-AMT	ON-COL	
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	3043255	1500.00	1430	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	929949	150.000	149	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	850904	750.000	778(A)	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	1441762	150.000	169(A)	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	1224109	150.000	165(A)	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	539834	150.000	153(A)	
M	30	1,2-Dichloroethylene (total)	96				1028190	150.000	299	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	485465	150.000	174(A)	
	32	2,2-Dichloropropane	77	5.641	5.642	(0.771)	669718	150.000	165(A)	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	240684	150.000	138	
	34	Chloroform	83	6.013	6.014	(0.822)	975563	150.000	149	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	723663	150.000	162(A)	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	777215	750.000	841(A)	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	191556	50.0000	50.2	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	837274	150.000	157(A)	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	733072	150.000	154(A)	
	40	2-Butanone	43	6.655	6.655	(0.910)	1242200	750.000	794(A)	
	41	Benzene	78	7.055	7.055	(0.871)	1958717	150.000	151(A)	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	324727	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	837903	150.000	159(A)	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	383044	150.000	181(A)	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	242426	50.0000	49.9	
	46	Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	1198082	150.000	169(A)	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	787889	150.000	143	
	48	Trichloroethene	95	8.003	8.003	(0.989)	521163	150.000	147	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	527967	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	374803	150.000	157(A)	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	546690	150.000	156(A)	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	774878	150.000	160(A)	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	939678	150.000	169(A)	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	95377	3000.00	3280(A)	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	648059	50.0000	50.4	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	329670	150.000	166(A)	
	57	Toluene	92	9.936	9.937	(1.227)	1163242	150.000	147	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	2409037	750.000	752(A)	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	382704	150.000	150(A)	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	819126	150.000	170(A)	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	422318	150.000	151(A)	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	596085	150.000	172(A)	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.942)	880095	150.000	153(A)	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	529310	150.000	158(A)	
	65	2-Hexanone	43	11.294	11.294	(0.978)	1747072	750.000	815(A)	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	471640	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.001)	1280841	150.000	147	
	152	1-Chlorohexane	91	11.600	11.601	(1.005)	2218644	150.000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.005)	2218644	150.000	149	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.007)	490768	150.000	160(A)	
M	70	Xylenes (total)	106				5121409	150.000	453	
	71	m+p-Xylenes	91	11.749	11.750	(1.018)	3329230	300.000	294	
	72	o-Xylene	91	12.168	12.168	(1.054)	1792179	150.000	158(A)	
	73	Styrene	104	12.223	12.224	(1.059)	1355504	150.000	159(A)	
	74	Bromoform	173	12.233	12.233	(1.060)	364795	150.000	178(A)	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	1997184	150.000	157(A)	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	262483	50.0000	51.0	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Report Date: 15-May-2018 13:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
77	cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	209478	150.000	174(A)	
78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	171762	150.000	175(A)	
79	Bromobenzene	156	12.828	12.828	(0.924)	535640	150.000	147	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	2496882	150.000	148	
81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	633959	150.000	150	
82	1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	1687500	150.000	152(A)	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	1506202	150.000	150	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	535615	150.000	146	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	1596605	150.000	149	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	1619517	150.000	155(A)	
87	Pentachloroethane	117	13.395	13.395	(0.965)	393081	150.000	157(A)	
88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	1779741	150.000	155(A)	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	1692088	150.000	159(A)	
90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	951059	150.000	146	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	244199	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	971183	150.000	144	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	1567839	150.000	157(A)	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	2014003	150.000	153(A)	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	936882	150.000	153(A)	
96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	118972	150.000	180(A)	
97	1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	641806	150.000	156(A)	
98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	214181	150.000	148	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	572626	150.000	160(A)	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	1769441	150.000	152(A)	
101	Naphthalene	128	16.806	16.806	(1.211)	1336967	150.000	177(A)	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	462534	150.000	158(A)	
103	Methyl Acetate	43	3.689	3.690	(0.504)	448089	150.000	155(A)	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	779075	150.000	157(A)	
M 153	Total Alkylbenzenes	100				12857570	150.000	1080	

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-d.i\D051018.b\D1263.d
Date : 10-MAY-2018 10:58
Client ID:
Sample Info: WG227999-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.654)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.119)
-Trichlorofluoromethane (2.267)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.779)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.490)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.325)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.554)+
-1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.888)+
-1,1,2,2-Tetrachloroethane (12.875)
-4-Chlorotoluene (13.014)
-trans-1,4-Dichloro-2-Bute (13.172)
-1,2,4-Trimethylbenzene (13.070)+
-tert-Butylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.797)
-1,2,3-Trimethylbenzene (13.934)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloroprop (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Lab Smp Id: WG227999-5
Inj Date : 10-MAY-2018 11:34 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-5
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 7 Calibration Sample, Level: 5
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	1.486	1.487	(0.203)	428172	100.000	103	
2	Chloromethane	50	1.654	1.663	(0.226)	436527	100.000	97.9	
3	Vinyl chloride	62	1.728	1.728	(0.236)	388483	100.000	111	
4	Bromomethane	94	2.025	2.025	(0.277)	169161	100.000	94.0	
5	Chloroethane	64	2.128	2.137	(0.291)	125474	100.000	78.7	
6	Trichlorofluoromethane	101	2.267	2.277	(0.310)	543831	100.000	100	
7	Diethyl Ether	59	2.583	2.583	(0.353)	184378	100.000	103	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	131872	500.000	567	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	239123	100.000	103	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	770578	100.000	108	
11	Freon-113	151	2.825	2.835	(0.386)	205859	100.000	102	
12	Iodomethane	142	2.936	2.937	(0.401)	240672	100.000	118	
13	Acrolein	56	3.160	3.160	(0.432)	305343	500.000	525	
14	Methylene Chloride	84	3.448	3.448	(0.471)	381783	100.000	98.7	
15	Acetone	43	3.522	3.522	(0.482)	522103	500.000	486	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	305026	2000.00	2380	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	364680	100.000	103	
18	Allyl Chloride	41	3.318	3.318	(0.454)	547847	100.000	106	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	1001586	100.000	109	
20	Acetonitrile	39	4.136	4.136	(0.565)	98620	1000.00	1010	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	1184032	100.000	108	
22	Chloroprene	53	4.480	4.480	(0.612)	582365	100.000	106	
23	Propionitrile	54	7.148	7.148	(0.977)	508139	1000.00	1020	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Report Date: 15-May-2018 13:58

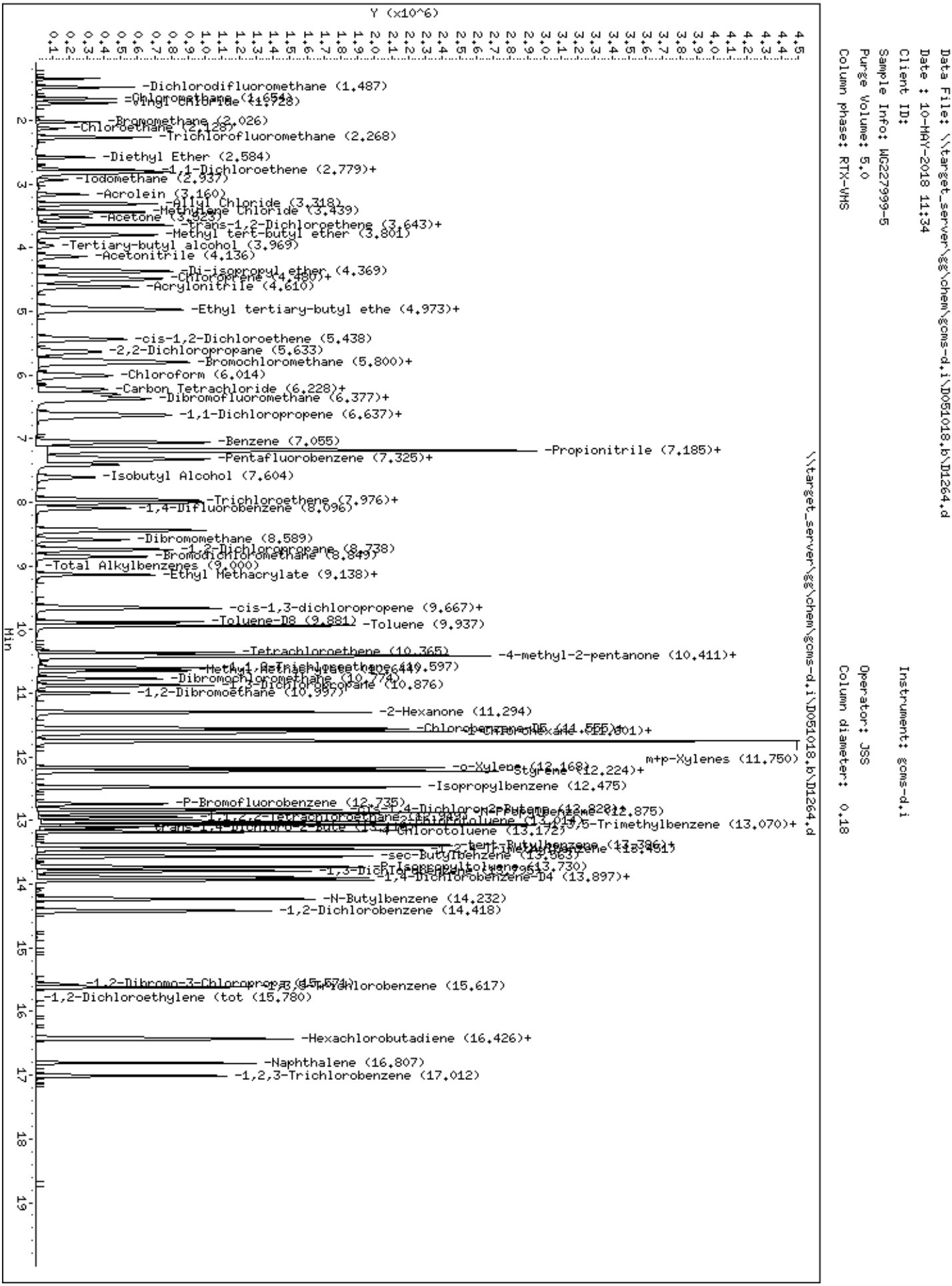
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	2174411	1000.00	976	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	682598	100.000	103	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	605528	500.000	520	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	1039801	100.000	113	
	28	Vinyl Acetate	43	4.982	4.982	(0.615)	854749	100.000	108	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	393301	100.000	104	
M	30	1,2-Dichloroethylene (total)	96				757981	100.000	207	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	338402	100.000	112	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	474471	100.000	109	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	197484	100.000	106	
	34	Chloroform	83	6.014	6.014	(0.822)	708383	100.000	102	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	521803	100.000	108	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	538083	500.000	542	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	201701	50.0000	50.0	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	606347	100.000	106	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	542023	100.000	106	
	40	2-Butanone	43	6.655	6.655	(0.910)	869399	500.000	522	
	41	Benzene	78	7.055	7.055	(0.871)	1415775	100.000	103	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	342793	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	605366	100.000	107	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	266889	100.000	116	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	245596	50.0000	48.2	
	46	Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	850475	100.000	111	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	549340	100.000	95.4	
	48	Trichloroethene	95	8.003	8.003	(0.989)	379705	100.000	101	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	558227	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	261642	100.000	103	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	385453	100.000	104	
	52	Bromodichloromethane	83	8.849	8.859	(1.093)	542154	100.000	105	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	670290	100.000	112	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	78968	2000.00	2450	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	685776	50.0000	50.4	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	229486	100.000	107	
	57	Toluene	92	9.937	9.937	(1.227)	857503	100.000	102	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	1723383	500.000	507	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	286199	100.000	105	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	575363	100.000	110	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	299918	100.000	101	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	417763	100.000	111	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.943)	626348	100.000	102	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	374167	100.000	105	
	65	2-Hexanone	43	11.294	11.294	(0.979)	1245942	500.000	538	
*	66	Chlorobenzene-D5	117	11.536	11.536	(1.000)	501569	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	934609	100.000	101	
	152	1-Chlorohexane	91	11.601	11.601	(1.006)	1618698	100.000	(a)	
	68	Ethylbenzene	91	11.601	11.601	(1.006)	1618698	100.000	102	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	351777	100.000	106	
M	70	Xylenes (total)	106				3755689	100.000	310	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	2456069	200.000	203	
	72	o-Xylene	91	12.168	12.168	(1.055)	1299620	100.000	107	
	73	Styrene	104	12.223	12.224	(1.060)	997760	100.000	108	
	74	Bromoform	173	12.233	12.233	(1.060)	252742	100.000	113	
	75	Isopropylbenzene	105	12.475	12.475	(0.899)	1456833	100.000	108	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	270382	50.0000	49.8	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Report Date: 15-May-2018 13:58

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	139960	100.000	110	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	112857	100.000	109	
	79	Bromobenzene	156	12.828	12.828	(0.924)	385158	100.000	102	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	1830667	100.000	104	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	448497	100.000	102	
	82	1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	1236190	100.000	106	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	1098148	100.000	104	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	377695	100.000	99.5	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	1153483	100.000	103	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	1171247	100.000	107	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	281051	100.000	107	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	1292165	100.000	107	
	89	P-Isopropyltoluene	119	13.730	13.730	(0.989)	1219817	100.000	108	
	90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	685682	100.000	102	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	253287	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	699219	100.000	99.8	
	93	N-Butylbenzene	91	14.232	14.232	(1.025)	1127949	100.000	108	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	1469372	100.000	106	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	667333	100.000	104	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	77966	100.000	111	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	457320	100.000	106	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	152838	100.000	102	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	408398	100.000	108	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	1268533	100.000	104	
	101	Naphthalene	128	16.807	16.806	(1.211)	938571	100.000	116	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	327226	100.000	106	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	312471	100.000	102	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	566730	100.000	107	
M	153	Total Alkylbenzenes	100				9347407	100.000	746	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Date : 10-MAY-2018 11:34
Client ID:
Sample Info: WG227999-5
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.654)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.128)
-Trichlorofluoromethane (2.268)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.779)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.439)
-Acetone (3.523)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.480)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.633)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.377)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.325)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.555)+
-1-Chlorohexane (11.801)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.828)+
-N-Propylbenzene (12.875)
-1,1,2,2-Tetrachloroethane (13.249)
-2-Chlorotoluene (13.014)
-1,3,5-Trimethylbenzene (13.070)+
-trans-1,4-Dichloro-2-Bute (13.165)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.386)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.897)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-W
Lab File IDs : W3881.D W3880.D W3879.D W3878.D W3883.D W3882.D
Column ID:
Calibration Date(s): 09-MAY-18 08:35, 09-MAY-18 11:41

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	5.0000	10.0000	20.0000	50.0000	100.0000	150.0000	New	b	m1	m2	%RSD	%RSD	
Dichlorodifluoromethane	0.39165	0.44068	0.39104	0.43667	0.38974	0.40012	AVG		0.40832		5.83650	15.00000	O
Chloromethane	0.67538	0.67772	0.57481	0.62691	0.56421	0.58664	AVG		0.61761		8.15355	15.00000	O
Vinyl chloride	0.50572	0.52688	0.47614	0.54272	0.48431	0.52094	AVG		0.50945		5.04133	15.00000	O
Bromomethane	0.19036	0.20765	0.16752	0.17542	0.17463	0.18447	AVG		0.18334		7.82917	15.00000	O
Chloroethane	17789	33897	56878	150314	252542	341500	QUA	0.00370	3.15914	3.39616	0.99664	0.99000	O
Trichlorofluoromethane	0.58237	0.64673	0.56017	0.62774	0.57632	0.60422	AVG		0.59959		5.49505	15.00000	O
1,1-Dichloroethene	0.37078	0.37875	0.32340	0.38104	0.34399	0.38134	AVG		0.36322		6.63039	15.00000	O
Carbon Disulfide	1.57033	1.48345	1.24502	1.44961	1.30278	1.35423	AVG		1.40090		8.68375	15.00000	O
Freon-113	0.31641	0.28291	0.28424	0.33314	0.28643	0.30506	AVG		0.30136		6.81070	15.00000	O
Methylene Chloride	0.49762	0.51769	0.45284	0.49476	0.46676	0.48720	AVG		0.48614		4.76855	15.00000	O
Acetone	0.16611	0.17857	0.17856	0.23045	0.15461	0.16214	AVG		0.17840		15.2290	15.00000	W
trans-1,2-Dichloroethene	0.40132	0.42104	0.36952	0.43634	0.39111	0.42130	AVG		0.40677		5.97280	15.00000	O
Methyl tert-butyl ether	1.00158	1.08358	0.98979	1.07500	1.13534	1.15802	AVG		1.07388		6.34995	15.00000	O
1,1-Dichloroethane	0.73207	0.77302	0.67495	0.77996	0.73890	0.77065	AVG		0.74493		5.29394	15.00000	O
cis-1,2-Dichloroethene	0.45952	0.45943	0.41682	0.47101	0.44506	0.46947	AVG		0.45355		4.46415	15.00000	O
2,2-Dichloropropane	14769	33266	64118	195369	471829	724548	LNR	0.10047	0.42156		0.99742	0.99000	O
Bromochloromethane	0.21584	0.22631	0.19530	0.22135	0.21394	0.22995	AVG		0.21711		5.65858	15.00000	O
Chloroform	0.72006	0.77407	0.67016	0.75713	0.70341	0.74035	AVG		0.72753		5.19253	15.00000	O
Carbon Tetrachloride	13384	35246	65296	215011	481164	758481	LNR	0.09807	0.23562		0.99774	0.99000	O
1,1,1-Trichloroethane	0.51119	0.53056	0.45972	0.57934	0.54962	0.59133	AVG		0.53696		8.96383	15.00000	O
1,1-Dichloropropene	0.30732	0.30791	0.25873	0.31469	0.29274	0.31114	AVG		0.29876		7.02516	15.00000	O
2-Butanone	0.25054	0.26422	0.25758	0.29400	0.25728	0.27087	AVG		0.26575		5.82117	15.00000	O
Benzene	0.91664	0.94087	0.81405	0.99800	0.89858	0.91727	AVG		0.91423		6.56728	15.00000	O
1,2-Dichloroethane	0.31845	0.34571	0.29484	0.34453	0.32056	0.34138	AVG		0.32758		6.12208	15.00000	O
Trichloroethene	0.23426	0.23897	0.20264	0.24295	0.21609	0.22945	AVG		0.22739		6.72057	15.00000	O
Dibromomethane	0.13455	0.14460	0.13087	0.15079	0.14511	0.14761	AVG		0.14226		5.48191	15.00000	O
1,2-Dichloropropane	0.23375	0.24398	0.21335	0.25054	0.24186	0.25254	AVG		0.23934		6.00856	15.00000	O
Bromodichloromethane	0.26259	0.29527	0.26499	0.30442	0.29746	0.31256	AVG		0.28955		7.20491	15.00000	O
cis-1,3-dichloropropene	0.27496	0.32050	0.30245	0.37881	0.37694	0.40357	AVG		0.34287		14.8041(	15.00000	O
Toluene	0.56968	0.58642	0.50373	0.60021	0.55494	0.57990	AVG		0.56581		6.01589	15.00000	O
4-methyl-2-pentanone	0.25854	0.30072	0.26810	0.29801	0.29033	0.28791	AVG		0.28393		5.96068	15.00000	O
Tetrachloroethene	0.18004	0.17645	0.16039	0.19085	0.17024	0.17708	AVG		0.17584		5.77190	15.00000	O
trans-1,3-Dichloropropene	20294	46706	95412	303944	702776	1113820	LNR	0.10894	0.34653		0.99729	0.99000	O
1,1,2-Trichloroethane	0.16640	0.19403	0.16670	0.18821	0.17803	0.19051	AVG		0.18065		6.72651	15.00000	O
Dibromochloromethane	0.18825	0.21397	0.19925	0.23078	0.23521	0.24936	AVG		0.21947		10.5552	15.00000	O
1,3-Dichloropropane	0.40278	0.43398	0.38768	0.43124	0.41842	0.43438	AVG		0.41808		4.60112	15.00000	O
1,2-Dibromoethane	0.19344	0.21241	0.19344	0.22351	0.22333	0.23310	AVG		0.21321		7.81129	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-W
Lab File IDs : W3881.D W3880.D W3879.D W3878.D W3883.D W3882.D
Column ID:
Calibration Date(s): 09-MAY-18 08:35
09-MAY-18 11:41

2-Hexanone	0.18475	0.21512	0.20788	0.22694	0.22269	0.22313	AVG		0.21342		7.31399	15.00000	O
Chlorobenzene	0.64653	0.69784	0.61221	0.70424	0.66012	0.68339	AVG		0.66739		5.22240	15.00000	O
Ethylbenzene	0.35034	0.37281	0.32749	0.38237	0.35325	0.37731	AVG		0.36059		5.76173	15.00000	O
1,1,1,2-Tetrachloroethane	0.16342	0.19586	0.18316	0.21582	0.22066	0.23402	AVG		0.20216		12.9843	15.00000	O
m+p-Xylenes	0.44039	0.46825	0.41243	0.46811	0.43294	0.44697	AVG		0.44485		4.82728	15.00000	O
o-Xylene	0.43983	0.45083	0.41102	0.46991	0.44941	0.46786	AVG		0.44814		4.80534	15.00000	O
Styrene	0.70262	0.76399	0.70315	0.79999	0.76174	0.79385	AVG		0.75422		5.65276	15.00000	O
Bromoform	0.11818	0.14059	0.13674	0.15757	0.16378	0.17720	AVG		0.14901		14.2622(	15.00000	O
Isopropylbenzene	2.01356	1.99681	1.72424	1.99013	1.79464	1.85934	AVG		1.89645		6.41330	15.00000	O
Bromobenzene	0.51968	0.54763	0.47728	0.53499	0.50387	0.53008	AVG		0.51892		4.85065	15.00000	O
N-Propylbenzene	2.64206	2.63660	2.27588	2.63385	2.30898	2.33399	AVG		2.47189		7.37769	15.00000	O
1,1,2,2-Tetrachloroethane	0.58164	0.63956	0.57066	0.62023	0.60130	0.63435	AVG		0.60796		4.63732	15.00000	O
1,3,5-Trimethylbenzene	1.83284	1.83741	1.60671	1.84935	1.65749	1.69791	AVG		1.74695		6.06461	15.00000	O
2-Chlorotoluene	1.58363	1.60968	1.41129	1.57867	1.44554	1.49431	AVG		1.52052		5.38753	15.00000	O
1,2,3-Trichloropropane	0.52371	0.54129	0.49035	0.52815	0.50702	0.53347	AVG		0.52067		3.60332	15.00000	O
4-Chlorotoluene	1.64788	1.66102	1.49409	1.70157	1.52703	1.56999	AVG		1.60026		5.13582	15.00000	O
tert-Butylbenzene	1.73224	1.74962	1.56518	1.83767	1.68759	1.75988	AVG		1.72203		5.28794	15.00000	O
1,2,4-Trimethylbenzene	1.90548	1.98574	1.73862	1.97410	1.76156	1.79876	AVG		1.86071		5.84136	15.00000	O
P-Isopropyltoluene	1.99179	2.05330	1.79019	2.07275	1.82768	1.84882	AVG		1.93076		6.38555	15.00000	O
1,3-Dichlorobenzene	1.05740	1.11018	0.99032	1.09045	0.99896	1.03472	AVG		1.04700		4.61228	15.00000	O
1,4-Dichlorobenzene	1.04363	1.11247	1.00161	1.11784	1.02711	1.04922	AVG		1.05865		4.42322	15.00000	O
N-Butylbenzene	1.86545	1.95634	1.74509	2.03364	1.75559	1.78670	AVG		1.85713		6.32059	15.00000	O
sec-Butylbenzene	2.42834	2.42108	2.06628	2.42654	2.14510	2.17072	AVG		2.27634		7.32782	15.00000	O
1,2-Dichlorobenzene	1.06346	1.10292	0.97830	1.08477	0.99944	1.02240	AVG		1.04188		4.75180	15.00000	O
1,2-Dibromo-3-Chloropropane	5294	13521	28199	80060	172230	294080	QUA	0.00825	8.26473	-3.94624	0.99916	0.99000	O
Hexachlorobutadiene	0.35612	0.36101	0.30832	0.35667	0.31376	0.32132	AVG		0.33620		7.20501	15.00000	O
1,2,4-Trichlorobenzene	0.61149	0.67897	0.64305	0.71264	0.64650	0.68244	AVG		0.66251		5.40837	15.00000	O
Naphthalene	1.67795	1.80359	1.72848	1.85869	1.81959	1.79958	AVG		1.78132		3.70313	15.00000	O
1,2,3-Trichlorobenzene	0.62078	0.67233	0.61194	0.66417	0.62082	0.63911	AVG		0.63819		3.92353	15.00000	O
Dibromofluoromethane	0.55220	0.54709	0.56041	0.56286	0.55147	0.55065	AVG		0.55411		1.10660	15.00000	
1,2-Dichloroethane-D4	0.69728	0.70312	0.70873	0.68489	0.66861	0.68870	AVG		0.69189		2.08458	15.00000	
Toluene-D8	1.19373	1.21329	1.17407	1.20296	1.19983	1.18929	AVG		1.19553		1.11704	15.00000	
P-Bromofluorobenzene	0.50654	0.52131	0.50976	0.52850	0.52955	0.53992	AVG		0.52260		2.43182	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG228096-9
Level: LOW Operator: JSS
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-d.i\D051118.b\D8A05(21)D.m
Misc Info: WG228096,WG227999-4,SL3807-5

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	70.3	140.69*	80-120
	2	Chloromethane	50.0	56.4	112.89	80-120
	3	Vinyl chloride	50.0	56.0	111.99	80-120
	4	Bromomethane	50.0	49.8	99.69	80-120
	5	Chloroethane	50.0	55.5	111.05	80-120
	6	Trichlorofluoromet	50.0	51.4	102.80	80-120
	7	Diethyl Ether	50.0	49.9	99.88	80-120
	8	Tertiary-butyl alc	250	242	96.63	80-120
	9	1,1-Dichloroethene	50.0	49.1	98.17	80-120
	10	Carbon Disulfide	50.0	49.8	99.50	80-120
	11	Freon-113	50.0	48.6	97.15	80-120
	12	Iodomethane	50.0	54.1	108.26	80-120
	13	Acrolein	250	239	95.77	80-120
	14	Methylene Chloride	50.0	47.8	95.62	80-120
	15	Acetone	50.0	47.9	95.75	80-120
	16	Isobutyl Alcohol	1000	879	87.89	80-120
	17	trans-1,2-Dichloro	50.0	48.6	97.15	80-120
	18	Allyl Chloride	50.0	51.5	102.93	80-120
	19	Methyl tert-butyl	50.0	49.1	98.18	80-120
	20	Acetonitrile	500	467	93.50	80-120
	21	Di-isopropyl ether	50.0	52.0	104.07	80-120
	22	Chloroprene	50.0	51.1	102.12	80-120
	23	Propionitrile	500	475	94.99	80-120
	24	Methacrylonitrile	500	485	96.94	80-120
	25	1,1-Dichloroethane	50.0	52.7	105.45	80-120
	26	Acrylonitrile	250	237	94.91	80-120
	27	Ethyl tertiary-but	50.0	53.5	106.97	80-120
	28	Vinyl Acetate	50.0	55.3	110.64	80-120
	29	cis-1,2-Dichloroet	50.0	49.7	99.49	80-120
M	30	1,2-Dichloroethyle	100	98.3	98.32	80-120
	31	Methyl Methacrylat	50.0	47.7	95.39	80-120
	32	2,2-Dichloropropan	50.0	57.8	115.72	80-120
	33	Bromochloromethane	50.0	51.2	102.35	80-120
	34	Chloroform	50.0	49.3	98.58	80-120
	35	Carbon Tetrachlori	50.0	51.9	103.73	80-120
	36	Tetrahydrofuran	50.0	45.9	91.83	80-120
	38	1,1,1-Trichloroeth	50.0	50.0	100.01	80-120
	39	1,1-Dichloropropen	50.0	50.9	101.85	80-120
	40	2-Butanone	50.0	47.9	95.83	80-120
	41	Benzene	50.0	50.1	100.13	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	43	Cyclohexane	50.0	49.8	99.63	80-120
	44	Ethyl Methacrylate	50.0	44.8	89.64	80-120
	46	Tertiary-amyl meth	50.0	51.9	103.83	80-120
	47	1,2-Dichloroethane	50.0	47.8	95.53	80-120
	48	Trichloroethene	50.0	49.2	98.46	80-120
	50	Dibromomethane	50.0	49.5	98.92	80-120
	51	1,2-Dichloropropan	50.0	50.8	101.57	80-120
	52	Bromodichlorometha	50.0	51.6	103.18	80-120
	53	cis-1,3-dichloropr	50.0	51.4	102.79	80-120
	54	1,4-Dioxane	1000	836	83.56	80-120
	56	2-Chloroethylvinyl	50.0	49.7	99.40	80-120
	57	Toluene	50.0	49.7	99.42	80-120
	58	4-methyl-2-pentano	50.0	48.4	96.92	80-120
	59	Tetrachloroethene	50.0	50.0	100.12	80-120
	60	trans-1,3-Dichloro	50.0	54.9	109.80	80-120
	61	1,1,2-Trichloroeth	50.0	48.3	96.62	80-120
	62	Dibromochlorometha	50.0	51.8	103.71	80-120
	63	1,3-Dichloropropan	50.0	46.3	92.56	80-120
	64	1,2-Dibromoethane	50.0	48.8	97.71	80-120
	65	2-Hexanone	50.0	48.9	97.85	80-120
	67	Chlorobenzene	50.0	48.3	96.62	80-120
	152	1-Chlorohexane	50.0	0.00	0.00*	80-120
	68	Ethylbenzene	50.0	49.0	98.07	80-120
	69	1,1,1,2-Tetrachlor	50.0	50.4	100.76	80-120
M	70	Xylenes (total)	150	149	99.28	80-120
	71	m+p-Xylenes	100	98.9	98.87	80-120
	72	o-Xylene	50.0	50.0	100.10	80-120
	73	Styrene	50.0	51.2	102.34	80-120
	74	Bromoform	50.0	46.1	92.24	80-120
	75	Isopropylbenzene	50.0	53.7	107.46	80-120
	77	cis-1,4-Dichloro-2	50.0	47.4	94.92	80-120
	78	trans-1,4-Dichloro	50.0	46.1	92.30	80-120
	79	Bromobenzene	50.0	48.3	96.54	80-120
	80	N-Propylbenzene	50.0	49.8	99.62	80-120
	81	1,1,2,2-Tetrachlor	50.0	47.2	94.32	80-120
	82	1,3,5-Trimethylben	50.0	50.5	101.02	80-120
	83	2-Chlorotoluene	50.0	49.7	99.47	80-120
	84	1,2,3-Trichloropro	50.0	45.1	90.28	80-120
	85	4-Chlorotoluene	50.0	50.0	100.01	80-120
	86	tert-Butylbenzene	50.0	50.4	100.73	80-120
	87	Pentachloroethane	50.0	50.8	101.66	80-120
	88	1,2,4-Trimethylben	50.0	50.6	101.25	80-120
	89	P-Isopropyltoluene	50.0	51.7	103.39	80-120
	90	1,3-Dichlorobenzen	50.0	48.5	96.95	80-120
	92	1,4-Dichlorobenzen	50.0	47.0	94.04	80-120
	93	N-Butylbenzene	50.0	52.1	104.25	80-120
	94	sec-Butylbenzene	50.0	50.4	100.89	80-120
	95	1,2-Dichlorobenzen	50.0	48.6	97.14	80-120
	96	1,2-Dibromo-3-Chlo	50.0	47.1	94.24	80-120
	97	1,3,5-Trichloroben	50.0	50.1	100.21	80-120
	98	Hexachlorobutadien	50.0	47.3	94.67	80-120
	99	1,2,4-Trichloroben	50.0	49.8	99.60	80-120
	100	1,2,3-Trimethylben	50.0	50.7	101.32	80-120
	101	Naphthalene	50.0	43.6	87.15	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
102 1,2,3-Trichloroben	50.0	47.5	95.05	80-120
103 Methyl Acetate	50.0	43.4	86.80	80-120
104 Methylcyclohexane	50.0	51.4	102.89	80-120
M 153 Total Alkylbenzene	350	356	101.59	80-120

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 37 Dibromofluorometha	50.0	50.0	100.00	68-128
$ 45 1,2-Dichloroethane	50.0	49.1	98.15	67-135
$ 55 Toluene-D8	50.0	50.5	101.05	65-128
$ 76 P-Bromofluorobenze	50.0	50.6	101.19	56-133

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3886A.D
Report Date: 15-May-2018 14:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3886A.D
Lab Smp Id: WG227905-7,SL3807
Inj Date : 09-MAY-2018 13:37 MS Autotune Date: 10-APR-2016 11:00
Operator : JSS Inst ID: gcms-w.i
Smp Info : WG227905-7,SL3807
Misc Info : WG227905,WG227905-4,SL3807-1
Comment : SW846 5035
Method : \\target_server\gg\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 10-May-2018 08:26 jsampson Quant Type: ISTD
Cal Date : 09-MAY-2018 09:49 Cal File: W3880.D
Als bottle: 9 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: D2400TARGET-1

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/kg)	FINAL (ug/Kgdrywt)	REVIEW COD
1	Dichlorodifluoromethane	85	1.965	1.971	(0.244)	233348	45.7834	45.8	
2	Chloromethane	50	2.193	2.192	(0.272)	356875	46.2913	46.3	
3	Vinyl chloride	62	2.258	2.264	(0.280)	299439	47.0875	47.1	
4	Bromomethane	94	2.608	2.607	(0.323)	101378	44.2975	44.3	
5	Chloroethane	64	2.737	2.743	(0.339)	162165	52.6906	52.7	
6	Trichlorofluoromethane	101	2.887	2.885	(0.358)	351675	46.9878	47.0	
7	Diethyl Ether	59	3.223	3.229	(0.399)	219030	48.7938	48.8	
8	Tertiary-butyl alcohol	59	4.717	4.715	(0.585)	134895	248.663	249	
9	1,1-Dichloroethene	96	3.459	3.464	(0.429)	210794	46.4936	46.5	
10	Carbon Disulfide	76	3.509	3.507	(0.435)	765181	43.7578	43.8	
11	Freon-113	151	3.502	3.507	(0.434)	180760	48.0519	48.0	
12	Iodomethane	142	3.645	3.643	(0.452)	211347	48.8324	48.8	
13	Acrolein	56	3.888	3.886	(0.482)	206099	236.653	237	
14	Methylene Chloride	84	4.195	4.194	(0.520)	274586	45.2495	45.2	
15	Acetone	43	4.281	4.279	(0.531)	106827	47.9705	48.0	
16	Isobutyl Alcohol	43	8.348	8.353	(1.035)	276470	955.802	956	
17	trans-1,2-Dichloroethene	96	4.417	4.415	(0.547)	244323	48.1186	48.1	
18	Allyl Chloride	41	4.052	4.058	(0.502)	423292	49.6090	49.6	
19	Methyl tert-butyl ether	73	4.574	4.572	(0.567)	654888	48.8551	48.8(R)	
20	Acetonitrile	39	4.974	4.980	(0.616)	87305	476.873	477	
21	Di-isopropyl ether	45	5.160	5.166	(0.639)	904558	48.5618	48.6	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3886A.D
Report Date: 15-May-2018 14:30

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/kg)	FINAL (ug/Kgdrywt)	REVIEW COD
	22	Chloroprene	53	5.331	5.337	(0.661)	407727	48.3342	48.3	
	23	Propionitrile	54	7.976	7.975	(0.988)	475149	484.558	484	
	24	Methacrylonitrile	41	7.998	8.003	(0.991)	1898534	483.535	484	
	25	1,1-Dichloroethane	63	5.374	5.380	(0.666)	474877	51.0703	51.1	
	26	Acrylonitrile	52	5.489	5.487	(0.680)	459446	238.069	238	
	27	Ethyl tertiary-butyl ether	59	5.810	5.809	(0.720)	519268	51.4223	51.4	
	28	Vinyl Acetate	43	5.846	5.852	(0.654)	591484	50.5202	50.5	
	29	cis-1,2-Dichloroethene	96	6.361	6.367	(0.788)	268462	47.4194	47.4	
M	30	1,2-Dichloroethylene (total)	96				512785	95.5380	95.5	
	31	Methyl Methacrylate	41	12.101	12.099	(1.353)	265082	46.3253	46.3	
	32	2,2-Dichloropropane	77	6.568	6.567	(0.814)	226148	48.0002	48.0	
	33	Bromochloromethane	128	6.725	6.731	(0.833)	121573	44.8590	44.8	
	34	Chloroform	83	6.875	6.874	(0.852)	436420	48.0567	48.0	
	35	Carbon Tetrachloride	117	7.097	7.096	(0.794)	237232	48.9115	48.9	
	36	Tetrahydrofuran	42	7.183	7.167	(0.890)	110019	50.7154	50.7	
$	37	Dibromofluoromethane	113	7.204	7.203	(0.893)	332678	48.0978	48.1	
	38	1,1,1-Trichloroethane	97	7.233	7.231	(0.896)	336299	50.1745	50.2	
	39	1,1-Dichloropropene	75	7.447	7.453	(0.833)	342278	50.0772	50.1	
	40	2-Butanone	43	7.462	7.460	(0.925)	163172	49.1895	49.2	
	41	Benzene	78	7.883	7.882	(0.882)	1023149	48.9167	48.9	
*	42	Pentafluorobenzene	168	8.069	8.074	(1.000)	624123	50.0000		
	43	Cyclohexane	56	6.711	6.710	(0.832)	468509	49.4635	49.5	
	44	Ethyl Methacrylate	69	10.121	10.119	(1.132)	196574	45.3875	45.4	
$	45	1,2-Dichloroethane-D4	65	8.119	8.125	(1.006)	419286	48.5483	48.5	
	46	Tertiary-amyl methyl ether	73	8.119	8.118	(1.006)	520785	46.1362	46.1	
	47	1,2-Dichloroethane	62	8.234	8.231	(0.921)	363840	48.5481	48.5	
	48	Trichloroethene	95	8.863	8.861	(0.991)	256338	49.2735	49.3	
*	49	1,4-Difluorobenzene	114	8.941	8.947	(1.000)	1143915	50.0000		
	50	Dibromomethane	93	9.534	9.533	(1.066)	160968	49.4589	49.4	
	51	1,2-Dichloropropane	63	9.706	9.705	(1.086)	265208	48.4344	48.4	
	52	Bromodichloromethane	83	9.813	9.819	(1.098)	346700	52.3369	52.3	
	53	cis-1,3-dichloropropene	75	10.814	10.813	(1.209)	394792	50.3285	50.3	
	54	1,4-Dioxane	88	10.164	10.169	(1.137)	88125	976.896	977	
$	55	Toluene-D8	98	11.093	11.091	(1.241)	1381864	50.5222	50.5	
	57	Toluene	92	11.171	11.170	(1.249)	644413	49.7815	49.8	
	58	4-methyl-2-pentanone	43	11.786	11.792	(1.318)	332159	51.1334	51.1	
	59	Tetrachloroethene	164	11.736	11.735	(0.877)	195355	50.2210	50.2	
	60	trans-1,3-Dichloropropene	75	11.822	11.820	(1.322)	330328	47.1132	47.1	
	61	1,1,2-Trichloroethane	83	12.051	12.049	(1.348)	199714	48.3230	48.3	
	62	Dibromochloromethane	129	12.301	12.299	(0.919)	253191	52.1499	52.1	
	63	1,3-Dichloropropane	76	12.458	12.457	(0.931)	430861	46.5867	46.6	
	64	1,2-Dibromoethane	107	12.637	12.635	(1.413)	242690	49.7542	49.8	
	65	2-Hexanone	43	13.037	13.036	(0.974)	245172	51.9302	51.9	
*	66	Chlorobenzene-D5	117	13.387	13.386	(1.000)	1106082	50.0000		
	67	Chlorobenzene	112	13.409	13.407	(1.002)	728327	49.3322	49.3	
	152	1-Chlorohexane	91	13.466	13.407	(1.669)	1270125	179.012	179(R)	
	68	Ethylbenzene	106	13.466	13.465	(1.006)	399021	50.0219	50.0	
	69	1,1,1,2-Tetrachloroethane	131	13.509	13.507	(1.009)	228641	51.1265	51.1	
M	70	Xylenes (total)	106				1462125	148.215	148	
	71	m+p-Xylenes	106	13.673	13.672	(1.021)	975559	99.1348	99.1	
	72	o-Xylene	106	14.252	14.251	(1.065)	486566	49.0802	49.1	
	73	Styrene	104	14.324	14.329	(1.070)	833108	49.9326	49.9	
	74	Bromoform	173	14.338	14.344	(1.071)	168926	51.2468	51.2	
	75	Isopropylbenzene	105	14.674	14.673	(0.893)	1251983	51.0375	51.0	

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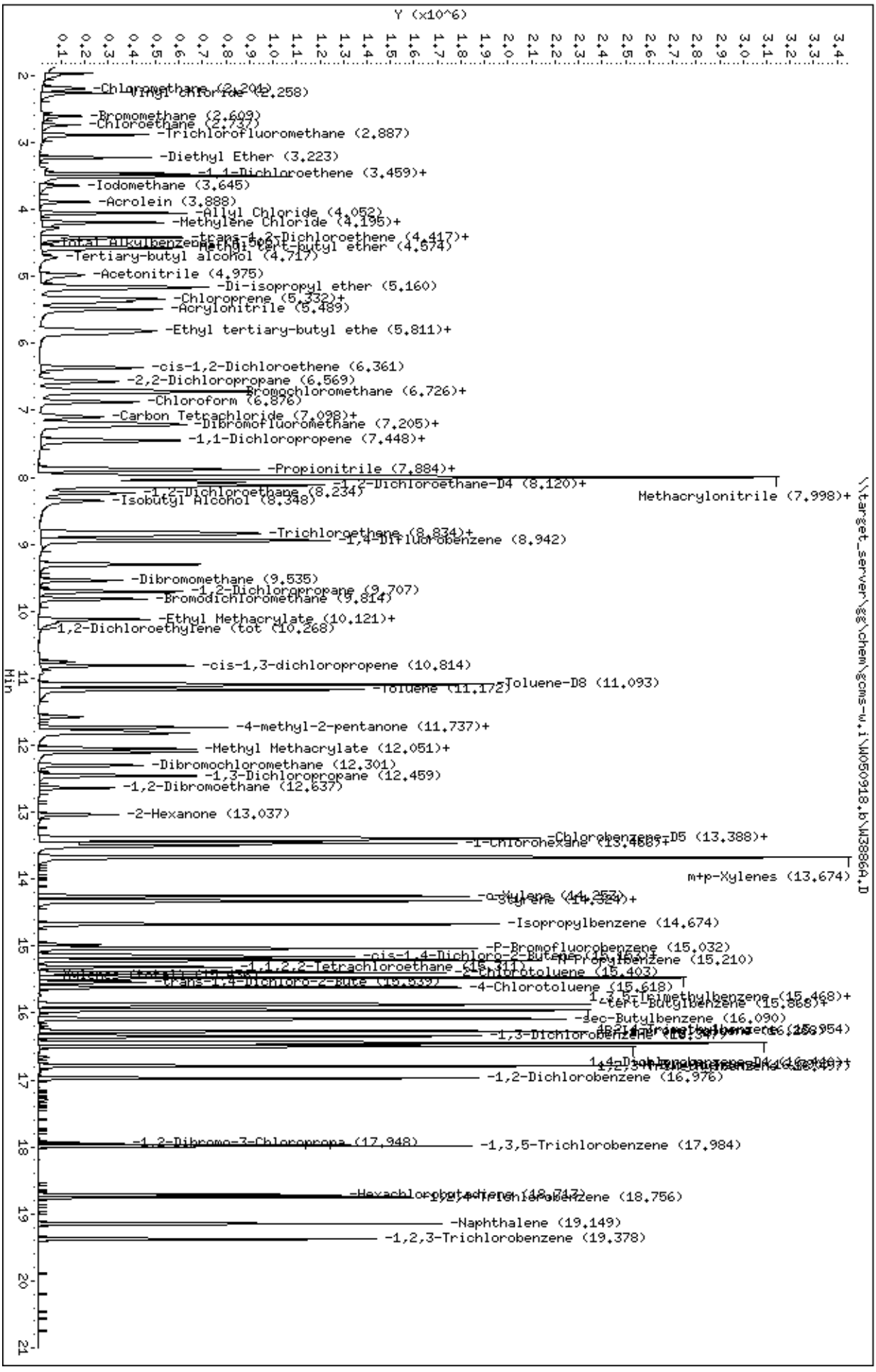
Report Date: 15-May-2018 14:30

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/kg)	FINAL (ug/Kgdrywt)	REVIEW COD
$	76	P-Bromofluorobenzene	95	15.031	15.030	(1.681)	600555	50.2299	50.2	
	77	cis-1,4-Dichloro-2-Butene	53	15.131	15.137	(0.920)	109755	45.0190	45.0	
	78	trans-1,4-Dichloro-2-Butene	53	15.539	15.537	(0.945)	91530	45.7166	45.7	
	79	Bromobenzene	156	15.160	15.159	(0.922)	320675	47.7747	47.8	
	80	N-Propylbenzene	91	15.210	15.209	(0.925)	1575521	49.2751	49.3	
	81	1,1,2,2-Tetrachloroethane	83	15.310	15.309	(0.931)	382785	48.6760	48.7	
	82	1,3,5-Trimethylbenzene	105	15.467	15.466	(0.941)	1101488	48.7451	48.7	
	83	2-Chlorotoluene	91	15.403	15.402	(0.937)	957545	48.6856	48.7	
	84	1,2,3-Trichloropropane	75	15.474	15.473	(0.941)	310505	46.1044	46.1	
	85	4-Chlorotoluene	91	15.617	15.616	(0.950)	996498	48.1413	48.1	
	86	tert-Butylbenzene	119	15.868	15.866	(0.965)	1086411	48.7738	48.8	
	87	Pentachloroethane	117	15.882	15.881	(0.966)	207456	45.0460	45.0	
	88	1,2,4-Trimethylbenzene	105	15.953	15.952	(0.970)	1157159	48.0781	48.1	
	89	P-Isopropyltoluene	119	16.268	16.274	(0.990)	1248706	49.9995	50.0	
	90	1,3-Dichlorobenzene	146	16.347	16.344	(0.994)	666480	49.2121	49.2	
*	91	1,4-Dichlorobenzene-D4	152	16.439	16.437	(1.000)	646751	50.0000		
	92	1,4-Dichlorobenzene	146	16.461	16.460	(1.001)	660643	48.2446	48.2	
	93	N-Butylbenzene	91	16.790	16.788	(1.021)	1238416	51.5533	51.6	
	94	sec-Butylbenzene	105	16.089	16.088	(0.979)	1454920	49.4122	49.4	
	95	1,2-Dichlorobenzene	146	16.976	16.974	(1.033)	645239	47.8780	47.9	
	96	1,2-Dibromo-3-Chloropropane	75	17.948	17.946	(1.092)	79613	48.2906	48.3	
	97	1,3,5-Trichlorobenzene	180	17.983	17.982	(2.229)	508714	50.6630	50.7	
	98	Hexachlorobutadiene	225	18.720	18.718	(1.139)	211416	48.6155	48.6	
	99	1,2,4-Trichlorobenzene	180	18.755	18.754	(1.141)	433521	50.5880	50.6	
	100	1,2,3-Trimethylbenzene	105	16.497	16.495	(2.044)	1251453	49.0217	49.0	
	101	Naphthalene	128	19.149	19.147	(1.165)	1125773	48.8588	48.8	
	102	1,2,3-Trichlorobenzene	180	19.377	19.376	(1.179)	401231	48.6044	48.6	
	103	Methyl Acetate	43	4.445	4.444	(0.551)	234194	45.6181	45.6	
	104	Methylcyclohexane	83	8.827	8.833	(1.094)	470350	49.8139	49.8	
M	153	Total Alkylbenzenes	100				8862621	345.837	346	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.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Instrument: gcms-w.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-w.i\W050918.b\W3886A.D
Y (x10^6)
Min
Vinyl chloride (2.258)
Bromomethane (2.609)
Chloroethane (2.737)
Trichlorofluoromethane (2.887)
Diethyl Ether (3.223)
1,1-Dichloroethene (3.459)+
Iodomethane (3.645)
Acrolein (3.888)
Allyl Chloride (4.052)
Methylene Chloride (4.195)+
trans-1,2-Dichloroethene (4.417)+
Total Alkylbenzenes
Methyl tert-butyl ether (4.574)
Tertiary-butyl alcohol (4.717)
Acetonitrile (4.975)
Di-isopropyl ether (5.160)
Chloroprene (5.332)+
Acrylonitrile (5.489)
Ethyl tertiary-butyl ethe (5.811)+
cis-1,2-Dichloroethene (6.361)
2,2-Dichloropropane (6.569)
Bromochloromethane (6.726)+
Chloroform (6.876)
Carbon Tetrachloride (7.098)+
Dibromofluoromethane (7.205)+
1,1-Dichloropropene (7.448)+
Propionitrile (7.884)+
1,2-Dichloroethane-D4 (8.120)+
Methacrylonitrile (7.998)+
1,2-Dichloroethane (8.234)
Isobutyl Alcohol (8.348)
Trichloroethene (8.834)+
1,4-Difluorobenzene (8.942)
Dibromomethane (9.535)
1,2-Dichloropropane (9.707)
Bromodichloromethane (9.814)
Ethyl Methacrylate (10.121)+
1,2-Dichloroethylene (tot (10.268)
cis-1,3-dichloropropene (10.814)
Toluene-D8 (11.093)
Toluene (11.172)
4-methyl-2-pentanone (11.737)+
Methyl Methacrylate (12.051)+
Dibromochloromethane (12.301)
1,3-Dichloropropane (12.459)
1,2-Dibromoethane (12.637)
2-Hexanone (13.037)
Chlorobenzene-D5 (13.388)+
1-Chlorohexane (13.468)+
m+p-Xylenes (13.674)
o-Xylene (14.257)
Styrene (14.324)+
Isopropylbenzene (14.674)
P-Bromofluorobenzene (15.032)
n-Propylbenzene (15.210)
1,1,2,2-Tetrachloroethane (15.311)
2-Chlorotoluene (15.403)
trans-1,4-Dichloro-2-Bute (15.539)
4-Chlorotoluene (15.618)
1,3,5-Trimethylbenzene (15.468)+
tert-Butylbenzene (15.868)+
sec-Butylbenzene (16.090)
1,3-Dichlorobenzene (16.254)
1,4-Dichlorobenzene-D4 (16.340)+
1,2,3-Trimethylbenzene (16.497)
1,2-Dichlorobenzene (16.976)
1,2-Dibromo-3-Chloropropa (17.948)
1,3,5-Trichlorobenzene (17.984)
Hexachlorobutadiene (18.747)
1,2,4-Trichlorobenzene (18.756)
Naphthalene (19.149)
1,2,3-Trichlorobenzene (19.378)

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3878.D
Report Date: 15-May-2018 16:13

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3878.D
Lab Smp Id: WG227905-4
Inj Date : 09-MAY-2018 08:35
Operator : JSS   Inst ID: gcms-w.i
Smp Info : WG227905-4
Misc Info :
Comment   : SW846 5035
Method   : \\target_server\gg\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 15-May-2018 15:32 hgould   Quant Type: ISTD
Cal Date : 09-MAY-2018 08:35   Cal File: W3878.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 * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	AMOUNTS ON-COL (ug/kg)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.970	1.971	(0.244)	243479	50.0000	(a)	
2	Chloromethane	50	2.192	2.192	(0.271)	349554	50.0000	(a)	
3	Vinyl chloride	62	2.263	2.264	(0.280)	302611	50.0000	(a)	
4	Bromomethane	94	2.606	2.607	(0.323)	97810	50.0000	(a)	
5	Chloroethane	64	2.742	2.743	(0.340)	150314	50.0000	(a)	
6	Trichlorofluoromethane	101	2.885	2.885	(0.357)	350015	50.0000	(a)	
7	Diethyl Ether	59	3.228	3.229	(0.400)	214773	50.0000	(a)	
8	Tertiary-butyl alcohol	59	4.715	4.715	(0.584)	97114	250.000	(a)	
9	1,1-Dichloroethene	96	3.464	3.464	(0.429)	212463	50.0000	(a)	
10	Carbon Disulfide	76	3.507	3.507	(0.434)	808277	50.0000	(a)	
11	Freon-113	151	3.507	3.507	(0.434)	185751	50.0000	(a)	
12	Iodomethane	142	3.643	3.643	(0.451)	203043	50.0000	(a)	
13	Acrolein	56	3.886	3.886	(0.481)	200675	250.000	(a)	
14	Methylene Chloride	84	4.193	4.194	(0.519)	275870	50.0000	(a)	
15	Acetone	43	4.279	4.279	(0.530)	642475	250.000	(a)	
16	Isobutyl Alcohol	43	8.353	8.353	(1.035)	244317	1000.00	(a)	
17	trans-1,2-Dichloroethene	96	4.415	4.415	(0.547)	243294	50.0000	(a)	
18	Allyl Chloride	41	4.057	4.058	(0.503)	425364	50.0000	(a)	
19	Methyl tert-butyl ether	73	4.572	4.572	(0.566)	599398	50.0000	(a)	
20	Acetonitrile	39	4.979	4.980	(0.617)	82212	500.000	(a)	
21	Di-isopropyl ether	45	5.165	5.166	(0.640)	892697	50.0000	(a)	
22	Chloroprene	53	5.337	5.337	(0.661)	401917	50.0000	(a)	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3878.D
Report Date: 15-May-2018 16:13

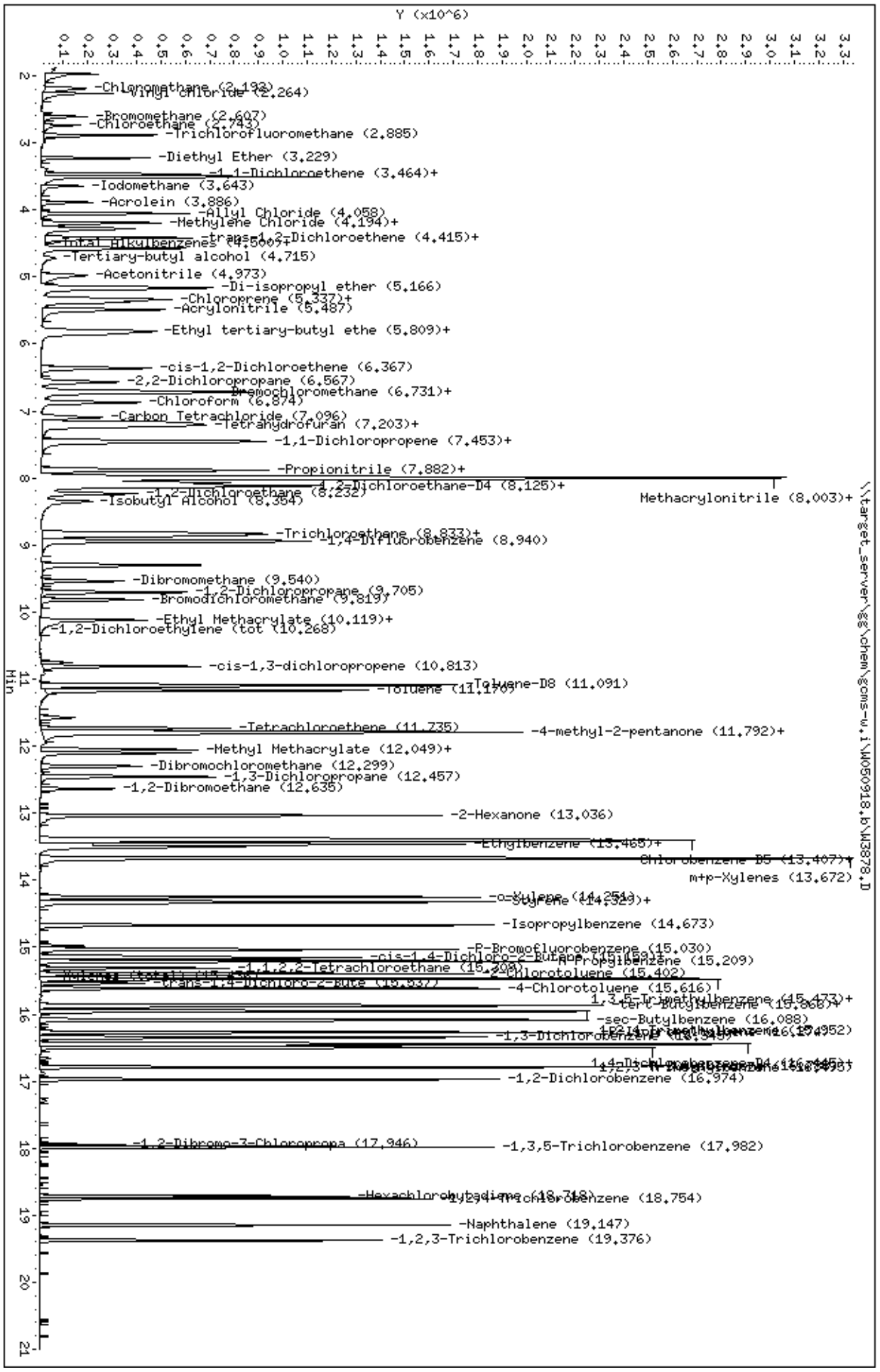
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	AMOUNTS ON-COL (ug/kg)	REVIEW CODE
	23	Propionitrile	54	7.974	7.975	(0.988)	468642	500.000	(a)	
	24	Methacrylonitrile	41	8.003	8.003	(0.991)	1882048	500.000	(a)	
	25	1,1-Dichloroethane	63	5.380	5.380	(0.666)	434890	50.0000	(a)	
	26	Acrylonitrile	52	5.487	5.487	(0.680)	461536	250.000	(a)	
	27	Ethyl tertiary-butyl ether	59	5.809	5.809	(0.719)	456730	50.0000	(a)	
	28	Vinyl Acetate	43	5.851	5.852	(0.654)	473748	50.0000	(a)	
	29	cis-1,2-Dichloroethene	96	6.366	6.367	(0.788)	262627	50.0000	(a)	
M	30	1,2-Dichloroethylene (total)	96				505921	100.000	(a)	
	31	Methyl Methacrylate	41	12.099	12.099	(1.352)	249974	50.0000	(a)	
	32	2,2-Dichloropropane	77	6.566	6.567	(0.813)	195369	50.0000	(a)	
	33	Bromochloromethane	128	6.731	6.731	(0.834)	123418	50.0000	(a)	
	34	Chloroform	83	6.874	6.874	(0.851)	422160	50.0000	(a)	
	35	Carbon Tetrachloride	117	7.095	7.096	(0.793)	215011	50.0000	(a)	
	36	Tetrahydrofuran	42	7.167	7.167	(0.888)	505805	250.000	(a)	
$	37	Dibromofluoromethane	113	7.202	7.203	(0.892)	313839	50.0000	(a)	
	38	1,1,1-Trichloroethane	97	7.231	7.231	(0.896)	323031	50.0000	(a)	
	39	1,1-Dichloropropene	75	7.453	7.453	(0.833)	327066	50.0000	(a)	
	40	2-Butanone	43	7.460	7.460	(0.924)	819653	250.000	(a)	
	41	Benzene	78	7.881	7.882	(0.881)	1037237	50.0000	(a)	
*	42	Pentafluorobenzene	168	8.074	8.074	(1.000)	557582	50.0000		
	43	Cyclohexane	56	6.709	6.710	(0.831)	450526	50.0000	(a)	
	44	Ethyl Methacrylate	69	10.119	10.119	(1.131)	191372	50.0000	(a)	
$	45	1,2-Dichloroethane-D4	65	8.124	8.125	(1.006)	381882	50.0000	(a)	
	46	Tertiary-amyl methyl ether	73	8.117	8.118	(1.005)	471003	50.0000	(a)	
	47	1,2-Dichloroethane	62	8.232	8.231	(0.920)	358072	50.0000	(a)	
	48	Trichloroethene	95	8.861	8.861	(0.990)	252496	50.0000	(a)	
*	49	1,4-Difluorobenzene	114	8.946	8.947	(1.000)	1039313	50.0000		
	50	Dibromomethane	93	9.533	9.533	(1.066)	156717	50.0000	(a)	
	51	1,2-Dichloropropane	63	9.704	9.705	(1.085)	260392	50.0000	(a)	
	52	Bromodichloromethane	83	9.819	9.819	(1.097)	316386	50.0000	(a)	
	53	cis-1,3-dichloropropene	75	10.812	10.813	(1.209)	393700	50.0000	(a)	
	54	1,4-Dioxane	88	10.169	10.169	(1.137)	87485	1000.00	(a)	
$	55	Toluene-D8	98	11.091	11.091	(1.240)	1250247	50.0000	(a)	
	57	Toluene	92	11.170	11.170	(1.248)	623802	50.0000	(a)	
	58	4-methyl-2-pentanone	43	11.791	11.792	(1.318)	1548647	250.000	(a)	
	59	Tetrachloroethene	164	11.734	11.735	(0.877)	197341	50.0000	(a)	
	60	trans-1,3-Dichloropropene	75	11.820	11.820	(1.321)	303944	50.0000	(a)	
	61	1,1,2-Trichloroethane	83	12.049	12.049	(1.347)	195611	50.0000	(a)	
	62	Dibromochloromethane	129	12.299	12.299	(0.919)	238629	50.0000	(a)	
	63	1,3-Dichloropropane	76	12.456	12.457	(0.931)	445908	50.0000	(a)	
	64	1,2-Dibromoethane	107	12.635	12.635	(1.412)	232299	50.0000	(a)	
	65	2-Hexanone	43	13.035	13.036	(0.974)	1173264	250.000	(a)	
*	66	Chlorobenzene-D5	117	13.385	13.386	(1.000)	1034004	50.0000		
	67	Chlorobenzene	112	13.407	13.407	(1.002)	728188	50.0000	(a)	
	152	1-Chlorohexane	91	13.407	13.407	(1.660)	354919	50.0000	(a)	
	68	Ethylbenzene	106	13.464	13.465	(1.006)	395376	50.0000	(a)	
	69	1,1,1,2-Tetrachloroethane	131	13.507	13.507	(1.009)	223156	50.0000	(a)	
M	70	Xylenes (total)	106				1453940	150.000	(a)	
	71	m+p-Xylenes	106	13.671	13.672	(1.021)	968050	100.000	(a)	
	72	o-Xylene	106	14.250	14.251	(1.065)	485890	50.0000	(a)	
	73	Styrene	104	14.329	14.329	(1.070)	827192	50.0000	(a)	
	74	Bromoform	173	14.343	14.344	(1.072)	162929	50.0000	(a)	
	75	Isopropylbenzene	105	14.672	14.673	(0.893)	1174275	50.0000	(a)	
$	76	P-Bromofluorobenzene	95	15.029	15.030	(1.680)	549274	50.0000	(a)	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3878.D
Report Date: 15-May-2018 16:13

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
	77	cis-1,4-Dichloro-2-Butene	53	15.137	15.137	(0.921)	104687	50.0000	(a)	
	78	trans-1,4-Dichloro-2-Butene	53	15.537	15.537	(0.945)	86041	50.0000	(a)	
	79	Bromobenzene	156	15.158	15.159	(0.922)	315670	50.0000	(a)	
	80	N-Propylbenzene	91	15.208	15.209	(0.925)	1554096	50.0000	(a)	
	81	1,1,2,2-Tetrachloroethane	83	15.308	15.309	(0.931)	365965	50.0000	(a)	
	82	1,3,5-Trimethylbenzene	105	15.465	15.466	(0.941)	1091207	50.0000	(a)	
	83	2-Chlorotoluene	91	15.401	15.402	(0.937)	931490	50.0000	(a)	
	84	1,2,3-Trichloropropane	75	15.473	15.473	(0.941)	311635	50.0000	(a)	
	85	4-Chlorotoluene	91	15.616	15.616	(0.950)	1004008	50.0000	(a)	
	86	tert-Butylbenzene	119	15.866	15.866	(0.965)	1084315	50.0000	(a)	
	87	Pentachloroethane	117	15.880	15.881	(0.966)	207682	50.0000	(a)	
	88	1,2,4-Trimethylbenzene	105	15.952	15.952	(0.970)	1164816	50.0000	(a)	
	89	P-Isopropyltoluene	119	16.273	16.274	(0.990)	1223022	50.0000	(a)	
	90	1,3-Dichlorobenzene	146	16.345	16.344	(0.994)	643418	50.0000	(a)	
*	91	1,4-Dichlorobenzene-D4	152	16.438	16.437	(1.000)	590048	50.0000		
	92	1,4-Dichlorobenzene	146	16.459	16.460	(1.001)	659582	50.0000	(a)	
	93	N-Butylbenzene	91	16.788	16.788	(1.021)	1199947	50.0000	(a)	
	94	sec-Butylbenzene	105	16.087	16.088	(0.979)	1431777	50.0000	(a)	
	95	1,2-Dichlorobenzene	146	16.974	16.974	(1.033)	640069	50.0000	(a)	
	96	1,2-Dibromo-3-Chloropropane	75	17.946	17.946	(1.092)	80060	50.0000	(a)	
	97	1,3,5-Trichlorobenzene	180	17.982	17.982	(2.227)	508290	50.0000	(a)	
	98	Hexachlorobutadiene	225	18.718	18.718	(1.139)	210453	50.0000	(a)	
	99	1,2,4-Trichlorobenzene	180	18.754	18.754	(1.141)	420493	50.0000	(a)	
	100	1,2,3-Trimethylbenzene	105	16.495	16.495	(2.043)	1252417	50.0000	(a)	
	101	Naphthalene	128	19.147	19.147	(1.165)	1096717	50.0000	(a)	
	102	1,2,3-Trichlorobenzene	180	19.375	19.376	(1.179)	391891	50.0000	(a)	
	103	Methyl Acetate	43	4.443	4.444	(0.550)	254996	50.0000	(a)	
	104	Methylcyclohexane	83	8.832	8.833	(1.094)	465815	50.0000	(a)	
M	153	Total Alkylbenzenes	100				8749180	50.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



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Sample Info: WG227905-4
Column phase: RTX-VMS

Instrument: gcms-w.i
Operator: JSS
Column diameter: 0.18

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Report Date: 15-May-2018 16:13

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3879.D
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Inj Date : 09-MAY-2018 09:12
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Meth Date : 15-May-2018 15:32 hgould   Quant Type: ISTD
Cal Date : 09-MAY-2018 09:12   Cal File: W3879.D
Als bottle: 2   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	AMOUNTS ON-COL (ug/kg)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.965	1.971	(0.244)	88842	20.0000	18.9	
2	Chloromethane	50	2.186	2.192	(0.271)	130593	20.0000	19.1	
3	Vinyl chloride	62	2.258	2.264	(0.280)	108175	20.0000	18.7	
4	Bromomethane	94	2.608	2.607	(0.323)	38060	20.0000	19.5	
5	Chloroethane	64	2.744	2.743	(0.340)	56878	20.0000	19.3	
6	Trichlorofluoromethane	101	2.887	2.885	(0.358)	127267	20.0000	18.9	
7	Diethyl Ether	59	3.223	3.229	(0.399)	78278	20.0000	18.9	
8	Tertiary-butyl alcohol	59	4.709	4.715	(0.584)	38951	100.000	99.2	
9	1,1-Dichloroethene	96	3.458	3.464	(0.429)	73474	20.0000	18.4	
10	Carbon Disulfide	76	3.509	3.507	(0.435)	282860	20.0000	18.5	
11	Freon-113	151	3.501	3.507	(0.434)	64577	20.0000	18.4	
12	Iodomethane	142	3.644	3.643	(0.452)	56753	20.0000	16.3	
13	Acrolein	56	3.887	3.886	(0.482)	73868	100.000	94.9	
14	Methylene Chloride	84	4.195	4.194	(0.520)	102881	20.0000	19.1(a)	
15	Acetone	43	4.280	4.279	(0.531)	202833	100.000	87.3	
16	Isobutyl Alcohol	43	8.348	8.353	(1.035)	72072	500.000	367	
17	trans-1,2-Dichloroethene	96	4.409	4.415	(0.546)	83953	20.0000	18.3	
18	Allyl Chloride	41	4.052	4.058	(0.502)	145521	20.0000	18.2	
19	Methyl tert-butyl ether	73	4.574	4.572	(0.567)	224873	20.0000	19.2	
20	Acetonitrile	39	4.974	4.980	(0.616)	30591	200.000	191	
21	Di-isopropyl ether	45	5.167	5.166	(0.640)	319404	20.0000	18.7	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3879.D
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	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	AMOUNTS ON-COL (ug/kg)	REVIEW CODE
	22 Chloroprene	53	5.331	5.337	(0.661)	146001	20.0000	18.8	
	23 Propionitrile	54	7.969	7.975	(0.988)	176013	200.000	192	
	24 Methacrylonitrile	41	7.997	8.003	(0.991)	710628	200.000	192	
	25 1,1-Dichloroethane	63	5.374	5.380	(0.666)	153344	20.0000	18.6	
	26 Acrylonitrile	52	5.488	5.487	(0.680)	168824	100.000	94.6	
	27 Ethyl tertiary-butyl ether	59	5.810	5.809	(0.720)	175019	20.0000	19.4	
	28 Vinyl Acetate	43	5.853	5.852	(0.655)	171311	20.0000	18.5	
	29 cis-1,2-Dichloroethene	96	6.361	6.367	(0.788)	94698	20.0000	18.8	
M	30 1,2-Dichloroethylene (total)	96				178651	40.0000	37.1	
	31 Methyl Methacrylate	41	12.100	12.099	(1.353)	83082	20.0000	17.7	
	32 2,2-Dichloropropane	77	6.568	6.567	(0.814)	64118	20.0000	17.8	
	33 Bromochloromethane	128	6.725	6.731	(0.833)	44371	20.0000	18.7	
	34 Chloroform	83	6.875	6.874	(0.852)	152255	20.0000	18.8	
	35 Carbon Tetrachloride	117	7.097	7.096	(0.794)	65296	20.0000	16.8	
	36 Tetrahydrofuran	42	7.175	7.167	(0.889)	185487	100.000	94.7	
$	37 Dibromofluoromethane	113	7.197	7.203	(0.892)	318300	50.0000	49.9	
	38 1,1,1-Trichloroethane	97	7.225	7.231	(0.895)	104445	20.0000	17.7	
	39 1,1-Dichloropropene	75	7.447	7.453	(0.833)	112720	20.0000	18.0	
	40 2-Butanone	43	7.461	7.460	(0.925)	292606	100.000	93.4	
	41 Benzene	78	7.883	7.882	(0.882)	354647	20.0000	18.0	
*	42 Pentafluorobenzene	168	8.069	8.074	(1.000)	567981	50.0000		
	43 Cyclohexane	56	6.704	6.710	(0.831)	147989	20.0000	17.8	
	44 Ethyl Methacrylate	69	10.120	10.119	(1.132)	64318	20.0000	17.8	
$	45 1,2-Dichloroethane-D4	65	8.119	8.125	(1.006)	402544	50.0000	50.8	
	46 Tertiary-amyl methyl ether	73	8.119	8.118	(1.006)	164041	20.0000	18.4	
	47 1,2-Dichloroethane	62	8.233	8.231	(0.921)	128450	20.0000	18.4	
	48 Trichloroethene	95	8.855	8.861	(0.990)	88282	20.0000	18.2	
*	49 1,4-Difluorobenzene	114	8.941	8.947	(1.000)	1089150	50.0000		
	50 Dibromomethane	93	9.534	9.533	(1.066)	57016	20.0000	18.6	
	51 1,2-Dichloropropane	63	9.706	9.705	(1.086)	92950	20.0000	18.4	
	52 Bromodichloromethane	83	9.813	9.819	(1.098)	115446	20.0000	18.6	
	53 cis-1,3-dichloropropene	75	10.814	10.813	(1.209)	131765	20.0000	17.8	
	54 1,4-Dioxane	88	10.163	10.169	(1.137)	32823	400.000	378	
$	55 Toluene-D8	98	11.093	11.091	(1.241)	1278738	50.0000	49.4	
	57 Toluene	92	11.171	11.170	(1.249)	219455	20.0000	18.2	
	58 4-methyl-2-pentanone	43	11.786	11.792	(1.318)	584008	100.000	94.7	
	59 Tetrachloroethene	164	11.736	11.735	(0.877)	66832	20.0000	18.3	
	60 trans-1,3-Dichloropropene	75	11.822	11.820	(1.322)	95412	20.0000	17.1	
	61 1,1,2-Trichloroethane	83	12.050	12.049	(1.348)	72624	20.0000	18.8	
	62 Dibromochloromethane	129	12.301	12.299	(0.919)	83024	20.0000	18.5	
	63 1,3-Dichloropropane	76	12.451	12.457	(0.930)	161541	20.0000	18.9	
	64 1,2-Dibromoethane	107	12.636	12.635	(1.413)	84274	20.0000	18.6	
	65 2-Hexanone	43	13.037	13.036	(0.974)	433105	100.000	95.6	
*	66 Chlorobenzene-D5	117	13.387	13.386	(1.000)	1041726	50.0000		
	67 Chlorobenzene	112	13.408	13.407	(1.002)	255103	20.0000	18.6	
	152 1-Chlorohexane	91	13.408	13.407	(1.662)	114072	20.0000	17.6	
	68 Ethylbenzene	106	13.466	13.465	(1.006)	136460	20.0000	18.4	
	69 1,1,1,2-Tetrachloroethane	131	13.509	13.507	(1.009)	76323	20.0000	18.4	
M	70 Xylenes (total)	106				514980	60.0000	56.1	
	71 m+p-Xylenes	106	13.673	13.672	(1.021)	343712	40.0000	37.5	
	72 o-Xylene	106	14.252	14.251	(1.065)	171268	20.0000	18.7	
	73 Styrene	104	14.323	14.329	(1.070)	292996	20.0000	18.7	
	74 Bromoform	173	14.338	14.344	(1.071)	56978	20.0000	18.6	
	75 Isopropylbenzene	105	14.674	14.673	(0.893)	408042	20.0000	18.6	

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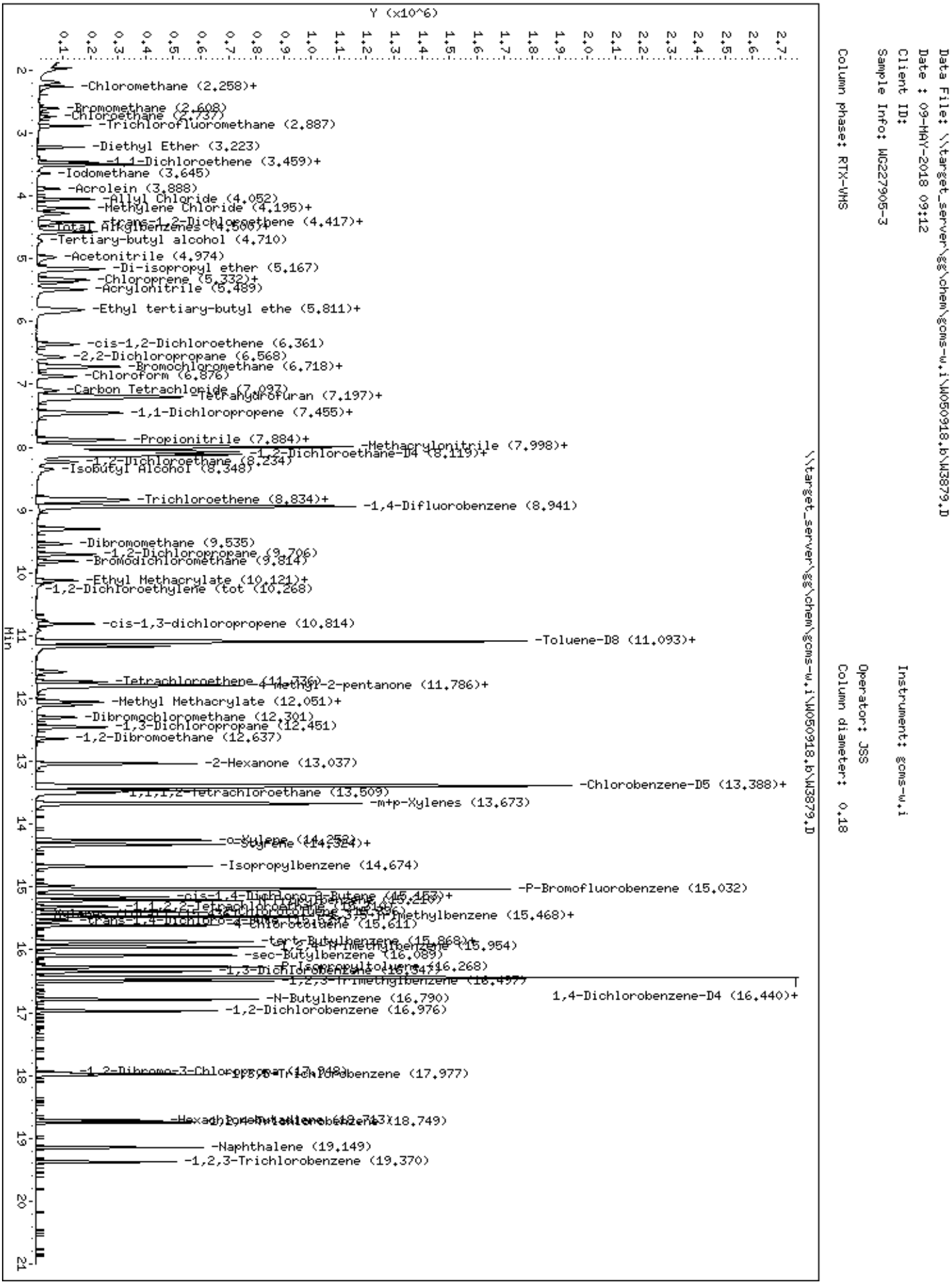
Report Date: 15-May-2018 16:13

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
$	76	P-Bromofluorobenzene	95	15.031	15.030	(1.681)	555203	50.0000	49.1	
	77	cis-1,4-Dichloro-2-Butene	53	15.131	15.137	(0.920)	36353	20.0000	18.6	
	78	trans-1,4-Dichloro-2-Butene	53	15.539	15.537	(0.945)	28617	20.0000	18.1	
	79	Bromobenzene	156	15.153	15.159	(0.922)	112949	20.0000	18.8	
	80	N-Propylbenzene	91	15.210	15.209	(0.925)	538590	20.0000	18.5	
	81	1,1,2,2-Tetrachloroethane	83	15.310	15.309	(0.931)	135047	20.0000	19.2	
	82	1,3,5-Trimethylbenzene	105	15.467	15.466	(0.941)	380230	20.0000	18.6	
	83	2-Chlorotoluene	91	15.396	15.402	(0.937)	333983	20.0000	18.9	
	84	1,2,3-Trichloropropane	75	15.474	15.473	(0.941)	116042	20.0000	19.2	
	85	4-Chlorotoluene	91	15.610	15.616	(0.950)	353578	20.0000	18.7	
	86	tert-Butylbenzene	119	15.867	15.866	(0.965)	370401	20.0000	18.4	
	87	Pentachloroethane	117	15.882	15.881	(0.966)	68505	20.0000	18.0	
	88	1,2,4-Trimethylbenzene	105	15.953	15.952	(0.970)	411446	20.0000	18.7	
	89	P-Isopropyltoluene	119	16.268	16.274	(0.990)	423651	20.0000	18.5	
	90	1,3-Dichlorobenzene	146	16.346	16.344	(0.994)	234359	20.0000	19.0	
*	91	1,4-Dichlorobenzene-D4	152	16.439	16.437	(1.000)	591627	50.0000		
	92	1,4-Dichlorobenzene	146	16.461	16.460	(1.001)	237031	20.0000	18.9	
	93	N-Butylbenzene	91	16.789	16.788	(1.021)	412977	20.0000	18.5	
	94	sec-Butylbenzene	105	16.089	16.088	(0.979)	488986	20.0000	18.4	
	95	1,2-Dichlorobenzene	146	16.975	16.974	(1.033)	231515	20.0000	19.0	
	96	1,2-Dibromo-3-Chloropropane	75	17.947	17.946	(1.092)	28199	20.0000	18.7	
	97	1,3,5-Trichlorobenzene	180	17.983	17.982	(2.229)	182947	20.0000	18.8	
	98	Hexachlorobutadiene	225	18.712	18.718	(1.138)	72963	20.0000	18.5	
	99	1,2,4-Trichlorobenzene	180	18.755	18.754	(1.141)	152178	20.0000	19.0	
	100	1,2,3-Trimethylbenzene	105	16.496	16.495	(2.044)	447536	20.0000	18.7	
	101	Naphthalene	128	19.148	19.147	(1.165)	409047	20.0000	19.3	
	102	1,2,3-Trichlorobenzene	180	19.377	19.376	(1.179)	144816	20.0000	19.2	
	103	Methyl Acetate	43	4.445	4.444	(0.551)	80639	20.0000	17.5	
	104	Methylcyclohexane	83	8.827	8.833	(1.094)	167635	20.0000	18.8	
M	153	Total Alkylbenzenes	100				3026281	20.0000	130	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3879.D
Date : 09-MAY-2018 09:12
Client ID:
Sample Info: WG227905-3
Column phase: RTX-VMS
Instrument: gcms-w.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-w.i\W050918.b\W3879.D
Y (x10^6)
Min
-Chloromethane (2.258)+
-Bromomethane (2.608)
-Chloroethane (2.737)
-Trichlorofluoromethane (2.887)
-Diethyl Ether (3.223)
-1,1-Dichloroethene (3.459)+
-Iodomethane (3.645)
-Acrolein (3.888)
-Allyl Chloride (4.052)
-Methylene Chloride (4.195)+
-trans-1,2-Dichloroethene (4.417)+
-Total Alkylbenzenes (4.500)+
-Tertiary-butyl alcohol (4.710)
-Acetonitrile (4.974)
-Di-isopropyl ether (5.167)
-Chloroprene (5.332)+
-Acrylonitrile (5.489)
-Ethyl tertiary-butyl ethe (5.811)+
-cis-1,2-Dichloroethene (6.361)
-2,2-Dichloropropane (6.568)
-Bromochloromethane (6.718)+
-Chloroform (6.876)
-Carbon Tetrachloride (7.097)
-Tetrahydrofuran (7.197)+
-1,1-Dichloropropene (7.455)+
-Propionitrile (7.884)+
-Methacrylonitrile (7.998)+
-1,2-Dichloroethane-D4 (8.119)+
-1,2-Dichloroethane (8.234)
-Isobutyl Alcohol (8.348)
-Trichloroethene (8.834)+
-1,4-Difluorobenzene (8.941)
-Dibromomethane (9.535)
-1,2-Dichloropropane (9.706)
-Bromodichloromethane (9.814)
-Ethyl Methacrylate (10.121)+
-1,2-Dichloroethylene (tot (10.268)
-cis-1,3-dichloropropene (10.814)
-Toluene-D8 (11.093)+
-Tetrachloroethene (11.336)
-4-methyl-2-pentanone (11.786)+
-Methyl Methacrylate (12.051)+
-Dibromochloromethane (12.301)
-1,3-Dichloropropane (12.451)
-1,2-Dibromoethane (12.637)
-2-Hexanone (13.037)
-Chlorobenzene-D5 (13.388)+
-1,1,1,2-Tetrachloroethane (13.509)
-m+p-Xylenes (13.673)
-o-Xylene (14.252)
-Styrene (14.324)+
-Isopropylbenzene (14.674)
-P-Bromofluorobenzene (15.032)
-cis-1,4-Dichloro-2-Butene (15.153)+
-1,1,2,2-Tetrachloroethane (15.210)
-Xylenes (15.236)
-trans-1,4-Dichloro-2-Butene (15.375)
-1,3,5-Trimethylbenzene (15.468)+
-4-Chlorotoluene (15.611)
-tert-Butylbenzene (15.868)+
-1,2,4-Trimethylbenzene (15.954)
-sec-Butylbenzene (16.089)
-P-Isopropyltoluene (16.268)
-1,3-Dichlorobenzene (16.347)
-1,2,3-Trimethylbenzene (16.497)
1,4-Dichlorobenzene-D4 (16.440)+
-N-Butylbenzene (16.790)
-1,2-Dichlorobenzene (16.976)
-1,2-Dibromo-3-Chloropropane (17.948)
-1,2,5-Trichlorobenzene (17.977)
-Hexachloro-1,3-butadiene (18.713)
-1,2,4-Trichlorobenzene (18.749)
-Naphthalene (19.149)
-1,2,3-Trichlorobenzene (19.370)

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3880.D
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Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3880.D
Lab Smp Id: WG227905-2
Inj Date : 09-MAY-2018 09:49
Operator : JSS   Inst ID: gcms-w.i
Smp Info : WG227905-2
Misc Info :
Comment   : SW846 5035
Method   : \\target_server\gg\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 15-May-2018 15:32 hgould   Quant Type: ISTD
Cal Date : 09-MAY-2018 09:49   Cal File: W3880.D
Als bottle: 3   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	AMOUNTS ON-COL (ug/kg)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.963	1.971	(0.243)	49242	10.0000	10.8	
2	Chloromethane	50	2.191	2.192	(0.272)	75730	10.0000	11.0	
3	Vinyl chloride	62	2.256	2.264	(0.280)	58874	10.0000	10.3	
4	Bromomethane	94	2.606	2.607	(0.323)	23203	10.0000	11.3	
5	Chloroethane	64	2.742	2.743	(0.340)	33897	10.0000	10.4	
6	Trichlorofluoromethane	101	2.885	2.885	(0.358)	72267	10.0000	10.8	
7	Diethyl Ether	59	3.221	3.229	(0.399)	38028	10.0000	9.5	
8	Tertiary-butyl alcohol	59	4.714	4.715	(0.584)	16980	50.0000	58.7	
9	1,1-Dichloroethene	96	3.464	3.464	(0.429)	42322	10.0000	10.4	
10	Carbon Disulfide	76	3.506	3.507	(0.435)	165763	10.0000	10.6	
11	Freon-113	151	3.499	3.507	(0.434)	31613	10.0000	9.4	
12	Iodomethane	142	3.642	3.643	(0.452)	28025	10.0000	11.0	
13	Acrolein	56	3.885	3.886	(0.482)	35392	50.0000	45.4	
14	Methylene Chloride	84	4.193	4.194	(0.520)	57847	10.0000	10.6(a)	
15	Acetone	43	4.278	4.279	(0.530)	99767	50.0000	49.4	
16	Isobutyl Alcohol	43	8.353	8.353	(1.035)	30198	200.000	244	
17	trans-1,2-Dichloroethene	96	4.414	4.415	(0.547)	47048	10.0000	10.4	
18	Allyl Chloride	41	4.050	4.058	(0.502)	69040	10.0000	9.0	
19	Methyl tert-butyl ether	73	4.572	4.572	(0.567)	121081	10.0000	10.1	
20	Acetonitrile	39	4.986	4.980	(0.618)	17483	100.000	107	
21	Di-isopropyl ether	45	5.165	5.166	(0.640)	150139	10.0000	9.0	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3880.D
Report Date: 15-May-2018 16:13

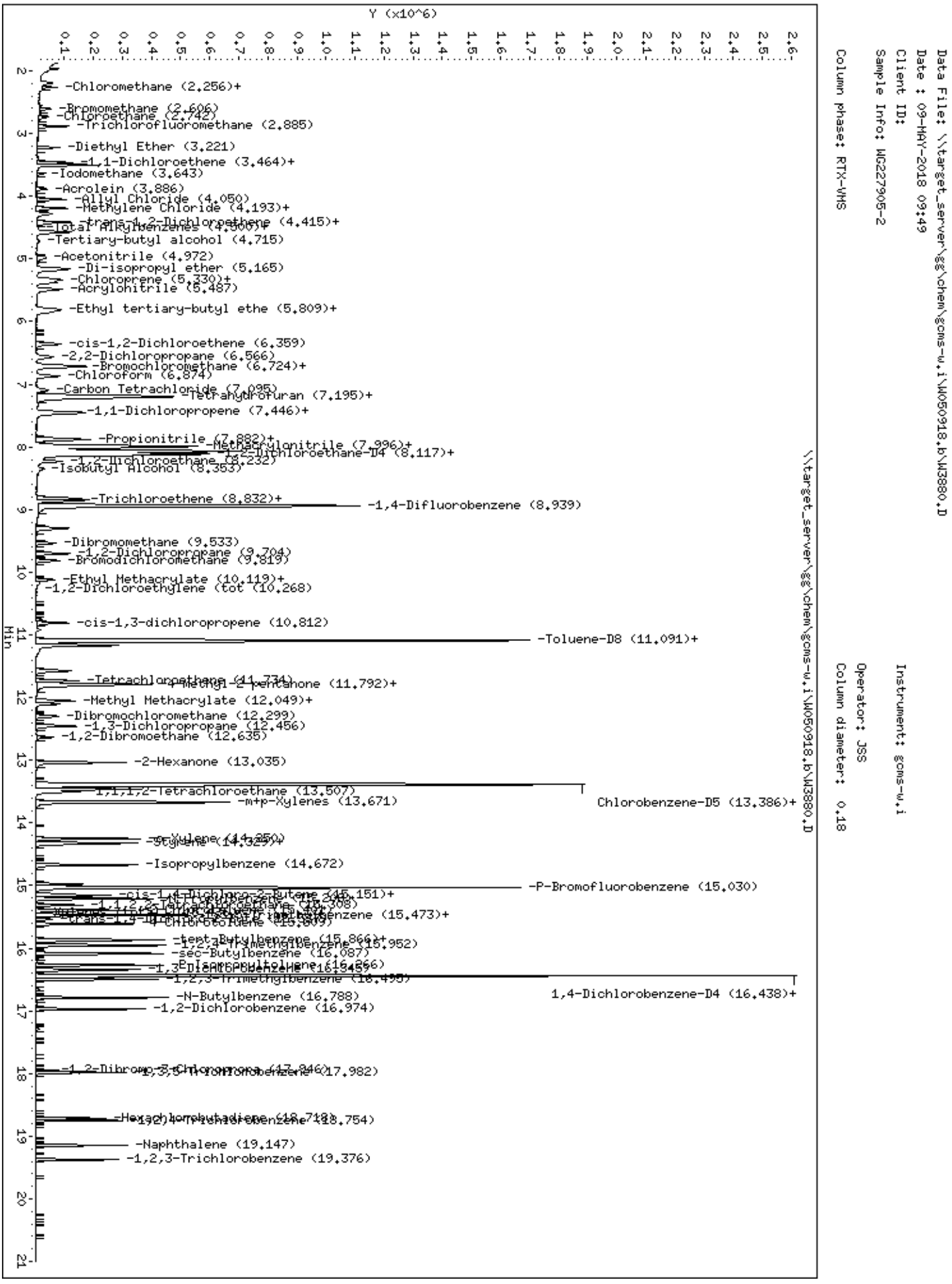
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	AMOUNTS ON-COL (ug/kg)	REVIEW CODE
	22	Chloroprene	53	5.329	5.337	(0.661)	68801	10.0000	9.1	
	23	Propionitrile	54	7.974	7.975	(0.988)	78444	100.000	89.4	
	24	Methacrylonitrile	41	7.995	8.003	(0.991)	340609	100.000	96.9	
	25	1,1-Dichloroethane	63	5.372	5.380	(0.666)	86378	10.0000	10.4	
	26	Acrylonitrile	52	5.486	5.487	(0.680)	78029	50.0000	45.2	
	27	Ethyl tertiary-butyl ether	59	5.808	5.809	(0.720)	82307	10.0000	9.1	
	28	Vinyl Acetate	43	5.851	5.852	(0.655)	81712	10.0000	11.8	
	29	cis-1,2-Dichloroethene	96	6.359	6.367	(0.788)	51338	10.0000	10.1	
M	30	1,2-Dichloroethylene (total)	96				98386	20.0000	20.5	
	31	Methyl Methacrylate	41	12.098	12.099	(1.353)	36223	10.0000	11.1	
	32	2,2-Dichloropropane	77	6.566	6.567	(0.814)	33266	10.0000	12.1	
	33	Bromochloromethane	128	6.723	6.731	(0.833)	25288	10.0000	10.4	
	34	Chloroform	83	6.873	6.874	(0.852)	86496	10.0000	10.6	
	35	Carbon Tetrachloride	117	7.095	7.096	(0.794)	35246	10.0000	12.0	
	36	Tetrahydrofuran	42	7.173	7.167	(0.889)	94626	50.0000	48.7	
$	37	Dibromofluoromethane	113	7.195	7.203	(0.892)	305662	50.0000	49.4	
	38	1,1,1-Trichloroethane	97	7.231	7.231	(0.896)	59286	10.0000	9.9	
	39	1,1-Dichloropropene	75	7.445	7.453	(0.833)	64507	10.0000	10.3	
	40	2-Butanone	43	7.466	7.460	(0.926)	147623	50.0000	49.7	
	41	Benzene	78	7.881	7.882	(0.882)	197112	10.0000	10.3	
*	42	Pentafluorobenzene	168	8.067	8.074	(1.000)	558708	50.0000		
	43	Cyclohexane	56	6.709	6.710	(0.832)	87103	10.0000	10.3	
	44	Ethyl Methacrylate	69	10.126	10.119	(1.133)	29303	10.0000	11.1	
$	45	1,2-Dichloroethane-D4	65	8.117	8.125	(1.006)	392840	50.0000	50.8	
	46	Tertiary-amyl methyl ether	73	8.117	8.118	(1.006)	76251	10.0000	11.3	
	47	1,2-Dichloroethane	62	8.231	8.231	(0.921)	72427	10.0000	10.6	
	48	Trichloroethene	95	8.853	8.861	(0.990)	50064	10.0000	10.5	
*	49	1,4-Difluorobenzene	114	8.939	8.947	(1.000)	1047503	50.0000		
	50	Dibromomethane	93	9.532	9.533	(1.066)	30293	10.0000	10.2	
	51	1,2-Dichloropropane	63	9.704	9.705	(1.086)	51114	10.0000	10.2	
	52	Bromodichloromethane	83	9.818	9.819	(1.098)	61860	10.0000	10.2	
	53	cis-1,3-dichloropropene	75	10.812	10.813	(1.209)	67144	10.0000	9.3	
	54	1,4-Dioxane	88	10.176	10.169	(1.138)	15837	200.000	192	
$	55	Toluene-D8	98	11.091	11.091	(1.241)	1270925	50.0000	50.7	
	57	Toluene	92	11.169	11.170	(1.249)	122855	10.0000	10.4	
	58	4-methyl-2-pentanone	43	11.791	11.792	(1.319)	315002	50.0000	53.0	
	59	Tetrachloroethene	164	11.734	11.735	(0.877)	36297	10.0000	10.0	
	60	trans-1,3-Dichloropropene	75	11.820	11.820	(1.322)	46706	10.0000	11.9	
	61	1,1,2-Trichloroethane	83	12.048	12.049	(1.348)	40650	10.0000	10.7	
	62	Dibromochloromethane	129	12.299	12.299	(0.919)	44015	10.0000	9.7	
	63	1,3-Dichloropropane	76	12.456	12.457	(0.931)	89271	10.0000	10.4	
	64	1,2-Dibromoethane	107	12.634	12.635	(1.413)	44501	10.0000	10	
	65	2-Hexanone	43	13.035	13.036	(0.974)	221261	50.0000	50.4	
*	66	Chlorobenzene-D5	117	13.385	13.386	(1.000)	1028525	50.0000		
	67	Chlorobenzene	112	13.406	13.407	(1.002)	143549	10.0000	10.4	
	152	1-Chlorohexane	91	13.406	13.407	(1.662)	64563	10.0000	10.2	
	68	Ethylbenzene	106	13.464	13.465	(1.006)	76689	10.0000	10.3	
	69	1,1,1,2-Tetrachloroethane	131	13.507	13.507	(1.009)	40289	10.0000	9.7	
M	70	Xylenes (total)	106				285381	30.0000	31.1	
	71	m+p-Xylenes	106	13.671	13.672	(1.021)	192642	20.0000	21.0	
	72	o-Xylene	106	14.250	14.251	(1.065)	92739	10.0000	10.1	
	73	Styrene	104	14.321	14.329	(1.070)	157157	10.0000	10.1	
	74	Bromoform	173	14.336	14.344	(1.071)	28920	10.0000	9.4	
	75	Isopropylbenzene	105	14.672	14.673	(0.893)	228826	10.0000	10.5	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3880.D
Report Date: 15-May-2018 16:13

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
$	76	P-Bromofluorobenzene	95	15.029	15.030	(1.681)	546078	50.0000	49.9	
	77	cis-1,4-Dichloro-2-Butene	53	15.136	15.137	(0.921)	16144	10.0000	11.8	
	78	trans-1,4-Dichloro-2-Butene	53	15.537	15.537	(0.945)	13730	10.0000	12.1	
	79	Bromobenzene	156	15.158	15.159	(0.922)	62756	10.0000	10.6	
	80	N-Propylbenzene	91	15.208	15.209	(0.925)	302143	10.0000	10.7	
	81	1,1,2,2-Tetrachloroethane	83	15.308	15.309	(0.931)	73291	10.0000	10.5	
	82	1,3,5-Trimethylbenzene	105	15.465	15.466	(0.941)	210560	10.0000	10.5	
	83	2-Chlorotoluene	91	15.401	15.402	(0.937)	184462	10.0000	10.6	
	84	1,2,3-Trichloropropane	75	15.472	15.473	(0.941)	62030	10.0000	10.4	
	85	4-Chlorotoluene	91	15.608	15.616	(0.950)	190346	10.0000	10.4	
	86	tert-Butylbenzene	119	15.865	15.866	(0.965)	200499	10.0000	10.2	
	87	Pentachloroethane	117	15.887	15.881	(0.967)	30206	10.0000	11.1	
	88	1,2,4-Trimethylbenzene	105	15.951	15.952	(0.970)	227557	10.0000	10.7	
	89	P-Isopropyltoluene	119	16.273	16.274	(0.990)	235300	10.0000	10.6	
	90	1,3-Dichlorobenzene	146	16.344	16.344	(0.994)	127222	10.0000	10.6	
*	91	1,4-Dichlorobenzene-D4	152	16.437	16.437	(1.000)	572979	50.0000		
	92	1,4-Dichlorobenzene	146	16.459	16.460	(1.001)	127484	10.0000	10.5	
	93	N-Butylbenzene	91	16.787	16.788	(1.021)	224188	10.0000	10.5	
	94	sec-Butylbenzene	105	16.087	16.088	(0.979)	277446	10.0000	10.6	
	95	1,2-Dichlorobenzene	146	16.973	16.974	(1.033)	126390	10.0000	10.6	
	96	1,2-Dibromo-3-Chloropropane	75	17.945	17.946	(1.092)	13521	10.0000	10.0	
	97	1,3,5-Trichlorobenzene	180	17.981	17.982	(2.229)	83408	10.0000	9.3	
	98	Hexachlorobutadiene	225	18.717	18.718	(1.139)	41370	10.0000	10.7	
	99	1,2,4-Trichlorobenzene	180	18.753	18.754	(1.141)	77807	10.0000	10.2	
	100	1,2,3-Trimethylbenzene	105	16.494	16.495	(2.045)	215061	10.0000	9.4	
	101	Naphthalene	128	19.146	19.147	(1.165)	206684	10.0000	10.1	
	102	1,2,3-Trichlorobenzene	180	19.375	19.376	(1.179)	77046	10.0000	10.5	
	103	Methyl Acetate	43	4.443	4.444	(0.551)	42121	10.0000	9.2	
	104	Methylcyclohexane	83	8.825	8.833	(1.094)	77170	10.0000	9.1	
M	153	Total Alkylbenzenes	100				1677693	10.0000	73.8	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Date : 09-MAY-2018 09:49
Client ID:
Sample Info: WG227905-2
Column phase: RTX-VMS
Instrument: gcms-w.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-w.i\W050918.b\W3880.D
Y (x10^6)
Min
-Chloromethane (2.256)+
-Bromomethane (2.606)
-Chloroethane (2.742)
-Trichlorofluoromethane (2.885)
-Diethyl Ether (3.221)
-1,1-Dichloroethene (3.464)+
-Iodomethane (3.643)
-Acrolein (3.886)
-Allyl Chloride (4.050)
-Methylene Chloride (4.193)+
-trans-1,2-Dichloroethene (4.415)+
-Total Alkylbenzenes (4.500)+
-Tertiary-butyl alcohol (4.715)
-Acetonitrile (4.972)
-Di-isopropyl ether (5.165)
-Chloroprene (5.330)+
-Acrylonitrile (5.487)
-Ethyl tertiary-butyl ethe (5.809)+
-cis-1,2-Dichloroethene (6.359)
-2,2-Dichloropropane (6.566)
-Bromochloromethane (6.724)+
-Chloroform (6.874)
-Carbon Tetrachloride (7.095)
-Tetrahydrofuran (7.195)+
-1,1-Dichloropropene (7.446)+
-Propionitrile (7.882)+
-Methacrylonitrile (7.996)+
-1,2-Dichloroethane-D4 (8.117)+
-1,2-Dichloroethane (8.232)
-Isobutyl Alcohol (8.353)
-Trichloroethene (8.832)+
-1,4-Difluorobenzene (8.939)
-Dibromomethane (9.533)
-1,2-Dichloropropane (9.704)
-Bromodichloromethane (9.819)
-Ethyl Methacrylate (10.119)+
-1,2-Dichloroethylene (tot (10.268)
-cis-1,3-dichloropropene (10.812)
-Toluene-D8 (11.091)+
-Tetrachloroethene (11.734)
-4-Methyl-2-pentanone (11.792)+
-Methyl Methacrylate (12.049)+
-Dibromochloromethane (12.299)
-1,3-Dichloropropane (12.456)
-1,2-Dibromoethane (12.635)
-2-Hexanone (13.035)
-1,1,1,2-Tetrachloroethane (13.507)
-m+p-Xylenes (13.671)
Chlorobenzene-D5 (13.386)+
-o-Xylene (14.250)
-Styrene (14.329)+
-Isopropylbenzene (14.672)
-P-Bromofluorobenzene (15.030)
-cis-1,4-Dichloro-2-Butene (15.151)+
-1,1,2,2-Tetrachloroethane (15.308)
-Bromobenzene (15.473)+
-trans-1,4-Dichloro-2-Butene (15.609)
-tert-Butylbenzene (15.866)+
-1,2,4-Trimethylbenzene (15.952)
-sec-Butylbenzene (16.087)
-p-Isopropyltoluene (16.266)
-1,3-Dichlorobenzene (16.345)
-1,2,3-Trimethylbenzene (16.495)
-N-Butylbenzene (16.788)
1,4-Dichlorobenzene-D4 (16.438)+
-1,2-Dichlorobenzene (16.974)
-1,2-Dibromo-3-Chloropropa (17.846)
-1,3,5-Trichlorobenzene (17.982)
-Hexachlorobutadiene (18.718)
-1,2,4-Trichlorobenzene (18.754)
-Naphthalene (19.147)
-1,2,3-Trichlorobenzene (19.376)

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3881.D
Report Date: 15-May-2018 16:13

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3881.D
Lab Smp Id: WG227905-1
Inj Date : 09-MAY-2018 10:26
Operator : JSS   Inst ID: gcms-w.i
Smp Info : WG227905-1
Misc Info :
Comment   : SW846 5035
Method   : \\target_server\gg\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 15-May-2018 15:32 hgould   Quant Type: ISTD
Cal Date : 09-MAY-2018 10:26   Cal File: W3881.D
Als bottle: 4   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	AMOUNTS ON-COL (ug/kg)	REVIEW CODE
1 Dichlorodifluoromethane	85	1.970	1.971	(0.244)	22685	5.00000	4.8(a)	
2 Chloromethane	50	2.192	2.192	(0.272)	39119	5.00000	5.5	
3 Vinyl chloride	62	2.263	2.264	(0.281)	29292	5.00000	5.0	
4 Bromomethane	94	2.606	2.607	(0.323)	11026	5.00000	5.2	
5 Chloroethane	64	2.742	2.743	(0.340)	17789	5.00000	5.2	
6 Trichlorofluoromethane	101	2.885	2.885	(0.358)	33732	5.00000	4.8(a)	
7 Diethyl Ether	59	3.228	3.229	(0.400)	20172	5.00000	4.8(a)	
8 Tertiary-butyl alcohol	59	4.722	4.715	(0.585)	7886	25.0000	41.0	
9 1,1-Dichloroethene	96	3.464	3.464	(0.429)	21476	5.00000	5.1	
10 Carbon Disulfide	76	3.507	3.507	(0.435)	90956	5.00000	5.6	
11 Freon-113	151	3.500	3.507	(0.434)	18327	5.00000	5.2	
12 Iodomethane	142	3.643	3.643	(0.452)	12600	5.00000	7.3	
13 Acrolein	56	3.886	3.886	(0.482)	20543	25.0000	25.4	
14 Methylene Chloride	84	4.193	4.194	(0.520)	28823	5.00000	5.1(a)	
15 Acetone	43	4.286	4.279	(0.531)	48107	25.0000	23.1(a)	
16 Isobutyl Alcohol	43	8.368	8.353	(1.037)	13201	100.000	184	
17 trans-1,2-Dichloroethene	96	4.415	4.415	(0.547)	23245	5.00000	4.9(a)	
18 Allyl Chloride	41	4.057	4.058	(0.503)	38590	5.00000	4.9(a)	
19 Methyl tert-butyl ether	73	4.572	4.572	(0.567)	58013	5.00000	4.7(a)	
20 Acetonitrile	39	4.987	4.980	(0.618)	8140	50.0000	47.9(a)	
21 Di-isopropyl ether	45	5.165	5.166	(0.640)	85426	5.00000	4.9(a)	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3881.D
Report Date: 15-May-2018 16:13

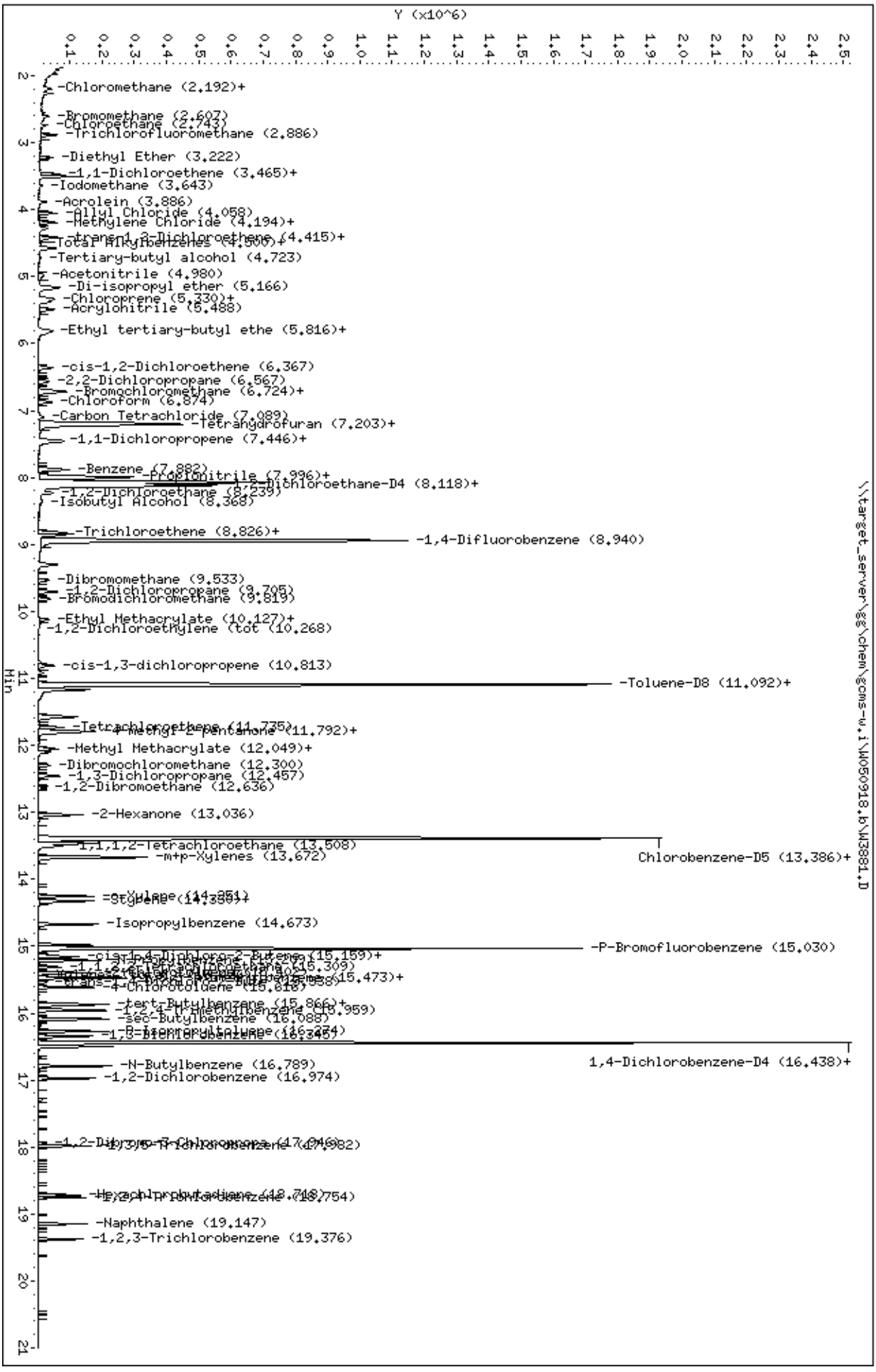
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
	22	Chloroprene	53	5.330	5.337	(0.661)	41036	5.00000	5.2	
	23	Propionitrile	54	7.975	7.975	(0.988)	43450	50.0000	47.7(a)	
	24	Methacrylonitrile	41	7.996	8.003	(0.991)	178775	50.0000	49.1(a)	
	25	1,1-Dichloroethane	63	5.380	5.380	(0.667)	42403	5.00000	4.9(a)	
	26	Acrylonitrile	52	5.494	5.487	(0.681)	42117	25.0000	23.5(a)	
	27	Ethyl tertiary-butyl ether	59	5.816	5.809	(0.721)	41135	5.00000	4.4(a)	
	28	Vinyl Acetate	43	5.852	5.852	(0.655)	36504	5.00000	7.9	
	29	cis-1,2-Dichloroethene	96	6.366	6.367	(0.789)	26616	5.00000	5.1	
M	30	1,2-Dichloroethylene (total)	96				49861	10.0000	10	
	31	Methyl Methacrylate	41	12.106	12.099	(1.354)	15891	5.00000	7.6	
	32	2,2-Dichloropropane	77	6.559	6.567	(0.813)	14769	5.00000	8.0	
	33	Bromochloromethane	128	6.724	6.731	(0.833)	12502	5.00000	5.0	
	34	Chloroform	83	6.874	6.874	(0.852)	41707	5.00000	4.9(a)	
	35	Carbon Tetrachloride	117	7.088	7.096	(0.793)	13384	5.00000	7.5	
	36	Tetrahydrofuran	42	7.181	7.167	(0.890)	48849	25.0000	24.3(a)	
$	37	Dibromofluoromethane	113	7.203	7.203	(0.893)	319846	50.0000	49.8	
	38	1,1,1-Trichloroethane	97	7.224	7.231	(0.895)	29609	5.00000	4.8(a)	
	39	1,1-Dichloropropene	75	7.446	7.453	(0.833)	33575	5.00000	5.1	
	40	2-Butanone	43	7.467	7.460	(0.926)	72558	25.0000	23.6(a)	
	41	Benzene	78	7.882	7.882	(0.882)	100144	5.00000	5.0	
*	42	Pentafluorobenzene	168	8.067	8.074	(1.000)	579217	50.0000		
	43	Cyclohexane	56	6.709	6.710	(0.832)	43676	5.00000	5.0	
	44	Ethyl Methacrylate	69	10.126	10.119	(1.133)	14061	5.00000	7.5	
$	45	1,2-Dichloroethane-D4	65	8.117	8.125	(1.006)	403879	50.0000	50.4	
	46	Tertiary-amyl methyl ether	73	8.117	8.118	(1.006)	39049	5.00000	7.8	
	47	1,2-Dichloroethane	62	8.239	8.231	(0.922)	34791	5.00000	4.9(a)	
	48	Trichloroethene	95	8.861	8.861	(0.991)	25593	5.00000	5.2	
*	49	1,4-Difluorobenzene	114	8.940	8.947	(1.000)	1092507	50.0000		
	50	Dibromomethane	93	9.540	9.533	(1.067)	14700	5.00000	4.7(a)	
	51	1,2-Dichloropropane	63	9.711	9.705	(1.086)	25537	5.00000	4.9(a)	
	52	Bromodichloromethane	83	9.819	9.819	(1.098)	28688	5.00000	4.5(a)	
	53	cis-1,3-dichloropropene	75	10.812	10.813	(1.209)	30040	5.00000	4.0(a)	
	54	1,4-Dioxane	88	10.176	10.169	(1.138)	6929	100.000	80.4(a)	
$	55	Toluene-D8	98	11.091	11.091	(1.241)	1304155	50.0000	49.9	
	57	Toluene	92	11.170	11.170	(1.249)	62238	5.00000	5.0	
	58	4-methyl-2-pentanone	43	11.792	11.792	(1.319)	141227	25.0000	22.8(a)	
	59	Tetrachloroethene	164	11.734	11.735	(0.877)	19131	5.00000	5.1	
	60	trans-1,3-Dichloropropene	75	11.820	11.820	(1.322)	20294	5.00000	8.1	
	61	1,1,2-Trichloroethane	83	12.056	12.049	(1.349)	18179	5.00000	4.6(a)	
	62	Dibromochloromethane	129	12.299	12.299	(0.919)	20003	5.00000	4.3(a)	
	63	1,3-Dichloropropane	76	12.456	12.457	(0.931)	42798	5.00000	4.8(a)	
	64	1,2-Dibromoethane	107	12.635	12.635	(1.413)	21133	5.00000	4.5(a)	
	65	2-Hexanone	43	13.035	13.036	(0.974)	98157	25.0000	21.6(a)	
*	66	Chlorobenzene-D5	117	13.386	13.386	(1.000)	1062569	50.0000		
	67	Chlorobenzene	112	13.407	13.407	(1.002)	68698	5.00000	4.8(a)	
	152	1-Chlorohexane	91	13.407	13.407	(1.662)	29851	5.00000	4.5(a)	
	68	Ethylbenzene	106	13.464	13.465	(1.006)	37226	5.00000	4.8(a)	
	69	1,1,1,2-Tetrachloroethane	131	13.507	13.507	(1.009)	17365	5.00000	4.0(a)	
M	70	Xylenes (total)	106				140323	15.0000	14.8(a)	
	71	m+p-Xylenes	106	13.671	13.672	(1.021)	93588	10.0000	9.9(a)	
	72	o-Xylene	106	14.250	14.251	(1.065)	46735	5.00000	4.9(a)	
	73	Styrene	104	14.329	14.329	(1.070)	74658	5.00000	4.6(a)	
	74	Bromoform	173	14.343	14.344	(1.072)	12557	5.00000	4.0(a)	
	75	Isopropylbenzene	105	14.672	14.673	(0.893)	117285	5.00000	5.3	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3881.D
Report Date: 15-May-2018 16:13

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
$	76	P-Bromofluorobenzene	95	15.030	15.030	(1.681)	553397	50.0000	48.5	
	77	cis-1,4-Dichloro-2-Butene	53	15.137	15.137	(0.921)	7505	5.00000	8.2	
	78	trans-1,4-Dichloro-2-Butene	53	15.537	15.537	(0.945)	6239	5.00000	8.3	
	79	Bromobenzene	156	15.158	15.159	(0.922)	30270	5.00000	5.0	
	80	N-Propylbenzene	91	15.208	15.209	(0.925)	153894	5.00000	5.3	
	81	1,1,2,2-Tetrachloroethane	83	15.308	15.309	(0.931)	33879	5.00000	4.8(a)	
	82	1,3,5-Trimethylbenzene	105	15.466	15.466	(0.941)	106759	5.00000	5.2	
	83	2-Chlorotoluene	91	15.401	15.402	(0.937)	92243	5.00000	5.2	
	84	1,2,3-Trichloropropane	75	15.473	15.473	(0.941)	30505	5.00000	5.0	
	85	4-Chlorotoluene	91	15.616	15.616	(0.950)	95985	5.00000	5.1	
	86	tert-Butylbenzene	119	15.866	15.866	(0.965)	100899	5.00000	5.0	
	87	Pentachloroethane	117	15.880	15.881	(0.966)	14518	5.00000	7.5	
	88	1,2,4-Trimethylbenzene	105	15.959	15.952	(0.971)	110990	5.00000	5.1	
	89	P-Isopropyltoluene	119	16.273	16.274	(0.990)	116017	5.00000	5.2	
	90	1,3-Dichlorobenzene	146	16.345	16.344	(0.994)	61591	5.00000	5.0	
*	91	1,4-Dichlorobenzene-D4	152	16.438	16.437	(1.000)	582477	50.0000		
	92	1,4-Dichlorobenzene	146	16.459	16.460	(1.001)	60789	5.00000	4.9(a)	
	93	N-Butylbenzene	91	16.788	16.788	(1.021)	108658	5.00000	5.0	
	94	sec-Butylbenzene	105	16.088	16.088	(0.979)	141445	5.00000	5.3	
	95	1,2-Dichlorobenzene	146	16.974	16.974	(1.033)	61944	5.00000	5.1	
	96	1,2-Dibromo-3-Chloropropane	75	17.946	17.946	(1.092)	5294	5.00000	4.2(a)	
	97	1,3,5-Trichlorobenzene	180	17.982	17.982	(2.229)	42764	5.00000	4.6(a)	
	98	Hexachlorobutadiene	225	18.718	18.718	(1.139)	20743	5.00000	5.3	
	99	1,2,4-Trichlorobenzene	180	18.754	18.754	(1.141)	35618	5.00000	4.6(a)	
	100	1,2,3-Trimethylbenzene	105	16.495	16.495	(2.045)	118688	5.00000	5.0	
	101	Naphthalene	128	19.147	19.147	(1.165)	97737	5.00000	4.7(a)	
	102	1,2,3-Trichlorobenzene	180	19.376	19.376	(1.179)	36159	5.00000	4.9(a)	
	103	Methyl Acetate	43	4.451	4.444	(0.552)	20759	5.00000	4.4(a)	
	104	Methylcyclohexane	83	8.825	8.833	(1.094)	42796	5.00000	4.9(a)	
M	153	Total Alkylbenzenes	100				838662	5.00000	36.2	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Y (x10^6)
Min
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Date : 09-MAY-2018 10:26
Client ID:
Sample Info: WG227905-1
Column phase: RTX-VMS
Instrument: gcms-w.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-w.i\W050918.b\W3881.D
-Chloromethane (2.192)+
-Bromomethane (2.607)
-Chloroethane (2.743)
-Trichlorofluoromethane (2.886)
-Diethyl Ether (3.222)
-1,1-Dichloroethene (3.465)+
-Iodomethane (3.643)
-Acrolein (3.886)
-Allyl Chloride (4.058)
-Methylene Chloride (4.194)+
-trans-1,2-Dichloroethene (4.415)+
Total Alkylbenzenes (4.500)+
-Tertiary-butyl alcohol (4.723)
-Acetonitrile (4.980)
-Di-isopropyl ether (5.166)
-Chloroprene (5.330)+
-Acrylonitrile (5.488)
-Ethyl tertiary-butyl ethe (5.816)+
-cis-1,2-Dichloroethene (6.367)
-2,2-Dichloropropane (6.567)
-Bromochloromethane (6.724)+
-Chloroform (6.874)
-Carbon Tetrachloride (7.089)
-Tetrahydrofuran (7.203)+
-1,1-Dichloropropene (7.446)+
-Benzene (7.882)
-Propionitrile (7.996)+
1,2-Dichloroethane-D4 (8.118)+
-1,2-Dichloroethane (8.239)
-Isobutyl Alcohol (8.368)
-Trichloroethene (8.826)+
-1,4-Difluorobenzene (8.940)
-Dibromomethane (9.533)
-1,2-Dichloropropane (9.705)
-Bromodichloromethane (9.819)
-Ethyl Methacrylate (10.127)+
-1,2-Dichloroethylene (tot (10.268)
-cis-1,3-dichloropropene (10.813)
-Toluene-D8 (11.092)+
-Tetrachloroethene (11.775)
4-Methyl-2-pentanone (11.792)+
-Methyl Methacrylate (12.049)+
-Dibromochloromethane (12.300)
-1,3-Dichloropropane (12.457)
-1,2-Dibromoethane (12.636)
-2-Hexanone (13.036)
-1,1,1,2-Tetrachloroethane (13.508)
-m+p-Xylenes (13.672)
Chlorobenzene-D5 (13.386)+
-Styrene (14.350)+
-Isopropylbenzene (14.673)
-P-Bromofluorobenzene (15.030)
-tert-Butylbenzene (15.866)+
-sec-Butylbenzene (16.088)
-N-Butylbenzene (16.789)
1,4-Dichlorobenzene-D4 (16.438)+
-1,2-Dichlorobenzene (16.974)
-Naphthalene (19.147)
-1,2,3-Trichlorobenzene (19.376)

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3882.D
Report Date: 15-May-2018 16:13

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3882.D
Lab Smp Id: WG227905-6
Inj Date : 09-MAY-2018 11:04 MS Autotune Date: 10-APR-2016 11:00
Operator : JSS Inst ID: gcms-w.i
Smp Info : WG227905-6
Misc Info :
Comment : SW846 5035
Method : \\target_server\gg\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 15-May-2018 15:32 hgould Quant Type: ISTD
Cal Date : 09-MAY-2018 11:04 Cal File: W3882.D
Als bottle: 5 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.962	1.971	(0.243)	698423	150.000	146	
2	Chloromethane	50	2.198	2.192	(0.272)	1023999	150.000	140	
3	Vinyl chloride	62	2.255	2.264	(0.279)	909324	150.000	152	
4	Bromomethane	94	2.605	2.607	(0.323)	322007	150.000	150	
5	Chloroethane	64	2.734	2.743	(0.339)	341500	150.000	111	
6	Trichlorofluoromethane	101	2.884	2.885	(0.357)	1054691	150.000	150	
7	Diethyl Ether	59	3.227	3.229	(0.400)	666801	150.000	159	
8	Tertiary-butyl alcohol	59	4.728	4.715	(0.586)	440656	750.000	1070(A)	
9	1,1-Dichloroethene	96	3.456	3.464	(0.428)	665644	150.000	156	
10	Carbon Disulfide	76	3.499	3.507	(0.433)	2363863	150.000	143	
11	Freon-113	151	3.499	3.507	(0.433)	532492	150.000	150	
12	Iodomethane	142	3.642	3.643	(0.451)	660358	150.000	194	
13	Acrolein	56	3.885	3.886	(0.481)	666690	750.000	824	
14	Methylene Chloride	84	4.192	4.194	(0.519)	850422	150.000	149	
15	Acetone	43	4.278	4.279	(0.530)	1415070	750.000	673	
16	Isobutyl Alcohol	43	8.352	8.353	(1.035)	1084272	3000.00	5140(A)	
17	trans-1,2-Dichloroethene	96	4.414	4.415	(0.547)	735399	150.000	154	
18	Allyl Chloride	41	4.049	4.058	(0.502)	1267525	150.000	160	
19	Methyl tert-butyl ether	73	4.571	4.572	(0.566)	2021368	150.000	164	
20	Acetonitrile	39	4.978	4.980	(0.617)	269720	1500.00	1580	
21	Di-isopropyl ether	45	5.164	5.166	(0.640)	2837614	150.000	164	

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Report Date: 15-May-2018 16:13

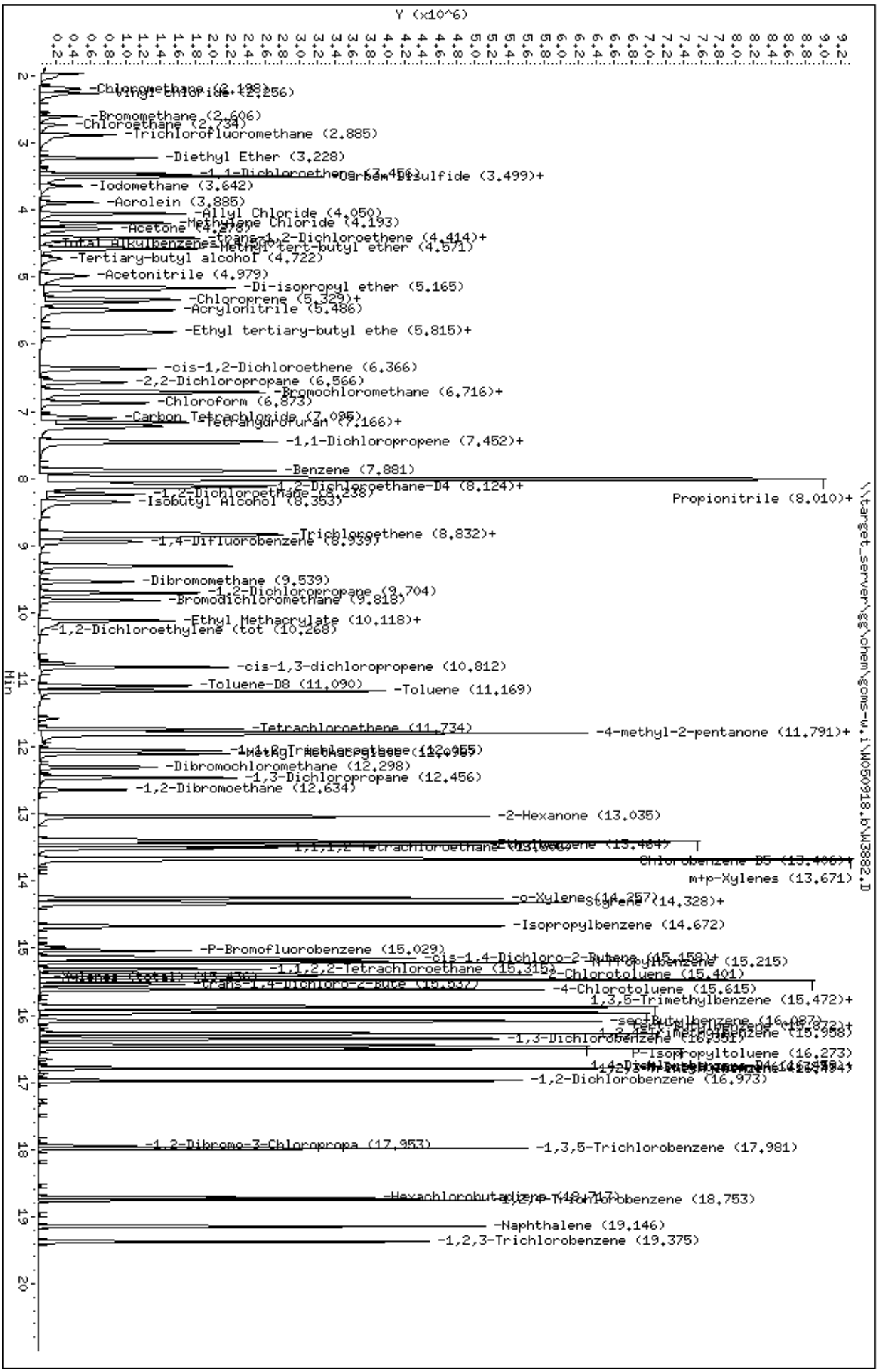
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
	22	Chloroprene	53	5.329	5.337	(0.660)	1237652	150.000	156	
	23	Propionitrile	54	7.981	7.975	(0.988)	1480713	1500.00	1620	
	24	Methacrylonitrile	41	8.009	8.003	(0.992)	5510011	1500.00	1500	
	25	1,1-Dichloroethane	63	5.372	5.380	(0.665)	1345208	150.000	155	
	26	Acrylonitrile	52	5.486	5.487	(0.680)	1472462	750.000	824	
	27	Ethyl tertiary-butyl ether	59	5.808	5.809	(0.719)	1559662	150.000	170	
	28	Vinyl Acetate	43	5.850	5.852	(0.654)	1805650	150.000	195	
	29	cis-1,2-Dichloroethene	96	6.365	6.367	(0.788)	819474	150.000	155	
M	30	1,2-Dichloroethylene (total)	96				1554873	300.000	309	
	31	Methyl Methacrylate	41	12.098	12.099	(1.352)	897505	150.000	201(A)	
	32	2,2-Dichloropropane	77	6.565	6.567	(0.813)	724548	150.000	194	
	33	Bromochloromethane	128	6.730	6.731	(0.834)	401386	150.000	158	
	34	Chloroform	83	6.873	6.874	(0.851)	1292310	150.000	152	
	35	Carbon Tetrachloride	117	7.094	7.096	(0.793)	758481	150.000	198	
	36	Tetrahydrofuran	42	7.166	7.167	(0.888)	1618391	750.000	801	
$	37	Dibromofluoromethane	113	7.201	7.203	(0.892)	320396	50.0000	49.6	
	38	1,1,1-Trichloroethane	97	7.230	7.231	(0.896)	1032192	150.000	166	
	39	1,1-Dichloropropene	75	7.452	7.453	(0.833)	1016652	150.000	156	
	40	2-Butanone	43	7.459	7.460	(0.924)	2364082	750.000	760	
	41	Benzene	78	7.881	7.882	(0.881)	2997195	150.000	150	
*	42	Pentafluorobenzene	168	8.073	8.074	(1.000)	581847	50.0000		
	43	Cyclohexane	56	6.708	6.710	(0.831)	1402065	150.000	159	
	44	Ethyl Methacrylate	69	10.118	10.119	(1.131)	675686	150.000	192	
$	45	1,2-Dichloroethane-D4	65	8.124	8.125	(1.006)	400720	50.0000	49.4	
	46	Tertiary-amyl methyl ether	73	8.116	8.118	(1.005)	1720496	150.000	189	
	47	1,2-Dichloroethane	62	8.238	8.231	(0.921)	1115457	150.000	156	
	48	Trichloroethene	95	8.860	8.861	(0.990)	749733	150.000	150	
*	49	1,4-Difluorobenzene	114	8.946	8.947	(1.000)	1089175	50.0000		
	50	Dibromomethane	93	9.532	9.533	(1.066)	482333	150.000	156	
	51	1,2-Dichloropropane	63	9.703	9.705	(1.085)	825165	150.000	159	
	52	Bromodichloromethane	83	9.818	9.819	(1.097)	1021311	150.000	163	
	53	cis-1,3-dichloropropene	75	10.811	10.813	(1.209)	1318675	150.000	180	
	54	1,4-Dioxane	88	10.168	10.169	(1.137)	291475	3000.00	3450	
$	55	Toluene-D8	98	11.090	11.091	(1.240)	1295350	50.0000	49.8	
	57	Toluene	92	11.169	11.170	(1.248)	1894823	150.000	153	
	58	4-methyl-2-pentanone	43	11.790	11.792	(1.318)	4703758	750.000	764	
	59	Tetrachloroethene	164	11.733	11.735	(0.877)	567424	150.000	150	
	60	trans-1,3-Dichloropropene	75	11.819	11.820	(1.321)	1113820	150.000	203(A)	
	61	1,1,2-Trichloroethane	83	12.055	12.049	(1.348)	622512	150.000	158	
	62	Dibromochloromethane	129	12.305	12.299	(0.919)	799065	150.000	173	
	63	1,3-Dichloropropane	76	12.455	12.457	(0.931)	1391926	150.000	156	
	64	1,2-Dibromoethane	107	12.634	12.635	(1.412)	761676	150.000	166	
	65	2-Hexanone	43	13.034	13.036	(0.974)	3575088	750.000	791	
*	66	Chlorobenzene-D5	117	13.384	13.386	(1.000)	1068141	50.0000		
	67	Chlorobenzene	112	13.406	13.407	(1.002)	2189876	150.000	153	
	152	1-Chlorohexane	91	13.406	13.407	(1.660)	1073176	150.000	162	
	68	Ethylbenzene	106	13.463	13.465	(1.006)	1209055	150.000	156	
	69	1,1,1,2-Tetrachloroethane	131	13.506	13.507	(1.009)	749913	150.000	177	
M	70	Xylenes (total)	106				4363768	150.000	456	
	71	m+p-Xylenes	106	13.678	13.672	(1.022)	2864542	300.000	300	
	72	o-Xylene	106	14.257	14.251	(1.065)	1499226	150.000	157	
	73	Styrene	104	14.328	14.329	(1.070)	2543839	150.000	158(A)	
	74	Bromoform	173	14.342	14.344	(1.072)	567817	150.000	182	
	75	Isopropylbenzene	105	14.678	14.673	(0.893)	3507803	150.000	146	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3882.D
Report Date: 15-May-2018 16:13

							AMOUNTS		
Compounds		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
$	76 P-Bromofluorobenzene	95	15.029	15.030	(1.680)	588064	50.0000	51.8	
	77 cis-1,4-Dichloro-2-Butene	53	15.136	15.137	(0.920)	399569	150.000	195	
	78 trans-1,4-Dichloro-2-Butene	53	15.536	15.537	(0.945)	327215	150.000	195	
	79 Bromobenzene	156	15.157	15.159	(0.922)	1000033	150.000	152	
	80 N-Propylbenzene	91	15.214	15.209	(0.925)	4403273	150.000	140	
	81 1,1,2,2-Tetrachloroethane	83	15.314	15.309	(0.931)	1196758	150.000	156	
	82 1,3,5-Trimethylbenzene	105	15.472	15.466	(0.941)	3203259	150.000	144	
	83 2-Chlorotoluene	91	15.400	15.402	(0.937)	2819141	150.000	146	
	84 1,2,3-Trichloropropane	75	15.472	15.473	(0.941)	1006430	150.000	153	
	85 4-Chlorotoluene	91	15.615	15.616	(0.950)	2961920	150.000	146	
	86 tert-Butylbenzene	119	15.865	15.866	(0.965)	3320160	150.000	153	
	87 Pentachloroethane	117	15.886	15.881	(0.966)	739032	150.000	190	
	88 1,2,4-Trimethylbenzene	105	15.958	15.952	(0.970)	3393510	150.000	143	
	89 P-Isopropyltoluene	119	16.272	16.274	(0.990)	3487952	150.000	142	
	90 1,3-Dichlorobenzene	146	16.351	16.344	(0.994)	1952091	150.000	147	
*	91 1,4-Dichlorobenzene-D4	152	16.444	16.437	(1.000)	628862	50.0000		
	92 1,4-Dichlorobenzene	146	16.458	16.460	(1.001)	1979437	150.000	148	
	93 N-Butylbenzene	91	16.787	16.788	(1.021)	3370759	150.000	143	
	94 sec-Butylbenzene	105	16.086	16.088	(0.978)	4095244	150.000	141	
	95 1,2-Dichlorobenzene	146	16.973	16.974	(1.032)	1928840	150.000	146	
	96 1,2-Dibromo-3-Chloropropane	75	17.945	17.946	(1.091)	294080	150.000	189	
	97 1,3,5-Trichlorobenzene	180	17.981	17.982	(2.227)	1482151	150.000	157	
	98 Hexachlorobutadiene	225	18.717	18.718	(1.138)	606207	150.000	141	
	99 1,2,4-Trichlorobenzene	180	18.753	18.754	(1.140)	1287484	150.000	154	
	100 1,2,3-Trimethylbenzene	105	16.494	16.495	(2.043)	3649466	150.000	152	
	101 Naphthalene	128	19.146	19.147	(1.164)	3395059	150.000	152	
	102 1,2,3-Trichlorobenzene	180	19.374	19.376	(1.178)	1205743	150.000	149	
	103 Methyl Acetate	43	4.442	4.444	(0.550)	824438	150.000	175	
	104 Methylcyclohexane	83	8.824	8.833	(1.093)	1403953	150.000	158	
M	153 Total Alkylbenzenes	100				25274157	150.000	1010	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.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Instrument: gcms-w.i
Operator: JSS
Column diameter: 0.18
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\\target_server\gg\chem\gcms-w.i\W050918.b\W3882.D
-Chloromethane (2.188)
-Vinyl chloride (2.256)
-Bromomethane (2.606)
-Chloroethane (2.734)
-Trichlorofluoromethane (2.885)
-Diethyl Ether (3.228)
-1,1-Dichloroethene (3.456)
-Carbon Disulfide (3.499)+
-Iodomethane (3.642)
-Acrolein (3.885)
-Allyl Chloride (4.050)
-Methylene Chloride (4.193)
-Acetone (4.278)
-trans-1,2-Dichloroethene (4.414)+
-Total Alkylbenzenes
-Methyl tert-butyl ether (4.571)
-Tertiary-butyl alcohol (4.722)
-Acetonitrile (4.979)
-Di-isopropyl ether (5.165)
-Chloroprene (5.329)+
-Acrylonitrile (5.486)
-Ethyl tertiary-butyl ethe (5.815)+
-cis-1,2-Dichloroethene (6.366)
-2,2-Dichloropropane (6.566)
-Bromochloromethane (6.716)+
-Chloroform (6.873)
-Carbon Tetrachloride (7.035)
-Tetrahydrofuran (7.166)+
-1,1-Dichloropropene (7.452)+
-Benzene (7.881)
-1,2-Dichloroethane-D4 (8.124)+
-1,2-Dichloroethane (8.238)
-Isobutyl Alcohol (8.353)
Propionitrile (8.010)+
-Trichloroethene (8.832)+
-1,4-Difluorobenzene (8.939)
-Dibromomethane (9.539)
-1,2-Dichloropropane (9.704)
-Bromodichloromethane (9.818)
-Ethyl Methacrylate (10.118)+
-1,2-Dichloroethylene (tot (10.268)
-cis-1,3-dichloropropene (10.812)
-Toluene-D8 (11.090)
-Toluene (11.169)
-Tetrachloroethene (11.734)
-4-methyl-2-pentanone (11.791)+
-1,1,2-Trichloroethane (12.055)
-Methyl Methacrylate (12.085)
-Dibromochloromethane (12.298)
-1,3-Dichloropropane (12.456)
-1,2-Dibromoethane (12.634)
-2-Hexanone (13.035)
-Ethylbenzene (13.484)
1,1,1,2-Tetrachloroethane (13.566)
Chlorobenzene-D5 (13.406)+
m+p-Xylenes (13.671)
-o-Xylenes (14.257)
Styrene (14.328)+
-Isopropylbenzene (14.672)
-P-Bromofluorobenzene (15.029)
-cis-1,4-Dichloro-2-Butene (15.158)+
N-Propylbenzene (15.215)
-1,1,2,2-Tetrachloroethane (15.315)
2-Chlorotoluene (15.401)
Xylenes (Total) (15.436)
-trans-1,4-Dichloro-2-Bute (15.537)
-4-Chlorotoluene (15.615)
1,3,5-Trimethylbenzene (15.472)+
-sec-Butylbenzene (16.087)
1,2,4-Trimethylbenzene (15.968)
-1,3-Dichlorobenzene (16.351)
P-Isopropyltoluene (16.273)
-1,2-Dichlorobenzene (16.973)
-1,2-Dibromo-3-Chloropropa (17.953)
-1,3,5-Trichlorobenzene (17.981)
-Hexachlorobutadiene (18.717)
1,2,4-Trichlorobenzene (18.753)
-Naphthalene (19.146)
-1,2,3-Trichlorobenzene (19.375)

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3883.D
Report Date: 15-May-2018 16:13

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3883.D
Lab Smp Id: WG227905-5
Inj Date : 09-MAY-2018 11:41 MS Autotune Date: 10-APR-2016 11:00
Operator : JSS Inst ID: gcms-w.i
Smp Info : WG227905-5
Misc Info :
Comment : SW846 5035
Method : \\target_server\gg\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 15-May-2018 15:32 hgould Quant Type: ISTD
Cal Date : 09-MAY-2018 11:41 Cal File: W3883.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

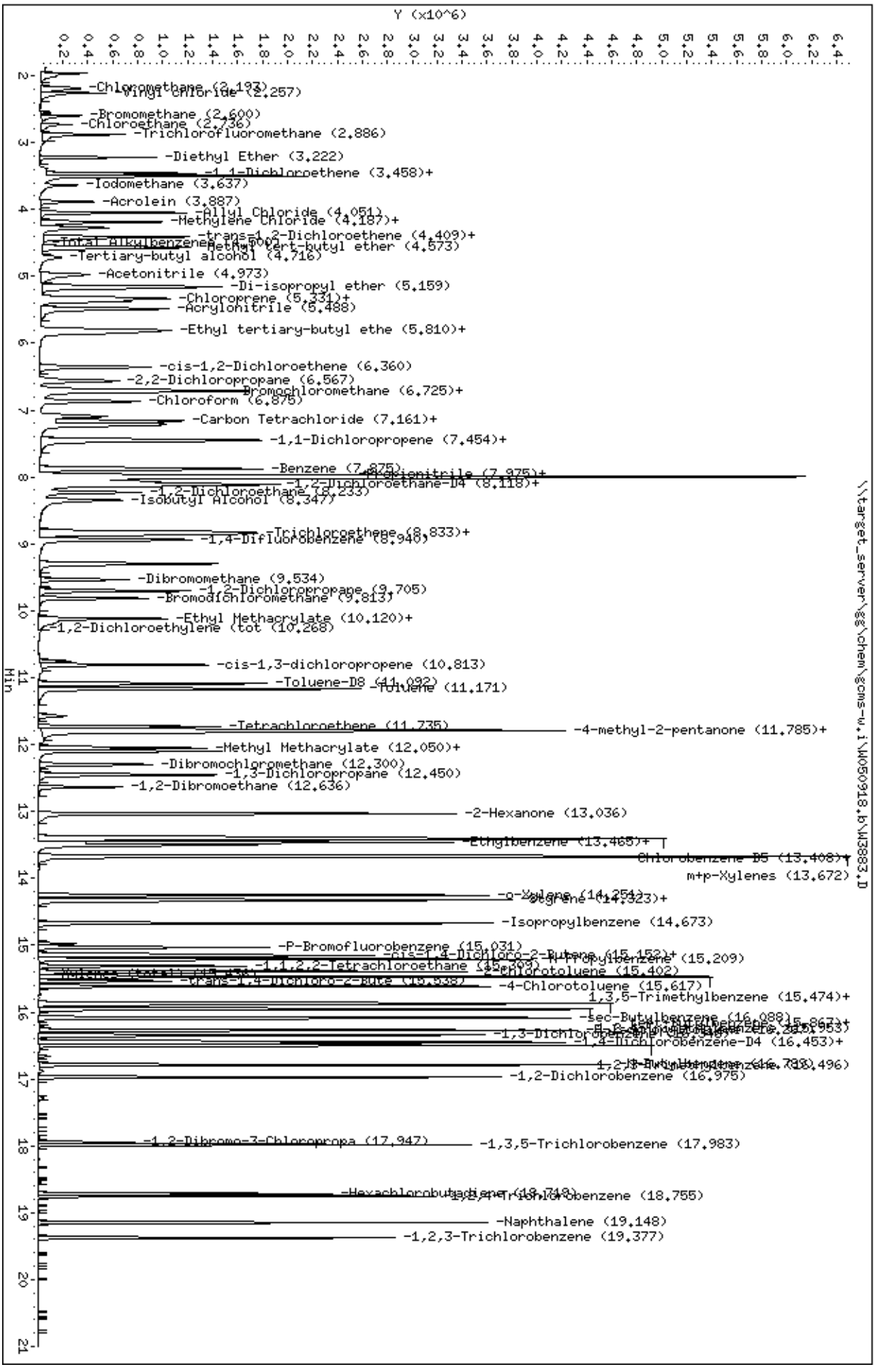
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	AMOUNTS ON-COL (ug/kg)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.963	1.971	(0.243)	473479	100.000	95.4	
2	Chloromethane	50	2.192	2.192	(0.272)	685445	100.000	91.4	
3	Vinyl chloride	62	2.257	2.264	(0.280)	588375	100.000	95.1	
4	Bromomethane	94	2.600	2.607	(0.322)	212156	100.000	95.2	
5	Chloroethane	64	2.735	2.743	(0.339)	252542	100.000	81.3	
6	Trichlorofluoromethane	101	2.878	2.885	(0.357)	700152	100.000	96.1	
7	Diethyl Ether	59	3.222	3.229	(0.399)	434165	100.000	99.4	
8	Tertiary-butyl alcohol	59	4.715	4.715	(0.584)	314764	500.000	679	
9	1,1-Dichloroethene	96	3.457	3.464	(0.429)	417896	100.000	94.7	
10	Carbon Disulfide	76	3.500	3.507	(0.434)	1582708	100.000	93.0	
11	Freon-113	151	3.500	3.507	(0.434)	347971	100.000	95.0	
12	Iodomethane	142	3.636	3.643	(0.451)	413920	100.000	113	
13	Acrolein	56	3.886	3.886	(0.482)	430917	500.000	508	
14	Methylene Chloride	84	4.194	4.194	(0.520)	567052	100.000	96.0	
15	Acetone	43	4.272	4.279	(0.530)	939148	500.000	438	
16	Isobutyl Alcohol	43	8.347	8.353	(1.035)	692337	2000.00	2870	
17	trans-1,2-Dichloroethene	96	4.408	4.415	(0.546)	475145	100.000	96.1	
18	Allyl Chloride	41	4.051	4.058	(0.502)	835518	100.000	101	
19	Methyl tert-butyl ether	73	4.573	4.572	(0.567)	1379280	100.000	106	
20	Acetonitrile	39	4.973	4.980	(0.616)	177863	1000.00	998	
21	Di-isopropyl ether	45	5.159	5.166	(0.639)	1825321	100.000	101	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3883.D
Report Date: 15-May-2018 16:13

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	AMOUNTS ON-COL (ug/kg)	REVIEW CODE
	22	Chloroprene	53	5.330	5.337	(0.661)	799486	100.000	97.4	
	23	Propionitrile	54	7.975	7.975	(0.988)	969150	1000.00	1020	
	24	Methacrylonitrile	41	7.996	8.003	(0.991)	3739936	1000.00	979	
	25	1,1-Dichloroethane	63	5.373	5.380	(0.666)	897662	100.000	99.2	
	26	Acrylonitrile	52	5.487	5.487	(0.680)	969952	500.000	516	
	27	Ethyl tertiary-butyl ether	59	5.809	5.809	(0.720)	1122714	100.000	114	
	28	Vinyl Acetate	43	5.845	5.852	(0.654)	1207677	100.000	122	
	29	cis-1,2-Dichloroethene	96	6.360	6.367	(0.788)	540688	100.000	98.1	
M	30	1,2-Dichloroethylene (total)	96				1015833	100.000	194	
	31	Methyl Methacrylate	41	12.099	12.099	(1.353)	580677	100.000	121	
	32	2,2-Dichloropropane	77	6.567	6.567	(0.814)	471829	100.000	117	
	33	Bromochloromethane	128	6.724	6.731	(0.833)	259904	100.000	98.5	
	34	Chloroform	83	6.874	6.874	(0.852)	854546	100.000	96.7	
	35	Carbon Tetrachloride	117	7.096	7.096	(0.794)	481164	100.000	118	
	36	Tetrahydrofuran	42	7.160	7.167	(0.887)	1060352	500.000	502	
$	37	Dibromofluoromethane	113	7.196	7.203	(0.892)	334984	50.0000	49.8	
	38	1,1,1-Trichloroethane	97	7.224	7.231	(0.895)	667709	100.000	102	
	39	1,1-Dichloropropene	75	7.446	7.453	(0.833)	653737	100.000	98.0	
	40	2-Butanone	43	7.460	7.460	(0.925)	1562812	500.000	484	
	41	Benzene	78	7.875	7.882	(0.881)	2006710	100.000	98.3	
*	42	Pentafluorobenzene	168	8.068	8.074	(1.000)	607433	50.0000		
	43	Cyclohexane	56	6.703	6.710	(0.831)	919281	100.000	99.7	
	44	Ethyl Methacrylate	69	10.119	10.119	(1.132)	435203	100.000	117	
$	45	1,2-Dichloroethane-D4	65	8.118	8.125	(1.006)	406133	50.0000	48.3	
	46	Tertiary-amyl methyl ether	73	8.111	8.118	(1.005)	1140718	100.000	116	
	47	1,2-Dichloroethane	62	8.232	8.231	(0.921)	715868	100.000	97.8	
	48	Trichloroethene	95	8.854	8.861	(0.990)	482573	100.000	95.0	
*	49	1,4-Difluorobenzene	114	8.940	8.947	(1.000)	1116599	50.0000		
	50	Dibromomethane	93	9.533	9.533	(1.066)	324063	100.000	102	
	51	1,2-Dichloropropane	63	9.705	9.705	(1.086)	540119	100.000	101	
	52	Bromodichloromethane	83	9.812	9.819	(1.098)	664282	100.000	103	
	53	cis-1,3-dichloropropene	75	10.813	10.813	(1.209)	841777	100.000	110	
	54	1,4-Dioxane	88	10.162	10.169	(1.137)	190767	2000.00	2170	
$	55	Toluene-D8	98	11.091	11.091	(1.241)	1339728	50.0000	50.2	
	57	Toluene	92	11.170	11.170	(1.249)	1239302	100.000	98.1	
	58	4-methyl-2-pentanone	43	11.785	11.792	(1.318)	3241775	500.000	511	
	59	Tetrachloroethene	164	11.735	11.735	(0.877)	371420	100.000	96.8	
	60	trans-1,3-Dichloropropene	75	11.821	11.820	(1.322)	702776	100.000	120	
	61	1,1,2-Trichloroethane	83	12.049	12.049	(1.348)	397568	100.000	98.5	
	62	Dibromochloromethane	129	12.300	12.299	(0.919)	513174	100.000	107	
	63	1,3-Dichloropropane	76	12.450	12.457	(0.930)	912883	100.000	100	
	64	1,2-Dibromoethane	107	12.635	12.635	(1.413)	498733	100.000	105	
	65	2-Hexanone	43	13.036	13.036	(0.974)	2429225	500.000	522	
*	66	Chlorobenzene-D5	117	13.386	13.386	(1.000)	1090871	50.0000		
	67	Chlorobenzene	112	13.407	13.407	(1.002)	1440209	100.000	98.9	
	152	1-Chlorohexane	91	13.407	13.407	(1.662)	685040	100.000	99.2	
	68	Ethylbenzene	106	13.465	13.465	(1.006)	770691	100.000	98.0	
	69	1,1,1,2-Tetrachloroethane	131	13.508	13.507	(1.009)	481420	100.000	109	
M	70	Xylenes (total)	106				2869625	100.000	295	
	71	m+p-Xylenes	106	13.672	13.672	(1.021)	1889124	200.000	195	
	72	o-Xylene	106	14.251	14.251	(1.065)	980501	100.000	100	
	73	Styrene	104	14.322	14.329	(1.070)	1661920	100.000	101	
	74	Bromoform	173	14.337	14.344	(1.071)	357327	100.000	110	
	75	Isopropylbenzene	105	14.673	14.673	(0.893)	2284747	100.000	94.6	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3883.D
Report Date: 15-May-2018 16:13

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
$	76	P-Bromofluorobenzene	95	15.030	15.030	(1.681)	591299	50.0000	50.7	
	77	cis-1,4-Dichloro-2-Butene	53	15.137	15.137	(0.921)	241646	100.000	114	
	78	trans-1,4-Dichloro-2-Butene	53	15.538	15.537	(0.945)	198710	100.000	114	
	79	Bromobenzene	156	15.159	15.159	(0.922)	641471	100.000	97.1	
	80	N-Propylbenzene	91	15.209	15.209	(0.925)	2939556	100.000	93.4	
	81	1,1,2,2-Tetrachloroethane	83	15.309	15.309	(0.931)	765519	100.000	98.9	
	82	1,3,5-Trimethylbenzene	105	15.466	15.466	(0.941)	2110143	100.000	94.9	
	83	2-Chlorotoluene	91	15.402	15.402	(0.937)	1840315	100.000	95.1	
	84	1,2,3-Trichloropropane	75	15.473	15.473	(0.941)	645484	100.000	97.4	
	85	4-Chlorotoluene	91	15.616	15.616	(0.950)	1944062	100.000	95.4	
	86	tert-Butylbenzene	119	15.866	15.866	(0.965)	2148463	100.000	98.0	
	87	Pentachloroethane	117	15.881	15.881	(0.966)	454895	100.000	113	
	88	1,2,4-Trimethylbenzene	105	15.952	15.952	(0.970)	2242641	100.000	94.7	
	89	P-Isopropyltoluene	119	16.274	16.274	(0.990)	2326815	100.000	94.7	
	90	1,3-Dichlorobenzene	146	16.345	16.344	(0.994)	1271768	100.000	95.4	
*	91	1,4-Dichlorobenzene-D4	152	16.438	16.437	(1.000)	636549	50.0000		
	92	1,4-Dichlorobenzene	146	16.460	16.460	(1.001)	1307614	100.000	97.0	
	93	N-Butylbenzene	91	16.788	16.788	(1.021)	2235035	100.000	94.5	
	94	sec-Butylbenzene	105	16.088	16.088	(0.979)	2730921	100.000	94.2	
	95	1,2-Dichlorobenzene	146	16.974	16.974	(1.033)	1272379	100.000	95.9	
	96	1,2-Dibromo-3-Chloropropane	75	17.946	17.946	(1.092)	172230	100.000	108	
	97	1,3,5-Trichlorobenzene	180	17.982	17.982	(2.229)	942521	100.000	96.4	
	98	Hexachlorobutadiene	225	18.718	18.718	(1.139)	399441	100.000	93.3	
	99	1,2,4-Trichlorobenzene	180	18.754	18.754	(1.141)	823053	100.000	97.6	
	100	1,2,3-Trimethylbenzene	105	16.495	16.495	(2.045)	2418098	100.000	97.3	
	101	Naphthalene	128	19.147	19.147	(1.165)	2316519	100.000	102	
	102	1,2,3-Trichlorobenzene	180	19.376	19.376	(1.179)	790369	100.000	97.3	
	103	Methyl Acetate	43	4.437	4.444	(0.550)	543973	100.000	109	
	104	Methylcyclohexane	83	8.826	8.833	(1.094)	888726	100.000	96.7	
M	153	Total Alkylbenzenes	100				16733574	100.000	664	


Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3883.D
Date : 09-MAY-2018 11:41
Client ID:
Sample Info: WG227905-5
Column phase: RTX-VMS
Instrument: gcms-w.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-w.i\W050918.b\W3883.D
-Chloromethane (2.193)
-Vinyl Chloride (2.257)
-Bromomethane (2.600)
-Chloroethane (2.736)
-Trichlorofluoromethane (2.886)
-Diethyl Ether (3.222)
-1,1-Dichloroethene (3.458)+
-Iodomethane (3.637)
-Acrolein (3.887)
-Allyl Chloride (4.051)
-Methylene Chloride (4.187)+
-trans-1,2-Dichloroethene (4.409)+
-Total Alkylbenzenes (4.900)+
-Methyl tert-butyl ether (4.573)
-Tertiary-butyl alcohol (4.716)
-Acetonitrile (4.973)
-Di-isopropyl ether (5.159)
-Chloroprene (5.331)+
-Acrylonitrile (5.488)
-Ethyl tertiary-butyl ethe (5.810)+
-cis-1,2-Dichloroethene (6.360)
-2,2-Dichloropropane (6.567)
-Bromochloromethane (6.725)+
-Chloroform (6.875)
-Carbon Tetrachloride (7.161)+
-1,1-Dichloropropene (7.454)+
-Benzene (7.875)
-Methacrylonitrile (7.975)+
-1,2-Dichloroethane-D4 (8.118)+
-1,2-Dichloroethane (8.233)
-Isobutyl Alcohol (8.347)
-Trichloroethene (8.833)+
-1,4-Difluorobenzene (8.940)
-Dibromomethane (9.534)
-1,2-Dichloropropane (9.705)
-Bromodichloromethane (9.813)
-Ethyl Methacrylate (10.120)+
-1,2-Dichloroethylene (tot (10.268)
-cis-1,3-dichloropropene (10.813)
-Toluene-D8 (11.092)
-Toluene (11.171)
-Tetrachloroethene (11.735)
-4-methyl-2-pentanone (11.785)+
-Methyl Methacrylate (12.050)+
-Dibromochloromethane (12.300)
-1,3-Dichloropropane (12.450)
-1,2-Dibromoethane (12.636)
-2-Hexanone (13.036)
-Ethylbenzene (13.468)+
Chlorobenzene-D5 (13.408)+
m+p-Xylenes (13.672)
-o-Xylene (14.254)+
-Styrene (14.323)+
-Isopropylbenzene (14.673)
-P-Bromofluorobenzene (15.031)
-cis-1,4-Dichloro-2-Butene (15.152)+
-n-Propylbenzene (15.209)
-1,1,2,2-Tetrachloroethane (15.309)
-2-Chlorotoluene (15.402)
-trans-1,4-Dichloro-2-Bute (15.538)
-4-Chlorotoluene (15.617)
1,3,5-Trimethylbenzene (15.474)+
-sec-Butylbenzene (16.088)
-1,3-Dichlorobenzene (16.340)
-1,4-Dichlorobenzene-D4 (16.453)+
-1,2-Dichlorobenzene (16.975)
-1,2-Dibromo-3-Chloropropa (17.947)
-1,3,5-Trichlorobenzene (17.983)
-Hexachlorobutadiene (18.748)
-1,2,4-Trichlorobenzene (18.755)
-Naphthalene (19.148)
-1,2,3-Trichlorobenzene (19.377)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG228234-4
Analytical Date: 05/14/18 11:19
Lab File ID : D1287.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.62391	0.62391	0.010	3.09389	20.00000	Averaged
2	Chloromethane	0.65045	0.62005	0.62005	0.100	-4.67427	20.00000	Averaged
3	Vinyl chloride	0.50829	0.50248	0.50248	0.010	-1.14423	20.00000	Averaged
4	Bromomethane	0.26245	0.27454	0.27454	0.010	4.60681	20.00000	Averaged
5	Chloroethane	0.23262	0.24058	0.24058	0.010	3.41946	20.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.81988	0.81988	0.010	3.96496	20.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.35305	0.35305	0.100	4.44865	20.00000	Averaged
10	Carbon Disulfide	1.04529	1.13729	1.13729	0.010	8.80095	20.00000	Averaged
11	Freon-113	0.29565	0.29341	0.29341	0.010	-0.75775	20.00000	Averaged
14	Methylene Chloride	0.56422	0.57139	0.57139	0.010	1.26936	20.00000	Averaged
15	Acetone	0.15669	0.15160	0.15160	0.010	-3.25019	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.51701	0.51701	0.010	0.15780	20.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.37646	1.37646	0.010	3.10236	20.00000	Averaged
25	1,1-Dichloroethane	0.96513	1.00126	1.00126	0.100	3.74370	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.56887	0.56887	0.010	3.52813	20.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.74529	0.74529	0.010	17.21189	20.00000	Averaged
33	Bromochloromethane	0.27091	0.29539	0.29539	0.010	9.03653	20.00000	Averaged
34	Chloroform	1.01172	1.05628	1.05628	0.010	4.40448	20.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.46187	0.46187	0.010	7.18751	20.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.88728	0.88728	0.010	6.58903	20.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.47804	0.47804	0.010	4.52053	20.00000	Averaged
40	2-Butanone	0.24292	0.23786	0.23786	0.010	-2.08416	20.00000	Averaged
41	Benzene	1.23369	1.26869	1.26869	0.010	2.83698	20.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.51792	0.51792	0.010	0.42827	20.00000	Averaged
48	Trichloroethene	0.33634	0.34238	0.34238	0.010	1.79484	20.00000	Averaged
50	Dibromomethane	0.22736	0.23720	0.23720	0.010	4.32754	20.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.34983	0.34983	0.010	4.88597	20.00000	Averaged
52	Bromodichloromethane	0.46224	0.49242	0.49242	0.010	6.53005	20.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.60327	0.60327	0.010	12.17813	20.00000	Averaged
57	Toluene	0.75378	0.76740	0.76740	0.010	1.80712	20.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.30016	0.30016	0.010	-1.40420	20.00000	Averaged
59	Tetrachloroethene	0.27263	0.27205	0.27205	0.010	-0.21195	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.50859	0.50859	0.010	9.12246	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26414	0.26414	0.010	-0.50861	20.00000	Averaged
62	Dibromochloromethane	0.37557	0.39494	0.39494	0.010	5.15663	20.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.60807	0.60807	0.010	-0.51426	20.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.32865	0.32865	0.010	2.66566	20.00000	Averaged
65	2-Hexanone	0.23077	0.22625	0.22625	0.010	-1.95742	20.00000	Averaged
67	Chlorobenzene	0.92421	0.91157	0.91157	0.300	-1.36796	20.00000	Averaged
68	Ethylbenzene	1.58372	1.61481	1.61481	0.010	1.96276	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.34462	0.34462	0.010	4.64448	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG228234-4
Analytical Date: 05/14/18 11:19
Lab File ID : D1287.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.20403	1.23913	1.23913	0.010	2.91515	20.00000	Averaged
72 o-Xylene	1.21487	1.28276	1.28276	0.010	5.58817	20.00000	Averaged
73 Styrene	0.91910	0.97235	0.97235	0.010	5.79316	20.00000	Averaged
74 Bromoform	50.00000	46.84350	0.23548	0.100	-6.31299	20.00000	Linear
75 Isopropylbenzene	2.65481	2.78983	2.78983	0.010	5.08572	20.00000	Averaged
79 Bromobenzene	0.74765	0.74159	0.74159	0.010	-0.80942	20.00000	Averaged
80 N-Propylbenzene	3.47227	3.54236	3.54236	0.010	2.01867	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.86973	0.81969	0.81969	0.300	-5.75343	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.30306	2.39736	2.39736	0.010	4.09444	20.00000	Averaged
83 2-Chlorotoluene	2.07978	2.12025	2.12025	0.010	1.94587	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74898	0.71578	0.71578	0.010	-4.43188	20.00000	Averaged
85 4-Chlorotoluene	2.20985	2.24912	2.24912	0.010	1.77718	20.00000	Averaged
86 tert-Butylbenzene	2.16738	2.24920	2.24920	0.010	3.77511	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.38615	2.48993	2.48993	0.010	4.34951	20.00000	Averaged
89 P-Isopropyltoluene	2.22161	2.35134	2.35134	0.010	5.83929	20.00000	Averaged
90 1,3-Dichlorobenzene	1.33333	1.32193	1.32193	0.010	-0.85486	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38362	1.34846	1.34846	0.010	-2.54147	20.00000	Averaged
93 N-Butylbenzene	2.07013	2.21627	2.21627	0.010	7.05978	20.00000	Averaged
94 sec-Butylbenzene	2.73458	2.83067	2.83067	0.010	3.51379	20.00000	Averaged
95 1,2-Dichlorobenzene	1.26487	1.26246	1.26246	0.010	-0.19039	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.13815	0.13326	0.13326	0.010	-3.53931	20.00000	Averaged
98 Hexachlorobutadiene	0.29715	0.29479	0.29479	0.010	-0.79621	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.74393	0.74278	0.74278	0.010	-0.15539	20.00000	Averaged
101 Naphthalene	50.00000	44.12384	1.58446	0.010	-11.75232	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60765	0.58158	0.58158	0.010	-4.29076	20.00000	Averaged
37 Dibromofluoromethane	0.58785	0.61099	0.61099	0.010	3.93565	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.74328	0.75738	0.75738	0.010	1.89788	20.00000	Averaged
55 Toluene-D8	1.21935	1.23358	1.23358	0.010	1.16653	20.00000	Averaged
76 P-Bromofluorobenzene	0.48673	0.50646	0.50646	0.010	4.05341	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228234-4
Lab File ID : D1287.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3807
Analytical Date: 05/14/18 11:19
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1287.d
Report Date: 15-May-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051418B.b\D1287.d
Lab Smp Id: WG228234-4
Inj Date : 14-MAY-2018 11:19 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228234-4,SL3807
Misc Info : WG228234,WG227999-4,SL3807-5
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051418B.b\D8A05(21)D.m
Meth Date : 15-May-2018 07:11 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.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

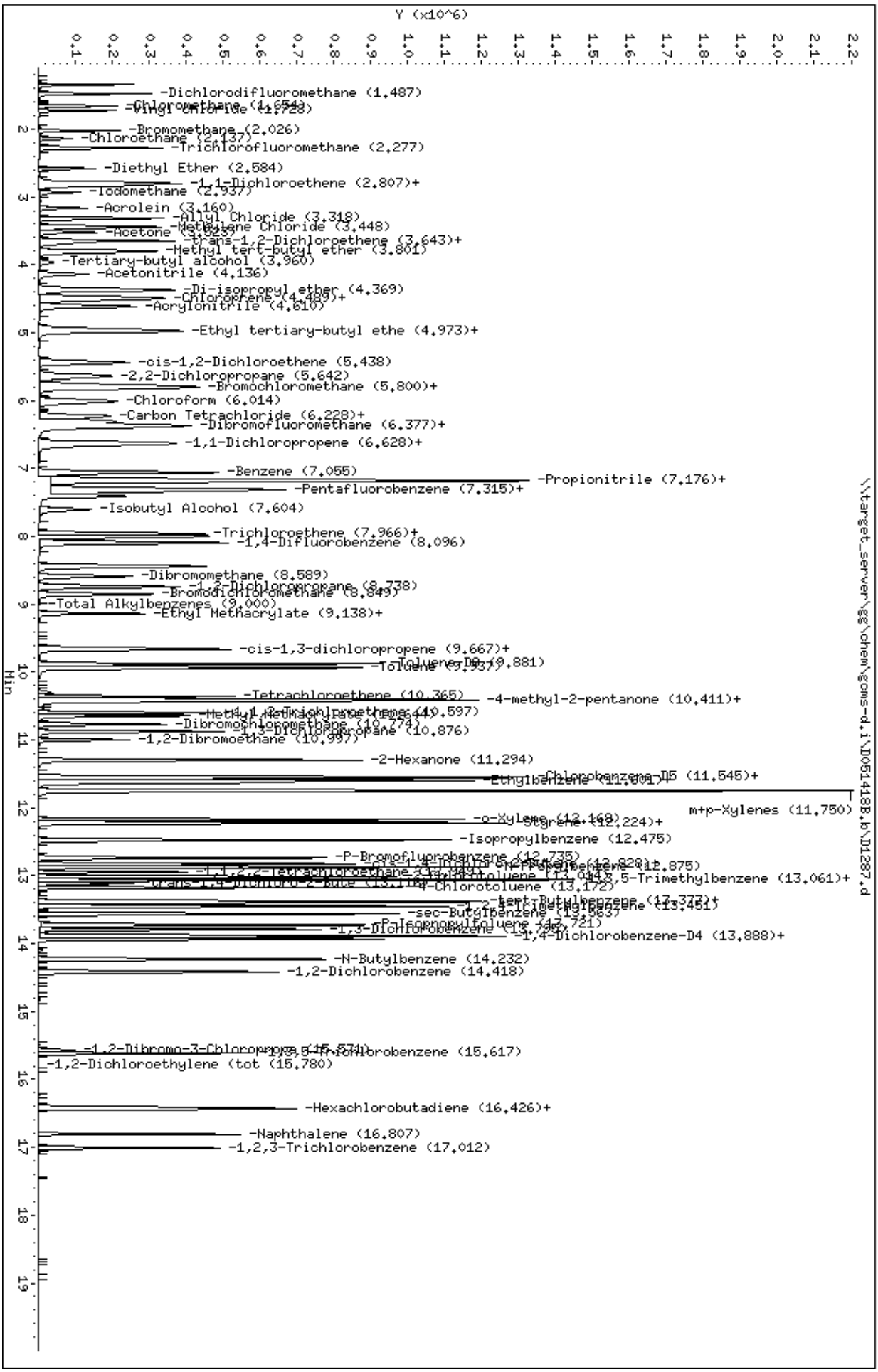
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	195711	50.0000	51.5	
2	Chloromethane	50	1.654	1.663	(0.226)	194500	50.0000	47.7	
3	Vinyl chloride	62	1.728	1.728	(0.236)	157619	50.0000	49.4	
4	Bromomethane	94	2.025	2.025	(0.277)	86120	50.0000	52.3	
5	Chloroethane	64	2.137	2.137	(0.292)	75465	50.0000	51.7	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	257185	50.0000	52.0	
7	Diethyl Ether	59	2.583	2.583	(0.353)	82191	50.0000	50.2	
8	Tertiary-butyl alcohol	59	3.959	3.969	(0.541)	47209	250.000	222	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	110745	50.0000	52.2	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	356750	50.0000	54.4	
11	Freon-113	151	2.834	2.835	(0.387)	92037	50.0000	49.6	
12	Iodomethane	142	2.936	2.937	(0.401)	125839	50.0000	56.9	
13	Acrolein	56	3.160	3.160	(0.432)	125392	250.000	236	
14	Methylene Chloride	84	3.448	3.448	(0.471)	179235	50.0000	50.6	
15	Acetone	43	3.522	3.522	(0.482)	237776	250.000	242	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	112099	1000.00	844	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	162179	50.0000	50.1	
18	Allyl Chloride	41	3.318	3.318	(0.454)	250145	50.0000	52.8	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	431776	50.0000	51.6	
20	Acetonitrile	39	4.136	4.136	(0.565)	41718	500.000	466	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	527813	50.0000	52.7	
22	Chloroprene	53	4.480	4.480	(0.612)	261273	50.0000	52.2	
23	Propionitrile	54	7.138	7.148	(0.976)	215946	500.000	472	

Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1287.d
Report Date: 15-May-2018 14:17

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.176	7.185	(0.981)	996052	500.000	488	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	314080	50.0000	51.9	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	253546	250.000	238	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	443418	50.0000	52.5	
	28	Vinyl Acetate	43	4.982	4.982	(0.615)	386803	50.0000	52.8	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	178446	50.0000	51.8	
M	30	1,2-Dichloroethylene (total)	96				340625	50.0000	102	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	146881	50.0000	47.2	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	233785	50.0000	58.6	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	92660	50.0000	54.5	
	34	Chloroform	83	6.014	6.014	(0.822)	331338	50.0000	52.2	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	237348	50.0000	53.6	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	226384	250.000	249	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	191658	50.0000	52.0	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	278325	50.0000	53.3	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	245658	50.0000	52.3	
	40	2-Butanone	43	6.655	6.655	(0.910)	373065	250.000	245	
	41	Benzene	78	7.055	7.055	(0.871)	651956	50.0000	51.4	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	313685	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	278572	50.0000	54.0	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	106539	50.0000	43.9	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	237580	50.0000	50.9	
	46	Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	355343	50.0000	50.7	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	266149	50.0000	50.2	
	48	Trichloroethene	95	8.003	8.003	(0.989)	175943	50.0000	50.9	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	513882	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	121893	50.0000	52.2	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	179770	50.0000	52.4	
	52	Bromodichloromethane	83	8.849	8.859	(1.093)	253046	50.0000	53.3	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	310008	50.0000	56.1	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	29673	1000.00	846	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	633913	50.0000	50.6	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	109925	50.0000	51.5	
	57	Toluene	92	9.937	9.937	(1.227)	394354	50.0000	50.9	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	771230	250.000	246	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	128993	50.0000	49.9	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	261353	50.0000	54.6	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	135737	50.0000	49.7	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	187259	50.0000	52.6	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.943)	288316	50.0000	49.7	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	168887	50.0000	51.3	
	65	2-Hexanone	43	11.294	11.294	(0.979)	536376	250.000	245	
*	66	Chlorobenzene-D5	117	11.536	11.536	(1.000)	474147	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	432217	50.0000	49.3	
	68	Ethylbenzene	91	11.601	11.601	(1.006)	765657	50.0000	51.0	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	163402	50.0000	52.3	
M	70	Xylenes (total)	106				1783275	150.000	156	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	1175060	100.000	103	
	72	o-Xylene	91	12.168	12.168	(1.055)	608215	50.0000	52.8	
	73	Styrene	104	12.223	12.224	(1.060)	461036	50.0000	52.9	
	74	Bromoform	173	12.233	12.233	(1.060)	111654	50.0000	46.8	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	677859	50.0000	52.5	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	260262	50.0000	52.0	
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	62979	50.0000	46.2	

Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1287.d
Report Date: 15-May-2018 14:17

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	51021	50.0000	46.0	
	79	Bromobenzene	156	12.828	12.828	(0.924)	180189	50.0000	49.6	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	860705	50.0000	51.0	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	199165	50.0000	47.1	
	82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	582498	50.0000	52.0	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	515168	50.0000	51.0	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	173917	50.0000	47.8	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	546481	50.0000	50.9	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	546500	50.0000	51.9	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	126664	50.0000	50.2	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	604991	50.0000	52.2	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	571317	50.0000	52.9	
	90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	321197	50.0000	49.6	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	242975	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	327641	50.0000	48.7	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	538499	50.0000	53.5	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	687782	50.0000	51.8	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	306746	50.0000	49.9	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	32379	50.0000	48.2	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	200738	50.0000	48.4	
	98	Hexachlorobutadiene	225	16.407	16.416	(1.182)	71626	50.0000	49.6	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	180476	50.0000	49.9	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	578853	50.0000	49.6	
	101	Naphthalene	128	16.807	16.806	(1.211)	384983	50.0000	44.1	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	141309	50.0000	47.8	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	128711	50.0000	45.9	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	251010	50.0000	51.8	
M	153	Total Alkylbenzenes	100				4392292	50.0000	365	


Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1287.d
Date : 14-MAY-2018 11:19
Client ID:
Sample Info: WG228234-4,SL3807
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051418B.b\D1287.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.654)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.523)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.960)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.377)+
-1,1-Dichloropropene (6.628)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.601)
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-1,1,2,2-Tetrachloroethane (12.828)+
-cis-1,4-Dichloro-2-butene (12.875)
-n-Propylbenzene (13.044)
-2-Chlorotoluene (13.118)
-1,3,5-Trimethylbenzene (13.061)+
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-p-Isopropyltoluene (13.721)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.574)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG228234-5
Analytical Date: 05/14/18 18:02
Lab File ID : D1296.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.57204	0.57204	0.010	-5.47725	50.00000	Averaged
2	Chloromethane	0.65045	0.56193	0.56193	0.100	-13.60934	50.00000	Averaged
3	Vinyl chloride	0.50829	0.46017	0.46017	0.010	-9.46743	50.00000	Averaged
4	Bromomethane	0.26245	0.22993	0.22993	0.010	-12.39304	50.00000	Averaged
5	Chloroethane	0.23262	0.22639	0.22639	0.010	-2.68009	50.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.80636	0.80636	0.010	2.24966	50.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.32071	0.32071	0.100	-5.11652	50.00000	Averaged
10	Carbon Disulfide	1.04529	1.03323	1.03323	0.010	-1.15395	50.00000	Averaged
11	Freon-113	0.29565	0.27836	0.27836	0.010	-5.84539	50.00000	Averaged
14	Methylene Chloride	0.56422	0.52913	0.52913	0.010	-6.21940	50.00000	Averaged
15	Acetone	0.15669	0.16069	0.16069	0.010	2.55056	50.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.46746	0.46746	0.010	-9.44224	50.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.30950	1.30950	0.010	-1.91315	50.00000	Averaged
25	1,1-Dichloroethane	0.96513	0.94513	0.94513	0.100	-2.07207	50.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.52357	0.52357	0.010	-4.71620	50.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.57524	0.57524	0.010	-9.53134	50.00000	Averaged
33	Bromochloromethane	0.27091	0.28061	0.28061	0.010	3.58037	50.00000	Averaged
34	Chloroform	1.01172	1.01217	1.01217	0.010	0.04523	50.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.41714	0.41714	0.010	-3.19345	50.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.82147	0.82147	0.010	-1.31659	50.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.42856	0.42856	0.010	-6.29815	50.00000	Averaged
40	2-Butanone	0.24292	0.25679	0.25679	0.010	5.70704	50.00000	Averaged
41	Benzene	1.23369	1.16865	1.16865	0.010	-5.27205	50.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.51750	0.51750	0.010	0.34764	50.00000	Averaged
48	Trichloroethene	0.33634	0.32490	0.32490	0.010	-3.40186	50.00000	Averaged
50	Dibromomethane	0.22736	0.23298	0.23298	0.010	2.47254	50.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.33775	0.33775	0.010	1.26611	50.00000	Averaged
52	Bromodichloromethane	0.46224	0.47169	0.47169	0.010	2.04525	50.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.55394	0.55394	0.010	3.00597	50.00000	Averaged
57	Toluene	0.75378	0.70938	0.70938	0.010	-5.88978	50.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.33063	0.33063	0.010	8.60512	50.00000	Averaged
59	Tetrachloroethene	0.27263	0.24130	0.24130	0.010	-11.49111	50.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.50782	0.50782	0.010	8.95783	50.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26268	0.26268	0.010	-1.05728	50.00000	Averaged
62	Dibromochloromethane	0.37557	0.38514	0.38514	0.010	2.54836	50.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.59586	0.59586	0.010	-2.51313	50.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.32865	0.32865	0.010	2.66526	50.00000	Averaged
65	2-Hexanone	0.23077	0.24955	0.24955	0.010	8.14087	50.00000	Averaged
67	Chlorobenzene	0.92421	0.86521	0.86521	0.300	-6.38362	50.00000	Averaged
68	Ethylbenzene	1.58372	1.50715	1.50715	0.010	-4.83491	50.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.32797	0.32797	0.010	-0.41192	50.00000	Averaged

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 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG228234-5
Analytical Date: 05/14/18 18:02
Lab File ID : D1296.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.20403	1.15989	1.15989	0.010	-3.66636	50.00000	Averaged
72 o-Xylene	1.21487	1.19449	1.19449	0.010	-1.67768	50.00000	Averaged
73 Styrene	0.91910	0.91753	0.91753	0.010	-0.17088	50.00000	Averaged
74 Bromoform	50.00000	47.05071	0.23655	0.100	-5.89857	50.00000	Linear
75 Isopropylbenzene	2.65481	2.52821	2.52821	0.010	-4.76893	50.00000	Averaged
79 Bromobenzene	0.74765	0.69948	0.69948	0.010	-6.44223	50.00000	Averaged
80 N-Propylbenzene	3.47227	3.24608	3.24608	0.010	-6.51398	50.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.86973	0.83271	0.83271	0.300	-4.25647	50.00000	Averaged
82 1,3,5-Trimethylbenzene	2.30306	2.19289	2.19289	0.010	-4.78372	50.00000	Averaged
83 2-Chlorotoluene	2.07978	1.94989	1.94989	0.010	-6.24523	50.00000	Averaged
84 1,2,3-Trichloropropane	0.74898	0.73764	0.73764	0.010	-1.51395	50.00000	Averaged
85 4-Chlorotoluene	2.20985	2.09179	2.09179	0.010	-5.34240	50.00000	Averaged
86 tert-Butylbenzene	2.16738	2.05387	2.05387	0.010	-5.23719	50.00000	Averaged
88 1,2,4-Trimethylbenzene	2.38615	2.29318	2.29318	0.010	-3.89595	50.00000	Averaged
89 P-Isopropyltoluene	2.22161	2.11210	2.11210	0.010	-4.92937	50.00000	Averaged
90 1,3-Dichlorobenzene	1.33333	1.21793	1.21793	0.010	-8.65517	50.00000	Averaged
92 1,4-Dichlorobenzene	1.38362	1.26100	1.26100	0.010	-8.86233	50.00000	Averaged
93 N-Butylbenzene	2.07013	1.93878	1.93878	0.010	-6.34492	50.00000	Averaged
94 sec-Butylbenzene	2.73458	2.53312	2.53312	0.010	-7.36714	50.00000	Averaged
95 1,2-Dichlorobenzene	1.26487	1.19103	1.19103	0.010	-5.83727	50.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.13815	0.14106	0.14106	0.010	2.10452	50.00000	Averaged
98 Hexachlorobutadiene	0.29715	0.24857	0.24857	0.010	-16.34927	50.00000	Averaged
99 1,2,4-Trichlorobenzene	0.74393	0.69445	0.69445	0.010	-6.65136	50.00000	Averaged
101 Naphthalene	50.00000	44.77185	1.60833	0.010	-10.45631	50.00000	Linear
102 1,2,3-Trichlorobenzene	0.60765	0.56843	0.56843	0.010	-6.45467	50.00000	Averaged
37 Dibromofluoromethane	0.58785	0.61417	0.61417	0.010	4.47720	50.00000	Averaged
45 1,2-Dichloroethane-D4	0.74328	0.80787	0.80787	0.010	8.69002	50.00000	Averaged
55 Toluene-D8	1.21935	1.24391	1.24391	0.010	2.01364	50.00000	Averaged
76 P-Bromofluorobenzene	0.48673	0.51970	0.51970	0.010	6.77393	50.00000	Averaged

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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http://katahdinlab.com
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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228234-5
Lab File ID : D1296.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3807
Analytical Date: 05/14/18 18:02
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1296.d
Report Date: 15-May-2018 14:18

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051418B.b\D1296.d
Lab Smp Id: WG228234-5
Inj Date : 14-MAY-2018 18:02 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228234-5,SL3807
Misc Info : WG228234,WG227999-4,SL3807-5
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051418B.b\D8A05(21)D.m
Meth Date : 15-May-2018 14:17 hgould Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 10 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

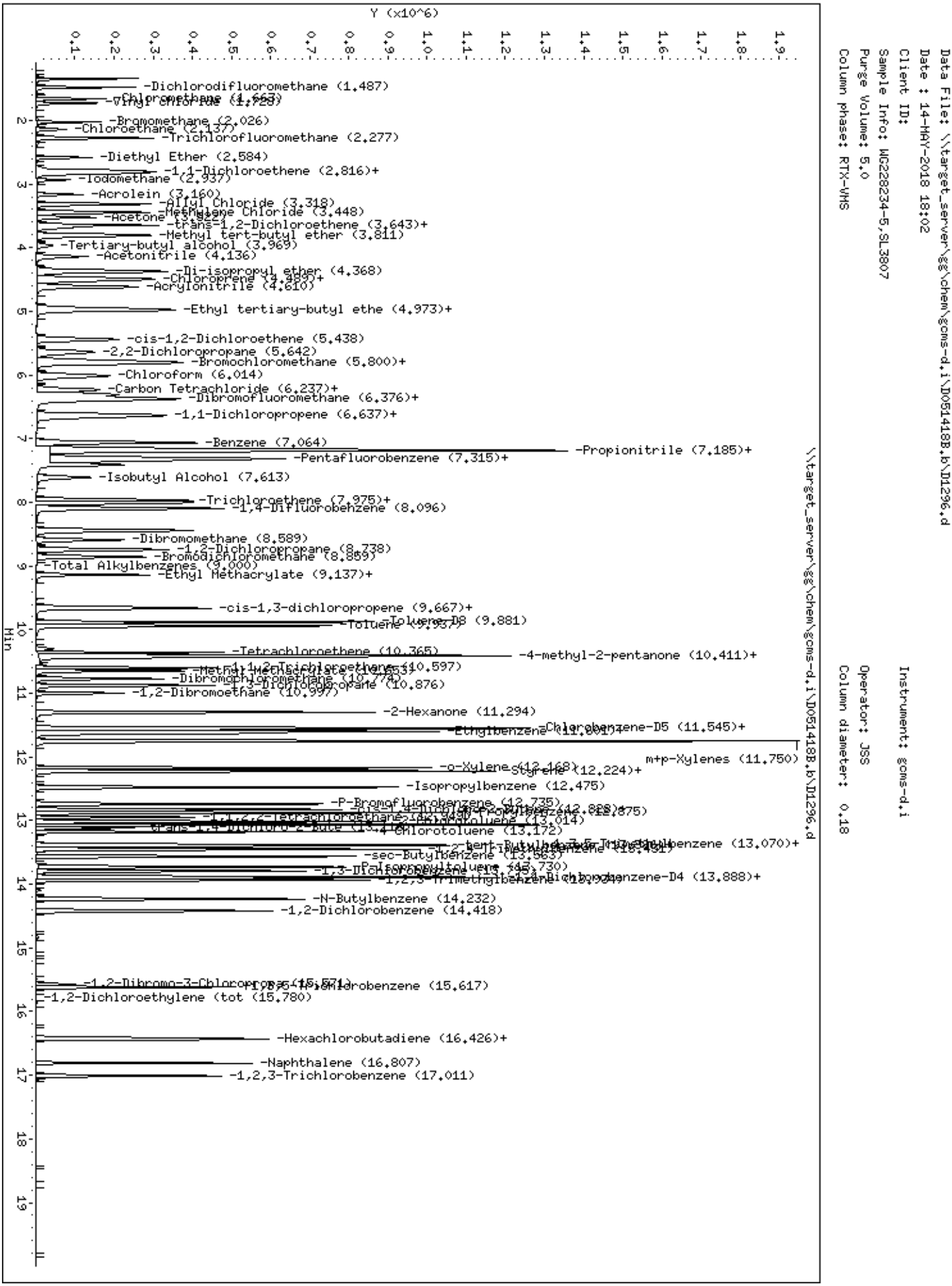
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	164521	50.0000	47.3	
2	Chloromethane	50	1.663	1.663	(0.227)	161614	50.0000	43.2	
3	Vinyl chloride	62	1.728	1.728	(0.236)	132347	50.0000	45.3	
4	Bromomethane	94	2.025	2.025	(0.277)	66128	50.0000	43.8	
5	Chloroethane	64	2.137	2.137	(0.292)	65110	50.0000	48.6	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	231912	50.0000	51.1	
7	Diethyl Ether	59	2.583	2.583	(0.353)	75926	50.0000	50.6	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	47326	250.000	242	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	92239	50.0000	47.4	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	297162	50.0000	49.4	
11	Freon-113	151	2.834	2.835	(0.387)	80059	50.0000	47.1	
12	Iodomethane	142	2.936	2.937	(0.401)	99006	50.0000	49.1	
13	Acrolein	56	3.169	3.160	(0.433)	118101	250.000	242	
14	Methylene Chloride	84	3.448	3.448	(0.471)	152181	50.0000	46.9	
15	Acetone	43	3.522	3.522	(0.482)	231078	250.000	256	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	117624	1000.00	961	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	134443	50.0000	45.3	
18	Allyl Chloride	41	3.317	3.318	(0.454)	214601	50.0000	49.4	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	376620	50.0000	49.0	
20	Acetonitrile	39	4.136	4.136	(0.565)	42822	500.000	522	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	461583	50.0000	50.3	
22	Chloroprene	53	4.479	4.480	(0.612)	228371	50.0000	49.7	
23	Propionitrile	54	7.148	7.148	(0.977)	218523	500.000	521	

Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1296.d
Report Date: 15-May-2018 14:18

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	1012820	500.000	542	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	271824	50.0000	49.0	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	251496	250.000	258	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	390213	50.0000	50.4	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	356831	50.0000	52.9	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	150581	50.0000	47.6	
M	30	1,2-Dichloroethylene (total)	96				285024	50.0000	92.9	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	142942	50.0000	49.8	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	165442	50.0000	45.2	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	80705	50.0000	51.8	
	34	Chloroform	83	6.013	6.014	(0.822)	291106	50.0000	50.0	
	35	Carbon Tetrachloride	117	6.236	6.237	(0.770)	197623	50.0000	48.4	
	36	Tetrahydrofuran	42	6.311	6.302	(0.863)	225467	250.000	271	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	176639	50.0000	52.2	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	236258	50.0000	49.3	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	203034	50.0000	46.8	
	40	2-Butanone	43	6.655	6.655	(0.910)	369265	250.000	264	
	41	Benzene	78	7.064	7.055	(0.873)	553654	50.0000	47.4	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	287605	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	230423	50.0000	48.7	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	104004	50.0000	46.4	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	232347	50.0000	54.3	
	46	Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	317620	50.0000	49.4	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	245170	50.0000	50.2	
	48	Trichloroethene	95	8.003	8.003	(0.989)	153924	50.0000	48.3	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	473756	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	110377	50.0000	51.2	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	160013	50.0000	50.6	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	223466	50.0000	51.0	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	262433	50.0000	51.5	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	28073	1000.00	868	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	589308	50.0000	51.0	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	94962	50.0000	48.3	
	57	Toluene	92	9.936	9.937	(1.227)	336075	50.0000	47.0	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	783190	250.000	272	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	106888	50.0000	44.2	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	240582	50.0000	54.5	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	124448	50.0000	49.5	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	170604	50.0000	51.3	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.942)	263942	50.0000	48.7	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	155699	50.0000	51.3	
	65	2-Hexanone	43	11.294	11.294	(0.978)	552712	250.000	270	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	442963	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.001)	383257	50.0000	46.8	
	68	Ethylbenzene	91	11.601	11.601	(1.005)	667613	50.0000	47.6	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.007)	145279	50.0000	49.8	
M	70	Xylenes (total)	106				1556687	150.000	145	
	71	m+p-Xylenes	91	11.749	11.750	(1.018)	1027574	100.000	96.3	
	72	o-Xylene	91	12.168	12.168	(1.054)	529113	50.0000	49.2	
	73	Styrene	104	12.223	12.224	(1.059)	406433	50.0000	49.9	
	74	Bromoform	173	12.233	12.233	(1.060)	104784	50.0000	47.0	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	583437	50.0000	47.6	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	246213	50.0000	53.4	
	77	cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	61666	50.0000	47.6	

Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1296.d
Report Date: 15-May-2018 14:18

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	49013	50.0000	46.6	
	79	Bromobenzene	156	12.828	12.828	(0.924)	161420	50.0000	46.8	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	749102	50.0000	46.7	
	81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	192166	50.0000	47.9	
	82	1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	506055	50.0000	47.6	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	449979	50.0000	46.9	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	170225	50.0000	49.2	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	482725	50.0000	47.3	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	473974	50.0000	47.4	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	115327	50.0000	48.1	
	88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	529200	50.0000	48.0	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	487412	50.0000	47.5	
	90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	281063	50.0000	45.7	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	230771	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	291002	50.0000	45.6	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	447414	50.0000	46.8	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	584571	50.0000	46.3	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	274856	50.0000	47.1	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	32552	50.0000	51.0	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	177452	50.0000	45.0	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	57363	50.0000	41.8	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	160259	50.0000	46.7	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	527837	50.0000	47.7	
	101	Naphthalene	128	16.806	16.806	(1.211)	371155	50.0000	44.8	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	131177	50.0000	46.8	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	130238	50.0000	50.7	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	211704	50.0000	47.6	
M	153	Total Alkylbenzenes	100				3777728	50.0000	330	


Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1296.d
Date : 14-MAY-2018 18:02
Client ID:
Sample Info: WG228234-5,SL3807
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051418B.b\D1296.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.816)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethene (10.597)
-Methyl Methacrylate (10.653)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.828)+
-1,1,2,2-Tetrachloroethane (12.949)
-2-Chlorotoluene (13.014)
-trans-1,4-Dichloro-2-Bute (13.116)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.070)+
-1,2,4-Trimethylbenzene (13.491)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.888)+
-1,2,3-Trimethylbenzene (13.924)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant **SDG:** SL3807
Lab ID : WG227905-11 **Analytical Date:** 05/09/18 19:21
Lab File ID : W3895.D **Instrument ID:** GCMS-W
Initial Calibration Date(s): 05/09/18 08:35 05/09/18 11:41 **Column ID:**

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.40832	0.38316	0.38316	0.010	-6.16116	50.00000	Averaged
2	Chloromethane	0.61761	0.58239	0.58239	0.100	-5.70381	50.00000	Averaged
3	Vinyl chloride	0.50945	0.51371	0.51371	0.010	0.83671	50.00000	Averaged
4	Bromomethane	0.18334	0.17114	0.17114	0.010	-6.65746	50.00000	Averaged
5	Chloroethane	50.00000	54.68970	0.26790	0.010	9.37940	50.00000	Quadratic
6	Trichlorofluoromethane	0.59959	0.61991	0.61991	0.010	3.38879	50.00000	Averaged
9	1,1-Dichloroethene	0.36322	0.34719	0.34719	0.010	-4.41324	50.00000	Averaged
10	Carbon Disulfide	1.40090	1.30996	1.30996	0.010	-6.49205	50.00000	Averaged
11	Freon-113	0.30136	0.28815	0.28815	0.010	-4.38422	50.00000	Averaged
14	Methylene Chloride	0.48614	0.45918	0.45918	0.010	-5.54636	50.00000	Averaged
15	Acetone	0.17840	0.15298	0.15298	0.010	-14.25204	50.00000	Averaged
17	trans-1,2-Dichloroethene	0.40677	0.38774	0.38774	0.010	-4.67997	50.00000	Averaged
19	Methyl tert-butyl ether	1.07388	0.93647	0.93647	0.010	-12.79624	50.00000	Averaged
25	1,1-Dichloroethane	0.74493	0.73414	0.73414	0.100	-1.44833	50.00000	Averaged
29	cis-1,2-Dichloroethene	0.45355	0.44145	0.44145	0.010	-2.66880	50.00000	Averaged
32	2,2-Dichloropropane	50.00000	36.31402	0.26382	0.010	-27.37196	50.00000	Linear
33	Bromochloromethane	0.21711	0.20582	0.20582	0.010	-5.20333	50.00000	Averaged
34	Chloroform	0.72753	0.70250	0.70250	0.010	-3.44005	50.00000	Averaged
35	Carbon Tetrachloride	50.00000	45.65140	0.19202	0.010	-8.69720	50.00000	Linear
38	1,1,1-Trichloroethane	0.53696	0.50730	0.50730	0.010	-5.52321	50.00000	Averaged
39	1,1-Dichloropropene	0.29876	0.30594	0.30594	0.010	2.40551	50.00000	Averaged
40	2-Butanone	0.26575	0.25446	0.25446	0.010	-4.24805	50.00000	Averaged
41	Benzene	0.91423	0.92846	0.92846	0.010	1.55651	50.00000	Averaged
47	1,2-Dichloroethane	0.32758	0.33324	0.33324	0.010	1.72790	50.00000	Averaged
48	Trichloroethene	0.22739	0.22920	0.22920	0.010	0.79422	50.00000	Averaged
50	Dibromomethane	0.14226	0.14705	0.14705	0.010	3.36880	50.00000	Averaged
51	1,2-Dichloropropane	0.23934	0.24672	0.24672	0.010	3.08602	50.00000	Averaged
52	Bromodichloromethane	0.28955	0.29840	0.29840	0.010	3.05776	50.00000	Averaged
53	cis-1,3-dichloropropene	0.34287	0.33747	0.33747	0.010	-1.57514	50.00000	Averaged
57	Toluene	0.56581	0.56143	0.56143	0.010	-0.77532	50.00000	Averaged
58	4-methyl-2-pentanone	0.28393	0.30884	0.30884	0.010	8.77196	50.00000	Averaged
59	Tetrachloroethene	0.17584	0.16982	0.16982	0.010	-3.42579	50.00000	Averaged
60	trans-1,3-Dichloropropene	50.00000	42.96251	0.26000	0.010	-14.07498	50.00000	Linear
61	1,1,2-Trichloroethane	0.18065	0.18187	0.18187	0.010	0.67939	50.00000	Averaged
62	Dibromochloromethane	0.21947	0.22903	0.22903	0.010	4.35618	50.00000	Averaged
63	1,3-Dichloropropane	0.41808	0.42624	0.42624	0.010	1.95211	50.00000	Averaged
64	1,2-Dibromoethane	0.21321	0.22162	0.22162	0.010	3.94881	50.00000	Averaged
65	2-Hexanone	0.21342	0.23141	0.23141	0.010	8.42755	50.00000	Averaged
67	Chlorobenzene	0.66739	0.67167	0.67167	0.300	0.64118	50.00000	Averaged
68	Ethylbenzene	0.36059	0.35911	0.35911	0.010	-0.41184	50.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.20216	0.20948	0.20948	0.010	3.62296	50.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG227905-11
Analytical Date: 05/09/18 19:21
Lab File ID : W3895.D
Instrument ID: GCMS-W
Initial Calibration Date(s): 05/09/18 08:35 05/09/18 11:41
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	0.44485	0.43815	0.43815	0.010	-1.50486	50.00000	Averaged
72 o-Xylene	0.44814	0.44827	0.44827	0.010	0.02707	50.00000	Averaged
73 Styrene	0.75422	0.76219	0.76219	0.010	1.05677	50.00000	Averaged
74 Bromoform	0.14901	0.15239	0.15239	0.100	2.26706	50.00000	Averaged
75 Isopropylbenzene	1.89645	1.86214	1.86214	0.010	-1.80946	50.00000	Averaged
79 Bromobenzene	0.51892	0.51122	0.51122	0.010	-1.48318	50.00000	Averaged
80 N-Propylbenzene	2.47189	2.38185	2.38185	0.010	-3.64273	50.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.60796	0.61669	0.61669	0.300	1.43610	50.00000	Averaged
82 1,3,5-Trimethylbenzene	1.74695	1.68603	1.68603	0.010	-3.48750	50.00000	Averaged
83 2-Chlorotoluene	1.52052	1.48790	1.48790	0.010	-2.14549	50.00000	Averaged
84 1,2,3-Trichloropropane	0.52067	0.53311	0.53311	0.010	2.38989	50.00000	Averaged
85 4-Chlorotoluene	1.60026	1.54519	1.54519	0.010	-3.44135	50.00000	Averaged
86 tert-Butylbenzene	1.72203	1.68103	1.68103	0.010	-2.38097	50.00000	Averaged
88 1,2,4-Trimethylbenzene	1.86071	1.78298	1.78298	0.010	-4.17733	50.00000	Averaged
89 P-Isopropyltoluene	1.93076	1.81574	1.81574	0.010	-5.95707	50.00000	Averaged
90 1,3-Dichlorobenzene	1.04700	0.99241	0.99241	0.010	-5.21470	50.00000	Averaged
92 1,4-Dichlorobenzene	1.05865	0.99768	0.99768	0.010	-5.75843	50.00000	Averaged
93 N-Butylbenzene	1.85713	1.71789	1.71789	0.010	-7.49752	50.00000	Averaged
94 sec-Butylbenzene	2.27634	2.17913	2.17913	0.010	-4.27050	50.00000	Averaged
95 1,2-Dichlorobenzene	1.04188	1.00313	1.00313	0.010	-3.71972	50.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	50.00000	55.61445	0.14340	0.010	11.22890	50.00000	Quadratic
98 Hexachlorobutadiene	0.33620	0.29866	0.29866	0.010	-11.16662	50.00000	Averaged
99 1,2,4-Trichlorobenzene	0.66251	0.57810	0.57810	0.010	-12.74155	50.00000	Averaged
101 Naphthalene	1.78132	1.74949	1.74949	0.010	-1.78663	50.00000	Averaged
102 1,2,3-Trichlorobenzene	0.63819	0.57580	0.57580	0.010	-9.77678	50.00000	Averaged
37 Dibromofluoromethane	0.55411	0.52445	0.52445	0.010	-5.35250	50.00000	Averaged
45 1,2-Dichloroethane-D4	0.69189	0.65862	0.65862	0.010	-4.80797	50.00000	Averaged
55 Toluene-D8	1.19553	1.19906	1.19906	0.010	0.29573	50.00000	Averaged
76 P-Bromofluorobenzene	0.52260	0.51697	0.51697	0.010	-1.07743	50.00000	Averaged

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 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227905-11
Lab File ID : W3895.D
Initial Calibration Date(s): 05/09/18 08:35 05/09/18 11:41

SDG: SL3807
Analytical Date: 05/09/18 19:21
Instrument ID: GCMS-W
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3895.D
Report Date: 17-May-2018 16:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3895.D
Lab Smp Id: WG227905-11
Inj Date : 09-MAY-2018 19:21 MS Autotune Date: 10-APR-2016 11:00
Operator : JSS Inst ID: gcms-w.i
Smp Info : WG227905-11,SL3807
Misc Info : WG227905,WG227905-4,SL3807-1
Comment : SW846 5035
Method : \\target_server\gg\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 15-May-2018 15:32 hgould Quant Type: ISTD
Cal Date : 09-MAY-2018 09:49 Cal File: W3880.D
Als bottle: 18 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 * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.969	1.971	(0.244)	208894	50.0000	46.9	
2	Chloromethane	50	2.197	2.192	(0.272)	317510	50.0000	47.1	
3	Vinyl chloride	62	2.262	2.264	(0.280)	280071	50.0000	50.4	
4	Bromomethane	94	2.605	2.607	(0.323)	93302	50.0000	46.7	
5	Chloroethane	64	2.741	2.743	(0.340)	146058	50.0000	54.7	
6	Trichlorofluoromethane	101	2.883	2.885	(0.357)	337969	50.0000	51.7	
7	Diethyl Ether	59	3.227	3.229	(0.400)	198670	50.0000	50.7	
8	Tertiary-butyl alcohol	59	4.721	4.715	(0.585)	91907	250.000	201	
9	1,1-Dichloroethene	96	3.462	3.464	(0.429)	189282	50.0000	47.8	
10	Carbon Disulfide	76	3.505	3.507	(0.434)	714174	50.0000	46.8	
11	Freon-113	151	3.498	3.507	(0.433)	157097	50.0000	47.8	
12	Iodomethane	142	3.641	3.643	(0.451)	182372	50.0000	48.3	
13	Acrolein	56	3.884	3.886	(0.481)	183578	250.000	241	
14	Methylene Chloride	84	4.192	4.194	(0.519)	250340	50.0000	47.2	
15	Acetone	43	4.277	4.279	(0.530)	417011	250.000	214	
16	Isobutyl Alcohol	43	8.352	8.353	(1.035)	214700	1000.00	870	
17	trans-1,2-Dichloroethene	96	4.413	4.415	(0.547)	211389	50.0000	47.7	
18	Allyl Chloride	41	4.056	4.058	(0.502)	368314	50.0000	49.4	
19	Methyl tert-butyl ether	73	4.570	4.572	(0.566)	510551	50.0000	43.6	
20	Acetonitrile	39	4.978	4.980	(0.617)	78915	500.000	493	
21	Di-isopropyl ether	45	5.164	5.166	(0.640)	818769	50.0000	50.3	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3895.D
Report Date: 17-May-2018 16:37

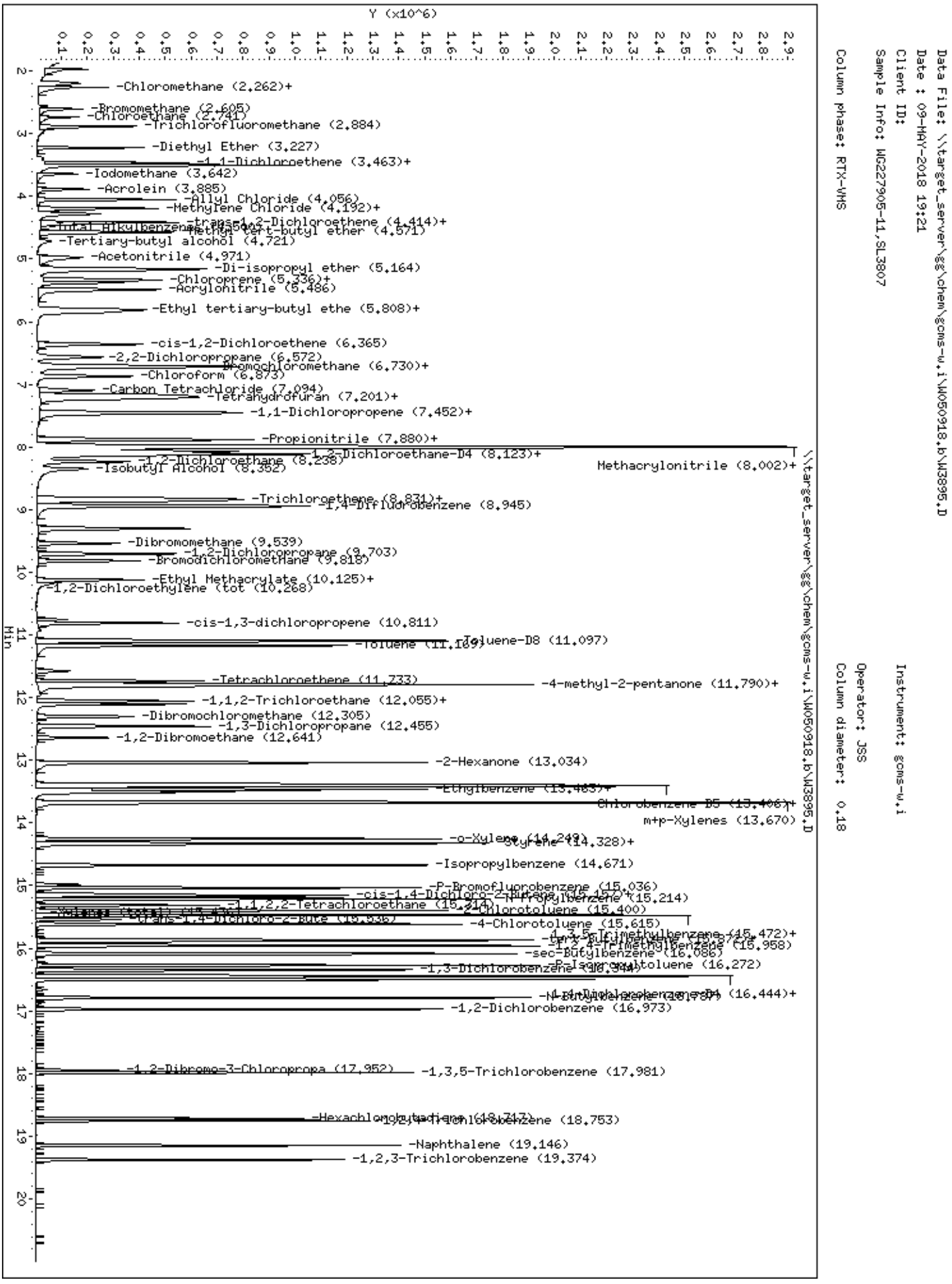
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
	22 Chloroprene	53	5.328	5.337	(0.660)	356569	50.0000	48.4	
	23 Propionitrile	54	7.973	7.975	(0.988)	429253	500.000	501	
	24 Methacrylonitrile	41	8.001	8.003	(0.991)	1794658	500.000	523	
	25 1,1-Dichloroethane	63	5.378	5.380	(0.666)	400243	50.0000	49.3	
	26 Acrylonitrile	52	5.485	5.487	(0.679)	431196	250.000	256	
	27 Ethyl tertiary-butyl ether	59	5.807	5.809	(0.719)	375282	50.0000	42.5	
	28 Vinyl Acetate	43	5.850	5.852	(0.654)	446087	50.0000	45.6	
	29 cis-1,2-Dichloroethene	96	6.365	6.367	(0.788)	240672	50.0000	48.7	
M	30 1,2-Dichloroethylene (total)	96				452061	100.000	96.3	
	31 Methyl Methacrylate	41	12.104	12.099	(1.353)	230912	50.0000	47.6(H)	
	32 2,2-Dichloropropane	77	6.572	6.567	(0.814)	143830	50.0000	36.3	
	33 Bromochloromethane	128	6.729	6.731	(0.834)	112209	50.0000	47.4	
	34 Chloroform	83	6.872	6.874	(0.851)	382996	50.0000	48.3	
	35 Carbon Tetrachloride	117	7.094	7.096	(0.793)	185523	50.0000	45.6	
	36 Tetrahydrofuran	42	7.165	7.167	(0.888)	477068	250.000	252	
$	37 Dibromofluoromethane	113	7.201	7.203	(0.892)	285927	50.0000	47.3	
	38 1,1,1-Trichloroethane	97	7.229	7.231	(0.896)	276576	50.0000	47.2	
	39 1,1-Dichloropropene	75	7.451	7.453	(0.833)	295586	50.0000	51.2	
	40 2-Butanone	43	7.465	7.460	(0.925)	693646	250.000	239	
	41 Benzene	78	7.880	7.882	(0.881)	897037	50.0000	50.8	
*	42 Pentafluorobenzene	168	8.073	8.074	(1.000)	545189	50.0000		
	43 Cyclohexane	56	6.708	6.710	(0.831)	394970	50.0000	47.7	
	44 Ethyl Methacrylate	69	10.124	10.119	(1.132)	176133	50.0000	47.9	
$	45 1,2-Dichloroethane-D4	65	8.123	8.125	(1.006)	359074	50.0000	47.6	
	46 Tertiary-amyl methyl ether	73	8.116	8.118	(1.005)	385370	50.0000	39.8	
	47 1,2-Dichloroethane	62	8.237	8.231	(0.921)	321958	50.0000	50.9	
	48 Trichloroethene	95	8.859	8.861	(0.990)	221440	50.0000	50.4	
*	49 1,4-Difluorobenzene	114	8.945	8.947	(1.000)	966151	50.0000		
	50 Dibromomethane	93	9.538	9.533	(1.066)	142071	50.0000	51.7	
	51 1,2-Dichloropropane	63	9.703	9.705	(1.085)	238371	50.0000	51.5	
	52 Bromodichloromethane	83	9.817	9.819	(1.097)	288302	50.0000	51.5	
	53 cis-1,3-dichloropropene	75	10.811	10.813	(1.209)	326047	50.0000	49.2	
	54 1,4-Dioxane	88	10.167	10.169	(1.137)	83648	1000.00	1100	
$	55 Toluene-D8	98	11.097	11.091	(1.241)	1158476	50.0000	50.1	
	57 Toluene	92	11.168	11.170	(1.249)	542422	50.0000	49.6	
	58 4-methyl-2-pentanone	43	11.790	11.792	(1.318)	1491935	250.000	272	
	59 Tetrachloroethene	164	11.733	11.735	(0.877)	159884	50.0000	48.3	
	60 trans-1,3-Dichloropropene	75	11.818	11.820	(1.321)	251202	50.0000	43.0	
	61 1,1,2-Trichloroethane	83	12.054	12.049	(1.348)	175718	50.0000	50.3	
	62 Dibromochloromethane	129	12.305	12.299	(0.919)	215634	50.0000	52.2	
	63 1,3-Dichloropropane	76	12.455	12.457	(0.931)	401306	50.0000	51.0	
	64 1,2-Dibromoethane	107	12.641	12.635	(1.413)	214123	50.0000	52.0	
	65 2-Hexanone	43	13.034	13.036	(0.974)	1089343	250.000	271	
*	66 Chlorobenzene-D5	117	13.384	13.386	(1.000)	941503	50.0000		
	67 Chlorobenzene	112	13.405	13.407	(1.002)	632377	50.0000	50.3	
	68 Ethylbenzene	106	13.463	13.465	(1.006)	338102	50.0000	49.8	
	69 1,1,1,2-Tetrachloroethane	131	13.505	13.507	(1.009)	197228	50.0000	51.8	
M	70 Xylenes (total)	106				1247087	150.000	148	
	71 m+p-Xylenes	106	13.670	13.672	(1.021)	825043	100.000	98.5	
	72 o-Xylene	106	14.249	14.251	(1.065)	422044	50.0000	50.0	
	73 Styrene	104	14.327	14.329	(1.070)	717608	50.0000	50.5	
	74 Bromoform	173	14.342	14.344	(1.072)	143473	50.0000	51.1	
	75 Isopropylbenzene	105	14.678	14.673	(0.893)	1011667	50.0000	49.1	
$	76 P-Bromofluorobenzene	95	15.028	15.030	(1.680)	499467	50.0000	49.5	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3895.D
Report Date: 17-May-2018 16:37

		QUANT SIG					AMOUNTS		
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/kg)	ON-COL (ug/kg)	REVIEW CODE
	77 cis-1,4-Dichloro-2-Butene	53	15.135	15.137	(0.920)	88229	50.0000	43.3	
	78 trans-1,4-Dichloro-2-Butene	53	15.535	15.537	(0.945)	72985	50.0000	43.7	
	79 Bromobenzene	156	15.157	15.159	(0.922)	277739	50.0000	49.2	
	80 N-Propylbenzene	91	15.214	15.209	(0.925)	1294018	50.0000	48.2	
	81 1,1,2,2-Tetrachloroethane	83	15.314	15.309	(0.931)	335036	50.0000	50.7	
	82 1,3,5-Trimethylbenzene	105	15.471	15.466	(0.941)	915991	50.0000	48.2	
	83 2-Chlorotoluene	91	15.400	15.402	(0.937)	808349	50.0000	48.9	
	84 1,2,3-Trichloropropane	75	15.471	15.473	(0.941)	289629	50.0000	51.2	
	85 4-Chlorotoluene	91	15.614	15.616	(0.950)	839477	50.0000	48.3	
	86 tert-Butylbenzene	119	15.864	15.866	(0.965)	913274	50.0000	48.8	
	87 Pentachloroethane	117	15.886	15.881	(0.966)	177565	50.0000	45.8	
	88 1,2,4-Trimethylbenzene	105	15.957	15.952	(0.970)	968664	50.0000	47.9	
	89 P-Isopropyltoluene	119	16.272	16.274	(0.990)	986460	50.0000	47.0	
	90 1,3-Dichlorobenzene	146	16.350	16.344	(0.994)	539157	50.0000	47.4	
*	91 1,4-Dichlorobenzene-D4	152	16.443	16.437	(1.000)	543283	50.0000		
	92 1,4-Dichlorobenzene	146	16.458	16.460	(1.001)	542025	50.0000	47.1	
	93 N-Butylbenzene	91	16.786	16.788	(1.021)	933303	50.0000	46.2	
	94 sec-Butylbenzene	105	16.086	16.088	(0.978)	1183885	50.0000	47.9	
	95 1,2-Dichlorobenzene	146	16.972	16.974	(1.032)	544981	50.0000	48.1	
	96 1,2-Dibromo-3-Chloropropane	75	17.951	17.946	(1.092)	77909	50.0000	55.6	
	97 1,3,5-Trichlorobenzene	180	17.980	17.982	(2.227)	370034	50.0000	42.2	
	98 Hexachlorobutadiene	225	18.716	18.718	(1.138)	162255	50.0000	44.4	
	99 1,2,4-Trichlorobenzene	180	18.752	18.754	(1.140)	314072	50.0000	43.6	
	100 1,2,3-Trimethylbenzene	105	16.493	16.495	(2.043)	1073281	50.0000	48.1	
	101 Naphthalene	128	19.145	19.147	(1.164)	950468	50.0000	49.1	
	102 1,2,3-Trichlorobenzene	180	19.374	19.376	(1.178)	312821	50.0000	45.1	
	103 Methyl Acetate	43	4.442	4.444	(0.550)	207833	50.0000	46.3	
	104 Methylcyclohexane	83	8.831	8.833	(1.094)	399075	50.0000	48.4	
M	153 Total Alkylbenzenes	100				7195595	50.0000	334	

QC Flag Legend

H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3895.D
Date : 09-MAY-2018 19:21
Client ID:
Sample Info: WG227905-11,SL3807
Column phase: RTX-VMS
Instrument: gcms-w.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
-Chloromethane (2.262)+
-Bromomethane (2.605)
-Chloroethane (2.741)
-Trichlorofluoromethane (2.884)
-Diethyl Ether (3.227)
-1,1-Dichloroethene (3.463)+
-Iodomethane (3.642)
-Acrolein (3.885)
-Allyl Chloride (4.056)
-Methylene Chloride (4.192)+
-trans-1,2-Dichloroethene (4.414)+
-Methyl tert-butyl ether (4.571)
-Tertiary-butyl alcohol (4.721)
-Acetonitrile (4.971)
-Di-isopropyl ether (5.164)
-Chloroprene (5.336)+
-Acrylonitrile (5.486)
-Ethyl tertiary-butyl ethe (5.808)+
-cis-1,2-Dichloroethene (6.365)
-2,2-Dichloropropane (6.572)
-Bromochloromethane (6.730)+
-Chloroform (6.873)
-Carbon Tetrachloride (7.094)
-Tetrahydrofuran (7.201)+
-1,1-Dichloropropene (7.452)+
-Propionitrile (7.880)+
-1,2-Dichloroethane-D4 (8.123)+
-1,2-Dichloroethane (8.238)
-Isobutyl Alcohol (8.352)
Methacrylonitrile (8.002)+
-Trichloroethene (8.831)+
-1,4-Difluorobenzene (8.945)
-Dibromomethane (9.539)
-1,2-Dichloropropane (9.703)
-Bromodichloromethane (9.818)
-Ethyl Methacrylate (10.125)+
-1,2-Dichloroethylene (tot (10.268)
-cis-1,3-dichloropropene (10.811)
-Toluene-D8 (11.097)
-Toluene (11.169)
-Tetrachloroethene (11.733)
-4-methyl-2-pentanone (11.790)+
-1,1,2-Trichloroethane (12.055)+
-Dibromochloromethane (12.305)
-1,3-Dichloropropane (12.455)
-1,2-Dibromoethane (12.641)
-2-Hexanone (13.034)
-Ethylbenzene (13.483)+
Chlorobenzene-D5 (13.406)+
m+p-Xylenes (13.670)
-o-Xylene (14.249)
-Styrene (14.328)+
-Isopropylbenzene (14.671)
-P-Bromofluorobenzene (15.036)
-cis-1,4-Dichloro-2-Butene (15.214)
-1,1,2,2-Tetrachloroethane (15.214)
-Bromobenzene (15.400)
-4-Chlorotoluene (15.615)
-n-Propylbenzene (15.472)+
-1,3,5-Trimethylbenzene (15.958)
-sec-Butylbenzene (16.086)
-1,3-Dichlorobenzene (16.444)+
-1,4-Dichlorobenzene-D4 (16.444)+
-1,2-Dichlorobenzene (16.973)
-1,2-Dibromo-3-Chloropropa (17.952)
-1,3,5-Trichlorobenzene (17.981)
-1,2,4-Trichlorobenzene (18.753)
-Naphthalene (19.146)
-1,2,3-Trichlorobenzene (19.374)
\\target_server\gg\chem\gcms-w.i\W050918.b\W3895.D

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\DB173a.d

Date : 10-MAY-2018 07:31

Client ID:

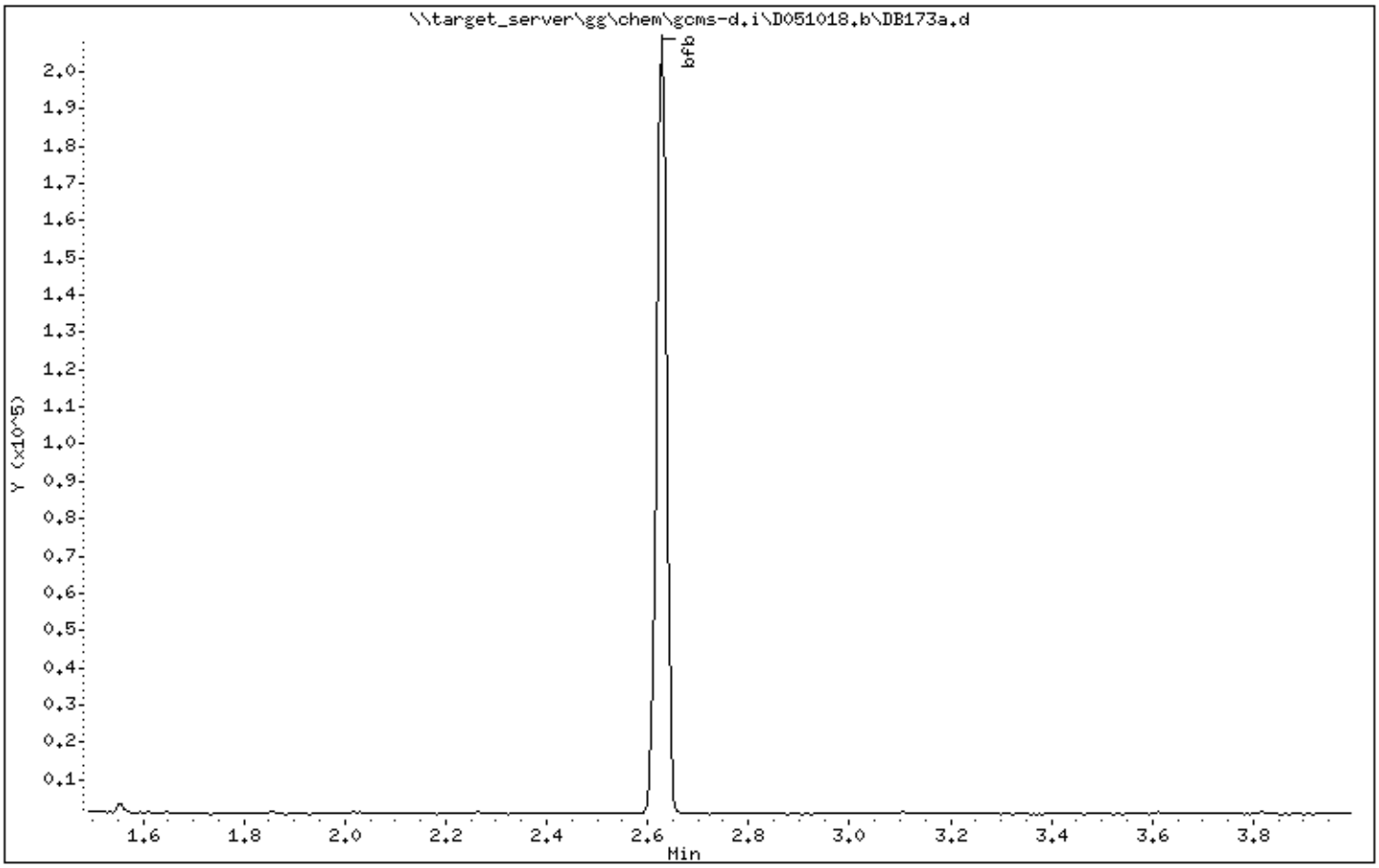
Instrument: gcms-d.i

Sample Info: WG227999-10,SL3807

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\DB173a.d

Date : 10-MAY-2018 07:31

Client ID:

Instrument: gcms-d.i

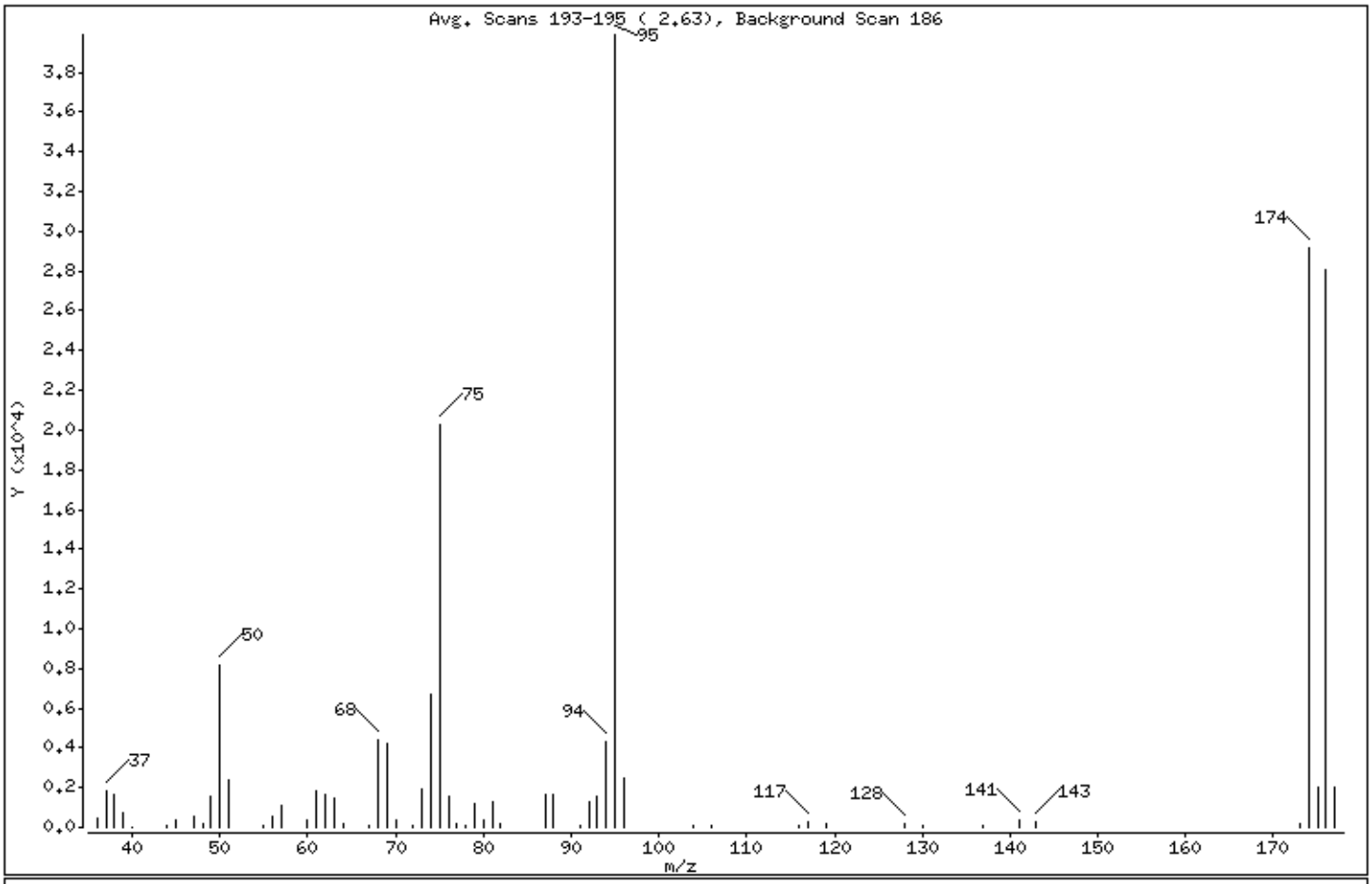
Sample Info: WG227999-10,SL3807

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	20.46
75	30.00 - 60.00% of mass 95	50.88
96	5.00 - 9.00% of mass 95	6.32
173	Less than 2.00% of mass 174	0.38 (0.51)
174	Greater than 50.00% of mass 95	73.06
175	5.00 - 9.00% of mass 174	4.94 (6.77)
176	95.00 - 101.00% of mass 174	70.32 (96.24)
177	5.00 - 9.00% of mass 176	5.09 (7.24)

Date : 10-MAY-2018 07:31

Client ID: Instrument: gcms-d.i

Sample Info: WG227999-10,SL3807

Operator: JSS

Column phase: RTX-VMS Column diameter: 0.18

Data File: DB173a.d
Spectrum: Avg. Scans 193-195 (2.63), Background Scan 186
Location of Maximum: 95.00
Number of points: 58

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	435	60.00	338	78.00	66	116.00	107
37.00	1821	61.00	1822	79.00	1175	117.00	244
38.00	1677	62.00	1652	80.00	343	119.00	146
39.00	701	63.00	1453	81.00	1254	128.00	158
40.00	30	64.00	208	82.00	166	130.00	52
44.00	130	67.00	80	87.00	1639	137.00	53
45.00	339	68.00	4378	88.00	1692	141.00	409
47.00	521	69.00	4229	91.00	115	143.00	306
48.00	225	70.00	359	92.00	1286	173.00	150
49.00	1557	72.00	83	93.00	1592	174.00	29144
50.00	8160	73.00	1901	94.00	4342	175.00	1972
51.00	2418	74.00	6709	95.00	39888	176.00	28048
55.00	51	75.00	20296	96.00	2520	177.00	2032
56.00	590	76.00	1590	104.00	102		
57.00	1075	77.00	227	106.00	112		

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\DB174a.d

Date : 11-MAY-2018 07:52

Client ID:

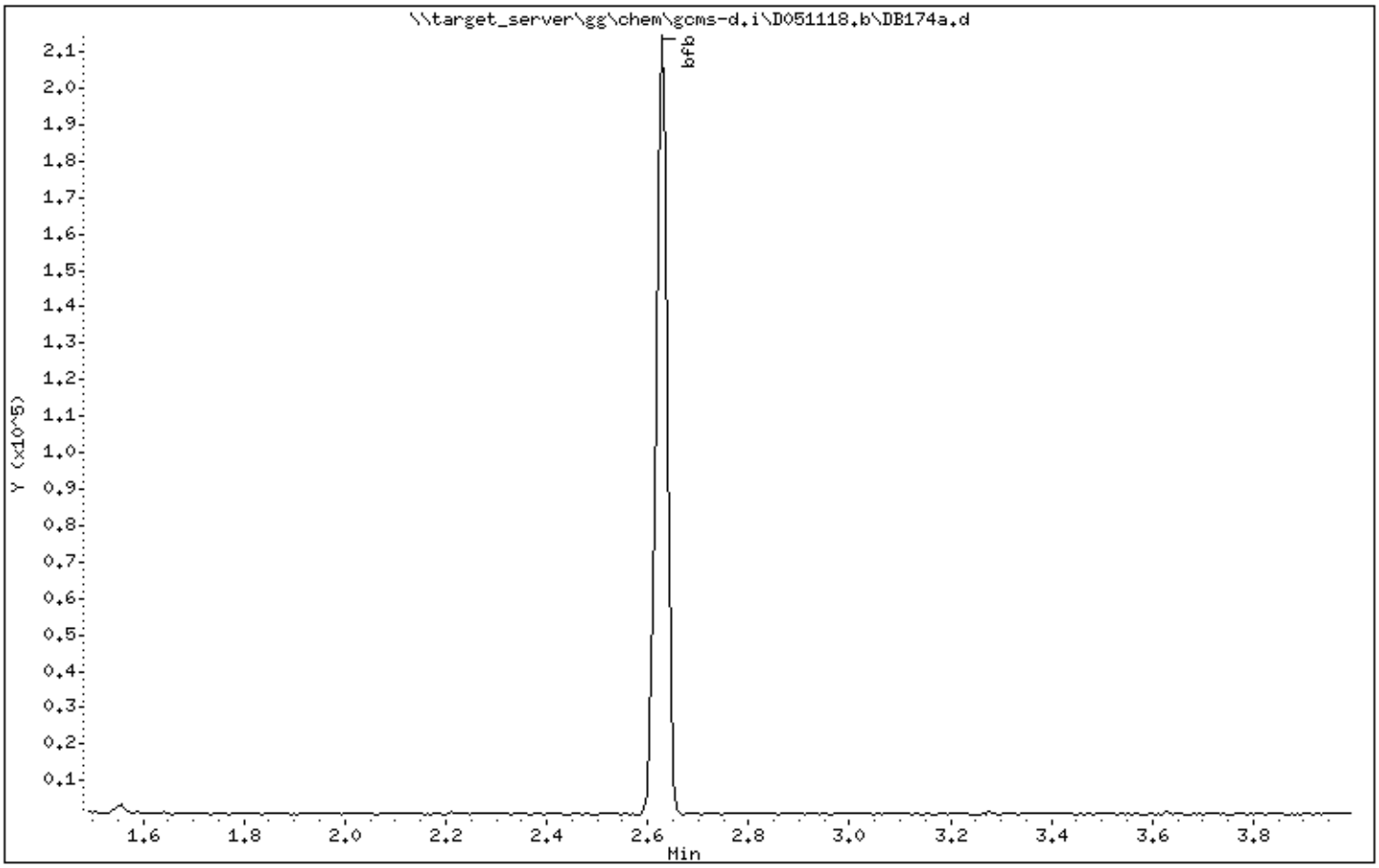
Instrument: gcms-d.i

Sample Info: WG228096-3,SL3807

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\DB174a.d

Date : 11-MAY-2018 07:52

Client ID:

Instrument: gcms-d.i

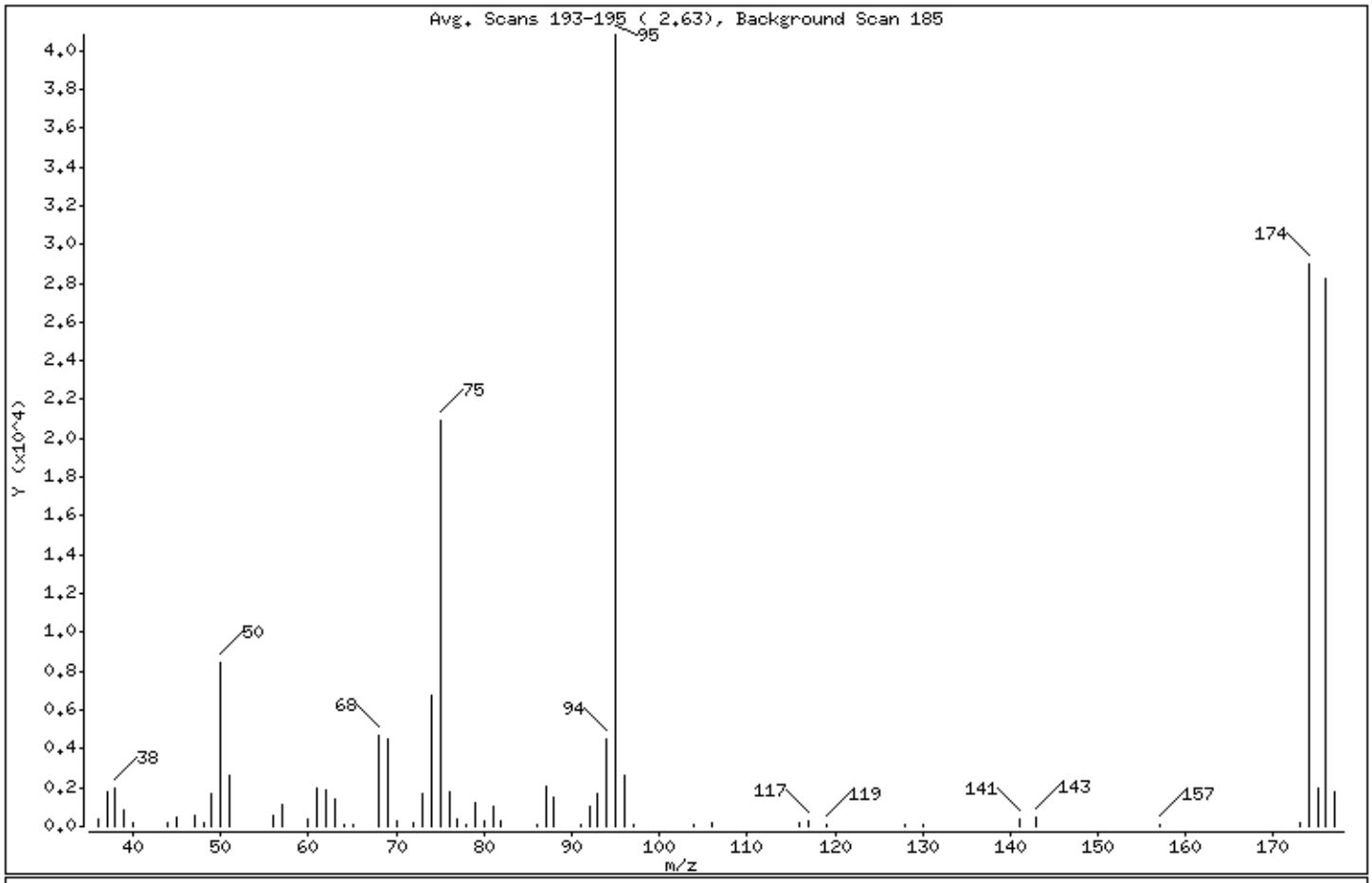
Sample Info: WG228096-3,SL3807

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	20.64
75	30.00 - 60.00% of mass 95	51.34
96	5.00 - 9.00% of mass 95	6.54
173	Less than 2.00% of mass 174	0.40 (0.56)
174	Greater than 50.00% of mass 95	71.14
175	5.00 - 9.00% of mass 174	4.91 (6.91)
176	95.00 - 101.00% of mass 174	69.26 (97.35)
177	5.00 - 9.00% of mass 176	4.44 (6.41)

Date : 11-MAY-2018 07:52

Client ID:

Instrument: gcms-d.i

Sample Info: WG228096-3,SL3807

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

Data File: DB174a.d
Spectrum: Avg. Scans 193-195 (2.63), Background Scan 185
Location of Maximum: 95.00
Number of points: 59

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	359	61.00	1935	79.00	1253	106.00	172
37.00	1769	62.00	1838	80.00	278	116.00	198
38.00	1987	63.00	1420	81.00	1024	117.00	252
39.00	826	64.00	128	82.00	238	119.00	124
40.00	203	65.00	51	86.00	51	128.00	51
44.00	157	68.00	4672	87.00	2057	130.00	110
45.00	424	69.00	4470	88.00	1515	141.00	404
47.00	571	70.00	273	91.00	74	143.00	497
48.00	165	72.00	189	92.00	1009	157.00	62
49.00	1728	73.00	1650	93.00	1664	173.00	162
50.00	8421	74.00	6748	94.00	4490	174.00	29032
51.00	2609	75.00	20952	95.00	40808	175.00	2005
56.00	603	76.00	1739	96.00	2669	176.00	28264
57.00	1092	77.00	329	97.00	56	177.00	1811
60.00	346	78.00	60	104.00	67		

Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\DB176.d

Date : 14-MAY-2018 10:56

Client ID:

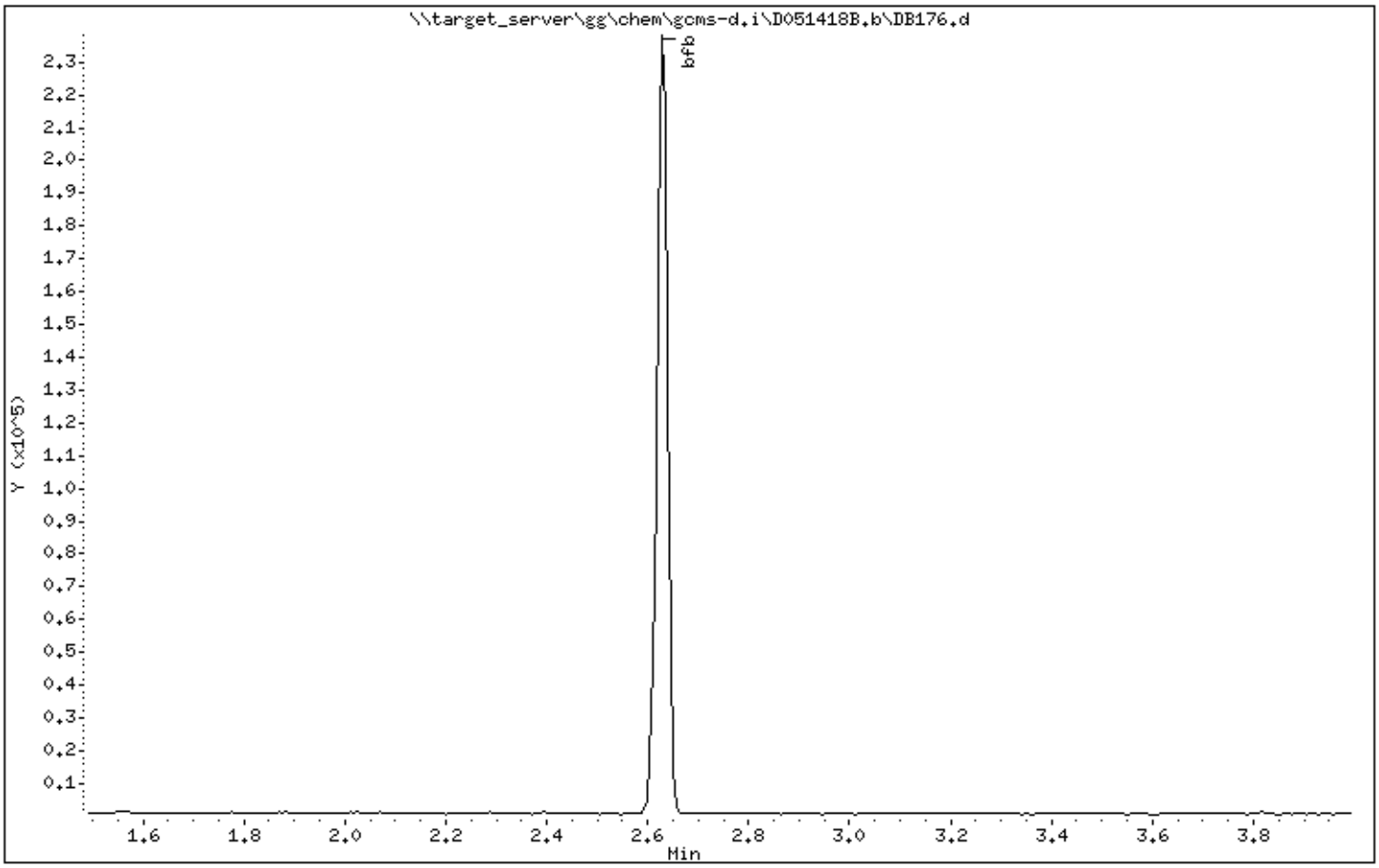
Instrument: gcms-d.i

Sample Info: WG228234-3,SL3807

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\DB176.d

Date : 14-MAY-2018 10:56

Client ID:

Instrument: gcms-d.i

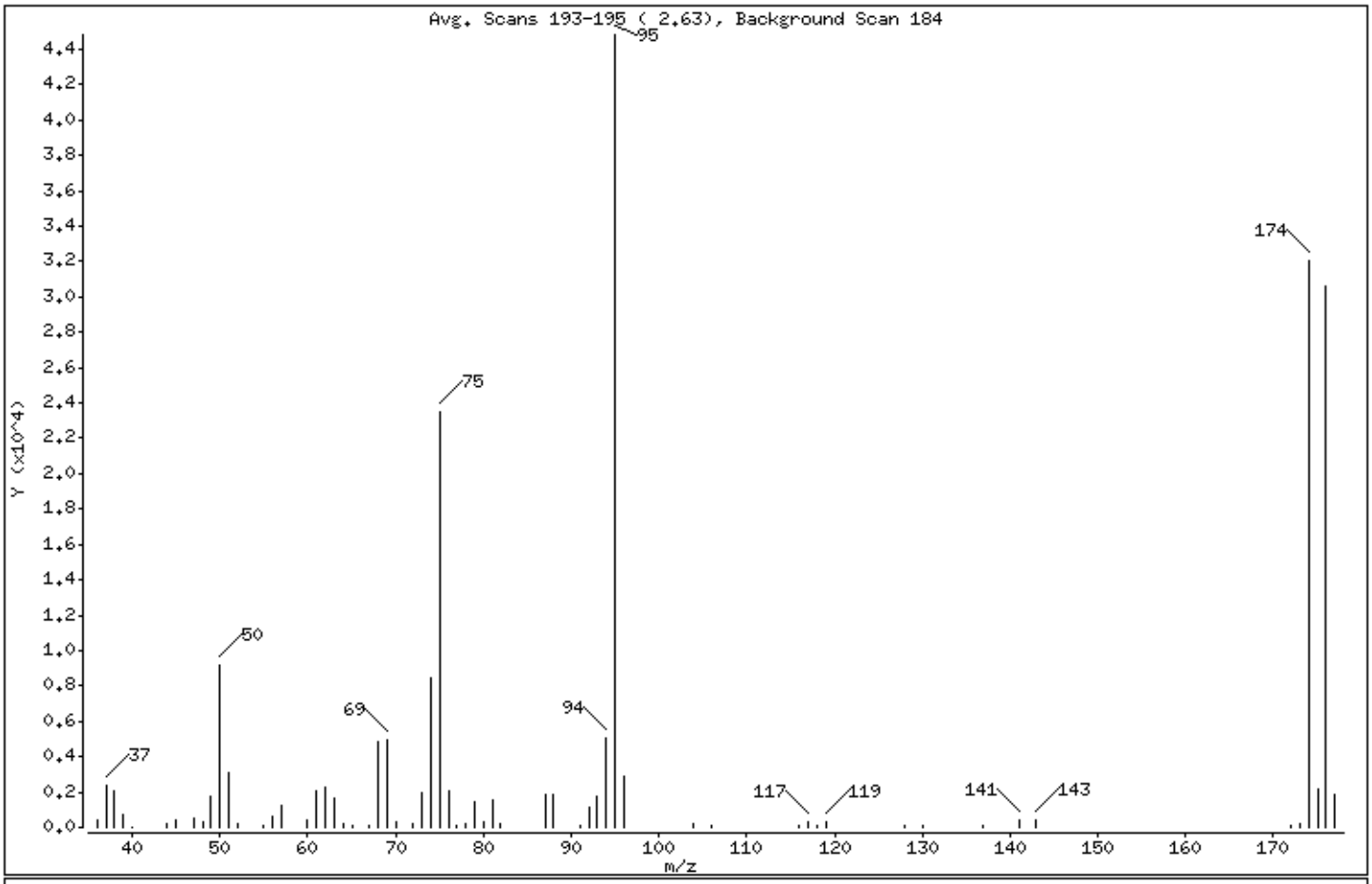
Sample Info: WG228234-3,SL3807

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	20.49
75	30.00 - 60.00% of mass 95	52.49
96	5.00 - 9.00% of mass 95	6.50
173	Less than 2.00% of mass 174	0.47 (0.65)
174	Greater than 50.00% of mass 95	71.58
175	5.00 - 9.00% of mass 174	4.77 (6.67)
176	95.00 - 101.00% of mass 174	68.27 (95.39)
177	5.00 - 9.00% of mass 176	4.19 (6.13)

Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\DB176.d

Date : 14-MAY-2018 10:56

Client ID:

Instrument: gcms-d.i

Sample Info: WG228234-3,SL3807

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

Data File: DB176.d
Spectrum: Avg. Scans 193-195 (2.63), Background Scan 184
Location of Maximum: 95.00
Number of points: 62

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	372	60.00	440	78.00	174	117.00	323
37.00	2349	61.00	2076	79.00	1411	118.00	121
38.00	2038	62.00	2234	80.00	328	119.00	274
39.00	767	63.00	1670	81.00	1550	128.00	142
40.00	10	64.00	180	82.00	243	130.00	111
44.00	234	65.00	123	87.00	1807	137.00	103
45.00	457	67.00	61	88.00	1805	141.00	368
47.00	476	68.00	4889	91.00	81	143.00	415
48.00	262	69.00	4917	92.00	1135	172.00	64
49.00	1795	70.00	346	93.00	1798	173.00	210
50.00	9179	72.00	241	94.00	5029	174.00	32072
51.00	3088	73.00	1914	95.00	44808	175.00	2138
52.00	194	74.00	8434	96.00	2912	176.00	30592
55.00	132	75.00	23520	104.00	201	177.00	1876
56.00	630	76.00	2046	106.00	105		
57.00	1262	77.00	119	116.00	104		

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\WB833a.D

Date : 09-MAY-2018 08:05

Client ID:

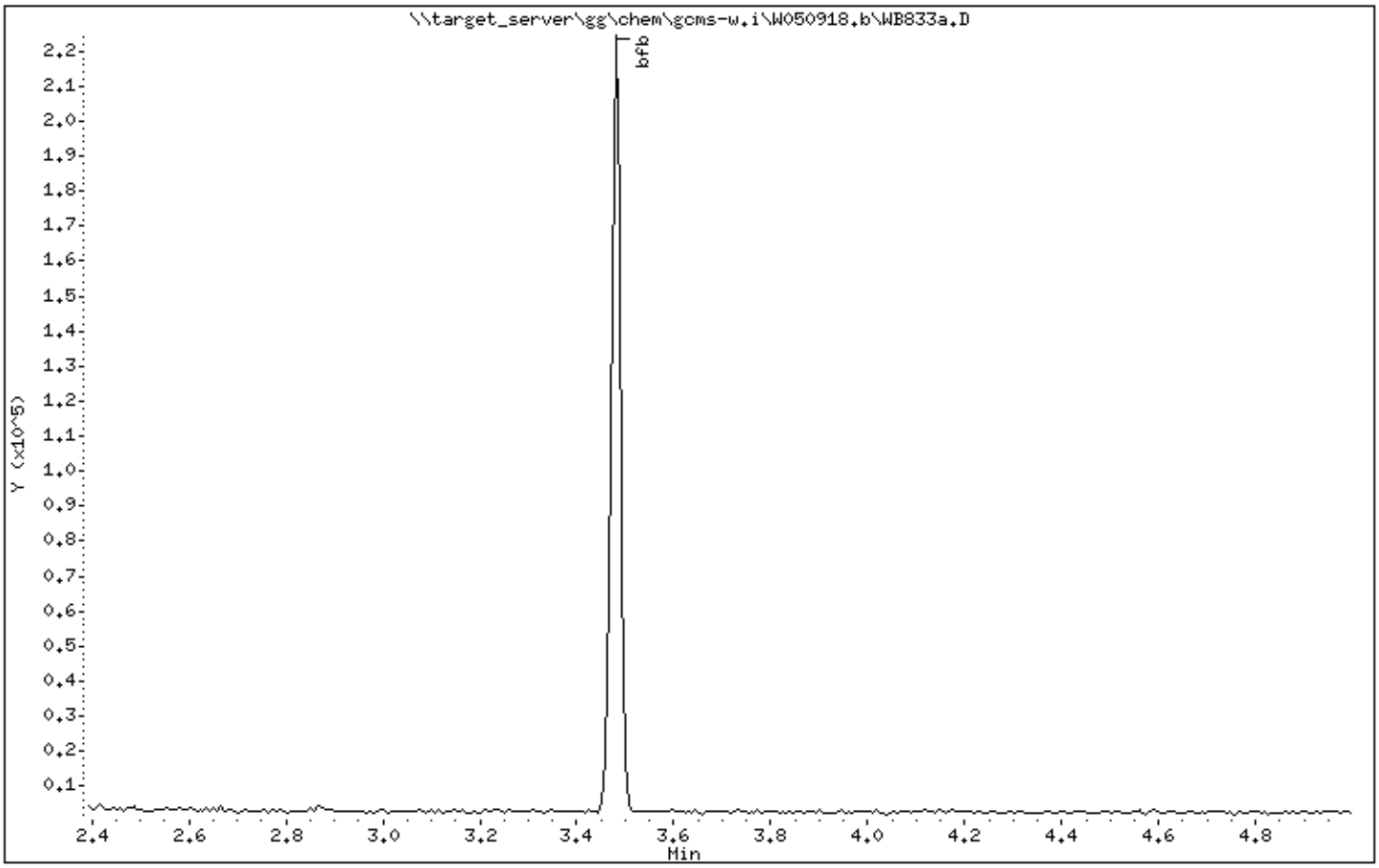
Instrument: gcms-w.i

Sample Info: WG227905-10,SL3807

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\WB833a.D

Date : 09-MAY-2018 08:05

Client ID:

Instrument: gcms-w.i

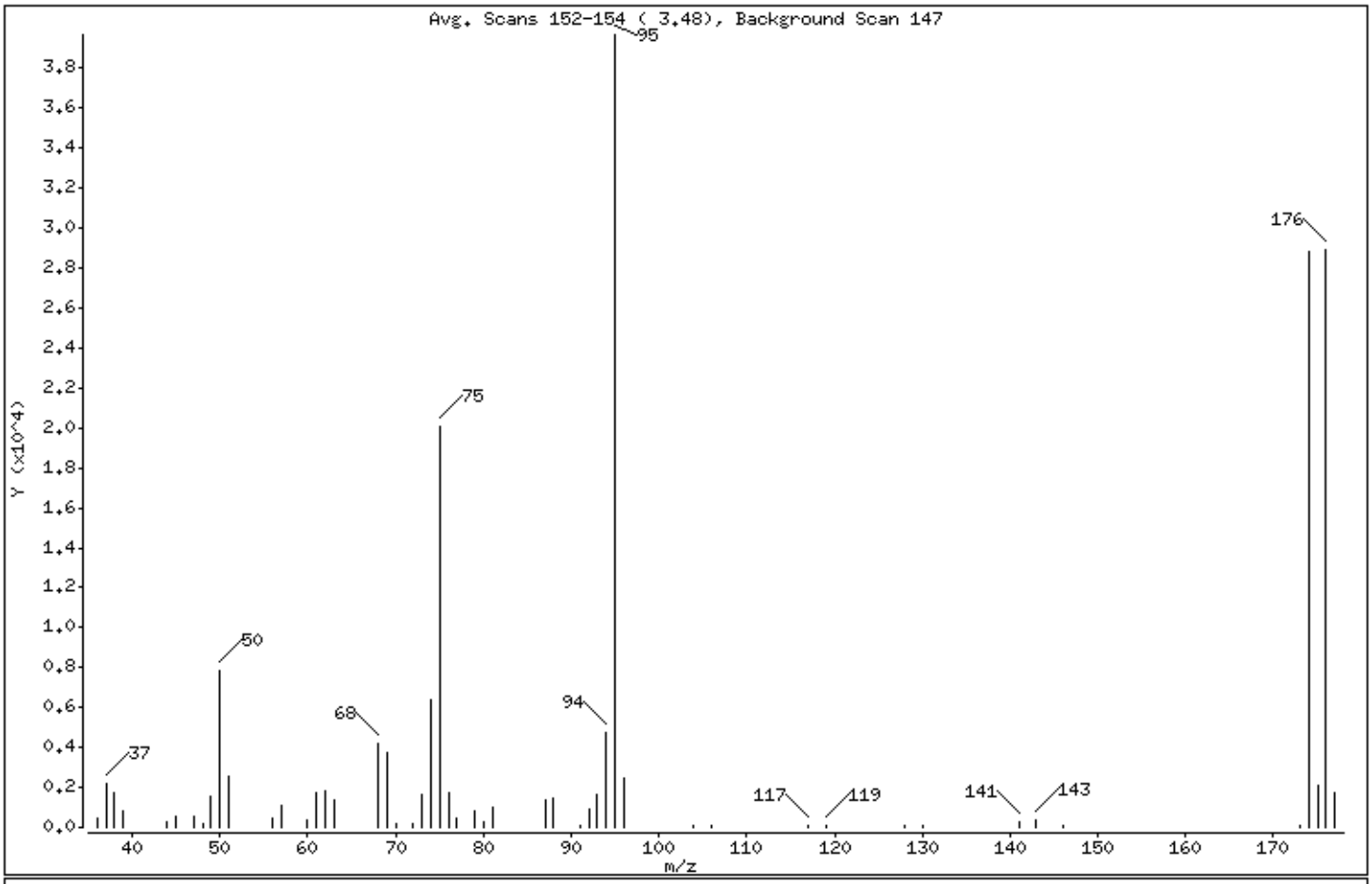
Sample Info: WG227905-10,SL3807

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	19.74
75	30.00 - 60.00% of mass 95	50.69
96	5.00 - 9.00% of mass 95	6.30
173	Less than 2.00% of mass 174	0.24 (0.34)
174	Greater than 50.00% of mass 95	72.64
175	5.00 - 9.00% of mass 174	5.19 (7.15)
176	95.00 - 101.00% of mass 174	72.88 (100.33)
177	5.00 - 9.00% of mass 176	4.45 (6.11)

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\WB833a.D

Date : 09-MAY-2018 08:05

Client ID:

Instrument: gcms-w.i

Sample Info: WG227905-10,SL3807

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

Data File: WB833a.D
Spectrum: Avg. Scans 152-154 (3.48), Background Scan 147
Location of Maximum: 95.00
Number of points: 51

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	444	60.00	354	79.00	822	117.00	122
37.00	2197	61.00	1744	80.00	245	119.00	95
38.00	1693	62.00	1831	81.00	958	128.00	88
39.00	832	63.00	1348	87.00	1352	130.00	94
44.00	308	68.00	4225	88.00	1462	141.00	274
45.00	542	69.00	3778	91.00	86	143.00	404
47.00	508	70.00	164	92.00	912	146.00	91
48.00	139	72.00	182	93.00	1679	173.00	97
49.00	1528	73.00	1616	94.00	4756	174.00	28824
50.00	7834	74.00	6359	95.00	39680	175.00	2060
51.00	2564	75.00	20112	96.00	2498	176.00	28920
56.00	422	76.00	1746	104.00	96	177.00	1767
57.00	1063	77.00	439	106.00	84		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228234-2
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: D1290.D

Sample Date:
Received Date:
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228234-2
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: D1290.D

Sample Date:
Received Date:
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-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		103.	%					
1,2-Dichloroethane-d4		108.	%					

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Report of Analytical Results

Client:
Lab ID: WG228234-2
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: D1290.D

Sample Date:
Received Date:
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		101.	%					
P-Bromofluorobenzene		102.	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1290.d
Report Date: 15-May-2018 14:17

Katahdin Analytical Services

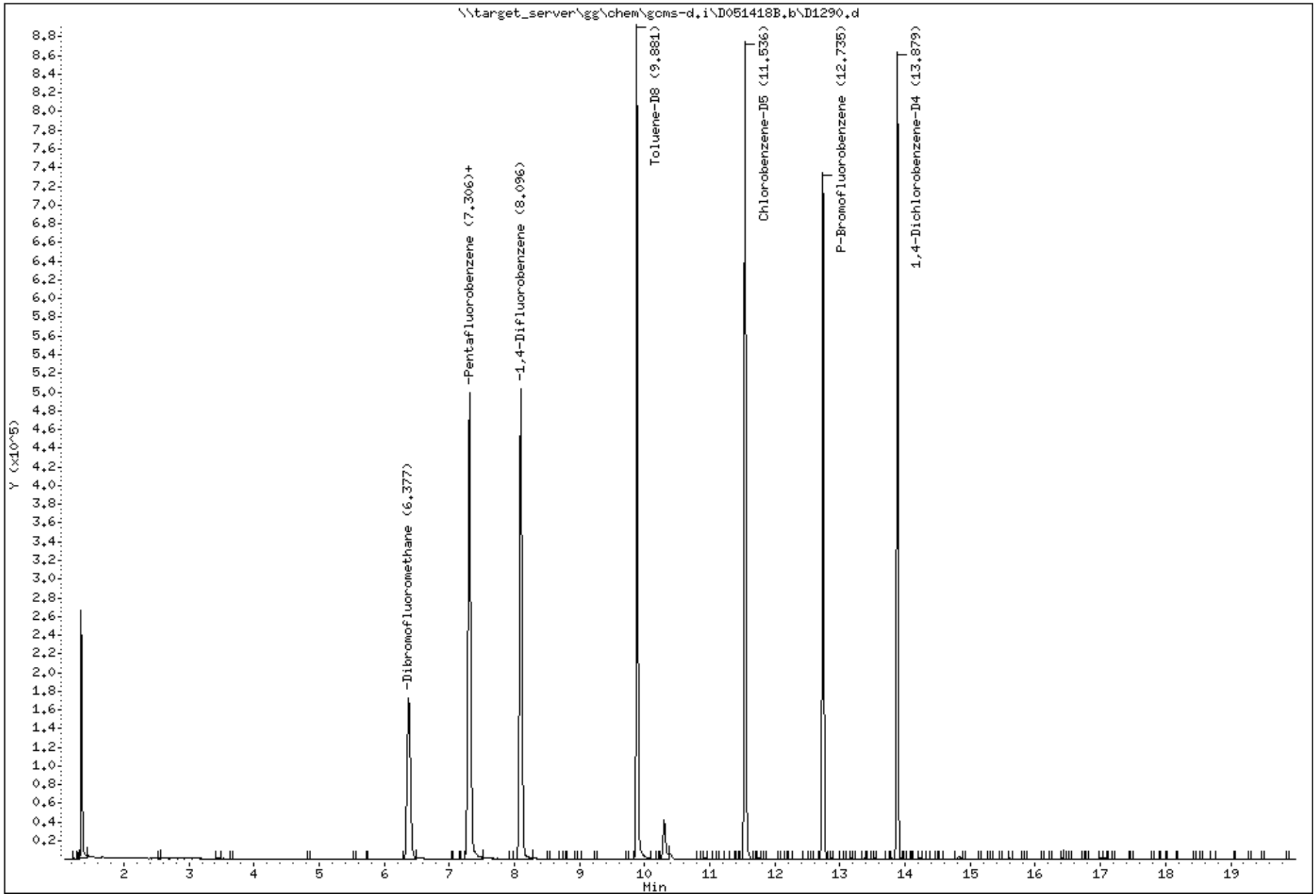
Data file : \\target_server\gg\chem\gcms-d.i\D051418B.b\D1290.d
Lab Smp Id: WG228234-2
Inj Date : 14-MAY-2018 13:19 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228234-2,SL3807
Misc Info : WG228234,WG227999-4,SL3807-5
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051418B.b\D8A05(21)D.m
Meth Date : 15-May-2018 07:11 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.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)	FINAL (ug/l)	REVIEW CODE
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	182749	51.6667	51.7	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	300847	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	242121	54.1384	54.1	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	492779	50.0000		
$	55 Toluene-D8	98	9.881	9.881	(1.220)	608197	50.6096	50.6	
*	66 Chlorobenzene-D5	117	11.536	11.536	(1.000)	458750	50.0000		
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	245750	51.2295	51.2	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	228819	50.0000		

Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1290.d
Date : 14-MAY-2018 13:19
Client ID:
Instrument: gcms-d.i
Sample Info: WG228234-2,SL3807



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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227905-9
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: W3888.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.70	2.5
1,1,1-Trichloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.42	2.5
1,1,2,2-Tetrachloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.84	2.5
Freon-113	U	2.5	ug/Kgdrywt	1	5	5.0	0.90	2.5
1,1,2-Trichloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.97	2.5
1,1-Dichloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	1.7	2.5
1,1-Dichloroethene	U	2.5	ug/Kgdrywt	1	5	5.0	0.93	2.5
1,1-Dichloropropene	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
1,2,3-Trichlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.76	2.5
1,2,3-Trichloropropane	U	2.5	ug/Kgdrywt	1	5	5.0	1.2	2.5
1,2,4-Trichlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.79	2.5
1,2,4-Trimethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.87	2.5
1,2-Dibromo-3-Chloropropane	U	2.5	ug/Kgdrywt	1	5	5.0	1.5	2.5
1,2-Dibromoethane	U	2.5	ug/Kgdrywt	1	5	5.0	1.2	2.5
1,2-Dichlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.78	2.5
1,2-Dichloroethane	U	2.5	ug/Kgdrywt	1	5	5.0	1.0	2.5
1,2-Dichloropropane	U	2.5	ug/Kgdrywt	1	5	5.0	1.4	2.5
1,3,5-Trimethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.67	2.5
1,3-Dichlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.62	2.5
1,3-Dichloropropane	U	2.5	ug/Kgdrywt	1	5	5.0	0.94	2.5
1,4-Dichlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.44	2.5
2,2-Dichloropropane	U	2.5	ug/Kgdrywt	1	5	5.0	0.50	2.5
2-Butanone	U	12	ug/Kgdrywt	1	25	25.	5.9	12.
2-Chlorotoluene	U	2.5	ug/Kgdrywt	1	5	5.0	1.1	2.5
2-Hexanone	U	12	ug/Kgdrywt	1	25	25.	4.8	12.
4-Chlorotoluene	U	2.5	ug/Kgdrywt	1	5	5.0	0.49	2.5
P-Isopropyltoluene	U	2.5	ug/Kgdrywt	1	5	5.0	0.76	2.5
4-Methyl-2-Pentanone	U	12	ug/Kgdrywt	1	25	25.	5.9	12.
Acetone	U	12	ug/Kgdrywt	1	25	25.	5.1	12.
Benzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
Bromobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.74	2.5
Bromochloromethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
Bromodichloromethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.60	2.5
Bromoform	U	2.5	ug/Kgdrywt	1	5	5.0	0.70	2.5

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227905-9
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: W3888.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromomethane	U	5.0	ug/Kgdrywt	1	10	10.	1.1	5.0
Carbon Disulfide	U	2.5	ug/Kgdrywt	1	5	5.0	0.78	2.5
Carbon Tetrachloride	U	2.5	ug/Kgdrywt	1	5	5.0	1.3	2.5
Chlorobenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.51	2.5
Dibromochloromethane	U	2.5	ug/Kgdrywt	1	5	5.0	7.0	2.5
Chloroethane	U	5.0	ug/Kgdrywt	1	10	10.	1.3	5.0
Chloroform	U	2.5	ug/Kgdrywt	1	5	5.0	0.35	2.5
Chloromethane	U	5.0	ug/Kgdrywt	1	10	10.	1.4	5.0
cis-1,2-Dichloroethene	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
cis-1,3-Dichloropropene	U	2.5	ug/Kgdrywt	1	5	5.0	0.72	2.5
Dibromomethane	U	2.5	ug/Kgdrywt	1	5	5.0	0.51	2.5
Dichlorodifluoromethane	U	5.0	ug/Kgdrywt	1	10	10.	0.92	5.0
Ethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.65	2.5
Hexachlorobutadiene	U	2.5	ug/Kgdrywt	1	5	5.0	0.74	2.5
Isopropylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
m+p-Xylenes	U	5.0	ug/Kgdrywt	1	10	10.	1.7	5.0
Methyl tert-butyl Ether	U	2.5	ug/Kgdrywt	1	5	5.0	1.1	2.5
Methylene Chloride	U	12	ug/Kgdrywt	1	25	25.	7.9	12.
N-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
N-Propylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.83	2.5
Naphthalene	U	2.5	ug/Kgdrywt	1	5	5.0	0.88	2.5
o-Xylene	U	2.5	ug/Kgdrywt	1	5	5.0	1.3	2.5
sec-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
Styrene	U	2.5	ug/Kgdrywt	1	5	5.0	0.51	2.5
tert-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.90	2.5
Tetrachloroethene	U	2.5	ug/Kgdrywt	1	5	5.0	1.2	2.5
Toluene	U	2.5	ug/Kgdrywt	1	5	5.0	1.4	2.5
trans-1,2-Dichloroethene	U	2.5	ug/Kgdrywt	1	5	5.0	0.71	2.5
trans-1,3-Dichloropropene	U	2.5	ug/Kgdrywt	1	5	5.0	0.86	2.5
Trichloroethene	U	2.5	ug/Kgdrywt	1	5	5.0	0.59	2.5
Trichlorofluoromethane	U	5.0	ug/Kgdrywt	1	10	10.	0.91	5.0
Vinyl Chloride	U	5.0	ug/Kgdrywt	1	10	10.	0.87	5.0
1,2-Dichloroethane-D4		98.1	%					
p-Bromofluorobenzene		95.3	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227905-9
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: W3888.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 17-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromofluoromethane		97.4	%					
Toluene-D8		99.7	%					

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Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3888.D
Report Date: 17-May-2018 14:49

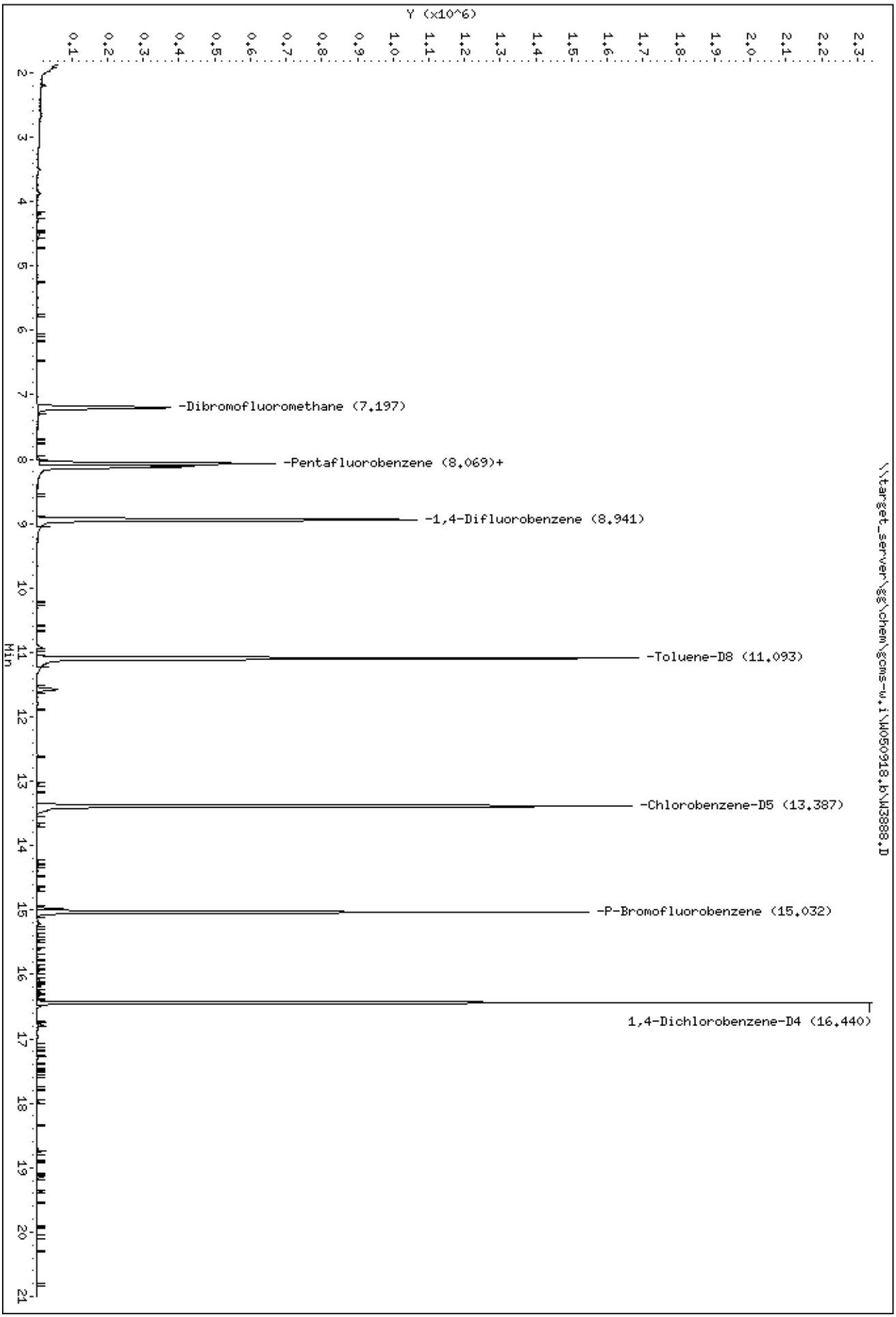
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3888.D
Lab Smp Id: WG227905-9
Inj Date : 09-MAY-2018 15:00 MS Autotune Date: 10-APR-2016 11:00
Operator : JSS Inst ID: gcms-w.i
Smp Info : WG227905-9,SL3807
Misc Info : WG227905,WG227905-4,SL3807-1
Comment : SW846 5035
Method : \\TARGET_SERVER\GG\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 15-May-2018 15:32 hgould Quant Type: ISTD
Cal Date : 09-MAY-2018 09:49 Cal File: W3880.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: TARGET_SERVER

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/kg)	FINAL (ug/Kgdrywt)	REVIEW COD
$ 37 Dibromofluoromethane	113	7.197	7.203	(0.892)	294870	48.6904	48.7	
* 42 Pentafluorobenzene	168	8.069	8.074	(1.000)	546460	50.0000		
$ 45 1,2-Dichloroethane-D4	65	8.119	8.125	(1.006)	370815	49.0380	49.0	
* 49 1,4-Difluorobenzene	114	8.941	8.947	(1.000)	1009274	50.0000		
$ 55 Toluene-D8	98	11.092	11.091	(1.241)	1203231	49.8598	49.8	
* 66 Chlorobenzene-D5	117	13.387	13.386	(1.000)	974283	50.0000		
$ 76 P-Bromofluorobenzene	95	15.031	15.030	(1.681)	502715	47.6559	47.6	
* 91 1,4-Dichlorobenzene-D4	152	16.439	16.437	(1.000)	513864	50.0000		


Y (x10^6)
Min
-Dibromofluoromethane (7.197)
-Pentafluorobenzene (8.069)+
-1,4-Difluorobenzene (8.941)
-Toluene-D8 (11.093)
-Chlorobenzene-D5 (13.387)
-P-Bromofluorobenzene (15.032)
1,4-Dichlorobenzene-D4 (16.440)
\\target_server\gc\chem\gcms-w.i\W050918.b\W3888.D
Data File: \\target_server\gc\chem\gcms-w.i\W050918.b\W3888.D
Date : 09-MAY-2018 15:00
Client ID:
Sample Info: WG227905-9,SL3807
Instrument: gcms-w.i

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228234-1
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: D1288.D

Sample Date:
Received Date:
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	98.8	50.0	49.4	ug/L	78-125
1,1,1-Trichloroethane	97.8	50.0	48.9	ug/L	74-131
1,1,2,2-Tetrachloroethane	94.4	50.0	47.2	ug/L	71-121
Freon-113	90.2	50.0	45.1	ug/L	70-136
1,1,2-Trichloroethane	96.0	50.0	48.0	ug/L	80-120
1,1-Dichloroethane	103.	50.0	51.5	ug/L	77-125
1,1-Dichloroethene	95.4	50.0	47.7	ug/L	71-131
1,1-Dichloropropene	96.0	50.0	48.0	ug/L	79-125
1,2,3-Trichlorobenzene	94.0	50.0	47.0	ug/L	69-129
1,2,3-Trichloropropane	91.2	50.0	45.6	ug/L	73-122
1,2,4-Trichlorobenzene	95.0	50.0	47.5	ug/L	69-130
1,2,4-Trimethylbenzene	95.6	50.0	47.8	ug/L	76-124
1,2-Dibromo-3-Chloropropane	94.6	50.0	47.3	ug/L	62-128
1,2-Dichlorobenzene	93.4	50.0	46.7	ug/L	80-120
1,2-Dichloroethane	95.2	50.0	47.6	ug/L	73-128
1,2-Dichloropropane	97.8	50.0	48.9	ug/L	78-122
1,3,5-Trimethylbenzene	96.0	50.0	48.0	ug/L	75-124
1,3-Dichlorobenzene	92.4	50.0	46.2	ug/L	80-120
1,3-Dichloropropane	93.0	50.0	46.5	ug/L	80-120
1,4-Dichlorobenzene	89.8	50.0	44.9	ug/L	79-120
2,2-Dichloropropane	103.	50.0	51.5	ug/L	60-139
2-Butanone	100.	50.0	50.2	ug/L	56-143
2-Chlorotoluene	95.0	50.0	47.5	ug/L	79-122
2-Hexanone	97.4	50.0	48.7	ug/L	57-139
4-Chlorotoluene	94.0	50.0	47.0	ug/L	78-122
P-Isopropyltoluene	97.2	50.0	48.6	ug/L	77-127
4-Methyl-2-Pentanone	98.8	50.0	49.4	ug/L	67-130
Acetone	96.8	50.0	48.4	ug/L	39-160
Benzene	95.4	50.0	47.7	ug/L	79-120
Bromobenzene	93.4	50.0	46.7	ug/L	80-120
Bromoform	93.0	50.0	46.5	ug/L	66-130
Bromomethane	98.4	50.0	49.2	ug/L	53-141
Carbon Disulfide	96.2	50.0	48.1	ug/L	64-133
Carbon Tetrachloride	99.2	50.0	49.6	ug/L	72-136
Chlorobenzene	93.0	50.0	46.5	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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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228234-1
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: D1288.D

Sample Date:
Received Date:
Extract Date: 14-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228234

Analysis Date: 14-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	100.	50.0	50.2	ug/L	78-123
Dibromochloromethane	104.	50.0	52.2	ug/L	74-126
Chloroethane	111.	50.0	55.6	ug/L	60-138
Chloroform	97.2	50.0	48.6	ug/L	79-124
Chloromethane	111.	50.0	55.3	ug/L	50-139
cis-1,2-Dichloroethene	96.4	50.0	48.2	ug/L	78-123
cis-1,3-Dichloropropene	100.	50.0	50.0	ug/L	75-124
Dibromomethane	99.2	50.0	49.6	ug/L	79-123
Bromodichloromethane	103.	50.0	51.3	ug/L	79-125
Dichlorodifluoromethane	137.	50.0	68.4	ug/L	32-152
Ethylbenzene	93.8	50.0	46.9	ug/L	79-121
1,2-Dibromoethane	97.4	50.0	48.7	ug/L	77-121
Hexachlorobutadiene	86.8	50.0	43.4	ug/L	66-134
Isopropylbenzene	101.	50.0	50.4	ug/L	72-131
Methyl tert-butyl Ether	98.8	50.0	49.4	ug/L	71-124
Methylene Chloride	94.8	50.0	47.4	ug/L	74-124
m+p-Xylenes	95.4	100.	95.4	ug/L	80-121
Naphthalene	88.8	50.0	44.4	ug/L	61-128
N-Butylbenzene	96.6	50.0	48.3	ug/L	75-128
N-Propylbenzene	93.2	50.0	46.6	ug/L	76-126
o-Xylene	97.2	50.0	48.6	ug/L	78-122
sec-Butylbenzene	94.6	50.0	47.3	ug/L	77-126
Styrene	99.2	50.0	49.6	ug/L	78-123
tert-Butylbenzene	95.2	50.0	47.6	ug/L	78-124
Tetrachloroethene	93.6	50.0	46.8	ug/L	74-129
Toluene	94.2	50.0	47.1	ug/L	80-121
trans-1,2-Dichloroethene	94.8	50.0	47.4	ug/L	75-124
trans-1,3-Dichloropropene	108.	50.0	53.8	ug/L	73-127
Trichloroethene	95.2	50.0	47.6	ug/L	79-123
Trichlorofluoromethane	102.	50.0	51.1	ug/L	65-141
Vinyl Chloride	110.	50.0	54.8	ug/L	58-137
Dibromofluoromethane	101.				80-120
1,2-Dichloroethane-d4	101.				81-120
Toluene-d8	99.4				89-120
P-Bromofluorobenzene	102.				85-120

600 Technology Way
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Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-d.i\D051418B.b\D1288.d
Report Date: 15-May-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051418B.b\D1288.d
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Inj Date : 14-MAY-2018 12:00 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228234-1,SL3807
Misc Info : WG228234,WG227999-4,SL3807-5
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051418B.b\D8A05(21)D.m
Meth Date : 15-May-2018 07:11 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 2 QC Sample: LCS
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
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	265882	68.4554	68.4	
2	Chloromethane	50	1.663	1.663	(0.227)	230833	55.2954	55.3	
3	Vinyl chloride	62	1.728	1.728	(0.236)	178734	54.7900	54.8	
4	Bromomethane	94	2.025	2.025	(0.277)	82890	49.2106	49.2	
5	Chloroethane	64	2.146	2.137	(0.293)	83084	55.6512	55.6	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	258506	51.0755	51.1	
7	Diethyl Ether	59	2.583	2.583	(0.353)	83847	50.1076	50.1	
8	Tertiary-butyl alcohol	59	3.959	3.969	(0.541)	53481	245.603	246	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	103399	47.6646	47.7	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	322818	48.1202	48.1	
11	Freon-113	151	2.834	2.835	(0.387)	85654	45.1422	45.1	
12	Iodomethane	142	2.936	2.937	(0.401)	122482	54.2144	54.2	
13	Acrolein	56	3.160	3.160	(0.432)	131949	242.569	242	
14	Methylene Chloride	84	3.448	3.448	(0.471)	171728	47.4239	47.4	
15	Acetone	43	3.522	3.522	(0.482)	48717	48.4433	48.4	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	121084	889.190	889	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	157042	47.4031	47.4	
18	Allyl Chloride	41	3.318	3.318	(0.454)	238868	49.3021	49.3	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	423085	49.3786	49.4	
20	Acetonitrile	39	4.145	4.136	(0.567)	44868	490.543	490	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	521084	50.8909	50.9	
22	Chloroprene	53	4.480	4.480	(0.612)	249416	48.6726	48.7	
23	Propionitrile	54	7.148	7.148	(0.977)	230911	493.813	494	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	1043610	500.369	500	

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Report Date: 15-May-2018 14:17

							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	319071	51.5121	51.5	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	265735	243.994	244	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	446068	51.6433	51.6	
	28 Vinyl Acetate	43	4.982	4.982	(0.615)	417604	55.5866	55.6	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	170166	48.2531	48.2	
M	30 1,2-Dichloroethylene (total)	96				327208	95.6562	95.6	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	148194	46.4518	46.4	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	210179	51.5045	51.5	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	87360	50.2450	50.2	
	34 Chloroform	83	6.014	6.014	(0.822)	315522	48.5935	48.6	
	35 Carbon Tetrachloride	117	6.237	6.237	(0.770)	225372	49.5808	49.6	
	36 Tetrahydrofuran	42	6.311	6.302	(0.863)	44072	47.4456	47.4	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	190622	50.5256	50.5	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	261297	48.9098	48.9	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	231726	48.0286	48.0	
	40 2-Butanone	43	6.655	6.655	(0.910)	78253	50.1927	50.2	
	41 Benzene	78	7.055	7.055	(0.871)	620908	47.7104	47.7	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	320895	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	255298	48.3801	48.4	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	111711	44.8554	44.8	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	242063	50.7440	50.7	
	46 Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	356284	49.7133	49.7	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	259226	47.6502	47.6	
	48 Trichloroethene	95	8.003	8.003	(0.989)	169089	47.6567	47.6	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	527447	50.0000		
	50 Dibromomethane	93	8.589	8.589	(1.061)	119092	49.6544	49.6	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	172127	48.9220	48.9	
	52 Bromodichloromethane	83	8.858	8.859	(1.094)	250272	51.3262	51.3	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	283716	50.0119	50.0	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	31141	864.957	865	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	639595	49.7241	49.7	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	108416	49.4948	49.5	
	57 Toluene	92	9.937	9.937	(1.227)	374221	47.0625	47.1	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	158754	49.4338	49.4	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	122265	46.7796	46.8	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	264529	53.8040	53.8	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	134395	47.9871	48.0	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	188120	52.2482	52.2	
	63 1,3-Dichloropropane	76	10.876	10.876	(0.943)	272273	46.4664	46.5	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	164520	48.7194	48.7	
	65 2-Hexanone	43	11.294	11.294	(0.979)	107661	48.6649	48.7	
*	66 Chlorobenzene-D5	117	11.536	11.536	(1.000)	479337	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.002)	412245	46.5279	46.5	
	68 Ethylbenzene	91	11.601	11.601	(1.006)	712532	46.9303	46.9	
	69 1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	155954	49.3967	49.4	
M	70 Xylenes (total)	106				1666348	143.926	144	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	1100789	95.3664	95.4	
	72 o-Xylene	91	12.168	12.168	(1.055)	565559	48.5599	48.6	
	73 Styrene	104	12.223	12.224	(1.060)	437057	49.6024	49.6	
	74 Bromoform	173	12.233	12.233	(1.060)	112129	46.5412	46.5	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	657703	50.4231	50.4	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	262108	51.0482	51.0	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	63705	46.2651	46.3	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	50438	45.0373	45.0	

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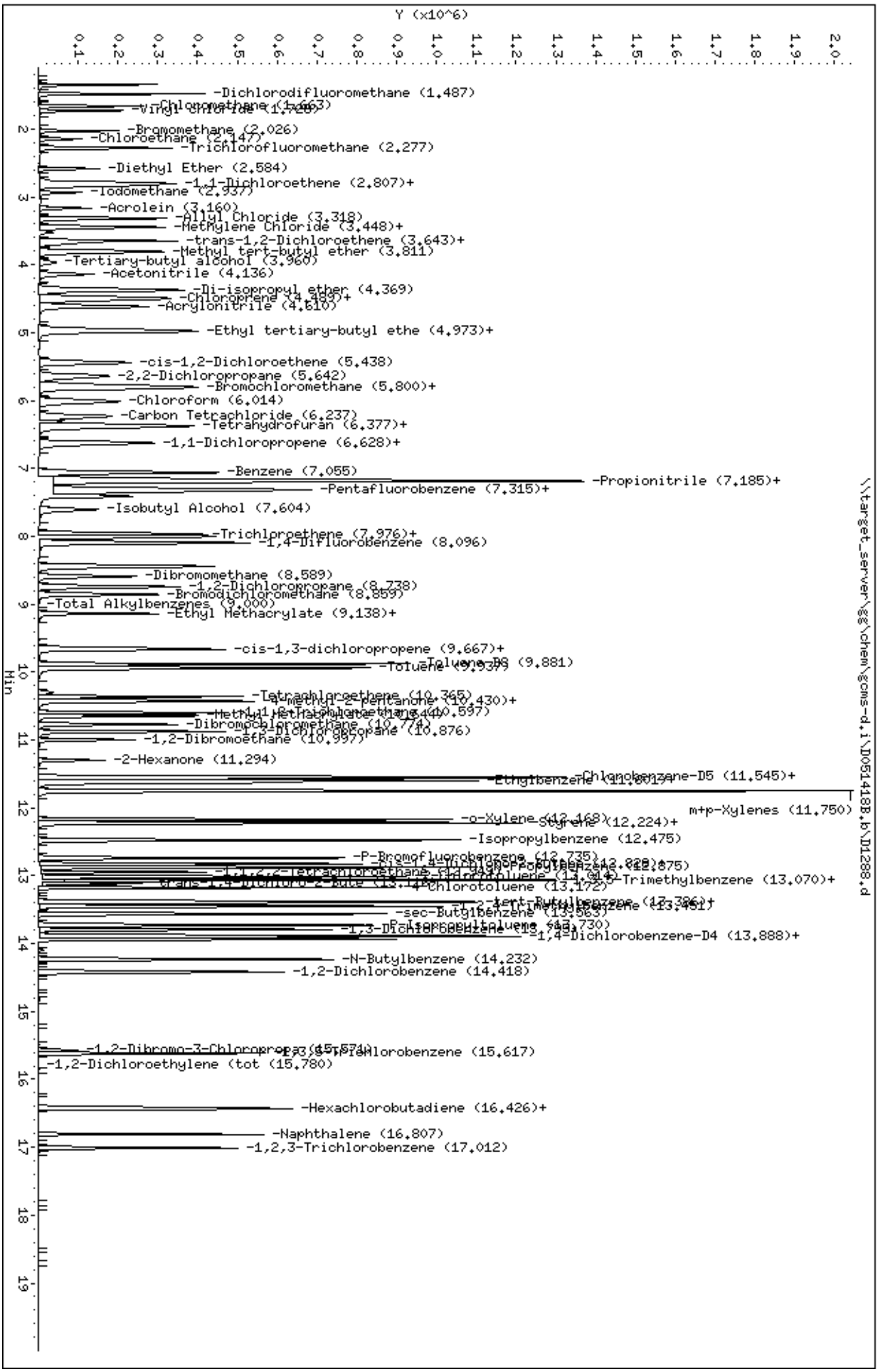
Report Date: 15-May-2018 14:17

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	79	Bromobenzene	156	12.828	12.828	(0.924)	171656	46.7301	46.7	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	795543	46.6320	46.6	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	201756	47.2144	47.2	
	82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	542690	47.9601	48.0	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	485248	47.4876	47.5	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	167648	45.5580	45.6	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	510748	47.0411	47.0	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	506797	47.5918	47.6	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	122382	47.9336	47.9	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	560905	47.8439	47.8	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	530334	48.5864	48.6	
	90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	302678	46.2036	46.2	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	245661	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	305075	44.8770	44.9	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	491237	48.2979	48.3	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	635153	47.2739	47.3	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	290058	46.6739	46.7	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	32108	47.3037	47.3	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	195863	46.7069	46.7	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	63410	43.4321	43.4	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	173478	47.4619	47.5	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	564016	47.8456	47.8	
	101	Naphthalene	128	16.807	16.806	(1.211)	391515	44.3754	44.4	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	140250	46.9767	47.0	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	128977	45.0004	45.0	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	234751	47.3383	47.3	
M	153	Total Alkylbenzenes	100				4062659	334.186	334	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Date : 14-MAY-2018 12:00
Client ID:
Sample Info: WG228234-1,SL3807
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051418B.b\D1288.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.720)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.960)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.377)+
-1,1-Dichloropropene (6.628)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
-Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.430)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-Bromoform (12.828)+
-1,1,2,2-Tetrachloroethane (12.875)
-n-Propylbenzene (13.014)
-1,3,5-Trimethylbenzene (13.070)+
-trans-1,4-Dichloro-2-bute (13.14
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.386)+
-1,2,4-Trimethylbenzene (13.461)
-sec-Butylbenzene (13.563)
-p-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropro
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227905-8
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: W3886.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 17-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	102.	50.0	51.1	ug/Kgdrywt	78-125
1,1,1-Trichloroethane	100.	50.0	50.2	ug/Kgdrywt	73-130
1,1,2,2-Tetrachloroethane	97.4	50.0	48.7	ug/Kgdrywt	70-125
Freon-113	96.0	50.0	48.0	ug/Kgdrywt	66-136
1,1,2-Trichloroethane	96.6	50.0	48.3	ug/Kgdrywt	78-125
1,1-Dichloroethane	102.	50.0	51.1	ug/Kgdrywt	76-125
1,1-Dichloroethene	93.0	50.0	46.5	ug/Kgdrywt	70-131
1,1-Dichloropropene	100.	50.0	50.1	ug/Kgdrywt	76-125
1,2,3-Trichlorobenzene	97.2	50.0	48.6	ug/Kgdrywt	66-130
1,2,3-Trichloropropane	92.2	50.0	46.1	ug/Kgdrywt	73-125
1,2,4-Trichlorobenzene	101.	50.0	50.6	ug/Kgdrywt	67-129
1,2,4-Trimethylbenzene	96.2	50.0	48.1	ug/Kgdrywt	75-125
1,2-Dibromo-3-Chloropropane	96.6	50.0	48.3	ug/Kgdrywt	61-132
1,2-Dibromoethane	99.6	50.0	49.8	ug/Kgdrywt	78-125
1,2-Dichlorobenzene	95.8	50.0	47.9	ug/Kgdrywt	78-125
1,2-Dichloroethane	97.0	50.0	48.5	ug/Kgdrywt	73-128
1,2-Dichloropropane	96.8	50.0	48.4	ug/Kgdrywt	76-125
1,3,5-Trimethylbenzene	97.4	50.0	48.7	ug/Kgdrywt	73-125
1,3-Dichlorobenzene	98.4	50.0	49.2	ug/Kgdrywt	77-125
1,3-Dichloropropane	93.2	50.0	46.6	ug/Kgdrywt	77-125
1,4-Dichlorobenzene	96.4	50.0	48.2	ug/Kgdrywt	75-120
2,2-Dichloropropane	96.0	50.0	48.0	ug/Kgdrywt	67-133
2-Butanone	98.4	50.0	49.2	ug/Kgdrywt	51-148
2-Chlorotoluene	97.4	50.0	48.7	ug/Kgdrywt	75-125
2-Hexanone	104.	50.0	51.9	ug/Kgdrywt	53-145
4-Chlorotoluene	96.2	50.0	48.1	ug/Kgdrywt	72-125
P-Isopropyltoluene	100.	50.0	50.0	ug/Kgdrywt	73-127
4-Methyl-2-Pentanone	102.	50.0	51.1	ug/Kgdrywt	65-135
Acetone	96.0	50.0	48.0	ug/Kgdrywt	36-164
Benzene	97.8	50.0	48.9	ug/Kgdrywt	77-125
Bromobenzene	95.6	50.0	47.8	ug/Kgdrywt	78-125
Bromochloromethane	89.6	50.0	44.8	ug/Kgdrywt	78-125
Bromodichloromethane	105.	50.0	52.3	ug/Kgdrywt	75-127
Bromoform	102.	50.0	51.2	ug/Kgdrywt	67-132
Bromomethane	88.6	50.0	44.3	ug/Kgdrywt	53-143

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227905-8
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: W3886.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JSS
Extraction Method: SW846 5035
Lab Prep Batch: WG227905

Analysis Date: 09-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 17-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Carbon Disulfide	87.6	50.0	43.8	ug/Kgdrywt	63-132
Carbon Tetrachloride	97.8	50.0	48.9	ug/Kgdrywt	70-135
Chlorobenzene	98.6	50.0	49.3	ug/Kgdrywt	79-125
Dibromochloromethane	104.	50.0	52.1	ug/Kgdrywt	74-126
Chloroethane	105.	50.0	52.7	ug/Kgdrywt	59-139
Chloroform	96.0	50.0	48.0	ug/Kgdrywt	78-125
Chloromethane	92.6	50.0	46.3	ug/Kgdrywt	50-136
cis-1,2-Dichloroethene	94.8	50.0	47.4	ug/Kgdrywt	77-125
cis-1,3-Dichloropropene	101.	50.0	50.3	ug/Kgdrywt	74-126
Dibromomethane	98.8	50.0	49.4	ug/Kgdrywt	78-125
Dichlorodifluoromethane	91.6	50.0	45.8	ug/Kgdrywt	29-149
Ethylbenzene	100.	50.0	50.0	ug/Kgdrywt	76-125
Hexachlorobutadiene	97.2	50.0	48.6	ug/Kgdrywt	61-135
Isopropylbenzene	102.	50.0	51.0	ug/Kgdrywt	68-134
m+p-Xylenes	99.1	100.	99.1	ug/Kgdrywt	77-125
Methyl tert-butyl Ether	97.6	50.0	48.8	ug/Kgdrywt	73-125
Methylene Chloride	90.4	50.0	45.2	ug/Kgdrywt	70-128
N-Butylbenzene	103.	50.0	51.6	ug/Kgdrywt	70-128
N-Propylbenzene	98.6	50.0	49.3	ug/Kgdrywt	73-125
Naphthalene	97.6	50.0	48.8	ug/Kgdrywt	62-129
o-Xylene	98.2	50.0	49.1	ug/Kgdrywt	77-125
sec-Butylbenzene	98.8	50.0	49.4	ug/Kgdrywt	73-126
Styrene	99.8	50.0	49.9	ug/Kgdrywt	76-125
tert-Butylbenzene	97.6	50.0	48.8	ug/Kgdrywt	73-125
Tetrachloroethene	100.	50.0	50.2	ug/Kgdrywt	73-128
Toluene	99.6	50.0	49.8	ug/Kgdrywt	77-125
trans-1,2-Dichloroethene	96.2	50.0	48.1	ug/Kgdrywt	74-125
trans-1,3-Dichloropropene	94.2	50.0	47.1	ug/Kgdrywt	71-130
Trichloroethene	98.6	50.0	49.3	ug/Kgdrywt	77-125
Trichlorofluoromethane	94.0	50.0	47.0	ug/Kgdrywt	62-140
Vinyl Chloride	94.2	50.0	47.1	ug/Kgdrywt	56-135
1,2-Dichloroethane-D4	97.1				71-136
p-Bromofluorobenzene	100.				79-125
Dibromofluoromethane	96.2				78-125
Toluene-D8	101.				85-125

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-w.i\W050918.b\W3886.D
Report Date: 17-May-2018 15:06

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-w.i\W050918.b\W3886.D
Lab Smp Id: WG227905-8
Inj Date : 09-MAY-2018 13:37 MS Autotune Date: 10-APR-2016 11:00
Operator : JSS Inst ID: gcms-w.i
Smp Info : WG227905-8,SL3807
Misc Info : WG227905,WG227905-4,SL3807-2
Comment : SW846 5035
Method : \\target_server\gg\chem\gcms-w.i\W050918.b\W8SDI(11)D.m
Meth Date : 15-May-2018 15:32 hgould Quant Type: ISTD
Cal Date : 09-MAY-2018 09:49 Cal File: W3880.D
Als bottle: 9 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/kg)	FINAL (ug/Kgdrywt)	REVIEW COD
1	Dichlorodifluoromethane	85	1.965	1.971	(0.244)	233348	45.7834	45.8	
2	Chloromethane	50	2.193	2.192	(0.272)	356875	46.2913	46.3	
3	Vinyl chloride	62	2.258	2.264	(0.280)	299439	47.0875	47.1	
4	Bromomethane	94	2.608	2.607	(0.323)	101378	44.2975	44.3	
5	Chloroethane	64	2.737	2.743	(0.339)	162165	52.6906	52.7	
6	Trichlorofluoromethane	101	2.887	2.885	(0.358)	351675	46.9878	47.0	
7	Diethyl Ether	59	3.223	3.229	(0.399)	219030	48.7938	48.8	
8	Tertiary-butyl alcohol	59	4.717	4.715	(0.585)	134895	248.663	249	
9	1,1-Dichloroethene	96	3.459	3.464	(0.429)	210794	46.4936	46.5	
10	Carbon Disulfide	76	3.509	3.507	(0.435)	765181	43.7578	43.8	
11	Freon-113	151	3.502	3.507	(0.434)	180760	48.0519	48.0	
12	Iodomethane	142	3.645	3.643	(0.452)	211347	48.8324	48.8	
13	Acrolein	56	3.888	3.886	(0.482)	206099	236.653	237	
14	Methylene Chloride	84	4.195	4.194	(0.520)	274586	45.2495	45.2	
15	Acetone	43	4.281	4.279	(0.531)	106827	47.9705	48.0	
16	Isobutyl Alcohol	43	8.348	8.353	(1.035)	276470	955.802	956	
17	trans-1,2-Dichloroethene	96	4.417	4.415	(0.547)	244323	48.1186	48.1	
18	Allyl Chloride	41	4.052	4.058	(0.502)	423292	49.6090	49.6	
19	Methyl tert-butyl ether	73	4.574	4.572	(0.567)	654888	48.8551	48.8	
20	Acetonitrile	39	4.974	4.980	(0.616)	87305	476.873	477	
21	Di-isopropyl ether	45	5.160	5.166	(0.639)	904558	48.5618	48.6	
22	Chloroprene	53	5.331	5.337	(0.661)	407727	48.3342	48.3	

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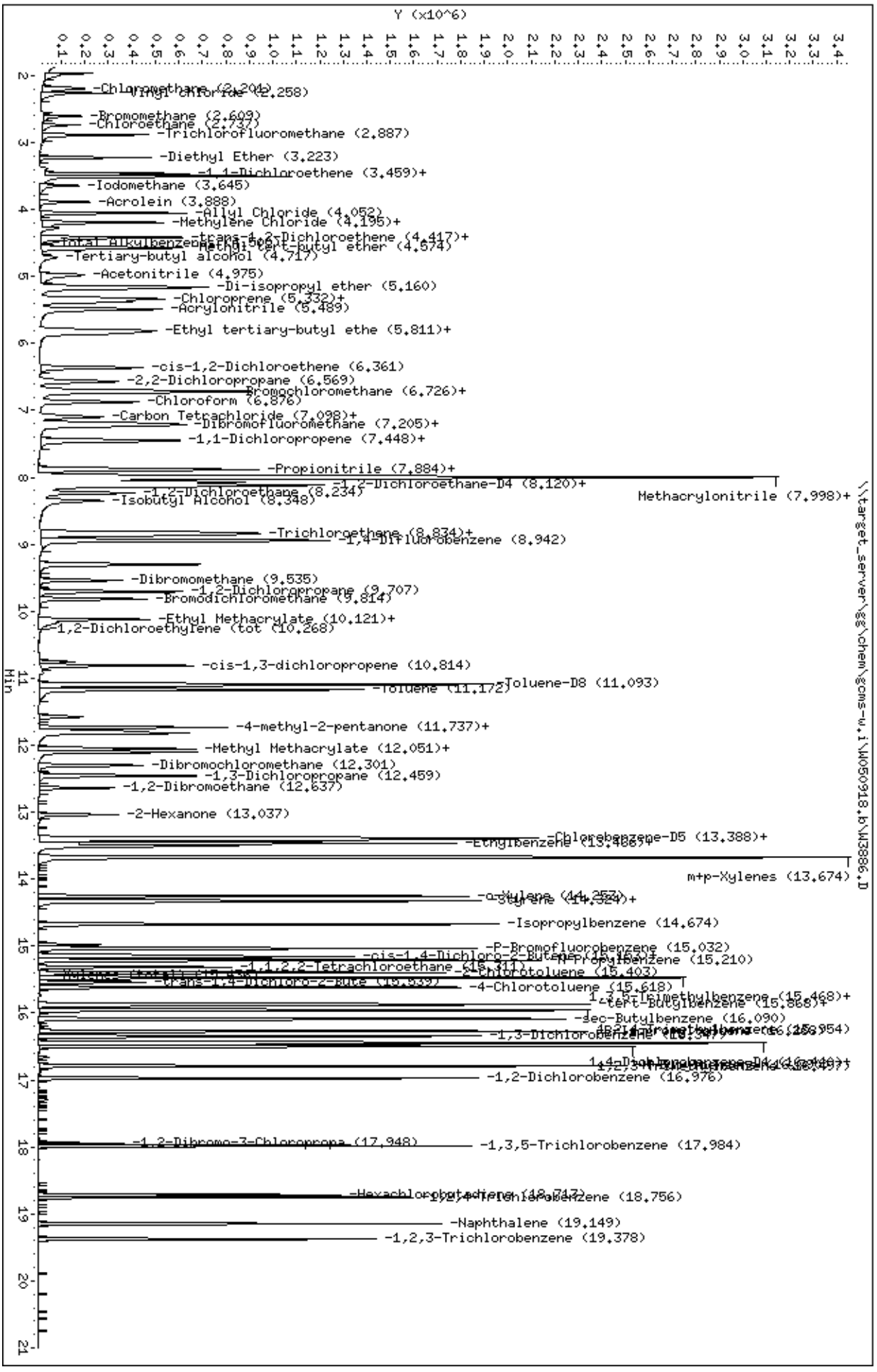
Report Date: 17-May-2018 15:06

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/kg)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW COD
	23	Propionitrile	54	7.976	7.975	(0.988)	475149	484.558	484	
	24	Methacrylonitrile	41	7.998	8.003	(0.991)	1898534	483.535	484	
	25	1,1-Dichloroethane	63	5.374	5.380	(0.666)	474877	51.0703	51.1	
	26	Acrylonitrile	52	5.489	5.487	(0.680)	459446	238.069	238	
	27	Ethyl tertiary-butyl ether	59	5.810	5.809	(0.720)	519268	51.4223	51.4	
	28	Vinyl Acetate	43	5.846	5.852	(0.654)	591484	50.5202	50.5	
	29	cis-1,2-Dichloroethene	96	6.361	6.367	(0.788)	268462	47.4194	47.4	
M	30	1,2-Dichloroethylene (total)	96				512785	95.5380	95.5	
	31	Methyl Methacrylate	41	12.101	12.099	(1.353)	265082	46.3253	46.3	
	32	2,2-Dichloropropane	77	6.568	6.567	(0.814)	226148	48.0002	48.0	
	33	Bromochloromethane	128	6.725	6.731	(0.833)	121573	44.8590	44.8	
	34	Chloroform	83	6.875	6.874	(0.852)	436420	48.0567	48.0	
	35	Carbon Tetrachloride	117	7.097	7.096	(0.794)	237232	48.9115	48.9	
	36	Tetrahydrofuran	42	7.183	7.167	(0.890)	110019	50.7154	50.7	
$	37	Dibromofluoromethane	113	7.204	7.203	(0.893)	332678	48.0978	48.1	
	38	1,1,1-Trichloroethane	97	7.233	7.231	(0.896)	336299	50.1745	50.2	
	39	1,1-Dichloropropene	75	7.447	7.453	(0.833)	342278	50.0772	50.1	
	40	2-Butanone	43	7.462	7.460	(0.925)	163172	49.1895	49.2	
	41	Benzene	78	7.883	7.882	(0.882)	1023149	48.9167	48.9	
*	42	Pentafluorobenzene	168	8.069	8.074	(1.000)	624123	50.0000		
	43	Cyclohexane	56	6.711	6.710	(0.832)	468509	49.4635	49.5	
	44	Ethyl Methacrylate	69	10.121	10.119	(1.132)	196574	45.3875	45.4	
$	45	1,2-Dichloroethane-D4	65	8.119	8.125	(1.006)	419286	48.5483	48.5	
	46	Tertiary-amyl methyl ether	73	8.119	8.118	(1.006)	520785	46.1362	46.1	
	47	1,2-Dichloroethane	62	8.234	8.231	(0.921)	363840	48.5481	48.5	
	48	Trichloroethene	95	8.863	8.861	(0.991)	256338	49.2735	49.3	
*	49	1,4-Difluorobenzene	114	8.941	8.947	(1.000)	1143915	50.0000		
	50	Dibromomethane	93	9.534	9.533	(1.066)	160968	49.4589	49.4	
	51	1,2-Dichloropropane	63	9.706	9.705	(1.086)	265208	48.4344	48.4	
	52	Bromodichloromethane	83	9.813	9.819	(1.098)	346700	52.3369	52.3	
	53	cis-1,3-dichloropropene	75	10.814	10.813	(1.209)	394792	50.3285	50.3	
	54	1,4-Dioxane	88	10.164	10.169	(1.137)	88125	976.896	977	
$	55	Toluene-D8	98	11.093	11.091	(1.241)	1381864	50.5222	50.5	
	57	Toluene	92	11.171	11.170	(1.249)	644413	49.7815	49.8	
	58	4-methyl-2-pentanone	43	11.786	11.792	(1.318)	332159	51.1334	51.1	
	59	Tetrachloroethene	164	11.736	11.735	(0.877)	195355	50.2210	50.2	
	60	trans-1,3-Dichloropropene	75	11.822	11.820	(1.322)	330328	47.1132	47.1	
	61	1,1,2-Trichloroethane	83	12.051	12.049	(1.348)	199714	48.3230	48.3	
	62	Dibromochloromethane	129	12.301	12.299	(0.919)	253191	52.1499	52.1	
	63	1,3-Dichloropropane	76	12.458	12.457	(0.931)	430861	46.5867	46.6	
	64	1,2-Dibromoethane	107	12.637	12.635	(1.413)	242690	49.7542	49.8	
	65	2-Hexanone	43	13.037	13.036	(0.974)	245172	51.9302	51.9	
*	66	Chlorobenzene-D5	117	13.387	13.386	(1.000)	1106082	50.0000		
	67	Chlorobenzene	112	13.409	13.407	(1.002)	728327	49.3322	49.3	
	68	Ethylbenzene	106	13.466	13.465	(1.006)	399021	50.0219	50.0	
	69	1,1,1,2-Tetrachloroethane	131	13.509	13.507	(1.009)	228641	51.1265	51.1	
M	70	Xylenes (total)	106				1462125	148.215	148	
	71	m+p-Xylenes	106	13.673	13.672	(1.021)	975559	99.1348	99.1	
	72	o-Xylene	106	14.252	14.251	(1.065)	486566	49.0802	49.1	
	73	Styrene	104	14.324	14.329	(1.070)	833108	49.9326	49.9	
	74	Bromoform	173	14.338	14.344	(1.071)	168926	51.2468	51.2	
	75	Isopropylbenzene	105	14.674	14.673	(0.893)	1251983	51.0375	51.0	
$	76	P-Bromofluorobenzene	95	15.031	15.030	(1.681)	600555	50.2299	50.2	
	77	cis-1,4-Dichloro-2-Butene	53	15.131	15.137	(0.920)	109755	45.0190	45.0	

Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3886.D
Report Date: 17-May-2018 15:06

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/kg)	FINAL (ug/Kgdrywt)	REVIEW COD
	78	trans-1,4-Dichloro-2-Butene	53	15.539	15.537	(0.945)	91530	45.7166	45.7	
	79	Bromobenzene	156	15.160	15.159	(0.922)	320675	47.7747	47.8	
	80	N-Propylbenzene	91	15.210	15.209	(0.925)	1575521	49.2751	49.3	
	81	1,1,2,2-Tetrachloroethane	83	15.310	15.309	(0.931)	382785	48.6760	48.7	
	82	1,3,5-Trimethylbenzene	105	15.467	15.466	(0.941)	1101488	48.7451	48.7	
	83	2-Chlorotoluene	91	15.403	15.402	(0.937)	957545	48.6856	48.7	
	84	1,2,3-Trichloropropane	75	15.474	15.473	(0.941)	310505	46.1044	46.1	
	85	4-Chlorotoluene	91	15.617	15.616	(0.950)	996498	48.1413	48.1	
	86	tert-Butylbenzene	119	15.868	15.866	(0.965)	1086411	48.7738	48.8	
	87	Pentachloroethane	117	15.882	15.881	(0.966)	207456	45.0460	45.0	
	88	1,2,4-Trimethylbenzene	105	15.953	15.952	(0.970)	1157159	48.0781	48.1	
	89	P-Isopropyltoluene	119	16.268	16.274	(0.990)	1248706	49.9995	50.0	
	90	1,3-Dichlorobenzene	146	16.347	16.344	(0.994)	666480	49.2121	49.2	
*	91	1,4-Dichlorobenzene-D4	152	16.439	16.437	(1.000)	646751	50.0000		
	92	1,4-Dichlorobenzene	146	16.461	16.460	(1.001)	660643	48.2446	48.2	
	93	N-Butylbenzene	91	16.790	16.788	(1.021)	1238416	51.5533	51.6	
	94	sec-Butylbenzene	105	16.089	16.088	(0.979)	1454920	49.4122	49.4	
	95	1,2-Dichlorobenzene	146	16.976	16.974	(1.033)	645239	47.8780	47.9	
	96	1,2-Dibromo-3-Chloropropane	75	17.948	17.946	(1.092)	79613	48.2906	48.3	
	97	1,3,5-Trichlorobenzene	180	17.983	17.982	(2.229)	508714	50.6630	50.7	
	98	Hexachlorobutadiene	225	18.720	18.718	(1.139)	211416	48.6155	48.6	
	99	1,2,4-Trichlorobenzene	180	18.755	18.754	(1.141)	433521	50.5880	50.6	
	100	1,2,3-Trimethylbenzene	105	16.497	16.495	(2.044)	1251453	49.0217	49.0	
	101	Naphthalene	128	19.149	19.147	(1.165)	1125773	48.8588	48.8	
	102	1,2,3-Trichlorobenzene	180	19.377	19.376	(1.179)	401231	48.6044	48.6	
	103	Methyl Acetate	43	4.445	4.444	(0.551)	234194	45.6181	45.6	
	104	Methylcyclohexane	83	8.827	8.833	(1.094)	470350	49.8139	49.8	
M	153	Total Alkylbenzenes	100				8862621	345.837	346	


Data File: \\target_server\gg\chem\gcms-w.i\W050918.b\W3886.D
Date : 09-MAY-2018 13:37
Client ID:
Sample Info: WG227905-8,SL3807
Column phase: RTX-VMS
Instrument: gcms-w.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-w.i\W050918.b\W3886.D
Y (x10^6)
Min
Vinyl chloride (2.258)
Chloromethane (2.204)
Bromomethane (2.609)
Chloroethane (2.737)
Trichlorofluoromethane (2.887)
Diethyl Ether (3.223)
1,1-Dichloroethene (3.459)+
Iodomethane (3.645)
Acrolein (3.888)
Allyl Chloride (4.052)
Methylene Chloride (4.195)+
trans-1,2-Dichloroethene (4.417)+
Total Alkylbenzenes
Methyl tert-butyl ether (4.574)
Tertiary-butyl alcohol (4.717)
Acetonitrile (4.975)
Di-isopropyl ether (5.160)
Chloroprene (5.332)+
Acrylonitrile (5.489)
Ethyl tertiary-butyl ethe (5.811)+
cis-1,2-Dichloroethene (6.361)
2,2-Dichloropropane (6.569)
Bromochloromethane (6.726)+
Chloroform (6.876)
Carbon Tetrachloride (7.098)+
Dibromofluoromethane (7.205)+
1,1-Dichloropropene (7.448)+
Propionitrile (7.884)+
1,2-Dichloroethane-D4 (8.120)+
Methacrylonitrile (7.998)+
1,2-Dichloroethane (8.234)
Isobutyl Alcohol (8.348)
Trichloroethene (8.834)+
1,4-Difluorobenzene (8.942)
Dibromomethane (9.535)
1,2-Dichloropropane (9.707)
Bromodichloromethane (9.814)
Ethyl Methacrylate (10.121)+
1,2-Dichloroethylene (tot (10.268)
cis-1,3-dichloropropene (10.814)
Toluene-D8 (11.093)
Toluene (11.172)
4-methyl-2-pentanone (11.737)+
Methyl Methacrylate (12.051)+
Dibromochloromethane (12.301)
1,3-Dichloropropane (12.459)
1,2-Dibromoethane (12.637)
2-Hexanone (13.037)
Chlorobenzene-D5 (13.388)+
Ethylbenzene (13.486)+
m+p-Xylenes (13.674)
o-Xylene (14.257)
Styrene (14.324)+
Isopropylbenzene (14.674)
P-Bromofluorobenzene (15.032)
n-Propylbenzene (15.210)
1,1,2,2-Tetrachloroethane (15.311)
2-Chlorotoluene (15.403)
trans-1,4-Dichloro-2-Bute (15.539)
4-Chlorotoluene (15.618)
1,2,3-Trimethylbenzene (15.468)+
tert-Butylbenzene (15.868)+
sec-Butylbenzene (16.090)
1,3-Dichlorobenzene (16.254)
1,2-Dichlorobenzene (16.976)
1,2-Dibromo-3-Chloropropa (17.948)
1,3,5-Trichlorobenzene (17.984)
Hexachlorobutadiene (18.747)
1,2,4-Trichlorobenzene (18.756)
Naphthalene (19.149)
1,2,3-Trichlorobenzene (19.378)

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 051018

					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
WG227999-10	DB173	1	-1	VOABFBAQ2							Y	[illegible]	NA	NA	
Rinse	D1258	1	1	D8A05 (21)							N				
WG227999-4	59	1	2								Y				
-3	60	1	3								Y				
-2	61	1	4								Y				
-1	62	1	5								Y				
-6	63	1	6								Y				
-5	64	1	7								Y				
-7	65	1	8								N				
-7	66	1	9								N				
-7	67	1	10								N				
VBLK	68	1	11								N				
WG227999-9	69	1	12								N				

Curve above

5-10-18

5-11-18

STANDARD	CODE
BFB	V1052
CAL. STD.	
LCS/MS MIX	
EXTRAS MIX	

STANDARD	CODE
IS MIX	V1084
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-D INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 051118 7:52

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	TRC	KI Paper Lot # COMMENTS
WG228096 -3	DB174	1	-1	VOABFBAQ2							Y	HG			
-4	D1271	1	1	D8A05(21)							Y				
-1/9	72	1	2								Y				
VBLKA	73	1	3								Y				Ind
WG228096 -2	74	1	4								N				
SL3807-5 B	75	1	5								Y				
SL3992-9 B	76	1	6						5.0		N		<2		No CCV
SL4035-2DL A	77	20	7						↓		N		<2		
SL3992-8 B	78	1	8				X		5.1		N		—		
-7 B	79	1	9						5.0		N		<2		
-2DL D	80	4	10								N		<2		
-6DL E	81	2	11								N		<2		Over-dilute Run 1:1
-2 D	82	1	12								N		<2		DL 1:10
SL3777-1RA G	83	1	13						↓		N		<2		↓
SL3992-2MS E	84	1	14					X			Y		<2		1556✓
-2MSD F	85	1	15						5.0						Didn't run, Archon fault
-6MS G	86	1	16												
-6MSD F	87	1	17						↓						
CCV1	88	1	18												
2	89	1	19												
3	90	1	20												
Rinse	91	1	21												
Rinse	92	1	22												

TTC 5/14/18

STANDARD	CODE
BFB	V1052
CAL. STD.	V1092/V1093A
LCS/MS MIX	V1096
EXTRAS MIX	V1094

STANDARD	CODE
IS MIX	V1084
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-012 - Revision 2 - 11/22/2017

QAMS655

GCMS-D INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 5-14-18 10:56

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	TRC	KI Paper Lot # COMMENTS
WG228234 3	DB1716	1	—	VGAMSB8A	✓						Y				
Vstd50	D1287			08A05(21)							Y				
LCS	88										N				
VBlmkA	89										N				
B	90										Y				
SL3807-5C	91								5.0		Y		<2		
SL3992-9C	92										Y		<2		
SL3995-16A	93										N		<2		HIS ↓ SS↑↓ poor purge Instrument error
-15A	94										Y		<2		
SL4035-20L	95	20							5.1		Y		<2		~~ND~~ ~~RR~~ OK 051518 TCP
CCV1	96	1									Y				18:02 ✓
2	97										N				
3	98										N				
Rmse	99										N				
Rmse	D1300		1								N				

051578

STANDARD	CODE
BFB	V1052
CAL. STD.	V1099/V1093B
LCS/MS MIX	V1096
EXTRAS MIX	V1094

STANDARD	CODE
IS MIX	V1054
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-012 - Revision 2 - 11/22/2017

QAMS655

KATAHDIN ANALYTICAL SERVICES

GCMS-W INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 050918 8:05

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	PREP METHOD 5035	PREP METHOD 1311	Criteria KAS	Criteria DoD	Criteria QAPP	Y/N	ANALYST	PH	TRCv	COMMENTS
WG227905 - 10	WB833	1	-1	VOABFBSL		✓					Y	[illegible]	NA	NA	
-4	W3878	1	1	W8SDI(11)							Y				
-3	79	1	2								Y				
-2	80	1	3								Y				
-1	81	1	4								Y				
-6	82	1	5								Y				
-5	83	1	6								Y				
-1	84	1	7								N				
VBLK	85	1	8								N				
WG227905-17/8	86	1	9								Y				LCS/mid
VBLK	87	1	10								~~Y~~ 2	051018			
WG227905 -2	88	1	11								~~Y~~ Y				✓
SL3807-1 D	89	1	12						5.1		Y				
-2 D	90	1	13								Y				
~~CCV~~ SL3995-1B	91	1	14								Y				
2 2B	92	1	15								Y2				1SS ↓
3 3B	93	1	16								Y2				1SS ↓
4B	94	1	17								Y2				1SS ↓
CCV1 -11	95	1	18								Y				19:21 ✓
2	96	1	19								N				
3	97	1	20								N				
Rms2	98	1	21								N				

JD 051018

STANDARD	CODE
BFB	V1052
CAL. STD.	V1088 | V1089A
LCS/MS MIX	V1091
EXTRAS MIX	V1087

STANDARD	CODE
IS MIX	V1090
SS MIX	✓

Circle Methods:

SW846 8260 EPA 624

SW846 8260 SIM EPA 524

SW846 8260 SIM (heated purge)

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:** SL3807

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-BKRD-SS07	SL3807-1		61.0		65.0		44.6	
CHAAP-BKRD-SB07	SL3807-2		52.0		63.5		67.0	
Method Blank Sample	WG228026-1		72.5		76.7		90.7	
Laboratory Control S	WG228026-2		106.		75.9		82.4	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	19-125
FLO	FLUORENE-D10	20-125
PYR	PYRENE-D10	31-128

= 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

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : U0849.D
Instrument ID : GCMS-U
Matrix : SL

SDG : SL3807
Lab Sample ID : WG228026-1
Date Extracted : 11-MAY-18
Date Analyzed : 14-MAY-18
Time Analyzed : 17:12

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	WG228026-2	U0850.D	05/14/18	17:43
CHAAP-BKRD-SS07	SL3807-1	U0851.D	05/14/18	18:14
CHAAP-BKRD-SB07	SL3807-2	U0852.D	05/14/18	18:44

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P.O. Box 540, Scarborough, ME 04070
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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : UD898.D
Instrument ID : GCMS-U

SDG : SL3807
Date Analyzed : 14-MAY-18
Time Analyzed : 12:41

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	31.8		
68	Less than 2.0% of mass 69	0.5	1.48	1
69	Less than 100.0% of mass 198	35.8		
70	Less than 2.0% of mass 69	0.0	0.0	1
127	40.0 - 60.0% of mass 198	44.2		
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	6.8		
275	10.0 - 30.0% of mass 198	20.9		
365	1.0 - 100.0% of mass 198	3.0		
441	0.0 - 100.0% of mass 443	11.0	83.19	2
442	40.0 - 100.0% of mass 198	66.1		
443	17.0 - 23.0% of mass 442	13.2	19.95	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	WG228239-4	U0842.D	05/14/18	13:33
Initial Calibration	WG228239-2	U0843.D	05/14/18	14:06
Initial Calibration	WG228239-3	U0844.D	05/14/18	14:37
Initial Calibration	WG228239-5	U0845.D	05/14/18	15:08
Initial Calibration	WG228239-6	U0846.D	05/14/18	15:39
Initial Calibration	WG228239-7	U0847.D	05/14/18	16:11
Independent Source	WG228239-8	U0848.D	05/14/18	16:41
Method Blank Sample	WG228026-1	U0849.D	05/14/18	17:12
Laboratory Control S	WG228026-2	U0850.D	05/14/18	17:43
CHAAP-BKRD-SS07	SL3807-1	U0851.D	05/14/18	18:14
CHAAP-BKRD-SB07	SL3807-2	U0852.D	05/14/18	18:44
Continuing Calibrati	WG228239-9	U0863.D	05/15/18	00:31

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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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 : WG228239-4
Lab File ID : U0842.D

SDG: SL3807
Analytical Date: 05/14/18 13:33
Instrument ID: GCMS-U

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	28814		5.99		80891		7.62		36551		9.94	
	Upper Limit	57628		6.16		161782		7.79		73102		10.10	
	Lower Limit	14407		5.83		40445.5		7.45		18275.5		9.77	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG228026-1	21798		6.00		80954		7.65		36142		9.95	
Laboratory Control S	WG228026-2	22344		6.01		80592		7.62		35095		9.95	
CHAAP-BKRD-SS07	SL3807-1	21729		6.01		82233		7.63		38150		9.95	
CHAAP-BKRD-SB07	SL3807-2	23174		6.01		88214		7.63		41355		9.95	
Continuing Calibrati	WG228239-9	33987		6.00		94358		7.62		42336		9.94	

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 : WG228239-4
Lab File ID : U0842.D

SDG: SL3807
Analytical Date: 05/14/18 13:33
Instrument ID: GCMS-U

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	62249		11.93		28137		15.70		12677		18.73	
	Upper Limit	124498		12.10		56274		15.86		25354		18.90	
	Lower Limit	31124.5		11.77		14068.5		15.53		6338.5		18.56	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG228026-1	58303		11.96		24858		15.73		12898		18.74	
Laboratory Control S	WG228026-2	53823		11.93		26182		15.70		16219		18.72	
CHAAP-BKRD-SS07	SL3807-1	61437		11.94		27625		15.72		13977		18.72	
CHAAP-BKRD-SB07	SL3807-2	66158		11.94		29463		15.72		16746		18.73	
Continuing Calibrati	WG228239-9	65477		11.93		31529		15.70		18658		18.72	

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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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

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-1
Client ID: CHAAP-BKRD-SS07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: U0851.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 11-MAY-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG228026

Analysis Date: 14-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 76.
Report Date: 15-MAY-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	J	9.9	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		61.0	%					
Fluorene-D10		65.0	%					
Pyrene-D10		44.6	%					

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Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0851.D
Report Date: 15-May-2018 08:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0851.D
Lab Smp Id: SL3807-1 Client Smp ID: CHAAP-BKRD-SS07
Inj Date : 14-MAY-2018 18:14 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3807-1
Misc Info : WG228239,WG228026,WG228239-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 16:11 Cal File: U0847.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

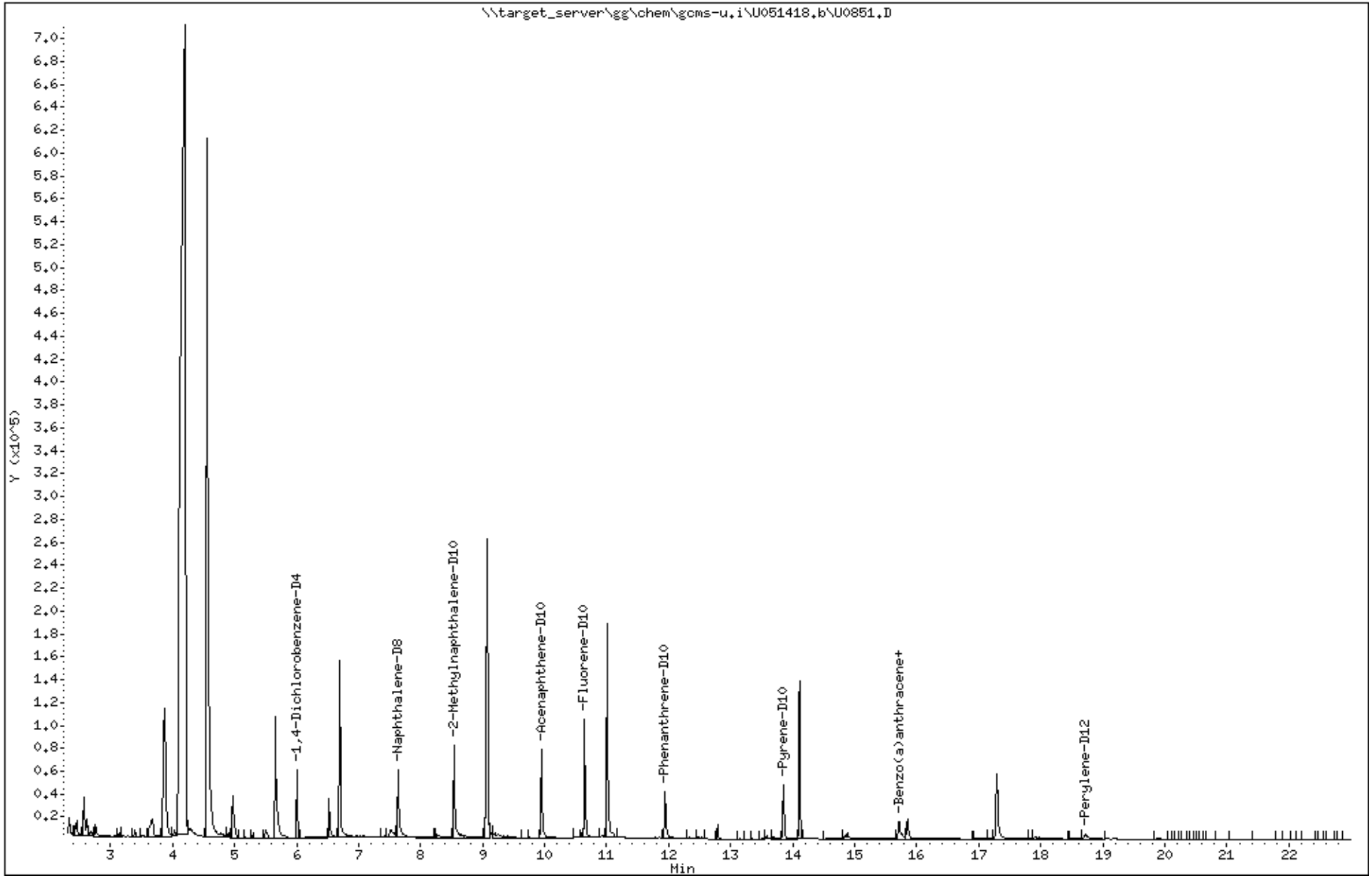
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03050	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	23.476	% Moisture
Cpnd Variable		Local Compound Variable

	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	6.005	6.014	(1.000)	21729	0.80000	(Q)	
*	26 Naphthalene-D8	136	7.634	7.634	(1.000)	82233	0.80000		
$	32 2-Methylnaphthalene-D10	152	8.539	8.538	(0.859)	57703	1.21713	52.1	
*	47 Acenaphthene-D10	164	9.946	9.947	(1.000)	38150	0.80000		
$	55 Fluorene-D10	174	10.645	10.646	(1.070)	50608	1.30056	55.7	
*	65 Phenanthrene-D10	188	11.943	11.944	(1.000)	61437	0.80000		
$	71 Pyrene-D10	212	13.845	13.855	(0.881)	46629	0.89193	38.2	
	74 Benzo(a)anthracene	228	15.706	15.686	(0.999)	1571	0.23209	9.94(a)	
*	76 Chrysene-D12	240	15.716	15.706	(1.000)	27625	0.80000		
*	83 Perylene-D12	264	18.719	18.732	(1.000)	13977	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-u.i\U051418.b\U0851.D
Date : 14-MAY-2018 18:14
Client ID: CHAAP-BKRD-SS07
Instrument: gcms-u.i
Sample Info: SL3807-1
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000013

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0851.D

Date : 14-MAY-2018 18:14

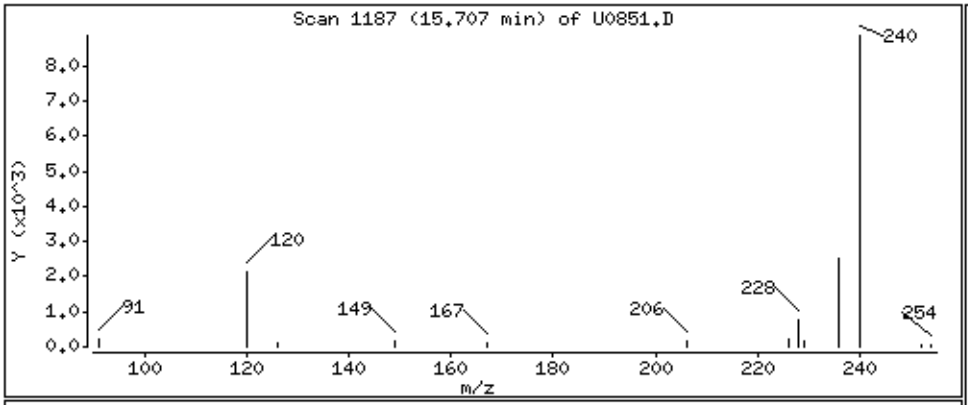
Client ID: CHAAP-BKRD-SS07 Instrument: gcms-u.i

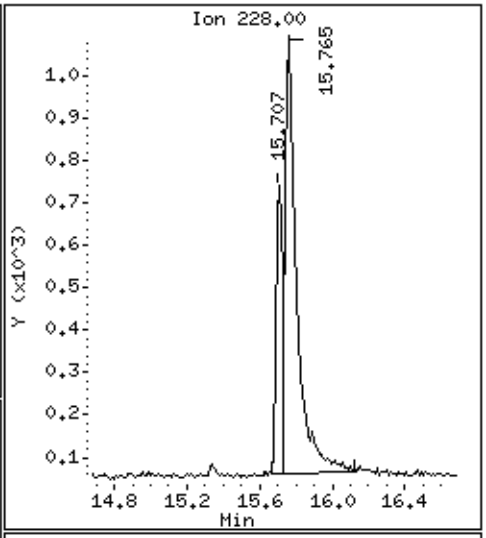
Sample Info: SL3807-1

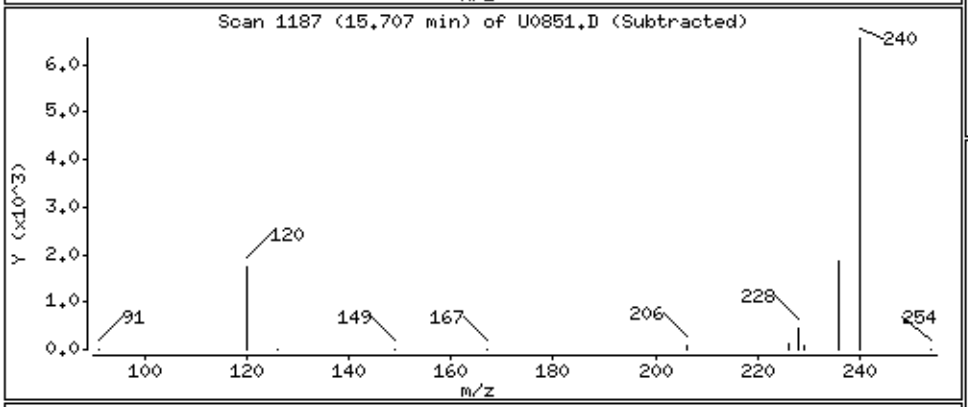
Volume Injected (uL): 1.0 Operator: JCG

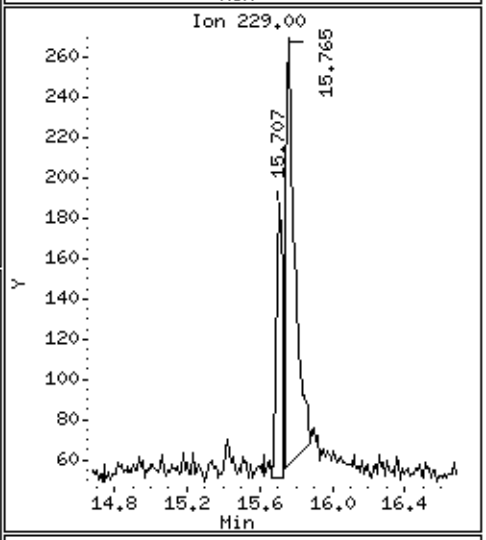
Column phase: ZB5-MS Column diameter: 0.25

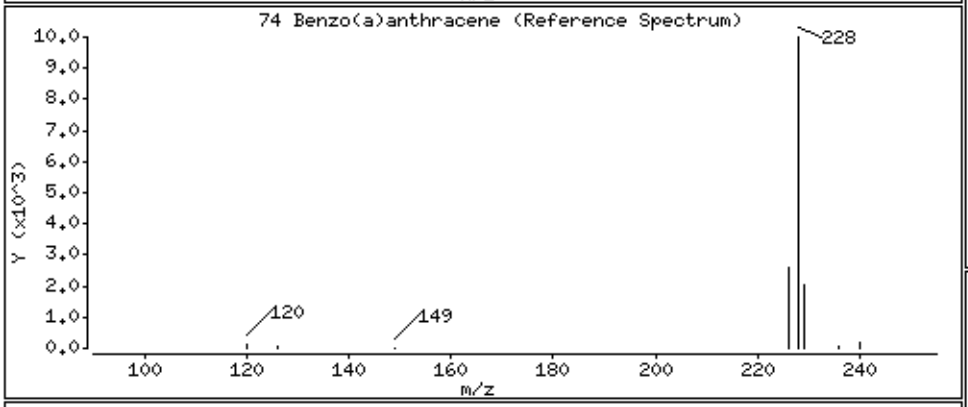
74 Benzo(a)anthracene Concentration: 9.94 ug/Kgdrywt

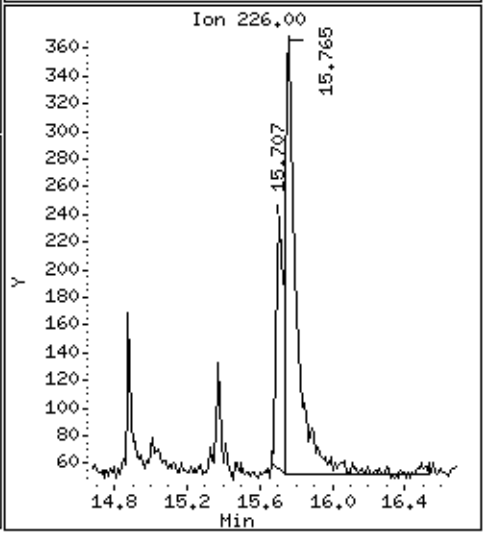


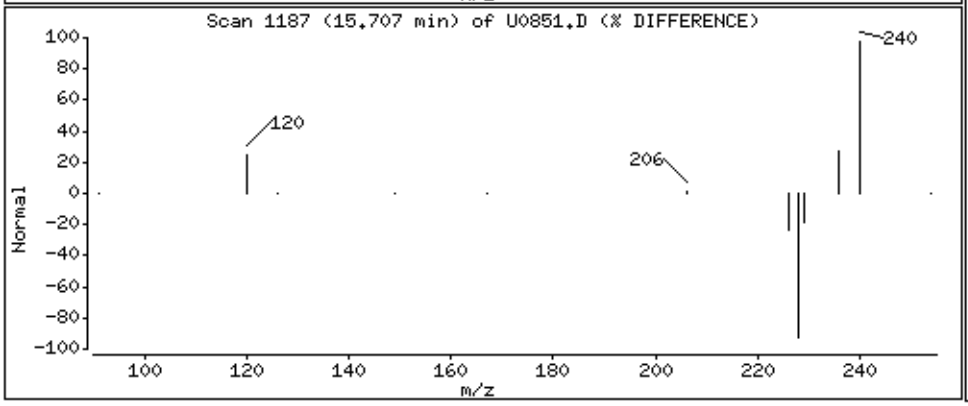












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-2
Client ID: CHAAP-BKRD-SB07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: U0852.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 11-MAY-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG228026

Analysis Date: 14-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 82.
Report Date: 15-MAY-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	J	8.6	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	U	12	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		52.0	%					
Fluorene-D10		63.5	%					
Pyrene-D10		67.0	%					

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Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0852.D
Report Date: 15-May-2018 08:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0852.D
Lab Smp Id: SL3807-2 Client Smp ID: CHAAP-BKRD-SB07
Inj Date : 14-MAY-2018 18:44 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3807-2
Misc Info : WG228239,WG228026,WG228239-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 16:11 Cal File: U0847.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

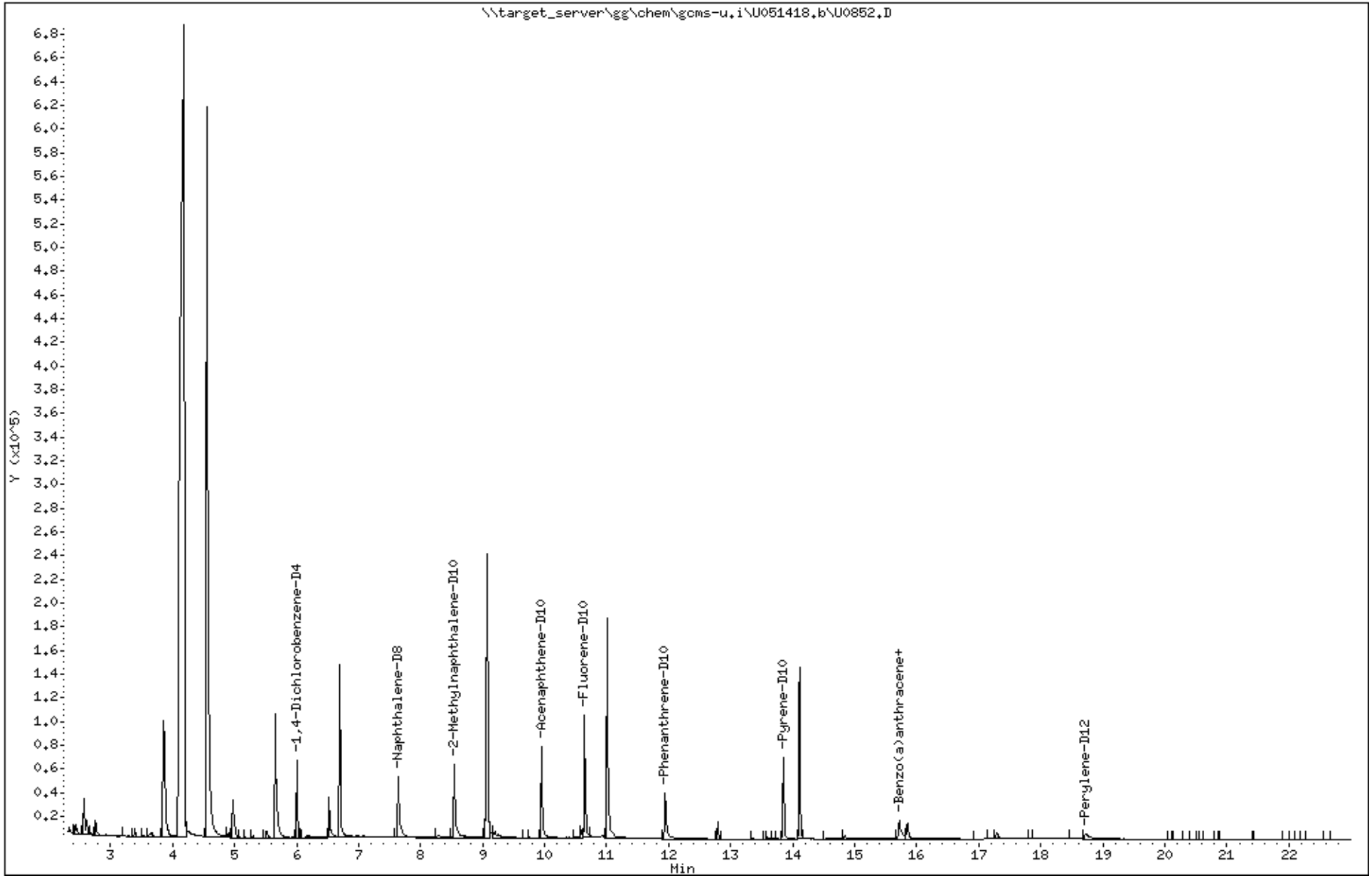
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03150	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	18.378	% Moisture
Cpnd Variable		Local Compound Variable

	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	6.005	6.014	(1.000)	23174	0.80000	(Q)	
*	26 Naphthalene-D8	136	7.634	7.634	(1.000)	88214	0.80000		
$	32 2-Methylnaphthalene-D10	152	8.539	8.538	(0.859)	53329	1.03769	40.4	
*	47 Acenaphthene-D10	164	9.946	9.947	(1.000)	41355	0.80000		
$	55 Fluorene-D10	174	10.645	10.646	(1.070)	53494	1.26819	49.3	
*	65 Phenanthrene-D10	188	11.943	11.944	(1.000)	66158	0.80000		
$	71 Pyrene-D10	212	13.845	13.855	(0.881)	68098	1.34144	52.2	
	74 Benzo(a)anthracene	228	15.706	15.686	(0.999)	1228	0.21994	8.55(a)	
*	76 Chrysene-D12	240	15.716	15.706	(1.000)	29463	0.80000		
*	83 Perylene-D12	264	18.730	18.732	(1.000)	16746	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-u.i\U051418.b\U0852.D
Date : 14-MAY-2018 18:44
Client ID: CHAAP-BKRD-SB07
Instrument: gcms-u.i
Sample Info: SL3807-2
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000017

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0852.D

Date : 14-MAY-2018 18:44

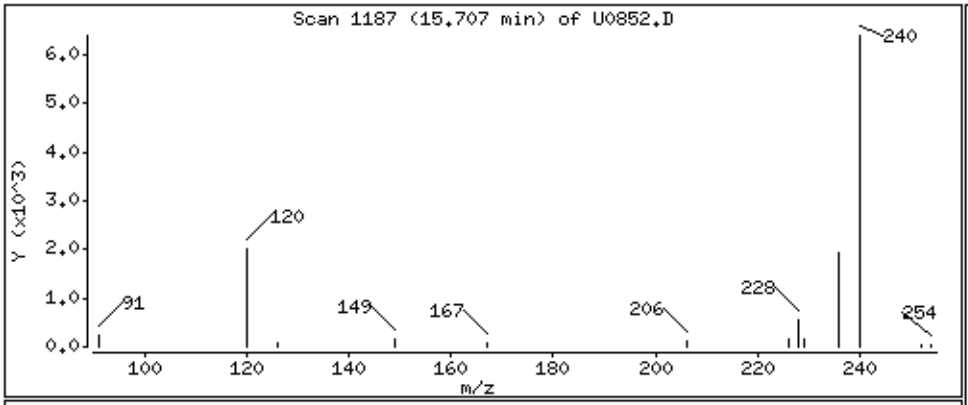
Client ID: CHAAP-BKRD-SB07 Instrument: gcms-u.i

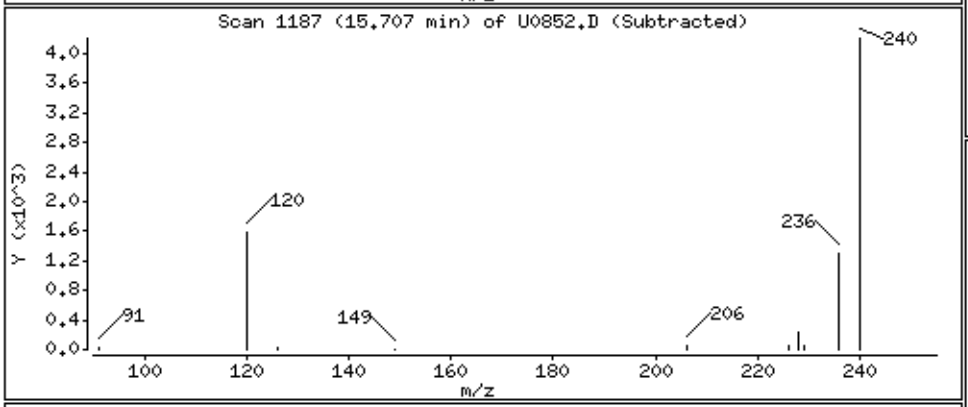
Sample Info: SL3807-2

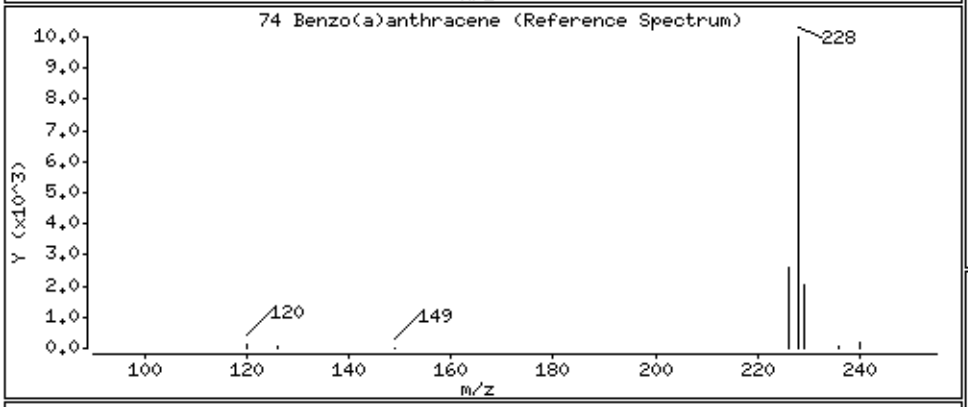
Volume Injected (uL): 1.0 Operator: JCG

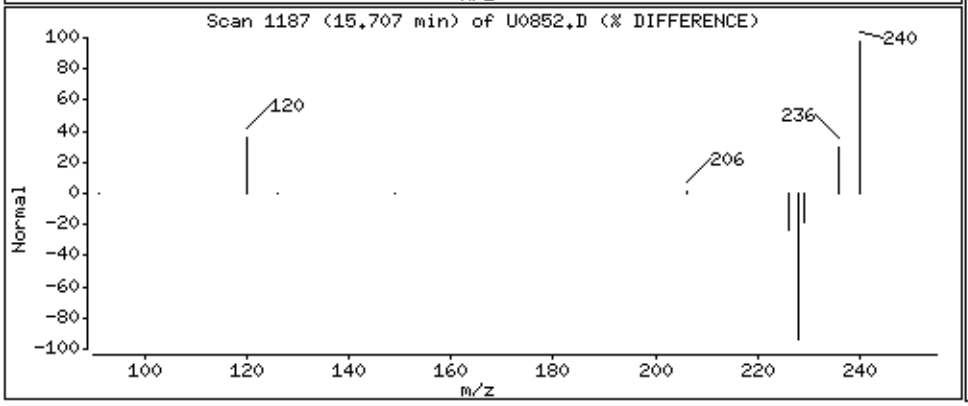
Column phase: ZB5-MS Column diameter: 0.25

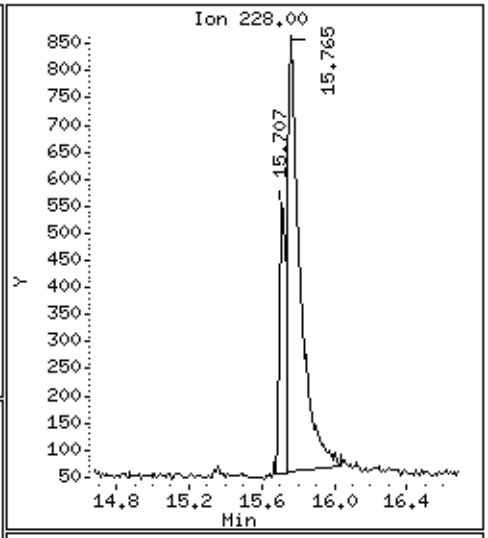
74 Benzo(a)anthracene Concentration: 8.55 ug/Kgdrywt

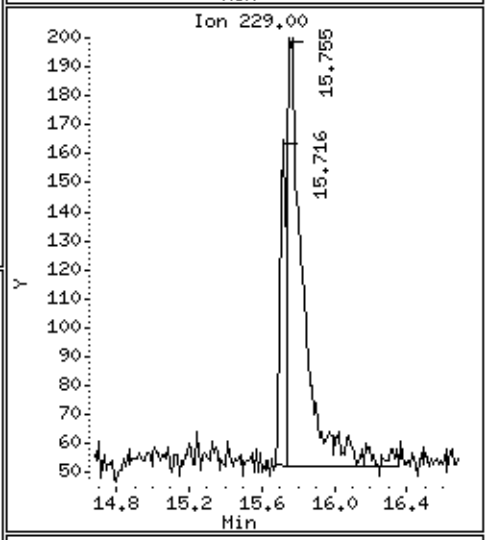


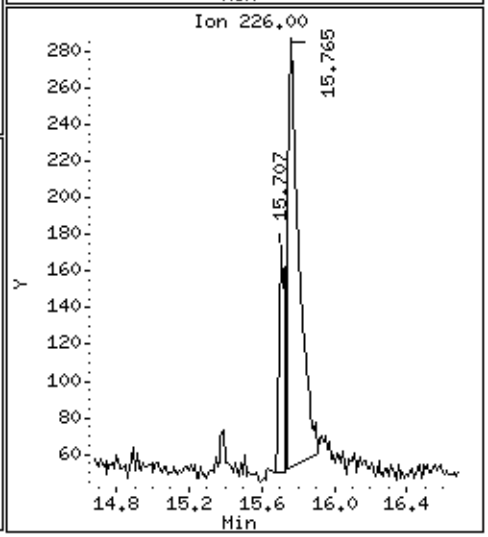












Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-U
Lab File IDs : U0843.D U0844.D U0842.D U0845.D U0846.D U0847.D
Column ID:
Calibration Date(s): 14-MAY-18 13:33, 14-MAY-18 16:11

	0.200000(Level 1	0.500000(Level 2	2.0000 Level 3	7.0000 Level 4	10.0000 Level 5	15.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.78697	0.90845	0.84788	0.78421	0.72706	0.71848	AVG		0.79551		9.11971	15.00000	O
2-Methylnaphthalene	0.16711	0.21812	0.20286	0.20401	0.19433	0.18682	AVG		0.19554		8.91943	15.00000	O
Acenaphthylene	1.69046	1.79295	1.69299	1.55541	1.45196	1.48043	AVG		1.61070		8.40221	15.00000	O
Acenaphthene	1.09033	1.16338	1.02771	0.98722	0.91450	0.90530	AVG		1.01474		9.92911	15.00000	O
Fluorene	1.26662	1.28711	1.26308	1.16541	1.08490	1.01660	AVG		1.18062		9.41894	15.00000	O
Phenanthrene	1.08282	1.04535	0.98487	0.94677	0.90114	0.87569	AVG		0.97277		8.32082	15.00000	O
Anthracene	1.05407	1.10512	1.04293	0.98217	0.94647	0.91824	AVG		1.00817		7.05353	15.00000	O
Fluoranthene	0.91132	0.89669	0.94560	0.93421	0.91488	0.90362	AVG		0.91772		2.03203	15.00000	O
Pyrene	12894	33085	154388	440473	682416	780339	LNR	-0.37598	1.65924		0.99757	0.99000	O
Benzo(a)anthracene	2545	6349	58340	226115	406671	459703	LNR	0.23324	0.99992		0.99930	0.99000	O
Chrysene	12178	22317	92854	298737	466592	522972	LNR	-0.36739	1.11844		0.99828	0.99000	O
Benzo(b)fluoranthene	0.94112	0.83178	0.97840	1.08371	1.15114	1.15033	AVG		1.02275		12.48923	15.00000	O
Benzo(k)fluoranthene	6624	11773	58457	222744	360026	424692	LNR	-0.24545	1.68882		0.99870	0.99000	O
Benzo(a)pyrene	1.34487	1.13424	0.96474	1.11786	1.15790	1.15523	AVG		1.14581		10.58604	15.00000	O
Indeno(1,2,3-cd)pyrene	1148	2124	17036	91727	143234	187105	LNR	0.25048	0.74096		0.99866	0.99000	O
Dibenzo(a,h)anthracene	730	1502	11140	62770	100445	132758	LNR	0.32290	0.52444		0.99798	0.99000	O
Benzo(g,h,i)perylene	0.75826	0.61225	0.65243	0.77323	0.70151	0.70935	AVG		0.70117		8.74547	15.00000	O
2-Methylnaphthalene-D10	1.05617	1.13537	1.02370	0.96917	0.88253	0.89805	AVG		0.99417		9.75037	15.00000	
Fluorene-D10	0.83007	0.91303	0.82407	0.81199	0.75510	0.76167	AVG		0.81599		7.00881	15.00000	
Pyrene-D10	8342	18889	104027	302895	475134	510101	LNR	-0.40650	1.10944		0.99602	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0848.D
Report Date: 15-May-2018 09:07

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: 021497
Sample Matrix: SOLID Fraction: SV
Lab Smp Id: WG228239-8
Level: LOW Operator: JCG
Data Type: MS DATA SampleType: INDCHECK
SpikeList File: SIM_IND_CHK5.spk Quant Type: ISTD
Sublist File: sw8270sim.sub
Method File: \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Misc Info: WG228239,WG228239,WG228239-4

SPIKE	COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
2	1,4-Dioxane	5.00	0.000	*	80-120
3	N-Nitrosodimethyl	5.00	0.000	*	80-120
4	Pyridine	5.00	0.000	*	80-120
5	Benzaldehyde	5.00	0.000	*	80-120
7	Bis(2-Chloroethyl	5.00	0.000	*	80-120
6	Phenol	5.00	0.000	*	80-120
8	2-Chlorophenol	5.00	0.000	*	80-120
9	1,3-Dichlorobenze	5.00	0.000	*	80-120
11	1,4-Dichlorobenze	5.00	0.000	*	80-120
12	1,2-Dichlorobenze	5.00	0.000	*	80-120
14	2,2'-Oxybis(1-chl	5.00	0.000	*	80-120
13	2-Methylphenol	5.00	0.000	*	80-120
15	Acetophenone	5.00	0.000	*	80-120
16	N-Nitroso-di-n-pr	5.00	0.000	*	80-120
18	Hexachloroethane	5.00	0.000	*	80-120
17	3&4-Methylphenol	5.00	0.000	*	80-120
19	Nitrobenzene	5.00	0.000	*	80-120
20	Isophorone	5.00	0.000	*	80-120
21	2-Nitrophenol	5.00	0.000	*	80-120
22	2,4-Dimethylphenol	5.00	0.000	*	80-120
23	bis(2-Chloroethox	5.00	0.000	*	80-120
24	2,4-Dichlorophenol	5.00	0.000	*	80-120
25	1,2,4-Trichlorobe	5.00	0.000	*	80-120
27	Naphthalene	5.00	5.75	115.03	80-120
28	4-Chloroaniline	5.00	0.000	*	80-120
29	Hexachlorobutadie	5.00	0.000	*	80-120
30	Caprolactam	5.00	0.000	*	80-120
33	2-Methylnaphthalen	5.00	6.01	120.24*	80-120
31	4-Chloro-3-Methyl	5.00	0.000	*	80-120
34	1-Methylnaphthale	5.00	0.000	*	80-120
36	1,2,4,5-Tetrachlo	5.00	0.000	*	80-120
35	Hexachlorocyclope	5.00	0.000	*	80-120
38	2,4,6-Trichloroph	5.00	0.000	*	80-120
39	2,4,5-Trichloroph	5.00	0.000	*	80-120
41	2-Chloronaphthale	5.00	0.000	*	80-120
40	1,1'-Biphenyl	5.00	0.000	*	80-120
42	2-Nitroaniline	5.00	0.000	*	80-120
43	Dimethyl Phthalate	5.00	0.000	*	80-120
45	Acenaphthylene	5.00	5.19	103.72	80-120
44	2,6-Dinitrotoluene	5.00	0.000	*	80-120

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0848.D
Report Date: 15-May-2018 09:07

SPIKE COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
48 Acenaphthene	5.00	5.54	110.71	80-120
46 3-Nitroaniline	5.00	0.000	*	80-120
49 2,4-Dinitrophenol	5.00	0.000	*	80-120
51 Dibenzofuran	5.00	0.000	*	80-120
52 2,4-Dinitrotoluene	5.00	0.000	*	80-120
53 2,3,4,6-Tetrachlo	5.00	0.000	*	80-120
50 4-Nitrophenol	5.00	0.000	*	80-120
54 Diethylphthalate	5.00	0.000	*	80-120
56 Fluorene	5.00	5.62	112.34	80-120
59 4,6-Dinitro-2-Met	5.00	0.000	*	80-120
58 4-Nitroaniline	5.00	0.000	*	80-120
60 N-Nitrosodiphenyl	5.00	0.000	*	80-120
61 4-Bromophenyl-phe	5.00	0.000	*	80-120
62 Hexachlorobenzene	5.00	0.000	*	80-120
63 Atrazine	5.00	0.000	*	80-120
64 Pentachlorophenol	5.00	0.000	*	80-120
66 Phenanthrene	5.00	5.71	114.19	80-120
67 Anthracene	5.00	5.49	109.83	80-120
68 Carbazole	5.00	0.000	*	80-120
69 Di-n-butylphthala	5.00	0.000	*	80-120
70 Fluoranthene	5.00	6.10	121.91*	80-120
72 Pyrene	5.00	6.48	129.51*	80-120
73 Butylbenzylphthal	5.00	0.000	*	80-120
74 Benzo(a)anthracene	5.00	5.72	114.44	80-120
77 Chrysene	5.00	5.93	118.68	80-120
75 3,3'-Dichlorobenz	5.00	0.000	*	80-120
78 bis(2-Ethylhexyl)	5.00	0.000	*	80-120
79 Di-n-octylphthala	5.00	0.000	*	80-120
80 Benzo(b)fluoranthe	5.00	5.86	117.18	80-120
81 Benzo(k)fluoranthe	5.00	6.06	121.17*	80-120
82 Benzo(a)pyrene	5.00	5.39	107.83	80-120
84 Indeno(1,2,3-cd)py	5.00	5.38	107.52	80-120
85 Dibenzo(a,h)anthra	5.00	4.86	97.22	80-120
86 Benzo(g,h,i)peryle	5.00	5.44	108.90	80-120

SURROGATE COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
$ 32 2-Methylnaphthale	2.00	0.000	*	19-94
$ 55 Fluorene-D10	2.00	0.000	*	20-96
$ 71 Pyrene-D10	2.00	0.000	*	31-128

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0842.D
Report Date: 15-May-2018 08:48

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0842.D
Lab Smp Id: WG228239-4
Inj Date : 14-MAY-2018 13:33 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG228239-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 12-MAY-2018 13:16 Cal File: U0821.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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
*	10 1,4-Dichlorobenzene-D4	152	5.994	6.014	(1.000)	28814	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.621	7.634	(1.000)	80891	0.80000	(a)	
	27 Naphthalene	128	7.645	7.658	(1.003)	171465	2.00000	2.13	
$	32 2-Methylnaphthalene-D10	152	8.525	8.538	(0.858)	93543	2.00000	2.06	
	33 2-Methylnaphthalene	115	8.563	8.574	(1.124)	41023	2.00000	2.07(Q)	
	45 Acenaphthylene	152	9.750	9.761	(0.981)	154701	2.00000	2.10	
*	47 Acenaphthene-D10	164	9.936	9.947	(1.000)	36551	0.80000	(a)	
	48 Acenaphthene	153	9.980	9.991	(1.004)	93910	2.00000	2.02	
$	55 Fluorene-D10	174	10.632	10.646	(1.070)	75301	2.00000	2.02(M)	M6
	56 Fluorene	166	10.674	10.688	(1.074)	115417	2.00000	2.14	
*	65 Phenanthrene-D10	188	11.932	11.944	(1.000)	62249	0.80000	(a)	
	66 Phenanthrene	178	11.956	11.968	(1.002)	153268	2.00000	2.02	
	67 Anthracene	178	12.037	12.037	(1.009)	162304	2.00000	2.07	
	70 Fluoranthene	202	13.573	13.584	(1.137)	147156	2.00000	2.06	
$	71 Pyrene-D10	212	13.844	13.855	(0.882)	104027	2.00000	2.34	
	72 Pyrene	202	13.864	13.875	(0.883)	154388	2.00000	2.34	
	74 Benzo(a)anthracene	228	15.677	15.686	(0.999)	58340	2.00000	1.84	
*	76 Chrysene-D12	240	15.696	15.706	(1.000)	28137	0.80000	(a)	
	77 Chrysene	228	15.745	15.755	(1.003)	92854	2.00000	2.07	
	80 Benzo(b)fluoranthene	252	17.866	17.877	(0.954)	31008	2.00000	1.91	
	81 Benzo(k)fluoranthene	252	17.934	17.934	(0.957)	58457	2.00000	1.99(H)	

JCG
9:09 am, May 15, 2018

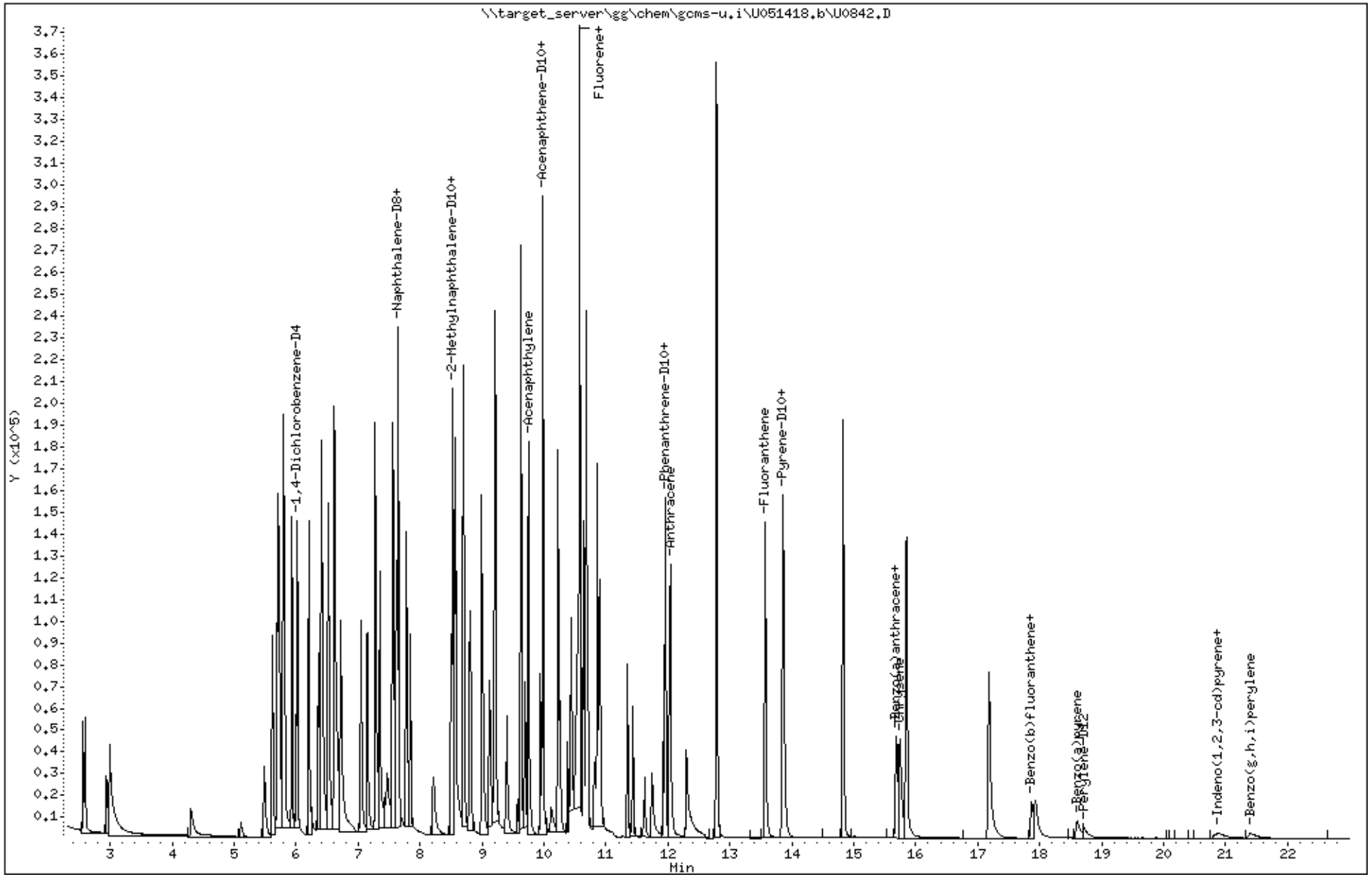
Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0842.D
Report Date: 15-May-2018 08:48

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	82 Benzo(a)pyrene	252	18.606	18.595	(0.993)	30575	2.00000	1.68	
*	83 Perylene-D12	264	18.731	18.732	(1.000)	12677	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.827	20.818	(1.112)	17036	2.00000	1.65	
	85 Dibenzo(a,h)anthracene	278	20.894	20.884	(1.115)	11140	2.00000	1.60	
	86 Benzo(g,h,i)perylene	276	21.410	21.400	(1.143)	20677	2.00000	1.86	

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-u.i\U051418.b\U0842.D
Date : 14-MAY-2018 13:33
Client ID:
Instrument: gcms-u.i
Sample Info: WG228239-4
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000025

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0843.D
Report Date: 15-May-2018 08:48

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0843.D
Lab Smp Id: WG228239-2
Inj Date : 14-MAY-2018 14:06 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG228239-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 14:06 Cal File: U0843.D
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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
*	10 1,4-Dichlorobenzene-D4	152	6.016	6.014	(1.000)	26104	0.80000	(aQ`	
*	26 Naphthalene-D8	136	7.634	7.634	(1.000)	94524	0.80000	(a)	
	27 Naphthalene	128	7.659	7.658	(1.003)	18597	0.20000	0.198(a)	
$	32 2-Methylnaphthalene-D10	152	8.562	8.538	(0.861)	9646	0.20000	0.212(a)	
	33 2-Methylnaphthalene	115	8.599	8.574	(1.126)	3949	0.20000	0.171(aQ	
	45 Acenaphthylene	152	9.760	9.761	(0.981)	15439	0.20000	0.210	
*	47 Acenaphthene-D10	164	9.946	9.947	(1.000)	36532	0.80000	(a)	
	48 Acenaphthene	153	9.990	9.991	(1.004)	9958	0.20000	0.215	
$	55 Fluorene-D10	174	10.660	10.646	(1.072)	7581	0.20000	0.203(aM)	M6
	56 Fluorene	166	10.701	10.688	(1.076)	11568	0.20000	0.214	
*	65 Phenanthrene-D10	188	11.955	11.944	(1.000)	51894	0.80000	(a)	
	66 Phenanthrene	178	11.990	11.968	(1.003)	14048	0.20000	0.223	
	67 Anthracene	178	12.072	12.037	(1.010)	13675	0.20000	0.209	
	70 Fluoranthene	202	13.615	13.584	(1.139)	11823	0.20000	0.199(a)	
$	71 Pyrene-D10	212	13.885	13.855	(0.882)	8342	0.20000	(a)	
	74 Benzo(a)anthracene	228	15.755	15.686	(1.001)	2545	0.20000	0.295(M)	M6
*	76 Chrysene-D12	240	15.736	15.706	(1.000)	18746	0.80000	(a)	
	77 Chrysene	228	15.785	15.755	(1.003)	12178	0.20000	0.171(a)	
	80 Benzo(b)fluoranthene	252	17.945	17.877	(0.956)	1930	0.20000	0.184(aM)	M6
	81 Benzo(k)fluoranthene	252	18.002	17.934	(0.959)	6624	0.20000	0.186(aM)	M6
	82 Benzo(a)pyrene	252	18.685	18.595	(0.996)	2758	0.20000	0.235	

JCG

9:09 am, May 15, 2018

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0843.D
Report Date: 15-May-2018 08:48

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
* 83 Perylene-D12	264	18.765	18.732	(1.000)	8203	0.80000	(a)	
84 Indeno(1,2,3-cd)pyrene	276	20.989	20.818	(1.119)	1148	0.20000	0.351(M)	M6
85 Dibenzo(a,h)anthracene	278	21.037	20.884	(1.121)	730	0.20000	0.394(M)	M6
86 Benzo(g,h,i)perylene	276	21.552	21.400	(1.149)	1555	0.20000	0.216(M)	M6

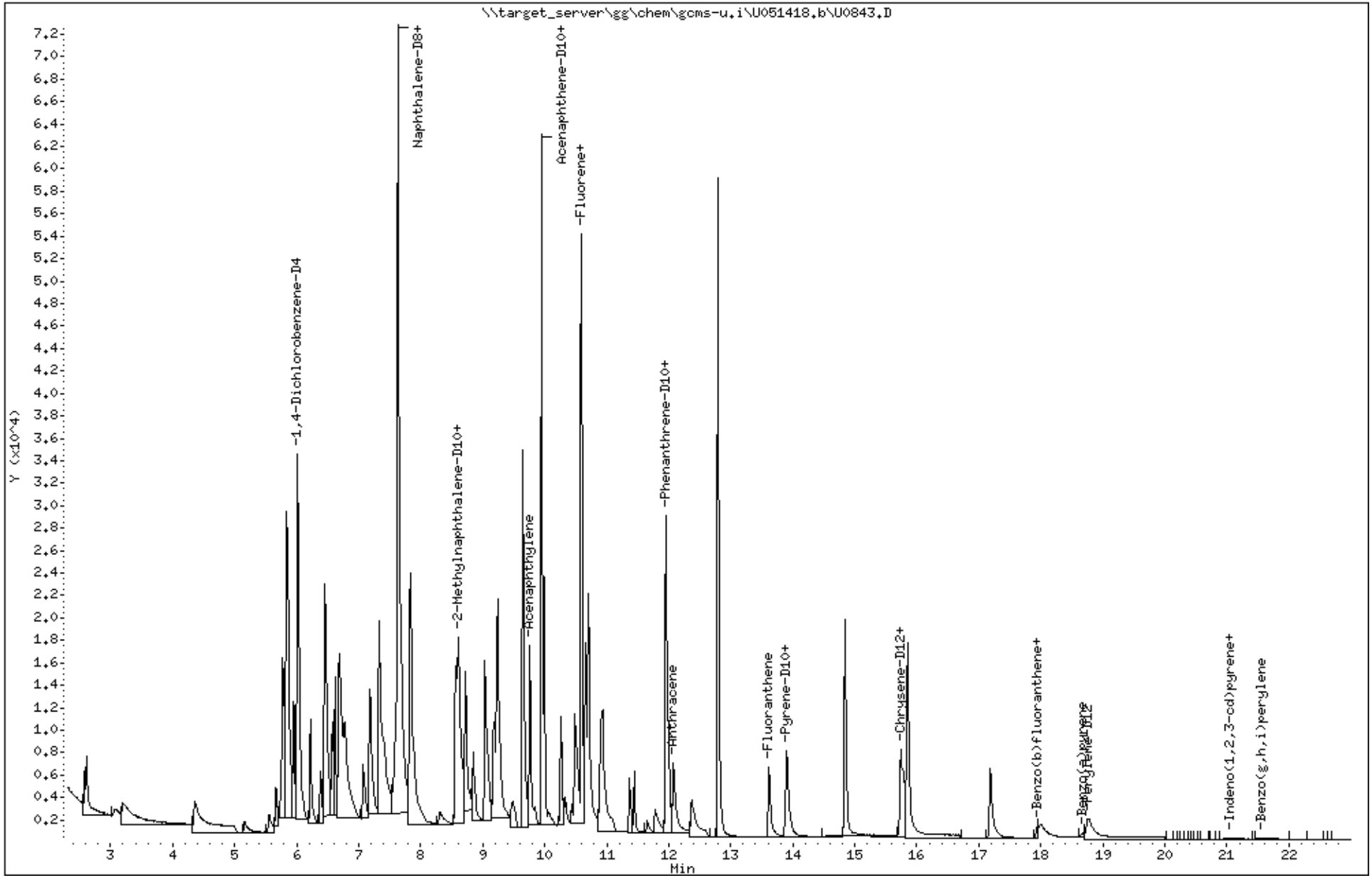
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.



9:09 am, May 15, 2018

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0843.D
Date : 14-MAY-2018 14:06
Client ID:
Instrument: gcms-u.i
Sample Info: WG228239-2
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000028

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0844.D
Report Date: 15-May-2018 08:48

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0844.D
Lab Smp Id: WG228239-3
Inj Date : 14-MAY-2018 14:37 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG228239-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 14:37 Cal File: U0844.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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
*	10 1,4-Dichlorobenzene-D4	152	6.005	6.014	(1.000)	25360	0.80000	(a)	
*	26 Naphthalene-D8	136	7.622	7.634	(1.000)	79677	0.80000	(a)	
	27 Naphthalene	128	7.659	7.658	(1.005)	45239	0.50000	0.571	
$	32 2-Methylnaphthalene-D10	152	8.537	8.538	(0.858)	24490	0.50000	0.571(a)	
	33 2-Methylnaphthalene	115	8.587	8.574	(1.127)	10862	0.50000	0.558(Q)	
	45 Acenaphthylene	152	9.749	9.761	(0.980)	38674	0.50000	0.556	
*	47 Acenaphthene-D10	164	9.946	9.947	(1.000)	34512	0.80000	(a)	
	48 Acenaphthene	153	9.990	9.991	(1.004)	25094	0.50000	0.573	
$	55 Fluorene-D10	174	10.646	10.646	(1.070)	19694	0.50000	0.559(aM)	M6
	56 Fluorene	166	10.687	10.688	(1.075)	27763	0.50000	0.545	
*	65 Phenanthrene-D10	188	11.943	11.944	(1.000)	50113	0.80000	(a)	
	66 Phenanthrene	178	11.978	11.968	(1.003)	32741	0.50000	0.537	
	67 Anthracene	178	12.060	12.037	(1.010)	34613	0.50000	0.548	
	70 Fluoranthene	202	13.594	13.584	(1.138)	28085	0.50000	0.488	
$	71 Pyrene-D10	212	13.865	13.855	(0.882)	18889	0.50000	0.436(a)	
	72 Pyrene	202	13.885	13.875	(0.883)	33085	0.50000	0.590	
	74 Benzo(a)anthracene	228	15.726	15.686	(1.000)	6349	0.50000	0.470	
*	76 Chrysene-D12	240	15.726	15.706	(1.000)	17904	0.80000	(a)	
	77 Chrysene	228	15.775	15.755	(1.003)	22317	0.50000	0.598	
	80 Benzo(b)fluoranthene	252	17.933	17.877	(0.956)	3861	0.50000	0.407	
	81 Benzo(k)fluoranthene	252	17.990	17.934	(0.959)	11773	0.50000	0.554(M)	M6

JCG

9:09 am, May 15, 2018

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0844.D
Report Date: 15-May-2018 08:48

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
82	Benzo(a)pyrene	252	18.696	18.595	(0.996)	5265	0.50000	0.495	
* 83	Perylene-D12	264	18.765	18.732	(1.000)	7427	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	20.951	20.818	(1.117)	2124	0.50000	0.509	
85	Dibenzo(a,h)anthracene	278	21.018	20.884	(1.120)	1502	0.50000	0.567(M)	M6
86	Benzo(g,h,i)perylene	276	21.524	21.400	(1.147)	2842	0.50000	0.436(MH)	M6

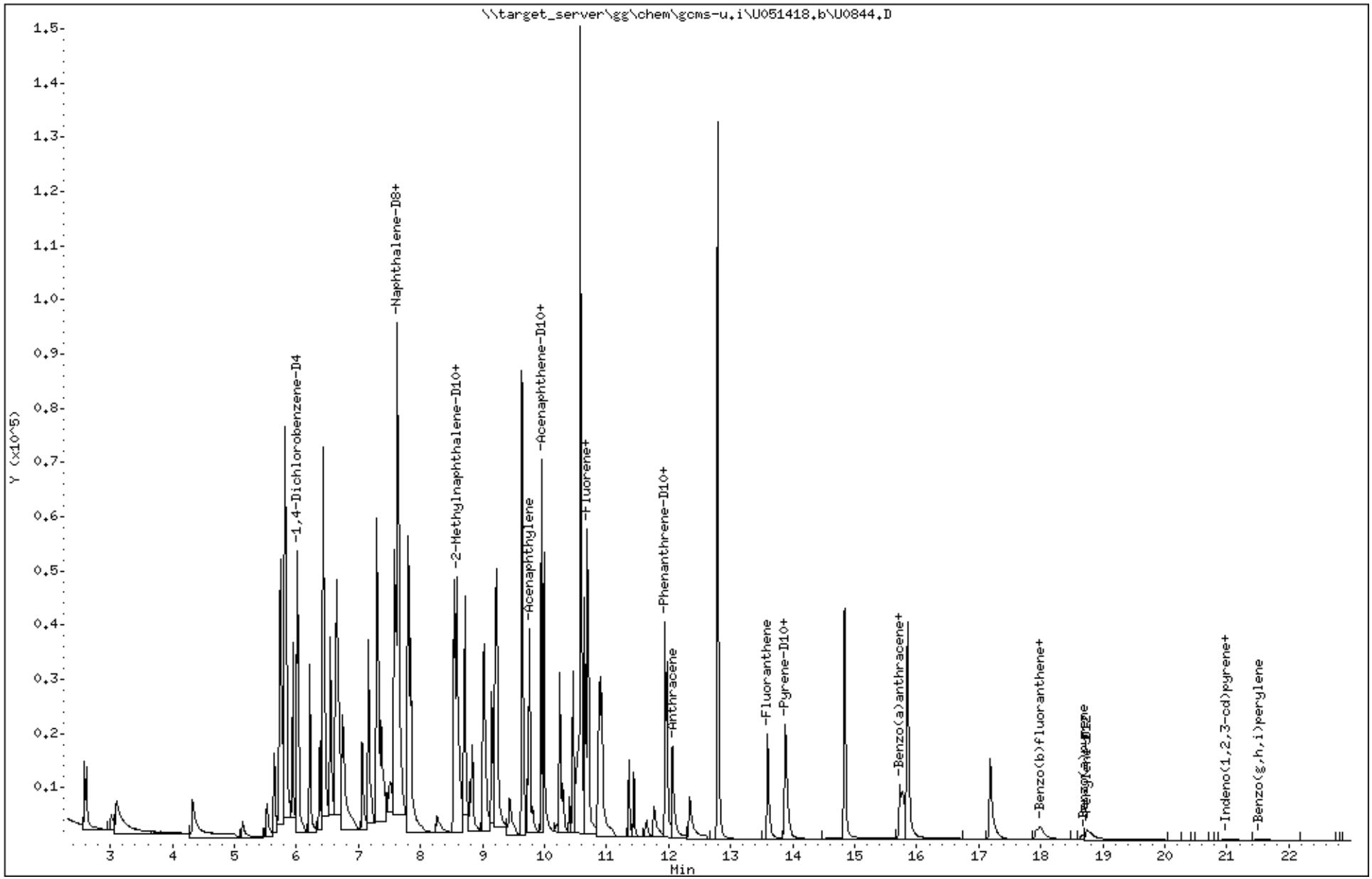
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

9:09 am, May 15, 2018

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0844.D
Date : 14-MAY-2018 14:37
Client ID:
Sample Info: WG228239-3
Volume Injected (uL): 1.0
Column phase: ZB5-MS

Instrument: gcms-u.i
Operator: JCG
Column diameter: 0.25



Katahdin Analytical Services 2000031

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0845.D
Report Date: 15-May-2018 08:48

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0845.D
Lab Smp Id: WG228239-5
Inj Date : 14-MAY-2018 15:08 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG228239-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 15:08 Cal File: U0845.D
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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
*	10 1,4-Dichlorobenzene-D4	152	5.995	6.014	(1.000)	21278	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.622	7.634	(1.000)	73617	0.80000	(a)	
	27 Naphthalene	128	7.647	7.658	(1.003)	505149	7.00000	6.90	
$	32 2-Methylnaphthalene-D10	152	8.525	8.538	(0.858)	280518	7.00000	6.82	
	33 2-Methylnaphthalene	115	8.562	8.574	(1.123)	131416	7.00000	7.30(Q)	
	45 Acenaphthylene	152	9.749	9.761	(0.981)	450200	7.00000	6.76	
*	47 Acenaphthene-D10	164	9.935	9.947	(1.000)	33079	0.80000	(a)	
	48 Acenaphthene	153	9.979	9.991	(1.004)	285743	7.00000	6.81	
$	55 Fluorene-D10	174	10.631	10.646	(1.070)	235023	7.00000	6.96	
	56 Fluorene	166	10.673	10.688	(1.074)	337318	7.00000	6.91	
*	65 Phenanthrene-D10	188	11.931	11.944	(1.000)	53195	0.80000	(a)	
	66 Phenanthrene	178	11.955	11.968	(1.002)	440681	7.00000	6.81	
	67 Anthracene	178	12.025	12.037	(1.008)	457156	7.00000	6.82	
	70 Fluoranthene	202	13.565	13.584	(1.137)	434833	7.00000	7.12	
$	71 Pyrene-D10	212	13.835	13.855	(0.882)	302895	7.00000	7.60	
	72 Pyrene	202	13.855	13.875	(0.883)	440473	7.00000	7.40	
	74 Benzo(a)anthracene	228	15.667	15.686	(0.999)	226115	7.00000	6.75	
*	76 Chrysene-D12	240	15.687	15.706	(1.000)	27570	0.80000	(a)	
	77 Chrysene	228	15.726	15.755	(1.002)	298737	7.00000	7.46	
	80 Benzo(b)fluoranthene	252	17.831	17.877	(0.953)	136424	7.00000	7.42	
	81 Benzo(k)fluoranthene	252	17.899	17.934	(0.957)	222744	7.00000	7.14(H)	

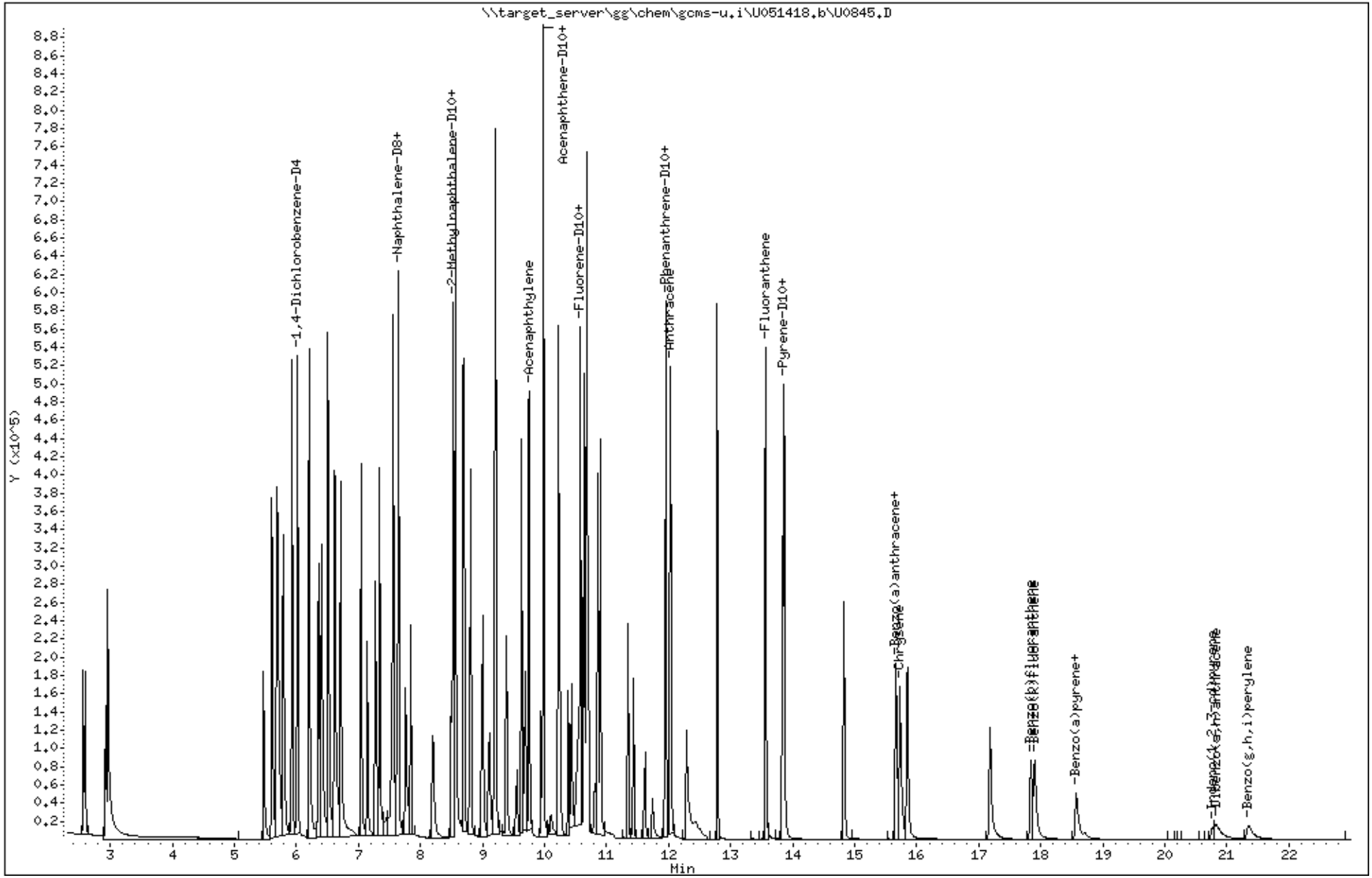
Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0845.D
Report Date: 15-May-2018 08:48

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	82 Benzo(a)pyrene	252	18.571	18.595	(0.993)	140723	7.00000	6.83	
*	83 Perylene-D12	264	18.708	18.732	(1.000)	14387	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.769	20.818	(1.110)	91727	7.00000	7.08	
	85 Dibenzo(a,h)anthracene	278	20.836	20.884	(1.114)	62770	7.00000	6.91	
	86 Benzo(g,h,i)perylene	276	21.352	21.400	(1.141)	97339	7.00000	7.72	

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-u.i\U051418.b\U0845.D
Date : 14-MAY-2018 15:08
Client ID:
Instrument: gcms-u.i
Sample Info: WG228239-5
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000034

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0846.D
Report Date: 15-May-2018 08:48

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0846.D
Lab Smp Id: WG228239-6
Inj Date : 14-MAY-2018 15:39 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG228239-6
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 15:39 Cal File: U0846.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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
*	10 1,4-Dichlorobenzene-D4	152	5.995	6.014	(1.000)	22079	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.621	7.634	(1.000)	79182	0.80000	(a)	
	27 Naphthalene	128	7.646	7.658	(1.003)	719630	10.0000	9.14	
$	32 2-Methylnaphthalene-D10	152	8.526	8.538	(0.858)	399125	10.0000	8.88	
	33 2-Methylnaphthalene	115	8.563	8.574	(1.124)	192344	10.0000	9.94(Q)	
	45 Acenaphthylene	152	9.739	9.761	(0.980)	656648	10.0000	9.01	
*	47 Acenaphthene-D10	164	9.936	9.947	(1.000)	36180	0.80000	(a)	
	48 Acenaphthene	153	9.980	9.991	(1.004)	413584	10.0000	9.01	
$	55 Fluorene-D10	174	10.633	10.646	(1.070)	341495	10.0000	9.25	
	56 Fluorene	166	10.674	10.688	(1.074)	490648	10.0000	9.19	
*	65 Phenanthrene-D10	188	11.919	11.944	(1.000)	58488	0.80000	(a)	
	66 Phenanthrene	178	11.954	11.968	(1.003)	658820	10.0000	9.26	
	67 Anthracene	178	12.024	12.037	(1.009)	691965	10.0000	9.39	
	70 Fluoranthene	202	13.564	13.584	(1.138)	668871	10.0000	9.97	
$	71 Pyrene-D10	212	13.834	13.855	(0.883)	475134	10.0000	10.1	
	72 Pyrene	202	13.854	13.875	(0.884)	682416	10.0000	9.70	
	74 Benzo(a)anthracene	228	15.657	15.686	(0.999)	406671	10.0000	10.1	
*	76 Chrysene-D12	240	15.676	15.706	(1.000)	32894	0.80000	(a)	
	77 Chrysene	228	15.725	15.755	(1.003)	466592	10.0000	9.85	
	80 Benzo(b)fluoranthene	252	17.832	17.877	(0.953)	232991	10.0000	11.2	
	81 Benzo(k)fluoranthene	252	17.889	17.934	(0.956)	360026	10.0000	10.3(H)	

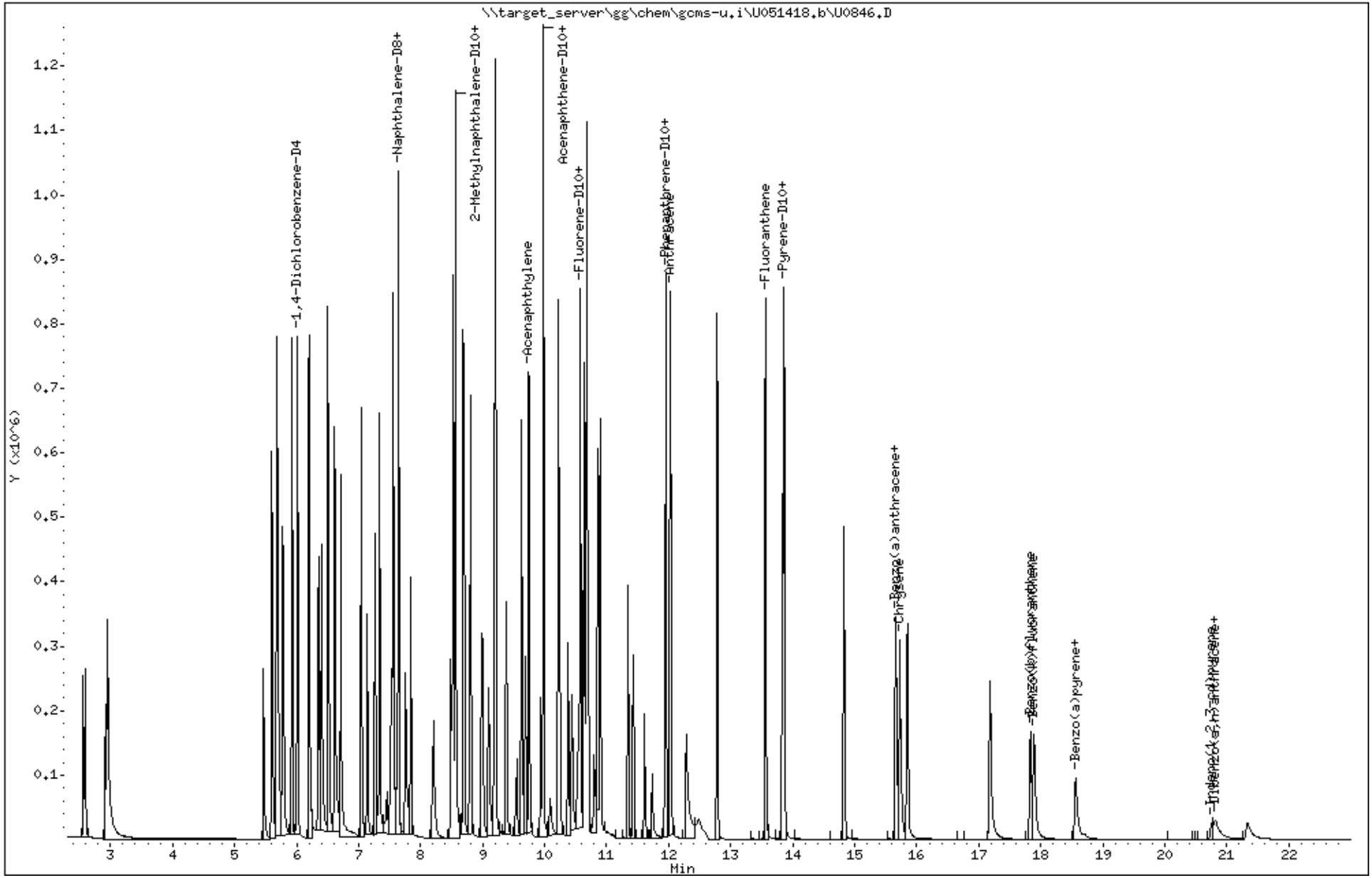
Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0846.D
Report Date: 15-May-2018 08:48

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	82 Benzo(a)pyrene	252	18.560	18.595	(0.992)	234358	10.0000	10.1	
*	83 Perylene-D12	264	18.708	18.732	(1.000)	16192	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.751	20.818	(1.109)	143234	10.0000	9.75	
	85 Dibenzo(a,h)anthracene	278	20.818	20.884	(1.113)	100445	10.0000	9.72	
	86 Benzo(g,h,i)perylene	276	21.334	21.400	(1.140)	141985	10.0000	10.0	

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-u.i\U051418.b\U0846.D
Date : 14-MAY-2018 15:39
Client ID:
Instrument: gcms-u.i
Sample Info: WG228239-6
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000037

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0847.D
Report Date: 15-May-2018 08:48

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0847.D
Lab Smp Id: WG228239-7
Inj Date : 14-MAY-2018 16:11 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG228239-7
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 16:11 Cal File: U0847.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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
*	10 1,4-Dichlorobenzene-D4	152	5.996	6.014	(1.000)	18556	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.622	7.634	(1.000)	61802	0.80000	(a)	
	27 Naphthalene	128	7.647	7.658	(1.003)	832569	15.0000	13.5	
$	32 2-Methylnaphthalene-D10	152	8.525	8.538	(0.858)	450646	15.0000	13.5	
	33 2-Methylnaphthalene	115	8.562	8.574	(1.123)	216482	15.0000	14.3	
	45 Acenaphthylene	152	9.750	9.761	(0.981)	742887	15.0000	13.8	
*	47 Acenaphthene-D10	164	9.935	9.947	(1.000)	26763	0.80000	(a)	
	48 Acenaphthene	153	9.979	9.991	(1.004)	454283	15.0000	13.4	
$	55 Fluorene-D10	174	10.631	10.646	(1.070)	382209	15.0000	14.0	
	56 Fluorene	166	10.673	10.688	(1.074)	510138	15.0000	12.9	
*	65 Phenanthrene-D10	188	11.920	11.944	(1.000)	43867	0.80000	(a)	
	66 Phenanthrene	178	11.955	11.968	(1.003)	720257	15.0000	13.5	
	67 Anthracene	178	12.025	12.037	(1.009)	755261	15.0000	13.7	
	70 Fluoranthene	202	13.565	13.584	(1.138)	743235	15.0000	14.8	
$	71 Pyrene-D10	212	13.836	13.855	(0.883)	510101	15.0000	14.6	
	72 Pyrene	202	13.856	13.875	(0.884)	780339	15.0000	14.9	
	74 Benzo(a)anthracene	228	15.657	15.686	(0.999)	459703	15.0000	15.1(A)	
*	76 Chrysene-D12	240	15.677	15.706	(1.000)	24701	0.80000	(a)	
	77 Chrysene	228	15.726	15.755	(1.003)	522972	15.0000	14.8	
	80 Benzo(b)fluoranthene	252	17.831	17.877	(0.953)	291415	15.0000	16.9(A)	
	81 Benzo(k)fluoranthene	252	17.888	17.934	(0.956)	424692	15.0000	14.7(H)	

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0847.D
Report Date: 15-May-2018 08:48

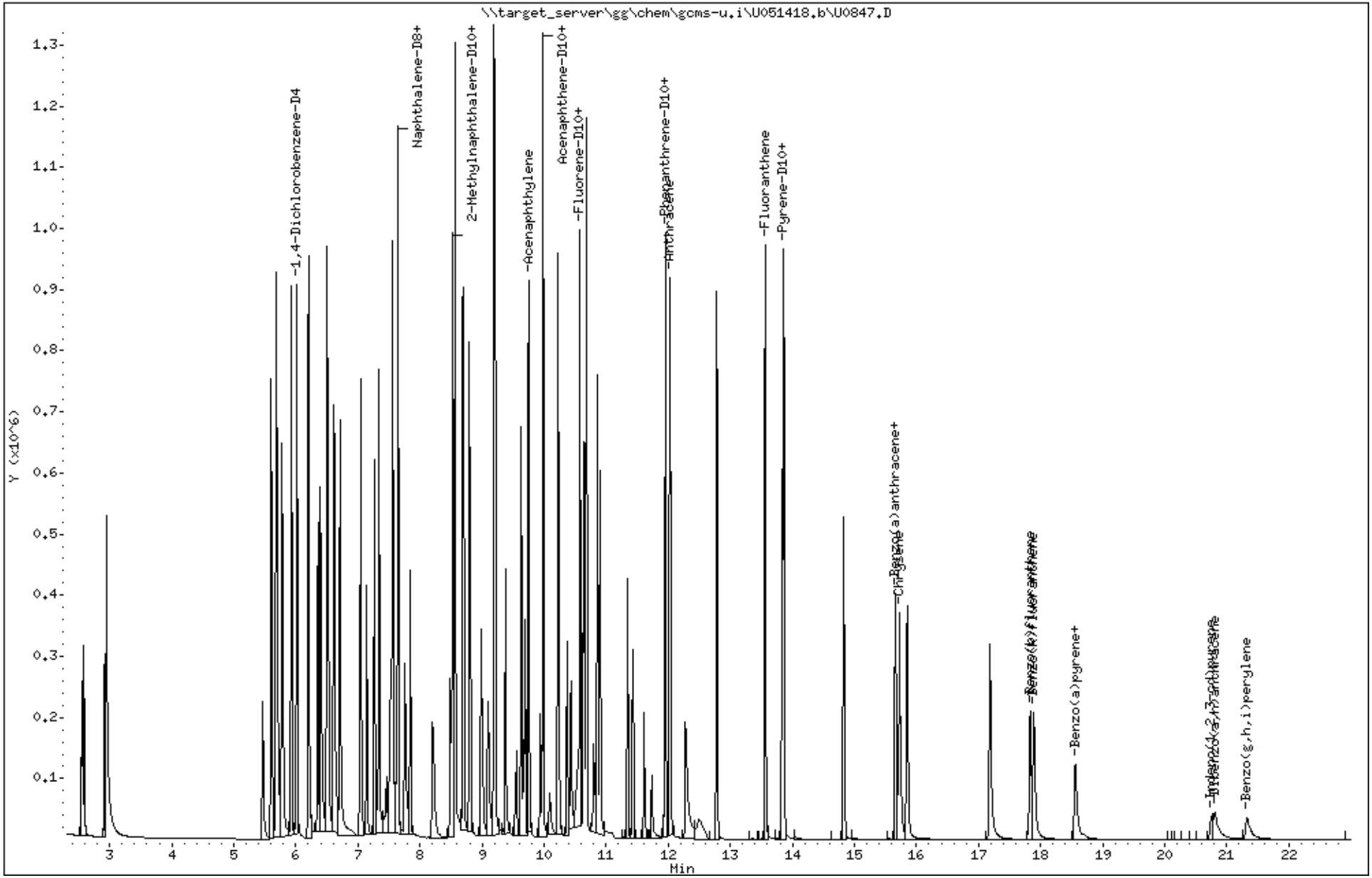
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	82 Benzo(a)pyrene	252	18.560	18.595	(0.992)	292657	15.0000	15.1(A)	
*	83 Perylene-D12	264	18.708	18.732	(1.000)	13511	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.750	20.818	(1.109)	187105	15.0000	15.2(A)	
	85 Dibenzo(a,h)anthracene	278	20.808	20.884	(1.112)	132758	15.0000	15.2(A)	
	86 Benzo(g,h,i)perylene	276	21.323	21.400	(1.140)	179700	15.0000	15.2(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.
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0847.D
Date : 14-MAY-2018 16:11
Client ID:
Sample Info: WG228239-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS

Instrument: gcms-u.i
Operator: JCG
Column diameter: 0.25



Katahdin Analytical Services 2000040

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0848.D
Report Date: 15-May-2018 09:07

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0848.D
Lab Smp Id: WG228239-8
Inj Date : 14-MAY-2018 16:41 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG228239-8
Misc Info : WG228239,WG228239,WG228239-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 16:11 Cal File: U0847.D
Als bottle: 8 QC Sample: INDCHECK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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	5.995	6.014	(1.000)	19587	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.621	7.634	(1.000)	70014	0.80000	(a)	
	27 Naphthalene	128	7.646	7.658	(1.003)	400419	5.75140	5.75	
	33 2-Methylnaphthalene	115	8.563	8.574	(1.124)	102882	6.01180	6.01(QR)	
	45 Acenaphthylene	152	9.750	9.761	(0.981)	349557	5.18602	5.19	
*	47 Acenaphthene-D10	164	9.936	9.947	(1.000)	33478	0.80000	(a)	
	48 Acenaphthene	153	9.979	9.991	(1.004)	235053	5.53530	5.54	
	56 Fluorene	166	10.674	10.688	(1.074)	277503	5.61678	5.62	
*	65 Phenanthrene-D10	188	11.931	11.944	(1.000)	52230	0.80000	(a)	
	66 Phenanthrene	178	11.954	11.968	(1.002)	362624	5.70972	5.71	
	67 Anthracene	178	12.024	12.037	(1.008)	361452	5.49146	5.49	
	70 Fluoranthene	202	13.563	13.584	(1.137)	365218	6.09553	6.10(R)	
	72 Pyrene	202	13.864	13.875	(0.884)	388523	6.47532	6.48(R)	
	74 Benzo(a)anthracene	228	15.666	15.686	(0.999)	191268	5.72200	5.72	
*	76 Chrysene-D12	240	15.685	15.706	(1.000)	27645	0.80000	(a)	
	77 Chrysene	228	15.734	15.755	(1.003)	240702	5.93398	5.93	
	80 Benzo(b)fluoranthene	252	17.843	17.877	(0.953)	106105	5.85924	5.86	
	81 Benzo(k)fluoranthene	252	17.900	17.934	(0.956)	187035	6.05844	6.06(RH)	
	82 Benzo(a)pyrene	252	18.572	18.595	(0.992)	109383	5.39153	5.39	
*	83 Perylene-D12	264	18.720	18.732	(1.000)	14165	0.80000	(a)	

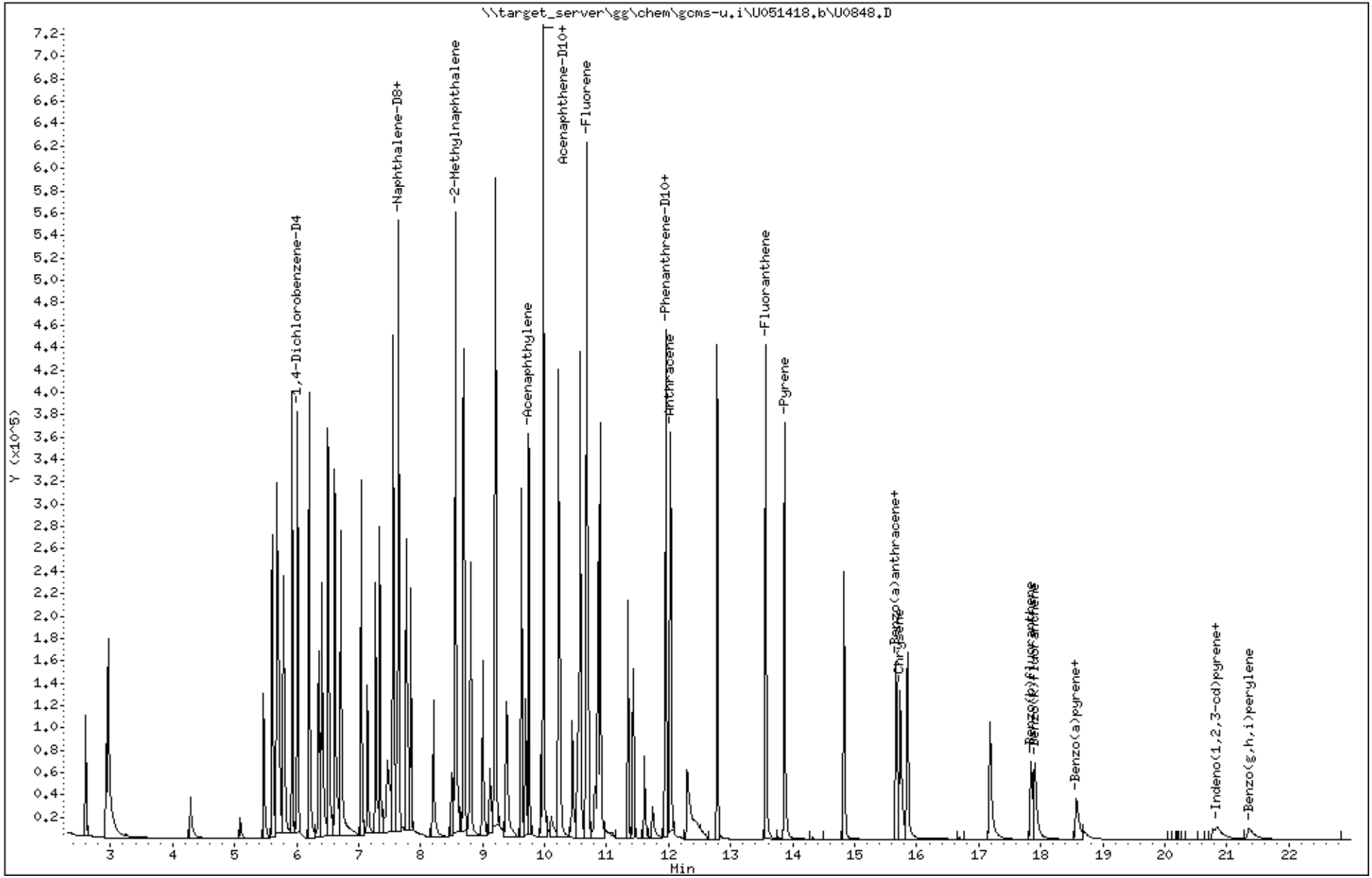
Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0848.D
Report Date: 15-May-2018 09:07

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
84 Indeno(1,2,3-cd)pyrene	276	20.779	20.818	(1.110)	67903	5.37610	5.38	
85 Dibenzo(a,h)anthracene	278	20.846	20.884	(1.114)	42741	4.86111	4.86	
86 Benzo(g,h,i)perylene	276	21.362	21.400	(1.141)	67598	5.44482	5.44	

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.

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0848.D
Date : 14-MAY-2018 16:41
Client ID:
Instrument: gcms-u.i
Sample Info: WG228239-8
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25

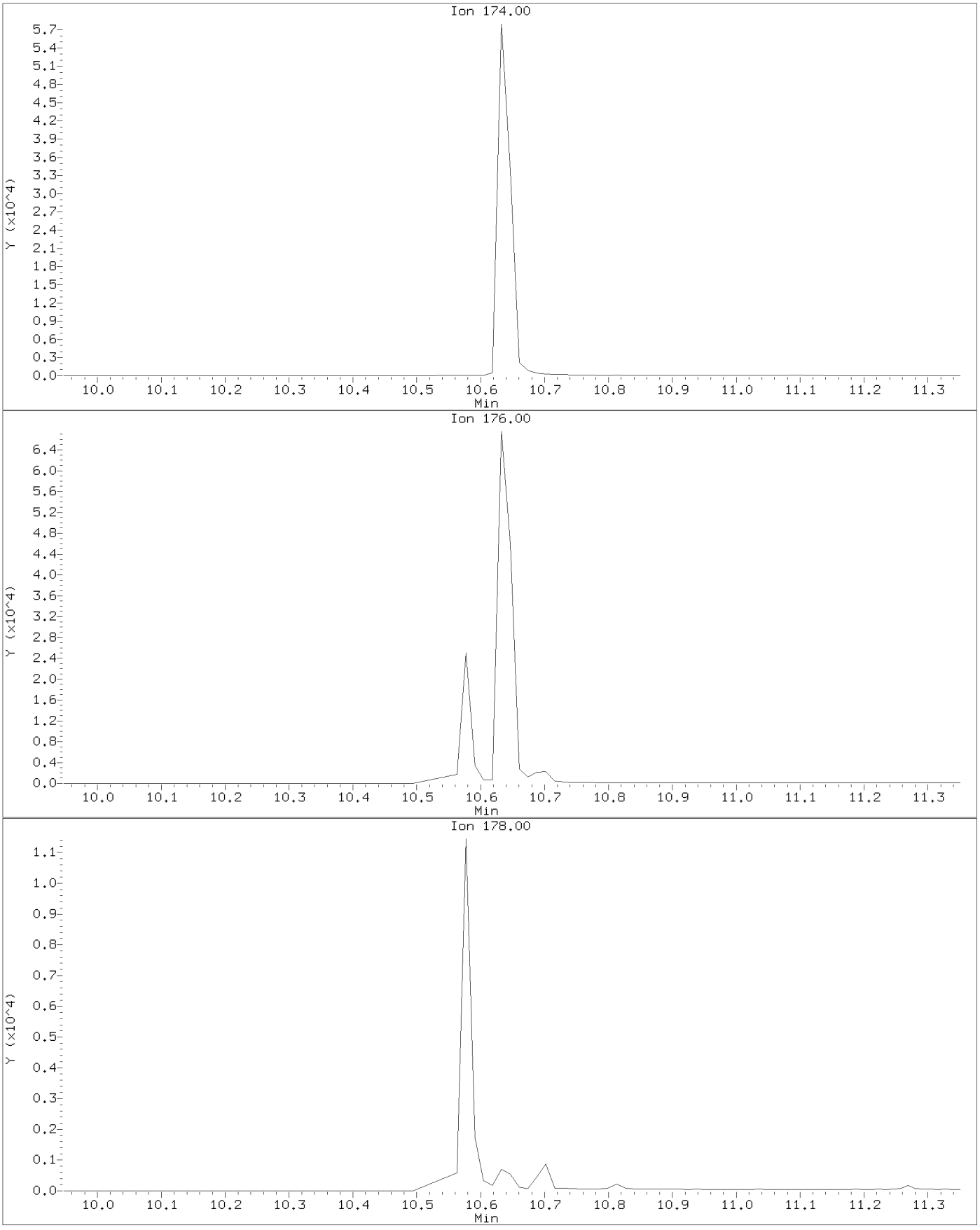


Katahdin Analytical Services 2000043

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0842.D
Injection Date: 14-MAY-2018 13:33
Instrument: gcms-u.i
Client Sample ID:

Compound: Fluorene-D10
CAS Number: 118-79-6

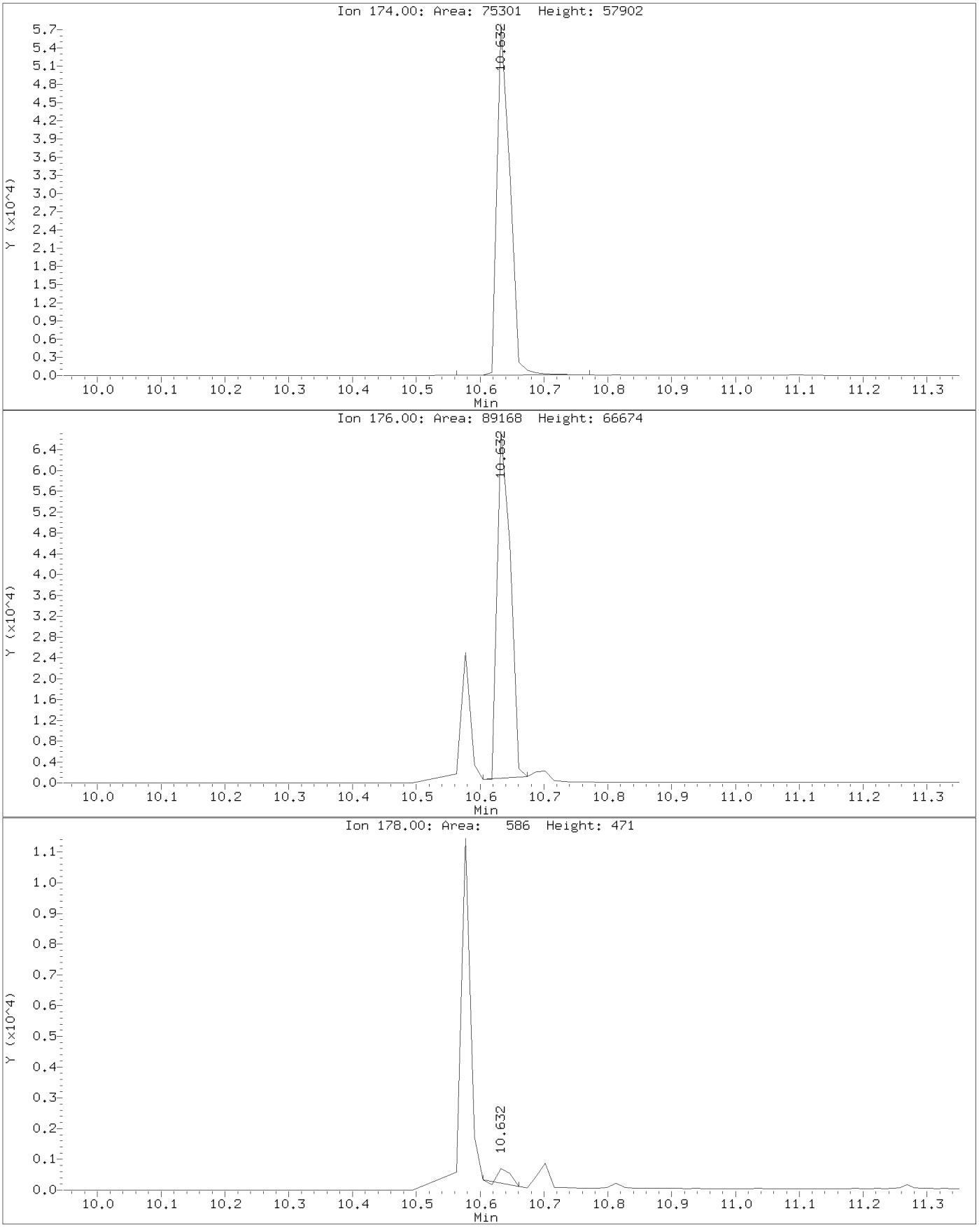
BEFORE MANUAL INTEGRATION



AFTER MANUAL INTEGRATION

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0842.D
Injection Date: 14-MAY-2018 13:33
Instrument: gcms-u.i
Client Sample ID:

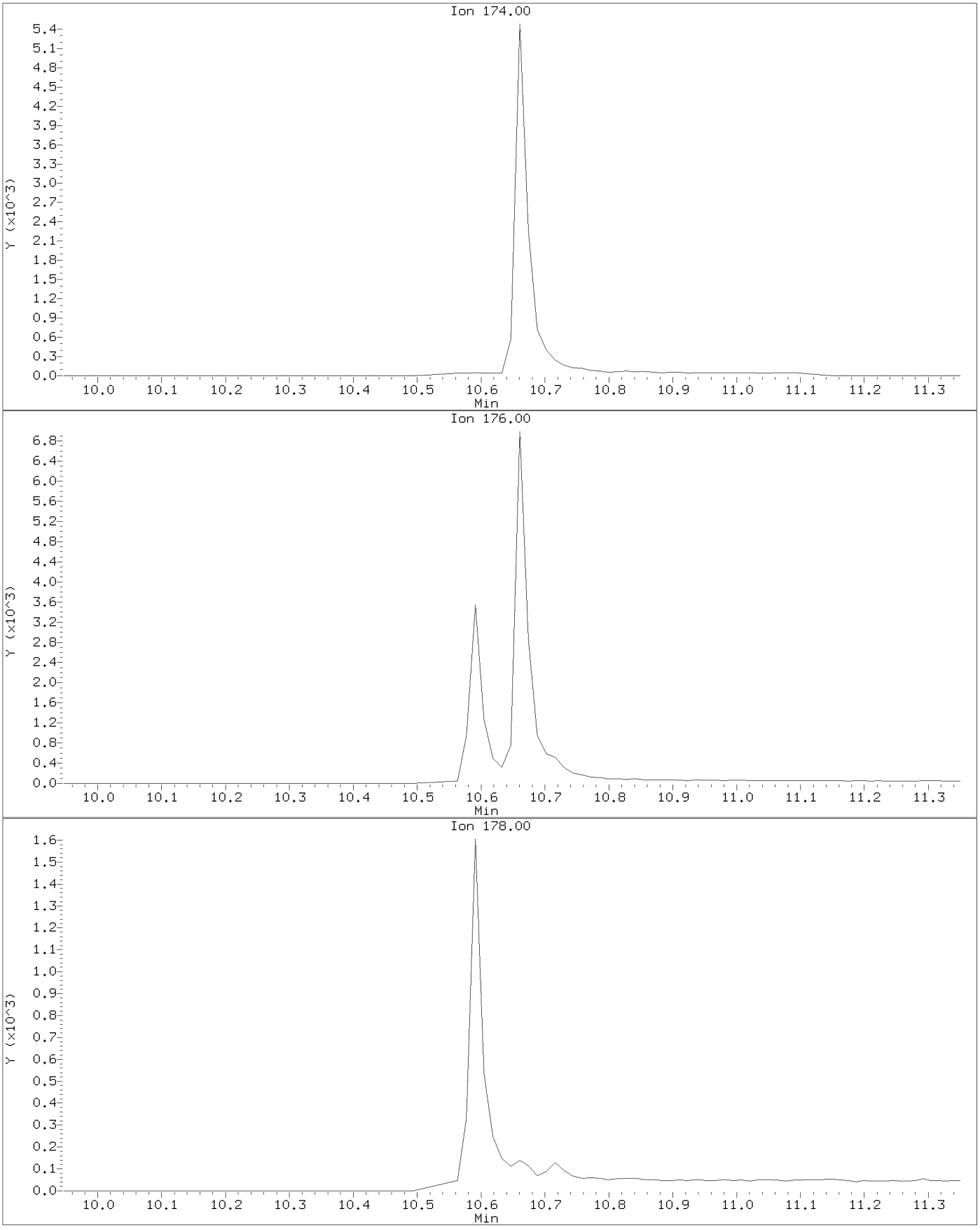
Compound: Fluorene-D10
CAS Number: 118-79-6



Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0843.D
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Fluorene-D10
CAS Number: 118-79-6

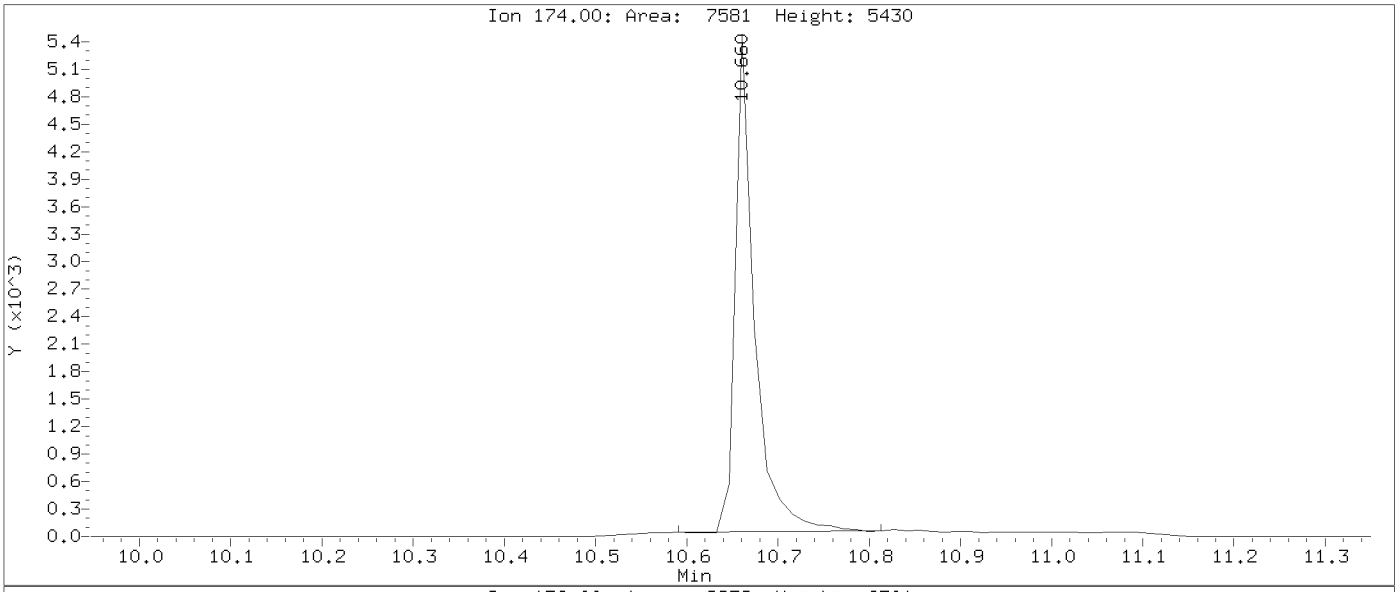
BEFORE MANUAL INTEGRATION

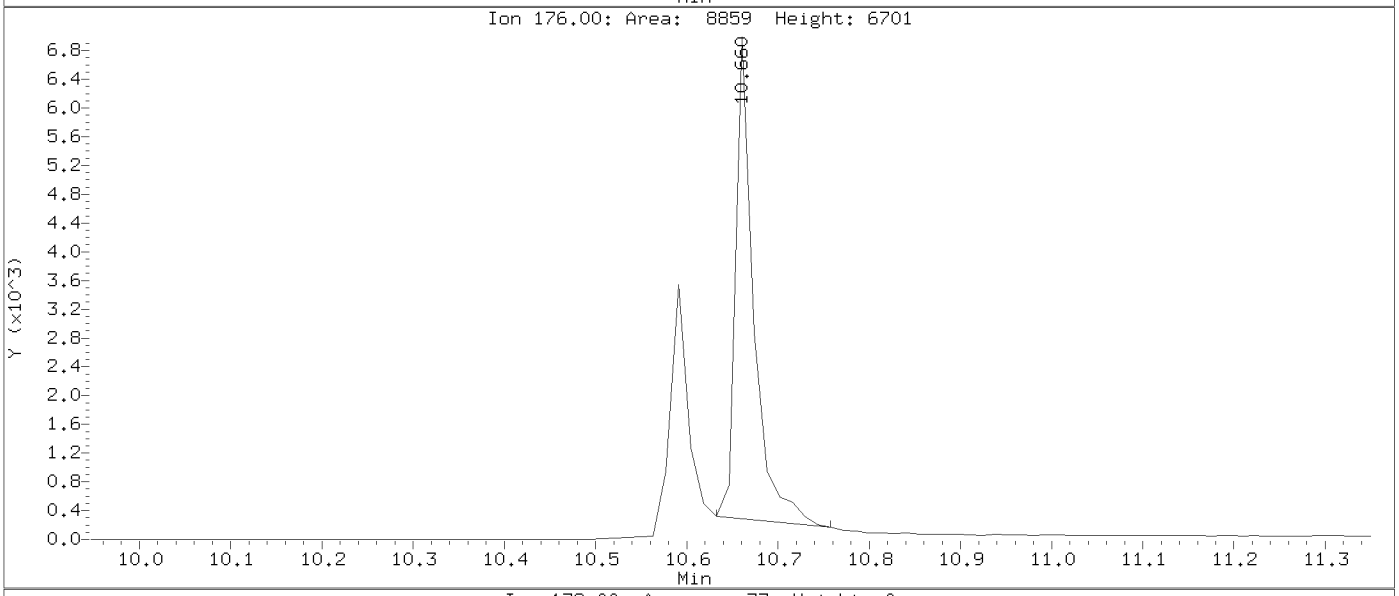


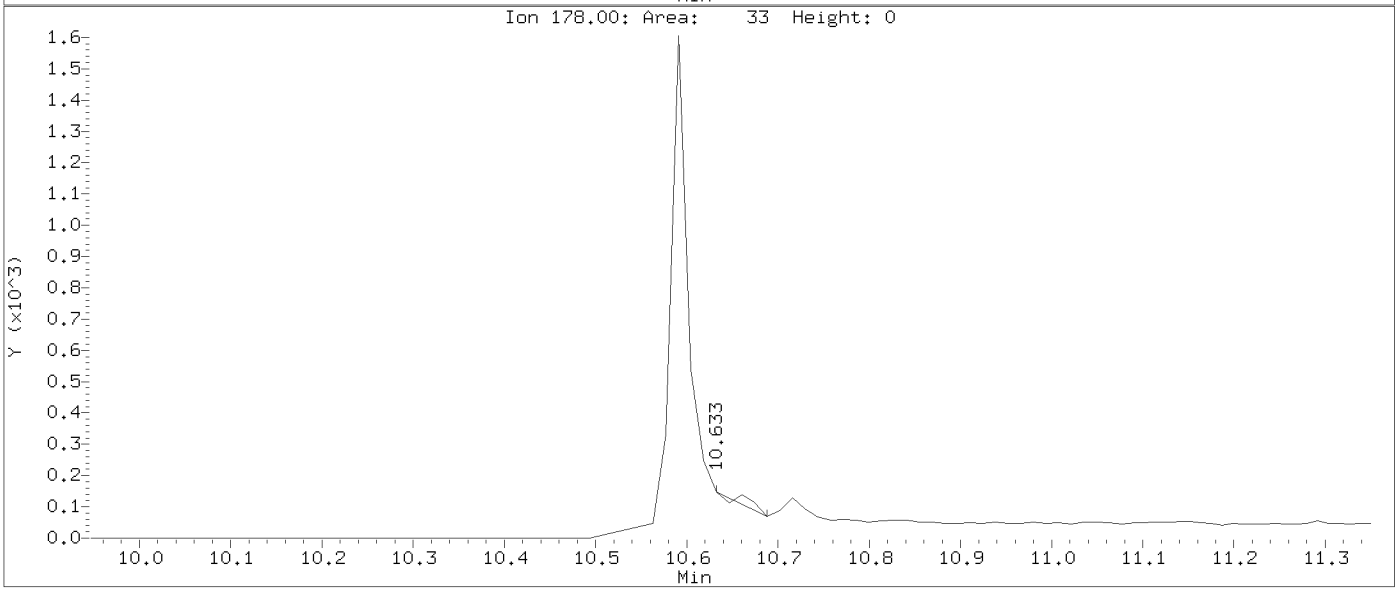
Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0843.D
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Fluorene-D10
CAS Number: 118-79-6

AFTER MANUAL INTEGRATION



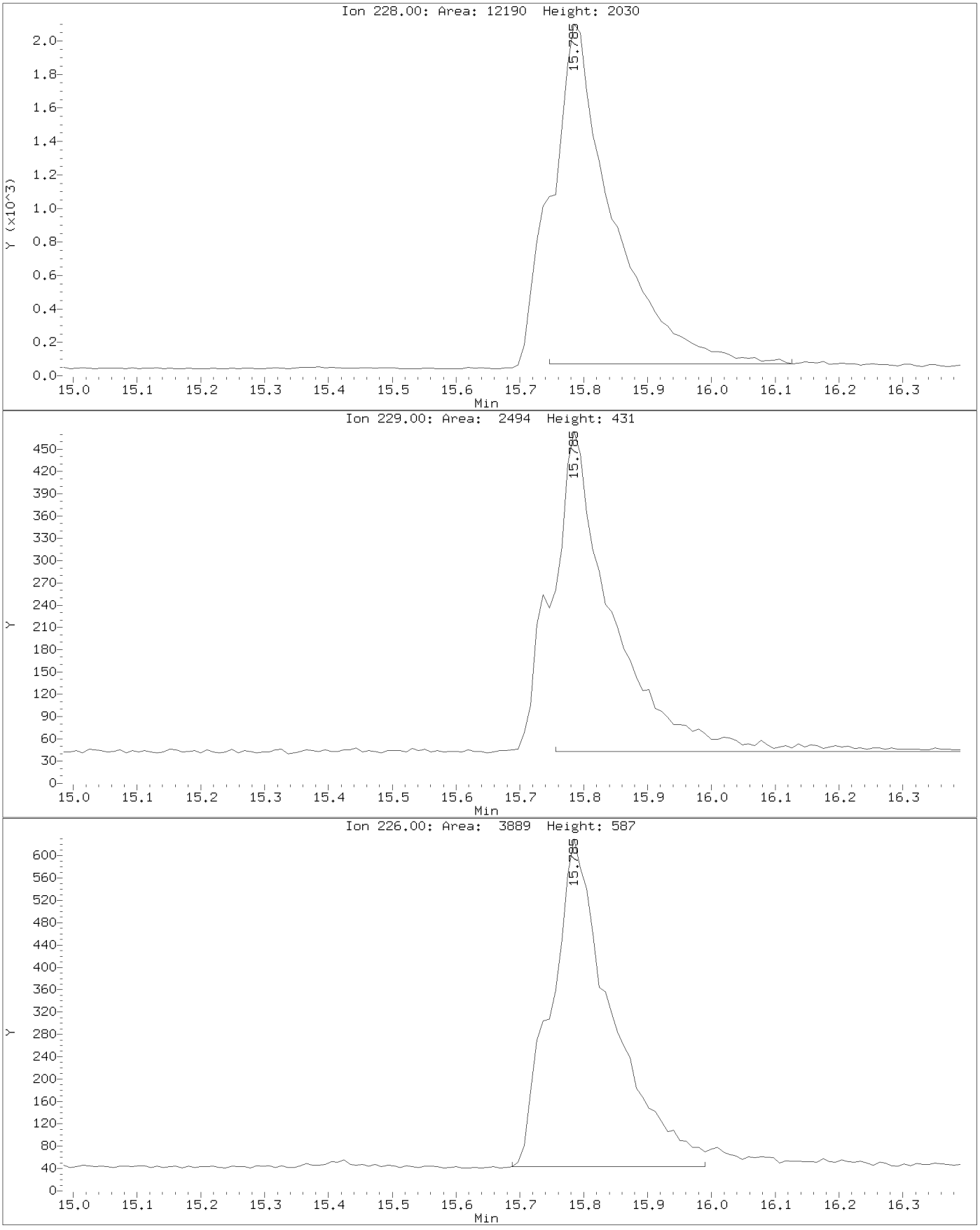




Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0843.D
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(a)anthracene
CAS Number: 56-55-3

BEFORE MANUAL INTEGRATION



AFTER MANUAL INTEGRATION

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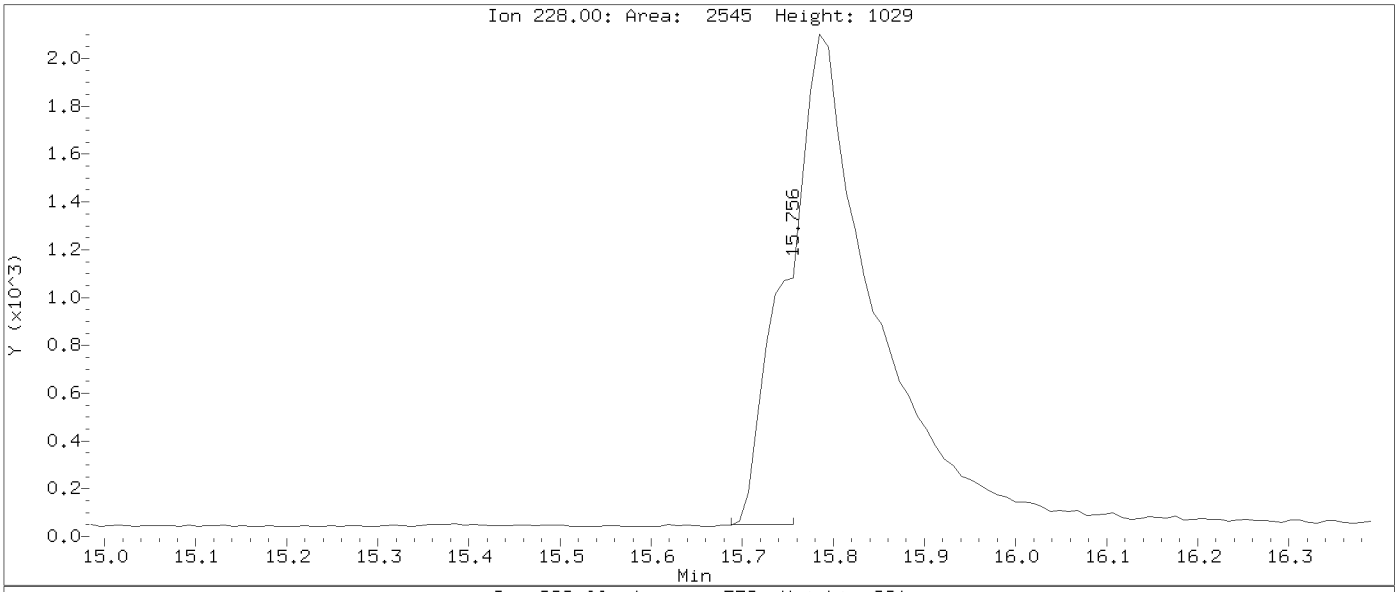
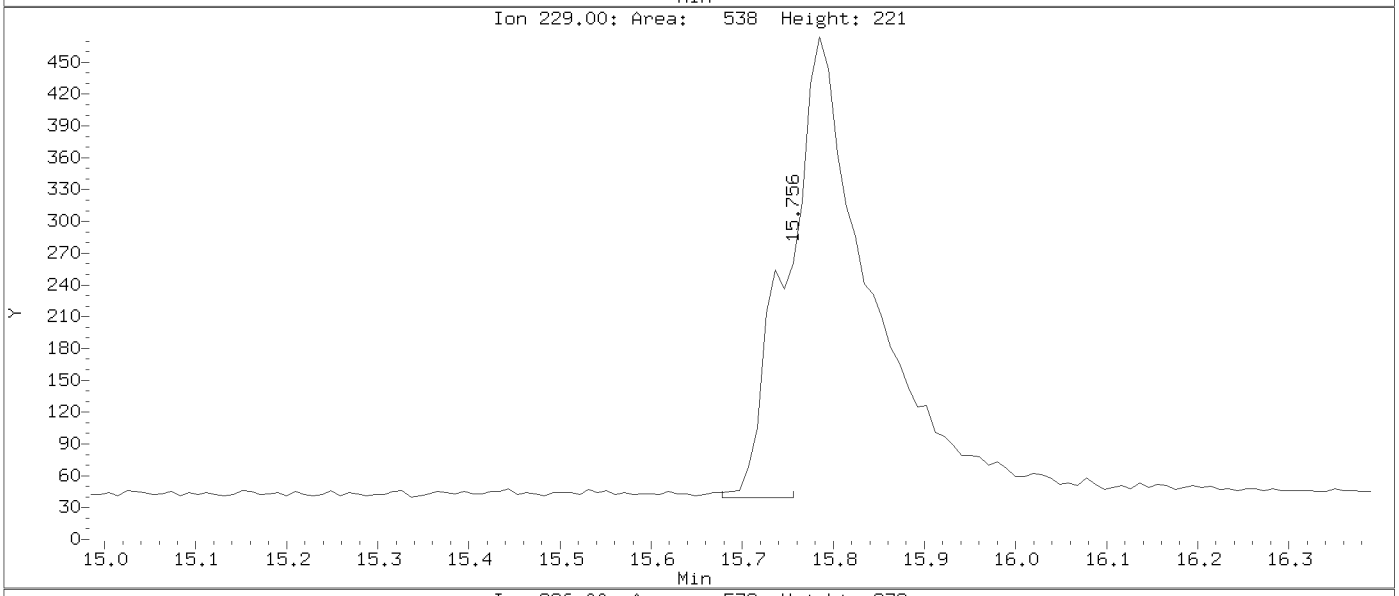
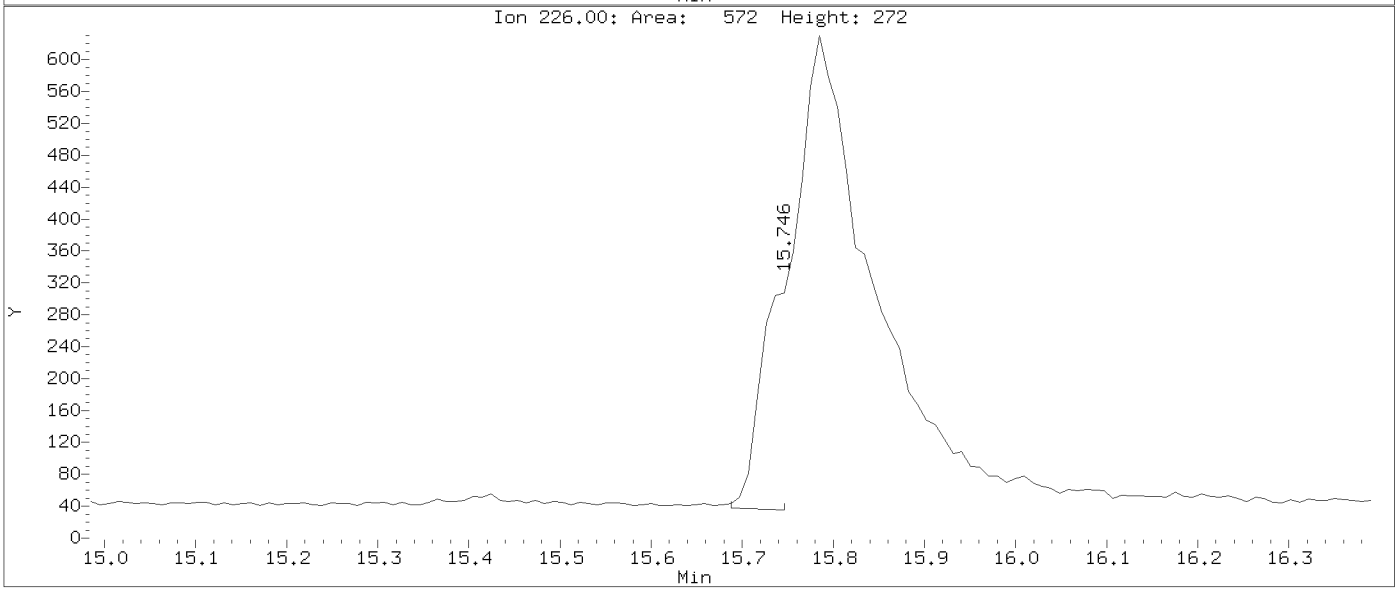
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(a)anthracene
CAS Number: 56-55-3







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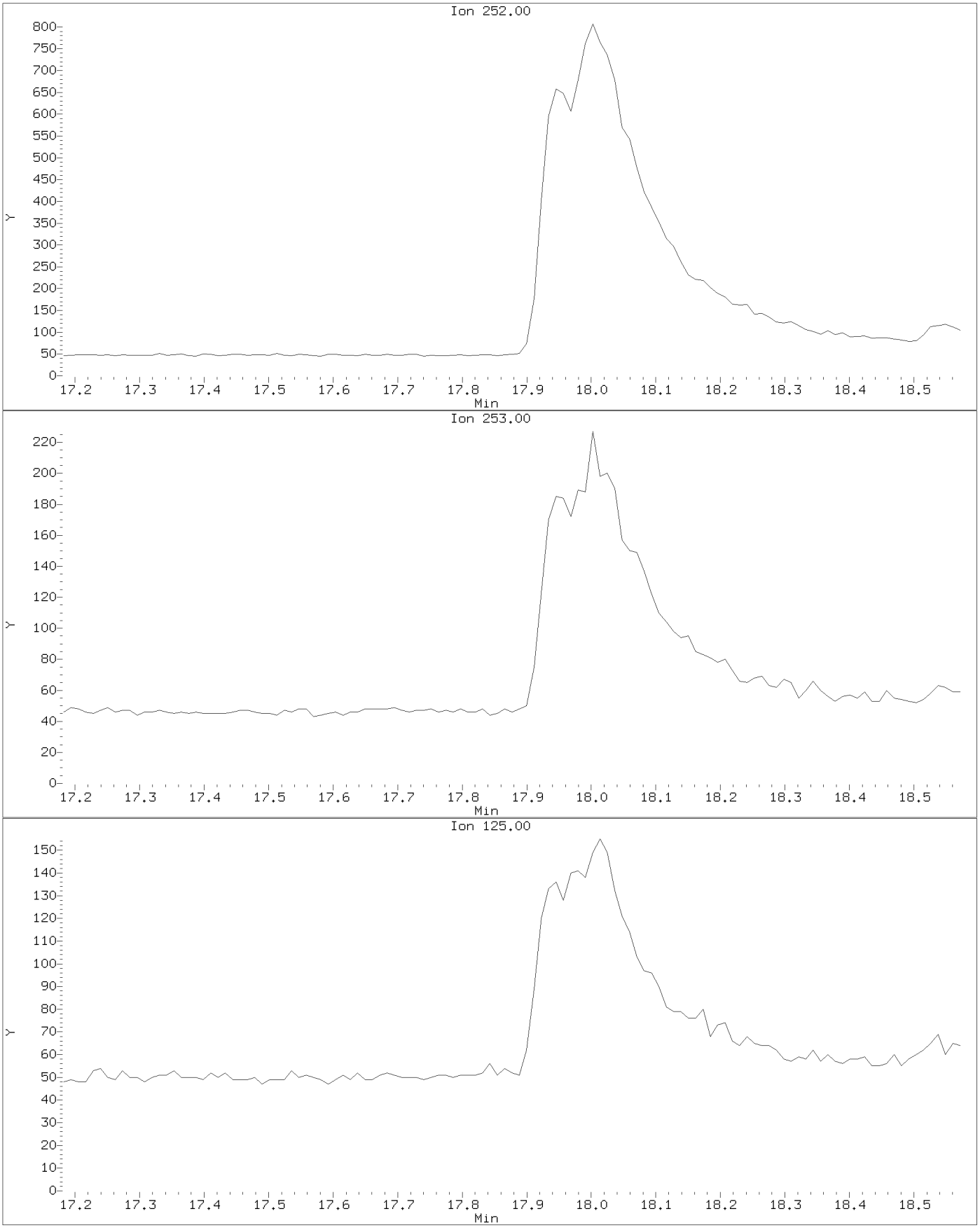
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(b)fluoranthene
CAS Number: 205-99-2

BEFORE MANUAL INTEGRATION



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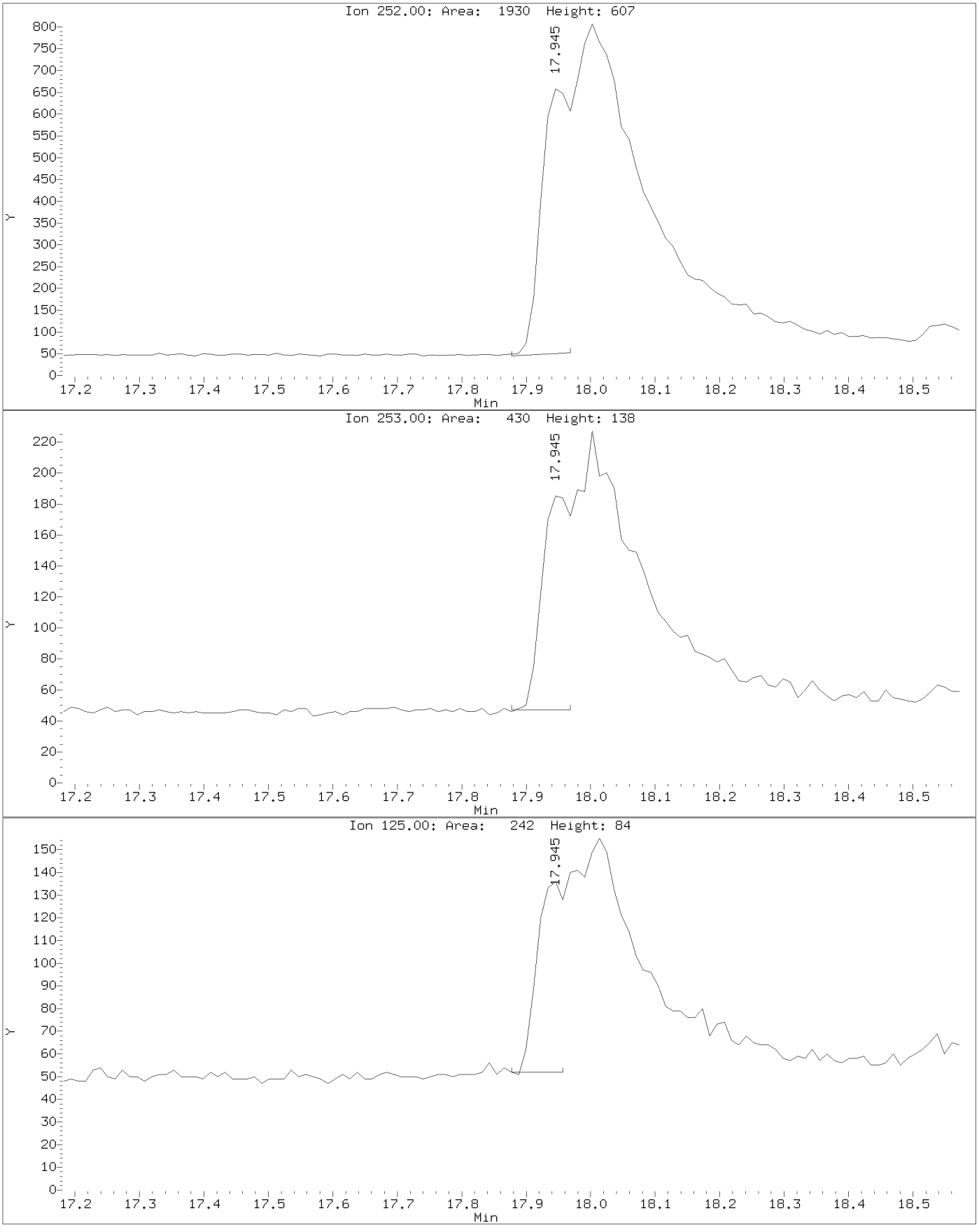
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(b)fluoranthene
CAS Number: 205-99-2

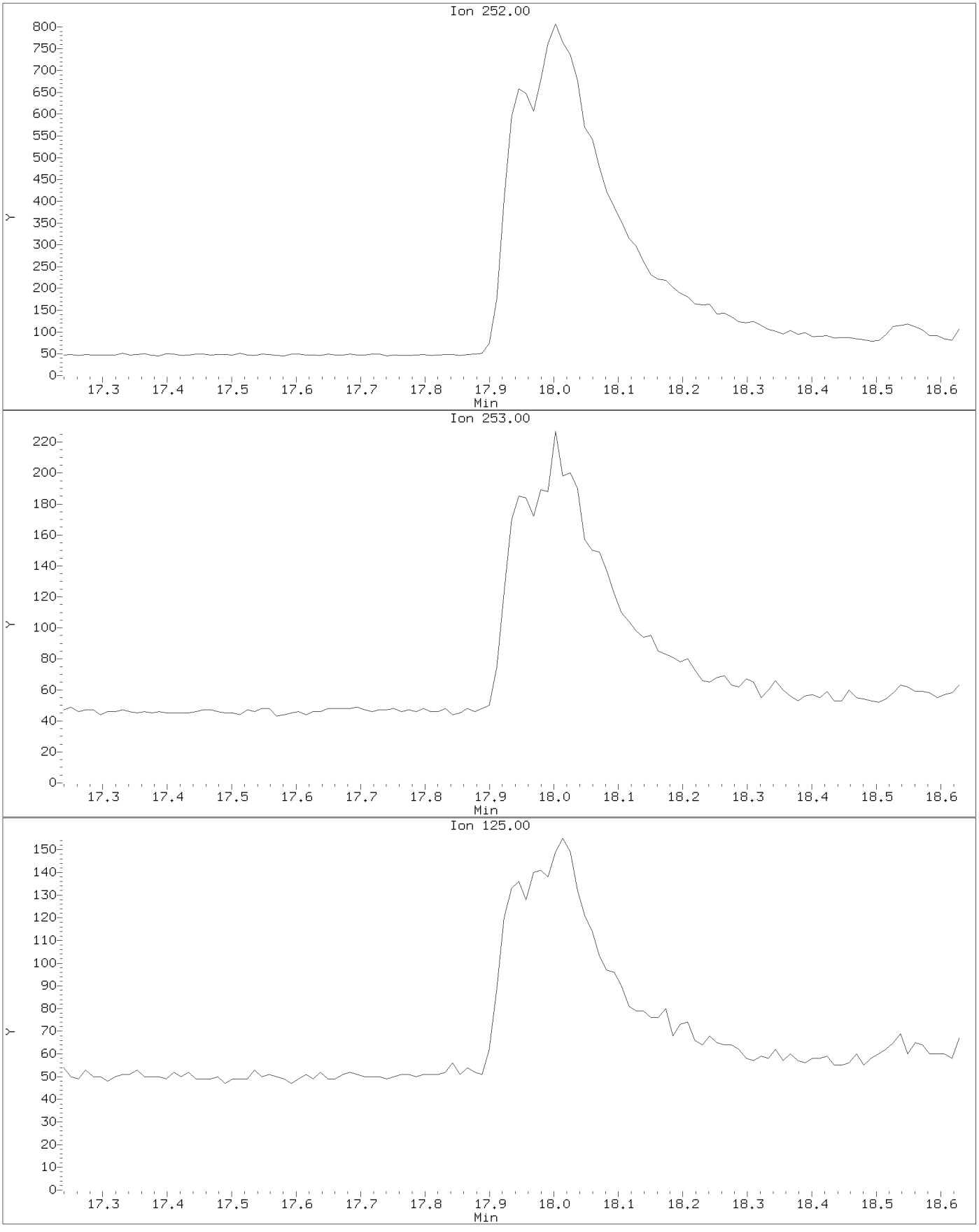
AFTER MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0843.D
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

BEFORE MANUAL INTEGRATION



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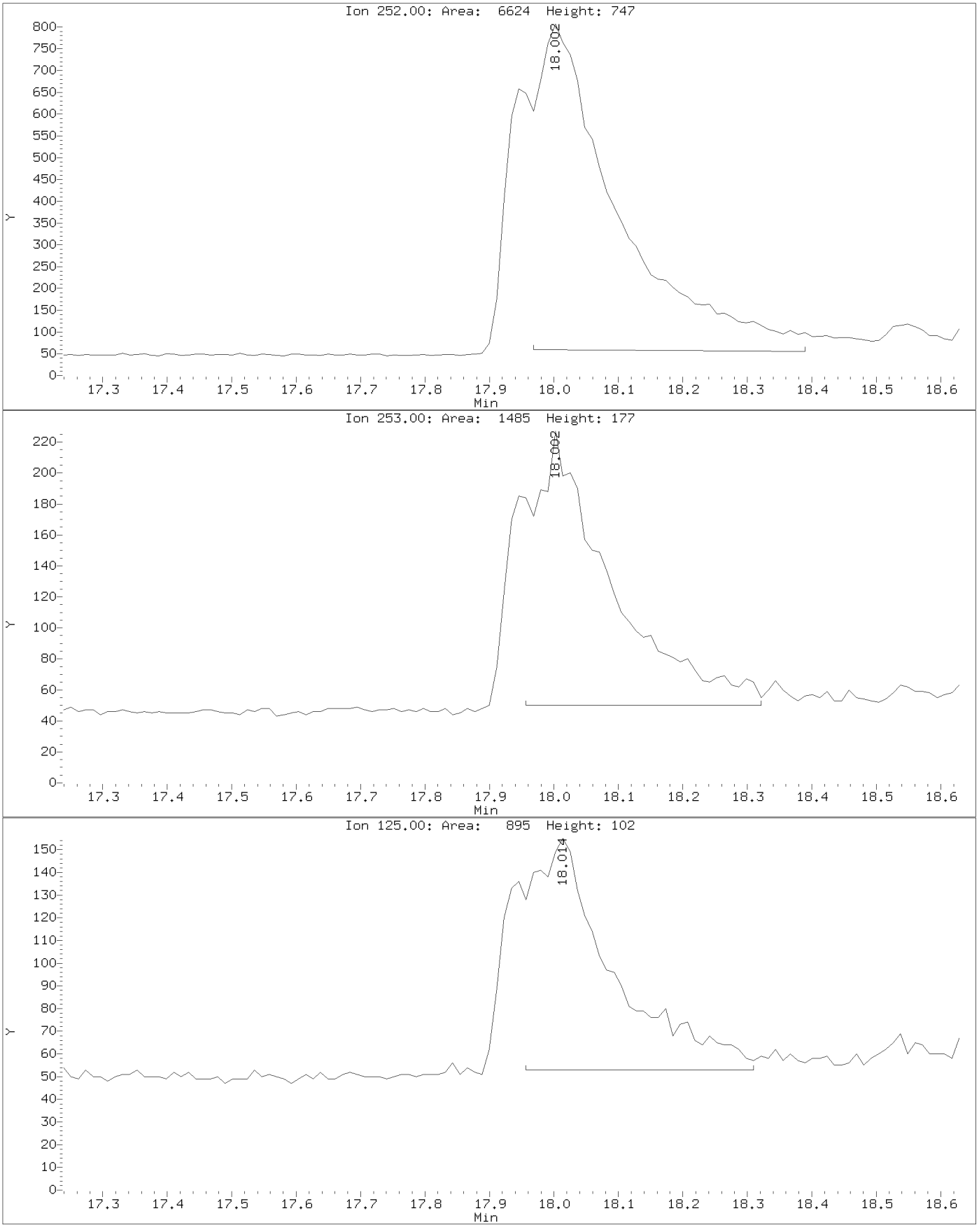
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

AFTER MANUAL INTEGRATION



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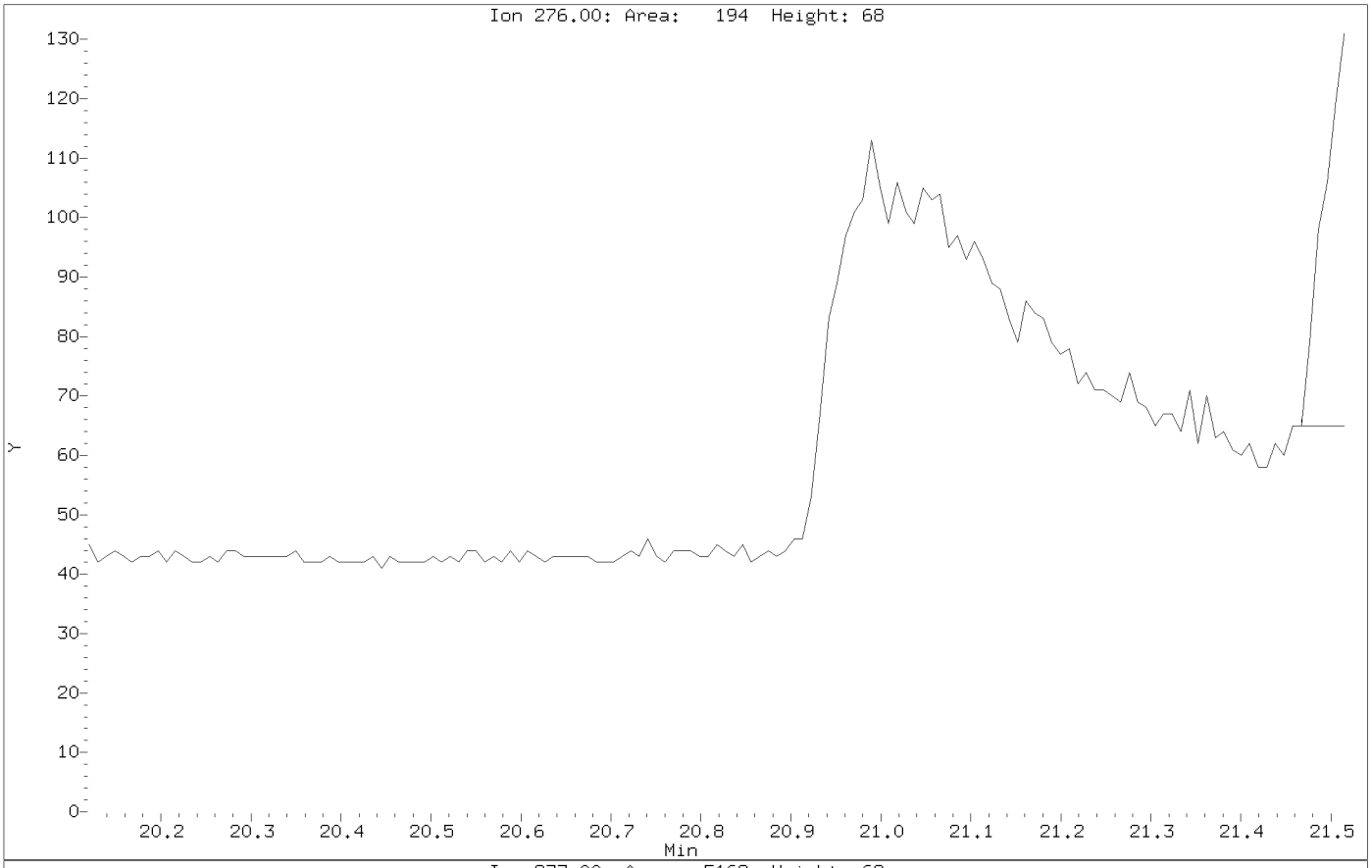
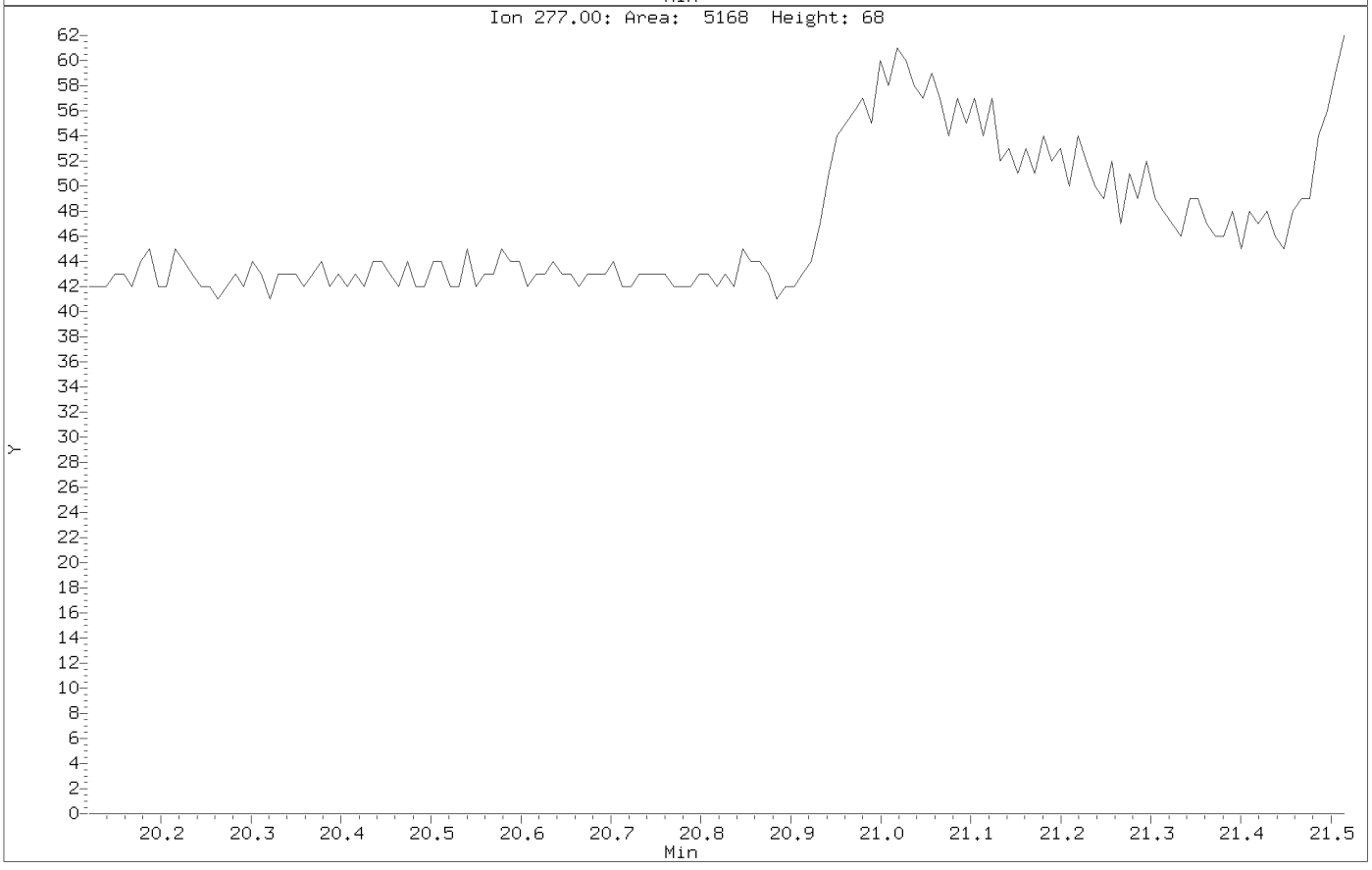
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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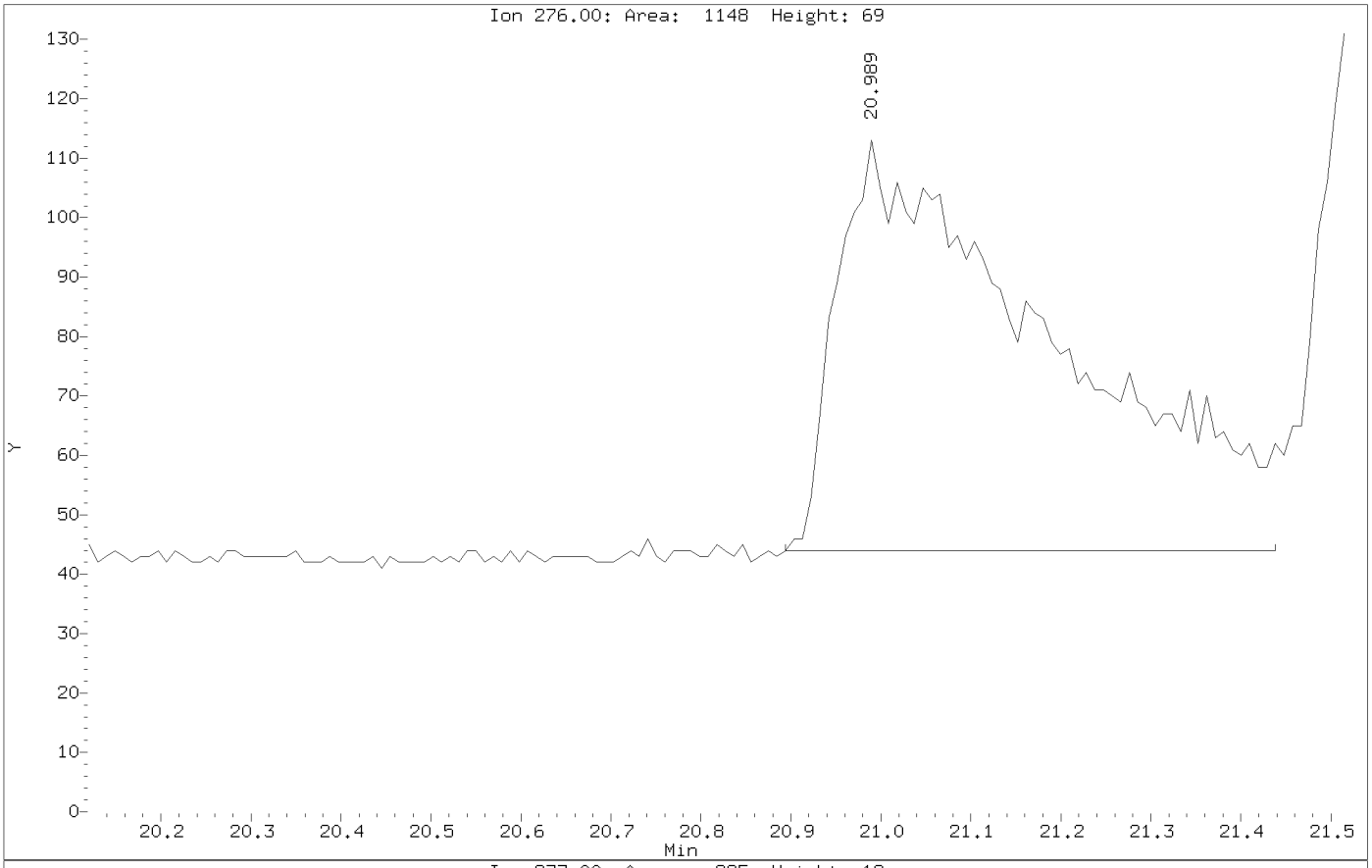
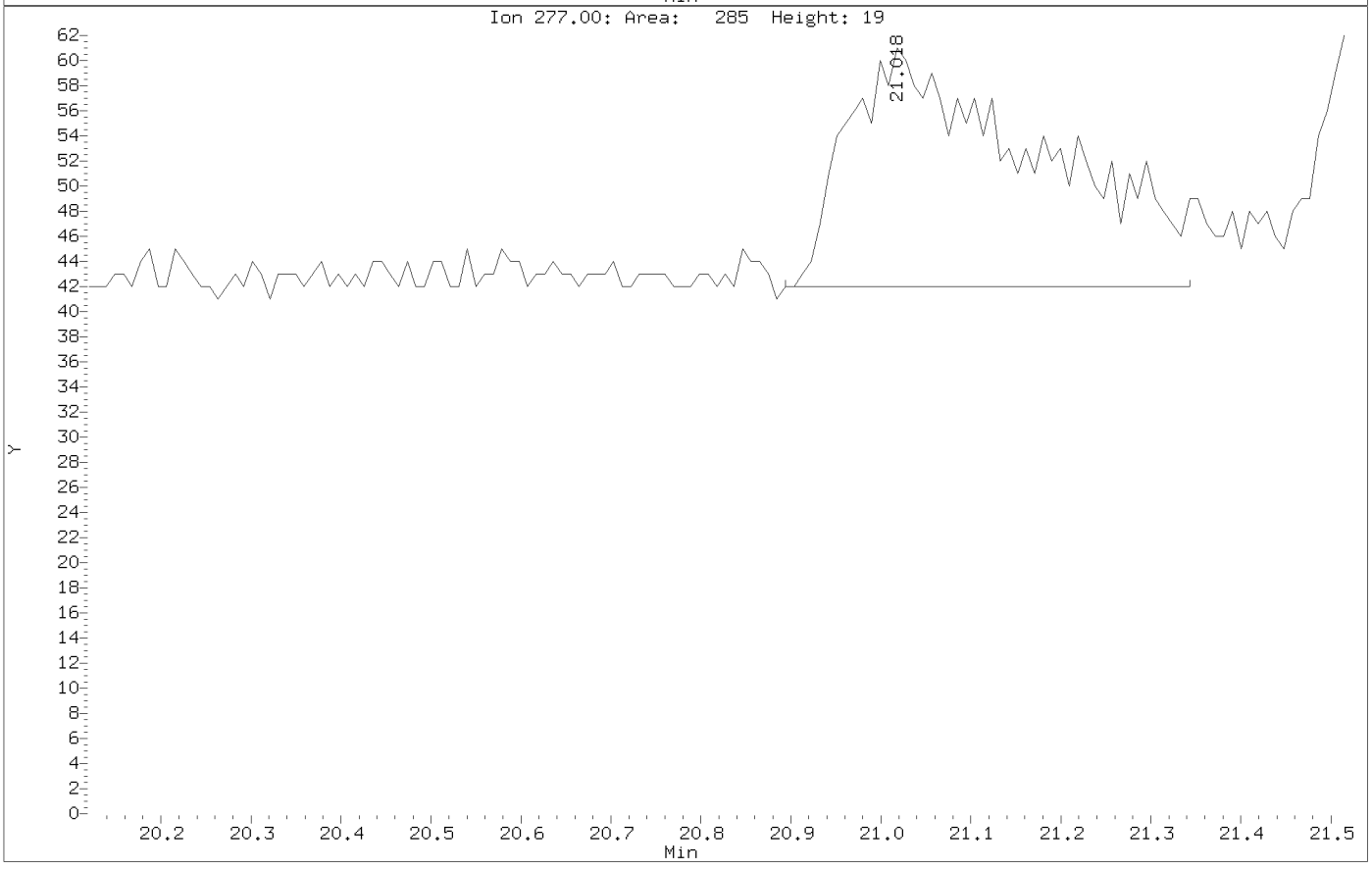
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





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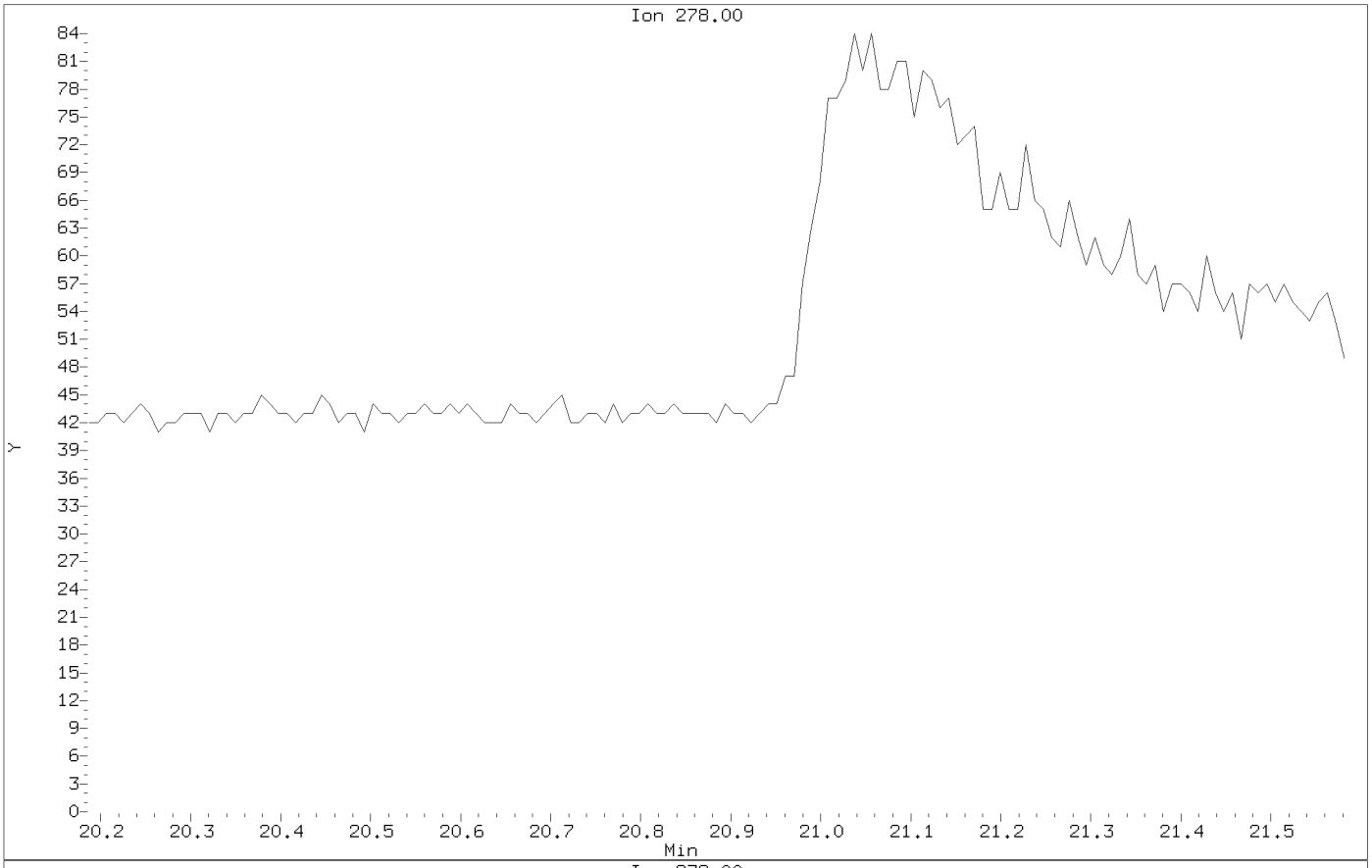
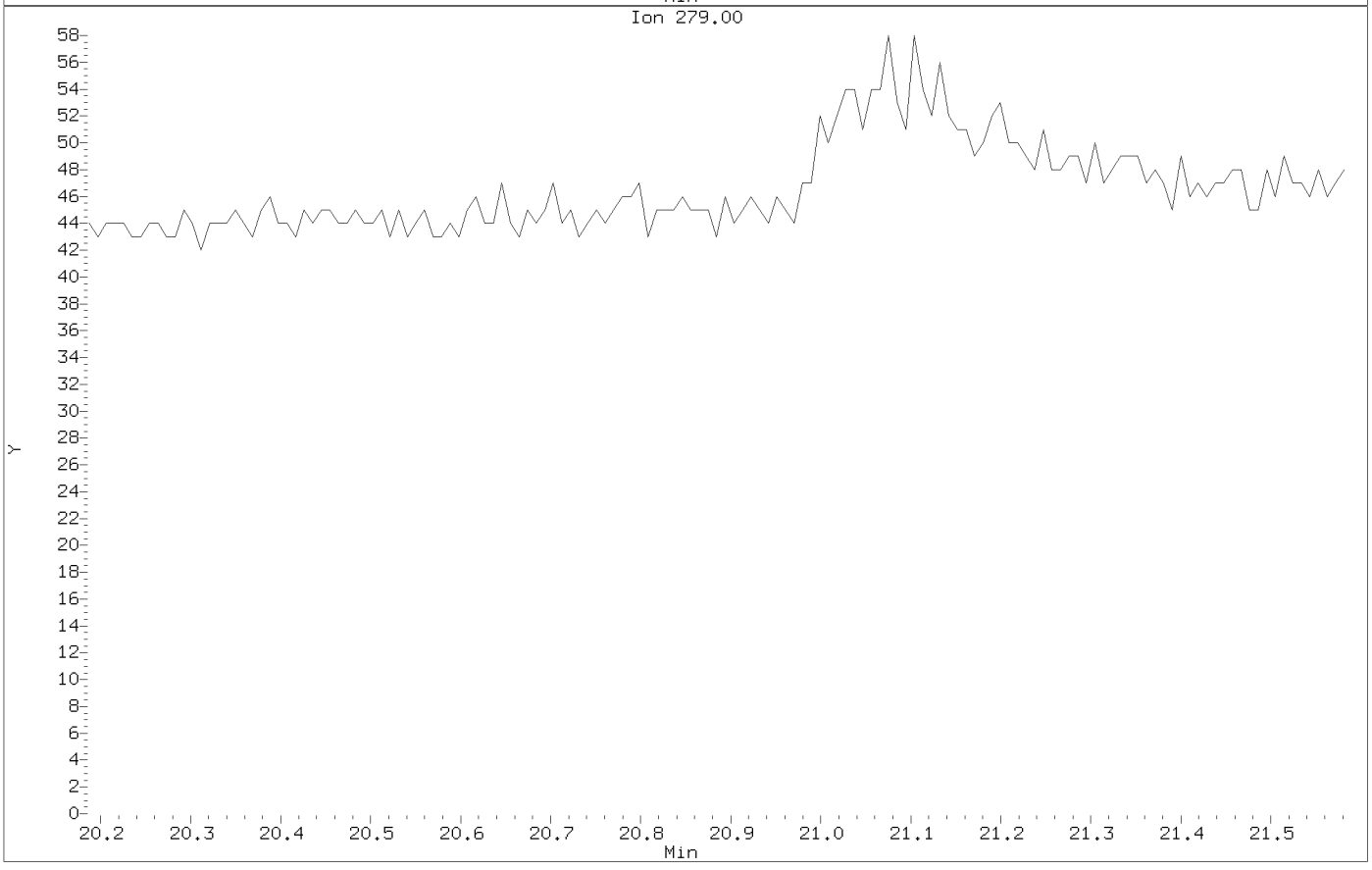
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Dibenzo(a,h)anthracene
CAS Number: 53-70-3

BEFORE MANUAL INTEGRATION





AFTER MANUAL INTEGRATION

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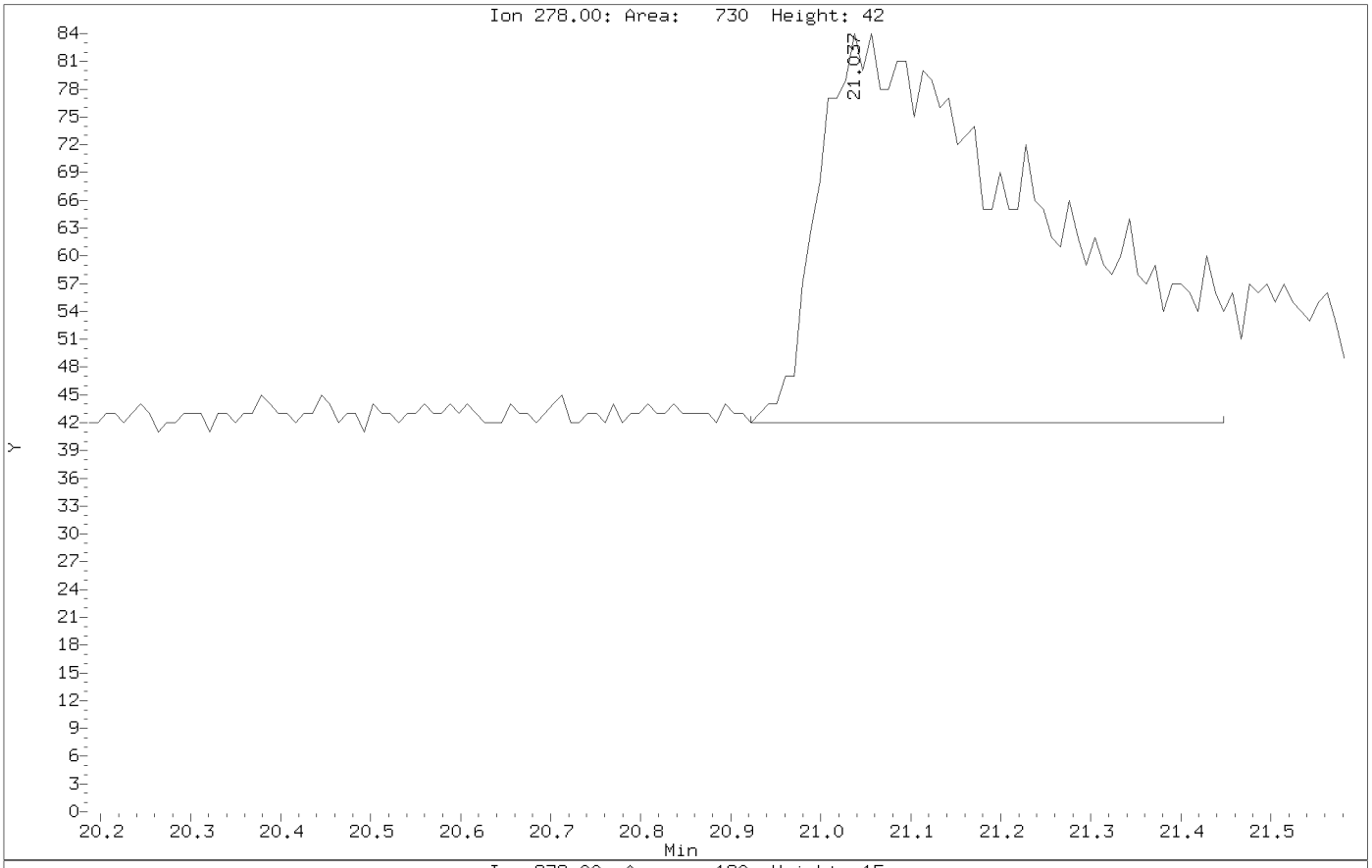
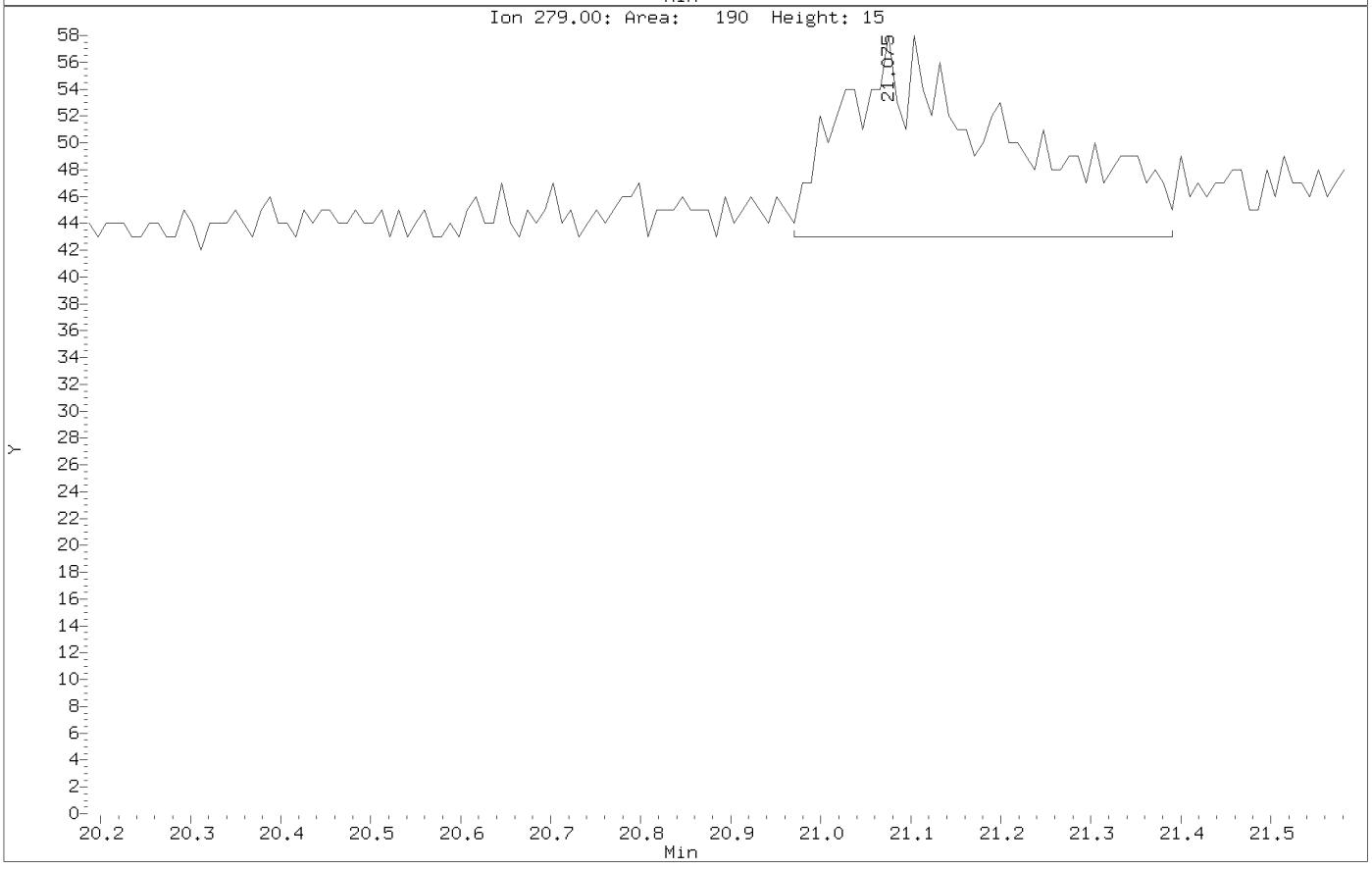
Client Sample ID:

Compound: Dibenzo(a,h)anthracene
CAS Number: 53-70-3





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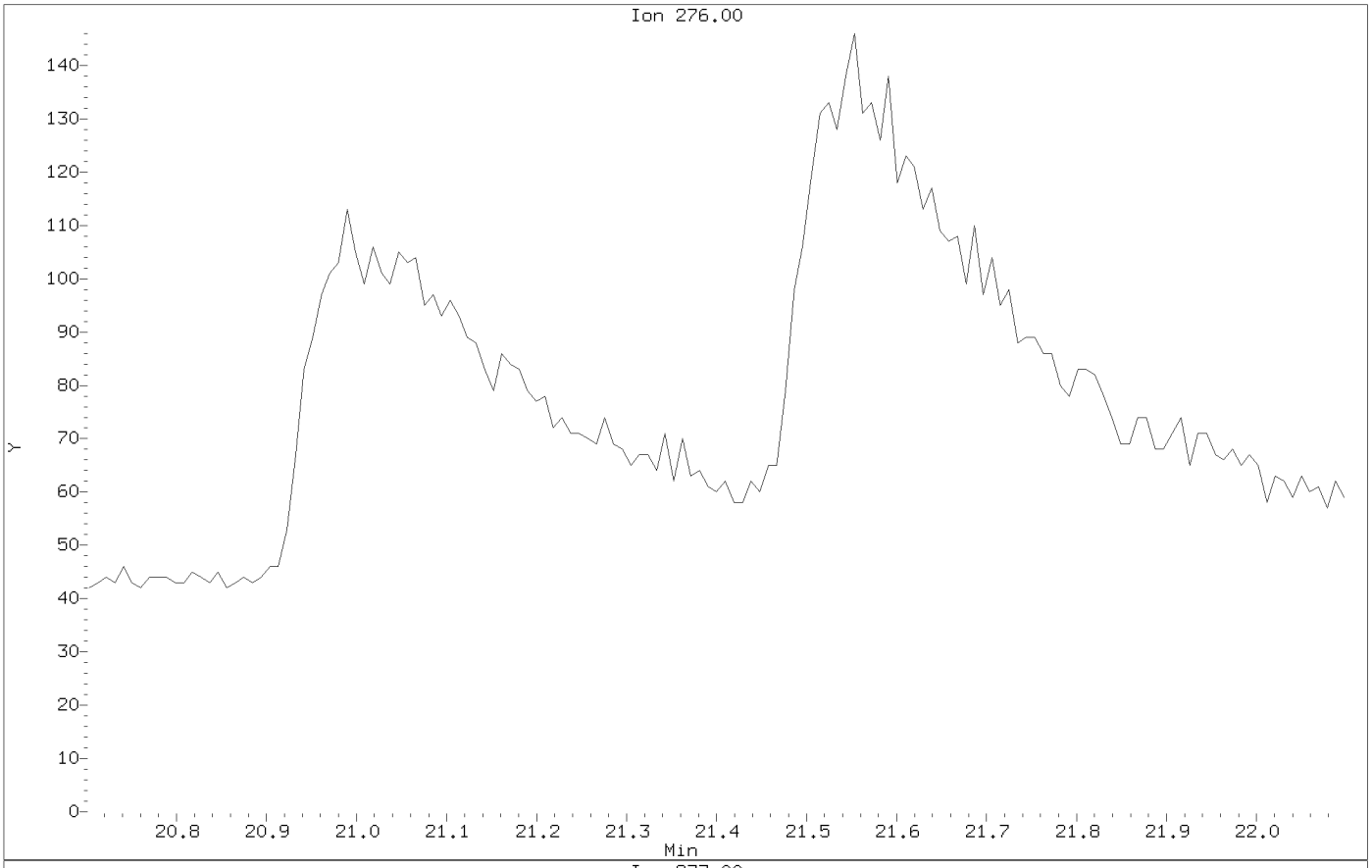
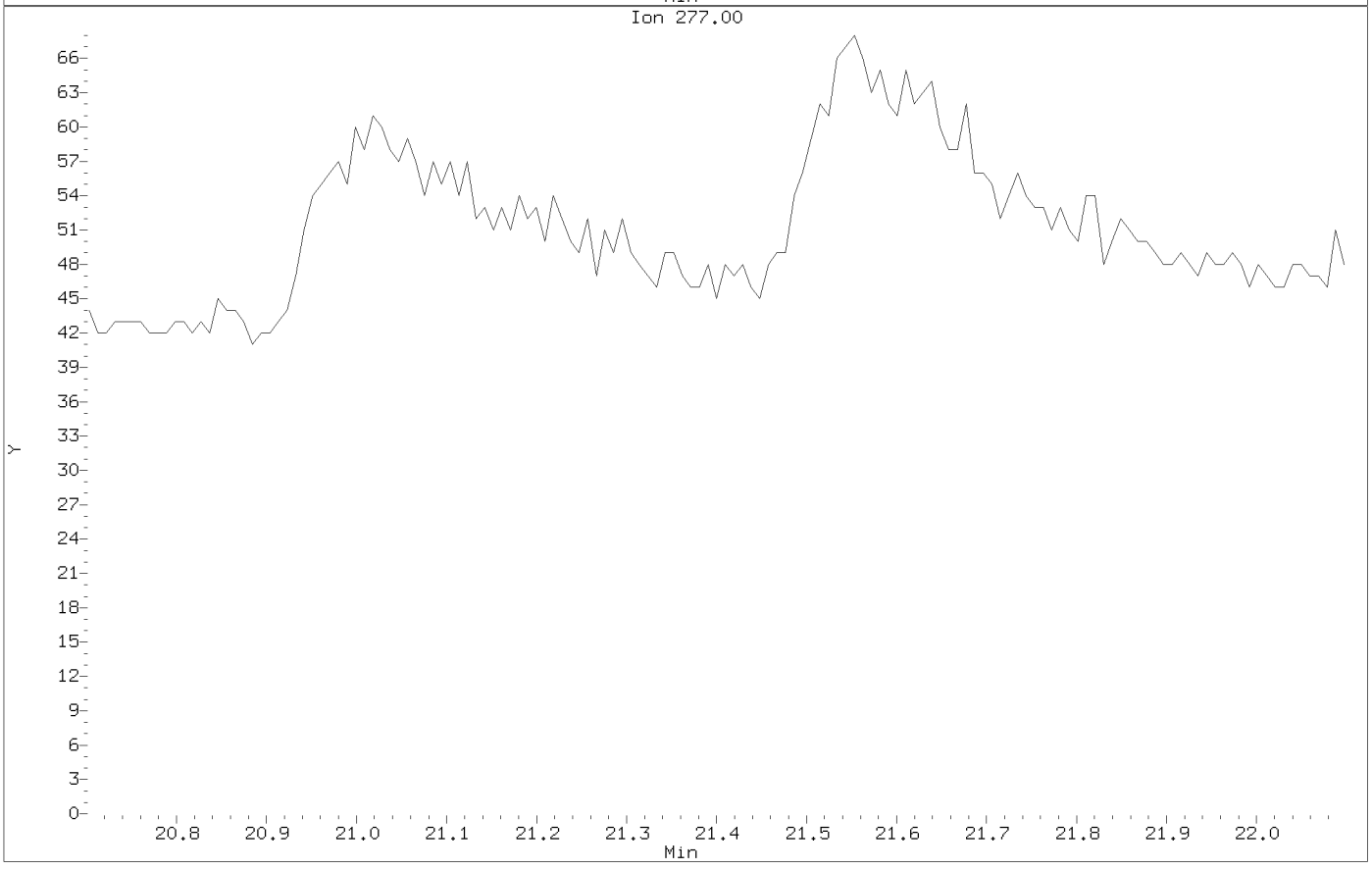
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(g,h,i)perylene
CAS Number: 191-24-2

BEFORE MANUAL INTEGRATION

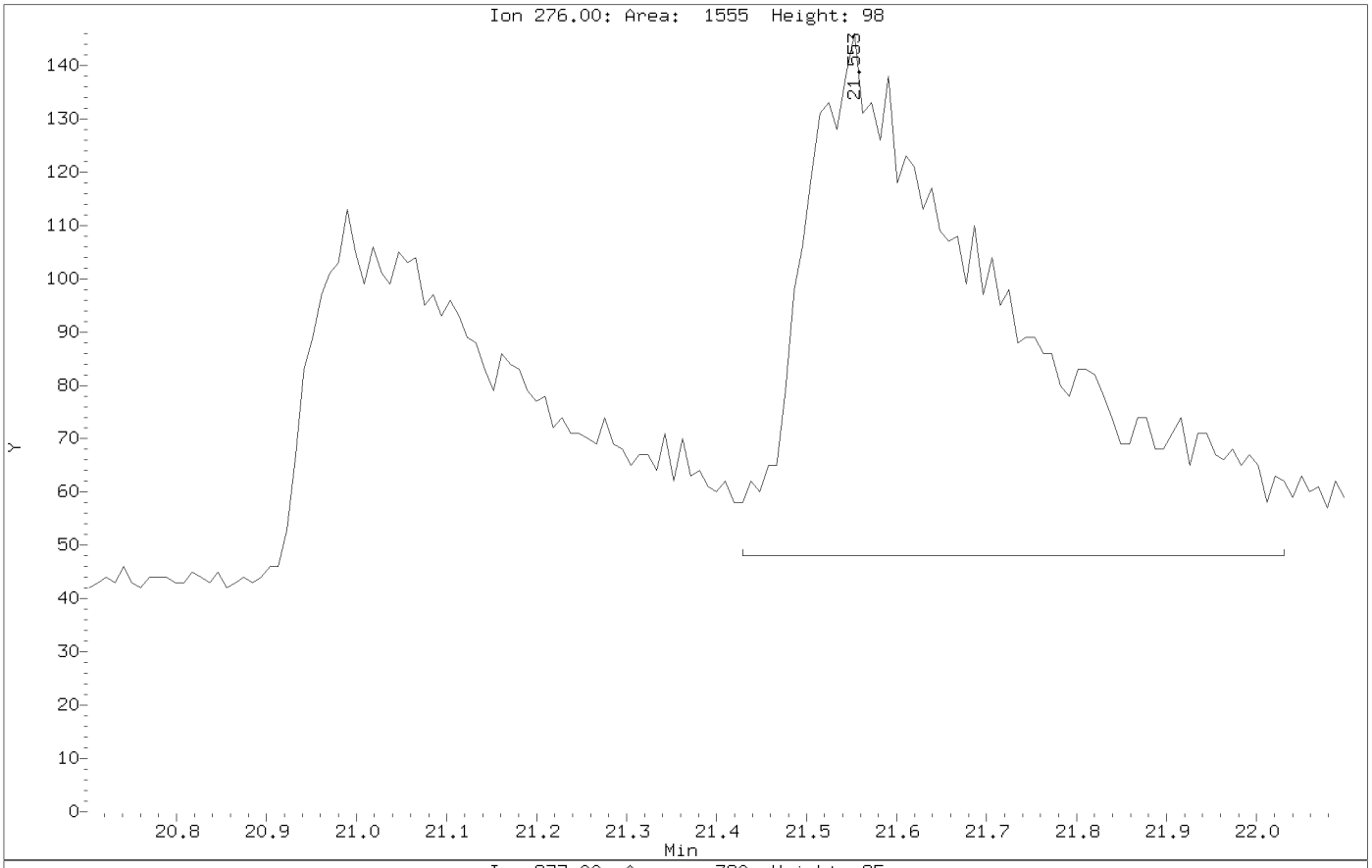


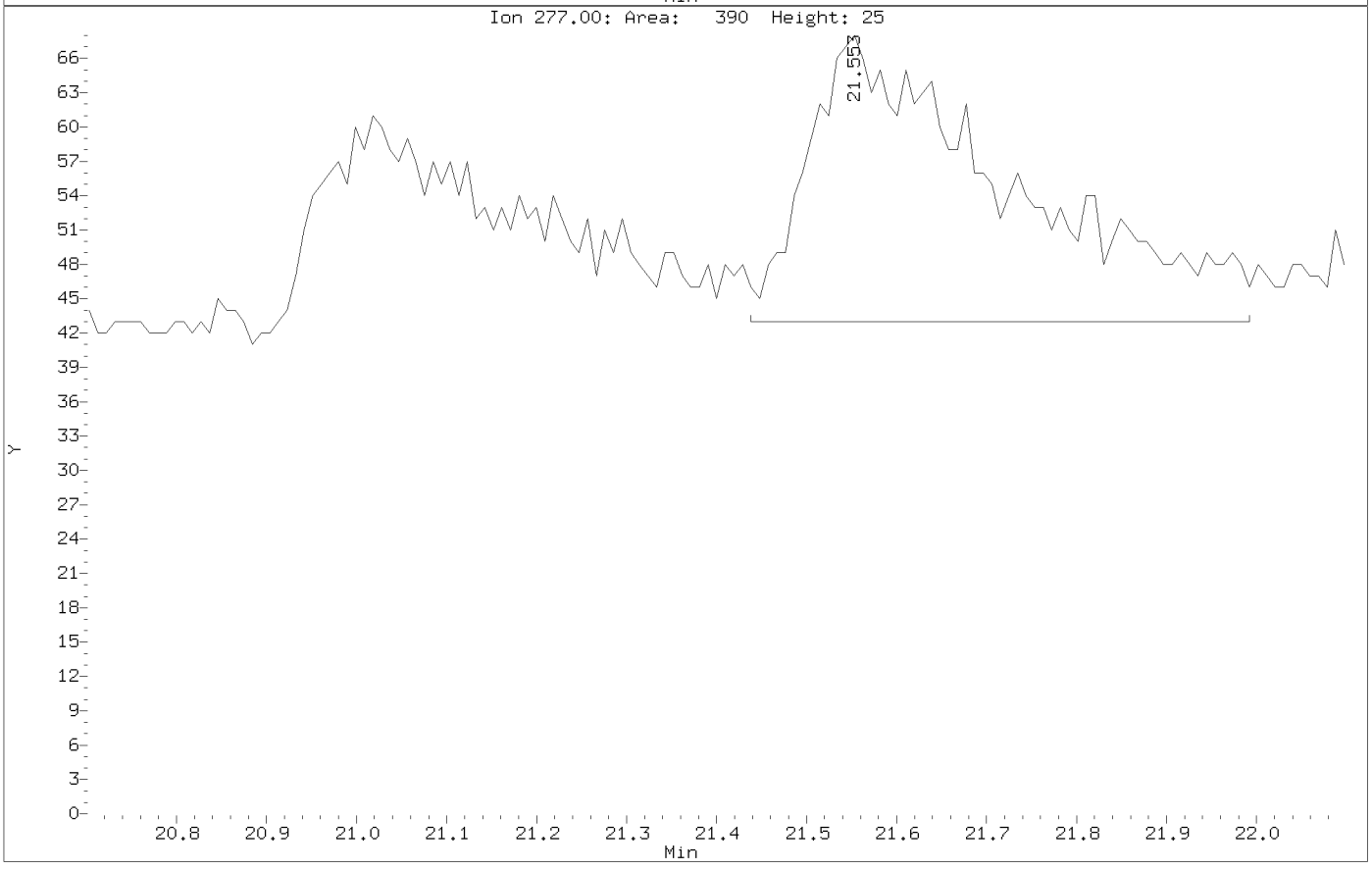


AFTER MANUAL INTEGRATION

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0843.D
Injection Date: 14-MAY-2018 14:06
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(g,h,i)perylene
CAS Number: 191-24-2





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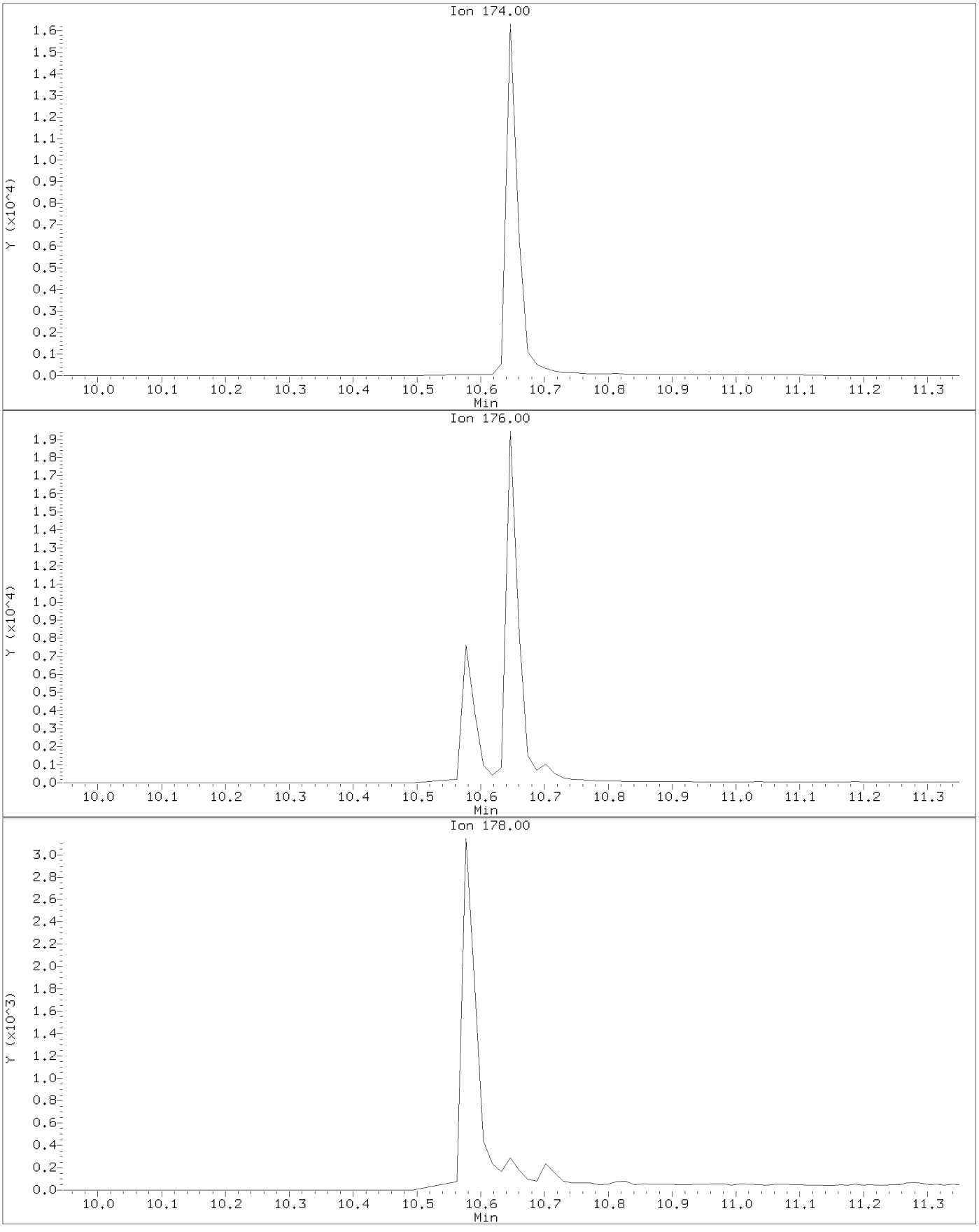
Injection Date: 14-MAY-2018 14:37
Instrument: gcms-u.i
Client Sample ID:

Compound: Fluorene-D10
CAS Number: 118-79-6

BEFORE MANUAL INTEGRATION



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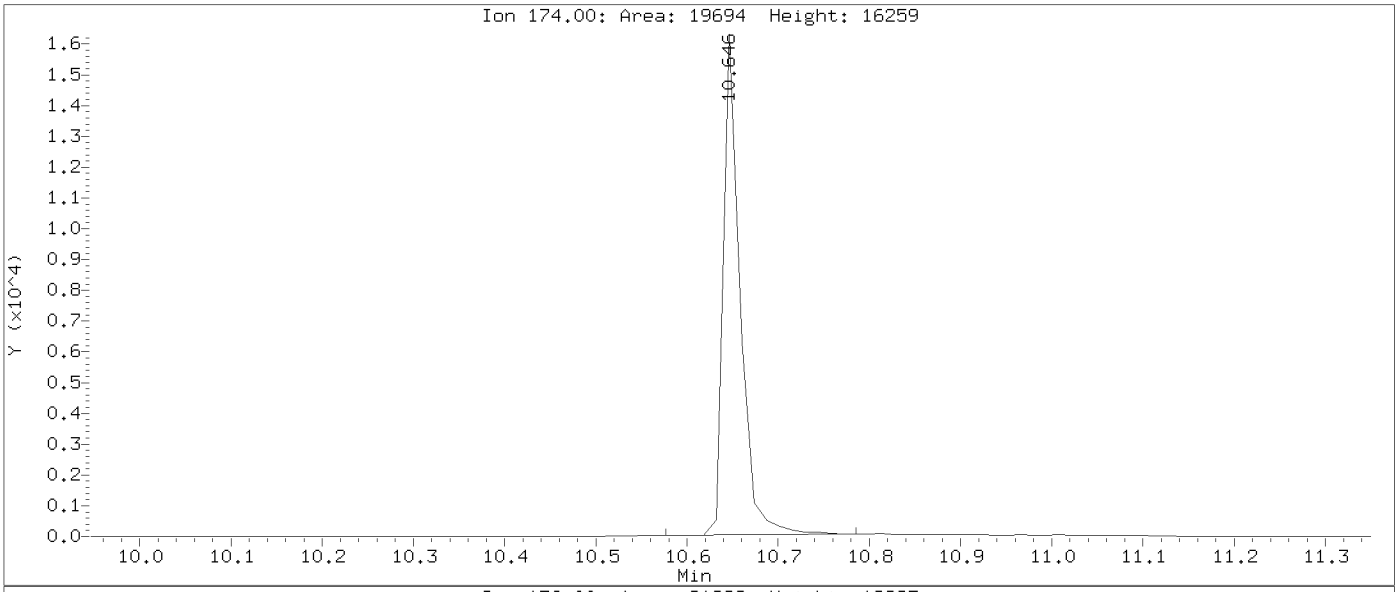
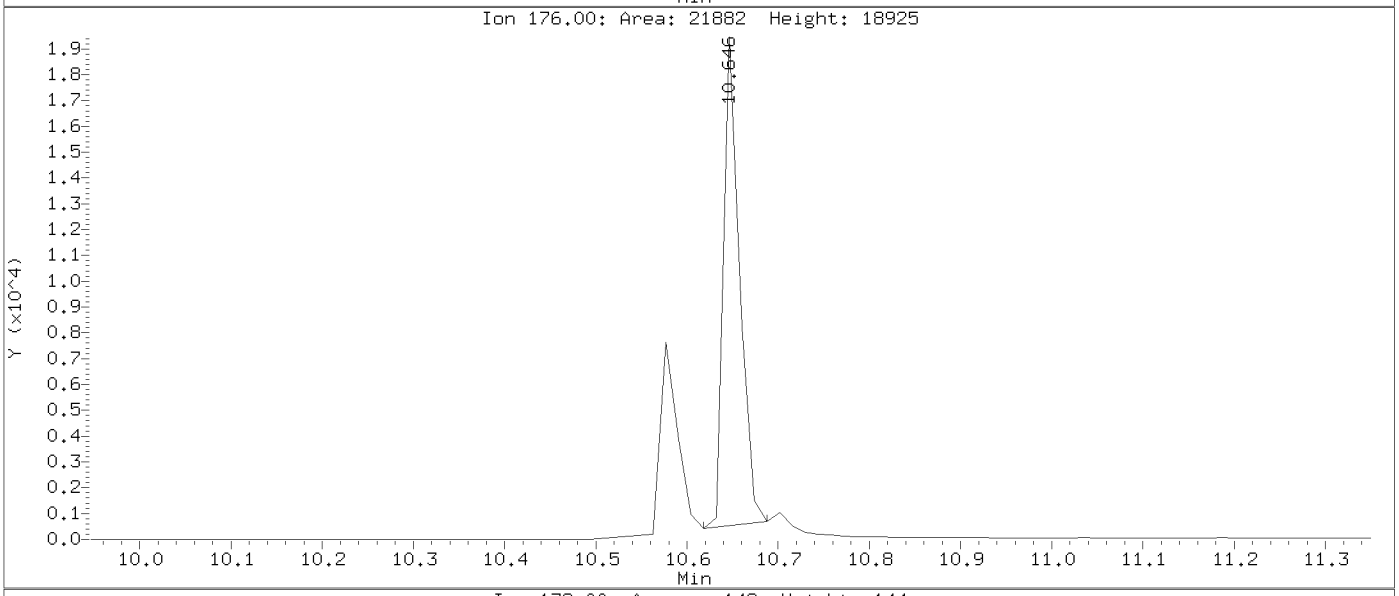
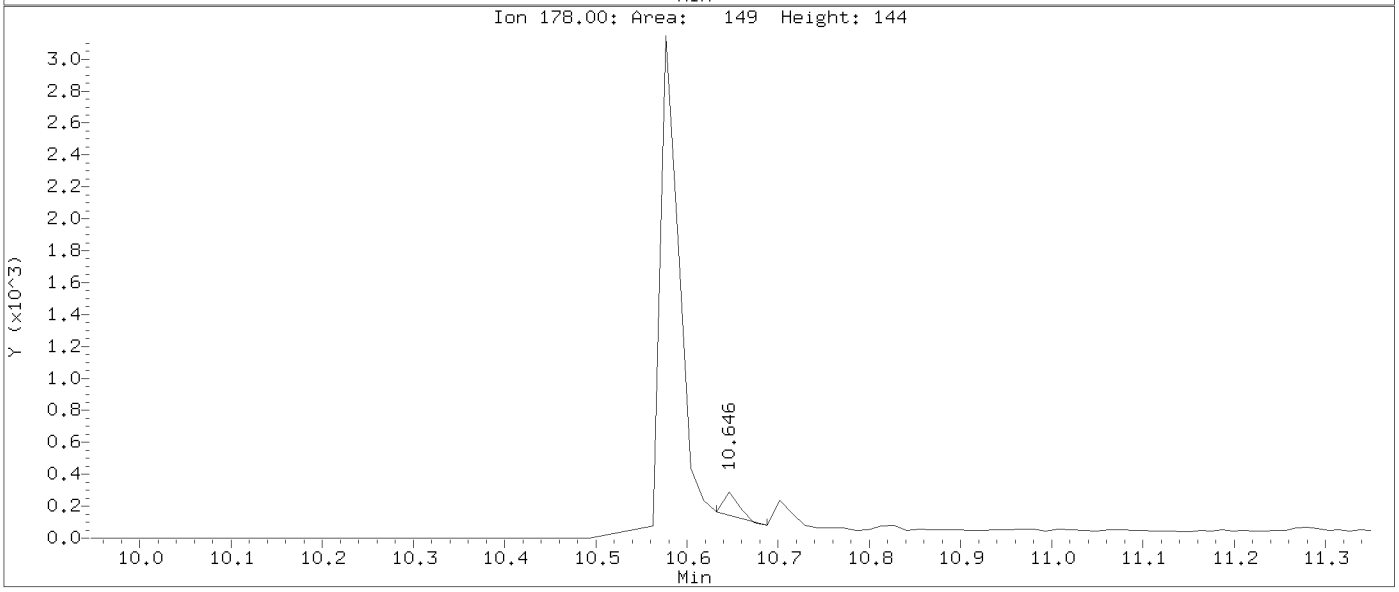
Instrument: gcms-u.i
Client Sample ID:

Compound: Fluorene-D10
CAS Number: 118-79-6

AFTER MANUAL INTEGRATION







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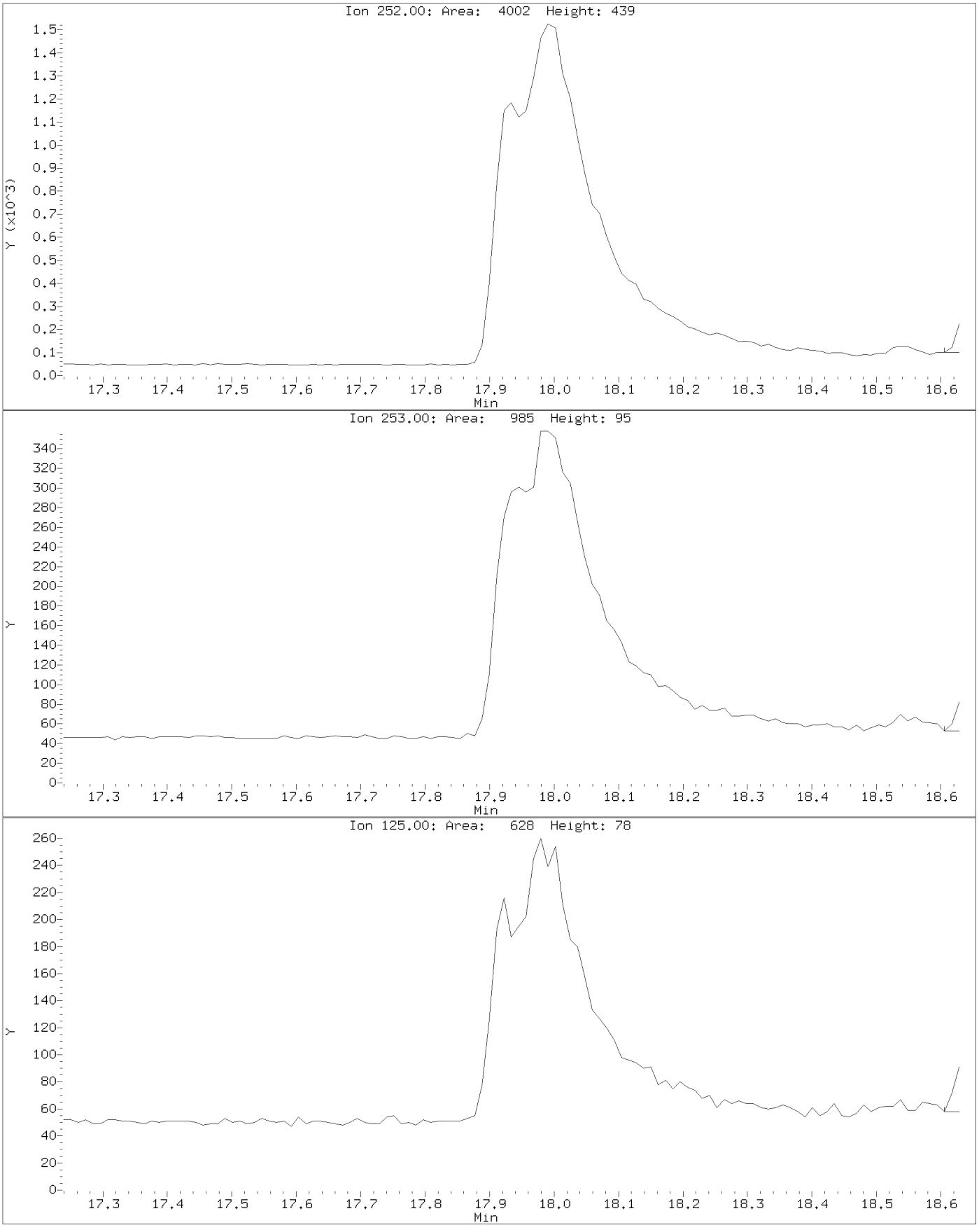
Injection Date: 14-MAY-2018 14:37
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

BEFORE MANUAL INTEGRATION



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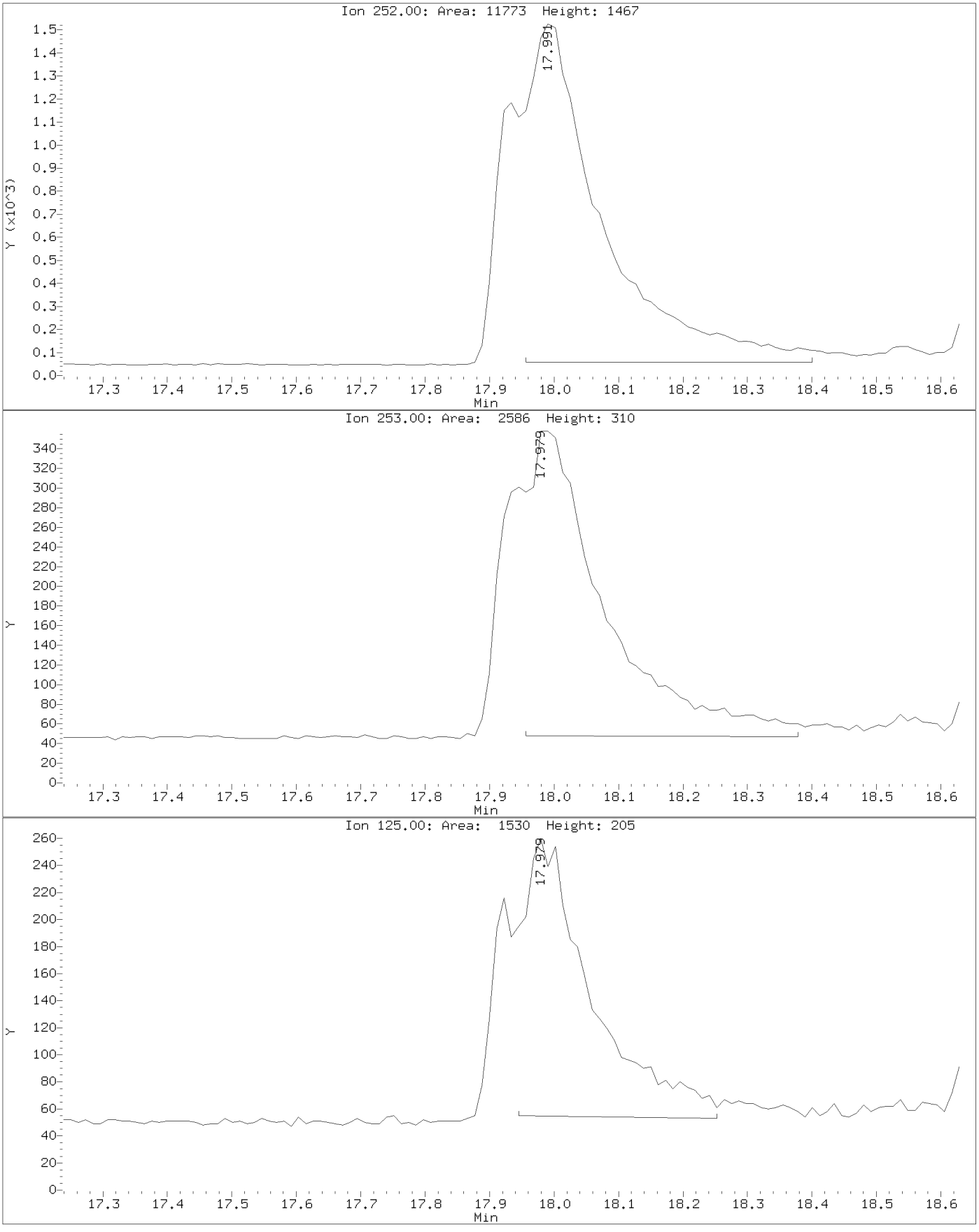
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

AFTER MANUAL INTEGRATION



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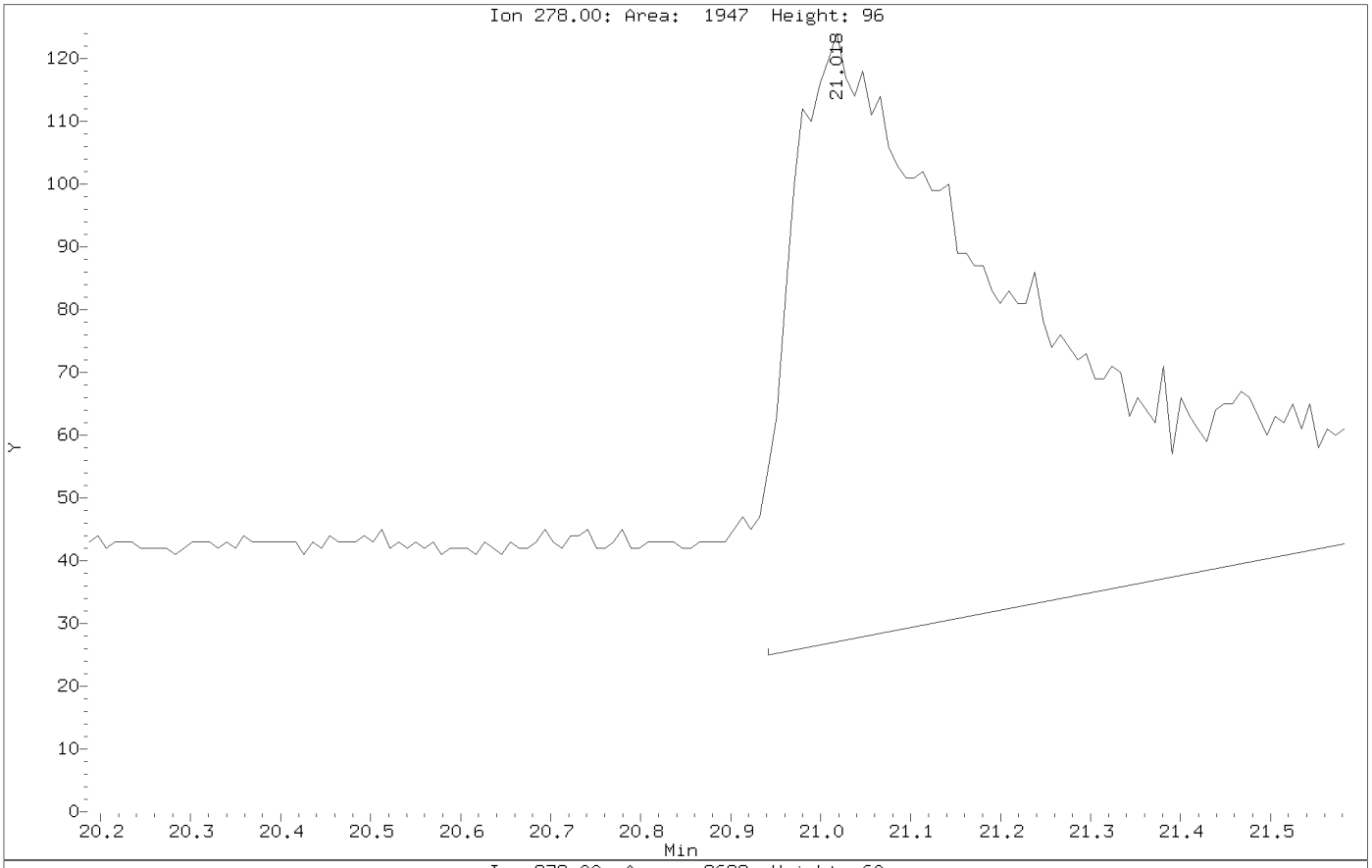
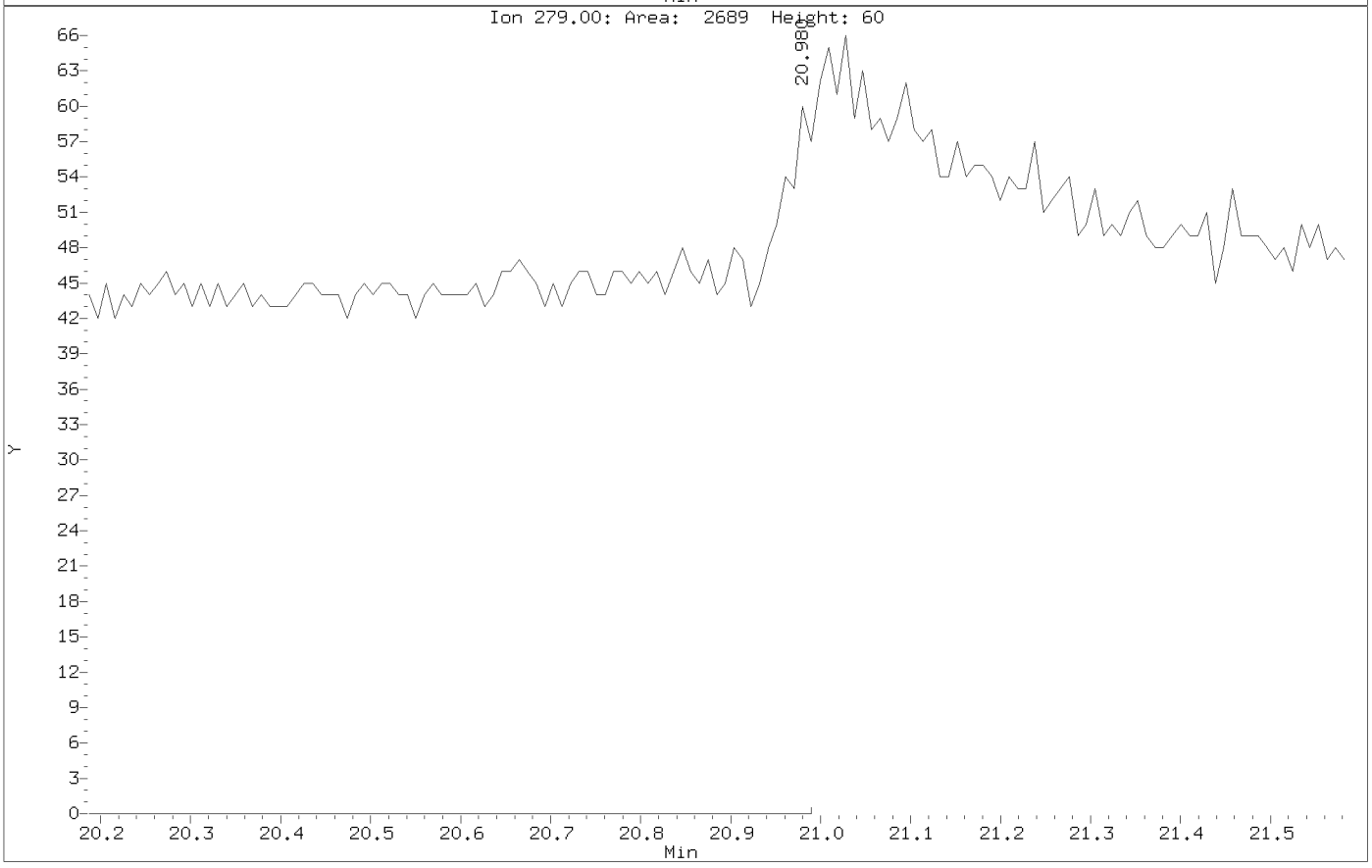
Injection Date: 14-MAY-2018 14:37
Instrument: gcms-u.i
Client Sample ID:

Compound: Dibenzo(a,h)anthracene
CAS Number: 53-70-3

BEFORE MANUAL INTEGRATION





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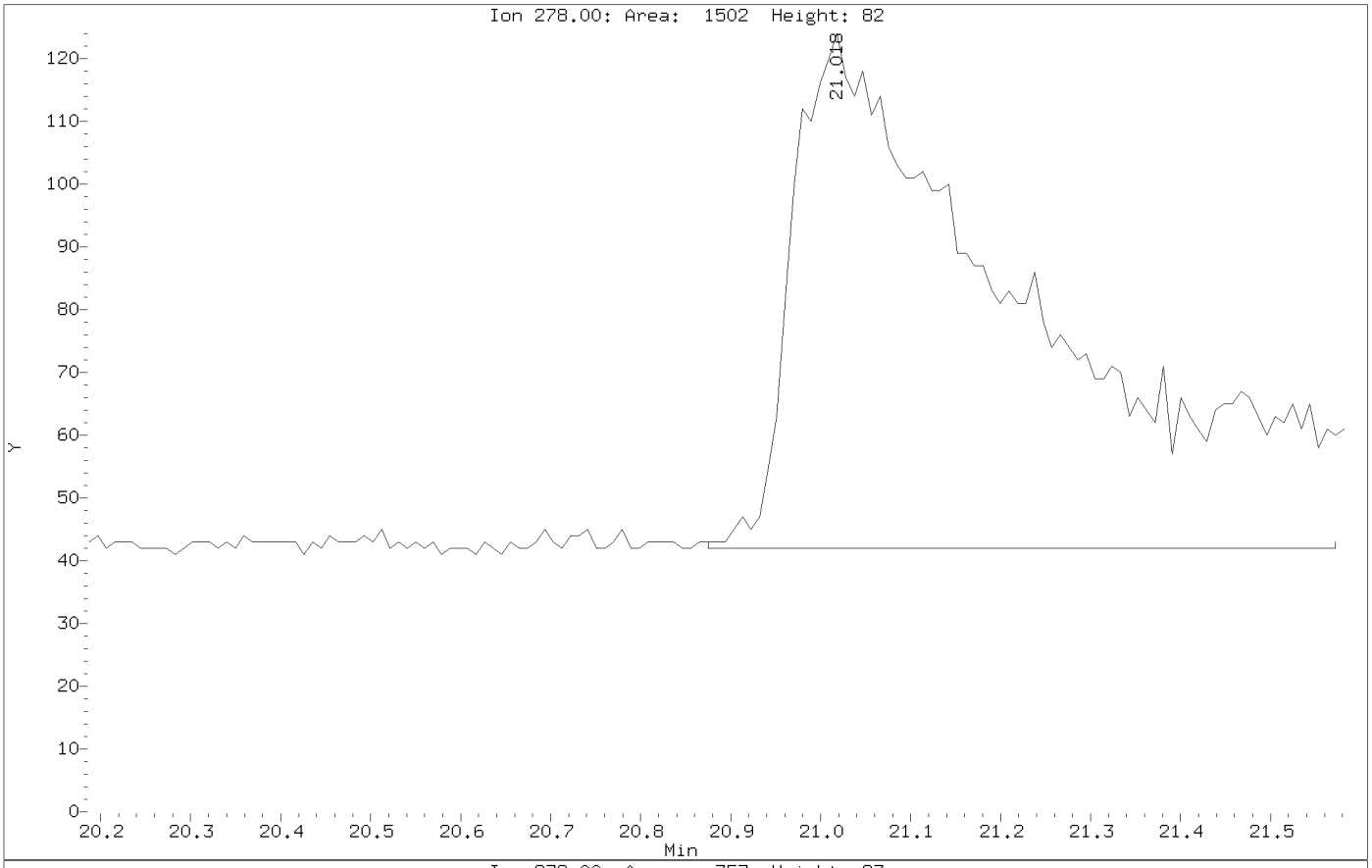
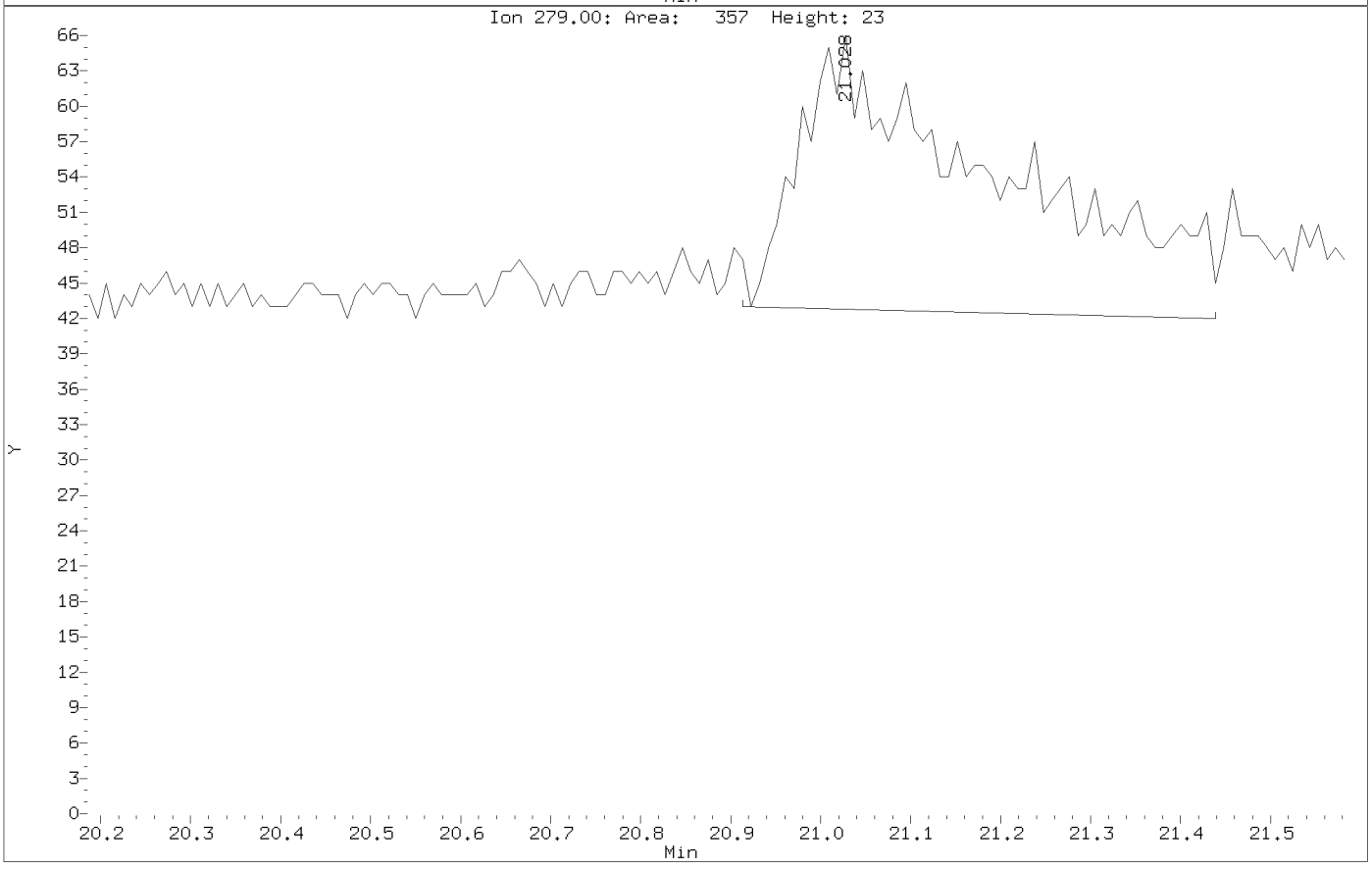
Injection Date: 14-MAY-2018 14:37
Instrument: gcms-u.i
Client Sample ID:

Compound: Dibenzo(a,h)anthracene
CAS Number: 53-70-3

AFTER MANUAL INTEGRATION





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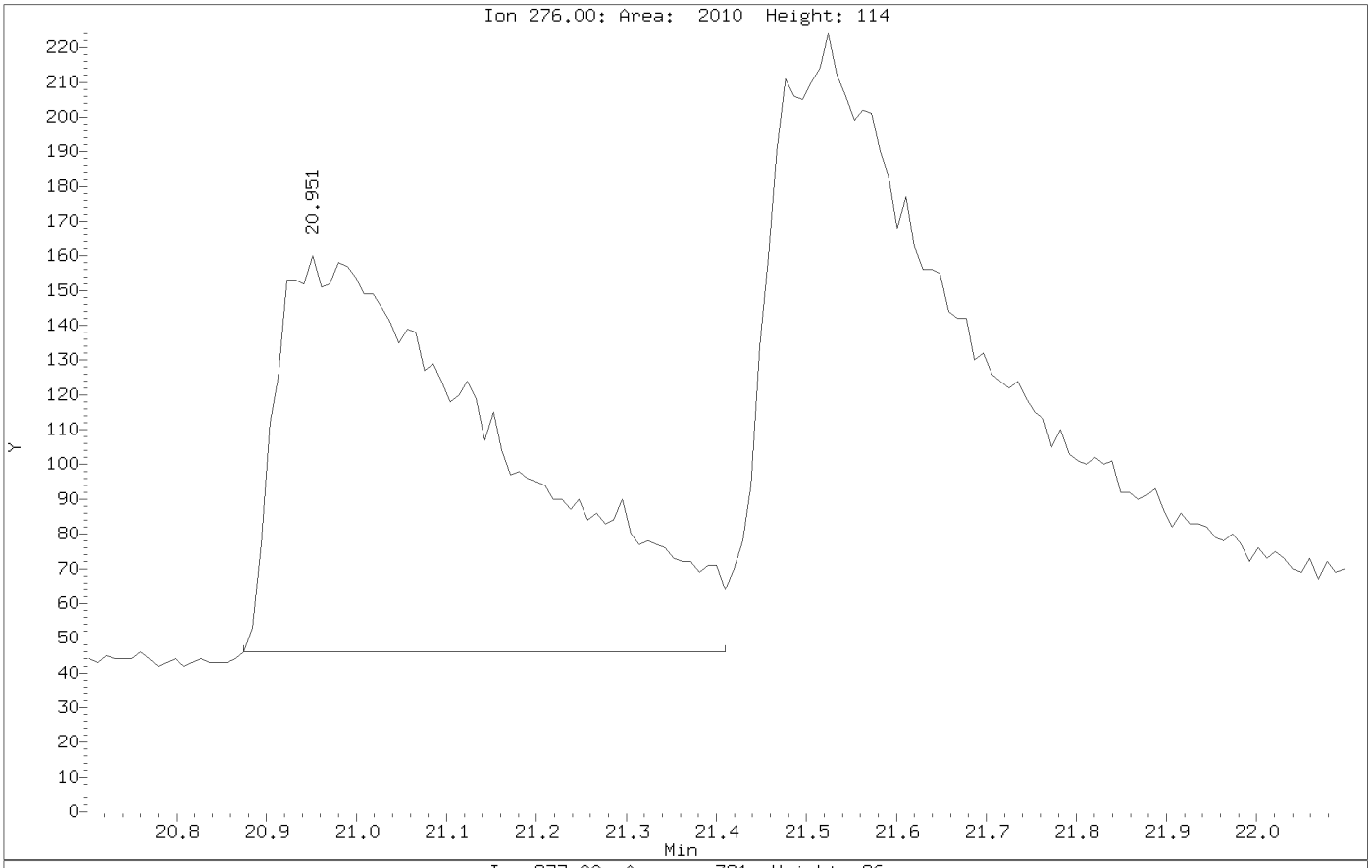
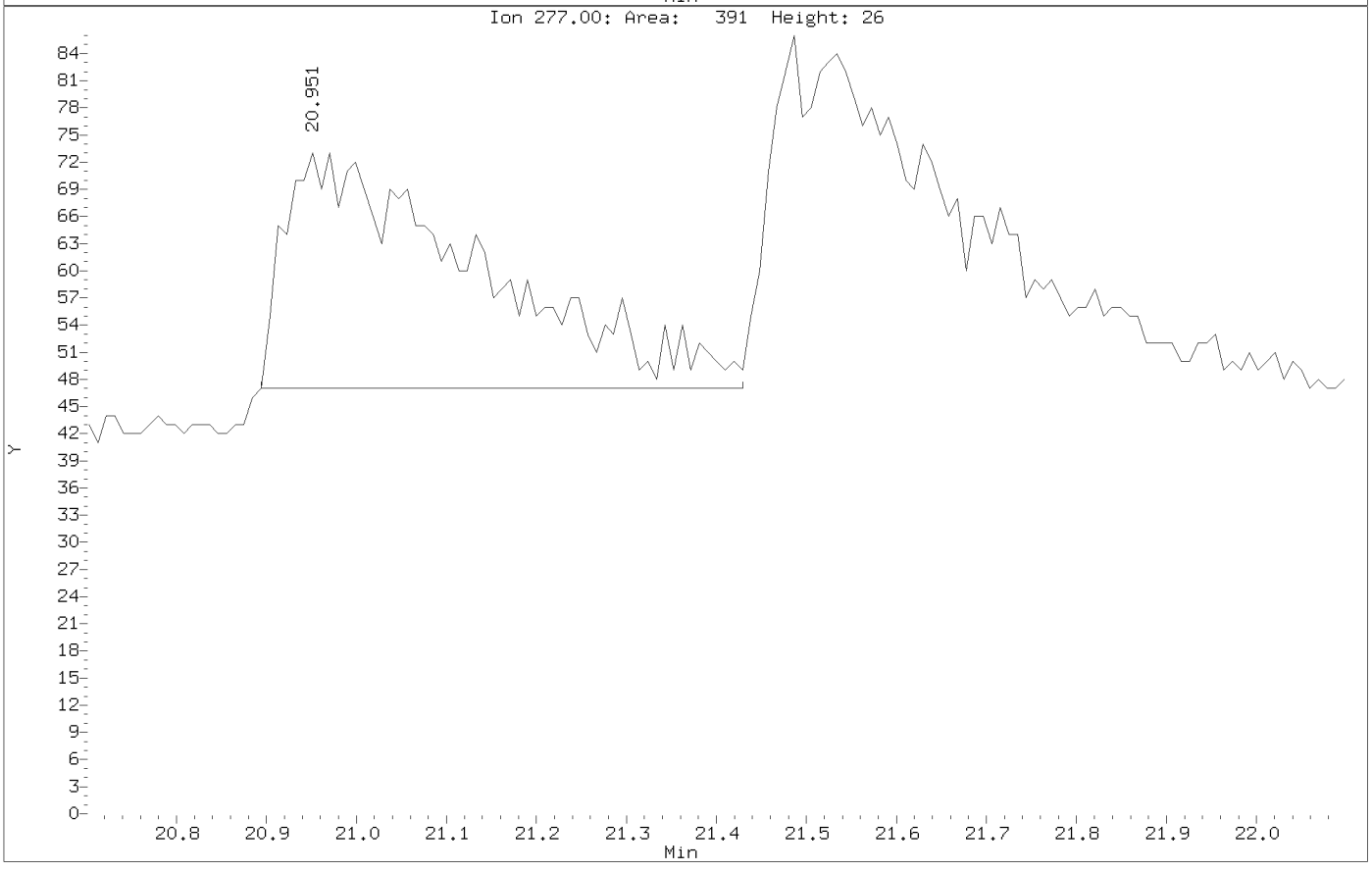
Injection Date: 14-MAY-2018 14:37
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(g,h,i)perylene
CAS Number: 191-24-2

BEFORE MANUAL INTEGRATION





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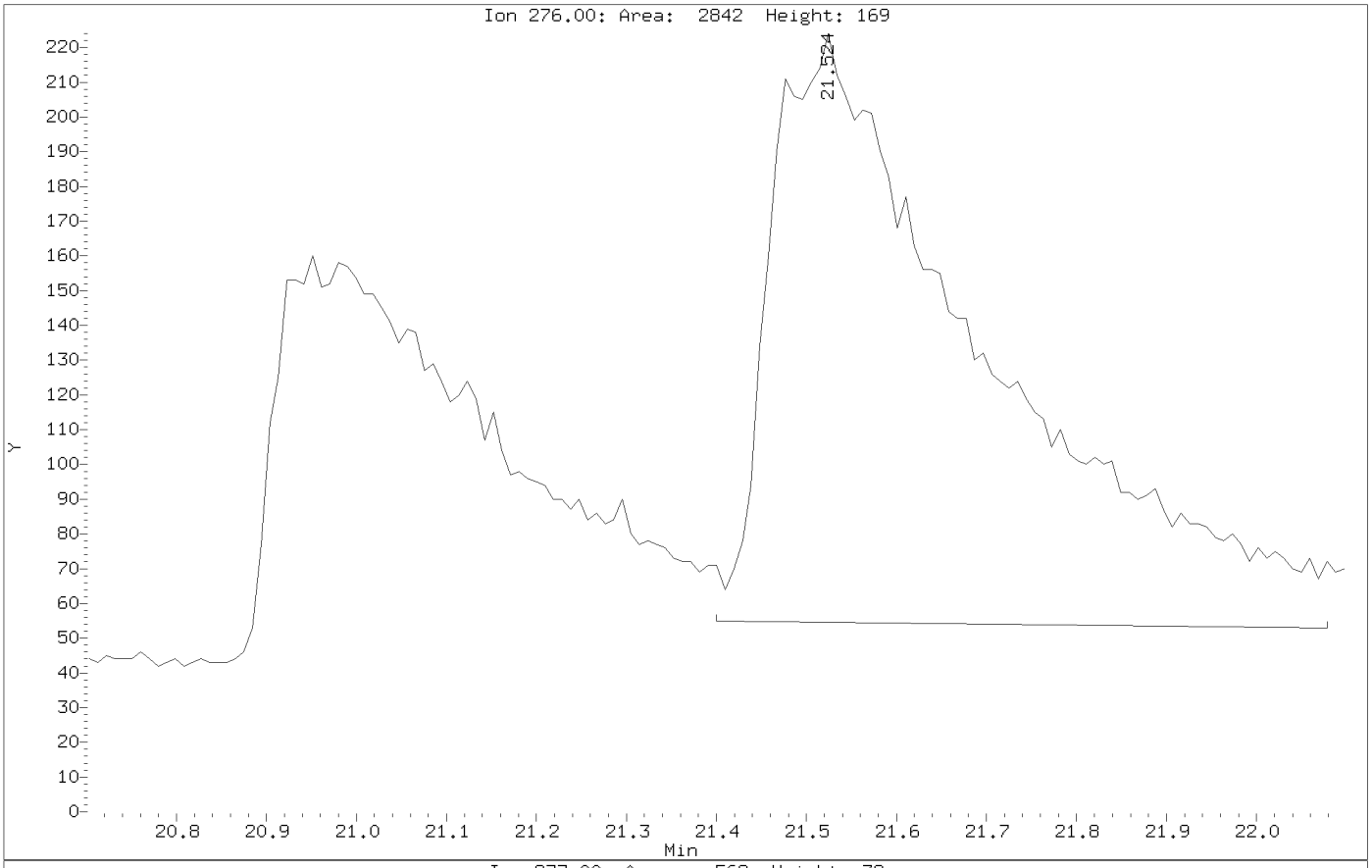
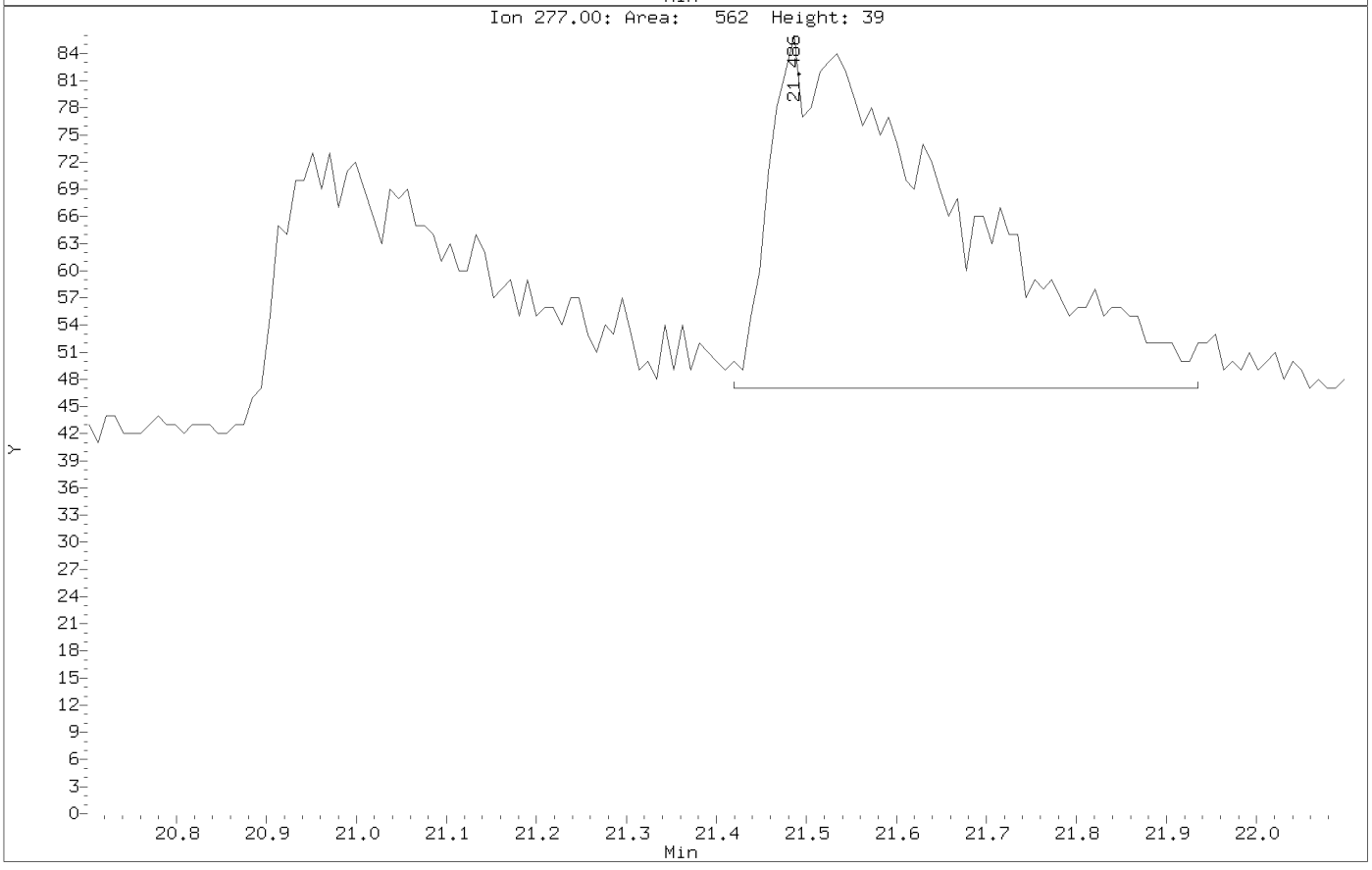
Injection Date: 14-MAY-2018 14:37
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(g,h,i)perylene
CAS Number: 191-24-2

AFTER MANUAL INTEGRATION





Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG228239-9
Analytical Date: 05/15/18 00:31
Lab File ID : U0863.D
Instrument ID: GCMS-U
Initial Calibration Date(s): 05/14/18 13:33 05/14/18 16:11
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	0.79551	0.84956	0.84956	0.010	6.79380	20.00000	Averaged
33 2-Methylnaphthalene	0.19554	0.19941	0.19941	0.010	1.97856	20.00000	Averaged
45 Acenaphthylene	1.61070	1.64682	1.64682	0.010	2.24226	20.00000	Averaged
48 Acenaphthene	1.01474	1.02789	1.02789	0.010	1.29596	20.01000	Averaged
56 Fluorene	1.18062	1.21058	1.21058	0.010	2.53774	20.00000	Averaged
66 Phenanthrene	0.97277	1.02961	1.02961	0.010	5.84255	20.00000	Averaged
67 Anthracene	1.00817	1.05341	1.05341	0.010	4.48738	20.00000	Averaged
70 Fluoranthene	0.91772	0.96215	0.96215	0.010	4.84081	20.01000	Averaged
72 Pyrene	2.00000	2.19527	2.07078	0.010	9.76348	20.00000	Linear
74 Benzo(a)anthracene	2.00000	1.98168	0.89747	0.010	-0.91619	20.00000	Linear
77 Chrysene	2.00000	2.15328	1.36852	0.010	7.66418	20.00000	Linear
80 Benzo(b)fluoranthene	1.02275	1.00950	1.00950	0.010	-1.29545	20.00000	Averaged
81 Benzo(k)fluoranthene	2.00000	1.68436	1.58810	0.010	-15.78182	20.00000	Linear
82 Benzo(a)pyrene	1.14581	1.02706	1.02706	0.010	-10.36400	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	1.93732	0.64350	0.010	-3.13378	20.00000	Linear
85 Dibenzo(a,h)anthracene	2.00000	1.89544	0.42929	0.010	-5.22822	20.00000	Linear
86 Benzo(g,h,i)perylene	0.70117	0.72844	0.72844	0.010	3.88890	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.99417	1.01503	1.01503	0.010	2.09893	20.00000	Averaged
55 Fluorene-D10	0.81599	0.83821	0.83821	0.010	2.72339	20.00000	Averaged
71 Pyrene-D10	2.00000	2.20045	1.40103	0.010	10.02263	20.00000	Linear

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0863.D
Report Date: 15-May-2018 08:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0863.D
Lab Smp Id: WG228239-9
Inj Date : 15-MAY-2018 00:31 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG228239-9,SL3807
Misc Info : WG228239,WG228239,WG228239-4,SL3807-1
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 16:11 Cal File: U0847.D
Als bottle: 23 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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	6.004	6.014	(1.000)	33987	0.80000	(a)	
*	26 Naphthalene-D8	136	7.621	7.634	(1.000)	94358	0.80000	(a)	
	27 Naphthalene	128	7.646	7.658	(1.003)	200406	2.00000	2.14	
$	32 2-Methylnaphthalene-D10	152	8.525	8.538	(0.858)	107431	2.00000	2.04	
	33 2-Methylnaphthalene	115	8.563	8.574	(1.124)	47040	2.00000	2.04	
	45 Acenaphthylene	152	9.750	9.761	(0.981)	174299	2.00000	2.04	
*	47 Acenaphthene-D10	164	9.936	9.947	(1.000)	42336	0.80000	(a)	
	48 Acenaphthene	153	9.979	9.991	(1.004)	108792	2.00000	2.02	
$	55 Fluorene-D10	174	10.632	10.646	(1.070)	88716	2.00000	2.05	
	56 Fluorene	166	10.674	10.688	(1.074)	128128	2.00000	2.05	
*	65 Phenanthrene-D10	188	11.931	11.944	(1.000)	65477	0.80000	(a)	
	66 Phenanthrene	178	11.965	11.968	(1.003)	168539	2.00000	2.12	
	67 Anthracene	178	12.035	12.037	(1.009)	172435	2.00000	2.09	
	70 Fluoranthene	202	13.573	13.584	(1.138)	157496	2.00000	2.10	
$	71 Pyrene-D10	212	13.844	13.855	(0.882)	110433	2.00000	2.20	
	72 Pyrene	202	13.864	13.875	(0.883)	163224	2.00000	2.20	
	74 Benzo(a)anthracene	228	15.676	15.686	(0.999)	70741	2.00000	1.98	
*	76 Chrysene-D12	240	15.696	15.706	(1.000)	31529	0.80000	(a)	
	77 Chrysene	228	15.745	15.755	(1.003)	107870	2.00000	2.15	
	80 Benzo(b)fluoranthene	252	17.866	17.877	(0.954)	47088	2.00000	1.97	

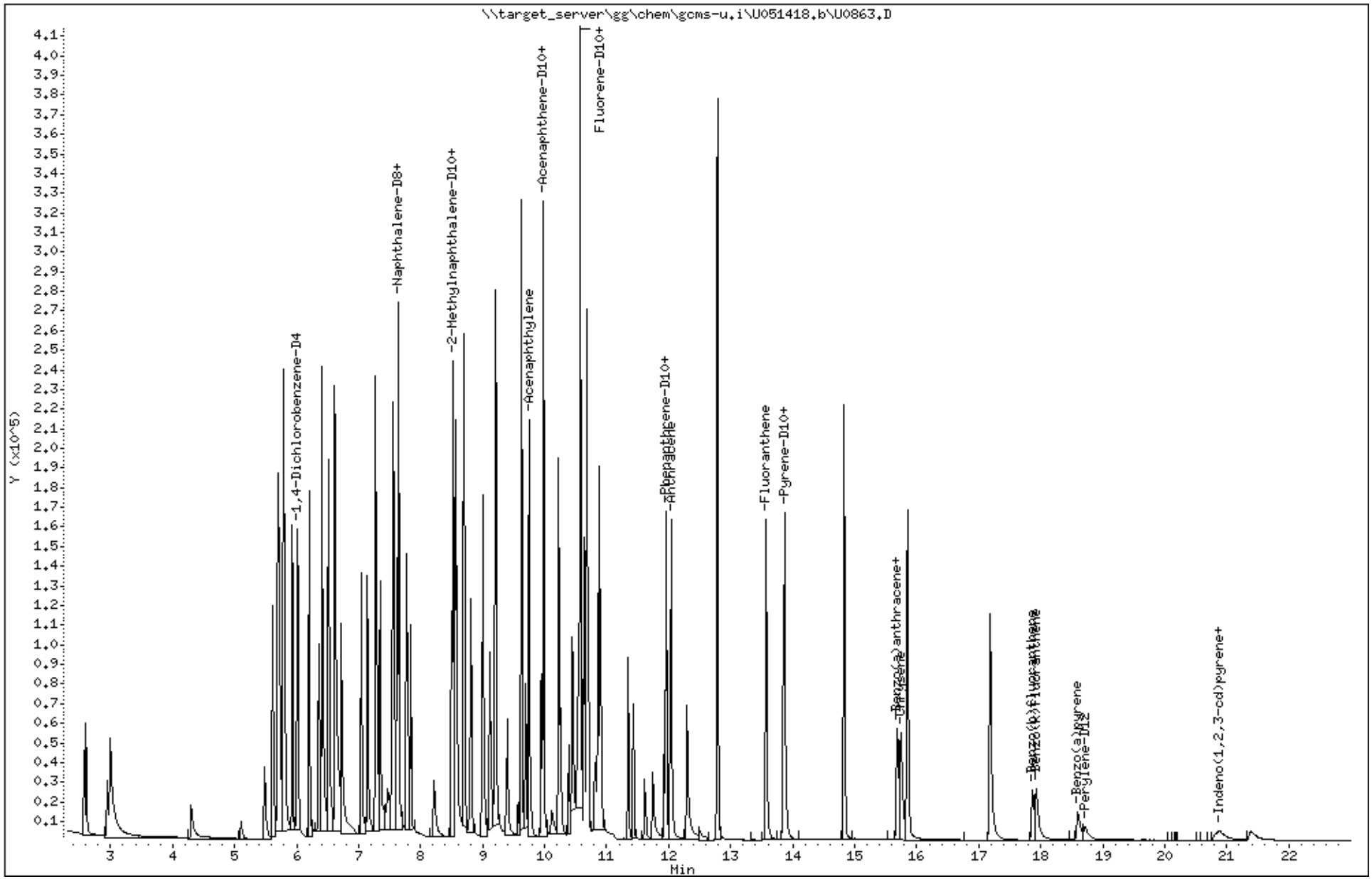
Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0863.D
Report Date: 15-May-2018 08:53

	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	17.923	17.934	(0.957)	74077	2.00000	1.68(H)	
82	Benzo(a)pyrene	252	18.594	18.595	(0.993)	47907	2.00000	1.79	
* 83	Perylene-D12	264	18.720	18.732	(1.000)	18658	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	20.808	20.818	(1.112)	30016	2.00000	1.94	
85	Dibenzo(a,h)anthracene	278	20.894	20.884	(1.116)	20024	2.00000	1.90	
86	Benzo(g,h,i)perylene	276	21.391	21.400	(1.143)	33978	2.00000	2.08	

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-u.i\U051418.b\U0863.D
Date : 15-MAY-2018 00:31
Client ID:
Instrument: gcms-u.i
Sample Info: WG228239-9,SL3807
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000071

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\UD898.D

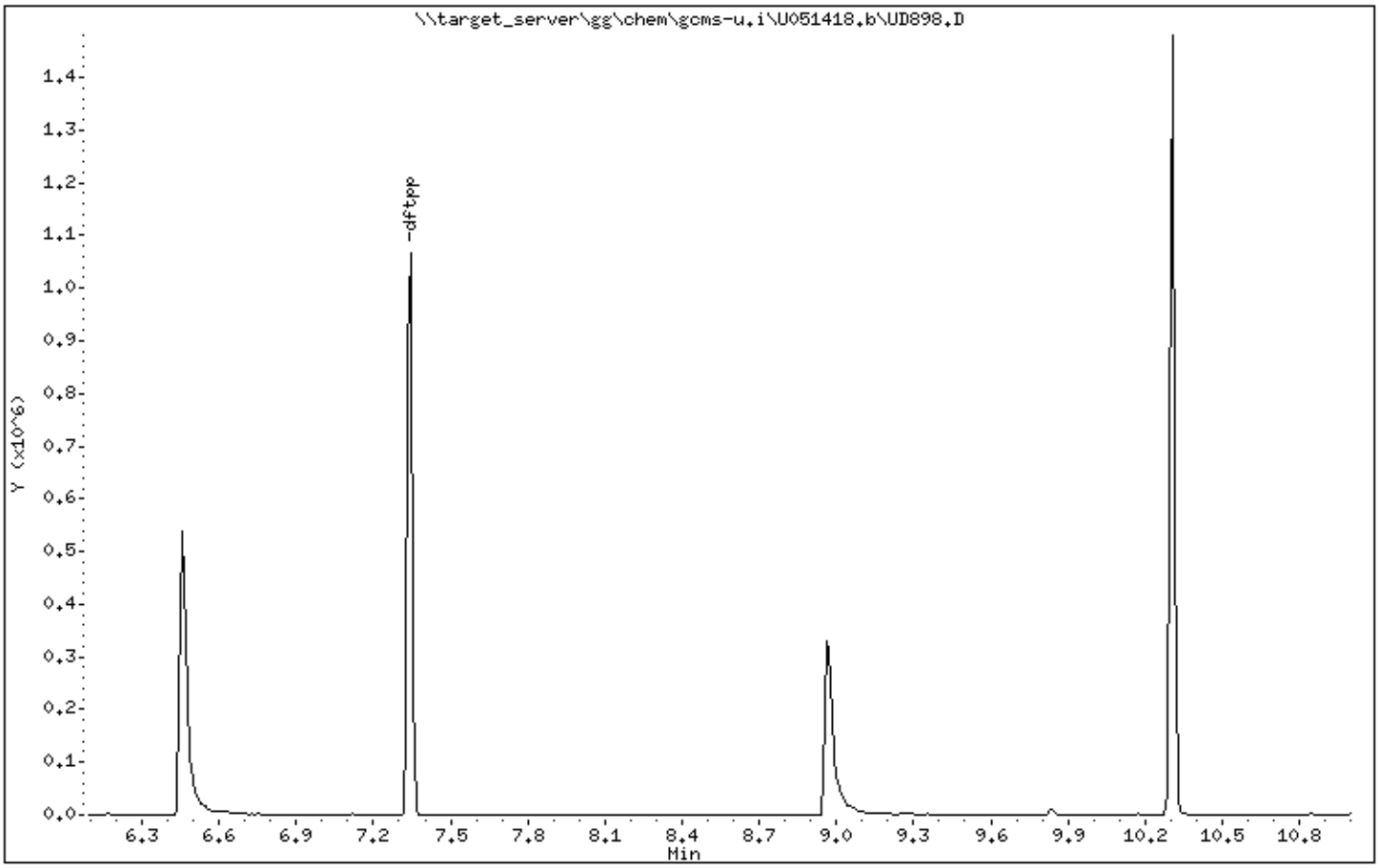
Date : 14-MAY-2018 12:41

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG228239-1,SL3807

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\UD898.D

Date : 14-MAY-2018 12:41

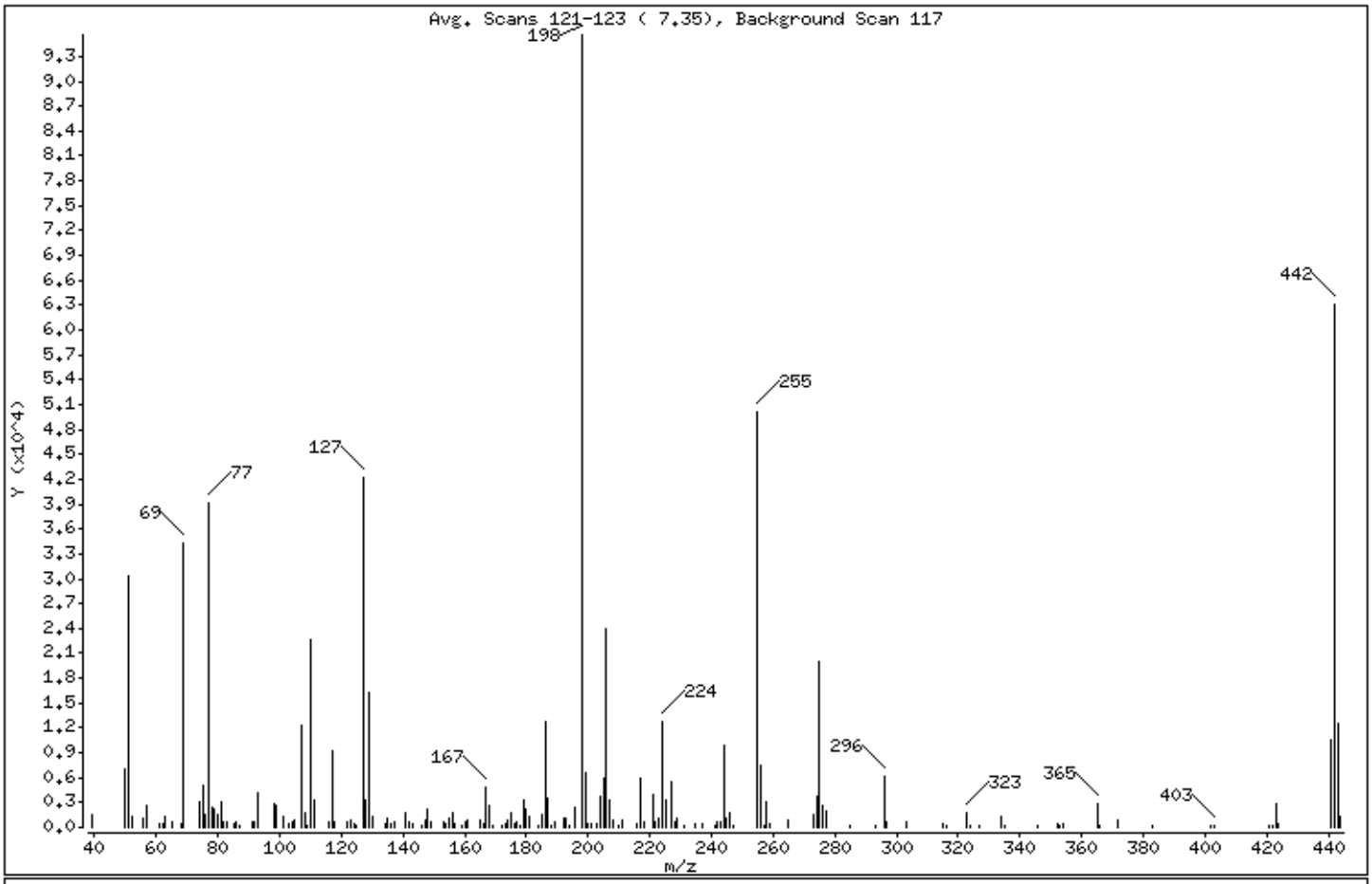
Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG228239-1,SL3807

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	31.80
68	Less than 2.00% of mass 69	0.53 (1.48)
69	Less than 100.00% of mass 198	35.82
70	Less than 2.00% of mass 69	0.00 (0.00)
127	40.00 - 60.00% of mass 198	44.18
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.82
275	10.00 - 30.00% of mass 198	20.93
365	1.00 - 100.00% of mass 198	2.95
441	0.01 - 100.00% of mass 443	10.97 (83.19)
442	40.00 - 100.00% of mass 198	66.08
443	17.00 - 23.00% of mass 442	13.19 (19.95)

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\UD898.D

Date : 14-MAY-2018 12:41

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG228239-1,SL3807

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: UD898.D
Spectrum: Avg. Scans 121-123 (7.35), Background Scan 117
Location of Maximum: 198.00
Number of points: 168

m/z	Y	m/z	Y	m/z	Y	m/z	Y
39.00	1575	123.00	983	186.00	12734	257.00	293
50.00	7091	124.00	422	187.00	3614	258.00	3005
51.00	30408	125.00	266	188.00	167	259.00	503
52.00	1363	127.00	42240	189.00	619	265.00	919
56.00	1037	128.00	3282	192.00	1070	273.00	1490
57.00	2742	129.00	16346	193.00	1076	274.00	3834
61.00	423	130.00	1238	194.00	167	275.00	20008
62.00	522	134.00	426	196.00	2332	276.00	2534
63.00	1215	135.00	1178	198.00	95616	277.00	1880
65.00	762	136.00	508	199.00	6525	285.00	167
68.00	507	137.00	584	200.00	528	293.00	281
69.00	34248	141.00	1753	201.00	417	296.00	6187
74.00	3009	142.00	617	203.00	539	297.00	695
75.00	5032	143.00	444	204.00	3655	303.00	690
76.00	1603	146.00	224	205.00	5887	315.00	461
77.00	39056	147.00	921	206.00	23960	316.00	273
78.00	2379	148.00	2291	207.00	3274	323.00	1849
79.00	2156	149.00	556	208.00	771	324.00	261
80.00	1644	153.00	622	210.00	263	327.00	273
81.00	2977	154.00	410	211.00	875	334.00	1335
82.00	627	155.00	1207	216.00	373	335.00	220
83.00	580	156.00	1760	217.00	6008	346.00	289
85.00	411	157.00	365	218.00	768	352.00	534
86.00	721	159.00	168	221.00	3930	353.00	206
87.00	228	160.00	631	222.00	752	354.00	534
91.00	572	161.00	958	223.00	1127	365.00	2821
92.00	684	165.00	893	224.00	12720	366.00	210
93.00	4152	166.00	525	225.00	3194	372.00	975
98.00	2915	167.00	4761	227.00	5482	383.00	185
99.00	2564	168.00	2598	228.00	644	402.00	236
101.00	1356	169.00	200	229.00	1205	403.00	322
103.00	450	172.00	178	231.00	243	421.00	223
104.00	757	173.00	424	235.00	445	422.00	268
105.00	774	174.00	939	237.00	423	423.00	2881
107.00	12295	175.00	1683	241.00	179	424.00	479

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\UD898.D

Date : 14-MAY-2018 12:41

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG228239-1,SL3807

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: UD898.D
Spectrum: Avg. Scans 121-123 (7.35), Background Scan 117
Location of Maximum: 198.00
Number of points: 168

m/z	Y	m/z	Y	m/z	Y	m/z	Y
108.00	1668	176.00	512	242.00	637	441.00	10488
109.00	192	177.00	682	243.00	601	442.00	63184
110.00	22608	178.00	184	244.00	9785	443.00	12607
111.00	3231	179.00	3393	245.00	1055	444.00	1315
116.00	567	180.00	2280	246.00	1793		
117.00	9229	181.00	1284	247.00	184		
118.00	550	184.00	185	255.00	50080		
122.00	675	185.00	1470	256.00	7395		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228026-1
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: U0849.D

Sample Date:
Received Date:
Extract Date: 11-MAY-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG228026

Analysis Date: 14-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 15-MAY-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	J	6.9	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		72.5	%					
Fluorene-D10		76.7	%					
Pyrene-D10		90.7	%					

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-u.i\U051418.b\U0849.D
Report Date: 15-May-2018 08:52

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0849.D
Lab Smp Id: WG228026-1 Client Smp ID: WG228026-Blank
Inj Date : 14-MAY-2018 17:12 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG228026-1,SL3807
Misc Info : WG228239,WG228026,WG228239-4,SL3807-1
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 16:11 Cal File: U0847.D
Als bottle: 9 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

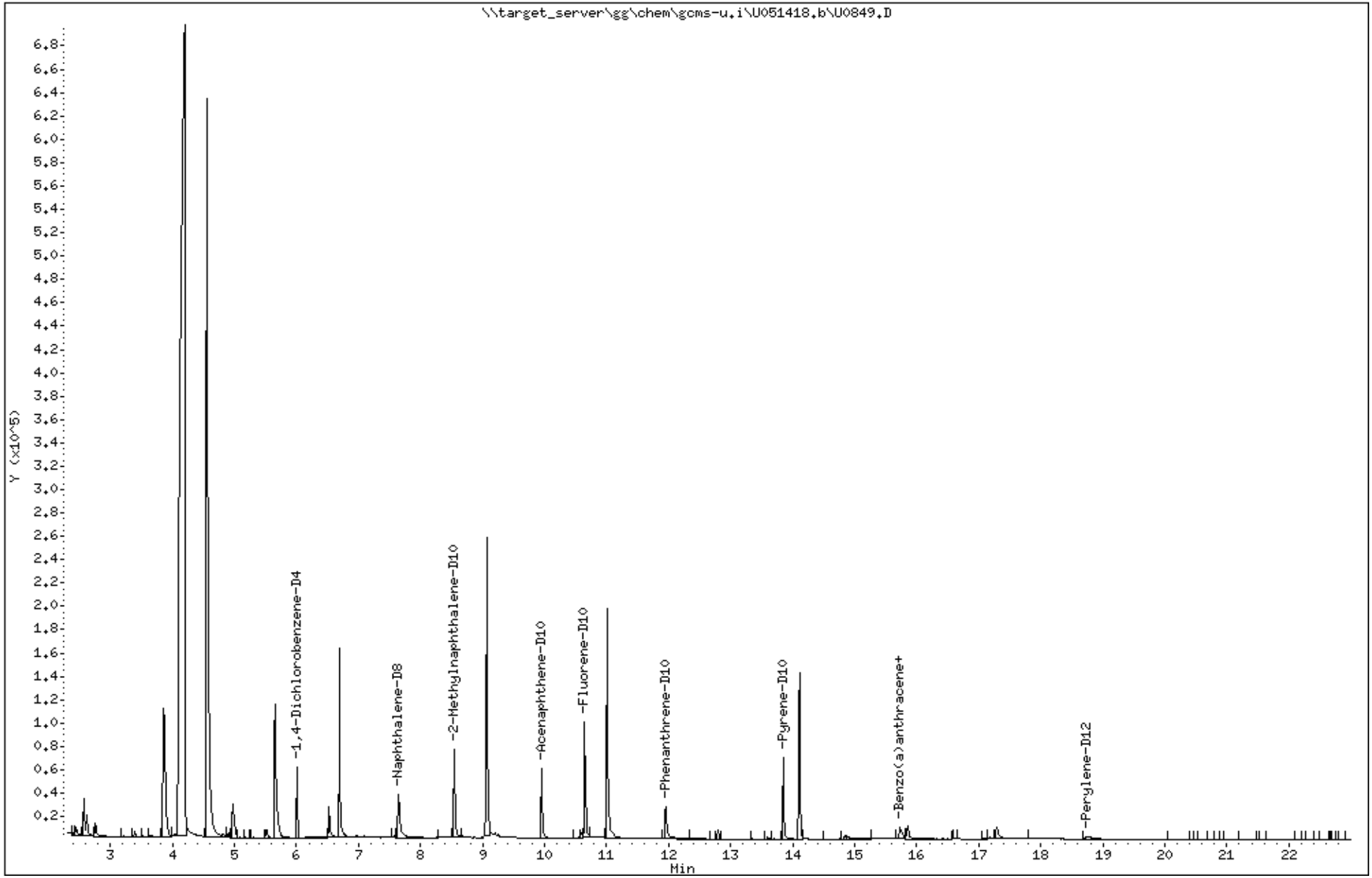
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	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	6.004	6.014	(1.000)	21798	0.80000	(Q)	
*	26 Naphthalene-D8	136	7.646	7.634	(1.000)	80954	0.80000		
$	32 2-Methylnaphthalene-D10	152	8.538	8.538	(0.858)	65116	1.44980	48.3	
*	47 Acenaphthene-D10	164	9.947	9.947	(1.000)	36142	0.80000		
$	55 Fluorene-D10	174	10.646	10.646	(1.070)	56531	1.53349	51.1	
*	65 Phenanthrene-D10	188	11.956	11.944	(1.000)	58303	0.80000		
$	71 Pyrene-D10	212	13.844	13.855	(0.880)	73758	1.81438	60.5	
	74 Benzo(a)anthracene	228	15.725	15.686	(1.000)	638	0.20713	6.90(a)	
*	76 Chrysene-D12	240	15.725	15.706	(1.000)	24858	0.80000		
*	83 Perylene-D12	264	18.743	18.732	(1.000)	12898	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-u.i\U051418.b\U0849.D
Date : 14-MAY-2018 17:12
Client ID: WG228026-Blank
Instrument: gcms-u.i
Sample Info: WG228026-1,SL3807
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000079

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0849.D

Date : 14-MAY-2018 17:12

Client ID: WG228026-Blank

Instrument: gcms-u.i

Sample Info: WG228026-1,SL3807

Volume Injected (uL): 1.0

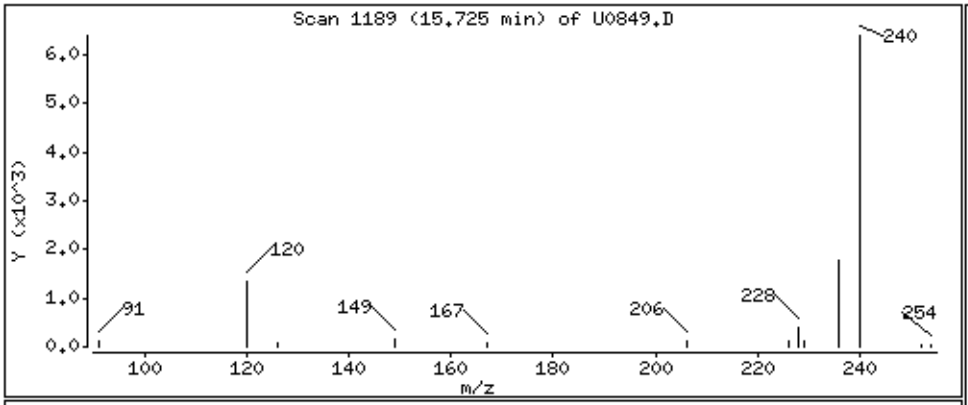
Operator: JCG

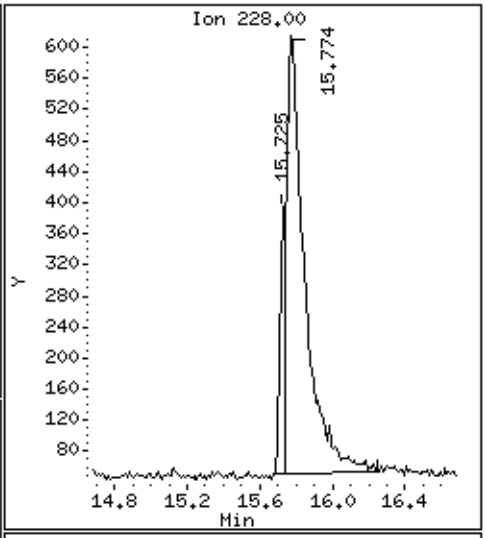
Column phase: ZB5-MS

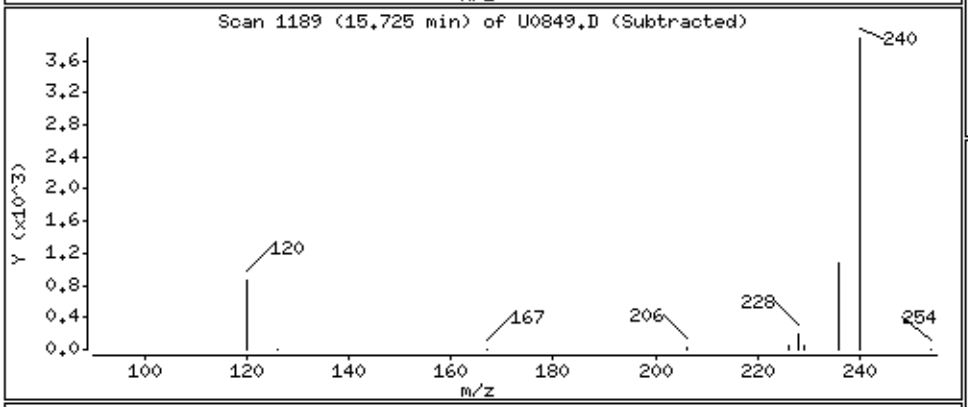
Column diameter: 0.25

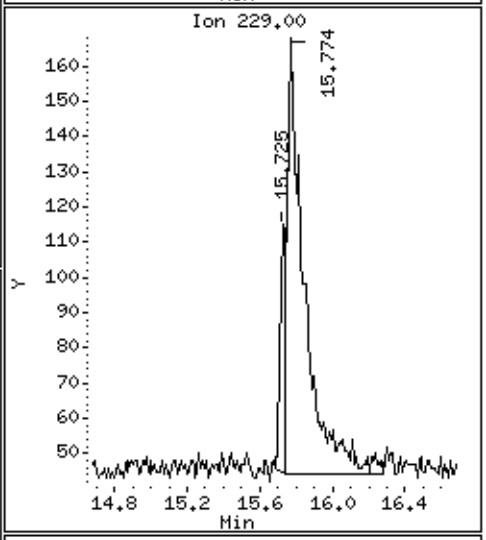
74 Benzo(a)anthracene

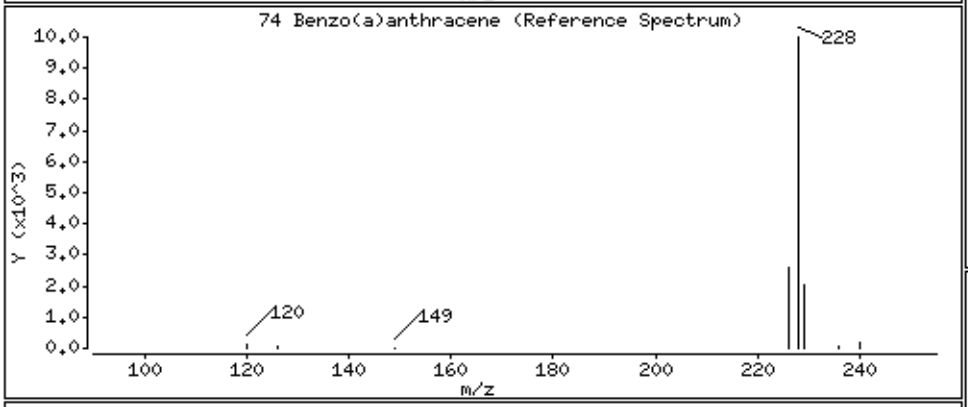
Concentration: 6.90 ug/Kgdrywt

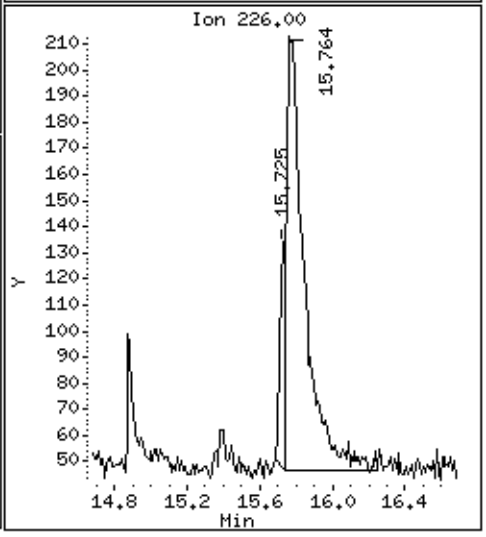


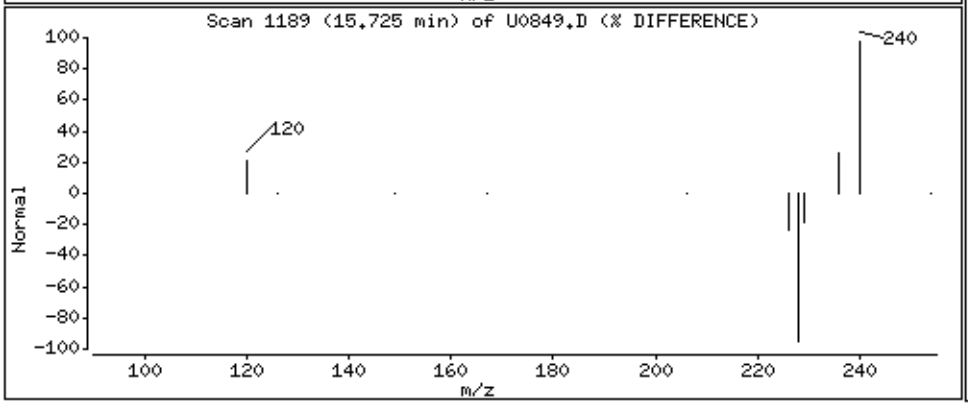












Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228026-2
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: U0850.D

Sample Date:
Received Date:
Extract Date: 11-MAY-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG228026

Analysis Date: 14-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 15-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	80.5	66.7	53.7	ug/Kgdrywt	38-125
2-Methylnaphthalene	76.3	66.7	50.9	ug/Kgdrywt	39-125
Acenaphthylene	76.3	66.7	50.9	ug/Kgdrywt	39-125
Acenaphthene	79.0	66.7	52.7	ug/Kgdrywt	44-125
Fluorene	76.3	66.7	50.9	ug/Kgdrywt	47-125
Phenanthrene	82.8	66.7	55.2	ug/Kgdrywt	49-125
Anthracene	83.2	66.7	55.5	ug/Kgdrywt	50-125
Fluoranthene	87.6	66.7	58.4	ug/Kgdrywt	55-125
Pyrene	85.2	66.7	56.8	ug/Kgdrywt	55-125
Benzo(a)anthracene	92.0	66.7	61.4	ug/Kgdrywt	54-125
Chrysene	91.8	66.7	61.2	ug/Kgdrywt	57-125
Benzo(b)Fluoranthene	82.6	66.7	55.1	ug/Kgdrywt	53-128
Benzo(k)fluoranthene	78.6	66.7	52.4	ug/Kgdrywt	56-125
Benzo(a)pyrene	77.5	66.7	51.7	ug/Kgdrywt	50-125
Indeno(1,2,3-cd)pyrene	85.2	66.7	56.8	ug/Kgdrywt	49-130
Dibenzo(a,h)anthracene	82.3	66.7	54.9	ug/Kgdrywt	50-129
Benzo(g,h,i)perylene	88.6	66.7	59.1	ug/Kgdrywt	49-127
2-Methylnaphthalene-D10	106.				19-125
Fluorene-D10	75.9				20-125
Pyrene-D10	82.4				31-128

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Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0850.D
Report Date: 15-May-2018 08:52

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U051418.b\U0850.D
Lab Smp Id: WG228026-2 Client Smp ID: WG228026-LCS
Inj Date : 14-MAY-2018 17:43 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG228026-2,SL3807
Misc Info : WG228239,WG228026,WG228239-4,SL3807-1
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U051418.b\USPSIM39.m
Meth Date : 15-May-2018 07:48 cgomez Quant Type: ISTD
Cal Date : 14-MAY-2018 16:11 Cal File: U0847.D
Als bottle: 10 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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	6.005	6.014	(1.000)	22344	0.80000	(Q)	
*	26 Naphthalene-D8	136	7.621	7.634	(1.000)	80592	0.80000		
	27 Naphthalene	128	7.646	7.658	(1.003)	129151	1.61157	53.7	
$	32 2-Methylnaphthalene-D10	152	8.526	8.538	(0.857)	92174	2.11346	70.4(R)	
	33 2-Methylnaphthalene	115	8.576	8.574	(1.125)	30070	1.52648	50.9(Q)	
	45 Acenaphthylene	152	9.749	9.761	(0.980)	107823	1.52595	50.9	
*	47 Acenaphthene-D10	164	9.946	9.947	(1.000)	35095	0.80000		
	48 Acenaphthene	153	9.978	9.991	(1.003)	70441	1.58240	52.7	
$	55 Fluorene-D10	174	10.645	10.646	(1.070)	54329	1.51773	50.6	
	56 Fluorene	166	10.673	10.688	(1.073)	79157	1.52835	50.9	
*	65 Phenanthrene-D10	188	11.931	11.944	(1.000)	53823	0.80000		
	66 Phenanthrene	178	11.966	11.968	(1.003)	108332	1.65526	55.2	
	67 Anthracene	178	12.036	12.037	(1.009)	112966	1.66547	55.5	
	70 Fluoranthene	202	13.574	13.584	(1.138)	108201	1.75244	58.4	
$	71 Pyrene-D10	212	13.845	13.855	(0.882)	71610	1.64702	54.9	
	72 Pyrene	202	13.865	13.875	(0.883)	108916	1.70493	56.8	
	74 Benzo(a)anthracene	228	15.677	15.686	(0.999)	54219	1.84340	61.4	
*	76 Chrysene-D12	240	15.696	15.706	(1.000)	26182	0.80000		
	77 Chrysene	228	15.745	15.755	(1.003)	77930	1.83511	61.2	
	80 Benzo(b)fluoranthene	252	17.865	17.877	(0.954)	34271	1.65282	55.1	

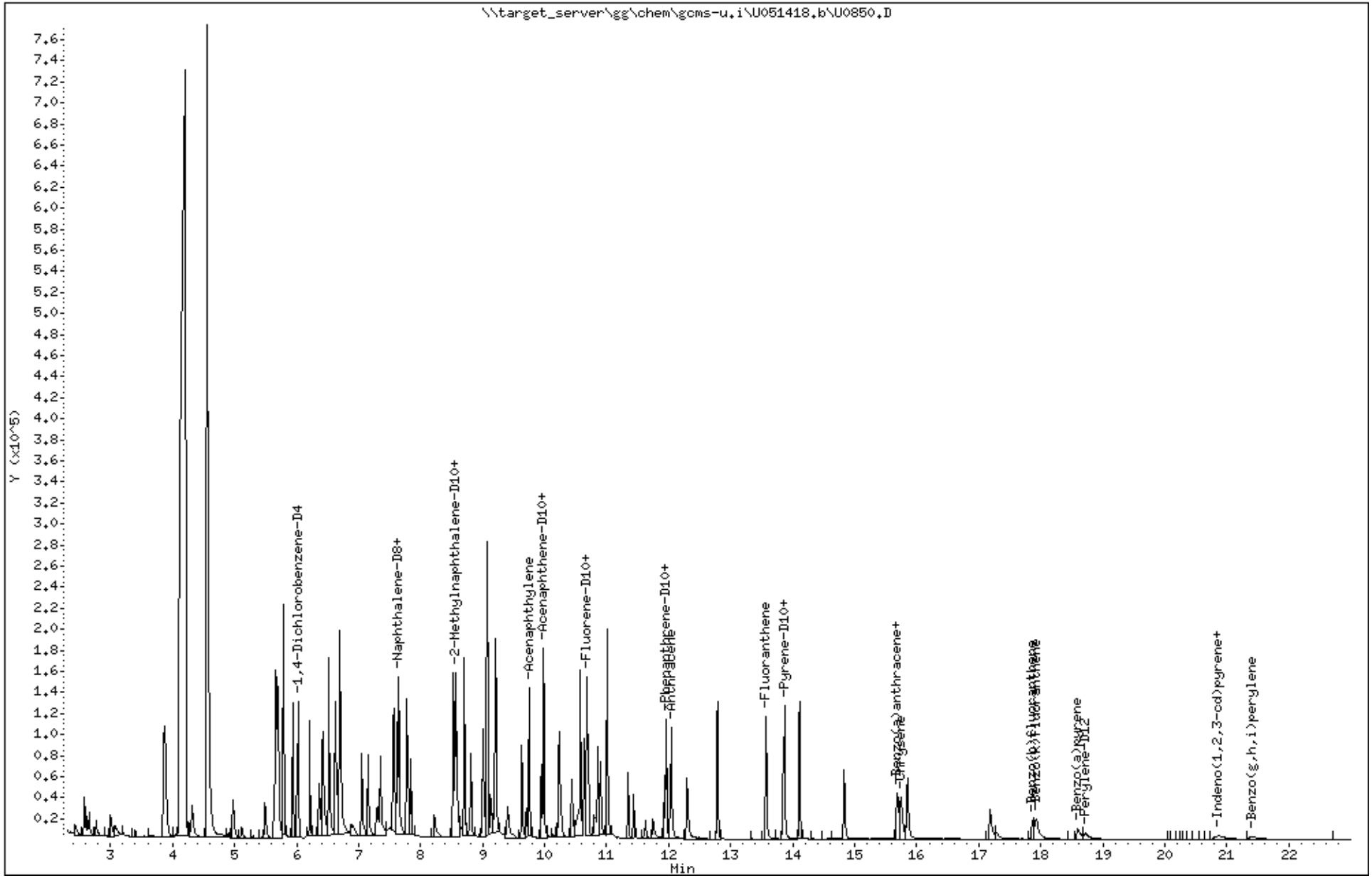
Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0850.D
Report Date: 15-May-2018 08:52

	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	17.921	17.934	(0.957)	60575	1.57284	52.4(H)	
	82 Benzo(a)pyrene	252	18.593	18.595	(0.993)	36017	1.55047	51.7	
*	83 Perylene-D12	264	18.719	18.732	(1.000)	16219	0.80000		
	84 Indeno(1,2,3-cd)pyrene	276	20.816	20.818	(1.112)	22606	1.70525	56.8	
	85 Dibenzo(a,h)anthracene	278	20.883	20.884	(1.116)	14768	1.64729	54.9	
	86 Benzo(g,h,i)perylene	276	21.399	21.400	(1.143)	25201	1.77280	59.1	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-u.i\U051418.b\U0850.D
Date : 14-MAY-2018 17:43
Client ID: WG228026-LCS
Instrument: gcms-u.i
Sample Info: WG228026-2,SL3807
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000084

Logbooks and Supporting Documents

SIM-SON

KATAHDIN ANALYTICAL SERVICES, LLC

ORGANIC EXTRACTIONS LOG - SOIL SEMIVOLATILE

Extraction Method:	SW846 3550: X	SW846 3540:	SW846 3545:	SW846 3546:	SW846 3580:
Analytical Method:	SW846 8270:	OTHER:			
Standards	Surrogate ID (1): SV2849		Spike ID (1): SV2846	Spike ID (3): —	
	Surrogate ID (2): —		Spike ID (2): —	—	
Solvents / Chemicals / Consumables	Solvent Lot # (MeCl2): D7742		Solvent Lot # (Acetone): D7350	Sodium Sulfate (granular) Lot #: 27968001	
	Filter Paper Lot # (SON): 16730660		Filter Paper Lot # (KD): 14081047	Sodium Sulfate (powder) Lot #: 27977004	
Misc.	Nitrogen Bath Temperature: 36°	Sonicator Horns Tuned: 40%	Balance ID: METTLER PJ400	Vial Lot ID: 393233	
Prep Start Time: 10:00	Prep Stop Time: 12:20	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 WAI	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
05-11-18	DP	WG328026-1	30.00	1.00	NR		X	05-11-18	KF	5.00	05-14-18	KF	1.00	D9	B473192
L	L	J -2	30.02	L	1.00		L	L	L	L	L	L	L	D10	
															DP 05-11-18

EX-008 – Revision 3 – 01/25/2016

QAEX351

0000034

Ext. Date	Ext. Init.	Sample ID	Initial Weight (g)	Surr. Vol. (mL)	Spk. Vol. (mL)	Fraction SCAN	Fraction WAI	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
05-11-18	DP	SL3807-1E	30.47	1.00	NR		X	05-11-18	KF	5.00	05-14-18	KF	1.00	E1	
		J -2E	31.49											2	
		SL3809-55A	32.06											3	
		-56A	34.12											4	
		-57A	31.07											5	
		-58A	31.91											6	
		-59A	31.09											7	
		-60A	30.38											8	
		-61A	30.03											9	
		-62A	31.88											E10	
		-63A	30.50											SV307 A1	
		-64A	31.21											A2	
		-65A	30.82											A3	
															DP 05-11-18

Reviewed By_____ Date_____

EX-008 – Revision 3 – 01/25/2016

QAEX351

0000035

Katahdin Analytical Services
GPC03 Logbook

Analytical Method: (check one)	SW846 8081 ✓	SW846 8082 ✓		SW846 8270 ✓	
MeCl2 Lot #: DT742	Filter Lot #: –	Room Temperature (beginning):	21.8	Room Temperature (ending):	20.7
Flow Rate: 5.0 mL/min	Flow Rate Set at: 5.44 mL/min	GPC Dump Time:	45 min	GPC Collect Time:	–
Time to fill 50 mL: 9.1 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	Dry Run	–	–	KF	5-11-18	5mL	✓	✓	
2	GPC Calib STD 7763	–	–	↓	↓	↓	✓	✓	
3	conc # 32041								
4	lot # A0124918								
5	0.5 mL → 10mL in								
6	MeCh lot # DT742								
7					KF	5-11-18			
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

Katahdin Analytical Services
GPC03 Logbook

Tray Pos. No.
23
24
25
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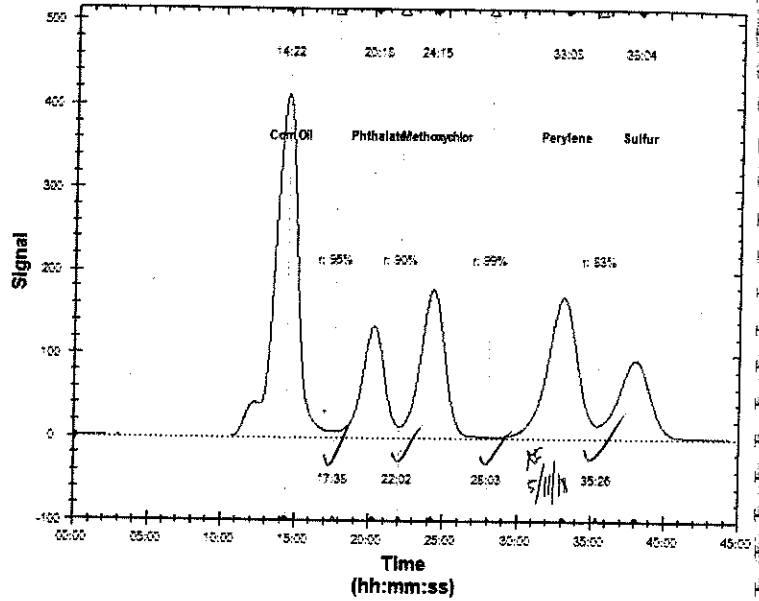
CALIBRATION REPORT

Sequence: CALIB051118.seq, Sample: [2] - [DT1]



TEMPLATE NAME : CO775_with_CO776_Guard

PEAK	SAMPLE	RET. TIME	SIGNAL
1	Corn Oil	14:22	413
2	Phthalate	20:18	133
3	Methoxychlor	24:15	178
4	Perylene	33:08	169
5	Sulfur	38:04	94

VALLEY	PEAKS	RES.	LIMIT	P/F
1	Corn Oil/Phthalate	95	0	P
2	Phthalate/Methoxychlor	90	0	P
3	Methoxychlor/Perylene	99	0	P
4	Perylene/Sulfur	83	0	P

P/P Dump: 22.02
collect: 13.24

S/S Dump: 17.38
collect: 22.62

Katahdin Analytical Services 2000087

Katahdin Analytical Services
GPC03 Logbook

Analytical Method: (check one)	SW846 8081	SW846 8082		SW846 8270 ✓	
MeCl2 Lot #: DT742	Filter Lot #: 104071172025	Room Temperature (beginning):	21.0	Room Temperature (ending):	20.5
Flow Rate: 5.0 mL/min	Flow Rate Set at: 5.44 mL/min	GPC Dump Time:	SS 17.38	GPC Collect Time:	SS 22.62
Time to fill 50 mL: 9.11 min	Column Pressure: 7				

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	5-11-18	5mL	✓		Expected: 112mL Actual: 110mL
2	WG228026-1	5-11-18	5mL						SDN
3	↓ -2								↓
4	WG228025-1								SOX
5	↓ -2								↓
6	SL4004-1								
7	SL4035-1								SDN
8	SL ~~3~~ 3807-1								
9	↓ -2								
10	SL3809-55								
11	-56								
12	-57								
13	-58								
14	-59								
15	-60								
16	-61								
17	-62								
18	-63								
19	-64								
20	-65	↓	↓						
21	Dry Rm	–	–						
22	Dry Rm	–	–	↓	↓	↓			

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									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									Exp 05-14-18
45									

Katahdin Analytical Services 2000088

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5973-U

DATE OF DFTPP INJECTION: 051418

JOB	SAMPLE	DATAFILE	DF	VIAL #	METHOD	UL INJ	CHEMIST	COMMENTS
WG228239-1	50 ng DFTPP	UD898	1	1	DFTPPSIM	2.0	JLK	OK
	SSTD 2.0 UD514	UDK47		2	USPSIM39			✓
	0.2	43		3				✓ Part only
	0.5	44		4				✓
	1.0	45		5				✓
	10.	46		6				✓
	15.	47		7				✓
	MD	48		8				OK
WG228626-1	~~SL38U9-26~~	49		9				OK
↓ -2	~~-30~~	50		10				SSI ↑
SL38U8-1	~~-31~~ JLK	51		11				OK
↓ -2	~~-32~~	52		12				OK
	SL38U9 -33	53		13				OK
	-34	54		14				OK
	-35	55		15				OK
	-36	56		16				OK
	-37	57		17				OK
	-38	58		18				OK
	-39	59		19				OK
	-40	60		20				OK
	-52	61		21				OK
	-53	62		22				OK
-9	SSTD 2.0 UD514	63		23				~~X~~ not run
-10	↓	64		↓				↓
-11		65	↓		↓	↓	↓	

STANDARD	CODE
DFTPP	53064
CAL. STD.	53067 53071
ICV. STD.	53095
IS MIX	53092

REVIEWED AND APPROVED BY: _____
DATE: _____

Katahdin Analytical Services 2000089

EXPLOSIVES 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:** SL3807

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-BKRD-SS07	SL3807-1	B	91.7	
CHAAP-BKRD-SB07	SL3807-2	B	95.2	
Method Blank Sample	WG227928-1	B	97.4	
Laboratory Control S	WG227928-2	B	105.	

		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.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin
ANALYTICAL SERVICES

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10318.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL3807
Lab Sample ID : WG227928-1
Date Extracted : 09-MAY-18
Date Analyzed : 11-MAY-18
Time Analyzed : 02:44

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	WG227928-2	HLE10319.	05/11/18	03:15
CHAAP-BKRD-SS07	SL3807-1	HLE10342.	05/11/18	18:11
CHAAP-BKRD-SB07	SL3807-2	HLE10343.	05/11/18	18:42

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL3807
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		
Continuing Calibrati	WG227995-4	05/10/18	23:07	8.522	
Method Blank Sample	WG227928-1	05/11/18	02:44	8.525	
Laboratory Control S	WG227928-2	05/11/18	03:15	8.529	
Continuing Calibrati	WG227995-5	05/11/18	04:48	8.521	
Continuing Calibrati	WG227995-6	05/11/18	13:15	8.381	
CHAAP-BKRD-SS07	SL3807-1	05/11/18	18:11	8.425	
CHAAP-BKRD-SB07	SL3807-2	05/11/18	18:42	8.424	
Continuing Calibrati	WG227995-7	05/11/18	19:13	8.398	

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

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-1
Client ID: CHAAP-BKRD-SS07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: HLE10342.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG227928

Analysis Date: 11-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 76.
Report Date: 18-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	62	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	8.2	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	990	150	490
PETN	U	490	ug/Kgdrywt	1	800	990	130	490
1,2-Dinitrobenzene		91.7	%					

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Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10342.D
Report Date: 18-May-2018 05:02

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10342.D
Lab Smp Id: SL3807-1 Client Smp ID: CHAAP-BKRD-SS07
Inj Date : 11-MAY-2018 18:11
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3807-1
Misc Info : WG227995,WG227928,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\EXPB05A.m
Meth Date : 16-May-2018 07:37 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 61
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	0.01060	Weight of Sample (Kg)
M	23.476	% Moisture
Cpnd Variable		Local Compound Variable

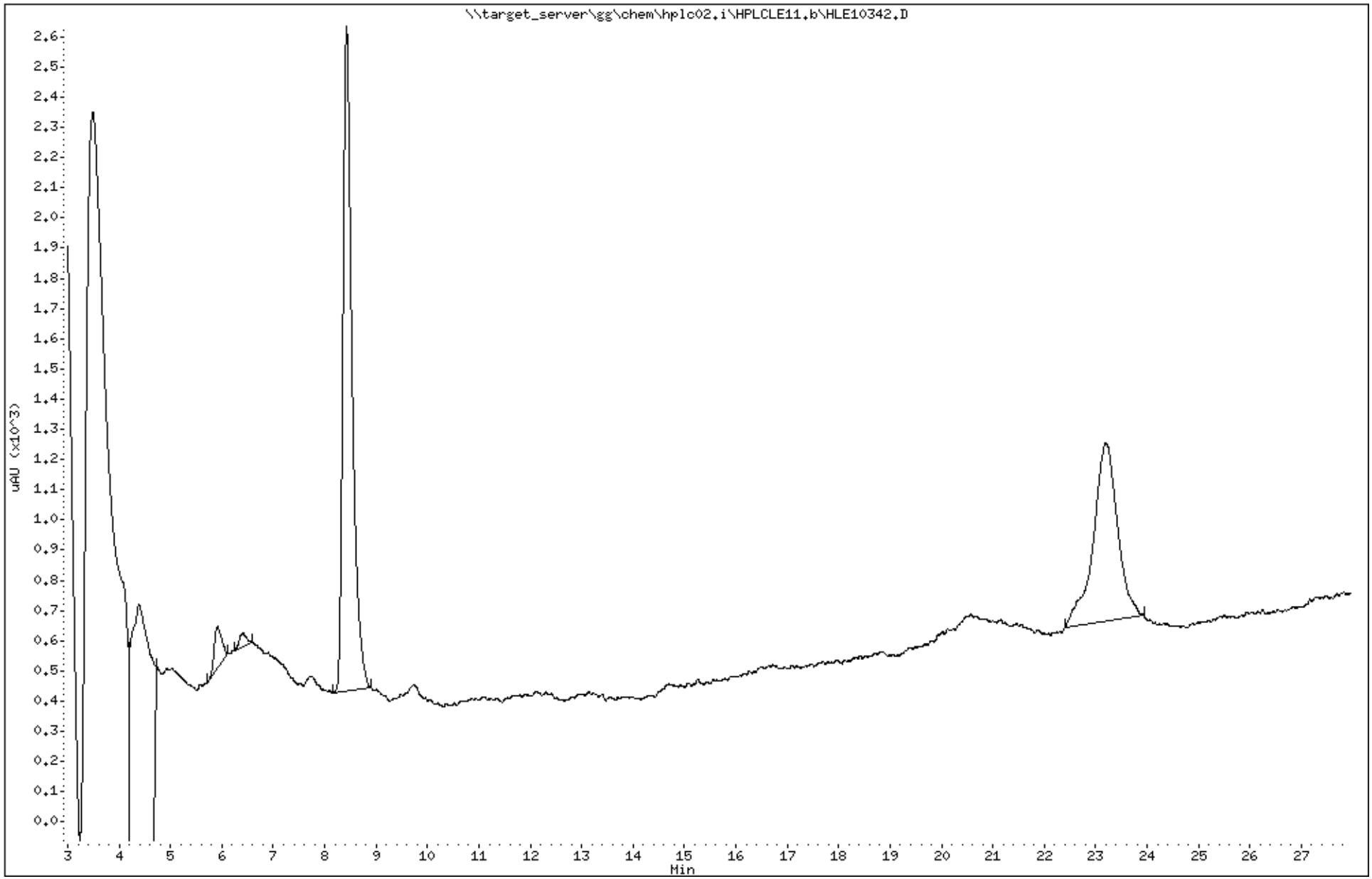
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10342.D
Date : 11-MAY-2018 18:11
Client ID: CHAAP-BKRD-SS07
Sample Info: SL3807-1

Instrument: hplc02.i

Operator: AAB
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 3000011

Data File: HLE10342.D
Report Date: 18-May-2018 05:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HPLCLE11.b\HLE10342.D
Lab Smp Id: SL3807-1 Client Smp ID: CHAAP-BKRD-SS07
Inj Date : 11-MAY-2018 18:11
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3807-1
Misc Info : WG227995,WG227928,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\EXPB05A.m\EXPB05A.m
Meth Date : 16-May-2018 06:47 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 61
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

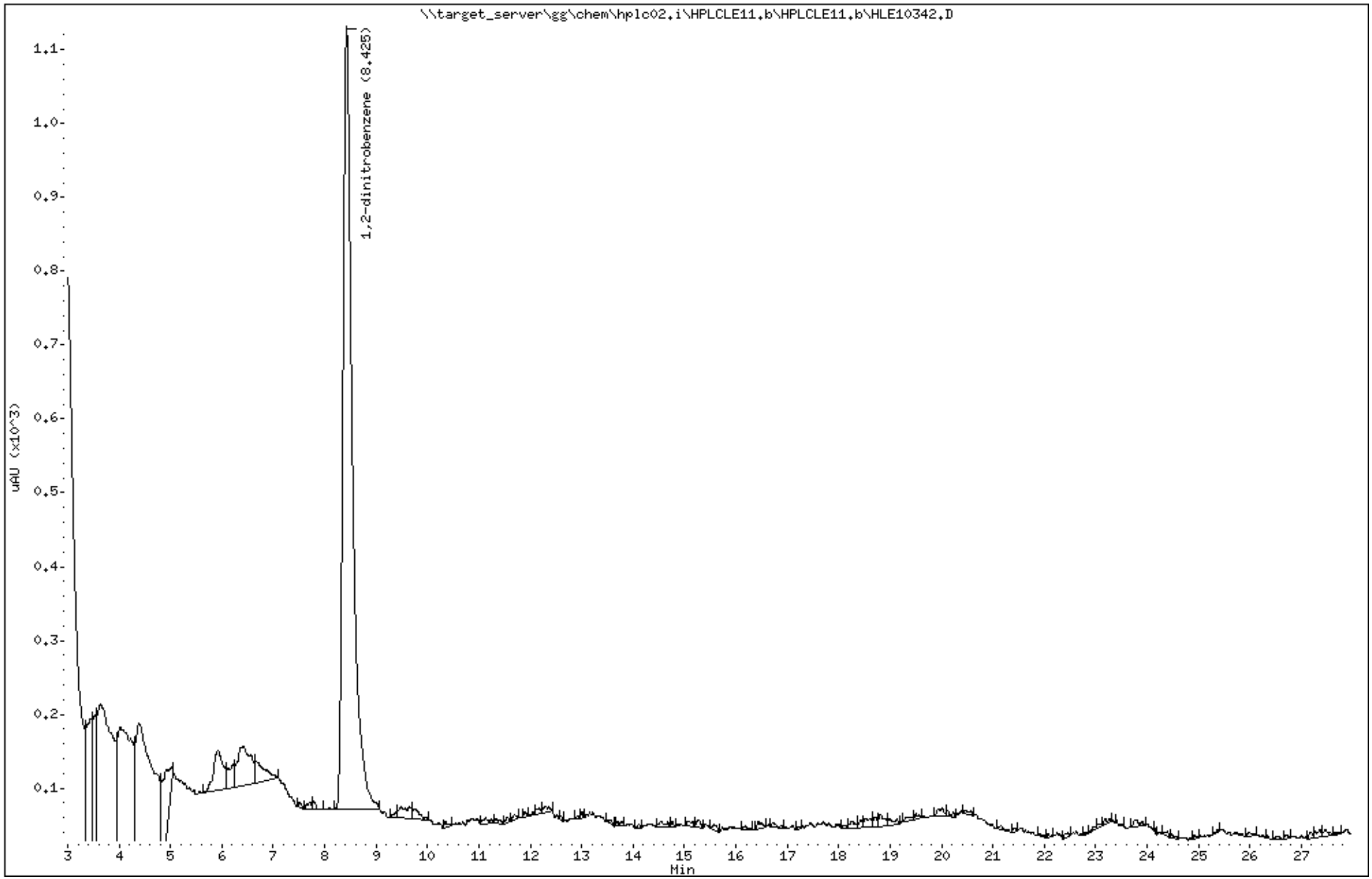
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01060	Weight of Sample (Kg)
M	23.476	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.425	8.381	0.044	1061	0.22929	565	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HPLCLE11.b\HLE10342.D
Date : 11-MAY-2018 18:11
Client ID: CHAAP-BKRD-SS07
Sample Info: SL3807-1

Instrument: hplc02.i

Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000013

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3807-2
Client ID: CHAAP-BKRD-SB07
Project: Cornhusker Army Ammunition Plant
SDG: SL3807
Lab File ID: HLE10343.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG227928

Analysis Date: 11-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 82.
Report Date: 18-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	52	ug/Kgdrywt	1	100	100	9.0	52.
RDX	U	52	ug/Kgdrywt	1	100	100	7.1	52.
1,3,5-Trinitrobenzene	U	52	ug/Kgdrywt	1	100	100	7.0	52.
1,3-Dinitrobenzene	U	52	ug/Kgdrywt	1	100	100	6.5	52.
Tetryl	U	52	ug/Kgdrywt	1	100	100	5.6	52.
Nitrobenzene	U	52	ug/Kgdrywt	1	100	100	23.	52.
2,4,6-Trinitrotoluene	U	52	ug/Kgdrywt	1	100	100	7.0	52.
2-Am-DNT	U	52	ug/Kgdrywt	1	100	100	22.	52.
4-Am-DNT	U	52	ug/Kgdrywt	1	100	100	18.	52.
2,6-Dinitrotoluene	U	52	ug/Kgdrywt	1	100	100	28.	52.
2,4-Dinitrotoluene	U	52	ug/Kgdrywt	1	100	100	16.	52.
2-Nitrotoluene	U	52	ug/Kgdrywt	1	100	100	12.	52.
3-Nitrotoluene	U	52	ug/Kgdrywt	1	100	100	8.3	52.
4-Nitrotoluene	U	52	ug/Kgdrywt	1	100	100	28.	52.
Nitroglycerin	U	420	ug/Kgdrywt	1	800	840	130	420
PETN	U	420	ug/Kgdrywt	1	800	840	110	420
1,2-Dinitrobenzene		95.2	%					

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\hplc02.i\HPLCLE11.b\HLE10343.D
Report Date: 18-May-2018 05:03

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10343.D
Lab Smp Id: SL3807-2 Client Smp ID: CHAAP-BKRD-SB07
Inj Date : 11-MAY-2018 18:42
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3807-2
Misc Info : WG227995,WG227928,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\EXPB05A.m
Meth Date : 16-May-2018 07:37 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 62
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	0.01170	Weight of Sample (Kg)
M	18.378	% Moisture
Cpnd Variable		Local Compound Variable

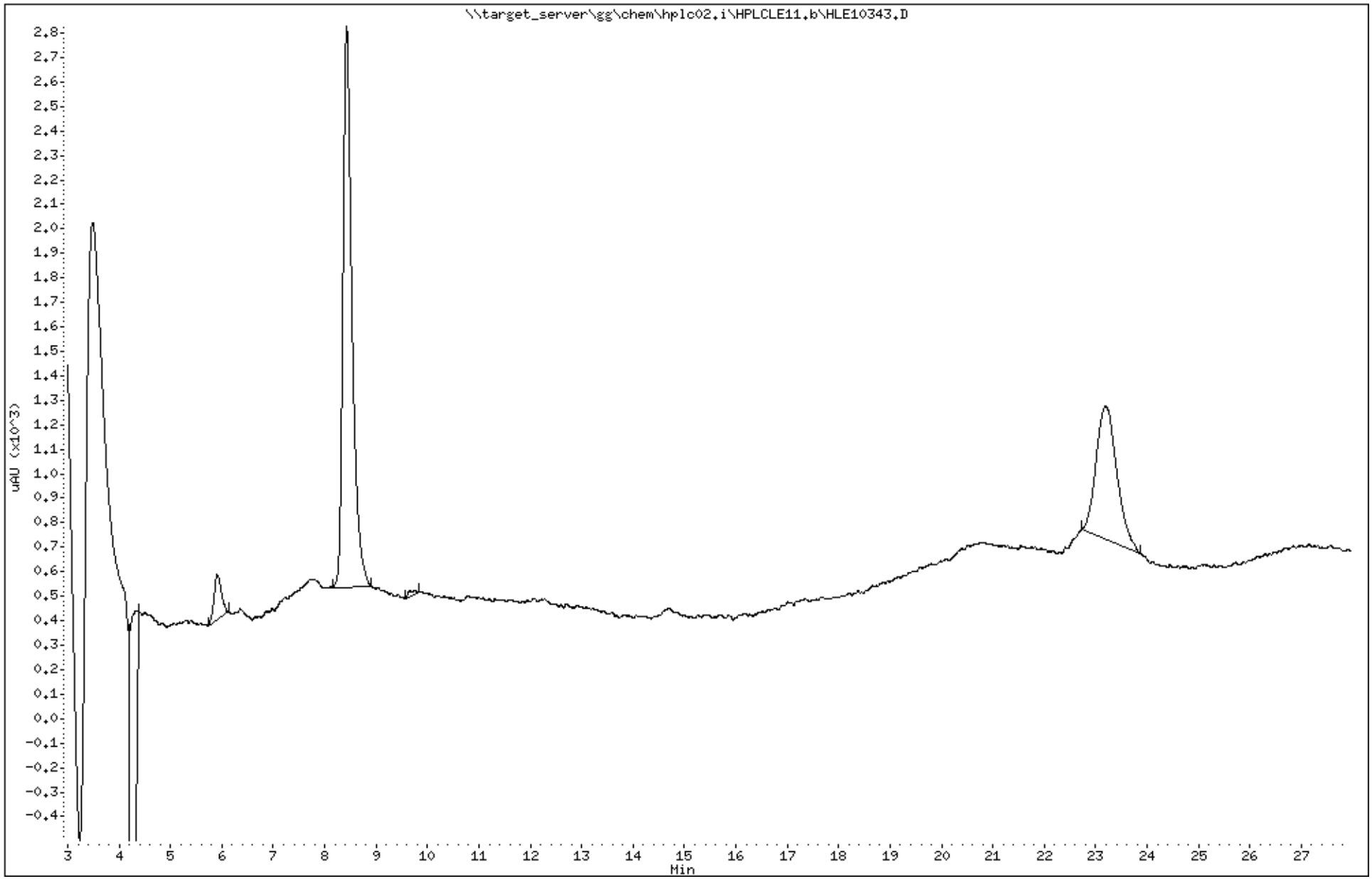
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10343.D
Date : 11-MAY-2018 18:42
Client ID: CHAAP-BKRD-SB07
Sample Info: SL3807-2

Instrument: hplc02.i

Operator: AAB
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 3000016

Data File: HLE10343.D
Report Date: 18-May-2018 05:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HPLCLE11.b\HLE10343.D
Lab Smp Id: SL3807-2 Client Smp ID: CHAAP-BKRD-SB07
Inj Date : 11-MAY-2018 18:42
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3807-2
Misc Info : WG227995,WG227928,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\EXPB05A.m\EXPB05A.m
Meth Date : 16-May-2018 06:47 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 62
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

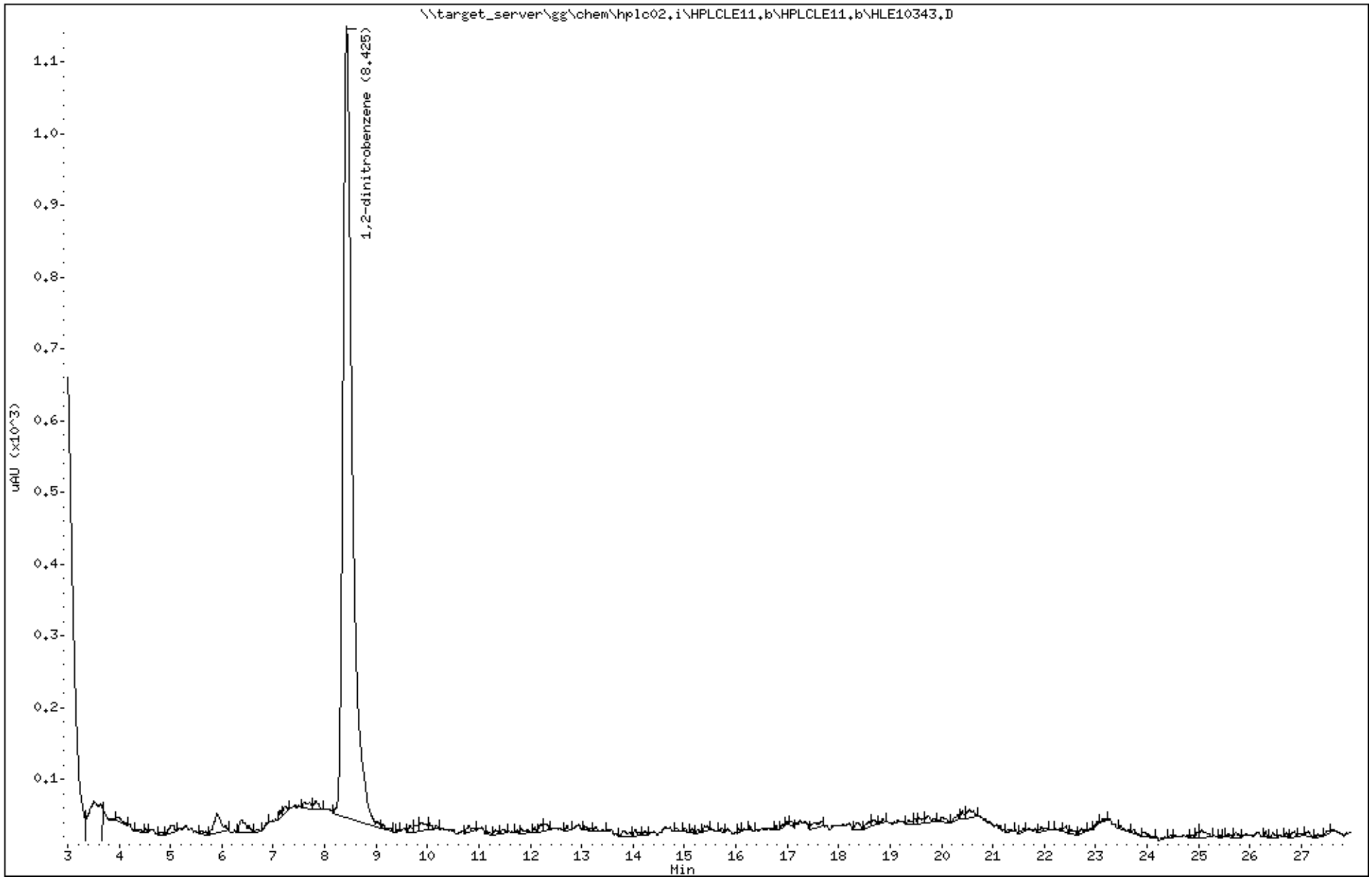
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01170	Weight of Sample (Kg)
M	18.378	% Moisture
Cpnd Variable		Local Compound Variable

						CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	
Compounds	RT	EXP RT	DLT RT	RESPONSE				REVIEW CODE
$ 2 1,2-dinitrobenzene	8.424	8.381	0.043	1103		0.23836	499	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HPLCLE11.b\HLE10343.D
Date : 11-MAY-2018 18:42
Client ID: CHAAP-BKRD-SB07
Sample Info: SL3807-2

Instrument: hplc02.i

Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000018

Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
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

	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

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

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

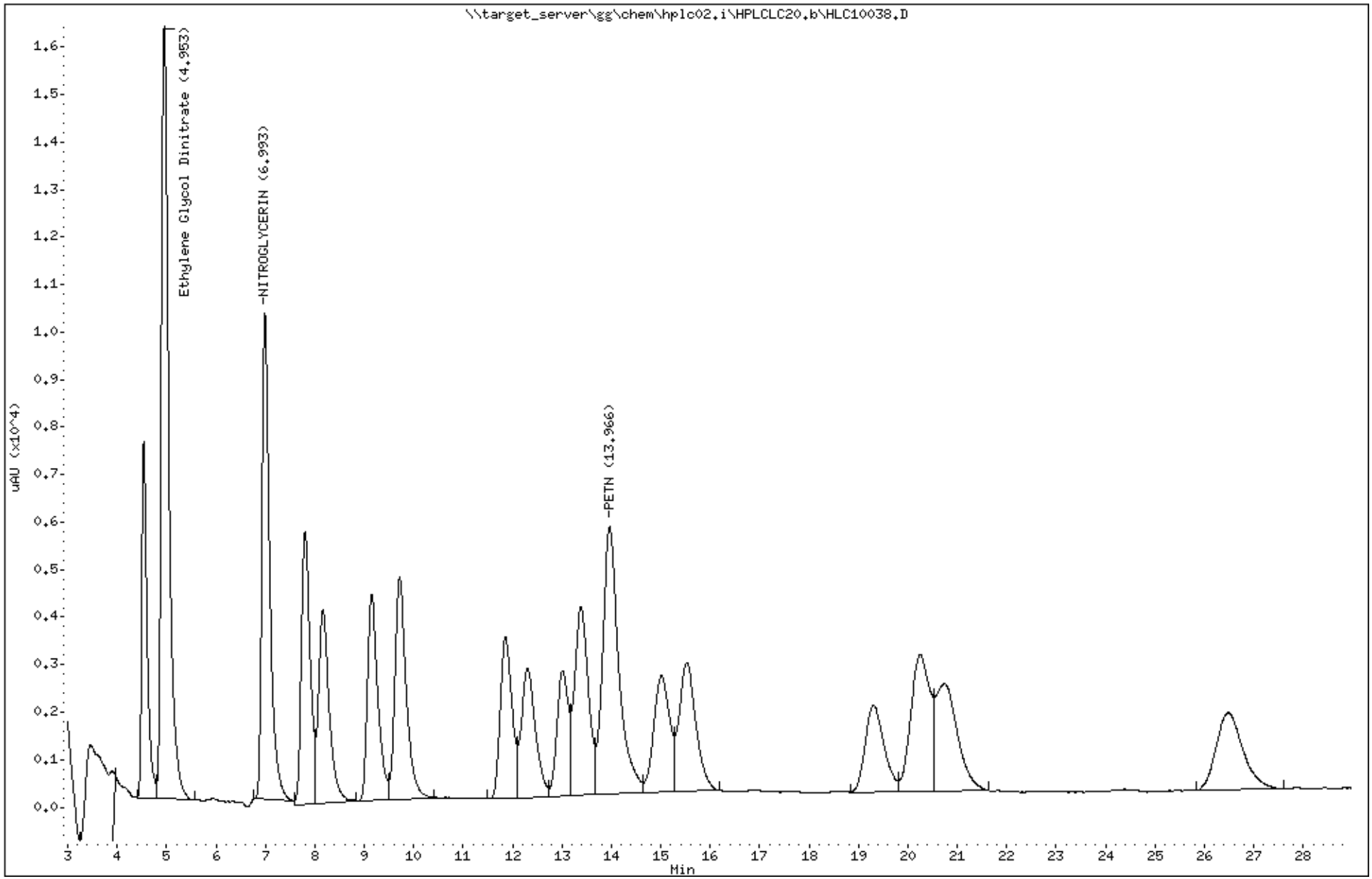
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	
8	NITROGLYCERIN	6.992	6.997	-0.005	10220	1.85373	18.5(M)	M2
18	PETN	13.966	13.963	0.003	5624	1.95560	19.6	
3	Ethylene Glycol Dinitrate	4.952	4.957	-0.005	16261	1.94680	19.5	

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 3000023

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10031.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

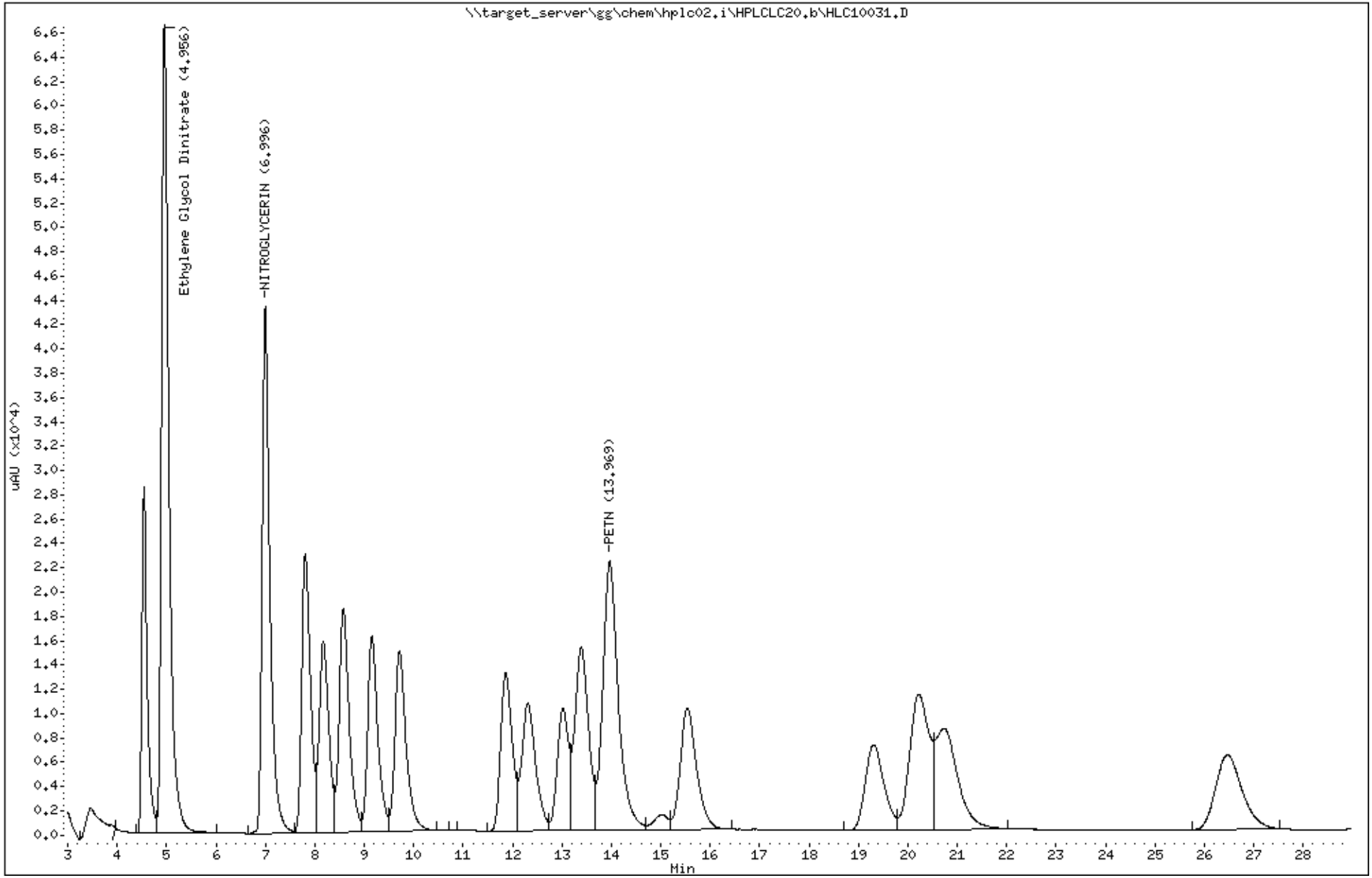
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10031.D
Lab Smp Id: WG225143-7
Inj Date : 20-MAR-2018 14:54
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-7
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin 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 3000025

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

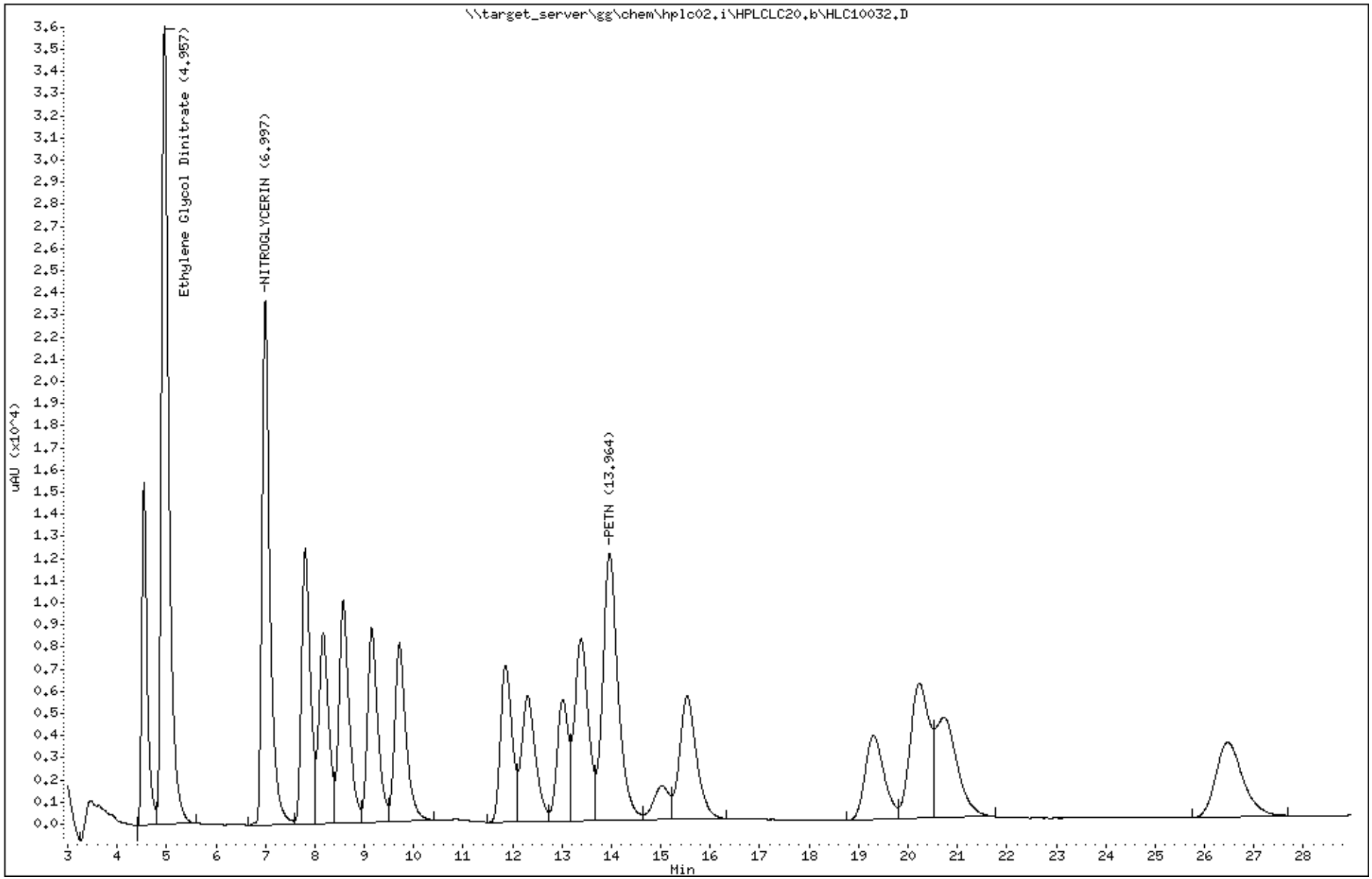
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.997	6.997	0.000	23668	4.00000	4.27	
18 PETN	13.963	13.963	0.000	12041	4.00000	4.43	
3 Ethylene Glycol Dinitrate	4.957	4.957	0.000	36056	4.00000	2.84(M)	M2

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 3000027

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

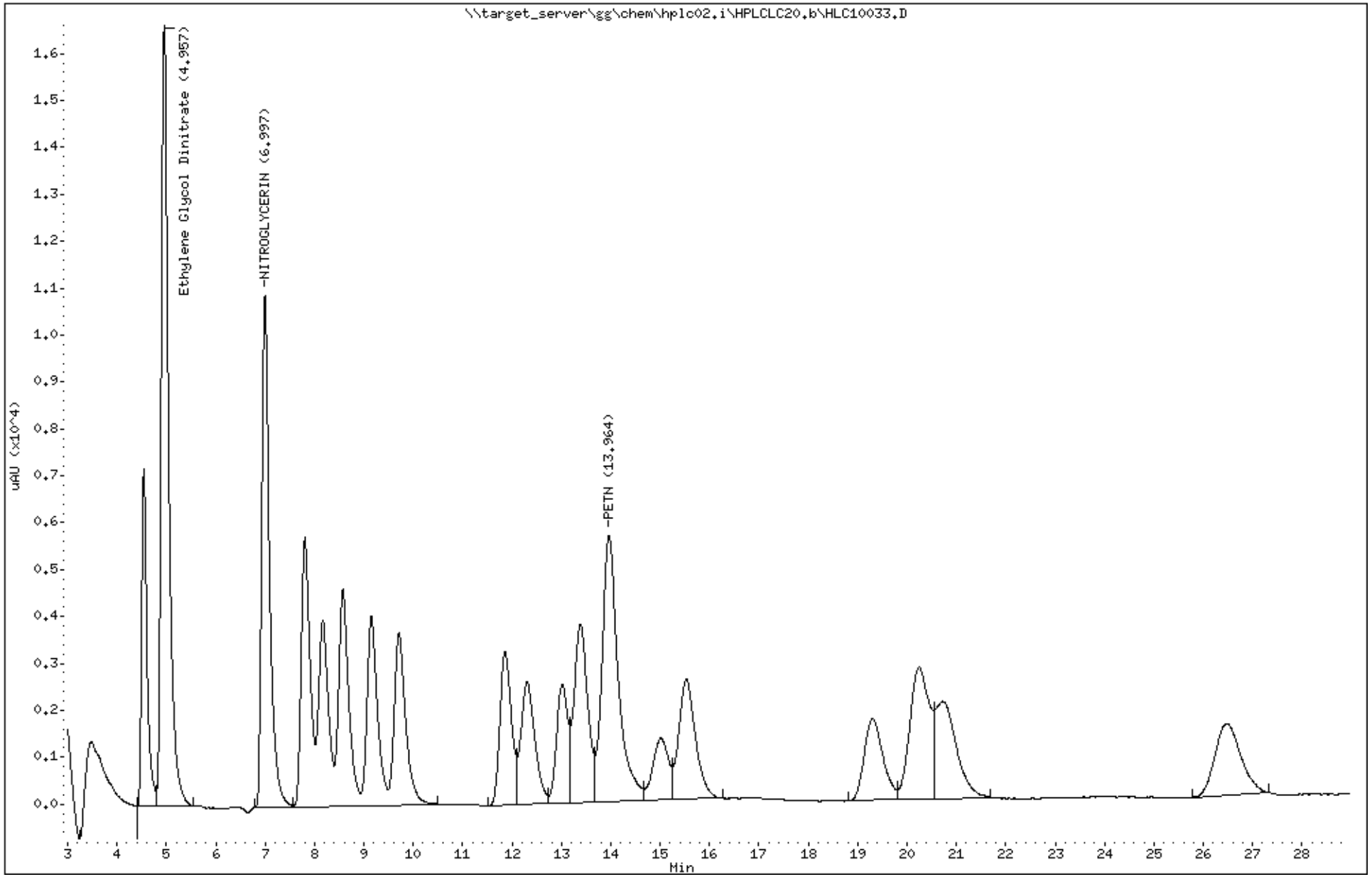
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.997	6.997	0.000	10907	2.00000	2.00(aM)	M2
18 PETN	13.963	13.963	0.000	5668	2.00000	2.00(a)	
3 Ethylene Glycol Dinitrate	4.957	4.957	0.000	16637	2.00000	2.00(aM)	

AB
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 3000029

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

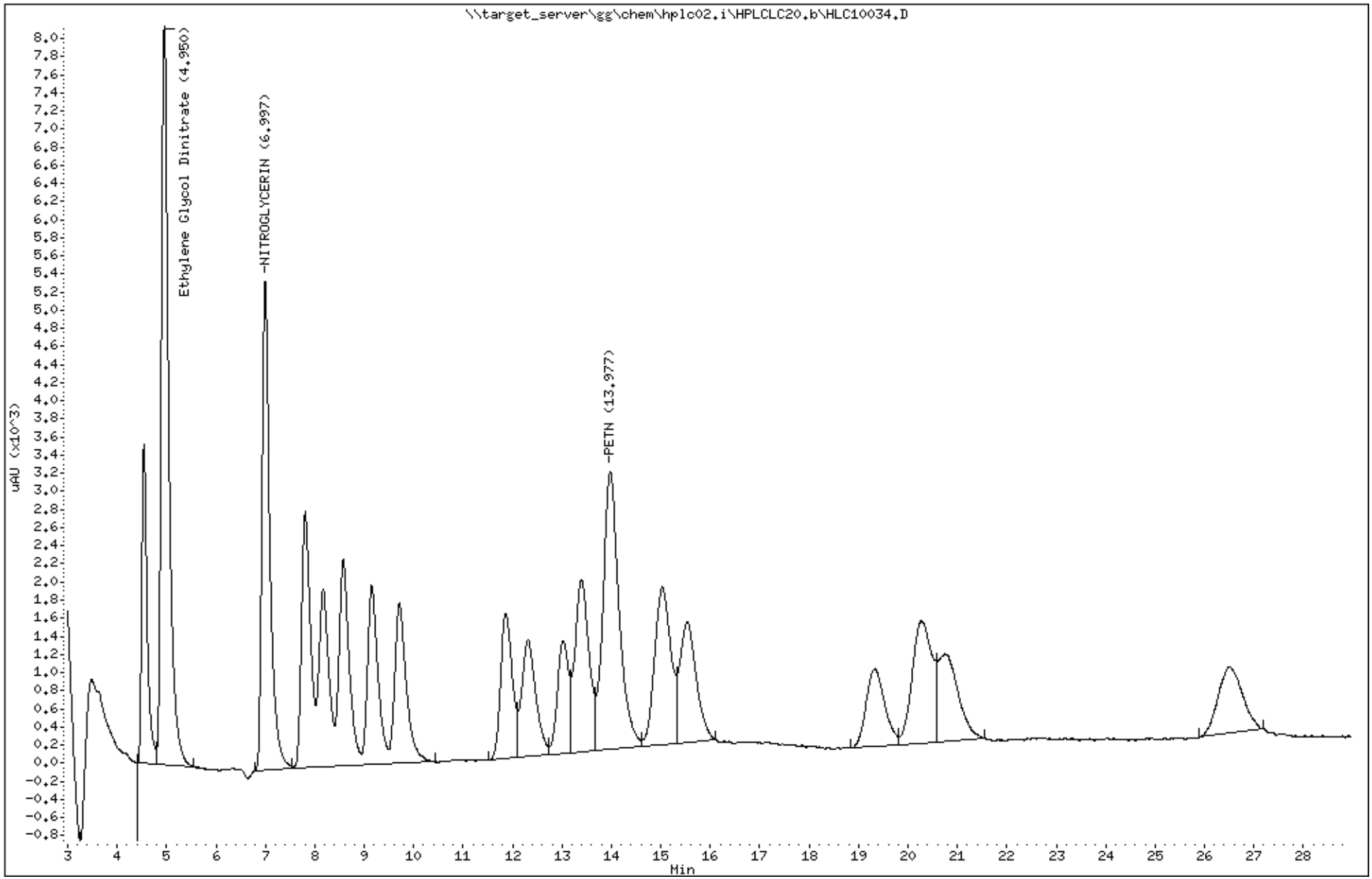
						AMOUNTS		
						CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE		(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.997	6.997	0.000	5392	1.00000	0.974(aM)	M2
18	PETN	13.977	13.963	0.014	3064	1.00000	1.13(a)	
3	Ethylene Glycol Dinitrate	4.950	4.957	-0.007	8157	1.00000	0.705(aM)	

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 3000031

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

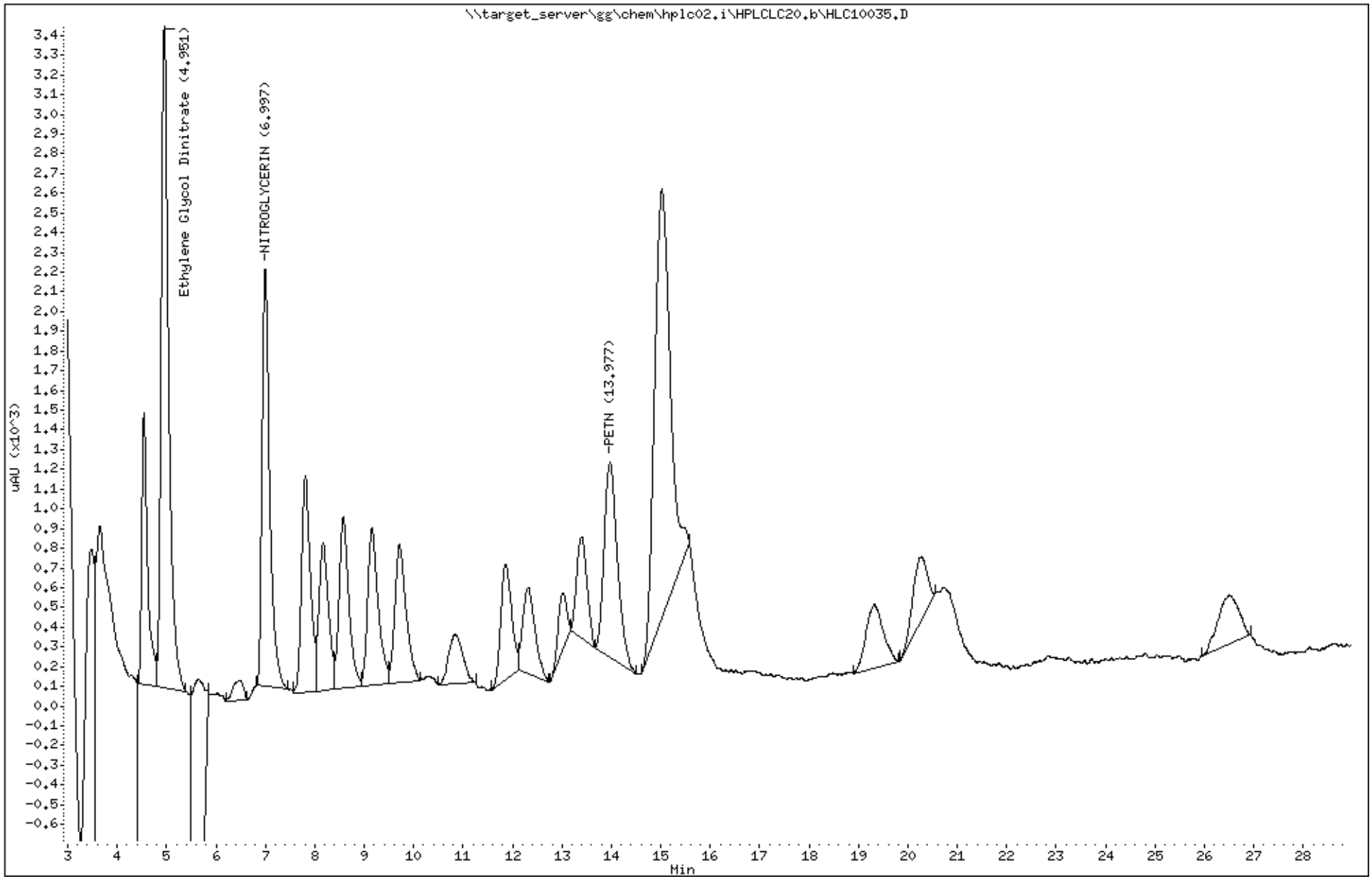
						AMOUNTS		
						CAL-AMT	ON-COL	
	Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.997	6.997	0.000	2112	0.40000	0.383(aM)	M2
18	PETN	13.977	13.963	0.014	986	0.40000	0.363(a)	
3	Ethylene Glycol Dinitrate	4.950	4.957	-0.007	3354	0.40000	0.402(aM)	

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 3000033

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

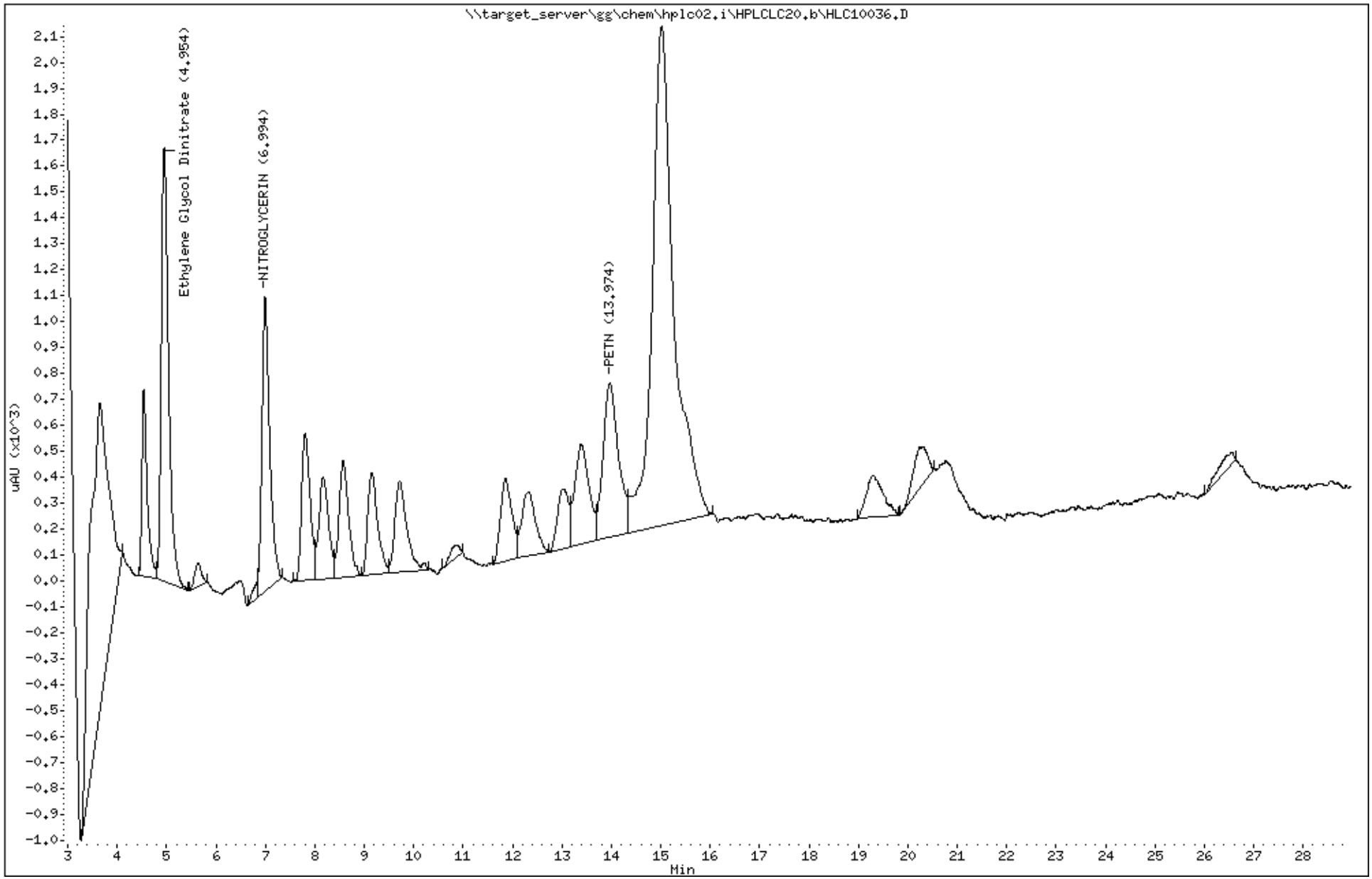
						AMOUNTS		
						CAL-AMT	ON-COL	
	Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.994	6.997	-0.003	1137	0.20000	0.206(aM)	M2
18	PETN	13.974	13.963	0.011	594	0.20000	0.218(a)	
3	Ethylene Glycol Dinitrate	4.954	4.957	-0.003	1670	0.20000	0.200(a)	

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 3000035

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

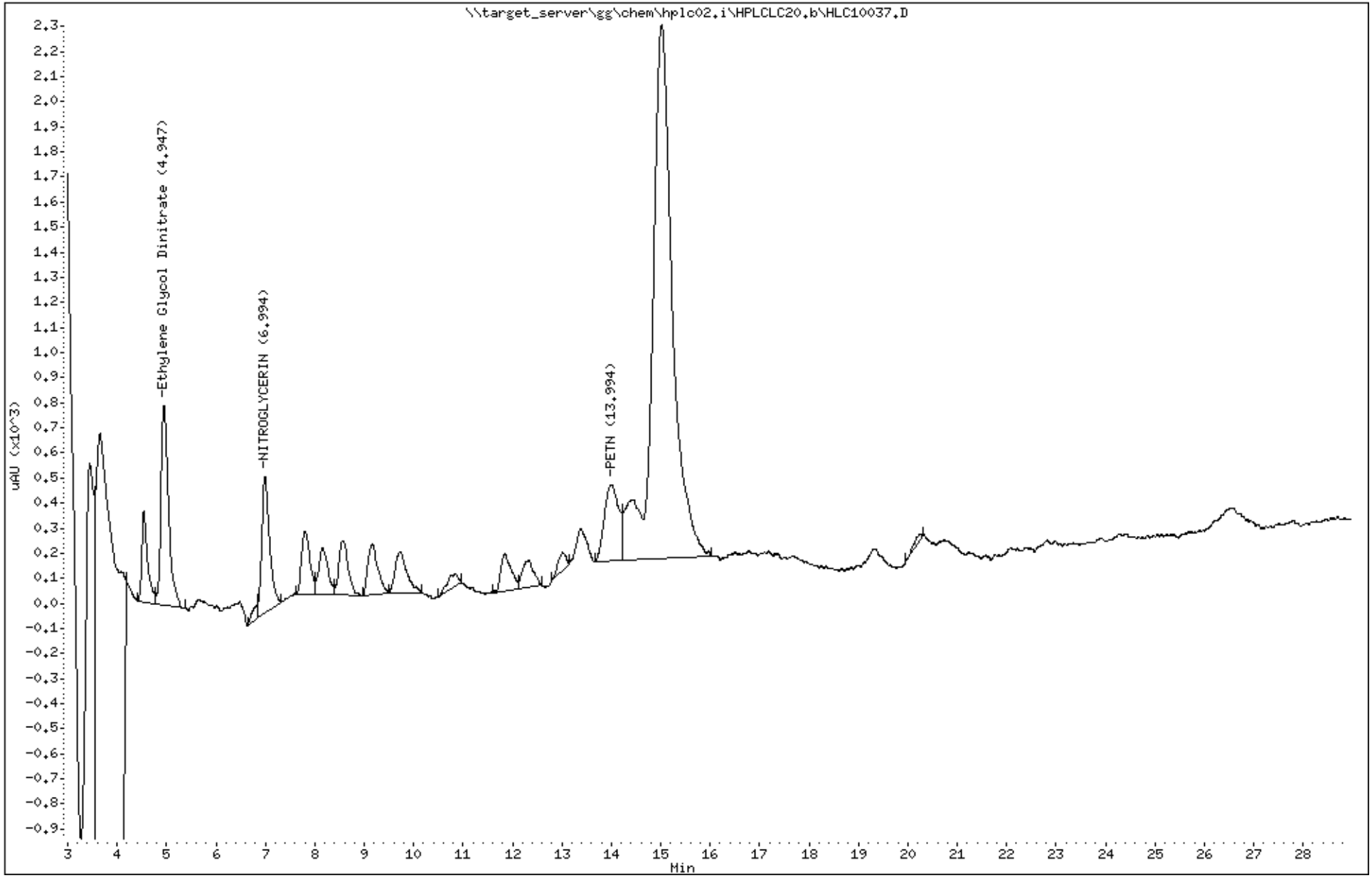
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.993	6.997	-0.004	544	0.10000	0.0987(aM)	M3
18 PETN	13.993	13.963	0.030	302	0.10000	0.105(aM)	
3 Ethylene Glycol Dinitrate	4.947	4.957	-0.010	793	0.10000	0.0949(a)	

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 3000037

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3807
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

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

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

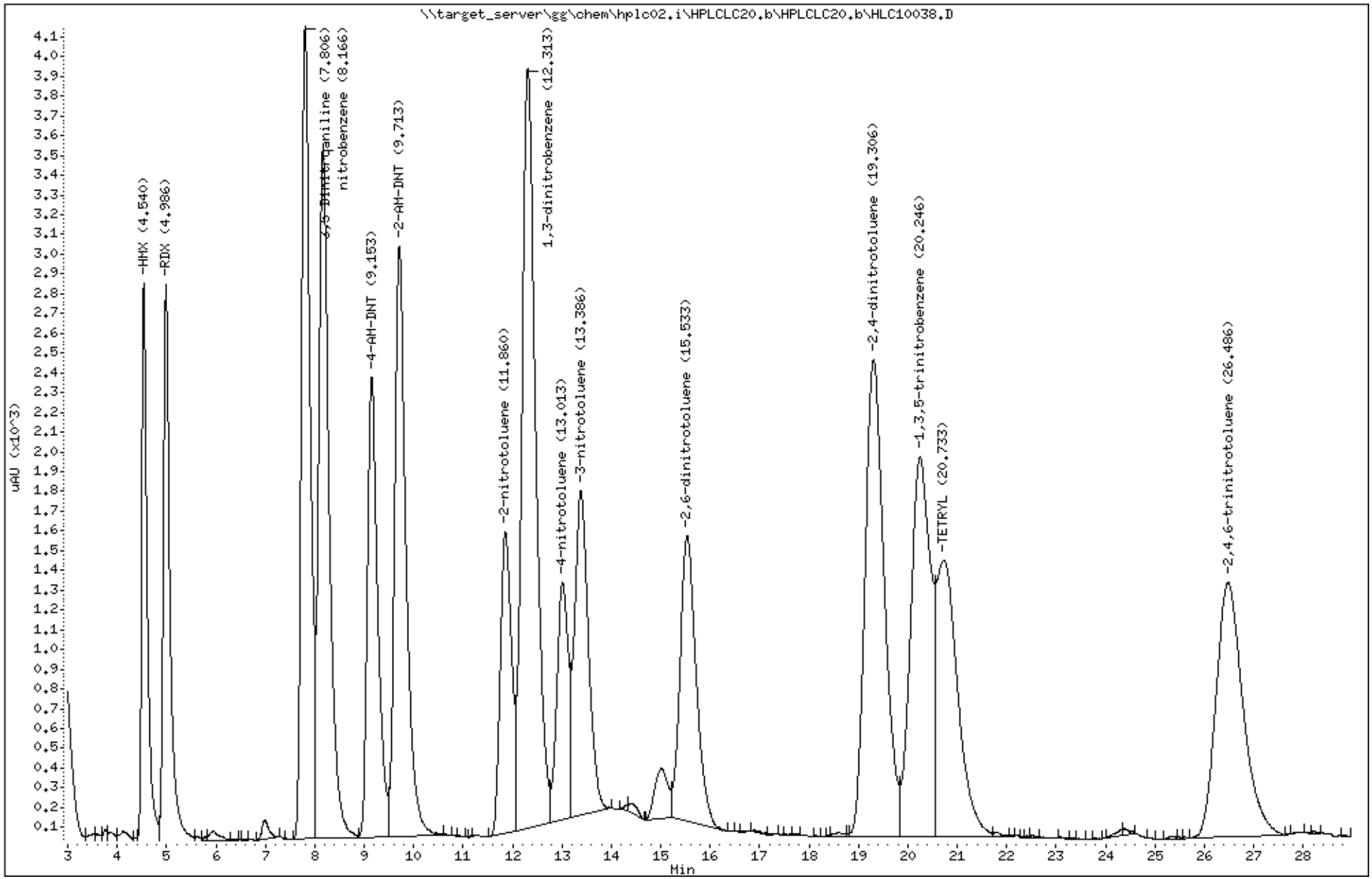
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	HMX	4.539	4.542	-0.003	2829	0.52480	5.25(M)	M5
4	RDX	4.986	4.989	-0.003	2819	0.51364	5.14(M)	
51	3,5-Dinitroaniline	7.806	7.809	-0.003	4113	0.49457	4.94	
7	nitrobenzene	8.166	8.175	-0.009	3495	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.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\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 3000041

Data File: HLC10031.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

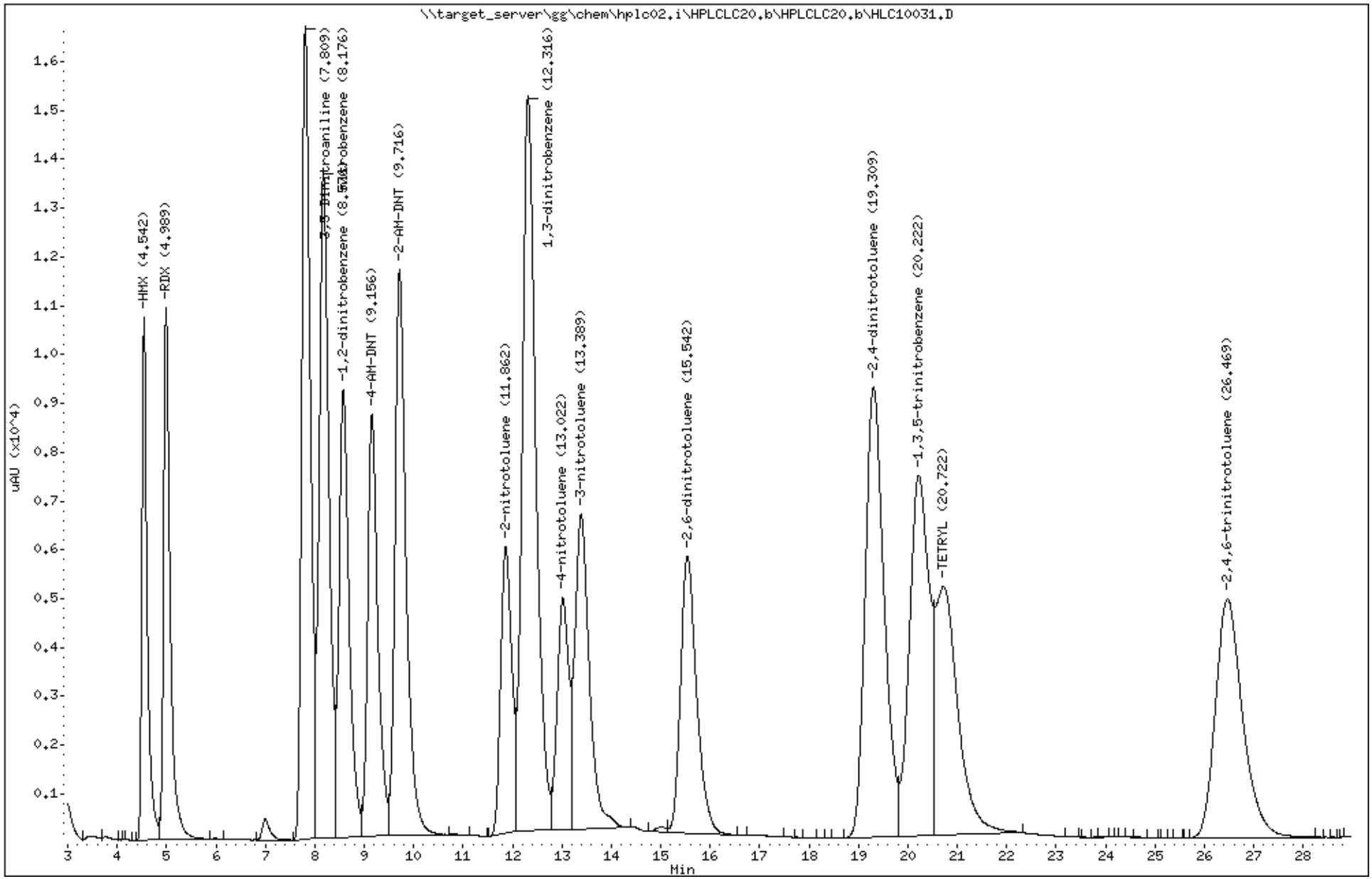
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10031.D
Lab Smp Id: WG225143-7
Inj Date : 20-MAR-2018 14:54
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-7
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 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	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\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 3000043

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

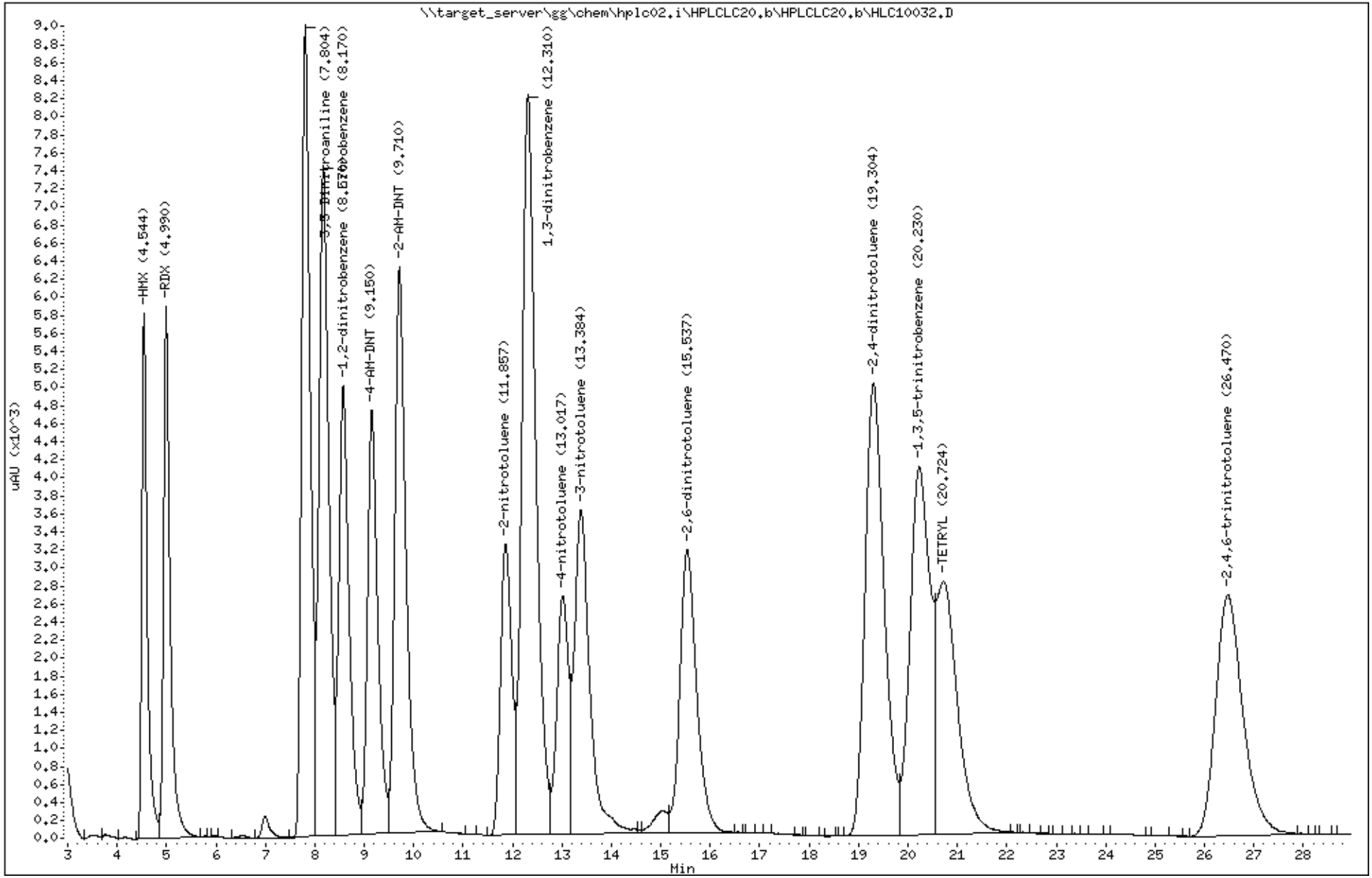
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.543	4.542	0.001	5810	1.00000	1.08(M)	M5
4	RDX	4.990	4.989	0.001	5888	1.00000	1.21(M)	
51	3,5-Dinitroaniline	7.803	7.809	-0.006	8996	1.00000	1.08	
7	nitrobenzene	8.170	8.175	-0.005	7418	1.00000	1.08	
$ 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.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\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 3000045

Data File: HLC10033.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

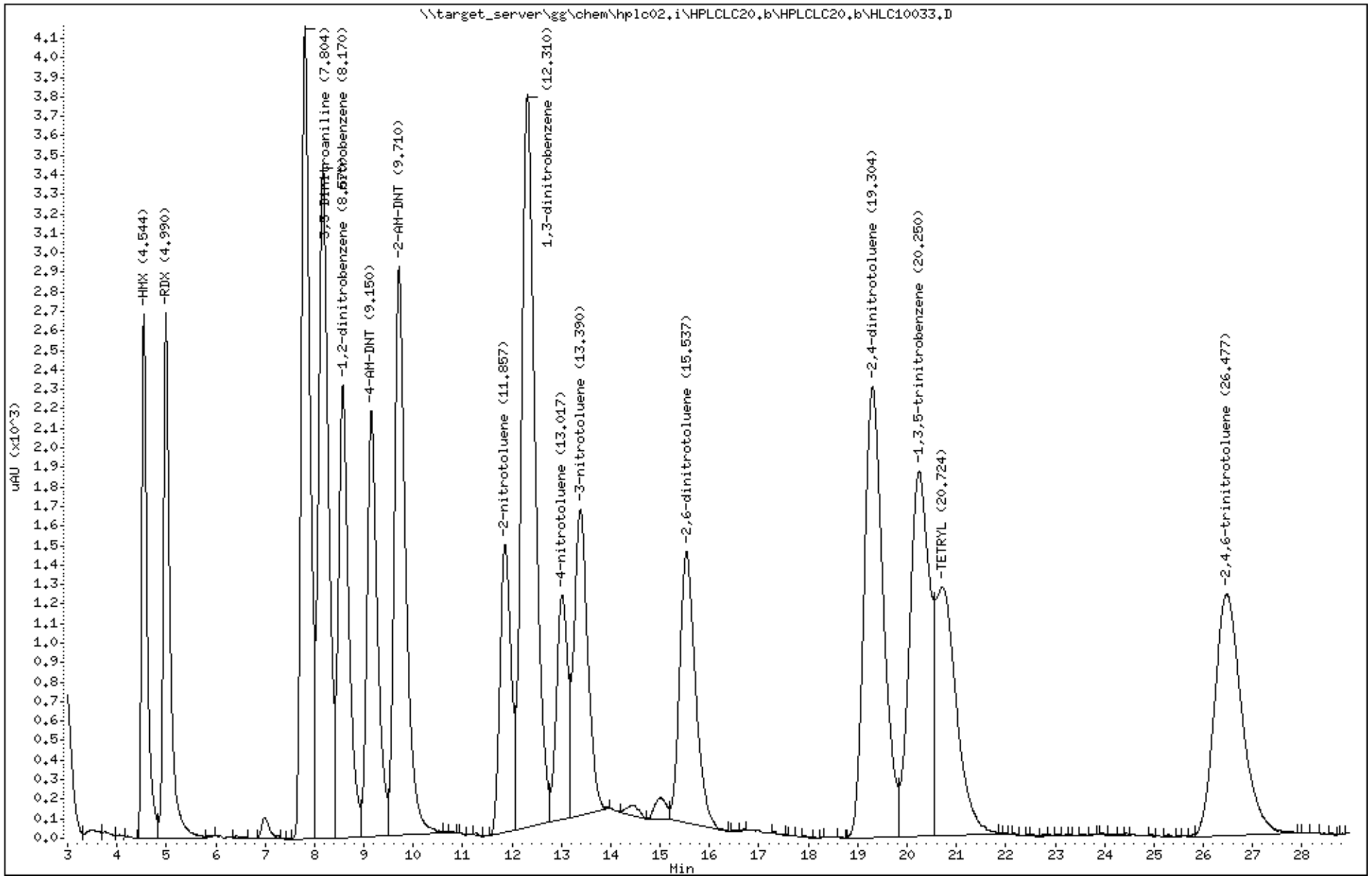
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10033.D
Lab Smp Id: WG225143-5
Inj Date : 20-MAR-2018 15:58
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-5
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 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

	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	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



Katahdin Analytical Services 3000047

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

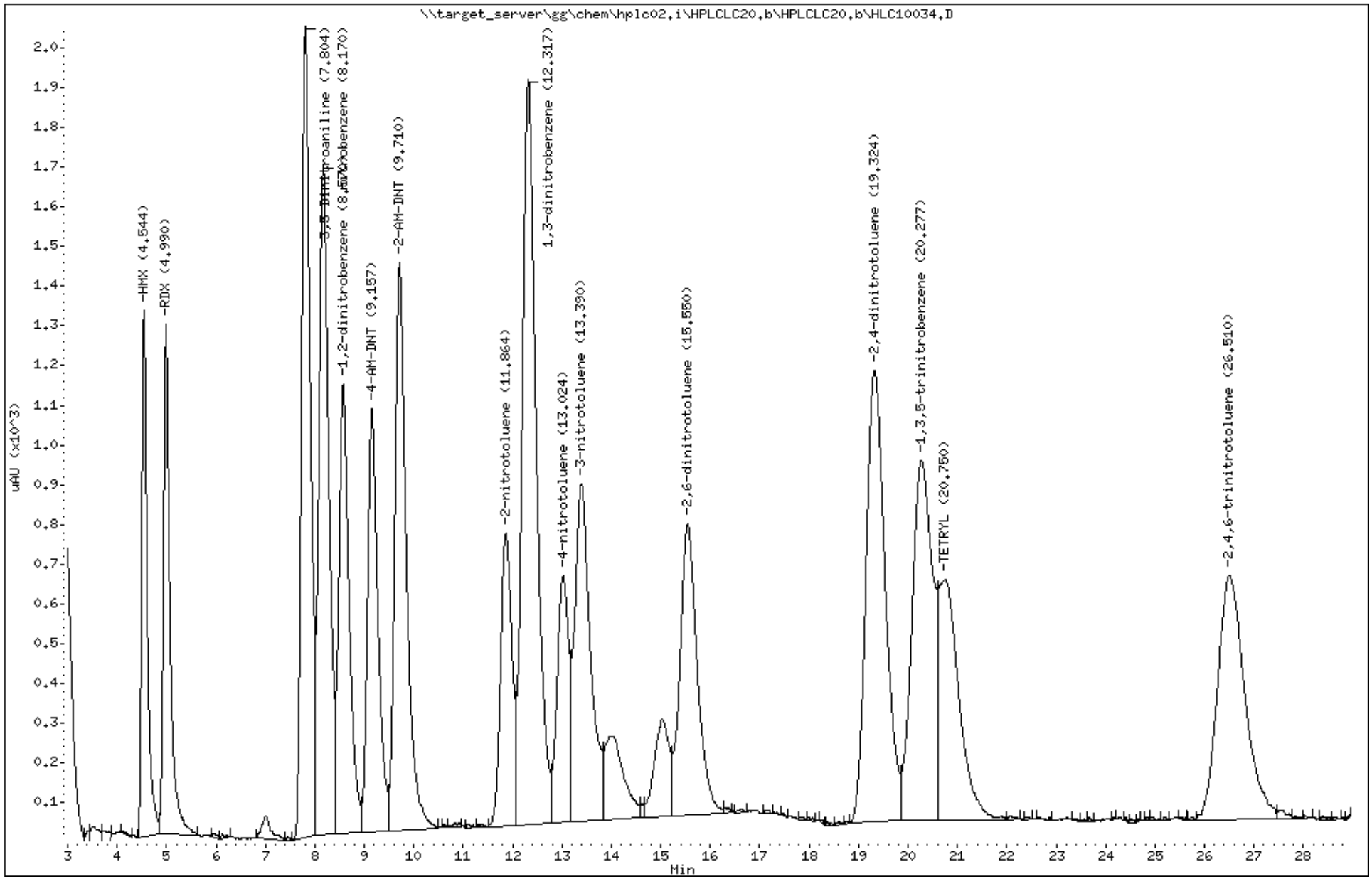
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	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).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\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 3000049

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

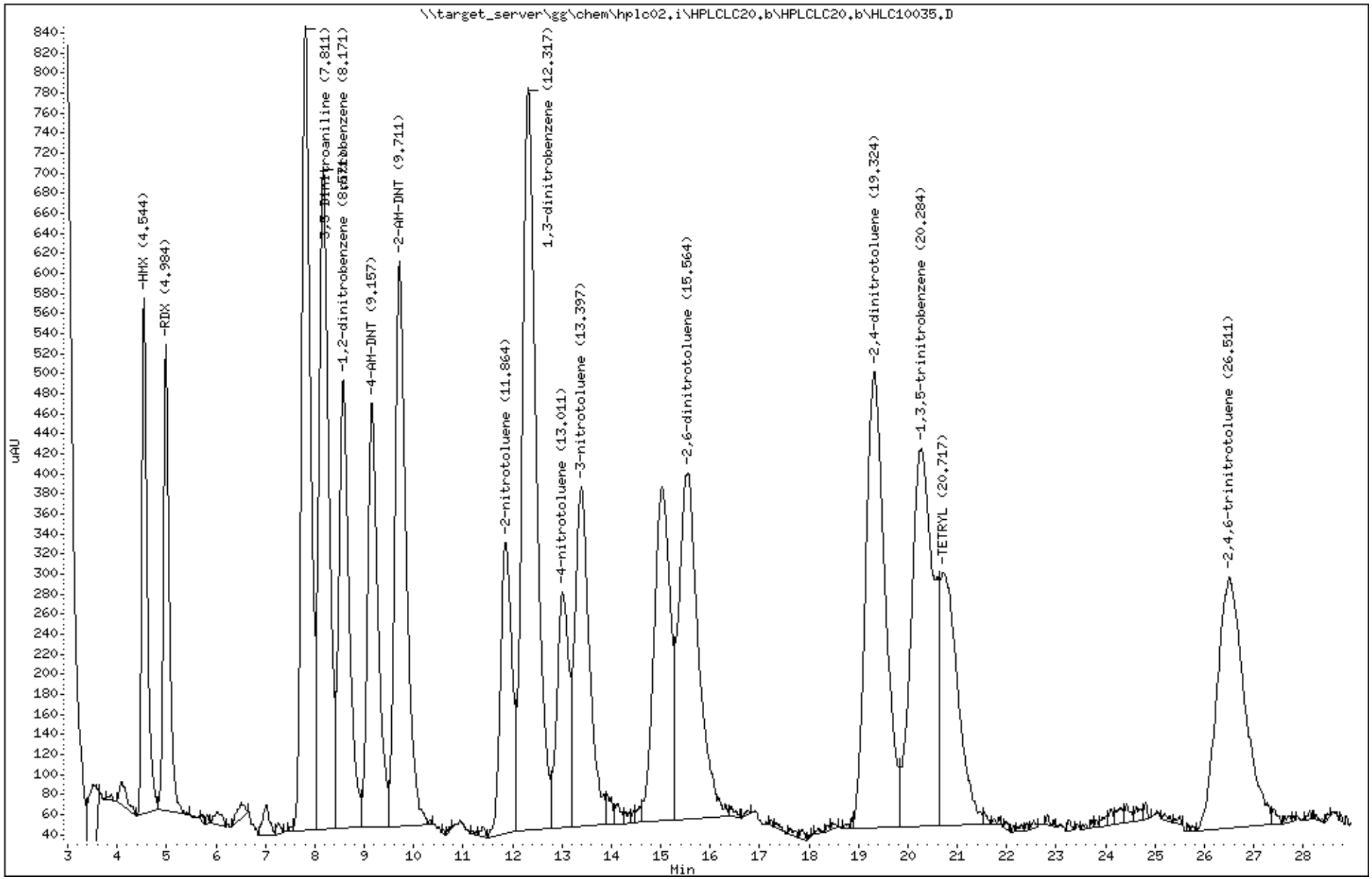
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	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 3000051

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

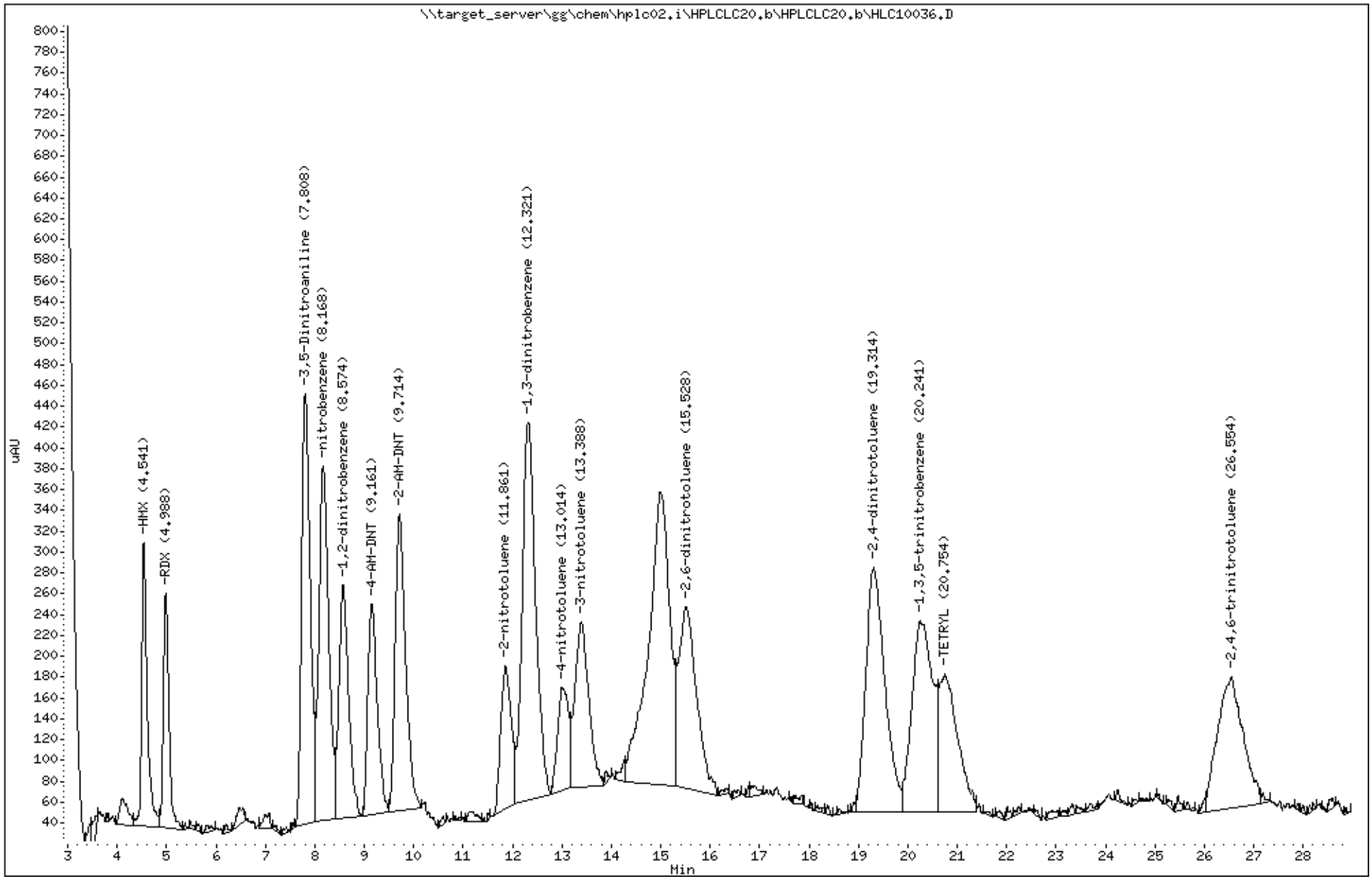
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.541	4.542	-0.001	272	0.05000	0.0504(a)	
4	RDX	4.987	4.989	-0.002	225	0.05000	0.0463(a)	
51	3,5-Dinitroaniline	7.807	7.809	-0.002	414	0.05000	0.0498(a)	
7	nitrobenzene	8.167	8.175	-0.008	341	0.05000	0.0497(a)	
$ 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 3000053

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

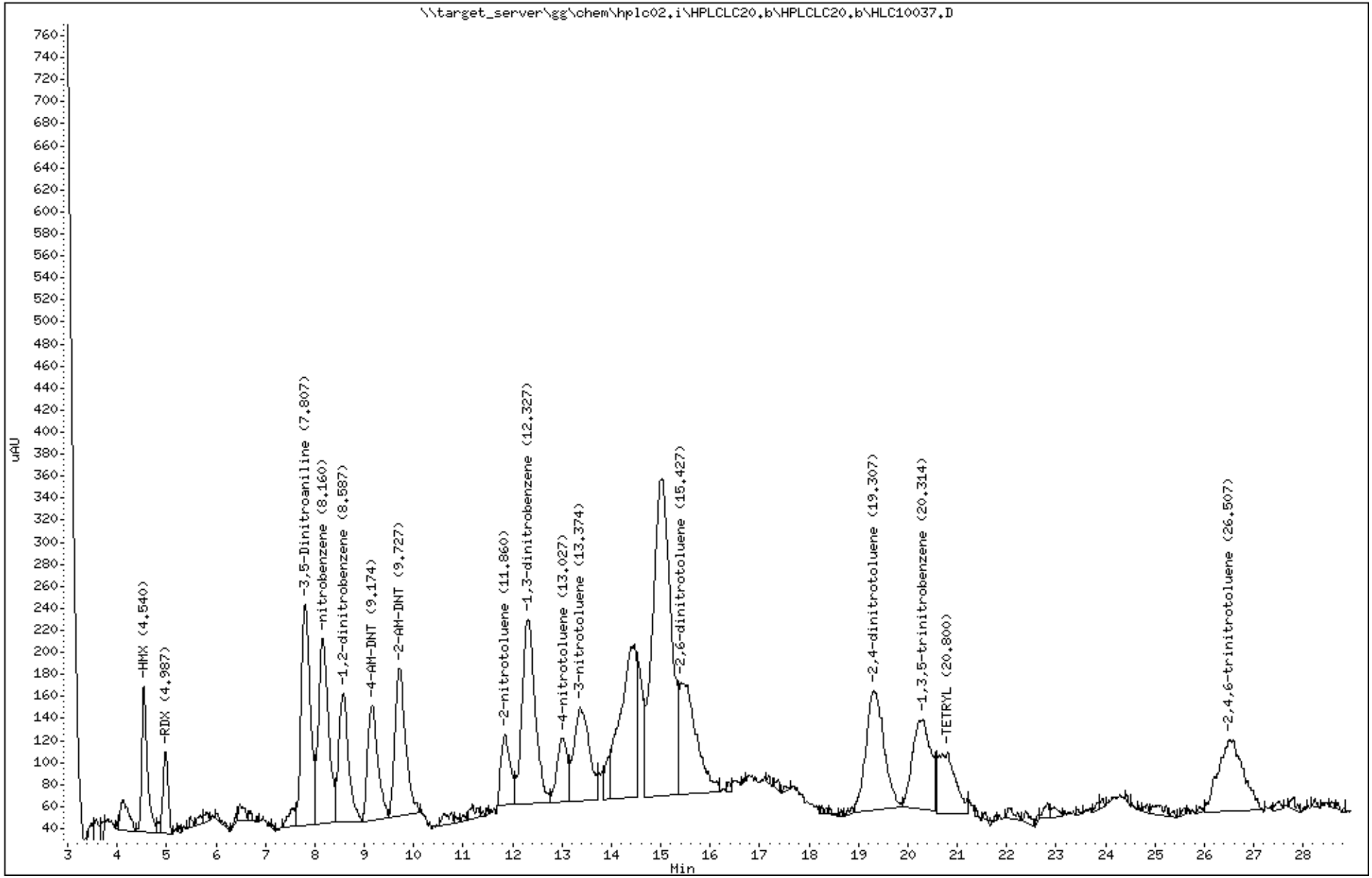
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.540	4.542	-0.002	133	0.02500	0.0247(a)	
4	RDX	4.987	4.989	-0.002	75	0.02500	0.0154(a)	
51	3,5-Dinitroaniline	7.807	7.809	-0.002	202	0.02500	0.0243(a)	
7	nitrobenzene	8.160	8.175	-0.015	169	0.02500	0.0246(a)	
$ 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 3000055

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-4
Lab File ID : HLE10311.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3807
Analytical Date: 05/10/18 23:07
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5249	0.010	-4.79207	20.00000	Averaged
140 PETN	2876	2971	0.010	3.30897	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10311.D
Report Date: 18-May-2018 04:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10311.D
Lab Smp Id: WG227995-4
Inj Date : 10-MAY-2018 23:07
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-4,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 30   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

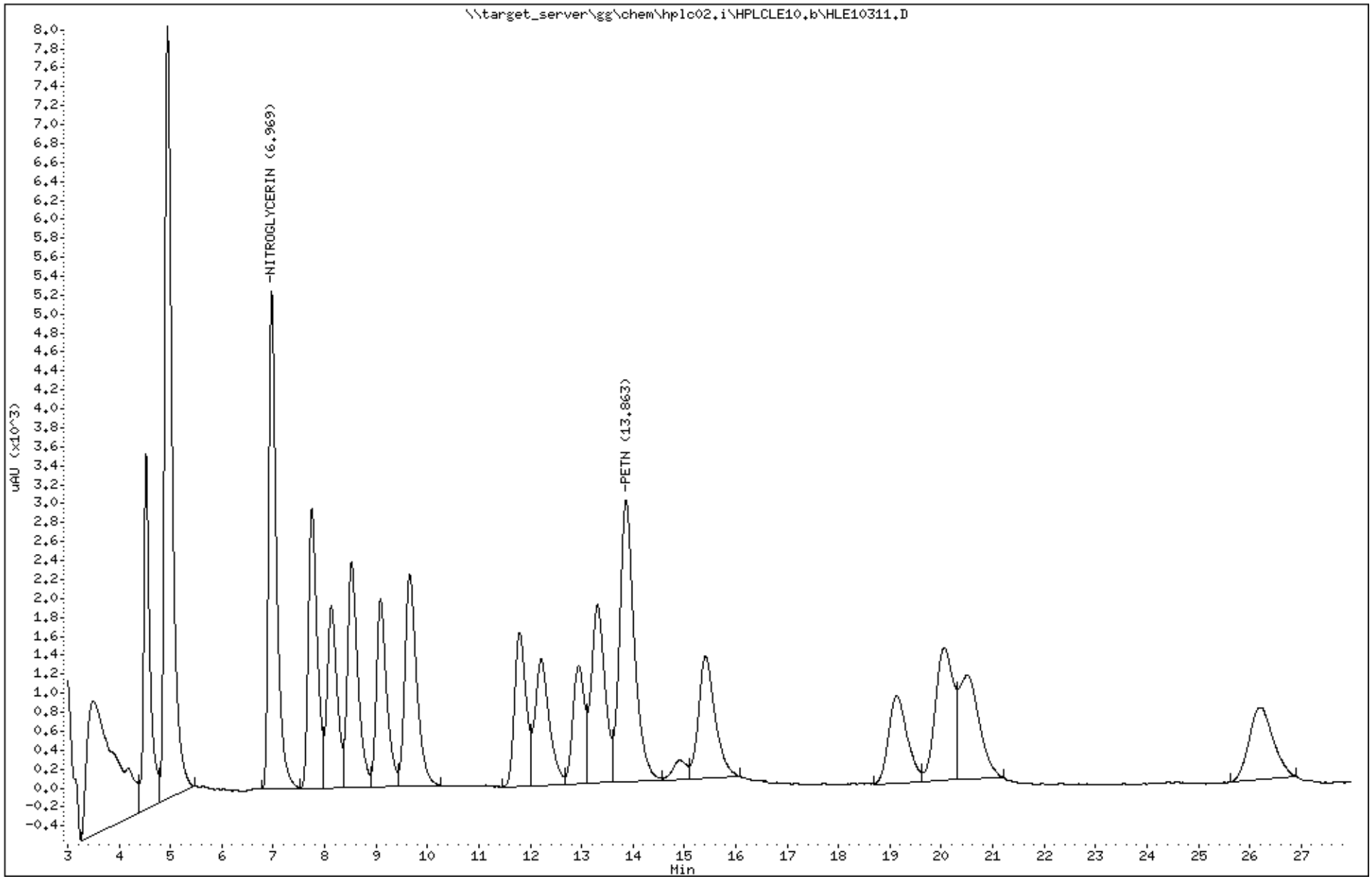
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.969	6.974	-0.005	5249	1.00000	0.952(a)
18 PETN	13.862	13.894	-0.032	2971	1.00000	1.03(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10311.D
Date : 10-MAY-2018 23:07
Client ID:
Instrument: hplc02.i
Sample Info: WG227995-4,SL3807
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000058

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-5
Lab File ID : HLE10322.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3807
Analytical Date: 05/11/18 04:48
Instrument ID: HPLC02
Column ID: A

	Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130	NITROGLYCERIN	5513	5324	0.010	-3.43170	20.00000	Averaged
140	PETN	2876	3031	0.010	5.37793	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10322.D
Report Date: 18-May-2018 04:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10322.D
Lab Smp Id: WG227995-5
Inj Date : 11-MAY-2018 04:48
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-5,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 41   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	6.968	6.974	-0.006	10648	1.00000	1.93(a)
18 PETN	13.861	13.894	-0.033	6061	1.00000	2.11(a)

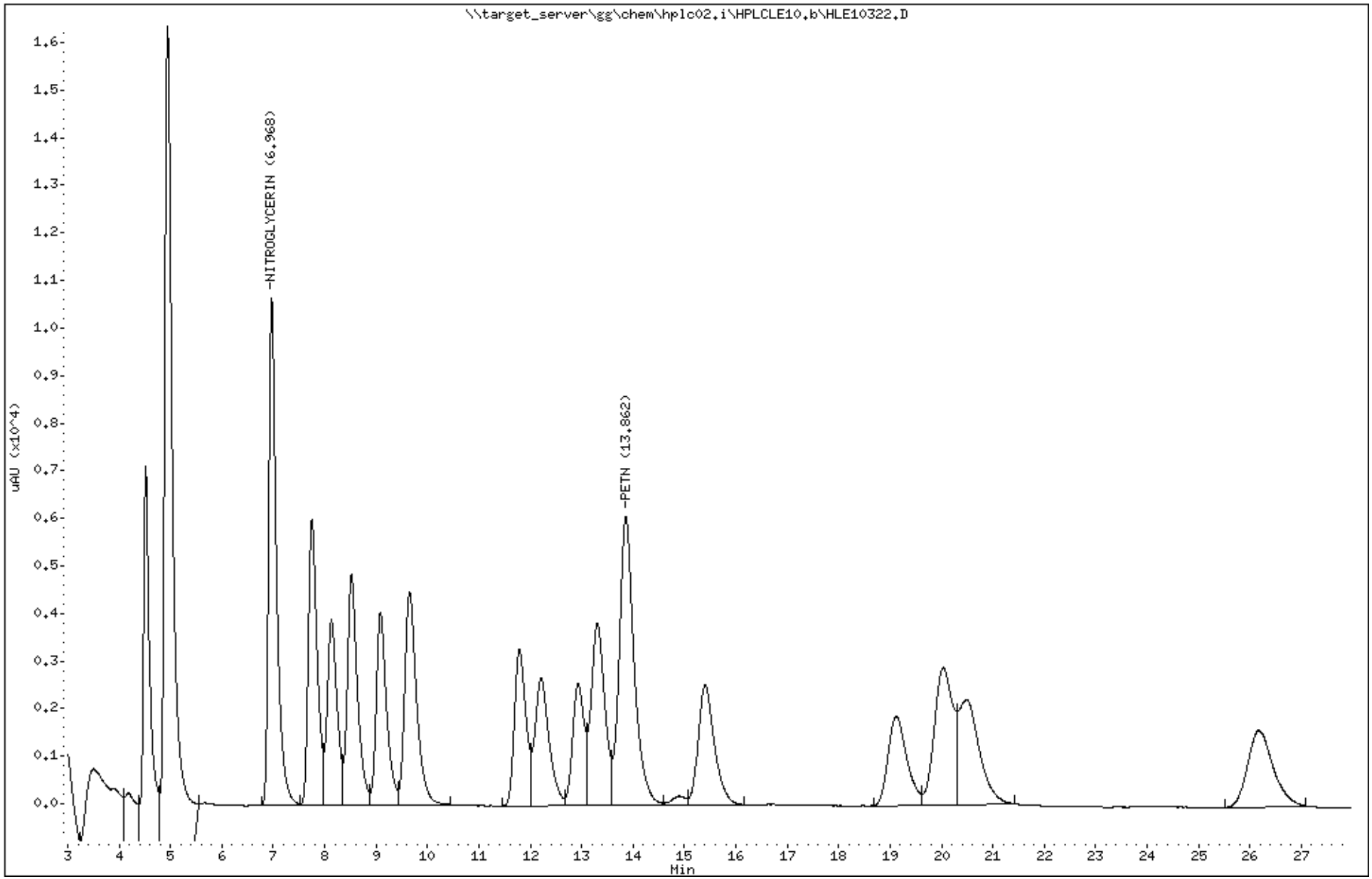
QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10322.D
Date : 11-MAY-2018 04:48
Client ID:
Sample Info: WG227995-5,SL3807

Instrument: hplc02.i

Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000061

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-6
Lab File ID : HLE10333.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3807
Analytical Date: 05/11/18 13:15
Instrument ID: HPLC02
Column ID: A

	Compound	$\overline{RRF}$/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130	NITROGLYCERIN	5513	5303	0.010	-3.81261	20.00000	Averaged
140	PETN	2876	3082	0.010	7.16871	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10333.D
Report Date: 18-May-2018 05:02

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10333.D
Lab Smp Id: WG227995-6
Inj Date : 11-MAY-2018 13:15
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227995-6,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\EXPB05A.m
Meth Date : 16-May-2018 07:37 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 52 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetnedgn.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	6.881	6.881	0.000	5303	1.00000	0.962(a)	
18 PETN	13.574	13.574	0.000	3082	1.00000	1.07(a)	
3 Ethylene Glycol Dinitrate	4.894	4.905	-0.011	8472	1.00000	1.01(aM)	M2

QC Flag Legend

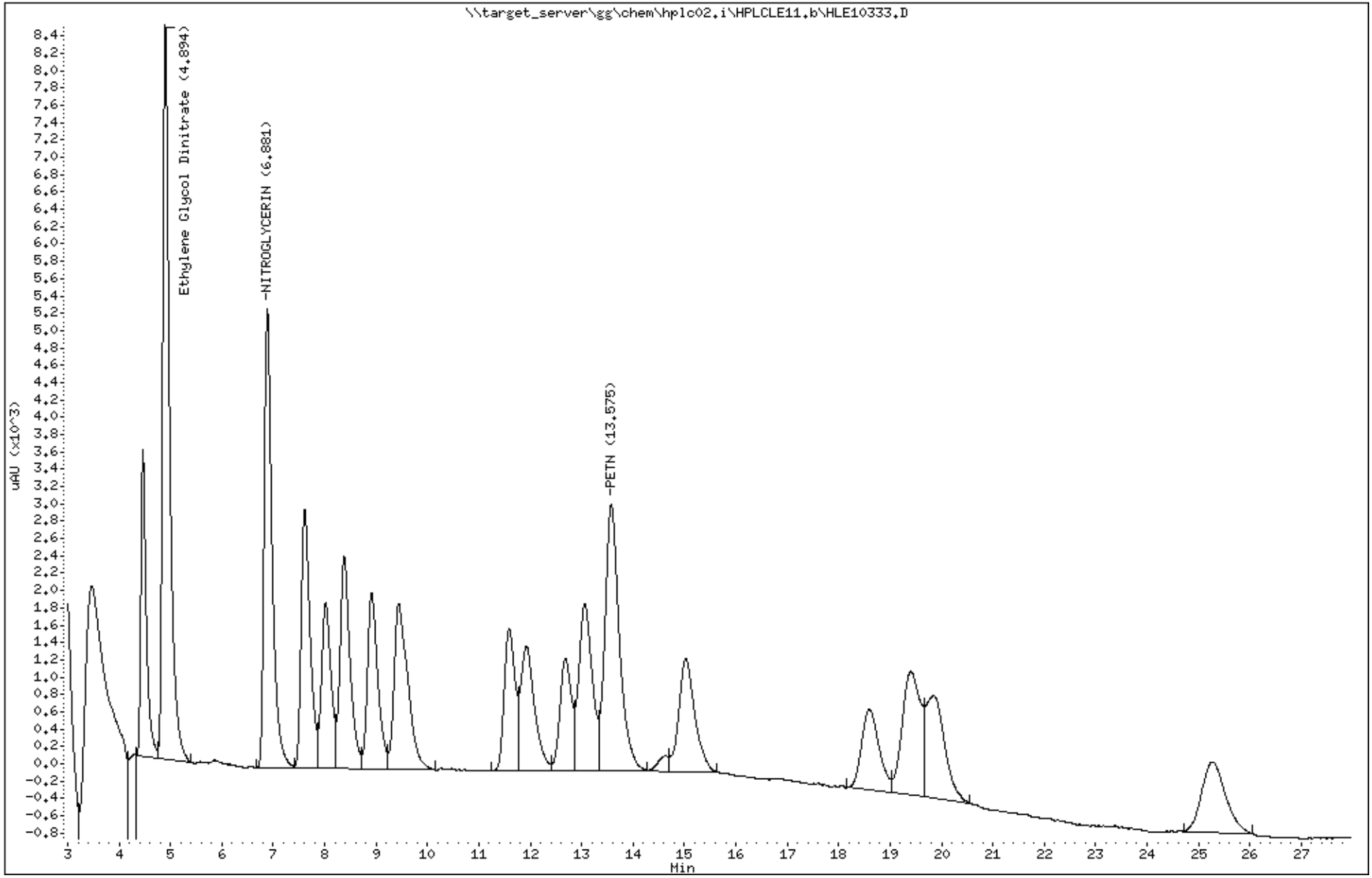
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

5:15 am, May 18, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10333.D
Date : 11-MAY-2018 13:15
Client ID:
Sample Info: WG227995-6,SL3807

Instrument: hplc02.i

Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000064

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-7
Lab File ID : HLE10344.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3807
Analytical Date: 05/11/18 19:13
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5392	0.010	-2.19830	20.00000	Averaged
140 PETN	2876	3139	0.010	9.15074	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10344.D
Report Date: 18-May-2018 05:03

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10344.D
Lab Smp Id: WG227995-7
Inj Date : 11-MAY-2018 19:13
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-7,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\EXPB05A.m
Meth Date : 16-May-2018 07:37 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 63   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	6.892	6.881	0.011	10784	1.00000	1.96(a)
18 PETN	13.605	13.574	0.031	6278	1.00000	2.18(a)

QC Flag Legend

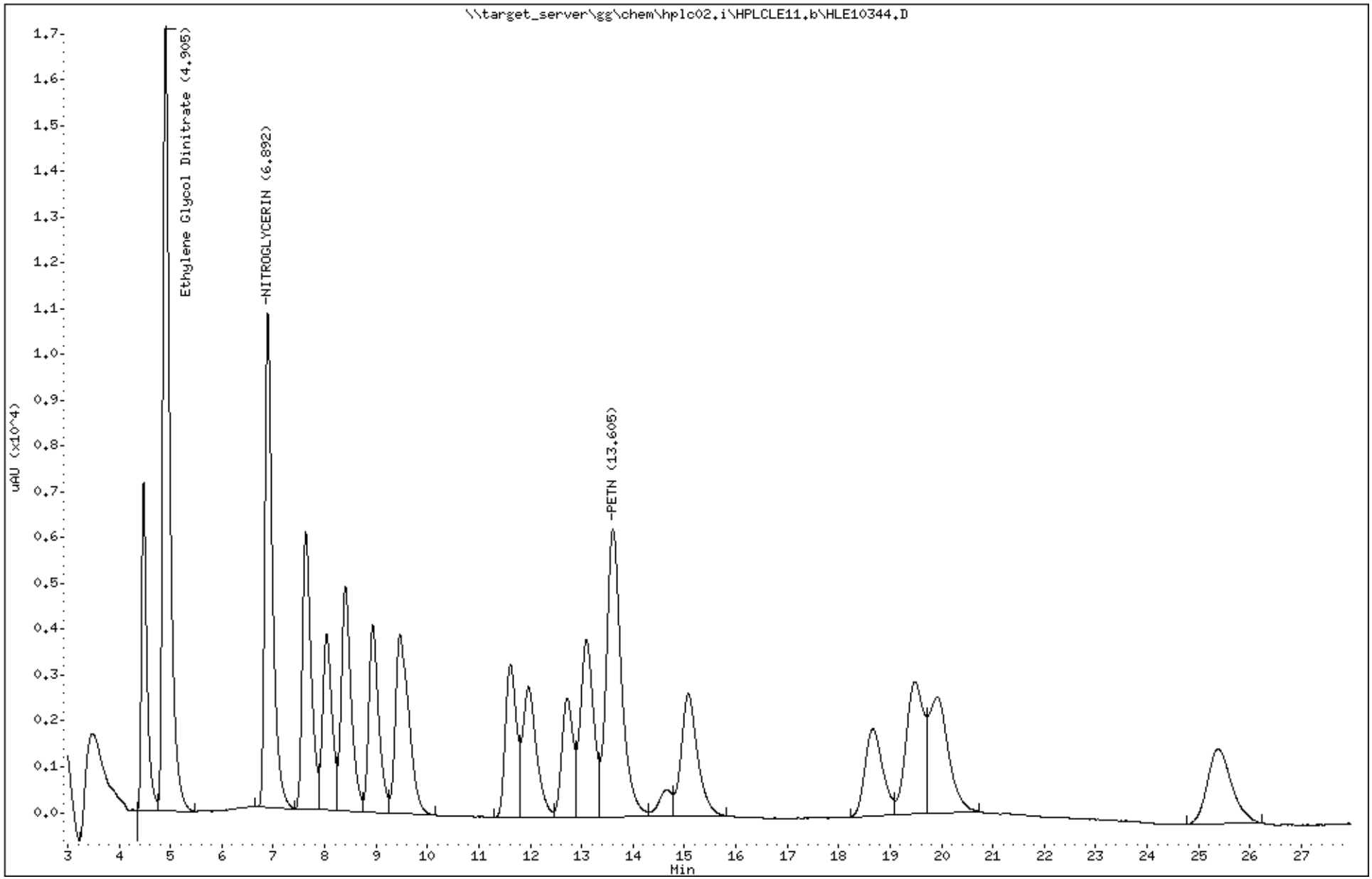
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HLE10344.D
Date : 11-MAY-2018 19:13
Client ID:
Sample Info: WG227995-7,SL3807

Column phase: Acclaim Exp E1

Instrument: hplc02.i

Operator: AAB
Column diameter: 4.60



Katahdin Analytical Services 3000067

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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG227995-4
Analytical Date: 05/10/18 23:07
Lab File ID : HLE10311.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
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	0.24615	5336	0.010	-1.53810	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3816	3816	0.010	3.44667	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7536	7536	0.010	1.23978	20.00000	Averaged
7	nitrobenzene	6867	6648	6648	0.010	-3.18413	20.00000	Averaged
9	TETRYL	2535	2824	2824	0.010	11.41923	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2476	2476	0.010	-1.99327	20.00000	Averaged
11	4-AM-DNT	4303	4304	4304	0.010	0.02988	20.00000	Averaged
12	2-AM-DNT	5761	5812	5812	0.010	0.89027	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23894	2888	0.010	-4.42405	20.00000	Linear
14	2,4-dinitrotoluene	4619	4680	4680	0.010	1.33160	20.00000	Averaged
15	2-nitrotoluene	2890	2928	2928	0.010	1.32991	20.00000	Averaged
16	4-nitrotoluene	2342	2344	2344	0.010	0.06709	20.00000	Averaged
17	3-nitrotoluene	3326	3184	3184	0.010	-4.25911	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4764	4764	0.010	2.95135	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: HLE10311.D
Report Date: 18-May-2018 05:01

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10311.D
Lab Smp Id: WG227995-4
Inj Date : 10-MAY-2018 23:07
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-4,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 30   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

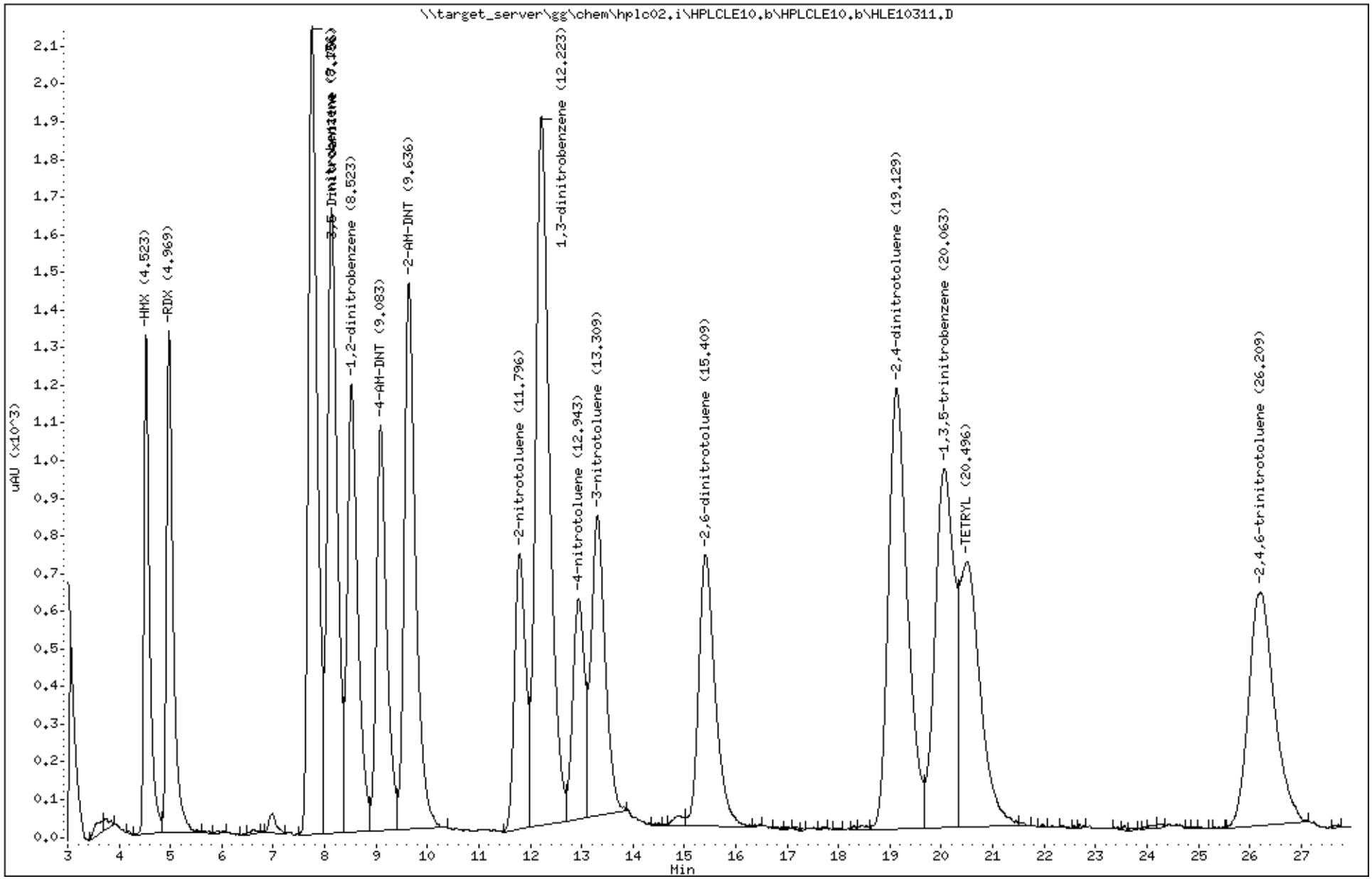
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.522	4.527	-0.005	1325	0.25000	0.246(a)	
4	RDX	4.969	4.974	-0.005	1334	0.25000	0.246(a)	
51	3,5-Dinitroaniline	7.756	7.774	-0.018	2146	0.25000	0.258	
7	nitrobenzene	8.136	8.147	-0.011	1662	0.25000	0.242(a)	
$ 2	1,2-dinitrobenzene	8.522	8.540	-0.018	1191	0.25000	0.257	
11	4-AM-DNT	9.082	9.107	-0.025	1076	0.25000	0.250	
12	2-AM-DNT	9.636	9.667	-0.031	1453	0.25000	0.252	
15	2-nitrotoluene	11.796	11.820	-0.024	732	0.25000	0.253	
6	1,3-dinitrobenzene	12.222	12.254	-0.032	1884	0.25000	0.253	
16	4-nitrotoluene	12.942	12.967	-0.025	586	0.25000	0.250	
17	3-nitrotoluene	13.309	13.334	-0.025	796	0.25000	0.239(a)	
13	2,6-dinitrotoluene	15.409	15.454	-0.045	722	0.25000	0.239(a)	
14	2,4-dinitrotoluene	19.129	19.194	-0.065	1170	0.25000	0.253	
5	1,3,5-trinitrobenzene	20.062	20.120	-0.058	954	0.25000	0.259	
9	TETRYL	20.496	20.580	-0.084	706	0.25000	0.278	
10	2,4,6-trinitrotoluene	26.209	26.300	-0.091	619	0.25000	0.245(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10311.D
Date : 10-MAY-2018 23:07
Client ID:
Instrument: hplc02.i
Sample Info: WG227995-4,SL3807
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000070

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG227995-5
Analytical Date: 05/11/18 04:48
Lab File ID : HLE10322.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5372	5372	0.010	-0.34584	20.00000	Averaged
4	RDX	0.50000	0.49544	5436	0.010	-0.91136	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3860	3860	0.010	4.63945	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7686	7686	0.010	3.25490	20.00000	Averaged
7	nitrobenzene	6867	6746	6746	0.010	-1.75694	20.00000	Averaged
9	TETRYL	2535	2736	2736	0.010	7.94724	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2562	2562	0.010	1.41084	20.00000	Averaged
11	4-AM-DNT	4303	4384	4384	0.010	1.88917	20.00000	Averaged
12	2-AM-DNT	5761	5906	5906	0.010	2.52201	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.48923	2880	0.010	-2.15387	20.00000	Linear
14	2,4-dinitrotoluene	4619	4750	4750	0.010	2.84724	20.00000	Averaged
15	2-nitrotoluene	2890	2978	2978	0.010	3.06027	20.00000	Averaged
16	4-nitrotoluene	2342	2450	2450	0.010	4.59230	20.00000	Averaged
17	3-nitrotoluene	3326	3336	3336	0.010	0.31143	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4834	4834	0.010	4.46407	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: HLE10322.D
Report Date: 18-May-2018 05:01

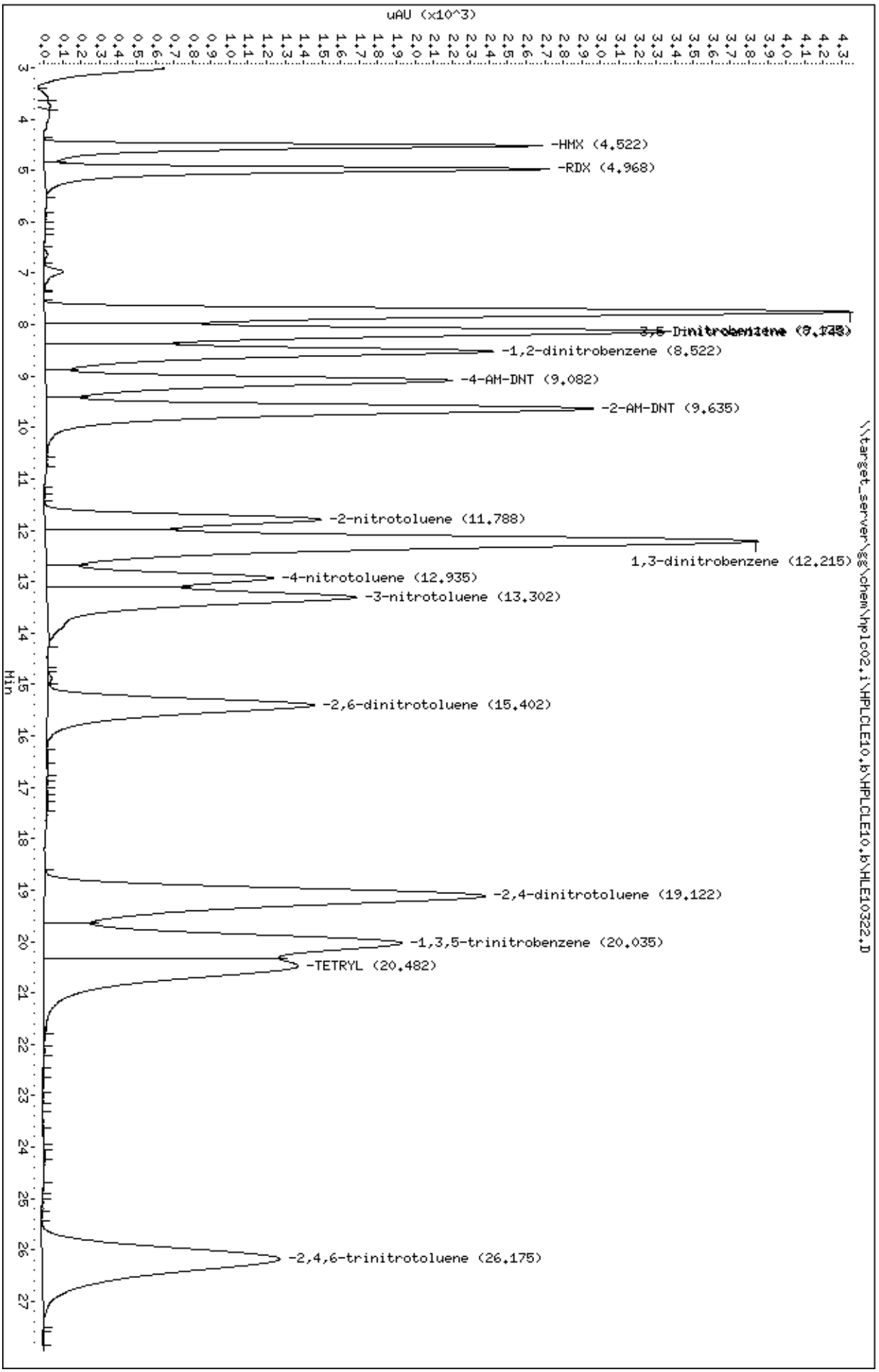
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10322.D
Lab Smp Id: WG227995-5
Inj Date : 11-MAY-2018 04:48
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227995-5,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 41 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	4.521	4.527	-0.006	2686	0.25000	0.498	
4	RDX	4.968	4.974	-0.006	2718	0.25000	0.495	
51	3,5-Dinitroaniline	7.748	7.774	-0.026	4357	0.25000	0.524	
7	nitrobenzene	8.135	8.147	-0.012	3373	0.25000	0.491	
$ 2	1,2-dinitrobenzene	8.521	8.540	-0.019	2417	0.25000	0.522	
11	4-AM-DNT	9.081	9.107	-0.026	2192	0.25000	0.509	
12	2-AM-DNT	9.635	9.667	-0.032	2953	0.25000	0.513	
15	2-nitrotoluene	11.788	11.820	-0.032	1489	0.25000	0.515	
6	1,3-dinitrobenzene	12.215	12.254	-0.039	3843	0.25000	0.516	
16	4-nitrotoluene	12.935	12.967	-0.032	1225	0.25000	0.523	
17	3-nitrotoluene	13.301	13.334	-0.033	1668	0.25000	0.502	
13	2,6-dinitrotoluene	15.401	15.454	-0.053	1440	0.25000	0.489	
14	2,4-dinitrotoluene	19.121	19.194	-0.073	2375	0.25000	0.514	
5	1,3,5-trinitrobenzene	20.035	20.120	-0.085	1930	0.25000	0.523	
9	TETRYL	20.481	20.580	-0.099	1368	0.25000	0.540	
10	2,4,6-trinitrotoluene	26.175	26.300	-0.125	1281	0.25000	0.507	


Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10322.D
Date : 11-MAY-2018 04:48
Client ID:
Sample Info: WG227995-5,SL3807
Column phase: Acclaim Exp E1
Instrument: hplc02.i
Operator: AAB
Column diameter: 4.60
\\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10322.D
uAU (x10^3)
Min
-HMX (4.522)
-RDX (4.968)
3,5-Dinitroaniline (7.745)
-1,2-dinitrobenzene (8.522)
-4-AM-DNT (9.082)
-2-AM-DNT (9.635)
-2-nitrotoluene (11.788)
1,3-dinitrobenzene (12.215)
-4-nitrotoluene (12.935)
-3-nitrotoluene (13.302)
-2,6-dinitrotoluene (15.402)
-2,4-dinitrotoluene (19.122)
-1,3,5-trinitrobenzene (20.035)
-TETRYL (20.482)
-2,4,6-trinitrotoluene (26.175)

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG227995-6
Analytical Date: 05/11/18 13:15
Lab File ID : HLE10333.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5308	5308	0.010	-1.53308	20.00000	Averaged
4	RDX	0.25000	0.24940	5408	0.010	-0.24122	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3904	3904	0.010	5.83224	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7856	7856	0.010	5.53871	20.00000	Averaged
7	nitrobenzene	6867	6664	6664	0.010	-2.95112	20.00000	Averaged
9	TETRYL	2535	3028	3028	0.010	19.46793	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2616	2616	0.010	3.54831	20.00000	Averaged
11	4-AM-DNT	4303	4380	4380	0.010	1.79621	20.00000	Averaged
12	2-AM-DNT	5761	5880	5880	0.010	2.07068	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.24556	2964	0.010	-1.77473	20.00000	Linear
14	2,4-dinitrotoluene	4619	4772	4772	0.010	3.32359	20.00000	Averaged
15	2-nitrotoluene	2890	2980	2980	0.010	3.12948	20.00000	Averaged
16	4-nitrotoluene	2342	2464	2464	0.010	5.18997	20.00000	Averaged
17	3-nitrotoluene	3326	3308	3308	0.010	-0.53051	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4896	4896	0.010	5.80390	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: HLE10333.D
Report Date: 18-May-2018 05:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HPLCLE11.b\HLE10333.D
Lab Smp Id: WG227995-6
Inj Date : 11-MAY-2018 13:15
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-6,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\EXPB05A.m\EXPB05A.m
Meth Date : 16-May-2018 06:47 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 52   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	4.467	4.467	0.000	1327	0.25000	0.246(a)	
4	RDX	4.914	4.914	0.000	1352	0.25000	0.249(a)	
51	3,5-Dinitroaniline	7.614	7.614	0.000	2171	0.25000	0.261	
7	nitrobenzene	8.021	8.021	0.000	1666	0.25000	0.243(a)	
$ 2	1,2-dinitrobenzene	8.381	8.381	0.000	1224	0.25000	0.264	
11	4-AM-DNT	8.914	8.914	0.000	1095	0.25000	0.254	
12	2-AM-DNT	9.434	9.434	0.000	1470	0.25000	0.255	
15	2-nitrotoluene	11.587	11.587	0.000	745	0.25000	0.258	
6	1,3-dinitrobenzene	11.934	11.934	0.000	1964	0.25000	0.264	
16	4-nitrotoluene	12.687	12.687	0.000	616	0.25000	0.263	
17	3-nitrotoluene	13.067	13.067	0.000	827	0.25000	0.249(a)	
13	2,6-dinitrotoluene	15.027	15.027	0.000	741	0.25000	0.246(a)	
14	2,4-dinitrotoluene	18.601	18.601	0.000	1193	0.25000	0.258	
5	1,3,5-trinitrobenzene	19.407	19.407	0.000	976	0.25000	0.264	
9	TETRYL	19.854	19.854	0.000	757	0.25000	0.299	
10	2,4,6-trinitrotoluene	25.281	25.281	0.000	654	0.25000	0.259	

QC Flag Legend

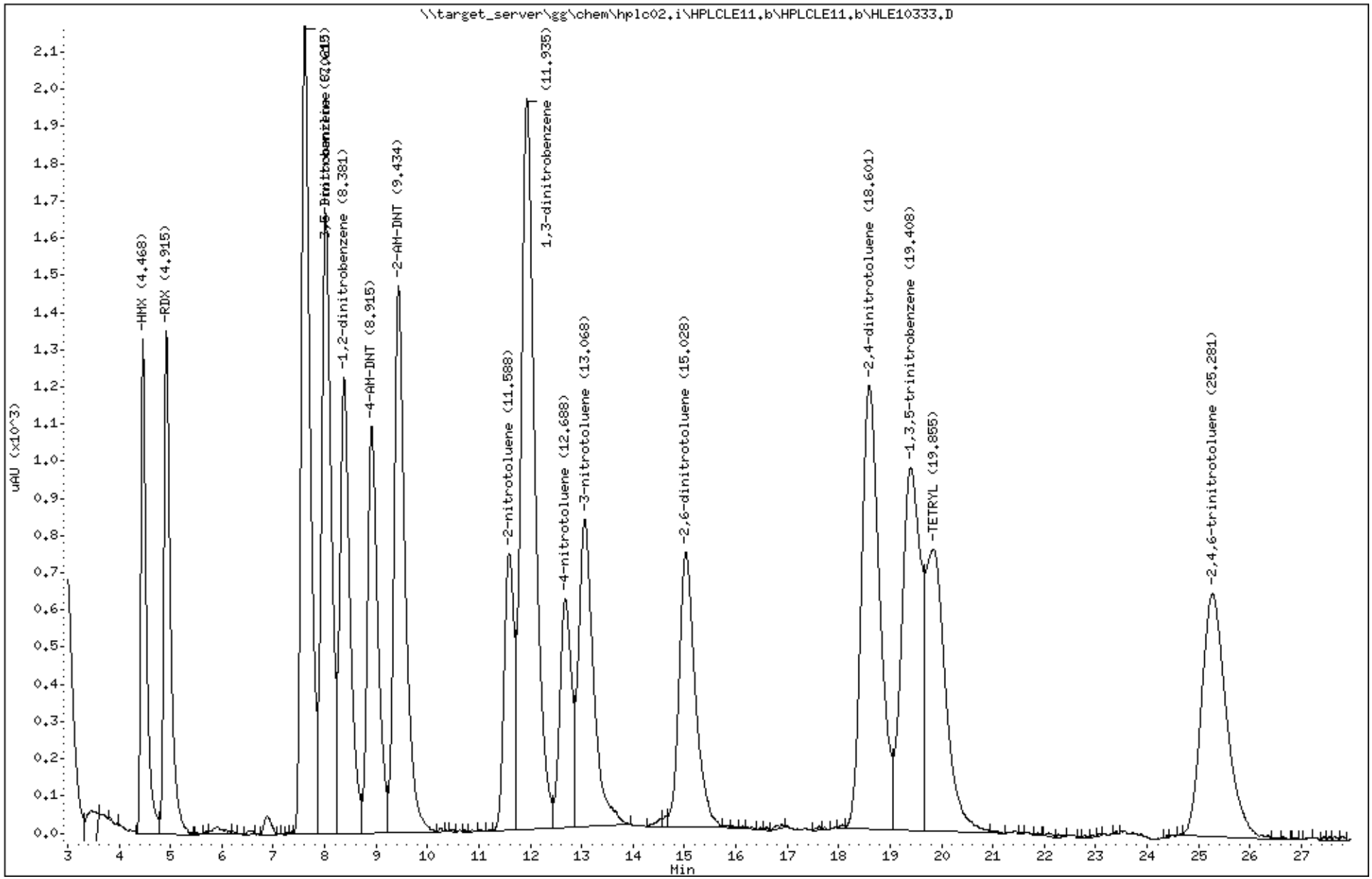
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HPLCLE11.b\HLE10333.D
Date : 11-MAY-2018 13:15
Client ID:
Sample Info: WG227995-6,SL3807

Column phase: Acclaim Exp E1

Instrument: hplc02.i

Operator: AAB
Column diameter: 4.60



Katahdin Analytical Services 3000076

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3807
Lab ID : WG227995-7
Analytical Date: 05/11/18 19:13
Lab File ID : HLE10344.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	HMX	5391	5390	5390	0.010	-0.01193	20.00000	Averaged	
4	RDX	0.50000	0.50121	5500	0.010	0.24142	20.00000	Linear	
5	1,3,5-trinitrobenzene	3689	3926	3926	0.010	6.42863	20.00000	Averaged	
6	1,3-dinitrobenzene	7444	7924	7924	0.010	6.45223	20.00000	Averaged	
7	nitrobenzene	6867	6770	6770	0.010	-1.40743	20.00000	Averaged	
9	TETRYL	2535	3222	3222	0.010	27.12208	20.00000	Averaged	*
10	2,4,6-trinitrotoluene	2526	2648	2648	0.010	4.81495	20.00000	Averaged	
11	4-AM-DNT	4303	4442	4442	0.010	3.23716	20.00000	Averaged	
12	2-AM-DNT	5761	5978	5978	0.010	3.77185	20.00000	Averaged	
13	2,6-dinitrotoluene	0.50000	0.50527	2972	0.010	1.05320	20.00000	Linear	
14	2,4-dinitrotoluene	4619	4848	4848	0.010	4.96915	20.00000	Averaged	
15	2-nitrotoluene	2890	3028	3028	0.010	4.79063	20.00000	Averaged	
16	4-nitrotoluene	2342	2480	2480	0.010	5.87303	20.00000	Averaged	
17	3-nitrotoluene	3326	3356	3356	0.010	0.91282	20.00000	Averaged	
2	1,2-dinitrobenzene	4627	4950	4950	0.010	6.97086	20.00000	Averaged	

*** = Compound out of QC criteria**

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Data File: HLE10344.D
Report Date: 18-May-2018 05:04

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Data file : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HPLCLE11.b\HLE10344.D
Lab Smp Id: WG227995-7
Inj Date : 11-MAY-2018 19:13
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-7,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE11.b\EXPB05A.m\EXPB05A.m
Meth Date : 16-May-2018 06:47 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 63   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

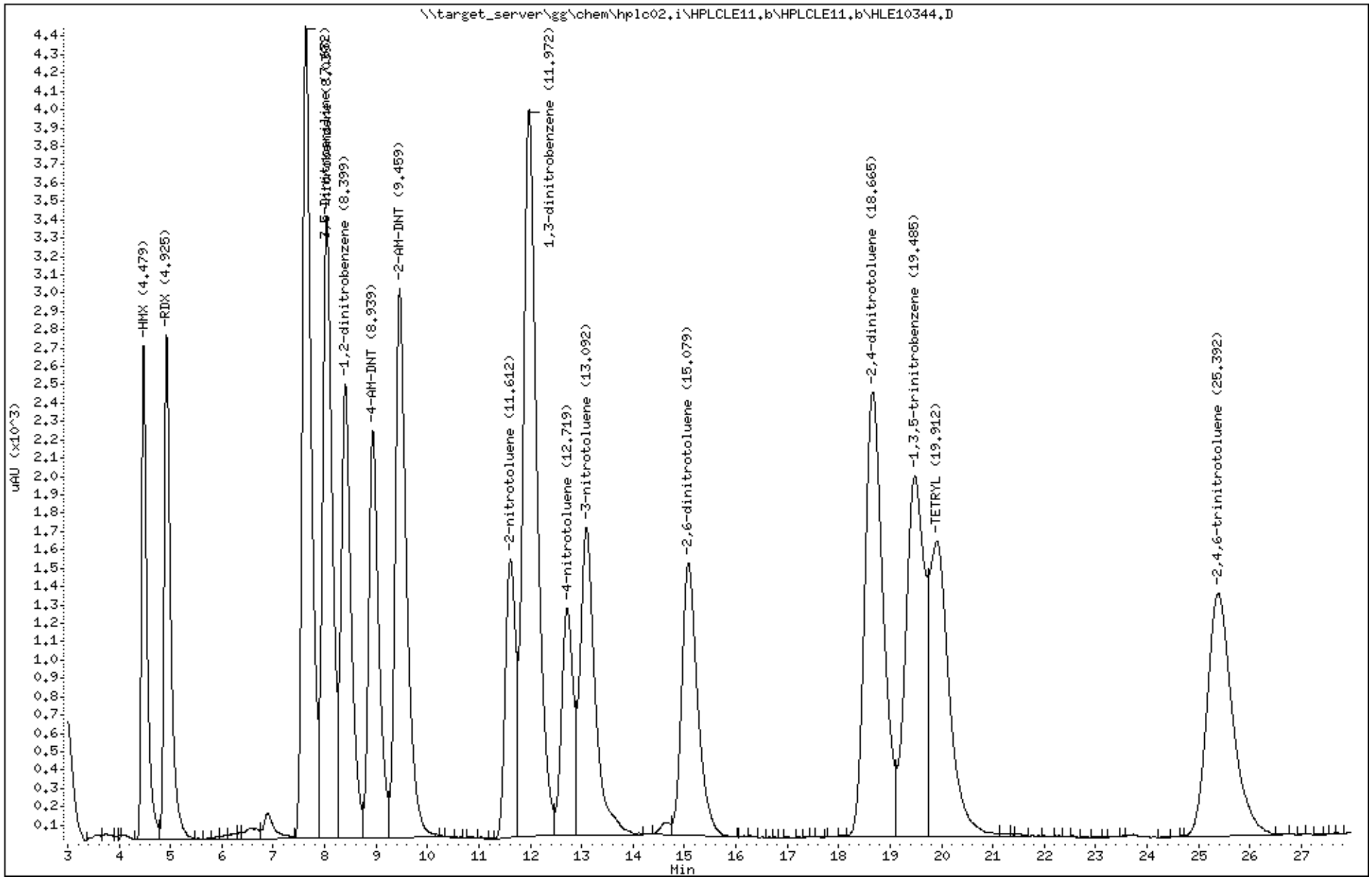
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.478	4.467	0.011	2695	0.25000	0.500	
4	RDX	4.925	4.914	0.011	2750	0.25000	0.501	
51	3,5-Dinitroaniline	7.632	7.614	0.018	4426	0.25000	0.532	
7	nitrobenzene	8.038	8.021	0.017	3385	0.25000	0.493	
$ 2	1,2-dinitrobenzene	8.398	8.381	0.017	2475	0.25000	0.535	
11	4-AM-DNT	8.938	8.914	0.024	2221	0.25000	0.516	
12	2-AM-DNT	9.458	9.434	0.024	2989	0.25000	0.519	
15	2-nitrotoluene	11.612	11.587	0.025	1514	0.25000	0.524	
6	1,3-dinitrobenzene	11.972	11.934	0.038	3962	0.25000	0.532	
16	4-nitrotoluene	12.718	12.687	0.031	1240	0.25000	0.529	
17	3-nitrotoluene	13.092	13.067	0.025	1678	0.25000	0.504	
13	2,6-dinitrotoluene	15.078	15.027	0.051	1486	0.25000	0.505	
14	2,4-dinitrotoluene	18.665	18.601	0.064	2424	0.25000	0.525	
5	1,3,5-trinitrobenzene	19.485	19.407	0.078	1963	0.25000	0.532	
9	TETRYL	19.912	19.854	0.058	1611	0.25000	0.636	
10	2,4,6-trinitrotoluene	25.392	25.281	0.111	1324	0.25000	0.524	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE11.b\HPLCLE11.b\HLE10344.D
Date : 11-MAY-2018 19:13
Client ID:
Sample Info: WG227995-7,SL3807

Instrument: hplc02.i

Operator: AAB
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 3000079

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227928-1
Client ID: Method Blank Sample
Project:
SDG: SL3807
Lab File ID: HLE10318.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG227928

Analysis Date: 11-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 18-MAY-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		97.4	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10318.D
Report Date: 18-May-2018 04:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10318.D
Lab Smp Id: WG227928-1 Client Smp ID: WG227928-Blank
Inj Date : 11-MAY-2018 02:44
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227928-1,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 37 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

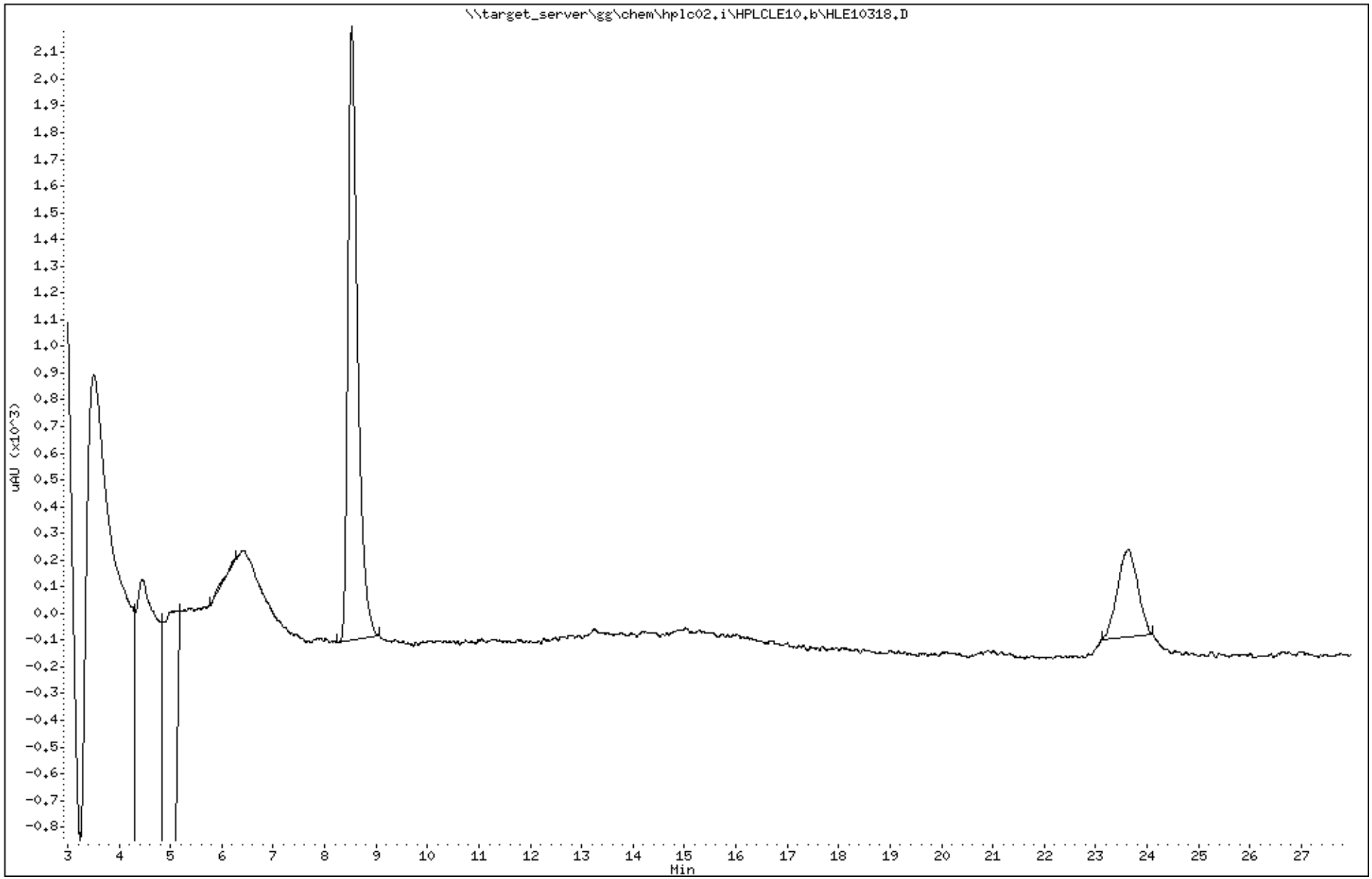
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10318.D
Date : 11-MAY-2018 02:44
Client ID: WG227928-Blank
Sample Info: WG227928-1,SL3807

Instrument: hplc02.i

Operator: AAB
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 3000083

Data File: HLE10318.D
Report Date: 18-May-2018 05:01

Katahdin Analytical Services

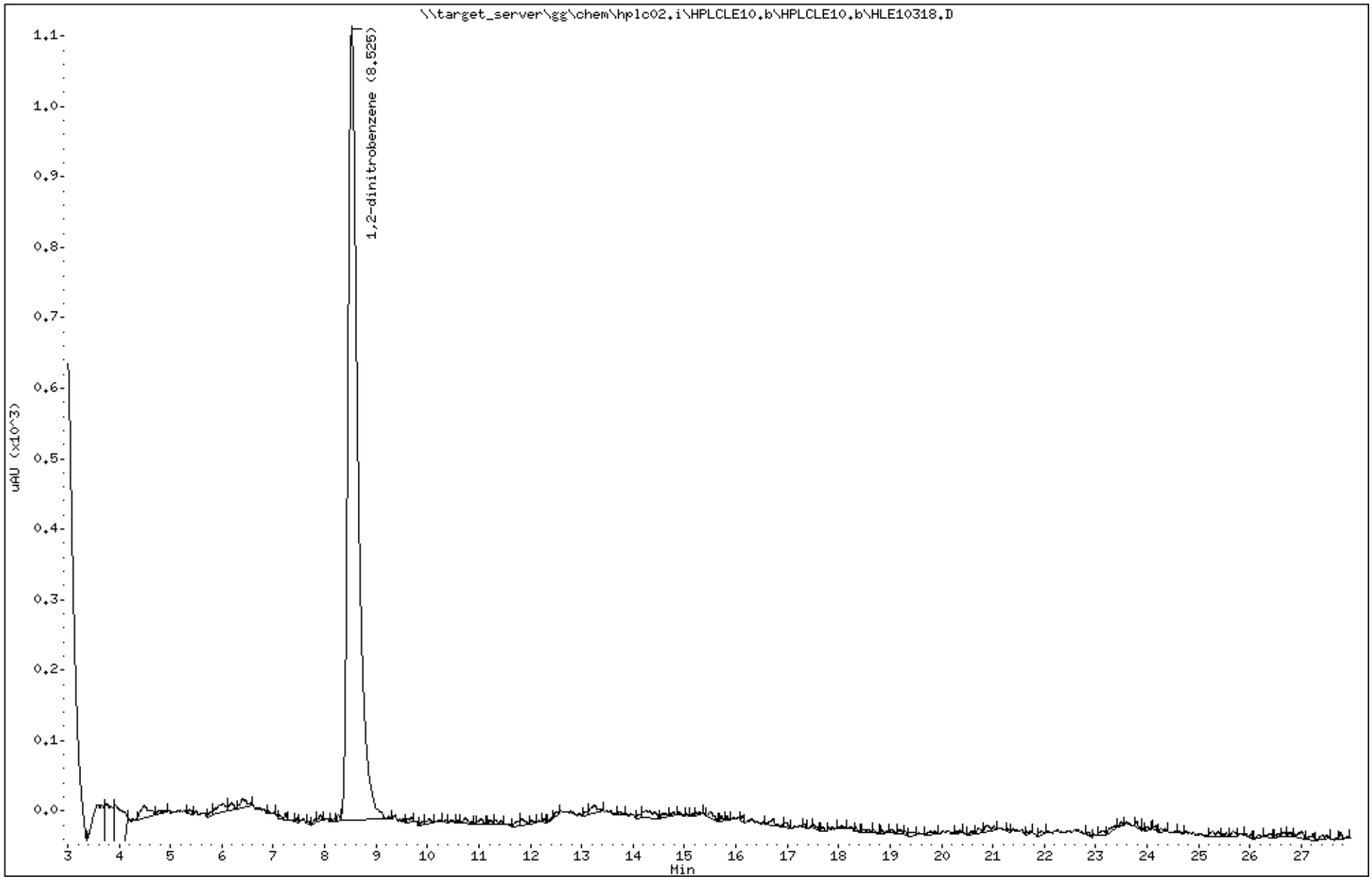
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10318.D
Lab Smp Id: WG227928-1 Client Smp ID: WG227928-Blank
Inj Date : 11-MAY-2018 02:44
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227928-1,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 37 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	8.525	8.540	-0.015	1126		0.24333	487	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10318.D
Date : 11-MAY-2018 02:44
Client ID: WG227928-Blank
Instrument: hplc02.i
Sample Info: WG227928-1,SL3807
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000085

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227928-2
Client ID: LCS
Project:
SDG: SL3807
LCS File ID: HLE10319.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG227928

Analysis Date: 11-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	106.	1000	1060	ug/Kgdrywt	74-125
RDX	105.	1000	1050	ug/Kgdrywt	67-129
1,3,5-Trinitrobenzene	108.	1000	1080	ug/Kgdrywt	80-125
1,3-Dinitrobenzene	108.	1000	1080	ug/Kgdrywt	73-125
Tetryl	124.	1000	1240	ug/Kgdrywt	68-135
Nitrobenzene	104.	1000	1040	ug/Kgdrywt	67-129
2,4,6-Trinitrotoluene	109.	1000	1090	ug/Kgdrywt	71-125
2-Am-DNT	108.	1000	1080	ug/Kgdrywt	71-125
4-Am-DNT	113.	1000	1130	ug/Kgdrywt	64-127
2,6-Dinitrotoluene	105.	1000	1050	ug/Kgdrywt	79-125
2,4-Dinitrotoluene	109.	1000	1090	ug/Kgdrywt	75-125
2-Nitrotoluene	110.	1000	1100	ug/Kgdrywt	70-125
3-Nitrotoluene	107.	1000	1070	ug/Kgdrywt	67-129
4-Nitrotoluene	111.	1000	1110	ug/Kgdrywt	71-125
Nitroglycerin	90.1	1000	901.	ug/Kgdrywt	73-125
PETN	90.8	1000	908.	ug/Kgdrywt	72-128
1,2-Dinitrobenzene	105.				78-125

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10319.D
Report Date: 18-May-2018 04:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10319.D
Lab Smp Id: WG227928-2 Client Smp ID: WG227928-LCS
Inj Date : 11-MAY-2018 03:15
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227928-2,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 38 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

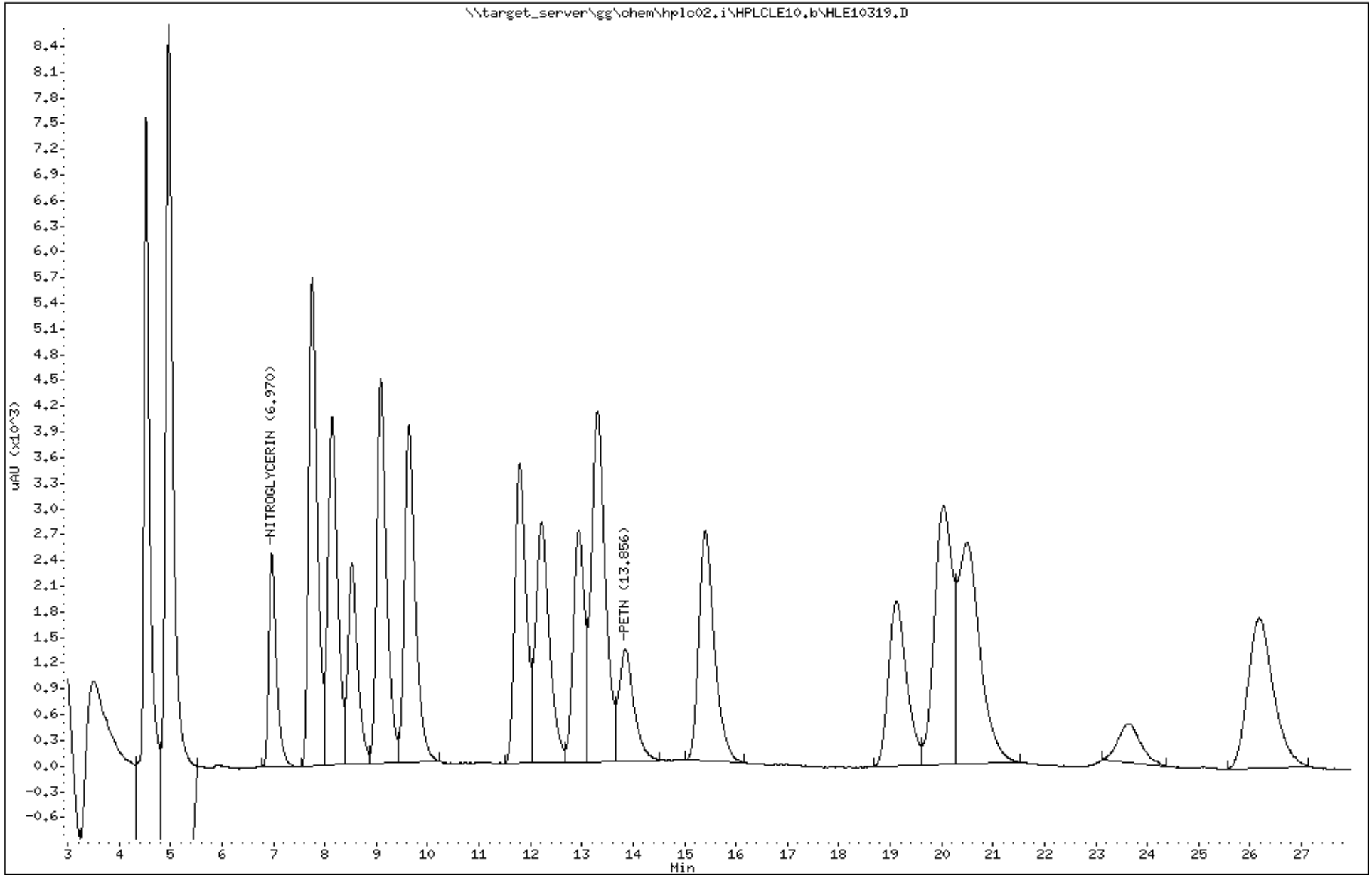
					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kgdrywt)
8 NITROGLYCERIN	6.969	6.974	-0.005	2485	0.45074	901
18 PETN	13.856	13.894	-0.038	1306	0.45413	908

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10319.D
Date : 11-MAY-2018 03:15
Client ID: WG227928-LCS
Sample Info: WG227928-2,SL3807

Instrument: hplc02.i

Operator: AAB
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 3000088

Data File: HLE10319.D
Report Date: 18-May-2018 05:01

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10319.D
Lab Smp Id: WG227928-2 Client Smp ID: WG227928-LCS
Inj Date : 11-MAY-2018 03:15
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227928-2,SL3807
Misc Info : WG227995,WG227928,WG225143-5,SL3807-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 38 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

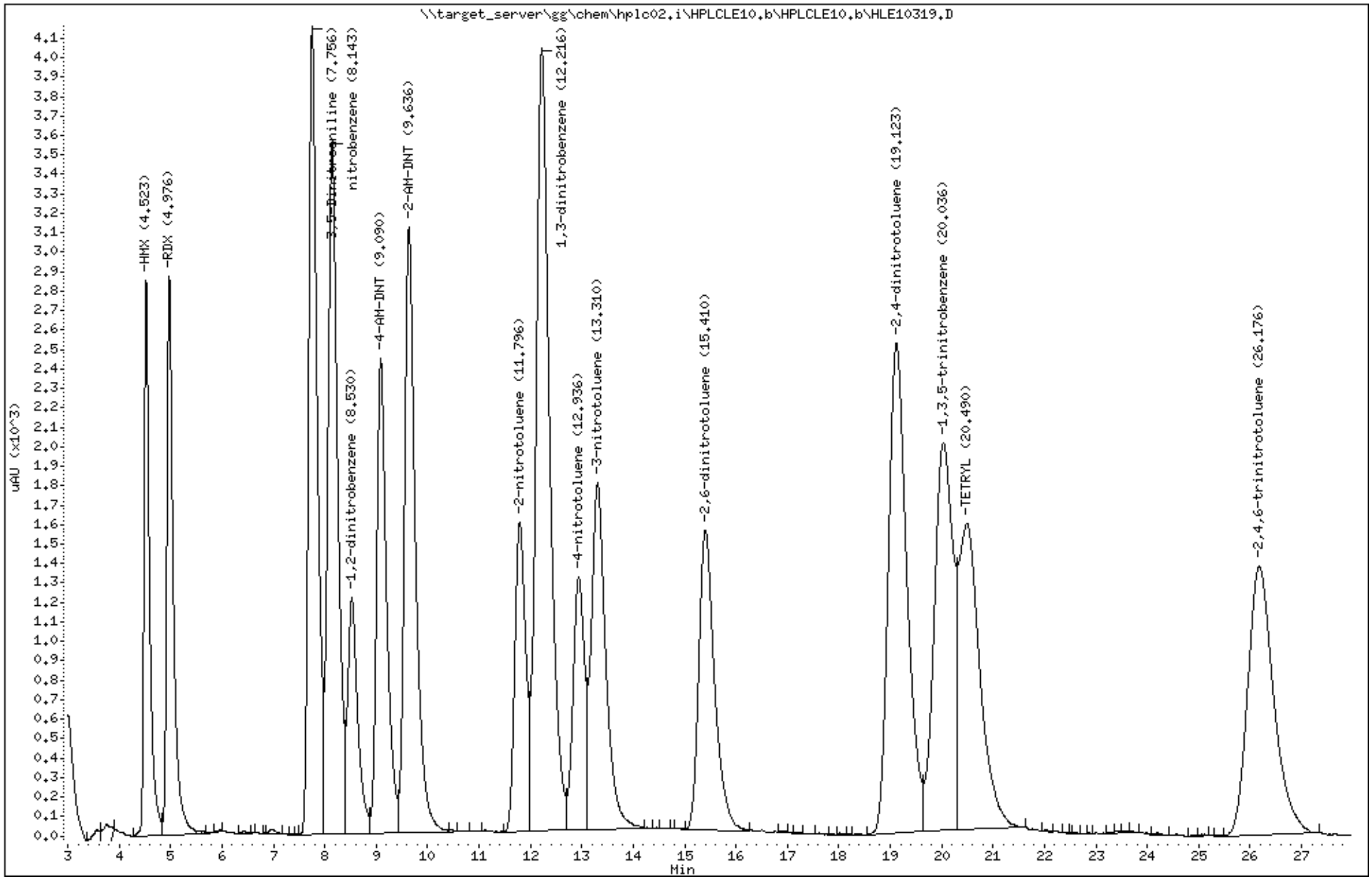
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.523	4.527	-0.004	2857	0.52999	1060	
4	RDX	4.976	4.974	0.002	2872	0.52318	1050	
51	3,5-Dinitroaniline	7.756	7.774	-0.018	4155	0.49962	999	
7	nitrobenzene	8.143	8.147	-0.004	3561	0.51859	1040	
$ 2	1,2-dinitrobenzene	8.529	8.540	-0.011	1213	0.26213	524	
11	4-AM-DNT	9.089	9.107	-0.018	2441	0.56732	1130	
12	2-AM-DNT	9.636	9.667	-0.031	3112	0.54021	1080	
15	2-nitrotoluene	11.796	11.820	-0.024	1590	0.55025	1100	
6	1,3-dinitrobenzene	12.216	12.254	-0.038	4020	0.54005	1080	
16	4-nitrotoluene	12.936	12.967	-0.031	1300	0.55498	1110	
17	3-nitrotoluene	13.309	13.334	-0.025	1781	0.53554	1070	
13	2,6-dinitrotoluene	15.409	15.454	-0.045	1542	0.52479	1050	
14	2,4-dinitrotoluene	19.123	19.194	-0.071	2518	0.54520	1090	
5	1,3,5-trinitrobenzene	20.036	20.120	-0.084	1995	0.54082	1080	
9	TETRYL	20.489	20.580	-0.091	1576	0.62180	1240	
10	2,4,6-trinitrotoluene	26.176	26.300	-0.124	1380	0.54624	1090	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10319.D
Date : 11-MAY-2018 03:15
Client ID: WG227928-LCS
Sample Info: WG227928-2,SL3807

Instrument: hplc02.i

Operator: AAB
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 3000090

Logbooks and Supporting Documents

Katahdin Analytical Services
Organic Extractions Log – Explosives (Soils)

Method SW846 8330B

Surrogate ID: P9096	Acetonitrile (ACN) Lot # DQ695	Filter Lot No: T0407171425
Spike ID (15): P9095		Vial Lot No: 00254511
Spike ID (NG): STK 5436		Syringe Lot No: 727887
Spike ID (PETN): 5438	Extraction Start Time: 15:00 5/9/18	Balance SN: Sheffler PJ400
Spike ID (EGDN): 5437	Extraction End Time: 9:00 5/10/18	No. 30 Sieve S/N —

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	EXP238 Tray Location	Comments
5-9-18	JMS	W6227928-1	9.99	0.5mL	N/A	20mL	✓	✓	F10	R473173
		-2	10.01		100uL				F11	10uPINGTE
		-3	11.83						F12	MS SL3809-2A
		-4	10.33						EXP239 A1	MSD
		-5	10.56						2	MS SL3809-16
		-6	12.08						3	MSD

EX-022 – Revision 2 – 03/21/2018

[redacted]

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	EXP239 Tray Location	Comments
5/9/18	JMS	SL3807-1 E	10.62	0.5mL	N/A	20mL	✓	✓	A4	
5/9/18		-2 E	11.70						5	
		SL3809-2 A	10.12						6	MS/D
		-~~4~~ 3 A	10.86						7	
		-~~6~~ 4 A	10.43						8	
		-~~8~~ 5 A	10.80						9	
		-~~10~~ 6 A	11.30						10	
		-~~12~~ 7 A	13.32						11	
		-~~14~~ 8 A	10.69						12	
		-9 A	11.11						B1	
		-10 A	13.13						2	
		-11 A	13.13						3	
		-12 A	11.34						4	
		-13 A	11.46						5	
		-14 A	11.00						6	
		-15 A	10.33						7	
		-16 A	11.32						8	MS/D
		-17 A	10.24						9	
		-18 A	11.22						10	
		-19 A	10.49						11	

EX-022 – Revision 2 – 03/21/2018

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): 8330B MOD. / 8330B

Column: PHENOMENEX	Injection Volume: 100uL	Standard	Standard ID
Flow Rate: 1.0 mL/MIN	Methanol lot #: DS202	C5	P9009
Detector Wavelengths: 210 nm / 252 nm		C4	P9010

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
031618	AC	HLC10023	COMBO	N		CANNABI	CANN TESTING
CHANGE TO PHENOMENEX COLUMN							
032018	AC	HLC10024	C5	Y		EXP80SA	
		025	WG225027-1	N			
		026	-2				
		027	-5				
		028	-3				
		029	-4				
		030	IND	N	WG225143	EXP80SA	
		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			2,4
		047	SL2138-20	Y			
		048	SL2295-1	Y			PETN SS ROUNDS IN
032118		049	C5 -9	Y			

Reviewed by/Date:

HP-003 - Revision 2 - 09/01/2016

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): (8330B MOD.) (8330B)

Column: PHENOMENEX	Injection Volume: 100 µL	Standard	Standard ID
Flow Rate: 1.0mL/min	Methanol lot #: DS 248	C5	P9101
Detector Wavelengths: 210nm / 254nm		C4	P9102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
051018	MAB	HLE10299	SL3841-14	Y	WG227995	EXPB05A	R
		300	-16				
		301	-18				
		302	-20				NG
		303	C5 -3	Y			
		304	SL3902-2	Y			
		305	-4				
		306	-6				
		307	-8				
		308	-10				
		309	-12				
		310	-14				
	AC	311	C4 -40 -4	Y	WG227584 WG227995		
		312	WG228021-1	Y	WG227995		
051118		313	-2				
		314	SL3993-1	Y			NG
		315	-2				NG 2AM 3NT
		316	SL3995-15	Y			NG
		317	SL3452-23RA	Y	WG227584		H R 4AM 2AM
		318	WG227928-1	Y	WG227995		
		319	-2				
		320	-3				
		321	-4				
		322	C5 -41 -5	Y	WG227584 WG227995		
		323	SL3952-2	Y	WG227995		
		324	-4				
		325	-6				
		326	-8				

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 #: DS243	C5	P9101
Detector Wavelengths: 210nm/254nm		C4	P9102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
051118	AC	HLE10327	SL3952-10	Y	WG227955	EXP8015A	
		328	-12				
		329	-16				
		330	-18				NG
		331	-19				
		332	-20 -21 MB 051518				
051118	AC	HLE10333	C4 -6	Y		EXP8015A	
		334	WG227928-5	Y			
		335	" -6	"			
		336	WG228023-1	Y			
		337	" -2				TET ↑
		338	-3				TET ↑
		339	-4				TET ↑
		340	-5				TNT ↑ TET ↑
		341	-6				H ↑ TET ↑
		342	SL3807-1	Y			
		343	" -2	"			
		344	C5 -7	Y			TET ↑
		345	WG228023-7	Y			TET ↑
		346	WG228038-1	Y			
		347	" -2				PETN DOUBLE SPIKE TET RND IN
		348	" -3	"			DNA RND IN
		349	SL3802-1	Y			4AM 2AM TET TNT
		350	" -2	"			4AM 2AM TNT
		351	SL3951-3	Y			
		352	" -4	"			
		353	SL3802 LCS1	Y			
051218		354	" LCS2	"			

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: SL3807 **SOW No.** SW846

Client Field ID	Lab Sample ID
CHAAP-BKRD-SB07	SL3807-002
CHAAP-BKRD-SS07	SL3807-001

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 Dinsmore

Date: 5/16/18 Title: Analyst

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-BKRD-SS07

Matrix: SOIL **SDG Name:** SL3807

Percent Solids: 76.5 **Lab Sample ID:** SL3807-001

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	9520			MS	5	9.7	0.48	3.9
7440-36-0	ANTIMONY, TOTAL	0.14			MS	5	0.097	0.019	0.048
7440-38-2	ARSENIC, TOTAL	2.58			MS	5	0.48	0.15	0.39
7440-39-3	BARIUM, TOTAL	167			MS	5	0.19	0.035	0.097
7440-41-7	BERYLLIUM, TOTAL	0.545			MS	5	0.097	0.0039	0.019
7440-43-9	CADMIUM, TOTAL	0.210			MS	5	0.097	0.0073	0.019
7440-70-2	CALCIUM, TOTAL	2460			MS	5	9.7	3.7	7.7
7440-47-3	CHROMIUM, TOTAL	11.0		B	MS	5	0.48	0.047	0.39
7440-48-4	COBALT, TOTAL	5.29			MS	5	0.097	0.0053	0.029
7440-50-8	COPPER, TOTAL	9.37			MS	5	0.29	0.068	0.19
7439-89-6	IRON, TOTAL	9370			MS	5	9.7	2.3	5.8
7439-92-1	LEAD, TOTAL	13.1			MS	5	0.097	0.0068	0.048
7439-95-4	MAGNESIUM, TOTAL	2280			MS	5	9.7	1.3	7.7
7439-96-5	MANGANESE, TOTAL	278		B	MS	5	0.19	0.041	0.097
7439-97-6	MERCURY, TOTAL	0.018	J		CV	1	0.033	0.0051	0.017
7440-02-0	NICKEL, TOTAL	8.42			MS	5	0.19	0.026	0.12
7440-09-7	POTASSIUM, TOTAL	3280			MS	5	97	4.4	39
7782-49-2	SELENIUM, TOTAL	0.515			MS	5	0.48	0.038	0.29
7440-22-4	SILVER, TOTAL	0.055	J		MS	5	0.097	0.0063	0.039
7440-23-5	SODIUM, TOTAL	109			MS	5	97	2.5	39
7440-28-0	THALLIUM, TOTAL	0.224			MS	5	0.097	0.0092	0.039
7440-62-2	VANADIUM, TOTAL	21.6			MS	5	0.48	0.11	0.39
7440-66-6	ZINC, TOTAL	31.7			MS	5	0.97	0.13	0.77

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-BKRD-SB07

Matrix: SOIL **SDG Name:** SL3807

Percent Solids: 81.6 **Lab Sample ID:** SL3807-002

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	18900			MS	5	11	0.55	4.4
7440-36-0	ANTIMONY, TOTAL	0.285			MS	5	0.11	0.022	0.055
7440-38-2	ARSENIC, TOTAL	12.2			MS	5	0.55	0.17	0.44
7440-39-3	BARIUM, TOTAL	259			MS	5	0.22	0.040	0.11
7440-41-7	BERYLLIUM, TOTAL	0.836			MS	5	0.11	0.0045	0.022
7440-43-9	CADMIUM, TOTAL	0.019	J		MS	5	0.11	0.0083	0.022
7440-70-2	CALCIUM, TOTAL	35000			MS	5	11	4.2	8.8
7440-47-3	CHROMIUM, TOTAL	18.6		B	MS	5	0.55	0.054	0.44
7440-48-4	COBALT, TOTAL	7.20			MS	5	0.11	0.0061	0.033
7440-50-8	COPPER, TOTAL	12.4			MS	5	0.33	0.077	0.22
7439-89-6	IRON, TOTAL	18000			MS	5	11	2.6	6.6
7439-92-1	LEAD, TOTAL	12.2			MS	5	0.11	0.0077	0.055
7439-95-4	MAGNESIUM, TOTAL	9910			MS	5	11	1.5	8.8
7439-96-5	MANGANESE, TOTAL	327		B	MS	5	0.22	0.046	0.11
7439-97-6	MERCURY, TOTAL	0.012	J		CV	1	0.041	0.0063	0.021
7440-02-0	NICKEL, TOTAL	16.4			MS	5	0.22	0.029	0.13
7440-09-7	POTASSIUM, TOTAL	5180			MS	5	110	5.0	44
7782-49-2	SELENIUM, TOTAL	0.37	J		MS	5	0.55	0.043	0.33
7440-22-4	SILVER, TOTAL	0.0821	J		MS	5	0.11	0.0072	0.044
7440-23-5	SODIUM, TOTAL	223			MS	5	110	2.8	44
7440-28-0	THALLIUM, TOTAL	0.322			MS	5	0.11	0.010	0.044
7440-62-2	VANADIUM, TOTAL	50.0			MS	5	0.55	0.12	0.44
7440-66-6	ZINC, TOTAL	45.9			MS	5	1.1	0.14	0.88

Comments:

QC Summary Section

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICV

File: HLE04A May 04, 2018 13:02

Analyte	True	Found	%R (1)
MERCURY	6.0	5.76	96.0

SAMPLE: CCV

File: HLE04A May 04, 2018 13:08

Analyte	True	Found	%R (1)
MERCURY	5.0	5.10	102.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: HLE04A May 04, 2018 13:31

Analyte	True	Found	%R (1)
MERCURY	5.0	5.07	101.4

SAMPLE: CCV

File: HLE04A May 04, 2018 13:57

Analyte	True	Found	%R (1)
MERCURY	5.0	5.23	104.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: HLE04A May 04, 2018 14:23

Analyte	True	Found	%R (1)
MERCURY	5.0	5.20	104.0

SAMPLE: CCV

File: HLE04A May 04, 2018 14:49

Analyte	True	Found	%R (1)
MERCURY	5.0	5.11	102.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: HLE04A May 04, 2018 15:15

Analyte	True	Found	%R (1)
MERCURY	5.0	5.04	100.8

SAMPLE: CCV

File: HLE04A May 04, 2018 15:25

Analyte	True	Found	%R (1)
MERCURY	5.0	5.03	100.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICV

File: JLE10C May 10, 2018 18:36

Analyte	True	Found	%R (1)
ALUMINUM	400.0	417.50	104.4
ANTIMONY	20.0	19.95	99.8
ARSENIC	20.0	19.93	99.6
BARIUM	20.0	20.15	100.7
BERYLLIUM	20.0	19.70	98.5
CADMIUM	20.0	20.13	100.6
CALCIUM	4000.0	4143.00	103.6
CHROMIUM	20.0	19.86	99.3
COBALT	20.0	20.08	100.4
COPPER	20.0	19.72	98.6
IRON	4000.0	4124.00	103.1
LEAD	20.0	19.62	98.1
MAGNESIUM	4000.0	4067.00	101.7
MANGANESE	20.0	19.62	98.1
MOLYBDENUM	40.0	38.34	95.9
NICKEL	20.0	19.99	99.9
POTASSIUM	4000.0	3974.00	99.4
SELENIUM	20.0	20.31	101.5
SILVER	20.0	20.05	100.3
SODIUM	4000.0	4044.00	101.1
THALLIUM	20.0	20.25	101.3
VANADIUM	20.0	20.19	101.0
ZINC	20.0	20.10	100.5

SAMPLE: CCV

File: JLE10C May 10, 2018 19:20

Analyte	True	Found	%R (1)
ALUMINUM	500.0	512.20	102.4
ANTIMONY	25.0	26.97	107.9
ARSENIC	25.0	24.94	99.8
BARIUM	25.0	26.51	106.0
BERYLLIUM	25.0	24.42	97.7
CADMIUM	25.0	23.40	93.6
CALCIUM	5000.0	5077.00	101.5
CHROMIUM	25.0	25.75	103.0
COBALT	25.0	25.92	103.7
COPPER	25.0	25.48	101.9
IRON	5000.0	5206.00	104.1
LEAD	25.0	25.27	101.1
MAGNESIUM	5000.0	5400.00	108.0
MANGANESE	25.0	25.35	101.4
MOLYBDENUM	25.0	23.80	95.2
NICKEL	25.0	25.82	103.3
POTASSIUM	5000.0	5136.00	102.7
SELENIUM	25.0	24.98	99.9
SILVER	25.0	24.15	96.6
SODIUM	5000.0	5493.00	109.9
THALLIUM	25.0	24.85	99.4
VANADIUM	25.0	25.67	102.7
ZINC	25.0	25.06	100.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: JLE10C May 10, 2018 20:10

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.90	101.6
ANTIMONY	25.0	26.21	104.8
ARSENIC	25.0	24.95	99.8
BARIUM	25.0	25.97	103.9
BERYLLIUM	25.0	25.32	101.3
CADMIUM	25.0	24.30	97.2
CALCIUM	5000.0	5115.00	102.3
CHROMIUM	25.0	25.45	101.8
COBALT	25.0	25.41	101.6
COPPER	25.0	25.47	101.9
IRON	5000.0	5115.00	102.3
LEAD	25.0	25.16	100.6
MAGNESIUM	5000.0	5135.00	102.7
MANGANESE	25.0	24.85	99.4
MOLYBDENUM	25.0	24.25	97.0
NICKEL	25.0	25.38	101.5
POTASSIUM	5000.0	4994.00	99.9
SELENIUM	25.0	25.22	100.9
SILVER	25.0	24.53	98.1
SODIUM	5000.0	5138.00	102.8
THALLIUM	25.0	25.11	100.4
VANADIUM	25.0	25.45	101.8
ZINC	25.0	25.28	101.1

SAMPLE: CCV

File: JLE10C May 10, 2018 21:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	511.10	102.2
ANTIMONY	25.0	26.35	105.4
ARSENIC	25.0	25.38	101.5
BARIUM	25.0	26.36	105.4
BERYLLIUM	25.0	24.94	99.8
CADMIUM	25.0	24.62	98.5
CALCIUM	5000.0	5148.00	103.0
CHROMIUM	25.0	25.46	101.8
COBALT	25.0	25.55	102.2
COPPER	25.0	25.67	102.7
IRON	5000.0	5166.00	103.3
LEAD	25.0	25.29	101.2
MAGNESIUM	5000.0	5016.00	100.3
MANGANESE	25.0	25.16	100.6
MOLYBDENUM	25.0	24.65	98.6
NICKEL	25.0	25.26	101.0
POTASSIUM	5000.0	4929.00	98.6
SELENIUM	25.0	25.85	103.4
SILVER	25.0	24.79	99.2
SODIUM	5000.0	4943.00	98.9
THALLIUM	25.0	25.19	100.8
VANADIUM	25.0	25.53	102.1
ZINC	25.0	25.37	101.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICV

File: JLE11B May 11, 2018 18:25

Analyte	True	Found	%R (1)
ALUMINUM	400.0	414.20	103.5
CALCIUM	4000.0	4127.00	103.2
IRON	4000.0	4102.00	102.6
MAGNESIUM	4000.0	4238.00	106.0
MOLYBDENUM	40.0	39.70	99.3
POTASSIUM	4000.0	4053.00	101.3
SODIUM	4000.0	4156.00	103.9

SAMPLE: CCV

File: JLE11B May 11, 2018 19:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.10	98.8
CALCIUM	5000.0	4935.00	98.7
IRON	5000.0	4986.00	99.7
MAGNESIUM	5000.0	4951.00	99.0
MOLYBDENUM	25.0	24.63	98.5
POTASSIUM	5000.0	4949.00	99.0
SODIUM	5000.0	4936.00	98.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: JLE11B May 11, 2018 19:58

Analyte	True	Found	%R (1)
ALUMINUM	500.0	521.20	104.2
CALCIUM	5000.0	5046.00	100.9
IRON	5000.0	5072.00	101.4
MAGNESIUM	5000.0	5501.00	110.0
MOLYBDENUM	25.0	24.10	96.4
POTASSIUM	5000.0	5091.00	101.8
SODIUM	5000.0	5580.00	111.6•

SAMPLE: CCV

File: JLE11B May 11, 2018 20:48

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.60	100.3
CALCIUM	5000.0	4978.00	99.6
IRON	5000.0	5066.00	101.3
MAGNESIUM	5000.0	5145.00	102.9
MOLYBDENUM	25.0	24.74	99.0
POTASSIUM	5000.0	4860.00	97.2
SODIUM	5000.0	5040.00	100.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: JLE11B May 11, 2018 21:38

Analyte	True	Found	%R (1)
ALUMINUM	500.0	488.60	97.7
CALCIUM	5000.0	4862.00	97.2
IRON	5000.0	4955.00	99.1
MAGNESIUM	5000.0	4745.00	94.9
MOLYBDENUM	25.0	25.50	102.0
POTASSIUM	5000.0	4694.00	93.9
SODIUM	5000.0	4418.00	88.4•

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICV

File: JLE14A May 14, 2018 15:20

Analyte	True	Found	%R (1)
ALUMINUM	400.0	412.60	103.2
CALCIUM	4000.0	3999.00	100.0
IRON	4000.0	3963.00	99.1
MAGNESIUM	4000.0	4031.00	100.8
MOLYBDENUM	40.0	37.59	94.0
POTASSIUM	4000.0	3962.00	99.1
SODIUM	4000.0	4031.00	100.8

SAMPLE: CCV

File: JLE14A May 14, 2018 16:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.10	101.4
CALCIUM	5000.0	5012.00	100.2
IRON	5000.0	4950.00	99.0
MAGNESIUM	5000.0	5259.00	105.2
MOLYBDENUM	25.0	23.94	95.8
POTASSIUM	5000.0	4848.00	97.0
SODIUM	5000.0	5302.00	106.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 16:45

Analyte	True	Found	%R (1)
ALUMINUM	500.0	503.30	100.7
CALCIUM	5000.0	4893.00	97.9
IRON	5000.0	4931.00	98.6
MAGNESIUM	5000.0	5149.00	103.0
MOLYBDENUM	25.0	23.98	95.9
POTASSIUM	5000.0	4878.00	97.6
SODIUM	5000.0	5107.00	102.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICV

File: JLE15C May 15, 2018 18:44

Analyte	True	Found	%R (1)
ALUMINUM	400.0	400.10	100.0
CALCIUM	4000.0	4046.00	101.2
IRON	4000.0	3993.00	99.8
MAGNESIUM	4000.0	3846.00	96.2
MOLYBDENUM	40.0	38.80	97.0
POTASSIUM	4000.0	3913.00	97.8
SODIUM	4000.0	3902.00	97.5

SAMPLE: CCV

File: JLE15C May 15, 2018 19:29

Analyte	True	Found	%R (1)
ALUMINUM	500.0	490.70	98.1
CALCIUM	5000.0	4941.00	98.8
IRON	5000.0	4942.00	98.8
MAGNESIUM	5000.0	4845.00	96.9
MOLYBDENUM	25.0	24.72	98.9
POTASSIUM	5000.0	4833.00	96.7
SODIUM	5000.0	4828.00	96.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 20:19

Analyte	True	Found	%R (1)
ALUMINUM	500.0	479.70	95.9
CALCIUM	5000.0	4918.00	98.4
IRON	5000.0	4875.00	97.5
MAGNESIUM	5000.0	4686.00	93.7
MOLYBDENUM	25.0	24.66	98.6
POTASSIUM	5000.0	4757.00	95.1
SODIUM	5000.0	4618.00	92.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: PQL

File: HLE04A May 04, 2018 13:06

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.17	85.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: PQL

File: JLE10C May 10, 2018 18:44

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.02	100.1
ANTIMONY	0.2	0.22	110.0
ARSENIC	1.0	0.90	90.0
BARIUM	0.4	0.39	97.5
BERYLLIUM	0.2	0.19	95.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	18.18	90.9
CHROMIUM	1.0	0.99	99.0
COBALT	0.2	0.20	100.0
COPPER	0.6	0.61	101.7
IRON	20.0	19.16	95.8
LEAD	0.2	0.17	85.0
MAGNESIUM	20.0	19.91	99.6
MANGANESE	0.4	0.37	92.5
MOLYBDENUM	1.0	1.01	101.0
NICKEL	0.4	0.43	107.5
POTASSIUM	200.0	188.80	94.4
SELENIUM	1.0	0.94	94.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	209.60	104.8
THALLIUM	0.2	0.21	105.0
VANADIUM	1.0	1.02	102.0
ZINC	2.0	2.10	105.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: PQL

File: JLE11B May 11, 2018 18:33

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.77	98.8
CALCIUM	20.0	19.82	99.1
IRON	20.0	20.33	101.6
MAGNESIUM	20.0	19.64	98.2
MOLYBDENUM	1.0	1.00	100.0
POTASSIUM	200.0	200.40	100.2
SODIUM	200.0	204.50	102.3

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: PQL

File: JLE14A May 14, 2018 15:26

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.37	101.8
CALCIUM	20.0	20.40	102.0
IRON	20.0	19.66	98.3
MAGNESIUM	20.0	20.57	102.8
MOLYBDENUM	1.0	1.00	100.0
POTASSIUM	200.0	198.10	99.0
SODIUM	200.0	211.10	105.5

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: PQL

File: JLE15C May 15, 2018 18:52

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.29	96.4
CALCIUM	20.0	19.83	99.1
IRON	20.0	19.56	97.8
MAGNESIUM	20.0	19.19	96.0
MOLYBDENUM	1.0	0.97	97.0
POTASSIUM	200.0	191.10	95.5
SODIUM	200.0	194.10	97.0

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICB

File: HLE04A May 04, 2018 13:04

Analyte	Result	C
MERCURY	-0.045	U

SAMPLE: CCB

File: HLE04A May 04, 2018 13:10

Analyte	Result	C
MERCURY	-0.037	U

SAMPLE: CCB

File: HLE04A May 04, 2018 13:33

Analyte	Result	C
MERCURY	-0.033	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCB

File: HLE04A May 04, 2018 13:59

Analyte	Result	C
MERCURY	-0.034	U

SAMPLE: CCB

File: HLE04A May 04, 2018 14:25

Analyte	Result	C
MERCURY	-0.053	U

SAMPLE: CCB

File: HLE04A May 04, 2018 14:51

Analyte	Result	C
MERCURY	-0.035	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCB

File: HLE04A May 04, 2018 15:17

Analyte	Result	C
MERCURY	-0.034	U

SAMPLE: CCB

File: HLE04A May 04, 2018 15:28

Analyte	Result	C
MERCURY	-0.034	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICB
File: JLE10C May 10, 2018 18:40

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	-0.041	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.060	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.007	J
SODIUM	4.400	U
THALLIUM	0.014	J
VANADIUM	0.095	J
ZINC	0.270	U

SAMPLE: CCB
File: JLE10C May 10, 2018 19:24

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.017	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	U
COPPER	0.030	U
IRON	4.300	U
LEAD	-0.057	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.068	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.005	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.072	J
ZINC	0.270	U

SAMPLE: CCB
File: JLE10C May 10, 2018 20:14

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.086	J
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
LEAD	-0.036	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.035	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	0.109	J
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: CCB

File: JLE10C May 10, 2018 21:04

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	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	U
COPPER	0.030	U
IRON	4.300	U
LEAD	-0.049	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	J
SODIUM	4.400	U
THALLIUM	-0.018	U
VANADIUM	0.102	J
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICB

File: JLE11B May 11, 2018 18:29

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.053	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE11B May 11, 2018 19:13

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.058	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE11B May 11, 2018 20:02

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:** SL3807

Concentration Units: ug/L

SAMPLE: CCB

File: JLE11B May 11, 2018 20:52

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	7.448	J

SAMPLE: CCB

File: JLE11B May 11, 2018 21:42

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:** SL3807

Concentration Units: ug/L

SAMPLE: ICB

File: JLE14A May 14, 2018 15:23

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.075	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE14A May 14, 2018 16:03

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.066	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE14A May 14, 2018 16:49

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.039	J
POTASSIUM	7.900	U
SODIUM	4.400	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICB

File: JLE15C May 15, 2018 18:48

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.056	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE15C May 15, 2018 19:33

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.051	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLE15C May 15, 2018 20:23

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

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLE04HGS1

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04HGS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
MERCURY	0.017	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLE04IMS1

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04IMS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
ALUMINUM	0.77	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.10	U
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	5.5	J
CHROMIUM	0.31	B
COBALT	0.030	U
COPPER	0.12	J
IRON	3.3	J
LEAD	0.050	U
MAGNESIUM	2.5	J
MANGANESE	0.14	B
NICKEL	0.040	J
POTASSIUM	40	U
SELENIUM	0.30	U
SILVER	0.0084	J
SODIUM	6.9	J
THALLIUM	0.040	U
VANADIUM	0.11	J
ZINC	0.80	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE10C May 10, 2018 18:52

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95740.00	95.7
ANTIMONY	0	0.05	
ARSENIC	0	0.10	
BARIUM	0	0.10	
BERYLLIUM	0	0.00	
CADMIUM	0	0.02	
CALCIUM	100000.00	97550.00	97.5
CHROMIUM	0	0.84	
COBALT	0	0.09	
COPPER	0	1.04	
IRON	100000.00	97360.00	97.4
LEAD	0	0.10	
MAGNESIUM	100000.00	95210.00	95.2
MANGANESE	0	0.37	
MOLYBDENUM	2000.00	1913.00	95.7
NICKEL	0	-0.34	
POTASSIUM	100000.00	96500.00	96.5
SELENIUM	0	0.15	
SILVER	0	0.03	
SODIUM	100000.00	99950.00	100.0
THALLIUM	0	0.00	
VANADIUM	0	0.34	
ZINC	0	2.17	

SAMPLE: ICSAB

File: JLE10C May 10, 2018 18:56

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	99080.00	99.1
ANTIMONY	20.00	21.97	110.0
ARSENIC	20.00	20.13	100.0
BARIUM	21.00	22.19	104.8
BERYLLIUM	20.00	20.40	100.0
CADMIUM	20.00	18.09	90.0
CALCIUM	100000.00	100400.00	100.4
CHROMIUM	20.00	21.80	110.0
COBALT	20.00	20.76	105.0
COPPER	20.00	20.57	105.0
IRON	100000.00	100000.00	100.0
LEAD	20.00	21.06	105.0
MAGNESIUM	100000.00	99640.00	99.6
MANGANESE	20.00	20.66	105.0
MOLYBDENUM	2000.00	1941.00	97.0
NICKEL	20.00	19.34	95.0
POTASSIUM	100000.00	101000.00	101.0
SELENIUM	20.00	19.36	95.0
SILVER	20.00	18.31	90.0
SODIUM	100000.00	103400.00	103.4
THALLIUM	20.00	20.97	105.0
VANADIUM	20.00	21.90	110.0
ZINC	20.00	20.72	105.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE11B May 11, 2018 18:41

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	96990.00	97.0
CALCIUM	100000.00	95750.00	95.8
IRON	100000.00	92660.00	92.7
MAGNESIUM	100000.00	94800.00	94.8
MOLYBDENUM	2000.00	1934.00	96.7
POTASSIUM	100000.00	96810.00	96.8
SODIUM	100000.00	97520.00	97.5

SAMPLE: ICSAB

File: JLE11B May 11, 2018 18:45

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	96230.00	96.2
CALCIUM	100000.00	96210.00	96.2
IRON	100000.00	93850.00	93.8
MAGNESIUM	100000.00	95470.00	95.5
MOLYBDENUM	2000.00	1979.00	99.0
POTASSIUM	100000.00	95870.00	95.9
SODIUM	100000.00	96190.00	96.2

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE14A May 14, 2018 15:34

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	99860.00	99.9
CALCIUM	100000.00	97280.00	97.3
IRON	100000.00	92940.00	92.9
MAGNESIUM	100000.00	99940.00	99.9
MOLYBDENUM	2000.00	1890.00	94.5
POTASSIUM	100000.00	99380.00	99.4
SODIUM	100000.00	102200.00	102.2

SAMPLE: ICSAB

File: JLE14A May 14, 2018 15:38

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	100600.00	100.6
CALCIUM	100000.00	96790.00	96.8
IRON	100000.00	93950.00	94.0
MAGNESIUM	100000.00	101300.00	101.3
MOLYBDENUM	2000.00	1912.00	95.6
POTASSIUM	100000.00	98850.00	98.9
SODIUM	100000.00	105400.00	105.4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE15C May 15, 2018 19:00

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	91500.00	91.5
CALCIUM	100000.00	95500.00	95.5
IRON	100000.00	90640.00	90.6
MAGNESIUM	100000.00	89100.00	89.1
MOLYBDENUM	2000.00	1911.00	95.5
POTASSIUM	100000.00	95450.00	95.5
SODIUM	100000.00	92410.00	92.4

SAMPLE: ICSAB

File: JLE15C May 15, 2018 19:04

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	93940.00	93.9
CALCIUM	100000.00	96200.00	96.2
IRON	100000.00	91150.00	91.1
MAGNESIUM	100000.00	91850.00	91.8
MOLYBDENUM	2000.00	1960.00	98.0
POTASSIUM	100000.00	97210.00	97.2
SODIUM	100000.00	94170.00	94.2

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OLE04HGS1

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.865	104.8	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLE04HGS1

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.902	108.4	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLE04IMS1

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04IMS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200	215	107.5	78	124
ANTIMONY	10.0	11.2	112.2	72	124
ARSENIC	10.0	10.6	106.5	82	118
BARIUM	200	225	112.4	86	116
BERYLLIUM	5.00	5.24	104.8	80	120
CADMIUM	25.0	26.1	104.5	84	116
CALCIUM	250	254	101.5	86	118
CHROMIUM	20.0	21.8	109.3	83	119
COBALT	50.0	56.0	112.1	84	115
COPPER	25.0	27.0	108.1	84	119
IRON	100	112	112.2	81	124
LEAD	10.0	11.1	111.1	84	118
MAGNESIUM	500	516	103.2	80	123
MANGANESE	50.0	54.0	108.0	85	116
NICKEL	50.0	54.8	109.7	84	119
POTASSIUM	1000	1050	104.8	85	119
SELENIUM	10.0	10.4	103.6	80	119
SILVER	5.00	5.34	106.8	83	118
SODIUM	750	864	115.2	79	125
THALLIUM	10.0	11.0	110.1	83	118
VANADIUM	50.0	55.2	110.4	82	116
ZINC	50.0	52.3	104.6	82	119

7D

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL **SDG Name:** SL3807

QC Batch ID: LE04HGS1 **Lab Sample ID:** LCSOLE04HGS1

Concentration Units: mg/Kg drywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
MERCURY	20.0	0.902	0.865	4.2	

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INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 4/6/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
MERCURY	0.20	0.025	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:** 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:** 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:** LE04HGS1

Matrix: SOIL **SDG Name:** SL3807

Method: CV **Prep Date:** 05/04/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OLE04HGS1	LC2OLE04HGS1	0.6	0.1	
LCSOLE04HGS1	LCSOLE04HGS1	0.6	0.1	
PBSLE04HGS1	PBSLE04HGS1	0.6	0.1	
CHAAP-BKRD-SS07	SL3807-001	0.8	0.1	E
CHAAP-BKRD-SB07	SL3807-002	0.6	0.1	E

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LE04IMS1

Matrix: SOIL **SDG Name:** SL3807

Method: MS **Prep Date:** 05/04/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOLE04IMS1	LCSOLE04IMS1	1	0.1	
PBSLE04IMS1	PBSLE04IMS1	1	0.1	
CHAAP-BKRD-SS07	SL3807-001	1.35	0.1	E
CHAAP-BKRD-SB07	SL3807-002	1.11	0.1	E

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: CETAC M6100 **File Name:** HLE04A

Date: 5/4/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	12:47	Hg
Standard #1 (0.2 ppb		1	12:50	Hg
Standard #2 (0.5 ppb		1	12:52	Hg
Standard #3 (1.0 ppb		1	12:54	Hg
Standard #4 (5.0 ppb		1	12:56	Hg
Standard #5 (10.0 pp		1	12:58	Hg
ICV		1	13:02	HG
ICB		1	13:04	HG
PQL		1	13:06	HG
CCV		1	13:08	HG
CCB		1	13:10	HG
ZZZZZZ		1	13:12	
ZZZZZZ		1	13:14	
ZZZZZZ		1	13:16	
ZZZZZZ		1	13:19	
ZZZZZZ		1	13:21	
ZZZZZZ		1	13:23	
ZZZZZZ		1	13:25	
ZZZZZZ		1	13:27	
ZZZZZZ		5	13:29	
CCV		1	13:31	HG
CCB		1	13:33	HG
ZZZZZZ		1	13:36	
ZZZZZZ		1	13:38	
ZZZZZZ		1	13:40	
ZZZZZZ		1	13:42	
ZZZZZZ		1	13:44	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: CETAC M6100 **File Name:** HLE04A

Date: 5/4/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	13:46	
ZZZZZZ		1	13:48	
ZZZZZZ		1	13:51	
ZZZZZZ		1	13:53	
ZZZZZZ		1	13:55	
CCV		1	13:57	HG
CCB		1	13:59	HG
ZZZZZZ		1	14:01	
ZZZZZZ		1	14:03	
ZZZZZZ		1	14:06	
ZZZZZZ		1	14:08	
ZZZZZZ		1	14:10	
ZZZZZZ		1	14:12	
ZZZZZZ		1	14:14	
PBSLE04HGS1		1	14:16	HG
LCSOLE04HGS1		1	14:18	HG
ZZZZZZ		1	14:21	
CCV		1	14:23	HG
CCB		1	14:25	HG
ZZZZZZ		1	14:27	
ZZZZZZ		1	14:29	
ZZZZZZ		1	14:31	
SL3807-001	CHAAP-BKRD-SS07	1	14:34	HG
SL3807-002	CHAAP-BKRD-SB07	1	14:36	HG
ZZZZZZ		1	14:38	
ZZZZZZ		5	14:40	
ZZZZZZ		1	14:42	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: CETAC M6100 **File Name:** HLE04A

Date: 5/4/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	14:44	
ZZZZZZ		1	14:47	
CCV		1	14:49	HG
CCB		1	14:51	HG
ZZZZZZ		1	14:53	
ZZZZZZ		1	14:55	
ZZZZZZ		1	14:57	
ZZZZZZ		1	14:59	
ZZZZZZ		1	15:02	
ZZZZZZ		1	15:04	
ZZZZZZ		1	15:06	
ZZZZZZ		1	15:08	
ZZZZZZ		1	15:10	
ZZZZZZ		1	15:13	
CCV		1	15:15	HG
CCB		1	15:17	HG
ZZZZZZ		1	15:19	
ZZZZZZ		1	15:21	
LC2OLE04HGS1		1	15:23	HG
CCV		1	15:25	HG
CCB		1	15:28	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE10C

Date: 5/10/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:43	
200.8 TUNE		1	14:46	
Cal Blank		1	18:28	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		1	18:32	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	18:36	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	18:40	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	18:44	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	18:48	
ICSA		1	18:52	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	18:56	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	19:00	
ZZZZZZ		1	19:04	
ZZZZZZ		1	19:08	
ZZZZZZ		1	19:12	
ZZZZZZ		1	19:16	
CCV		1	19:20	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	19:24	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	19:29	
ZZZZZZ		1	19:33	
ZZZZZZ		1	19:37	
ZZZZZZ		5	19:41	
ZZZZZZ		5	19:45	
ZZZZZZ		5	19:49	
ZZZZZZ		5	19:53	
ZZZZZZ		5	19:57	
ZZZZZZ		5	20:01	
ZZZZZZ		2	20:05	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE10C

Date: 5/10/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	20:10	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	20:14	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PBSLE04IMS1		5	20:18	Sb As Ba Be Cd Cr Co Cu Fe Pb Mn Ni Se Ag Tl V Zn
LCSOLE04IMS1		5	20:22	Sb As Ba Be Cd Cr Co Cu Fe Pb Mn Ni Se Ag Tl V Zn
ZZZZZZ		5	20:26	
ZZZZZZ		5	20:30	
ZZZZZZ		5	20:35	
ZZZZZZ		5	20:39	
SL3807-001	CHAAP-BKRD-SS07	5	20:43	Sb As Ba Be Cd Cr Co Cu Fe Pb Mn Ni Se Ag Tl V Zn
SL3807-002	CHAAP-BKRD-SB07	5	20:47	Sb As Ba Be Cd Cr Co Cu Fe Pb Mn Ni Se Ag Tl V Zn
ZZZZZZ		5	20:52	
ZZZZZZ		5	20:56	
CCV		1	21:00	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	21:04	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:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE11B

Date: 5/11/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
6020 TUNE		1	15:24							
200.8 TUNE		1	15:27							
Cal Blank		1	18:17	Al	Ca	Fe	Mg	Mo	K	Na
Cal Std		1	18:21	Al	Ca	Fe	Mg	Mo	K	Na
ICV		1	18:25	Al	Ca	Fe	Mg	Mo	K	Na
ICB		1	18:29	Al	Ca	Fe	Mg	Mo	K	Na
PQL		1	18:33	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	18:37							
ICSA		1	18:41	Al	Ca	Fe	Mg	Mo	K	Na
ICSAB		1	18:45	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	18:50							
ZZZZZZ		1	18:54							
ZZZZZZ		1	18:57							
ZZZZZZ		1	19:01							
ZZZZZZ		1	19:05							
CCV		1	19:09	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	19:13	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	19:17							
ZZZZZZ		1	19:21							
ZZZZZZ		5	19:25							
ZZZZZZ		1	19:29							
ZZZZZZ		1	19:33							
ZZZZZZ		1	19:38							
ZZZZZZ		5	19:42							
ZZZZZZ		1	19:46							
ZZZZZZ		1	19:50							
ZZZZZZ		1	19:54							

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE11B

Date: 5/11/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
CCV		1	19:58	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	20:02	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	20:06							
ZZZZZZ		1	20:10							
ZZZZZZ		1	20:14							
ZZZZZZ		1	20:19							
ZZZZZZ		1	20:23							
ZZZZZZ		1	20:27							
ZZZZZZ		1	20:31							
ZZZZZZ		1	20:35							
ZZZZZZ		1	20:39							
ZZZZZZ		1	20:44							
CCV		1	20:48	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	20:52	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	20:56							
ZZZZZZ		1	21:00							
ZZZZZZ		1	21:04							
ZZZZZZ		1	21:09							
PBSLE04IMS1		5	21:13	Al	Ca		Mg		K	
LCSOLE04IMS1		5	21:17	Al	Ca		Mg		K	
ZZZZZZ		10	21:21							
ZZZZZZ		10	21:25							
ZZZZZZ		10	21:29							
ZZZZZZ		10	21:33							
CCV		1	21:38	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	21:42	Al	Ca	Fe	Mg	Mo	K	Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
6020 TUNE		1	14:23							
200.8 TUNE		1	14:26							
Cal Blank		1	15:12	Al	Ca	Fe	Mg	Mo	K	Na
Cal Std		1	15:16	Al	Ca	Fe	Mg	Mo	K	Na
ICV		1	15:20	Al	Ca	Fe	Mg	Mo	K	Na
ICB		1	15:23	Al	Ca	Fe	Mg	Mo	K	Na
PQL		1	15:26	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	15:30							
ICSA		1	15:34	Al	Ca	Fe	Mg	Mo	K	Na
ICSAB		1	15:38	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	15:41							
ZZZZZZ		1	15:45							
ZZZZZZ		1	15:48							
ZZZZZZ		1	15:52							
ZZZZZZ		1	15:56							
CCV		1	16:00	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	16:03	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	16:07							
ZZZZZZ		1	16:11							
ZZZZZZ		1	16:14							
ZZZZZZ		5	16:18							
ZZZZZZ		1	16:22							
ZZZZZZ		25	16:26							
ZZZZZZ		1	16:30							
ZZZZZZ		1	16:33							
PBSLE04IMS1		5	16:37							Na
LCSOLE04IMS1		5	16:41							Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
CCV		1	16:45	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	16:49	Al	Ca	Fe	Mg	Mo	K	Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
6020 TUNE		1	14:18							
200.8 TUNE		1	14:21							
Cal Blank		1	18:36	Al	Ca	Fe	Mg	Mo	K	Na
Cal Std		1	18:40	Al	Ca	Fe	Mg	Mo	K	Na
ICV		1	18:44	Al	Ca	Fe	Mg	Mo	K	Na
ICB		1	18:48	Al	Ca	Fe	Mg	Mo	K	Na
PQL		1	18:52	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	18:56							
ICSA		1	19:00	Al	Ca	Fe	Mg	Mo	K	Na
ICSAB		1	19:04	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	19:08							
ZZZZZZ		1	19:13							
ZZZZZZ		1	19:16							
ZZZZZZ		1	19:21							
ZZZZZZ		1	19:25							
CCV		1	19:29	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	19:33	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	19:37							
ZZZZZZ		5	19:41							
ZZZZZZ		1	19:45							
ZZZZZZ		1	19:50							
SL3807-001	CHAAP-BKRD-SS07	5	19:54	Al	Ca		Mg		K	Na
SL3807-002	CHAAP-BKRD-SB07	5	19:58	Al	Ca		Mg		K	Na
ZZZZZZ		1	20:02							
ZZZZZZ		5	20:07							
ZZZZZZ		5	20:11							
ZZZZZZ		5	20:15							

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3807

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
CCV		1	20:19	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	20:23	Al	Ca	Fe	Mg	Mo	K	Na

Raw Data Section

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: Cetac M6100 (H) **ANALYST**: JS **ANALYSIS DATE**: 05/04/2018

FILE NAME: HLE04A **METHOD**: CVAA

☐ 245.1
☐ 7470
☑ 7471
☑ DoD
☐ _____

REVIEWED
ams 5/7/18
KATAHDIN ANALYTICAL
METALS SECTION

Analyte : Mercury

$SnCl_2$ Lot : MR2005

STANDARDS USED:

Standard Name	Prep. Date	Expiration Date	Standard Conc.
Cal. Blank / ICB / CCB	05/04/2018	06/01/2018	0.00 ug/L
Standard #1 / PQL	05/04/2018	06/01/2018	0.20 ug/L
Standard #2	05/04/2018	06/01/2018	0.50 ug/L
Standard #3	05/04/2018	06/01/2018	1.00 ug/L
Standard #4	05/04/2018	06/01/2018	5.00 ug/L
Standard #5	05/04/2018	06/01/2018	10.00 ug/L
ICV	05/04/2018	06/01/2018	6.00 ug/L

Additional Comments and Notes:

ams 5/7/18

Post Spike (245.1/7470): 0.005 mL MW17721 (pipet M17) into 8.0mL (pipet M12) of sample

Post Spike (7471): 0.008 mL MW17721 (pipet M17) into 8.0mL (pipet M12) of sample

5x Dilution: 1.6mL (pipet M13) of sample + 6.4mL (pipet M13) 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	HLE04A	5/4/2018	12:47	JS
Standard #1 (0.2 ppb)	1.0000	HLE04A	5/4/2018	12:50	JS
Standard #2 (0.5 ppb)	1.0000	HLE04A	5/4/2018	12:52	JS
Standard #3 (1.0 ppb)	1.0000	HLE04A	5/4/2018	12:54	JS
Standard #4 (5.0 ppb)	1.0000	HLE04A	5/4/2018	12:56	JS
Standard #5 (10.0 ppb)	1.0000	HLE04A	5/4/2018	12:58	JS
ICV	1.0000	HLE04A	5/4/2018	13:02	JS
ICB	1.0000	HLE04A	5/4/2018	13:04	JS
PQL	1.0000	HLE04A	5/4/2018	13:06	JS
CCV	1.0000	HLE04A	5/4/2018	13:08	JS
CCB	1.0000	HLE04A	5/4/2018	13:10	JS
PBSLE03HGS1	1.0000	HLE04A	5/4/2018	13:12	JS
LCSOLE03HGS1	1.0000	HLE04A	5/4/2018	13:14	JS
SL3707-001	1.0000	HLE04A	5/4/2018	13:16	JS
SL3708-001	1.0000	HLE04A	5/4/2018	13:19	JS
SL3708-002	1.0000	HLE04A	5/4/2018	13:21	JS
SL3708-003	1.0000	HLE04A	5/4/2018	13:23	JS
SL3708-004	1.0000	HLE04A	5/4/2018	13:25	JS
SL3708-005	1.0000	HLE04A	5/4/2018	13:27	JS
SL3708-005L	5.0000	HLE04A	5/4/2018	13:29	JS
CCV	1.0000	HLE04A	5/4/2018	13:31	JS
CCB	1.0000	HLE04A	5/4/2018	13:33	JS
SL3708-005A	1.0000	HLE04A	5/4/2018	13:36	JS
SL3708-005S	1.0000	HLE04A	5/4/2018	13:38	JS
SL3708-005P	1.0000	HLE04A	5/4/2018	13:40	JS
SL3708-006	1.0000	HLE04A	5/4/2018	13:42	JS
SL3708-007	1.0000	HLE04A	5/4/2018	13:44	JS
SL3708-008	1.0000	HLE04A	5/4/2018	13:46	JS
SL3708-009	1.0000	HLE04A	5/4/2018	13:48	JS
SL3708-010	1.0000	HLE04A	5/4/2018	13:51	JS
SL3708-011	1.0000	HLE04A	5/4/2018	13:53	JS
SL3708-012	1.0000	HLE04A	5/4/2018	13:55	JS
CCV	1.0000	HLE04A	5/4/2018	13:57	JS
CCB	1.0000	HLE04A	5/4/2018	13:59	JS
SL3708-013	1.0000	HLE04A	5/4/2018	14:01	JS
SL3708-014	1.0000	HLE04A	5/4/2018	14:03	JS
SL3708-015	1.0000	HLE04A	5/4/2018	14:06	JS
SL3708-016	1.0000	HLE04A	5/4/2018	14:08	JS
SL3708-017	1.0000	HLE04A	5/4/2018	14:10	JS
SL3708-018	1.0000	HLE04A	5/4/2018	14:12	JS
SL3708-019	1.0000	HLE04A	5/4/2018	14:14	JS
PBSLE04HGS1	1.0000	HLE04A	5/4/2018	14:16	JS
LCSOLE04HGS1	1.0000	HLE04A	5/4/2018	14:18	JS
SL3708-020	1.0000	HLE04A	5/4/2018	14:21	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
CCV	1.0000	HLE04A	5/4/2018	14:23	JS
CCB	1.0000	HLE04A	5/4/2018	14:25	JS
SL3708-021	1.0000	HLE04A	5/4/2018	14:27	JS
SL3760-001	1.0000	HLE04A	5/4/2018	14:29	JS
SL3782-001	1.0000	HLE04A	5/4/2018	14:31	JS
SL3807-001	1.0000	HLE04A	5/4/2018	14:34	JS
SL3807-002	1.0000	HLE04A	5/4/2018	14:36	JS
SL3809-002	1.0000	HLE04A	5/4/2018	14:38	JS
SL3809-002L	5.0000	HLE04A	5/4/2018	14:40	JS
SL3809-002A	1.0000	HLE04A	5/4/2018	14:42	JS
SL3809-002S	1.0000	HLE04A	5/4/2018	14:44	JS
SL3809-002P	1.0000	HLE04A	5/4/2018	14:47	JS
CCV	1.0000	HLE04A	5/4/2018	14:49	JS
CCB	1.0000	HLE04A	5/4/2018	14:51	JS
SL3809-003	1.0000	HLE04A	5/4/2018	14:53	JS
SL3809-004	1.0000	HLE04A	5/4/2018	14:55	JS
SL3809-005	1.0000	HLE04A	5/4/2018	14:57	JS
SL3809-006	1.0000	HLE04A	5/4/2018	14:59	JS
SL3809-007	1.0000	HLE04A	5/4/2018	15:02	JS
SL3809-008	1.0000	HLE04A	5/4/2018	15:04	JS
SL3809-009	1.0000	HLE04A	5/4/2018	15:06	JS
SL3809-010	1.0000	HLE04A	5/4/2018	15:08	JS
SL3809-011	1.0000	HLE04A	5/4/2018	15:10	JS
SL3838-001	1.0000	HLE04A	5/4/2018	15:13	JS
CCV	1.0000	HLE04A	5/4/2018	15:15	JS
CCB	1.0000	HLE04A	5/4/2018	15:17	JS
SL3838-002	1.0000	HLE04A	5/4/2018	15:19	JS
SL3838-003	1.0000	HLE04A	5/4/2018	15:21	JS
LC2OLE04HGS1	1.0000	HLE04A	5/4/2018	15:23	JS
CCV	1.0000	HLE04A	5/4/2018	15:25	JS
CCB	1.0000	HLE04A	5/4/2018	15:28	JS

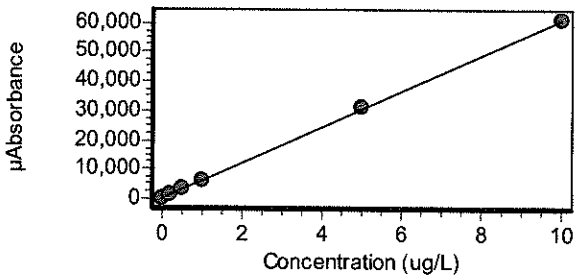
Report Generated By CETAC QuickTrace
Analyst: kasgc
Worksheet file: C:\Program Files\QuickTrace\Worksheets\HLE04A.wsz
Date Started: 5/4/2018 12:45:38 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Calibration Blank					STD	05/04/18 12:47:58 pm	0.000	75	26.33		1.00
Replicates	49.8	98.0	78.7	74.5							
Standard #1 (0.2 ppb)					STD	05/04/18 12:50:05 pm	0.200	1298	1.70		1.00
Replicates	1273.6	1285.4	1315.6	1318.1							
Standard #2 (0.5 ppb)					STD	05/04/18 12:52:12 pm	0.500	3216	0.92		1.00
Replicates	3206.2	3184.3	3218.3	3255.3							
Standard #3 (1.0 ppb)					STD	05/04/18 12:54:19 pm	1.000	6311	0.97		1.00
Replicates	6308.8	6235.3	6312.6	6385.6							
Standard #4 (5.0 ppb)					STD	05/04/18 12:56:27 pm	5.000	31191	0.59		1.00
Replicates	31384.8	31000.8	31073.0	31305.5							
Standard #5 (10.0 ppb)					STD	05/04/18 12:58:36 pm	10.000	60884	0.51		1.00
Replicates	61094.5	60537.9	60708.3	61196.8							

Calibration

Equation: A = 200.581 + 6094.125C
R2: 0.99988
SEE: 303.3706
Flags:



ICV					ICV	05/04/18 01:02:06 pm	5.758	35288	0.80		1.00
Replicates	35675.7	35179.3	35012.2	35284.3							
% Recovery	95.96										
ICB					ICB	05/04/18 01:04:12 pm	-0.045	-73	27.21		1.00
Replicates	-92.1	-78.3	-45.1	-76.6							

Katahdin Analytical Services 4000069

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
PQL					CRDL	05/04/18 01:06:18 pm	0.175	1268	1.03		1.00
	Replicates	1256.5	1271.3	1284.8	1258.5						
	% Recovery	87.56									
CCV					CCV	05/04/18 01:08:26 pm	5.099	31273	0.67		1.00
	Replicates	31499.0	31096.1	31089.8	31405.6						
	% Recovery	101.97									
CCB					CCB	05/04/18 01:10:32 pm	-0.037	-25	26.37		1.00
	Replicates	-19.8	-20.3	-24.6	-33.8						
PBSLE03HGS1					PBK	05/04/18 01:12:39 pm	-0.026	43	68.89		1.00
	Replicates	73.0	61.6	26.8	9.8						
LCSOLE03HGS1					LCS	05/04/18 01:14:47 pm	5.274	32341	1.24		1.00
	Replicates	32937.4	32182.1	32085.4	32159.4						
	% Recovery	105.48									
SL3707-001					UNK	05/04/18 01:16:54 pm	0.140	1054	1.01		1.00
	Replicates	1067.8	1053.3	1053.8	1041.8						
SL3708-001					UNK	05/04/18 01:19:02 pm	0.030	383	8.68		1.00
	Replicates	407.5	346.3	413.9	362.9						
SL3708-002					UNK	05/04/18 01:21:11 pm	0.015	291	10.18		1.00
	Replicates	322.3	250.8	295.9	293.4						
SL3708-003					UNK	05/04/18 01:23:18 pm	0.072	637	3.01		1.00
	Replicates	619.7	661.2	643.4	623.7						
SL3708-004					UNK	05/04/18 01:25:26 pm	0.087	731	3.42		1.00
	Replicates	701.4	753.4	718.7	749.6						
SL3708-005					UNK	05/04/18 01:27:34 pm	0.065	598	5.61		1.00
	Replicates	629.5	571.7	624.9	566.9						
SL3708-005L					UNK	05/04/18 01:29:42 pm	-0.060	127	13.42		5.00
	Replicates	138.1	104.4	142.0	123.7						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/04/18 01:31:51 pm	5.068	31088	0.64		1.00
Replicates	31233.6	30868.3	30974.9	31274.6						
% Recovery	101.37									
CCB				CCB	05/04/18 01:33:57 pm	-0.033	2	311.87		1.00
Replicates	10.1	-15.0	-15.4	26.5						
SL3708-005A				UNK	05/04/18 01:36:06 pm	1.059	6656	0.95		1.00
Replicates	6741.3	6647.0	6588.0	6649.2						
SL3708-005S				UNK	05/04/18 01:38:13 pm	1.004	6320	0.64		1.00
Replicates	6347.0	6267.9	6307.2	6356.9						
AM 5/4/18 SL3708-005SP				UNK	05/04/18 01:40:21 pm	1.017	6397	0.55		1.00
Replicates	6448.2	6386.3	6366.5	6388.6						
SL3708-006				UNK	05/04/18 01:42:30 pm	0.036	422	5.02		1.00
Replicates	422.8	411.0	451.8	403.7						
SL3708-007				UNK	05/04/18 01:44:39 pm	0.055	537	7.22		1.00
Replicates	535.6	522.2	498.9	590.2						
SL3708-008				UNK	05/04/18 01:46:48 pm	0.090	750	3.35		1.00
Replicates	755.8	752.0	715.8	776.3						
SL3708-009				UNK	05/04/18 01:48:56 pm	0.078	676	1.85		1.00
Replicates	693.7	675.5	665.9	668.7						
SL3708-010				UNK	05/04/18 01:51:04 pm	0.090	748	4.11		1.00
Replicates	740.2	760.9	710.0	782.2						
SL3708-011				UNK	05/04/18 01:53:13 pm	0.053	522	4.20		1.00
Replicates	521.0	537.8	491.6	538.5						
SL3708-012				UNK	05/04/18 01:55:22 pm	0.042	458	3.62		1.00
Replicates	477.1	451.6	465.6	439.0						

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/04/18 01:57:30 pm	5.230	32075	0.52		1.00
Replicates	32194.5	31906.4	31960.6	32238.2							
% Recovery	104.61										
CCB					CCB	05/04/18 01:59:36 pm	-0.034	-9	527.62		1.00
Replicates	6.0	-55.0	-33.9	48.3							
SL3708-013					UNK	05/04/18 02:01:46 pm	0.060	566	2.58		1.00
Replicates	567.0	566.3	547.0	582.7							
SL3708-014					UNK	05/04/18 02:03:54 pm	0.052	520	2.70		1.00
Replicates	536.6	525.6	508.4	507.8							
SL3708-015					UNK	05/04/18 02:06:03 pm	0.094	771	3.89		1.00
Replicates	807.3	772.1	734.0	769.5							
SL3708-016					UNK	05/04/18 02:08:12 pm	0.074	652	3.89		1.00
Replicates	687.1	632.7	634.1	653.1							
SL3708-017					UNK	05/04/18 02:10:21 pm	0.074	650	2.09		1.00
Replicates	653.8	636.2	642.4	667.0							
SL3708-018					UNK	05/04/18 02:12:31 pm	0.094	775	4.88		1.00
Replicates	819.9	779.0	775.0	727.3							
SL3708-019					UNK	05/04/18 02:14:40 pm	0.061	570	2.99		1.00
Replicates	594.7	554.9	564.2	567.7							
PBSLE05HGS1					PBK	05/04/18 02:16:49 pm	-0.032	3	319.42		1.00
Replicates	12.2	4.6	6.3	-10.9							
LCSOLE05HGS1					LCS	05/04/18 02:18:58 pm	5.413	33188	0.89		1.00
Replicates	33609.9	33055.6	32927.6	33158.1							
% Recovery	108.26										
SL3708-020					UNK	05/04/18 02:21:08 pm	0.089	744	5.98		1.00
Replicates	810.5	723.3	714.1	729.5							

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/04/18 02:23:16 pm	5.195	31857	0.55		1.00
Replicates	32045.5	31688.2	31726.0	31967.7						
% Recovery	103.89									
CCB				CCB	05/04/18 02:25:22 pm	-0.053	-122	20.13		1.00
Replicates	-155.4	-106.5	-126.0	-101.0						
SL3708-021				UNK	05/04/18 02:27:32 pm	0.072	638	4.31		1.00
Replicates	661.8	653.8	635.1	599.9						
SL3760-001				UNK	05/04/18 02:29:41 pm	0.827	5243	1.07		1.00
Replicates	5178.5	5213.7	5287.7	5292.7						
SL3782-001				UNK	05/04/18 02:31:51 pm	0.925	5838	2.04		1.00
Replicates	5694.9	5801.2	5880.9	5975.7						
SL3807-001				UNK	05/04/18 02:34:00 pm	0.113	890	4.46		1.00
Replicates	935.6	878.1	842.1	904.2						
SL3807-002				UNK	05/04/18 02:36:11 pm	0.060	565	3.27		1.00
Replicates	568.8	548.2	554.3	589.8						
SL3809-002				UNK	05/04/18 02:38:21 pm	0.060	563	5.34		1.00
Replicates	545.4	535.6	568.9	603.2						
SL3809-002L				UNK	05/04/18 02:40:30 pm	-0.056	132	13.70		5.00
Replicates	106.6	138.2	149.0	134.5						
SL3809-002A				UNK	05/04/18 02:42:40 pm	0.867	5482	1.28		1.00
Replicates	5585.9	5439.2	5442.8	5459.3						
SL3809-002S				UNK	05/04/18 02:44:50 pm	1.051	6608	1.00		1.00
Replicates	6689.3	6549.4	6558.7	6633.5						
SL3809-002P				UNK	05/04/18 02:47:01 pm	1.050	6601	1.71		1.00
Replicates	6748.9	6587.3	6474.3	6592.6						

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/04/18 02:49:09 pm	5.107	31324	0.55		1.00
Replicates	31535.4	31210.4	31159.4	31390.6							
% Recovery	102.14										
CCB					CCB	05/04/18 02:51:15 pm	-0.035	-15	225.04		1.00
Replicates	10.1	-12.5	5.5	-61.5							
SL3809-003					UNK	05/04/18 02:53:26 pm	0.075	655	3.24		1.00
Replicates	637.8	666.3	637.1	679.8							
SL3809-004					UNK	05/04/18 02:55:35 pm	0.048	493	6.75		1.00
Replicates	492.0	486.2	457.2	537.7							
SL3809-005					UNK	05/04/18 02:57:46 pm	0.075	657	2.89		1.00
Replicates	636.4	679.7	663.5	646.8							
SL3809-006					UNK	05/04/18 02:59:56 pm	0.085	719	5.69		1.00
Replicates	743.6	657.9	742.6	730.3							
SL3809-007					UNK	05/04/18 03:02:07 pm	0.125	961	4.19		1.00
Replicates	1019.3	957.4	930.3	938.3							
SL3809-008					UNK	05/04/18 03:04:18 pm	0.078	677	2.29		1.00
Replicates	677.4	655.6	685.4	690.9							
SL3809-009					UNK	05/04/18 03:06:28 pm	0.064	589	1.68		1.00
Replicates	597.5	578.4	583.6	598.1							
SL3809-010					UNK	05/04/18 03:08:38 pm	0.109	862	2.10		1.00
Replicates	881.1	842.2	873.2	852.2							
SL3809-011					UNK	05/04/18 03:10:49 pm	0.163	1195	2.32		1.00
Replicates	1234.2	1181.5	1171.0	1192.0							
SL3838-001					UNK	05/04/18 03:13:00 pm	0.450	2942	1.10		1.00
Replicates	2977.2	2902.4	2932.2	2956.5							

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/04/18 03:15:08 pm	5.038	30902	0.61		1.00
	Replicates	31075.3	30747.3	30730.0	31056.5						
	% Recovery	100.76									
CCB					CCB	05/04/18 03:17:14 pm	-0.034	-8	303.19		1.00
	Replicates	16.3	-4.8	-42.2	-1.7						
SL3838-002					UNK	05/04/18 03:19:26 pm	0.284	1932	1.77		1.00
	Replicates	1967.6	1937.9	1885.4	1935.5						
SL3838-003					UNK	05/04/18 03:21:36 pm	0.771	4901	1.06		1.00
	Replicates	4967.2	4847.3	4875.3	4913.4						
LC2OLE04HGS1					LCS	05/04/18 03:23:47 pm	5.191	31837	1.54		1.00
	Replicates	32535.9	31802.7	31440.2	31567.4						
	% Recovery	103.82									
CCV					CCV	05/04/18 03:25:55 pm	5.029	30846	0.58		1.00
	Replicates	31061.0	30767.4	30646.9	30909.0						
	% Recovery	100.57									
CCB					CCB	05/04/18 03:28:02 pm	-0.034	-7	361.61		1.00
	Replicates	-38.4	-18.7	5.6	22.1						

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: JS **ANALYSIS DATE**: 05/10/2018

FILE NAME: JLE10C

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

REVIEWED
MD 5/15/18
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
JS (initals) on 5.10.18 (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17714	04/30/2018	04/30/2019	0 ug/L
Standard 1	MW17738	05/04/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17751	05/09/2018	05/15/2018	Varies by Element
ICSAB	MW17752	05/09/2018	05/15/2018	Varies by Element
CCV	MW17734	05/09/2018	06/21/2018	Varies by Element
Internal Standard	MW17712	04/27/2018	07/192018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

- Sc failed in LRS2; rejected associated analytes for all DoD 5.0 or higher samples w/affected analyte concentrations greater than the calibration concentration.
- Be RSD failed in 200.8 Metals Tune; rejected B, Be and Na results for all 200.8 samples in this analytical run.

MD 5/15/18

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 MW17714 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17714(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17714 (pipet M18)

Post Spike: 0.08mL of MW17698(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	JLE10C	5/10/2018	6:28:00 14:43	JS
200.8 TUNE	1	JLE10C	5/10/2018	6:28:00 14:46	JS
Cal Blank	1	JLE10C	5/10/2018	6:28:00 18:28	JS
Cal Std	1	JLE10C	5/10/2018	6:32:00 18:32	JS
ICV	1	JLE10C	5/10/2018	6:36:00 18:36	JS
ICB	1	JLE10C	5/10/2018	6:40:00 18:40	JS
PQL	1	JLE10C	5/10/2018	6:44:00 18:44	JS
RINSE	1	JLE10C	5/10/2018	6:48:00 18:48	JS
ICSA	1	JLE10C	5/10/2018	6:52:00 18:52	JS
ICSAB	1	JLE10C	5/10/2018	6:56:00 18:56	JS
RINSE	1	JLE10C	5/10/2018	7:00:00 19:00	JS
LRS1	1	JLE10C	5/10/2018	7:04:00 19:04	JS
LRS2	1	JLE10C	5/10/2018	7:08:00 19:08	JS
RINSE	1	JLE10C	5/10/2018	7:12:00 19:12	JS
RINSE	1	JLE10C	5/10/2018	7:16:00 19:16	JS
CCV	1	JLE10C	5/10/2018	7:20:00 19:20	JS
CCB	1	JLE10C	5/10/2018	7:24:00 19:24	JS
LCSWLE03IMW1	5	JLE10C	5/10/2018	7:29:00 19:29	JS
SL3618-001	1	JLE10C	5/10/2018	7:33:00 19:33	JS
SL3721-001	1	JLE10C	5/10/2018	7:37:00 19:37	JS
PBWLE03IMW2	5	JLE10C	5/10/2018	7:41:00 19:41	JS
LCSWLE03IMW2	5	JLE10C	5/10/2018	7:45:00 19:45	JS
SL3708-022	5	JLE10C	5/10/2018	7:49:00 19:49	JS
PBWLE04IMW1	5	JLE10C	5/10/2018	7:53:00 19:53	JS
LCSWLE04IMW1	5	JLE10C	5/10/2018	7:57:00 19:57	JS
SL3809-001	5	JLE10C	5/10/2018	8:01:00 20:01	JS
SL3719-001	2	JLE10C	5/10/2018	8:05:00 20:05	JS
CCV	1	JLE10C	5/10/2018	8:10:00 20:10	JS
CCB	1	JLE10C	5/10/2018	8:14:00 20:14	JS
PBSLE04IMS1	5	JLE10C	5/10/2018	8:18:00 20:18	JS
LCSOLE04IMS1	5	JLE10C	5/10/2018	8:22:00 20:22	JS
SL3708-007	5	JLE10C	5/10/2018	8:26:00 20:26	JS
SL3708-019	5	JLE10C	5/10/2018	8:30:00 20:30	JS
SL3708-020	5	JLE10C	5/10/2018	8:35:00 20:35	JS
SL3708-021	5	JLE10C	5/10/2018	8:39:00 20:39	JS
SL3807-001	5	JLE10C	5/10/2018	8:43:00 20:43	JS
SL3807-002	5	JLE10C	5/10/2018	8:47:00 20:47	JS
RINSE	5	JLE10C	5/10/2018	8:52:00 20:52	JS
PBSLE07IMS1	5	JLE10C	5/10/2018	8:56:00 20:56	JS
CCV	1	JLE10C	5/10/2018	9:00:00 21:00	JS
CCB	1	JLE10C	5/10/2018	9:04:00 21:04	JS
LCSOLE07IMS1	5	JLE10C	5/10/2018	9:08:00 21:08	JS
SL3809-012	5	JLE10C	5/10/2018	9:12:00 21:12	JS
SL3809-013	5	JLE10C	5/10/2018	9:17:00 21:17	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3809-014	5	JLE10C	5/10/2018 9:21:00	21:21	JS
SL3809-015	5	JLE10C	5/10/2018 9:25:00	21:25	JS
SL3809-017	5	JLE10C	5/10/2018 9:30:00	21:30	JS
SL3809-017	10	JLE10C	5/10/2018 9:34:00	21:34	JS
SL3809-018	5	JLE10C	5/10/2018 9:38:00	21:38	JS
SL3809-019	5	JLE10C	5/10/2018 9:42:00	21:42	JS
RINSE	1	JLE10C	5/10/2018 9:47:00	21:47	JS
CCV	1	JLE10C	5/10/2018 9:51:00	21:51	JS
CCB	1	JLE10C	5/10/2018 9:55:00	21:55	JS
SL3809-020	5	JLE10C	5/10/2018 9:59:00	21:59	JS
SL3809-020	10	JLE10C	5/10/2018 10:04:0	22:04	JS
SL3809-056	5	JLE10C	5/10/2018 10:08:0	22:08	JS
SL3809-057	5	JLE10C	5/10/2018 10:12:0	22:12	JS
SL3809-058	5	JLE10C	5/10/2018 10:16:0	22:16	JS
SL3809-059	5	JLE10C	5/10/2018 10:21:0	22:21	JS
SL3809-060	5	JLE10C	5/10/2018 10:25:0	22:25	JS
SL3809-061	5	JLE10C	5/10/2018 10:29:0	22:29	JS
SL3809-062	5	JLE10C	5/10/2018 10:34:0	22:34	JS
RINSE	1	JLE10C	5/10/2018 10:38:0	22:38	JS
CCV	1	JLE10C	5/10/2018 10:42:0	22:42	JS
CCB	1	JLE10C	5/10/2018 10:46:0	22:46	JS
SL3809-063	5	JLE10C	5/10/2018 10:51:0	22:51	JS
SL3809-064	5	JLE10C	5/10/2018 10:55:0	22:55	JS
SL3809-065	5	JLE10C	5/10/2018 10:59:0	22:59	JS
RINSE	1	JLE10C	5/10/2018 11:03:0	23:03	JS
RINSE	1	JLE10C	5/10/2018 11:08:0	23:08	JS
PBSLE08IMS1	5	JLE10C	5/10/2018 11:12:0	23:12	JS
LCSOLE08IMS1	5	JLE10C	5/10/2018 11:16:0	23:16	JS
SL3809-016	5	JLE10C	5/10/2018 11:20:0	23:20	JS
SL3809-016L	25	JLE10C	5/10/2018 11:24:0	23:24	JS
SL3809-016A	5	JLE10C	5/10/2018 11:29:0	23:29	JS
CCV	1	JLE10C	5/10/2018 11:33:0	23:33	JS
CCB	1	JLE10C	5/10/2018 11:37:0	23:37	JS
SL3809-016S	5	JLE10C	5/10/2018 11:41:0	23:41	JS
SL3809-016P	5	JLE10C	5/10/2018 11:46:0	23:46	JS
SL3809-021	5	JLE10C	5/10/2018 11:50:0	23:50	JS
SL3809-022	5	JLE10C	5/10/2018 11:54:0	23:54	JS
SL3809-023	5	JLE10C	5/10/2018 11:59:0	23:59	JS
SL3809-025	5	JLE10C	5/11/2018 12:03:0	0:03	JS
SL3809-026	5	JLE10C	5/11/2018 12:07:0	0:07	JS
SL3809-027	5	JLE10C	5/11/2018 12:11:0	0:11	JS
SL3809-028	5	JLE10C	5/11/2018 12:16:0	0:16	JS
RINSE	1	JLE10C	5/11/2018 12:20:0	0:20	JS
CCV	1	JLE10C	5/11/2018 12:24:0	0:24	JS
CCB	1	JLE10C	5/11/2018 12:28:0	0:28	JS
SL3809-029	5	JLE10C	5/11/2018 12:33:0	0:33	JS
SL3809-030	5	JLE10C	5/11/2018 12:37:0	0:37	JS

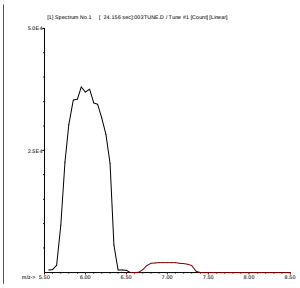
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3809-031	5	JLE10C	5/11/2018 12:41:0	0:41	JS
SL3809-032	5	JLE10C	5/11/2018 12:46:0	0:46	JS
SL3809-033	5	JLE10C	5/11/2018 12:50:0	0:50	JS
SL3809-034	5	JLE10C	5/11/2018 12:54:0	0:54	JS
SL3809-035	5	JLE10C	5/11/2018 12:59:0	0:59	JS
SL3809-036	5	JLE10C	5/11/2018 1:03:00	1:03	JS
SL3809-037	5	JLE10C	5/11/2018 1:07:00	1:07	JS
RINSE	1	JLE10C	5/11/2018 1:12:00	1:12	JS
CCV	1	JLE10C	5/11/2018 1:16:00	1:16	JS
CCB	1	JLE10C	5/11/2018 1:20:00	1:20	JS
SL3809-038	5	JLE10C	5/11/2018 1:24:00	1:24	JS
SL3809-039	5	JLE10C	5/11/2018 1:29:00	1:29	JS
SL3809-040	5	JLE10C	5/11/2018 1:33:00	1:33	JS
RINSE	1	JLE10C	5/11/2018 1:37:00	1:37	JS
PBWLE09IMW1	1	JLE10C	5/11/2018 1:42:00	1:42	JS
LSCWLE09IMW1	5	JLE10C	5/11/2018 1:46:00	1:46	JS
SL3836-002	1	JLE10C	5/11/2018 1:50:00	1:50	JS
SL3836-002L	5	JLE10C	5/11/2018 1:54:00	1:54	JS
SL3836-002S	5	JLE10C	5/11/2018 1:58:00	1:58	JS
SL3836-002P	5	JLE10C	5/11/2018 2:02:00	2:02	JS
CCV	1	JLE10C	5/11/2018 2:07:00	2:07	JS
CCB	1	JLE10C	5/11/2018 2:11:00	2:11	JS
SL3844-001	1	JLE10C	5/11/2018 2:15:00	2:15	JS
SL3855-001	1	JLE10C	5/11/2018 2:19:00	2:19	JS
SL3905-001	1	JLE10C	5/11/2018 2:24:00	2:24	JS
SL3910-002	1	JLE10C	5/11/2018 2:28:00	2:28	JS
SL3913-001	1	JLE10C	5/11/2018 2:32:00	2:32	JS
CCV	1	JLE10C	5/11/2018 2:36:00	2:36	JS
CCB	1	JLE10C	5/11/2018 2:41:00	2:41	JS
PQL	1	JLE10C	5/11/2018 2:45:00	2:45	JS
CCV	1	JLE10C	5/11/2018 2:49:00	2:49	JS
CCB	1	JLE10C	5/11/2018 2:53:00	2:53	JS

6020 QC Tune Report

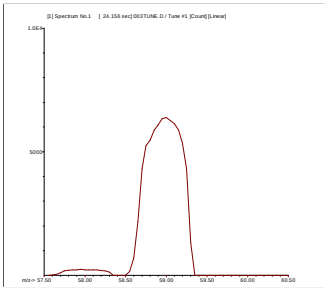
Data File: C:\ICPCHEM\1\DATA\JLE10A.B\003TUNE.D
Date Acquired: May 10 2018 02:43 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

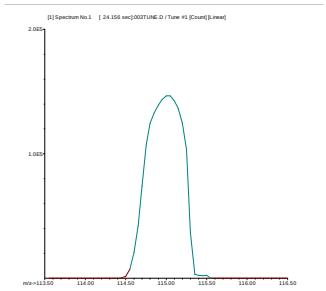
Element	Actual	Required	Flag
7 Li	3.55	5.00	
59 Co	2.85	5.00	
115 In	2.33	5.00	
205 Tl	2.05	5.00	



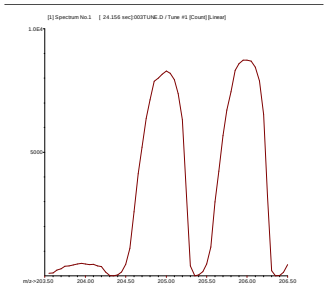
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



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:



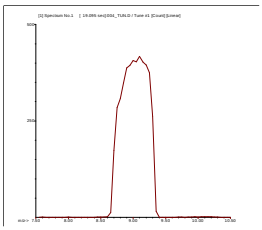
205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

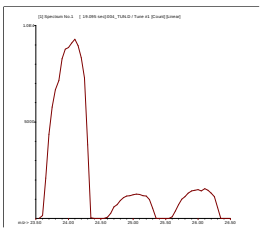
Data File: C:\ICPCHEM\1\DATA\JLE10A.B\004_TUN.D
Date Acquired: May 10 2018 02:46 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

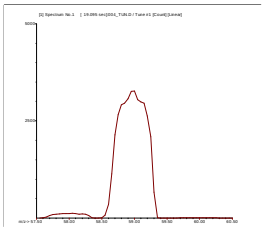
Element	Actual	Required	Flag
9 Be	6.17	5.00	RSDFail
24 Mg	2.33	5.00	
59 Co	2.53	5.00	
115 In	1.59	5.00	
208 Pb	1.70	5.00	



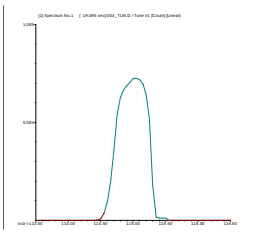
9 Be
Mass Calib.
Actual: 9.10
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.60
Required: 1.00
Flag:



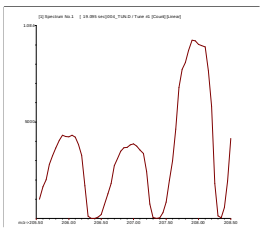
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:

Tune Result: Fail

Katahdin Analytical Services 4000081

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.I
Date Acquired: May 10 2018 06:28 pm
Operator: JS
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: May 10 2018 06:30 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1729334.00	A	73830.00	4.27
9	Be	11.11	P	1.93	17.33
11	B	153.34	P	15.28	9.96
23	Na	41078.71	P	1431.00	3.48
25	Mg	75.56	P	13.88	18.37
27	Al	1089.29	P	101.90	9.35
28	Si	1046879.00	A	9975.00	0.95
29	Si	85321.48	P	494.10	0.58
39	K	849936.50	A	9052.00	1.07
43	Ca	263.00	P	61.20	23.27
44	Ca	4678.56	P	262.30	5.61
45	Sc	2274967.00	A	71130.00	3.13
51	V	1010.65	P	184.70	18.28
52	Cr	7231.96	P	276.20	3.82
53	Cr	6394.91	P	8.81	0.14
55	Mn	1387.89	P	57.39	4.14
56	Fe	1364240.00	A	29480.00	2.16
57	Fe	9377.59	P	300.50	3.20
59	Co	148.90	P	36.72	24.66
60	Ni	61.73	P	6.94	11.24
63	Cu	350.01	P	62.28	17.79
65	Cu	162.23	P	8.39	5.17
66	Zn	848.94	P	51.68	6.09
68	Zn	1032.29	P	46.83	4.54
72	Ge	590563.19	P	9959.00	1.69
75	As	-40.77	P	75.46	185.09
82	Se	0.56	P	3.22	573.95
88	Sr	66.67	P	33.34	50.00
89	Y	4752403.00	A	34100.00	0.72
98	Mo	43.80	P	18.82	42.97
107	Ag	34.45	P	10.71	31.09
109	Ag	15.56	P	6.94	44.61
111	Cd	859.11	P	7.68	0.89
114	Cd	-2.83	P	8.62	304.85
115	In	4791905.00	A	112500.00	2.35
118	Sn	425.58	P	30.06	7.06
120	Sn	586.70	P	46.31	7.89
121	Sb	21.11	P	1.93	9.12
123	Sb	17.78	P	6.94	39.03
135	Ba	20.00	P	11.55	57.75
137	Ba	36.67	P	16.67	45.46
159	Tb	6367688.00	A	56290.00	0.88
182	W	34.45	P	13.47	39.11
203	Tl	673.37	P	28.48	4.23
205	Tl	1617.93	P	33.56	2.07
208	Pb	2940.23	P	145.30	4.94
209	Bi	2872959.00	A	6982.00	0.24
232	Th	20.00	P	3.33	16.66
238	U	10.00	P	3.33	33.33

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\016CALI.D\016CALI.D#
Date Acquired: May 10 2018 06:32 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 10 2018 06:31 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1781111.00	A	85360.00	4.79
9 Be	72665.59	P	650.10	0.89
11 B	32522.20	P	822.60	2.53
23 Na	45287832.00	A	289100.00	0.64
25 Mg	4098799.00	A	85060.00	2.08
27 Al	4152079.00	A	24870.00	0.60
28 Si	3352985.00	A	25980.00	0.77
29 Si	209688.09	P	1726.00	0.82
39 K	66520300.00	A	266600.00	0.40
43 Ca	121958.70	P	2036.00	1.67
44 Ca	2061030.00	A	30130.00	1.46
45 Sc	2430311.00	A	75540.00	3.11
51 V	463908.31	P	9723.00	2.10
52 Cr	413184.41	P	7578.00	1.83
53 Cr	54211.40	P	1491.00	2.75
55 Mn	547165.63	P	5072.00	0.93
56 Fe	88648712.00	A	2044000.00	2.31
57 Fe	2174333.00	A	15930.00	0.73
59 Co	468634.50	P	5641.00	1.20
60 Ni	105077.40	P	2803.00	2.67
63 Cu	254944.09	P	2278.00	0.89
65 Cu	121801.10	P	1091.00	0.90
66 Zn	66545.57	P	1085.00	1.63
68 Zn	48560.24	P	264.40	0.54
72 Ge	599660.69	P	17340.00	2.89
75 As	67947.17	P	1130.00	1.66
82 Se	5285.82	P	40.16	0.76
88 Sr	797103.31	A	10970.00	1.38
89 Y	5019899.00	A	115700.00	2.30
98 Mo	258813.09	P	1793.00	0.69
107 Ag	410485.81	P	2792.00	0.68
109 Ag	396364.59	P	5886.00	1.49
111 Cd	85337.49	P	658.70	0.77
114 Cd	187361.91	P	851.60	0.45
115 In	5010517.00	A	59140.00	1.18
118 Sn	255265.80	P	2027.00	0.79
120 Sn	347758.00	P	3610.00	1.04
121 Sb	319552.19	P	3094.00	0.97
123 Sb	243704.09	P	1631.00	0.67
135 Ba	73437.96	P	1027.00	1.40
137 Ba	127660.00	P	1805.00	1.41
159 Tb	6743512.00	A	217200.00	3.22
182 W	282712.59	P	3284.00	1.16
203 Tl	221879.30	P	1910.00	0.86
205 Tl	522778.81	P	5368.00	1.03
208 Pb	711606.38	P	8059.00	1.13
209 Bi	2945707.00	A	92430.00	3.14
232 Th	717673.88	P	5258.00	0.73
238 U	700284.38	P	3027.00	0.43

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1781111.40	4.79	1729334.00	103.0	79.5 - 120.4	
45 Sc	2430311.00	3.11	2274967.30	106.8	79.5 - 120.4	
72 Ge	599660.69	2.89	590563.19	101.5	79.5 - 120.4	
159 Tb	6743511.50	3.22	6367688.00	105.9	79.5 - 120.4	
209 Bi	2945707.50	3.14	2872959.00	102.5	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000083

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\017_ICV.D\017_ICV.D#
Date Acquired: May 10 2018 06:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.7	ppb	3.04	20	98.5	
11 B	22.29	ppb	3.02	20	111.45	Fail
23 Na	4,044.	ppb	2.98	4,000	101.1	
25 Mg	4,067.	ppb	3.71	4,000	101.675	
27 Al	417.5	ppb	3.80	400	104.375	
28 Si	407.1	ppb	6.17	400	101.775	
29 Si	385.2	ppb	7.00	400	96.3	
39 K	3,974.	ppb	5.41	4,000	99.35	
43 Ca	4,127.	ppb	2.94	4,000	103.175	
44 Ca	4,143.	ppb	1.73	4,000	103.575	
51 V	20.19	ppb	1.62	20	100.95	
52 Cr	19.86	ppb	2.10	20	99.3	
53 Cr	16.99	ppb	3.63	20	84.95	
55 Mn	19.62	ppb	1.11	20	98.1	
56 Fe	3,973.	ppb	0.92	4,000	99.325	
57 Fe	4,124.	ppb	1.13	4,000	103.1	
59 Co	20.08	ppb	1.20	20	100.4	
60 Ni	19.99	ppb	1.18	20	99.95	
63 Cu	19.74	ppb	1.01	20	98.7	
65 Cu	19.72	ppb	0.85	20	98.6	
66 Zn	20.1	ppb	0.64	20	100.5	
68 Zn	20.35	ppb	1.90	20	101.75	
75 As	19.93	ppb	0.51	20	99.65	
82 Se	20.31	ppb	0.94	20	101.55	
88 Sr	19.53	ppb	0.19	20	97.65	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.34	ppb	0.45	40	95.85	
107 Ag	20.05	ppb	0.29	20	100.25	
109 Ag	19.87	ppb	0.39	20	99.35	
111 Cd	19.88	ppb	0.52	20	99.4	
114 Cd	20.13	ppb	0.86	20	100.65	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.69	ppb	1.04	20	98.45	
120 Sn	19.97	ppb	2.43	20	99.85	
121 Sb	19.91	ppb	2.14	20	99.55	
123 Sb	19.95	ppb	1.69	20	99.75	
135 Ba	20.15	ppb	2.18	20	100.75	
137 Ba	19.74	ppb	1.52	20	98.7	
182 W	19.76	ppb	2.01	20	98.8	
203 Tl	20.25	ppb	3.82	20	101.25	
205 Tl	20.23	ppb	2.51	20	101.15	
208 Pb	19.62	ppb	2.51	20	98.1	
232 Th	19.59	ppb	3.42	20	97.95	
238 U	19.69	ppb	3.34	20	98.45	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1746699.60	1.20	1729334.00	101.0	80 - 120.4	
45 Sc	2362151.00	1.38	2274967.30	103.8	80 - 120.4	
72 Ge	602163.69	0.84	590563.19	102.0	80 - 120.4	
159 Tb	6631086.00	0.84	6367688.00	104.1	80 - 120.4	
209 Bi	2956290.50	1.62	2872959.00	102.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000084

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\018_ICB.D\018_ICB.D#
Date Acquired: May 10 2018 06:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0011	ppb	239.96	1.00	
11 B	1.751	ppb	11.84	1.00	
23 Na	0.179	ppb	275.59	1.00	
25 Mg	-0.008	ppb	411.01	1.00	
27 Al	-0.0445	ppb	34.04	1.00	
28 Si	-1.458	ppb	1269.50	1.00	
29 Si	-19.94	ppb	158.63	1.00	
39 K	-5.211	ppb	98.45	1.00	
43 Ca	-4.311	ppb	48.06	1.00	
44 Ca	-1.057	ppb	121.38	1.00	
51 V	0.095	ppb	65.06	1.00	
52 Cr	0.0002	ppb	4423.90	1.00	
53 Cr	-1.829	ppb	15.92	1.00	
55 Mn	-0.0031	ppb	180.92	1.00	
56 Fe	-4.394	ppb	96.63	1.00	
57 Fe	-0.832	ppb	167.43	1.00	
59 Co	-0.0015	ppb	249.24	1.00	
60 Ni	0.0029	ppb	294.69	1.00	
63 Cu	-0.0045	ppb	82.18	1.00	
65 Cu	-0.0107	ppb	93.82	1.00	
66 Zn	-0.0095	ppb	653.59	1.00	
68 Zn	-0.0312	ppb	233.66	1.00	
75 As	0.0029	ppb	2902.90	1.00	
82 Se	0.0614	ppb	116.93	1.00	
88 Sr	-0.001	ppb	219.77	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0603	ppb	47.20	1.00	
107 Ag	0.007	ppb	32.56	1.00	
109 Ag	0.0057	ppb	19.07	1.00	
111 Cd	-0.0202	ppb	63.03	1.00	
114 Cd	0.0012	ppb	97.55	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0292	ppb	61.97	1.00	
120 Sn	0.0189	ppb	19.38	1.00	
121 Sb	0.0026	ppb	110.50	1.00	
123 Sb	0.0049	ppb	122.45	1.00	
135 Ba	0.005	ppb	10.77	1.00	
137 Ba	-0.0031	ppb	125.05	1.00	
182 W	0.0623	ppb	27.05	1.00	
203 Tl	0.0136	ppb	59.50	1.00	
205 Tl	0.0011	ppb	841.82	1.00	
208 Pb	-0.0415	ppb	24.67	1.00	
232 Th	0.0501	ppb	2.87	1.00	
238 U	0.0039	ppb	30.04	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1745717.10	2.60	1729334.00	100.9	79.5 - 120	
45 Sc	2297165.50	3.68	2274967.30	101.0	79.5 - 120	
72 Ge	592537.69	3.44	590563.19	100.3	79.5 - 120	
159 Tb	6302002.50	2.78	6367688.00	99.0	79.5 - 120	
209 Bi	2825172.80	2.88	2872959.00	98.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000085

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\019_PQL.D\019_PQL.D#
Date Acquired: May 10 2018 06:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1865	ppb	8.97	0.20	93.25	
11 B	4.623	ppb	2.39	4.00	115.575	
23 Na	209.6	ppb	4.16	200.00	104.8	
25 Mg	19.91	ppb	3.29	20.00	99.55	
27 Al	20.02	ppb	2.49	20.00	100.1	
28 Si	94.14	ppb	4.89	100.00	94.14	
29 Si	68.99	ppb	6.65	100.00	68.99	Fail
39 K	188.8	ppb	2.43	200.00	94.4	
43 Ca	20.71	ppb	9.49	20.00	103.55	
44 Ca	18.18	ppb	8.87	20.00	90.9	
51 V	1.022	ppb	5.25	1.00	102.2	
52 Cr	0.9857	ppb	4.35	1.00	98.57	
53 Cr	-0.3098	ppb	34.38	---	#VALUE!	
55 Mn	0.3704	ppb	4.39	0.40	92.6	
56 Fe	14.44	ppb	18.81	20.00	72.2	
57 Fe	19.16	ppb	5.75	20.00	95.8	
59 Co	0.2027	ppb	9.33	0.20	101.35	
60 Ni	0.4262	ppb	6.24	0.40	106.55	
63 Cu	0.587	ppb	3.24	0.60	97.8333	
65 Cu	0.6143	ppb	3.75	0.60	102.383	
66 Zn	2.098	ppb	5.95	2.00	104.9	
68 Zn	2.065	ppb	11.33	2.00	103.25	
75 As	0.8977	ppb	13.20	1.00	89.77	
82 Se	0.9414	ppb	21.97	1.00	94.14	
88 Sr	1.001	ppb	2.04	1.00	100.1	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	1.008	ppb	3.61	1.00	100.8	
107 Ag	0.2009	ppb	4.89	0.20	100.45	
109 Ag	0.2148	ppb	2.52	0.20	107.4	
111 Cd	0.182	ppb	1.21	0.20	91	
114 Cd	0.1992	ppb	2.96	0.20	99.6	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.02	ppb	1.53	1.00	102	
120 Sn	1.016	ppb	2.24	1.00	101.6	
121 Sb	0.2192	ppb	6.26	0.20	109.6	
123 Sb	0.2197	ppb	6.71	0.20	109.85	
135 Ba	0.389	ppb	3.26	0.40	97.25	
137 Ba	0.4098	ppb	3.16	0.40	102.45	
182 W	1.052	ppb	3.45	1.00	105.2	
203 Tl	0.2136	ppb	3.09	0.20	106.8	
205 Tl	0.1973	ppb	3.19	0.20	98.65	
208 Pb	0.1654	ppb	11.95	0.20	82.7	
232 Th	0.2195	ppb	5.91	0.20	109.75	
238 U	0.2009	ppb	1.33	0.20	100.45	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1764228.30	1.58	1729334.00	102.0	80 - 120.4	
45 Sc	2351187.80	0.48	2274967.30	103.4	80 - 120.4	
72 Ge	598807.50	0.90	590563.19	101.4	80 - 120.4	
159 Tb	6399823.50	1.05	6367688.00	100.5	80 - 120.4	
209 Bi	2870511.00	0.82	2872959.00	99.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000086

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\020SMPL.D\020SMPL.D#
Date Acquired: May 10 2018 06:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	67.38	100.	
11 B	0.5142	0.5142	ppb	17.89	1000.	
23 Na	0.4205	0.4205	ppb	80.05	200000.	
25 Mg	0.0059	0.0059	ppb	497.81	200000.	
27 Al	0.3308	0.3308	ppb	27.32	200000.	
28 Si	-0.9571	-0.9571	ppb	2514.90	#VALUE!	
29 Si	-22.73	-22.73	ppb	135.28	10000.	
39 K	-3.43	-3.43	ppb	186.85	200000.	
43 Ca	0.2247	0.2247	ppb	2930.60	#VALUE!	
44 Ca	-0.3362	-0.3362	ppb	242.62	200000.	
51 V	0.1385	0.1385	ppb	45.90	1000.	
52 Cr	-0.0189	-0.0189	ppb	225.33	2000.	
53 Cr	-1.822	-1.822	ppb	8.10	#VALUE!	
55 Mn	-0.0061	-0.0061	ppb	55.57	2000.	
56 Fe	-5.813	-5.813	ppb	55.74	#VALUE!	
57 Fe	0.3782	0.3782	ppb	600.21	100000.	
59 Co	-0.0009	-0.0009	ppb	251.91	1000.	
60 Ni	0.0048	0.0048	ppb	95.25	1000.	
63 Cu	0.0894	0.0894	ppb	0.74	#VALUE!	
65 Cu	0.0931	0.0931	ppb	15.35	2000.	
66 Zn	-0.0184	-0.0184	ppb	287.93	2000.	
68 Zn	-0.037	-0.037	ppb	150.63	#VALUE!	
75 As	0.0916	0.0916	ppb	30.28	1000.	
82 Se	0.0117	0.0117	ppb	1431.70	1000.	
88 Sr	0.0008	0.0008	ppb	237.27	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0105	0.0105	ppb	45.49	1000.	
107 Ag	0.0028	0.0028	ppb	31.42	100.	
109 Ag	0.0019	0.0019	ppb	52.69	#VALUE!	
111 Cd	-0.0166	-0.0166	ppb	58.34	#VALUE!	
114 Cd	0.	0.	ppb	9893.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0062	0.0062	ppb	95.56	1000.	
120 Sn	0.0103	0.0103	ppb	62.75	#VALUE!	
121 Sb	0.0029	0.0029	ppb	94.60	#VALUE!	
123 Sb	0.0029	0.0029	ppb	144.09	1000.	
135 Ba	0.0045	0.0045	ppb	83.47	2000.	
137 Ba	-0.0011	-0.0011	ppb	56.24	#VALUE!	
182 W	0.0107	0.0107	ppb	21.83	1000.	
203 Tl	0.0009	0.0009	ppb	1867.50	1000.	
205 Tl	-0.0059	-0.0059	ppb	20.65	#VALUE!	
208 Pb	0.0776	0.0776	ppb	24.26	2000.	
232 Th	0.01	0.01	ppb	21.26	1000.	
238 U	0.0009	0.0009	ppb	156.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1761663.50	1.91	1729334.00	101.9	69.5 - 120	
45 Sc	2330740.00	4.68	2274967.30	102.5	69.5 - 120	
72 Ge	599504.50	1.53	590563.19	101.5	69.5 - 120	
159 Tb	6444362.50	2.69	6367688.00	101.2	69.5 - 120	
209 Bi	2869159.80	2.33	2872959.00	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000087

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\021ICSA.D\021ICSA.D#
Date Acquired: May 10 2018 06:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0019	ppb	92.49		
11 B	0.8925	ppb	14.13		
23 Na	99,950.	ppb	2.53		
25 Mg	95,210.	ppb	3.18		
27 Al	95,740.	ppb	3.54		
28 Si	-8.244	ppb	208.64		
29 Si	-6.903	ppb	358.54		
39 K	96,500.	ppb	3.70		
43 Ca	105,500.	ppb	4.41		
44 Ca	97,550.	ppb	3.36		
51 V	0.3363	ppb	9.55		
52 Cr	0.8415	ppb	2.42		
53 Cr	0.1942	ppb	64.93		
55 Mn	0.3651	ppb	7.37		
56 Fe	100,100.	ppb	3.21		
57 Fe	97,360.	ppb	2.99		
59 Co	0.0851	ppb	18.15		
60 Ni	-0.3374	ppb	1.98		
63 Cu	3.685	ppb	2.47		
65 Cu	1.041	ppb	2.22		
66 Zn	2.166	ppb	7.68		
68 Zn	0.5131	ppb	14.61		
75 As	0.1018	ppb	63.44		
82 Se	0.1537	ppb	64.80		
88 Sr	0.9247	ppb	5.60		
89 Y	--------	---	--------		
98 Mo	1,913.	ppb	0.60		
107 Ag	0.0267	ppb	27.97		
109 Ag	0.0284	ppb	10.24		
111 Cd	0.0089	ppb	726.60		
114 Cd	0.0215	ppb	63.64		
115 In	--------	---	--------		
118 Sn	0.0633	ppb	9.74		
120 Sn	0.0658	ppb	25.16		
121 Sb	0.046	ppb	6.45		
123 Sb	0.0497	ppb	5.50		
135 Ba	0.1032	ppb	6.04		
137 Ba	0.0846	ppb	17.25		
182 W	0.2373	ppb	6.73		
203 Tl	-0.0037	ppb	103.40		
205 Tl	-0.0086	ppb	132.37		
208 Pb	0.0971	ppb	23.03		
232 Th	0.0572	ppb	19.29		
238 U	0.0007	ppb	77.55		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1773623.50	4.59	1729334.00	102.6	69.5 - 120.4	
45 Sc	2519145.30	4.88	2274967.30	110.7	69.5 - 120.4	
72 Ge	628978.75	2.70	590563.19	106.5	69.5 - 120.4	
159 Tb	6373178.00	0.38	6367688.00	100.1	69.5 - 120.4	
209 Bi	2544576.00	0.60	2872959.00	88.6	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000088

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\022ICSB.D\022ICSB.D#
Date Acquired: May 10 2018 06:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	20.4	ppb	1.50	20.00	79.5 - 120	
11 B	23.49	ppb	2.32	20.00	79.5 - 120	
23 Na	103,400.	ppb	0.58	#########	79.5 - 120	
25 Mg	99,640.	ppb	3.35	#########	79.5 - 120	
27 Al	99,080.	ppb	2.47	#########	79.5 - 120	
28 Si	558.5	ppb	3.83	---	##### - #####	
29 Si	548.5	ppb	2.17	---	##### - #####	
39 K	101,000.	ppb	1.65	#########	79.5 - 120	
43 Ca	108,700.	ppb	2.22	#########	79.5 - 120	
44 Ca	100,400.	ppb	2.40	#########	79.5 - 120	
51 V	21.9	ppb	1.31	20.00	79.5 - 120	
52 Cr	21.8	ppb	2.02	20.00	79.5 - 120	
53 Cr	21.94	ppb	2.00	---	##### - #####	
55 Mn	20.66	ppb	1.50	20.00	79.5 - 120	
56 Fe	103,300.	ppb	2.97	#########	79.5 - 120	
57 Fe	100,000.	ppb	3.87	#########	79.5 - 120	
59 Co	20.76	ppb	1.51	20.00	79.5 - 120	
60 Ni	19.34	ppb	0.22	20.00	79.5 - 120	
63 Cu	22.98	ppb	2.20	20.00	79.5 - 120	
65 Cu	20.57	ppb	2.19	20.00	79.5 - 120	
66 Zn	20.72	ppb	1.80	20.00	79.5 - 120	
68 Zn	19.11	ppb	0.79	20.00	79.5 - 120	
75 As	20.13	ppb	2.58	20.00	79.5 - 120	
82 Se	19.36	ppb	3.87	20.00	79.5 - 120	
88 Sr	21.07	ppb	2.81	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,941.	ppb	3.88	2000.00	79.5 - 120	
107 Ag	18.31	ppb	1.16	20.00	79.5 - 120	
109 Ag	18.15	ppb	2.62	20.00	79.5 - 120	
111 Cd	18.26	ppb	0.75	20.00	79.5 - 120	
114 Cd	18.09	ppb	2.00	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.98	ppb	1.94	20.00	79.5 - 120	
120 Sn	22.12	ppb	1.33	20.00	79.5 - 120	
121 Sb	22.16	ppb	1.69	20.00	79.5 - 120	
123 Sb	21.97	ppb	1.89	20.00	79.5 - 120	
135 Ba	22.19	ppb	1.62	20.00	79.5 - 120	
137 Ba	21.74	ppb	1.98	20.00	79.5 - 120	
182 W	20.26	ppb	1.46	20.00	79.5 - 120	
203 Tl	20.97	ppb	2.61	20.00	79.5 - 120	
205 Tl	21.15	ppb	3.04	20.00	79.5 - 120	
208 Pb	21.06	ppb	3.40	20.00	79.5 - 120	
232 Th	22.53	ppb	1.48	20.00	79.5 - 120	
238 U	22.12	ppb	2.97	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1908229.40	1.79	1729334.00	110.3	69.5 - 120	
45 Sc	2680944.50	0.65	2274967.30	117.8	69.5 - 120	
72 Ge	657149.25	1.94	590563.19	111.3	69.5 - 120	
159 Tb	6301713.00	1.44	6367688.00	99.0	69.5 - 120	
209 Bi	2481115.30	2.23	2872959.00	86.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000089

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\023SMPL.D\023SMPL.D#
Date Acquired: May 10 2018 07:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	80.58	100.	
11 B	0.6366	0.6366	ppb	2.76	1000.	
23 Na	5.973	5.973	ppb	7.92	200000.	
25 Mg	0.3352	0.3352	ppb	40.36	200000.	
27 Al	0.562	0.562	ppb	20.14	200000.	
28 Si	19.42	19.42	ppb	91.40	#VALUE!	
29 Si	-55.48	-55.48	ppb	36.32	10000.	
39 K	-6.267	-6.267	ppb	59.14	200000.	
43 Ca	-1.748	-1.748	ppb	257.27	#VALUE!	
44 Ca	1.909	1.909	ppb	70.67	200000.	
51 V	0.1316	0.1316	ppb	44.92	1000.	
52 Cr	0.0328	0.0328	ppb	22.87	2000.	
53 Cr	2.955	2.955	ppb	9.23	#VALUE!	
55 Mn	0.0085	0.0085	ppb	46.48	2000.	
56 Fe	7.14	7.14	ppb	74.58	#VALUE!	
57 Fe	5.396	5.396	ppb	35.56	100000.	
59 Co	0.0004	0.0004	ppb	718.66	1000.	
60 Ni	0.0161	0.0161	ppb	18.61	1000.	
63 Cu	0.1115	0.1115	ppb	8.98	#VALUE!	
65 Cu	0.1158	0.1158	ppb	15.98	2000.	
66 Zn	0.1063	0.1063	ppb	36.62	2000.	
68 Zn	0.037	0.037	ppb	155.29	#VALUE!	
75 As	0.0112	0.0112	ppb	871.02	1000.	
82 Se	-0.0325	-0.0325	ppb	265.44	1000.	
88 Sr	0.0029	0.0029	ppb	51.81	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.073	1.073	ppb	50.78	1000.	
107 Ag	0.0033	0.0033	ppb	30.15	100.	
109 Ag	0.0022	0.0022	ppb	62.11	#VALUE!	
111 Cd	-0.0767	-0.0767	ppb	14.34	#VALUE!	
114 Cd	0.0006	0.0006	ppb	372.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.03	0.03	ppb	10.31	1000.	
120 Sn	0.022	0.022	ppb	59.23	#VALUE!	
121 Sb	0.0017	0.0017	ppb	91.91	#VALUE!	
123 Sb	0.0024	0.0024	ppb	90.26	1000.	
135 Ba	0.0081	0.0081	ppb	29.23	2000.	
137 Ba	0.0203	0.0203	ppb	26.81	#VALUE!	
182 W	0.0087	0.0087	ppb	49.74	1000.	
203 Tl	-0.0021	-0.0021	ppb	132.30	1000.	
205 Tl	-0.0047	-0.0047	ppb	241.84	#VALUE!	
208 Pb	0.0389	0.0389	ppb	19.13	2000.	
232 Th	0.0111	0.0111	ppb	28.51	1000.	
238 U	0.0013	0.0013	ppb	51.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2007881.90	2.80	1729334.00	116.1	69.5 - 120	
45 Sc	2658498.50	3.72	2274967.30	116.9	69.5 - 120	
72 Ge	665262.00	1.09	590563.19	112.6	69.5 - 120	
159 Tb	6115422.00	1.69	6367688.00	96.0	69.5 - 120	
209 Bi	2676831.00	1.45	2872959.00	93.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000090

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\024SMPL.D\024SMPL.D#
Date Acquired: May 10 2018 07:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	1.13	100.	>LDR
11 B	0.3469	0.3469	ppb	15.09	1000.	
23 Na	5.099	5.099	ppb	1.81	200000.	
25 Mg	0.9764	0.9764	ppb	24.06	200000.	
27 Al	2.815	2.815	ppb	2.18	200000.	
28 Si	-15.62	-15.62	ppb	71.70	#VALUE!	
29 Si	-62.29	-62.29	ppb	29.86	10000.	
39 K	-7.279	-7.279	ppb	51.85	200000.	
43 Ca	1,157.	1,157.	ppb	5.03	#VALUE!	
44 Ca	-412.5	-412.5	ppb	5.24	200000.	LOW
51 V	1,055.	1,055.	ppb	1.44	1000.	>LDR
52 Cr	2,093.	2,093.	ppb	1.60	2000.	>LDR
53 Cr	2,186.	2,186.	ppb	1.71	#VALUE!	
55 Mn	2,025.	2,025.	ppb	1.22	2000.	>LDR
56 Fe	0.4054	0.4054	ppb	802.42	#VALUE!	
57 Fe	-0.7898	-0.7898	ppb	158.77	100000.	
59 Co	1,038.	1,038.	ppb	2.21	1000.	>LDR
60 Ni	1,046.	1,046.	ppb	2.96	1000.	>LDR
63 Cu	2,012.	2,012.	ppb	2.40	#VALUE!	
65 Cu	1,997.	1,997.	ppb	3.10	2000.	
66 Zn	2,011.	2,011.	ppb	2.20	2000.	>LDR
68 Zn	2,015.	2,015.	ppb	2.05	#VALUE!	
75 As	1,031.	1,031.	ppb	1.98	1000.	>LDR
82 Se	1,049.	1,049.	ppb	1.83	1000.	>LDR
88 Sr	1,896.	1,896.	ppb	1.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	963.4	963.4	ppb	1.05	1000.	
107 Ag	100.7	100.7	ppb	1.24	100.	>LDR
109 Ag	98.	98.	ppb	2.15	#VALUE!	
111 Cd	977.1	977.1	ppb	3.37	#VALUE!	
114 Cd	947.4	947.4	ppb	1.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,058.	1,058.	ppb	3.35	1000.	>LDR
120 Sn	1,072.	1,072.	ppb	2.52	#VALUE!	
121 Sb	1,075.	1,075.	ppb	2.22	#VALUE!	
123 Sb	1,073.	1,073.	ppb	1.83	1000.	>LDR
135 Ba	2,131.	2,131.	ppb	1.77	2000.	>LDR
137 Ba	2,076.	2,076.	ppb	2.75	#VALUE!	
182 W	980.7	980.7	ppb	2.15	1000.	
203 Tl	1,002.	1,002.	ppb	1.92	1000.	>LDR
205 Tl	994.8	994.8	ppb	2.03	#VALUE!	
208 Pb	1,967.	1,967.	ppb	0.65	2000.	
232 Th	993.1	993.1	ppb	0.78	1000.	
238 U	976.8	976.8	ppb	1.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1962585.10	3.28	1729334.00	113.5	69.5 - 120	
45 Sc	2612171.80	3.22	2274967.30	114.8	69.5 - 120	
72 Ge	648663.25	3.46	590563.19	109.8	69.5 - 120	
159 Tb	6401563.00	1.62	6367688.00	100.5	69.5 - 120	
209 Bi	2803417.80	1.06	2872959.00	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

14 :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 4000091

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\025SMPL.D\025SMPL.D#
Date Acquired: May 10 2018 07:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	0.0065	0.0065	ppb	82.04	100.	
11 B	0.8056	0.8056	ppb	16.42	1000.	
23 Na	207,100.	207,100.	ppb	2.89	200000.	>LDR
25 Mg	196,100.	196,100.	ppb	0.70	200000.	
27 Al	197,100.	197,100.	ppb	1.20	200000.	
28 Si	10,880.	10,880.	ppb	0.97	#VALUE!	
29 Si	11,840.	11,840.	ppb	0.90	10000.	>LDR
39 K	201,500.	201,500.	ppb	1.11	200000.	>LDR
43 Ca	209,100.	209,100.	ppb	1.48	#VALUE!	
44 Ca	199,600.	199,600.	ppb	1.14	200000.	
51 V	0.3193	0.3193	ppb	7.42	1000.	
52 Cr	3.225	3.225	ppb	2.12	2000.	
53 Cr	1.957	1.957	ppb	29.01	#VALUE!	
55 Mn	7.73	7.73	ppb	1.62	2000.	
56 Fe	102,700.	102,700.	ppb	2.29	#VALUE!	
57 Fe	99,690.	99,690.	ppb	2.59	100000.	
59 Co	2.913	2.913	ppb	3.46	1000.	
60 Ni	3.138	3.138	ppb	3.32	1000.	
63 Cu	9.439	9.439	ppb	2.69	#VALUE!	
65 Cu	3.19	3.19	ppb	5.50	2000.	
66 Zn	3.437	3.437	ppb	0.34	2000.	
68 Zn	1.235	1.235	ppb	3.50	#VALUE!	
75 As	0.2073	0.2073	ppb	49.59	1000.	
82 Se	0.4038	0.4038	ppb	37.05	1000.	
88 Sr	6.56	6.56	ppb	0.41	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.52	1.52	ppb	44.51	1000.	
107 Ag	0.3501	0.3501	ppb	2.84	100.	
109 Ag	0.3314	0.3314	ppb	1.51	#VALUE!	
111 Cd	-0.0063	-0.0063	ppb	157.54	#VALUE!	
114 Cd	-0.0065	-0.0065	ppb	32.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.7023	0.7023	ppb	25.52	1000.	
120 Sn	0.7148	0.7148	ppb	22.40	#VALUE!	
121 Sb	0.1943	0.1943	ppb	16.71	#VALUE!	
123 Sb	0.2098	0.2098	ppb	15.57	1000.	
135 Ba	0.2626	0.2626	ppb	13.68	2000.	
137 Ba	0.2704	0.2704	ppb	12.79	#VALUE!	
182 W	1.259	1.259	ppb	40.73	1000.	
203 Tl	0.0426	0.0426	ppb	50.48	1000.	
205 Tl	0.0326	0.0326	ppb	25.93	#VALUE!	
208 Pb	0.3996	0.3996	ppb	4.40	2000.	
232 Th	1.329	1.329	ppb	28.68	1000.	
238 U	0.1333	0.1333	ppb	21.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2009945.40	3.63	1729334.00	116.2	69.5 - 120	
45 Sc	2812562.30	4.48	2274967.30	123.6	69.5 - 120	IS Fai
72 Ge	649551.00	2.11	590563.19	110.0	69.5 - 120	
159 Tb	5434172.50	2.55	6367688.00	85.3	69.5 - 120	
209 Bi	2041288.30	3.81	2872959.00	71.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

3 :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 4000092

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\026SMPL.D\026SMPL.D#
Date Acquired: May 10 2018 07:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	53.87	100.	
11 B	0.2893	0.2893	ppb	21.96	1000.	
23 Na	13.24	13.24	ppb	12.89	200000.	
25 Mg	0.4063	0.4063	ppb	56.29	200000.	
27 Al	0.7009	0.7009	ppb	9.09	200000.	
28 Si	54.79	54.79	ppb	35.19	#VALUE!	
29 Si	-40.52	-40.52	ppb	43.49	10000.	
39 K	1.523	1.523	ppb	264.67	200000.	
43 Ca	-7.229	-7.229	ppb	75.93	#VALUE!	
44 Ca	4.41	4.41	ppb	44.33	200000.	
51 V	0.1568	0.1568	ppb	20.00	1000.	
52 Cr	0.0813	0.0813	ppb	44.72	2000.	
53 Cr	5.173	5.173	ppb	4.28	#VALUE!	
55 Mn	0.013	0.013	ppb	25.56	2000.	
56 Fe	21.16	21.16	ppb	33.69	#VALUE!	
57 Fe	5.855	5.855	ppb	48.78	100000.	
59 Co	-0.0034	-0.0034	ppb	16.36	1000.	
60 Ni	0.0195	0.0195	ppb	58.76	1000.	
63 Cu	0.1452	0.1452	ppb	6.76	#VALUE!	
65 Cu	0.1262	0.1262	ppb	12.36	2000.	
66 Zn	0.0726	0.0726	ppb	26.89	2000.	
68 Zn	0.1078	0.1078	ppb	58.93	#VALUE!	
75 As	0.0464	0.0464	ppb	286.76	1000.	
82 Se	0.0061	0.0061	ppb	1735.20	1000.	
88 Sr	0.0008	0.0008	ppb	147.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2129	0.2129	ppb	49.55	1000.	
107 Ag	0.0025	0.0025	ppb	17.52	100.	
109 Ag	0.0028	0.0028	ppb	33.98	#VALUE!	
111 Cd	-0.0677	-0.0677	ppb	12.03	#VALUE!	
114 Cd	-0.0002	-0.0002	ppb	673.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1177	0.1177	ppb	13.96	1000.	
120 Sn	0.13	0.13	ppb	11.74	#VALUE!	
121 Sb	0.0308	0.0308	ppb	44.78	#VALUE!	
123 Sb	0.0206	0.0206	ppb	19.08	1000.	
135 Ba	0.0155	0.0155	ppb	102.98	2000.	
137 Ba	0.0153	0.0153	ppb	46.15	#VALUE!	
182 W	0.2077	0.2077	ppb	39.55	1000.	
203 Tl	-0.0095	-0.0095	ppb	102.23	1000.	
205 Tl	0.0013	0.0013	ppb	620.18	#VALUE!	
208 Pb	0.0823	0.0823	ppb	20.37	2000.	
232 Th	0.04	0.04	ppb	56.21	1000.	
238 U	0.006	0.006	ppb	44.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2131613.50	3.53	1729334.00	123.3	69.5 - 120	IS Fai
45 Sc	2794353.00	3.55	2274967.30	122.8	69.5 - 120	IS Fai
72 Ge	685743.88	3.52	590563.19	116.1	69.5 - 120	
159 Tb	5785932.50	1.80	6367688.00	90.9	69.5 - 120	
209 Bi	2463613.30	2.64	2872959.00	85.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000093

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\027SMPL.D\027SMPL.D#
Date Acquired: May 10 2018 07:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 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	1248.40	100.	
11 B	0.2224	0.2224	ppb	22.15	1000.	
23 Na	6.686	6.686	ppb	12.40	200000.	
25 Mg	0.1219	0.1219	ppb	32.81	200000.	
27 Al	0.4702	0.4702	ppb	29.67	200000.	
28 Si	17.53	17.53	ppb	61.27	#VALUE!	
29 Si	-74.64	-74.64	ppb	15.06	10000.	
39 K	-5.168	-5.168	ppb	64.67	200000.	
43 Ca	-3.523	-3.523	ppb	120.44	#VALUE!	
44 Ca	1.512	1.512	ppb	81.35	200000.	
51 V	0.1267	0.1267	ppb	41.35	1000.	
52 Cr	0.0721	0.0721	ppb	21.06	2000.	
53 Cr	5.39	5.39	ppb	3.31	#VALUE!	
55 Mn	0.0016	0.0016	ppb	254.40	2000.	
56 Fe	6.059	6.059	ppb	29.05	#VALUE!	
57 Fe	3.148	3.148	ppb	43.87	100000.	
59 Co	0.0027	0.0027	ppb	59.07	1000.	
60 Ni	0.0226	0.0226	ppb	36.50	1000.	
63 Cu	0.1194	0.1194	ppb	6.19	#VALUE!	
65 Cu	0.1205	0.1205	ppb	15.61	2000.	
66 Zn	0.0875	0.0875	ppb	24.67	2000.	
68 Zn	0.0965	0.0965	ppb	71.65	#VALUE!	
75 As	0.0247	0.0247	ppb	189.16	1000.	
82 Se	0.0678	0.0678	ppb	46.76	1000.	
88 Sr	0.0027	0.0027	ppb	111.12	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0828	0.0828	ppb	44.28	1000.	
107 Ag	0.0003	0.0003	ppb	203.14	100.	
109 Ag	0.0008	0.0008	ppb	151.26	#VALUE!	
111 Cd	-0.0677	-0.0677	ppb	23.19	#VALUE!	
114 Cd	-0.0015	-0.0015	ppb	94.75	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0716	0.0716	ppb	27.84	1000.	
120 Sn	0.0761	0.0761	ppb	12.20	#VALUE!	
121 Sb	0.0122	0.0122	ppb	34.58	#VALUE!	
123 Sb	0.0147	0.0147	ppb	50.56	1000.	
135 Ba	0.0163	0.0163	ppb	100.37	2000.	
137 Ba	0.0078	0.0078	ppb	71.32	#VALUE!	
182 W	0.093	0.093	ppb	38.93	1000.	
203 Tl	-0.0031	-0.0031	ppb	707.52	1000.	
205 Tl	-0.0157	-0.0157	ppb	58.48	#VALUE!	
208 Pb	0.0485	0.0485	ppb	35.25	2000.	
232 Th	0.0311	0.0311	ppb	47.54	1000.	
238 U	0.0019	0.0019	ppb	39.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2132787.30	3.35	1729334.00	123.3	69.5 - 120	IS Fai
45 Sc	2845807.30	2.12	2274967.30	125.1	69.5 - 120	IS Fai
72 Ge	697410.25	1.69	590563.19	118.1	69.5 - 120	
159 Tb	6099743.50	2.10	6367688.00	95.8	69.5 - 120	
209 Bi	2614637.30	2.16	2872959.00	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000094

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\028_CCV.D\028_CCV.D#
Date Acquired: May 10 2018 07:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.42	ppb	0.65	25	97.68	
11 B	24.47	ppb	3.92	25	97.88	
23 Na	5,493.	ppb	0.46	5,000	109.86	
25 Mg	5,400.	ppb	2.58	5,000	108	
27 Al	512.2	ppb	2.74	500	102.44	
28 Si	559.1	ppb	7.19	500	111.82	
29 Si	483.1	ppb	8.46	500	96.62	
39 K	5,136.	ppb	4.53	5,000	102.72	
43 Ca	5,190.	ppb	0.64	5,000	103.8	
44 Ca	5,077.	ppb	1.50	5,000	101.54	
51 V	25.67	ppb	1.97	25	102.68	
52 Cr	25.75	ppb	2.16	25	103	
53 Cr	25.51	ppb	0.91	25	102.04	
55 Mn	25.35	ppb	1.34	25	101.4	
56 Fe	5,125.	ppb	2.01	5,000	102.5	
57 Fe	5,206.	ppb	2.49	5,000	104.12	
59 Co	25.92	ppb	1.59	25	103.68	
60 Ni	25.82	ppb	0.92	25	103.28	
63 Cu	25.72	ppb	1.50	25	102.88	
65 Cu	25.48	ppb	0.81	25	101.92	
66 Zn	25.06	ppb	0.39	25	100.24	
68 Zn	25.1	ppb	1.79	25	100.4	
75 As	24.94	ppb	1.27	25	99.76	
82 Se	24.98	ppb	0.57	25	99.92	
88 Sr	23.6	ppb	0.73	25	94.4	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.8	ppb	1.11	25	95.2	
107 Ag	24.15	ppb	0.93	25	96.6	
109 Ag	23.65	ppb	0.50	25	94.6	
111 Cd	23.68	ppb	1.16	25	94.72	
114 Cd	23.4	ppb	0.79	25	93.6	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	26.71	ppb	1.14	25	106.84	
120 Sn	26.9	ppb	1.60	25	107.6	
121 Sb	27.41	ppb	1.03	25	109.64	
123 Sb	26.97	ppb	1.82	25	107.88	
135 Ba	26.51	ppb	0.82	25	106.04	
137 Ba	26.57	ppb	1.95	25	106.28	
182 W	24.14	ppb	1.78	25	96.56	
203 Tl	24.85	ppb	4.02	25	99.4	
205 Tl	25.27	ppb	0.73	25	101.08	
208 Pb	25.27	ppb	2.38	25	101.08	
232 Th	24.82	ppb	2.23	25	99.28	
238 U	24.6	ppb	2.77	25	98.4	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2133875.50	2.96	1729334.00	123.4	80 - 120.4	ISFail
45 Sc	2703783.30	4.32	2274967.30	118.8	80 - 120.4	
72 Ge	670422.88	2.91	590563.19	113.5	80 - 120.4	
159 Tb	6359487.50	1.65	6367688.00	99.9	80 - 120.4	
209 Bi	2734107.80	2.15	2872959.00	95.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\029_CCB.D\029_CCB.D#
Date Acquired: May 10 2018 07:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.002	ppb	37.31	1.00	
11 B	1.193	ppb	14.10	1.00	
23 Na	3.45	ppb	5.04	1.00	
25 Mg	0.1106	ppb	105.70	1.00	
27 Al	0.0375	ppb	219.58	1.00	
28 Si	37.87	ppb	30.61	1.00	
29 Si	-31.78	ppb	12.74	1.00	
39 K	1.473	ppb	136.80	1.00	
43 Ca	-4.207	ppb	63.89	1.00	
44 Ca	1.308	ppb	94.57	1.00	
51 V	0.0719	ppb	47.68	1.00	
52 Cr	0.0105	ppb	351.71	1.00	
53 Cr	0.4427	ppb	38.47	1.00	
55 Mn	-0.0065	ppb	20.27	1.00	
56 Fe	5.306	ppb	89.58	1.00	
57 Fe	2.488	ppb	20.19	1.00	
59 Co	0.0053	ppb	63.01	1.00	
60 Ni	-0.0021	ppb	282.96	1.00	
63 Cu	-0.0001	ppb	6383.00	1.00	
65 Cu	-0.0002	ppb	5127.80	1.00	
66 Zn	0.0319	ppb	69.76	1.00	
68 Zn	0.0542	ppb	43.74	1.00	
75 As	-0.0707	ppb	24.81	1.00	
82 Se	-0.0156	ppb	428.60	1.00	
88 Sr	0.0021	ppb	146.07	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0684	ppb	41.96	1.00	
107 Ag	0.0047	ppb	13.38	1.00	
109 Ag	0.0026	ppb	76.11	1.00	
111 Cd	-0.049	ppb	23.38	1.00	
114 Cd	0.0026	ppb	78.17	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0499	ppb	32.05	1.00	
120 Sn	0.0584	ppb	27.24	1.00	
121 Sb	0.0127	ppb	42.53	1.00	
123 Sb	0.0165	ppb	30.82	1.00	
135 Ba	-0.0007	ppb	415.55	1.00	
137 Ba	0.0005	ppb	686.25	1.00	
182 W	0.0802	ppb	35.17	1.00	
203 Tl	-0.0022	ppb	237.50	1.00	
205 Tl	0.004	ppb	205.62	1.00	
208 Pb	-0.0573	ppb	12.06	1.00	
232 Th	0.1068	ppb	10.89	1.00	
238 U	0.0038	ppb	36.08	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1940704.40	5.70	1729334.00	112.2	79.5 - 120	
45 Sc	2519557.50	0.82	2274967.30	110.8	79.5 - 120	
72 Ge	633017.00	1.24	590563.19	107.2	79.5 - 120	
159 Tb	5946772.00	0.61	6367688.00	93.4	79.5 - 120	
209 Bi	2610746.50	1.92	2872959.00	90.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000096

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\030SMPL.D\030SMPL.D#
Date Acquired: May 10 2018 07:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE03IMW1
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	1.97	100.	
11 B	524.5	104.9	ppb	3.34	1000.	
23 Na	8,520.	1,704.	ppb	3.14	200000.	
25 Mg	5,395.	1,079.	ppb	2.46	200000.	
27 Al	2,289.	457.8	ppb	1.26	200000.	
28 Si	1,201.5	240.3	ppb	0.55	#VALUE!	
29 Si	801.5	160.3	ppb	7.98	10000.	
39 K	10,530.	2,106.	ppb	3.47	200000.	
43 Ca	2,972.	594.4	ppb	6.77	#VALUE!	
44 Ca	2,484.	496.8	ppb	4.73	200000.	
51 V	582.	116.4	ppb	0.99	1000.	
52 Cr	221.9	44.38	ppb	2.00	2000.	
53 Cr	228.45	45.69	ppb	0.54	#VALUE!	
55 Mn	553.5	110.7	ppb	1.47	2000.	
56 Fe	1,141.	228.2	ppb	2.87	#VALUE!	
57 Fe	1,125.5	225.1	ppb	3.36	100000.	
59 Co	576.	115.2	ppb	0.88	1000.	
60 Ni	563.	112.6	ppb	2.33	1000.	
63 Cu	274.7	54.94	ppb	1.84	#VALUE!	
65 Cu	276.5	55.3	ppb	1.73	2000.	
66 Zn	560.	112.	ppb	2.86	2000.	
68 Zn	604.	120.8	ppb	2.98	#VALUE!	
75 As	106.65	21.33	ppb	2.93	1000.	
82 Se	106.25	21.25	ppb	0.48	1000.	
88 Sr	496.15	99.23	ppb	1.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.75	20.15	ppb	1.36	1000.	
107 Ag	52.5	10.5	ppb	1.61	100.	
109 Ag	52.	10.4	ppb	1.18	#VALUE!	
111 Cd	250.75	50.15	ppb	1.85	#VALUE!	
114 Cd	249.85	49.97	ppb	1.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	558.5	111.7	ppb	4.07	1000.	
120 Sn	565.	113.	ppb	3.02	#VALUE!	
121 Sb	114.25	22.85	ppb	2.98	#VALUE!	
123 Sb	112.95	22.59	ppb	3.15	1000.	
135 Ba	2,278.5	455.7	ppb	2.49	2000.	
137 Ba	2,306.	461.2	ppb	3.01	#VALUE!	
182 W	101.	20.2	ppb	2.01	1000.	
203 Tl	105.5	21.1	ppb	2.72	1000.	
205 Tl	104.7	20.94	ppb	3.25	#VALUE!	
208 Pb	105.25	21.05	ppb	3.45	2000.	
232 Th	101.45	20.29	ppb	2.35	1000.	
238 U	103.35	20.67	ppb	3.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2042906.90	2.64	1729334.00	118.1	69.5 - 120	
45 Sc	2664890.50	0.21	2274967.30	117.1	69.5 - 120	
72 Ge	657306.31	1.19	590563.19	111.3	69.5 - 120	
159 Tb	6390270.50	1.19	6367688.00	100.4	69.5 - 120	
209 Bi	2764806.30	1.67	2872959.00	96.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000097

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\031SMPL.D\031SMPL.D#
Date Acquired: May 10 2018 07:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3618-001
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	0.0741	0.0741	ppb	15.96	100.	
11 B	68.54	68.54	ppb	0.72	1000.	
23 Na	58,410.	58,410.	ppb	0.89	200000.	
25 Mg	536.	536.	ppb	3.14	200000.	
27 Al	732.6	732.6	ppb	1.27	200000.	
28 Si	7,565.	7,565.	ppb	0.98	#VALUE!	
29 Si	8,286.	8,286.	ppb	1.82	10000.	
39 K	1,837.	1,837.	ppb	2.45	200000.	
43 Ca	1,141.	1,141.	ppb	4.74	#VALUE!	
44 Ca	1,156.	1,156.	ppb	1.94	200000.	
51 V	1.158	1.158	ppb	7.88	1000.	
52 Cr	2.228	2.228	ppb	2.25	2000.	
53 Cr	11.36	11.36	ppb	31.69	#VALUE!	
55 Mn	16.79	16.79	ppb	0.76	2000.	
56 Fe	1,101.	1,101.	ppb	0.67	#VALUE!	
57 Fe	1,107.	1,107.	ppb	1.59	100000.	
59 Co	0.2979	0.2979	ppb	2.76	1000.	
60 Ni	1.453	1.453	ppb	2.21	1000.	
63 Cu	14.13	14.13	ppb	0.99	#VALUE!	
65 Cu	12.52	12.52	ppb	0.80	2000.	
66 Zn	10.2	10.2	ppb	2.93	2000.	
68 Zn	10.1	10.1	ppb	3.13	#VALUE!	
75 As	33.17	33.17	ppb	0.77	1000.	
82 Se	0.036	0.036	ppb	215.97	1000.	
88 Sr	6.772	6.772	ppb	2.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.685	1.685	ppb	1.94	1000.	
107 Ag	0.0037	0.0037	ppb	23.84	100.	
109 Ag	0.0057	0.0057	ppb	22.35	#VALUE!	
111 Cd	-0.0774	-0.0774	ppb	14.47	#VALUE!	
114 Cd	0.0078	0.0078	ppb	16.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.339	0.339	ppb	8.50	1000.	
120 Sn	0.3639	0.3639	ppb	6.89	#VALUE!	
121 Sb	0.0755	0.0755	ppb	8.85	#VALUE!	
123 Sb	0.081	0.081	ppb	8.21	1000.	
135 Ba	2.875	2.875	ppb	4.41	2000.	
137 Ba	2.861	2.861	ppb	1.28	#VALUE!	
182 W	5.832	5.832	ppb	1.36	1000.	
203 Tl	0.0002	0.0002	ppb	2213.90	1000.	
205 Tl	0.0116	0.0116	ppb	71.13	#VALUE!	
208 Pb	0.4138	0.4138	ppb	4.79	2000.	
232 Th	0.7439	0.7439	ppb	16.95	1000.	
238 U	0.3805	0.3805	ppb	1.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2023037.60	2.84	1729334.00	117.0	69.5 - 120	
45 Sc	2732831.50	1.77	2274967.30	120.1	69.5 - 120	
72 Ge	663169.25	1.67	590563.19	112.3	69.5 - 120	
159 Tb	6161521.00	1.63	6367688.00	96.8	69.5 - 120	
209 Bi	2583467.30	1.99	2872959.00	89.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000098

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\032SMPL.D\032SMPL.D#
Date Acquired: May 10 2018 07:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3721-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	70.18	100.	
11 B	12.84	12.84	ppb	2.61	1000.	
23 Na	2,839.	2,839.	ppb	2.20	200000.	
25 Mg	28.72	28.72	ppb	0.75	200000.	
27 Al	32.54	32.54	ppb	4.37	200000.	
28 Si	513.9	513.9	ppb	2.29	#VALUE!	
29 Si	450.	450.	ppb	6.10	10000.	
39 K	8,396.	8,396.	ppb	0.97	200000.	
43 Ca	14.73	14.73	ppb	23.33	#VALUE!	
44 Ca	23.62	23.62	ppb	8.46	200000.	
51 V	0.1593	0.1593	ppb	115.00	1000.	
52 Cr	0.2331	0.2331	ppb	13.51	2000.	
53 Cr	13.65	13.65	ppb	3.62	#VALUE!	
55 Mn	0.1355	0.1355	ppb	11.45	2000.	
56 Fe	8.31	8.31	ppb	30.48	#VALUE!	
57 Fe	3.721	3.721	ppb	12.82	100000.	
59 Co	0.0018	0.0018	ppb	264.79	1000.	
60 Ni	0.0184	0.0184	ppb	59.76	1000.	
63 Cu	0.1536	0.1536	ppb	10.63	#VALUE!	
65 Cu	0.067	0.067	ppb	9.32	2000.	
66 Zn	1.019	1.019	ppb	3.87	2000.	
68 Zn	1.015	1.015	ppb	13.13	#VALUE!	
75 As	2.503	2.503	ppb	6.14	1000.	
82 Se	0.0123	0.0123	ppb	777.45	1000.	
88 Sr	0.1748	0.1748	ppb	4.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0868	0.0868	ppb	13.30	1000.	
107 Ag	0.0064	0.0064	ppb	22.12	100.	
109 Ag	0.0088	0.0088	ppb	25.92	#VALUE!	
111 Cd	-0.0974	-0.0974	ppb	25.38	#VALUE!	
114 Cd	0.0002	0.0002	ppb	706.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0704	0.0704	ppb	21.22	1000.	
120 Sn	0.0647	0.0647	ppb	13.77	#VALUE!	
121 Sb	0.7442	0.7442	ppb	2.63	#VALUE!	
123 Sb	0.7407	0.7407	ppb	1.35	1000.	
135 Ba	2.782	2.782	ppb	2.16	2000.	
137 Ba	2.716	2.716	ppb	1.63	#VALUE!	
182 W	0.0415	0.0415	ppb	24.23	1000.	
203 Tl	0.0033	0.0033	ppb	286.18	1000.	
205 Tl	0.005	0.005	ppb	235.19	#VALUE!	
208 Pb	-0.0663	-0.0663	ppb	13.87	2000.	
232 Th	0.0689	0.0689	ppb	30.45	1000.	
238 U	0.005	0.005	ppb	21.32	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2024251.30	1.31	1729334.00	117.1	69.5 - 120	
45 Sc	2682200.50	2.32	2274967.30	117.9	69.5 - 120	
72 Ge	668191.13	1.69	590563.19	113.1	69.5 - 120	
159 Tb	6172333.50	0.79	6367688.00	96.9	69.5 - 120	
209 Bi	2646675.30	0.98	2872959.00	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000099

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\033SMPL.D\033SMPL.D#
Date Acquired: May 10 2018 07:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE03IMW2
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	-0.0192	-0.0038	ppb	52.92	100.	
11 B	11.325	2.265	ppb	14.44	1000.	
23 Na	62.6	12.52	ppb	4.08	200000.	
25 Mg	12.72	2.544	ppb	1.04	200000.	
27 Al	9.41	1.882	ppb	6.93	200000.	
28 Si	-17.37	-3.474	ppb	312.03	#VALUE!	
29 Si	-333.55	-66.71	ppb	13.42	10000.	
39 K	-26.23	-5.246	ppb	96.74	200000.	
43 Ca	-11.475	-2.295	ppb	64.49	#VALUE!	
44 Ca	23.755	4.751	ppb	36.20	200000.	
51 V	1.3755	0.2751	ppb	9.85	1000.	
52 Cr	2.5195	0.5039	ppb	14.55	2000.	
53 Cr	117.3	23.46	ppb	2.94	#VALUE!	
55 Mn	0.2814	0.0563	ppb	2.98	2000.	
56 Fe	72.3	14.46	ppb	16.02	#VALUE!	
57 Fe	20.055	4.011	ppb	54.08	100000.	
59 Co	0.004	0.0008	ppb	731.78	1000.	
60 Ni	0.0702	0.014	ppb	21.05	1000.	
63 Cu	0.695	0.139	ppb	16.82	#VALUE!	
65 Cu	0.685	0.137	ppb	11.91	2000.	
66 Zn	0.5395	0.1079	ppb	20.06	2000.	
68 Zn	0.543	0.1086	ppb	48.28	#VALUE!	
75 As	1.639	0.3278	ppb	18.98	1000.	
82 Se	0.1444	0.0289	ppb	47.47	1000.	
88 Sr	0.0405	0.0081	ppb	17.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0867	0.0173	ppb	30.49	1000.	
107 Ag	0.0167	0.0033	ppb	48.16	100.	
109 Ag	0.014	0.0028	ppb	51.34	#VALUE!	
111 Cd	-0.4594	-0.0919	ppb	7.93	#VALUE!	
114 Cd	0.0025	0.0005	ppb	554.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.0875	0.2175	ppb	10.31	1000.	
120 Sn	1.064	0.2128	ppb	1.81	#VALUE!	
121 Sb	0.0257	0.0051	ppb	50.22	#VALUE!	
123 Sb	0.036	0.0072	ppb	41.15	1000.	
135 Ba	0.1821	0.0364	ppb	31.19	2000.	
137 Ba	0.1277	0.0255	ppb	25.51	#VALUE!	
182 W	0.1174	0.0235	ppb	26.78	1000.	
203 Tl	-0.0123	-0.0025	ppb	396.55	1000.	
205 Tl	-0.0296	-0.0059	ppb	70.24	#VALUE!	
208 Pb	-0.195	-0.039	ppb	33.50	2000.	
232 Th	0.3209	0.0642	ppb	34.35	1000.	
238 U	0.0059	0.0012	ppb	98.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1912733.80	0.58	1729334.00	110.6	69.5 - 120	
45 Sc	2501718.50	0.73	2274967.30	110.0	69.5 - 120	
72 Ge	631270.81	1.26	590563.19	106.9	69.5 - 120	
159 Tb	6112657.00	1.25	6367688.00	96.0	69.5 - 120	
209 Bi	2691316.80	1.23	2872959.00	93.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000100

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\034SMPL.D\034SMPL.D#
Date Acquired: May 10 2018 07:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE03IMW2
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	52.	10.4	ppb	2.05	100.	
11 B	542.	108.4	ppb	5.68	1000.	
23 Na	8,255.	1,651.	ppb	1.11	200000.	
25 Mg	5,180.	1,036.	ppb	0.88	200000.	
27 Al	2,179.	435.8	ppb	3.06	200000.	
28 Si	1,085.	217.	ppb	6.77	#VALUE!	
29 Si	756.	151.2	ppb	11.32	10000.	
39 K	10,185.	2,037.	ppb	0.43	200000.	
43 Ca	2,829.5	565.9	ppb	5.50	#VALUE!	
44 Ca	2,467.5	493.5	ppb	0.51	200000.	
51 V	560.5	112.1	ppb	0.84	1000.	
52 Cr	216.8	43.36	ppb	0.89	2000.	
53 Cr	296.9	59.38	ppb	4.54	#VALUE!	
55 Mn	533.5	106.7	ppb	1.06	2000.	
56 Fe	1,108.	221.6	ppb	1.29	#VALUE!	
57 Fe	1,097.	219.4	ppb	0.34	100000.	
59 Co	550.	110.	ppb	1.09	1000.	
60 Ni	535.5	107.1	ppb	1.08	1000.	
63 Cu	270.2	54.04	ppb	2.39	#VALUE!	
65 Cu	266.65	53.33	ppb	1.52	2000.	
66 Zn	520.	104.	ppb	0.28	2000.	
68 Zn	574.	114.8	ppb	1.49	#VALUE!	
75 As	103.7	20.74	ppb	2.03	1000.	
82 Se	101.1	20.22	ppb	0.94	1000.	
88 Sr	499.25	99.85	ppb	0.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.95	20.39	ppb	0.15	1000.	
107 Ag	53.6	10.72	ppb	1.16	100.	
109 Ag	52.05	10.41	ppb	1.12	#VALUE!	
111 Cd	250.	50.	ppb	0.63	#VALUE!	
114 Cd	249.35	49.87	ppb	0.80	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	551.5	110.3	ppb	2.63	1000.	
120 Sn	559.5	111.9	ppb	1.80	#VALUE!	
121 Sb	111.55	22.31	ppb	2.13	#VALUE!	
123 Sb	111.75	22.35	ppb	1.52	1000.	
135 Ba	2,268.	453.6	ppb	1.97	2000.	
137 Ba	2,276.5	455.3	ppb	1.76	#VALUE!	
182 W	104.95	20.99	ppb	0.71	1000.	
203 Tl	107.75	21.55	ppb	2.69	1000.	
205 Tl	107.95	21.59	ppb	1.83	#VALUE!	
208 Pb	107.2	21.44	ppb	1.50	2000.	
232 Th	105.5	21.1	ppb	2.49	1000.	
238 U	105.8	21.16	ppb	2.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1920857.90	6.10	1729334.00	111.1	69.5 - 120	
45 Sc	2523120.30	4.20	2274967.30	110.9	69.5 - 120	
72 Ge	629891.13	2.53	590563.19	106.7	69.5 - 120	
159 Tb	6285040.50	0.69	6367688.00	98.7	69.5 - 120	
209 Bi	2721975.80	1.69	2872959.00	94.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000101

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\035SMPL.D\035SMPL.D#
Date Acquired: May 10 2018 07:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-022
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	145.64	100.	
11 B	28.405	5.681	ppb	16.34	1000.	
23 Na	64.6	12.92	ppb	9.51	200000.	
25 Mg	12.71	2.542	ppb	12.43	200000.	
27 Al	12.21	2.442	ppb	11.49	200000.	
28 Si	37.07	7.414	ppb	49.89	#VALUE!	
29 Si	-215.5	-43.1	ppb	12.33	10000.	
39 K	2.136	0.4272	ppb	1113.80	200000.	
43 Ca	14.79	2.958	ppb	155.58	#VALUE!	
44 Ca	26.885	5.377	ppb	36.21	200000.	
51 V	0.954	0.1908	ppb	46.55	1000.	
52 Cr	2.278	0.4556	ppb	20.65	2000.	
53 Cr	76.25	15.25	ppb	2.48	#VALUE!	
55 Mn	0.2356	0.0471	ppb	10.48	2000.	
56 Fe	48.23	9.646	ppb	51.19	#VALUE!	
57 Fe	21.815	4.363	ppb	19.90	100000.	
59 Co	-0.0083	-0.0017	ppb	85.83	1000.	
60 Ni	0.1348	0.027	ppb	19.35	1000.	
63 Cu	0.7955	0.1591	ppb	7.19	#VALUE!	
65 Cu	0.768	0.1536	ppb	11.77	2000.	
66 Zn	0.652	0.1304	ppb	26.24	2000.	
68 Zn	0.794	0.1588	ppb	61.73	#VALUE!	
75 As	2.0775	0.4155	ppb	29.89	1000.	
82 Se	-0.1305	-0.0261	ppb	263.59	1000.	
88 Sr	0.0767	0.0153	ppb	32.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1039	0.0208	ppb	38.78	1000.	
107 Ag	0.008	0.0016	ppb	145.30	100.	
109 Ag	0.0133	0.0027	ppb	75.57	#VALUE!	
111 Cd	-0.3042	-0.0608	ppb	42.64	#VALUE!	
114 Cd	0.0077	0.0015	ppb	163.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.005	0.201	ppb	4.62	1000.	
120 Sn	1.0635	0.2127	ppb	8.03	#VALUE!	
121 Sb	0.0636	0.0127	ppb	27.97	#VALUE!	
123 Sb	0.0688	0.0138	ppb	8.15	1000.	
135 Ba	0.1515	0.0303	ppb	31.20	2000.	
137 Ba	0.1597	0.0319	ppb	25.60	#VALUE!	
182 W	0.1365	0.0273	ppb	22.28	1000.	
203 Tl	-0.0018	-0.0004	ppb	1415.60	1000.	
205 Tl	-0.0379	-0.0076	ppb	103.47	#VALUE!	
208 Pb	-0.2262	-0.0452	ppb	22.35	2000.	
232 Th	0.758	0.1516	ppb	32.72	1000.	
238 U	0.0117	0.0023	ppb	27.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1765558.50	2.91	1729334.00	102.1	69.5 - 120	
45 Sc	2393349.00	0.44	2274967.30	105.2	69.5 - 120	
72 Ge	611123.25	0.82	590563.19	103.5	69.5 - 120	
159 Tb	6268826.00	1.99	6367688.00	98.4	69.5 - 120	
209 Bi	2727941.00	1.10	2872959.00	95.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000102

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\036SMPL.D\036SMPL.D#
Date Acquired: May 10 2018 07:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE04IMW1
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	0.0064	0.0013	ppb	181.22	100.	
11 B	11.625	2.325	ppb	14.21	1000.	
23 Na	32.59	6.518	ppb	2.42	200000.	
25 Mg	12.065	2.413	ppb	2.91	200000.	
27 Al	10.185	2.037	ppb	14.37	200000.	
28 Si	10.69	2.138	ppb	356.27	#VALUE!	
29 Si	-220.65	-44.13	ppb	5.75	10000.	
39 K	-15.71	-3.142	ppb	74.22	200000.	
43 Ca	-28.285	-5.657	ppb	67.86	#VALUE!	
44 Ca	-0.68	-0.136	ppb	653.38	200000.	
51 V	0.9835	0.1967	ppb	28.73	1000.	
52 Cr	1.9785	0.3957	ppb	24.57	2000.	
53 Cr	72.4	14.48	ppb	2.41	#VALUE!	
55 Mn	0.3309	0.0662	ppb	6.38	2000.	
56 Fe	61.7	12.34	ppb	29.94	#VALUE!	
57 Fe	15.085	3.017	ppb	24.34	100000.	
59 Co	0.0141	0.0028	ppb	142.16	1000.	
60 Ni	0.0784	0.0157	ppb	26.55	1000.	
63 Cu	0.5505	0.1101	ppb	3.12	#VALUE!	
65 Cu	0.5885	0.1177	ppb	11.58	2000.	
66 Zn	1.8005	0.3601	ppb	7.52	2000.	
68 Zn	1.8925	0.3785	ppb	35.01	#VALUE!	
75 As	0.3427	0.0685	ppb	152.76	1000.	
82 Se	0.113	0.0226	ppb	693.23	1000.	
88 Sr	0.0484	0.0097	ppb	40.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0386	0.0077	ppb	34.41	1000.	
107 Ag	0.0093	0.0019	ppb	140.22	100.	
109 Ag	0.0141	0.0028	ppb	67.84	#VALUE!	
111 Cd	-0.2984	-0.0597	ppb	28.29	#VALUE!	
114 Cd	0.0043	0.0009	ppb	73.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9155	0.1831	ppb	17.59	1000.	
120 Sn	0.9525	0.1905	ppb	9.59	#VALUE!	
121 Sb	0.0355	0.0071	ppb	39.55	#VALUE!	
123 Sb	0.0438	0.0088	ppb	62.96	1000.	
135 Ba	0.1883	0.0377	ppb	34.56	2000.	
137 Ba	0.2378	0.0476	ppb	40.99	#VALUE!	
182 W	0.0523	0.0105	ppb	38.43	1000.	
203 Tl	0.0252	0.005	ppb	168.42	1000.	
205 Tl	-0.0633	-0.0127	ppb	48.56	#VALUE!	
208 Pb	-0.2582	-0.0516	ppb	27.56	2000.	
232 Th	0.2565	0.0513	ppb	29.44	1000.	
238 U	0.0015	0.0003	ppb	226.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1796455.40	3.27	1729334.00	103.9	69.5 - 120	
45 Sc	2390231.80	1.27	2274967.30	105.1	69.5 - 120	
72 Ge	609730.25	0.90	590563.19	103.2	69.5 - 120	
159 Tb	6184298.00	1.34	6367688.00	97.1	69.5 - 120	
209 Bi	2718114.30	1.07	2872959.00	94.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000103

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\037SMPL.D\037SMPL.D#
Date Acquired: May 10 2018 07:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE04IMW1
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	50.25	10.05	ppb	4.16	100.	
11 B	540.5	108.1	ppb	1.07	1000.	
23 Na	8,175.	1,635.	ppb	4.09	200000.	
25 Mg	5,155.	1,031.	ppb	1.26	200000.	
27 Al	2,156.	431.2	ppb	3.53	200000.	
28 Si	1,107.	221.4	ppb	6.45	#VALUE!	
29 Si	855.5	171.1	ppb	10.91	10000.	
39 K	10,440.	2,088.	ppb	4.11	200000.	
43 Ca	3,032.5	606.5	ppb	6.56	#VALUE!	
44 Ca	2,439.	487.8	ppb	1.41	200000.	
51 V	540.5	108.1	ppb	2.54	1000.	
52 Cr	208.65	41.73	ppb	1.51	2000.	
53 Cr	266.6	53.32	ppb	1.19	#VALUE!	
55 Mn	520.	104.	ppb	0.90	2000.	
56 Fe	1,089.	217.8	ppb	3.55	#VALUE!	
57 Fe	1,062.	212.4	ppb	2.14	100000.	
59 Co	538.5	107.7	ppb	2.21	1000.	
60 Ni	520.	104.	ppb	0.57	1000.	
63 Cu	257.25	51.45	ppb	0.66	#VALUE!	
65 Cu	259.7	51.94	ppb	0.94	2000.	
66 Zn	498.8	99.76	ppb	0.83	2000.	
68 Zn	551.5	110.3	ppb	0.31	#VALUE!	
75 As	103.7	20.74	ppb	1.66	1000.	
82 Se	101.05	20.21	ppb	1.42	1000.	
88 Sr	490.45	98.09	ppb	2.25	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.65	20.13	ppb	1.25	1000.	
107 Ag	51.35	10.27	ppb	1.72	100.	
109 Ag	50.25	10.05	ppb	1.44	#VALUE!	
111 Cd	251.65	50.33	ppb	1.56	#VALUE!	
114 Cd	250.3	50.06	ppb	1.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	526.5	105.3	ppb	1.15	1000.	
120 Sn	535.	107.	ppb	1.15	#VALUE!	
121 Sb	109.3	21.86	ppb	1.10	#VALUE!	
123 Sb	108.3	21.66	ppb	1.37	1000.	
135 Ba	2,155.5	431.1	ppb	1.27	2000.	
137 Ba	2,153.	430.6	ppb	1.54	#VALUE!	
182 W	103.65	20.73	ppb	0.93	1000.	
203 Tl	104.75	20.95	ppb	1.76	1000.	
205 Tl	104.1	20.82	ppb	0.17	#VALUE!	
208 Pb	105.1	21.02	ppb	0.70	2000.	
232 Th	101.75	20.35	ppb	1.36	1000.	
238 U	102.15	20.43	ppb	0.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1913154.40	0.52	1729334.00	110.6	69.5 - 120	
45 Sc	2450839.30	4.05	2274967.30	107.7	69.5 - 120	
72 Ge	628181.63	2.57	590563.19	106.4	69.5 - 120	
159 Tb	6480556.00	0.54	6367688.00	101.8	69.5 - 120	
209 Bi	2864766.50	1.04	2872959.00	99.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000104

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\038SMPL.D\038SMPL.D#
Date Acquired: May 10 2018 08:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-001
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	320.65	100.	
11 B	27.93	5.586	ppb	16.96	1000.	
23 Na	30.66	6.132	ppb	11.92	200000.	
25 Mg	14.085	2.817	ppb	7.53	200000.	
27 Al	9.455	1.891	ppb	17.10	200000.	
28 Si	3.8205	0.7641	ppb	1745.80	#VALUE!	
29 Si	-221.25	-44.25	ppb	25.47	10000.	
39 K	-8.36	-1.672	ppb	147.73	200000.	
43 Ca	-3.204	-0.6408	ppb	714.58	#VALUE!	
44 Ca	16.3	3.26	ppb	20.21	200000.	
51 V	1.4665	0.2933	ppb	42.31	1000.	
52 Cr	2.15	0.43	ppb	11.80	2000.	
53 Cr	61.2	12.24	ppb	1.45	#VALUE!	
55 Mn	0.1651	0.033	ppb	12.46	2000.	
56 Fe	41.375	8.275	ppb	32.94	#VALUE!	
57 Fe	18.78	3.756	ppb	16.85	100000.	
59 Co	0.0052	0.001	ppb	227.64	1000.	
60 Ni	0.141	0.0282	ppb	32.19	1000.	
63 Cu	0.661	0.1322	ppb	7.11	#VALUE!	
65 Cu	0.6585	0.1317	ppb	19.31	2000.	
66 Zn	0.7675	0.1535	ppb	29.95	2000.	
68 Zn	0.9005	0.1801	ppb	31.19	#VALUE!	
75 As	0.524	0.1048	ppb	332.54	1000.	
82 Se	0.2773	0.0555	ppb	92.32	1000.	
88 Sr	0.0683	0.0137	ppb	16.10	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1811	0.0362	ppb	36.62	1000.	
107 Ag	0.0164	0.0033	ppb	42.34	100.	
109 Ag	0.0187	0.0037	ppb	66.36	#VALUE!	
111 Cd	-0.2489	-0.0498	ppb	33.87	#VALUE!	
114 Cd	-0.0033	-0.0007	ppb	181.98	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.0485	0.2097	ppb	8.98	1000.	
120 Sn	1.0125	0.2025	ppb	4.37	#VALUE!	
121 Sb	0.0365	0.0073	ppb	49.22	#VALUE!	
123 Sb	0.0575	0.0115	ppb	10.68	1000.	
135 Ba	0.1427	0.0285	ppb	21.69	2000.	
137 Ba	0.0707	0.0141	ppb	45.87	#VALUE!	
182 W	0.1467	0.0293	ppb	19.84	1000.	
203 Tl	-0.0029	-0.0006	ppb	1040.50	1000.	
205 Tl	-0.0517	-0.0103	ppb	58.71	#VALUE!	
208 Pb	-0.1993	-0.0399	ppb	25.07	2000.	
232 Th	0.795	0.159	ppb	36.97	1000.	
238 U	0.009	0.0018	ppb	56.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1776549.80	2.49	1729334.00	102.7	69.5 - 120	
45 Sc	2387239.30	2.34	2274967.30	104.9	69.5 - 120	
72 Ge	613361.56	1.45	590563.19	103.9	69.5 - 120	
159 Tb	6295458.50	0.27	6367688.00	98.9	69.5 - 120	
209 Bi	2764960.80	0.68	2872959.00	96.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000105

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\039SMPL.D\039SMPL.D#
Date Acquired: May 10 2018 08:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3719-001
Misc Info: AQ
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 2.00
Autodil Factor: Undiluted
Final Dil Factor: 2.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0053	-0.0027	ppb	58.60	100.	
11 B	14.992	7.496	ppb	3.65	1000.	
23 Na	16,702.	8,351.	ppb	2.22	200000.	
25 Mg	2,988.	1,494.	ppb	0.93	200000.	
27 Al	2.458	1.229	ppb	6.07	200000.	
28 Si	8,288.	4,144.	ppb	1.52	#VALUE!	
29 Si	8,618.	4,309.	ppb	0.99	10000.	
39 K	3,010.	1,505.	ppb	1.71	200000.	
43 Ca	17,730.	8,865.	ppb	2.82	#VALUE!	
44 Ca	17,374.	8,687.	ppb	1.83	200000.	
51 V	0.2718	0.1359	ppb	39.99	1000.	
52 Cr	0.1297	0.0648	ppb	14.08	2000.	
53 Cr	3.94	1.97	ppb	58.68	#VALUE!	
55 Mn	1.758	0.879	ppb	3.47	2000.	
56 Fe	-11.748	-5.874	ppb	57.18	#VALUE!	
57 Fe	4.496	2.248	ppb	70.37	100000.	
59 Co	0.0344	0.0172	ppb	28.29	1000.	
60 Ni	0.916	0.458	ppb	3.92	1000.	
63 Cu	2,202.	1,101.	ppb	1.82	#VALUE!	
65 Cu	2,232.	1,116.	ppb	2.38	2000.	
66 Zn	155.1	77.55	ppb	1.64	2000.	
68 Zn	151.64	75.82	ppb	1.37	#VALUE!	
75 As	0.0959	0.0479	ppb	142.91	1000.	
82 Se	0.3684	0.1842	ppb	16.28	1000.	
88 Sr	77.8	38.9	ppb	1.84	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2252	0.1126	ppb	5.68	1000.	
107 Ag	0.0317	0.0159	ppb	18.76	100.	
109 Ag	0.0364	0.0182	ppb	5.14	#VALUE!	
111 Cd	-0.1327	-0.0664	ppb	19.72	#VALUE!	
114 Cd	0.0136	0.0068	ppb	30.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0156	-0.0078	ppb	94.59	1000.	
120 Sn	-0.0114	-0.0057	ppb	76.94	#VALUE!	
121 Sb	0.136	0.068	ppb	3.39	#VALUE!	
123 Sb	0.15	0.075	ppb	9.34	1000.	
135 Ba	6.508	3.254	ppb	2.20	2000.	
137 Ba	6.598	3.299	ppb	0.86	#VALUE!	
182 W	0.0252	0.0126	ppb	56.24	1000.	
203 Tl	0.0058	0.0029	ppb	291.03	1000.	
205 Tl	-0.0162	-0.0081	ppb	64.00	#VALUE!	
208 Pb	2.052	1.026	ppb	0.88	2000.	
232 Th	0.0086	0.0043	ppb	29.42	1000.	
238 U	0.2156	0.1078	ppb	5.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1924808.30	1.99	1729334.00	111.3	69.5 - 120	
45 Sc	2604751.00	1.88	2274967.30	114.5	69.5 - 120	
72 Ge	665400.13	0.93	590563.19	112.7	69.5 - 120	
159 Tb	6800868.50	0.91	6367688.00	106.8	69.5 - 120	
209 Bi	2990943.50	2.20	2872959.00	104.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000106

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\040_CCV.D\040_CCV.D#
Date Acquired: May 10 2018 08:10 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.32	ppb	4.92	25	101.28	
11 B	26.25	ppb	6.33	25	105	
23 Na	5,138.	ppb	2.40	5,000	102.76	
25 Mg	5,135.	ppb	1.24	5,000	102.7	
27 Al	507.9	ppb	2.41	500	101.58	
28 Si	516.3	ppb	1.03	500	103.26	
29 Si	468.	ppb	2.06	500	93.6	
39 K	4,994.	ppb	1.91	5,000	99.88	
43 Ca	5,142.	ppb	1.15	5,000	102.84	
44 Ca	5,115.	ppb	0.27	5,000	102.3	
51 V	25.45	ppb	0.51	25	101.8	
52 Cr	25.45	ppb	0.50	25	101.8	
53 Cr	25.99	ppb	3.42	25	103.96	
55 Mn	24.85	ppb	0.68	25	99.4	
56 Fe	4,952.	ppb	0.40	5,000	99.04	
57 Fe	5,115.	ppb	1.16	5,000	102.3	
59 Co	25.41	ppb	1.90	25	101.64	
60 Ni	25.38	ppb	2.05	25	101.52	
63 Cu	25.37	ppb	1.22	25	101.48	
65 Cu	25.47	ppb	2.18	25	101.88	
66 Zn	25.28	ppb	1.82	25	101.12	
68 Zn	24.78	ppb	1.36	25	99.12	
75 As	24.95	ppb	1.66	25	99.8	
82 Se	25.22	ppb	1.31	25	100.88	
88 Sr	24.08	ppb	1.17	25	96.32	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.25	ppb	0.33	25	97	
107 Ag	24.53	ppb	1.01	25	98.12	
109 Ag	24.44	ppb	1.12	25	97.76	
111 Cd	24.31	ppb	1.69	25	97.24	
114 Cd	24.3	ppb	1.30	25	97.2	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.54	ppb	0.94	25	102.16	
120 Sn	25.65	ppb	1.05	25	102.6	
121 Sb	26.17	ppb	1.24	25	104.68	
123 Sb	26.21	ppb	0.51	25	104.84	
135 Ba	25.97	ppb	2.24	25	103.88	
137 Ba	25.83	ppb	1.70	25	103.32	
182 W	24.33	ppb	1.35	25	97.32	
203 Tl	25.11	ppb	1.43	25	100.44	
205 Tl	25.28	ppb	0.85	25	101.12	
208 Pb	25.16	ppb	1.27	25	100.64	
232 Th	24.54	ppb	0.61	25	98.16	
238 U	24.73	ppb	2.11	25	98.92	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1892974.40	4.05	1729334.00	109.5	80 - 120.4	
45 Sc	2532496.50	1.02	2274967.30	111.3	80 - 120.4	
72 Ge	634285.44	0.69	590563.19	107.4	80 - 120.4	
159 Tb	6536835.50	0.56	6367688.00	102.7	80 - 120.4	
209 Bi	2848214.00	1.31	2872959.00	99.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000107

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\041_CCB.D\041_CCB.D#
Date Acquired: May 10 2018 08:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0006	ppb	292.71	1.00	
11 B	2.342	ppb	5.43	1.00	
23 Na	0.5462	ppb	74.57	1.00	
25 Mg	-0.0137	ppb	746.52	1.00	
27 Al	-0.0018	ppb	2976.60	1.00	
28 Si	27.01	ppb	41.76	1.00	
29 Si	-17.91	ppb	55.37	1.00	
39 K	-1.058	ppb	156.71	1.00	
43 Ca	-3.894	ppb	52.57	1.00	
44 Ca	-1.529	ppb	34.47	1.00	
51 V	0.1088	ppb	65.40	1.00	
52 Cr	0.0858	ppb	31.98	1.00	
53 Cr	1.535	ppb	28.37	1.00	
55 Mn	-0.0051	ppb	121.14	1.00	
56 Fe	5.278	ppb	50.83	1.00	
57 Fe	1.342	ppb	112.22	1.00	
59 Co	0.0002	ppb	1254.70	1.00	
60 Ni	0.0026	ppb	316.14	1.00	
63 Cu	-0.0097	ppb	74.31	1.00	
65 Cu	-0.009	ppb	29.02	1.00	
66 Zn	-0.0084	ppb	715.45	1.00	
68 Zn	0.0048	ppb	547.11	1.00	
75 As	-0.0101	ppb	1143.00	1.00	
82 Se	-0.0138	ppb	522.99	1.00	
88 Sr	0.0022	ppb	33.22	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0352	ppb	60.71	1.00	
107 Ag	0.0017	ppb	60.38	1.00	
109 Ag	0.003	ppb	39.61	1.00	
111 Cd	-0.0617	ppb	21.87	1.00	
114 Cd	-0.0006	ppb	236.36	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0421	ppb	27.04	1.00	
120 Sn	0.0343	ppb	18.22	1.00	
121 Sb	0.0097	ppb	27.34	1.00	
123 Sb	0.0069	ppb	74.48	1.00	
135 Ba	0.0042	ppb	150.02	1.00	
137 Ba	-0.0002	ppb	4071.20	1.00	
182 W	0.06	ppb	31.18	1.00	
203 Tl	-0.0041	ppb	162.95	1.00	
205 Tl	-0.0047	ppb	296.96	1.00	
208 Pb	-0.0365	ppb	40.59	1.00	
232 Th	0.0954	ppb	6.17	1.00	
238 U	0.0025	ppb	84.58	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1801631.90	3.43	1729334.00	104.2	79.5 - 120	
45 Sc	2362830.50	0.67	2274967.30	103.9	79.5 - 120	
72 Ge	601709.56	1.64	590563.19	101.9	79.5 - 120	
159 Tb	6031961.50	0.87	6367688.00	94.7	79.5 - 120	
209 Bi	2693124.80	0.97	2872959.00	93.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000108

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\042SMPL.D\042SMPL.D#
Date Acquired: May 10 2018 08:18 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE04IMS1
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	865.82	100.	
11 B	9.035	1.807	ppb	6.87	1000.	
23 Na	54.05	10.81	ppb	2.30	200000.	
25 Mg	24.46	4.892	ppb	6.48	200000.	
27 Al	9.745	1.949	ppb	1.77	200000.	
28 Si	-12.72	-2.544	ppb	212.34	#VALUE!	
29 Si	-176.3	-35.26	ppb	23.79	10000.	
39 K	23.075	4.615	ppb	72.63	200000.	
43 Ca	58.7	11.74	ppb	42.26	#VALUE!	
44 Ca	66.15	13.23	ppb	11.90	200000.	
51 V	1.135	0.227	ppb	16.86	1000.	
52 Cr	3.131	0.6262	ppb	16.58	2000.	
53 Cr	56.7	11.34	ppb	2.80	#VALUE!	
55 Mn	1.3675	0.2735	ppb	1.47	2000.	
56 Fe	48.115	9.623	ppb	29.35	#VALUE!	
57 Fe	33.405	6.681	ppb	15.72	100000.	
59 Co	0.0317	0.0063	ppb	46.98	1000.	
60 Ni	0.3993	0.0799	ppb	12.60	1000.	
63 Cu	1.0895	0.2179	ppb	5.19	#VALUE!	
65 Cu	1.173	0.2346	ppb	4.11	2000.	
66 Zn	0.967	0.1934	ppb	6.68	2000.	
68 Zn	0.819	0.1638	ppb	39.96	#VALUE!	
75 As	0.3312	0.0662	ppb	591.73	1000.	
82 Se	0.2824	0.0565	ppb	117.48	1000.	
88 Sr	0.1974	0.0395	ppb	19.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.14	0.028	ppb	7.36	1000.	
107 Ag	0.0839	0.0168	ppb	21.97	100.	
109 Ag	0.078	0.0156	ppb	12.87	#VALUE!	
111 Cd	-0.2273	-0.0455	ppb	50.01	#VALUE!	
114 Cd	-0.0105	-0.0021	ppb	761.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.575	9.515	ppb	2.19	1000.	
120 Sn	48.44	9.688	ppb	1.51	#VALUE!	
121 Sb	0.0354	0.0071	ppb	25.29	#VALUE!	
123 Sb	0.0378	0.0076	ppb	61.79	1000.	
135 Ba	0.3146	0.0629	ppb	26.19	2000.	
137 Ba	0.2642	0.0528	ppb	3.73	#VALUE!	
182 W	0.0937	0.0187	ppb	27.89	1000.	
203 Tl	-0.0269	-0.0054	ppb	363.54	1000.	
205 Tl	-0.0474	-0.0095	ppb	110.33	#VALUE!	
208 Pb	-0.1134	-0.0227	ppb	70.00	2000.	
232 Th	0.545	0.109	ppb	29.86	1000.	
238 U	0.0078	0.0016	ppb	44.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1784473.30	2.87	1729334.00	103.2	69.5 - 120	
45 Sc	2343137.00	0.55	2274967.30	103.0	69.5 - 120	
72 Ge	602197.81	0.50	590563.19	102.0	69.5 - 120	
159 Tb	6206731.00	1.12	6367688.00	97.5	69.5 - 120	
209 Bi	2760174.30	0.98	2872959.00	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000109

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\043SMPL.D\043SMPL.D#
Date Acquired: May 10 2018 08:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE04IMS1
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	52.35	10.47	ppb	5.25	100.	
11 B	558.	111.6	ppb	1.47	1000.	
23 Na	8,560.	1,712.	ppb	3.04	200000.	
25 Mg	5,405.	1,081.	ppb	2.12	200000.	
27 Al	2,303.	460.6	ppb	4.16	200000.	
28 Si	1,053.5	210.7	ppb	4.52	#VALUE!	
29 Si	852.	170.4	ppb	6.35	10000.	
39 K	10,820.	2,164.	ppb	1.60	200000.	
43 Ca	3,069.5	613.9	ppb	1.60	#VALUE!	
44 Ca	2,610.	522.	ppb	2.35	200000.	
51 V	552.	110.4	ppb	3.33	1000.	
52 Cr	218.5	43.7	ppb	2.59	2000.	
53 Cr	285.	57.	ppb	1.56	#VALUE!	
55 Mn	540.	108.	ppb	1.87	2000.	
56 Fe	1,113.5	222.7	ppb	1.52	#VALUE!	
57 Fe	1,122.	224.4	ppb	0.87	100000.	
59 Co	560.5	112.1	ppb	0.53	1000.	
60 Ni	548.5	109.7	ppb	0.21	1000.	
63 Cu	267.45	53.49	ppb	1.43	#VALUE!	
65 Cu	270.25	54.05	ppb	1.27	2000.	
66 Zn	523.	104.6	ppb	0.37	2000.	
68 Zn	571.5	114.3	ppb	0.32	#VALUE!	
75 As	106.5	21.3	ppb	2.70	1000.	
82 Se	103.65	20.73	ppb	0.88	1000.	
88 Sr	517.5	103.5	ppb	2.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	105.85	21.17	ppb	2.46	1000.	
107 Ag	53.4	10.68	ppb	1.13	100.	
109 Ag	53.1	10.62	ppb	1.28	#VALUE!	
111 Cd	260.45	52.09	ppb	2.13	#VALUE!	
114 Cd	261.2	52.24	ppb	1.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	595.	119.	ppb	0.27	1000.	
120 Sn	606.	121.2	ppb	1.78	#VALUE!	
121 Sb	112.7	22.54	ppb	1.81	#VALUE!	
123 Sb	112.2	22.44	ppb	0.84	1000.	
135 Ba	2,247.5	449.5	ppb	1.59	2000.	
137 Ba	2,243.5	448.7	ppb	1.15	#VALUE!	
182 W	108.45	21.69	ppb	2.41	1000.	
203 Tl	110.1	22.02	ppb	2.79	1000.	
205 Tl	111.55	22.31	ppb	0.63	#VALUE!	
208 Pb	111.1	22.22	ppb	1.47	2000.	
232 Th	107.6	21.52	ppb	1.80	1000.	
238 U	108.5	21.7	ppb	1.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1919505.00	2.19	1729334.00	111.0	69.5 - 120	
45 Sc	2433777.30	1.18	2274967.30	107.0	69.5 - 120	
72 Ge	617392.38	1.11	590563.19	104.5	69.5 - 120	
159 Tb	6419061.00	0.39	6367688.00	100.8	69.5 - 120	
209 Bi	2831666.00	1.09	2872959.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000110

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\044SMPL.D\044SMPL.D#
Date Acquired: May 10 2018 08:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-007
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	12.19	2.438	ppb	2.72	100.	
11 B	197.75	39.55	ppb	1.55	1000.	
23 Na	20,495.	4,099.	ppb	5.12	200000.	
25 Mg	124,150.	24,830.	ppb	4.04	200000.	
27 Al	263,000.	52,600.	ppb	2.28	200000.	
28 Si	3,510.5	702.1	ppb	7.61	#VALUE!	
29 Si	3,256.	651.2	ppb	9.99	10000.	
39 K	60,600.	12,120.	ppb	3.50	200000.	
43 Ca	608,500.	121,700.	ppb	3.79	#VALUE!	
44 Ca	560,000.	112,000.	ppb	2.34	200000.	
51 V	513.5	102.7	ppb	2.55	1000.	
52 Cr	258.05	51.61	ppb	3.84	2000.	
53 Cr	280.3	56.06	ppb	2.58	#VALUE!	
55 Mn	13,760.	2,752.	ppb	1.30	2000.	>LDR
56 Fe	271,550.	54,310.	ppb	1.45	#VALUE!	
57 Fe	265,650.	53,130.	ppb	0.92	100000.	
59 Co	102.	20.4	ppb	0.47	1000.	
60 Ni	263.	52.6	ppb	2.96	1000.	
63 Cu	174.75	34.95	ppb	1.66	#VALUE!	
65 Cu	176.7	35.34	ppb	2.74	2000.	
66 Zn	676.	135.2	ppb	2.07	2000.	
68 Zn	758.	151.6	ppb	2.84	#VALUE!	
75 As	36.04	7.208	ppb	2.04	1000.	
82 Se	4.8555	0.9711	ppb	5.56	1000.	
88 Sr	1,513.	302.6	ppb	1.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	18.665	3.733	ppb	0.42	1000.	
107 Ag	1.0525	0.2105	ppb	1.72	100.	
109 Ag	0.8605	0.1721	ppb	4.60	#VALUE!	
111 Cd	4.4295	0.8859	ppb	5.43	#VALUE!	
114 Cd	1.8555	0.3711	ppb	2.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.85	11.17	ppb	0.45	1000.	
120 Sn	56.35	11.27	ppb	0.08	#VALUE!	
121 Sb	2.9275	0.5855	ppb	1.41	#VALUE!	
123 Sb	2.8475	0.5695	ppb	2.10	1000.	
135 Ba	3,924.	784.8	ppb	0.19	2000.	
137 Ba	3,832.5	766.5	ppb	0.84	#VALUE!	
182 W	1.1985	0.2397	ppb	6.08	1000.	
203 Tl	4.523	0.9046	ppb	1.99	1000.	
205 Tl	4.4945	0.8989	ppb	2.30	#VALUE!	
208 Pb	164.7	32.94	ppb	0.86	2000.	
232 Th	121.5	24.3	ppb	1.08	1000.	
238 U	17.36	3.472	ppb	1.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1749662.60	1.26	1729334.00	101.2	69.5 - 120	
45 Sc	2422880.30	4.98	2274967.30	106.5	69.5 - 120	
72 Ge	600070.13	2.41	590563.19	101.6	69.5 - 120	
159 Tb	6771675.50	0.97	6367688.00	106.3	69.5 - 120	
209 Bi	2865284.00	1.12	2872959.00	99.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000111

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\045SMPL.D\045SMPL.D#
Date Acquired: May 10 2018 08:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-019
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	14.065	2.813	ppb	3.31	100.	
11 B	207.45	41.49	ppb	2.91	1000.	
23 Na	4,695.	939.	ppb	2.82	200000.	
25 Mg	110,700.	22,140.	ppb	2.01	200000.	
27 Al	311,300.	62,260.	ppb	3.82	200000.	
28 Si	4,363.	872.6	ppb	2.07	#VALUE!	
29 Si	4,184.	836.8	ppb	2.64	10000.	
39 K	76,650.	15,330.	ppb	1.50	200000.	
43 Ca	519,500.	103,900.	ppb	1.40	#VALUE!	
44 Ca	478,300.	95,660.	ppb	0.54	200000.	
51 V	653.5	130.7	ppb	4.32	1000.	
52 Cr	278.15	55.63	ppb	2.70	2000.	
53 Cr	305.45	61.09	ppb	1.61	#VALUE!	
55 Mn	11,570.	2,314.	ppb	2.19	2000.	>LDR
56 Fe	296,750.	59,350.	ppb	4.17	#VALUE!	
57 Fe	292,750.	58,550.	ppb	3.30	100000.	
59 Co	200.25	40.05	ppb	3.17	1000.	
60 Ni	323.	64.6	ppb	2.20	1000.	
63 Cu	184.9	36.98	ppb	2.69	#VALUE!	
65 Cu	188.35	37.67	ppb	1.50	2000.	
66 Zn	726.5	145.3	ppb	2.84	2000.	
68 Zn	900.5	180.1	ppb	3.50	#VALUE!	
75 As	134.1	26.82	ppb	2.10	1000.	
82 Se	4.7935	0.9587	ppb	24.74	1000.	
88 Sr	1,709.5	341.9	ppb	1.21	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.595	3.319	ppb	0.92	1000.	
107 Ag	1.2305	0.2461	ppb	2.55	100.	
109 Ag	0.956	0.1912	ppb	1.28	#VALUE!	
111 Cd	6.19	1.238	ppb	2.32	#VALUE!	
114 Cd	3.1115	0.6223	ppb	1.74	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.8	11.56	ppb	1.91	1000.	
120 Sn	58.4	11.68	ppb	1.38	#VALUE!	
121 Sb	3.3685	0.6737	ppb	1.55	#VALUE!	
123 Sb	3.3615	0.6723	ppb	3.84	1000.	
135 Ba	6,975.	1,395.	ppb	1.32	2000.	
137 Ba	6,805.	1,361.	ppb	0.55	#VALUE!	
182 W	1.443	0.2886	ppb	4.73	1000.	
203 Tl	5.675	1.135	ppb	8.18	1000.	
205 Tl	5.655	1.131	ppb	2.92	#VALUE!	
208 Pb	253.95	50.79	ppb	0.89	2000.	
232 Th	139.4	27.88	ppb	0.80	1000.	
238 U	26.01	5.202	ppb	2.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1756891.00	2.64	1729334.00	101.6	69.5 - 120	
45 Sc	2451628.50	3.47	2274967.30	107.8	69.5 - 120	
72 Ge	613258.88	0.78	590563.19	103.8	69.5 - 120	
159 Tb	6659198.00	1.14	6367688.00	104.6	69.5 - 120	
209 Bi	2829968.00	0.27	2872959.00	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000112

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\046SMPL.D\046SMPL.D#
Date Acquired: May 10 2018 08:35 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-020
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	7.535	1.507	ppb	3.87	100.	
11 B	156.55	31.31	ppb	2.46	1000.	
23 Na	3,355.5	671.1	ppb	2.78	200000.	
25 Mg	110,100.	22,020.	ppb	1.21	200000.	
27 Al	163,050.	32,610.	ppb	0.33	200000.	
28 Si	2,902.5	580.5	ppb	2.65	#VALUE!	
29 Si	2,589.	517.8	ppb	2.42	10000.	
39 K	40,545.	8,109.	ppb	2.70	200000.	
43 Ca	1,567,500.	313,500.	ppb	2.64	#VALUE!	
44 Ca	1,504,000.	300,800.	ppb	2.04	200000.	>LDR
51 V	344.05	68.81	ppb	1.30	1000.	
52 Cr	153.75	30.75	ppb	0.56	2000.	
53 Cr	160.25	32.05	ppb	2.61	#VALUE!	
55 Mn	5,080.	1,016.	ppb	2.06	2000.	
56 Fe	147,500.	29,500.	ppb	0.71	#VALUE!	
57 Fe	145,300.	29,060.	ppb	2.04	100000.	
59 Co	80.05	16.01	ppb	1.46	1000.	
60 Ni	174.75	34.95	ppb	2.34	1000.	
63 Cu	94.45	18.89	ppb	2.16	#VALUE!	
65 Cu	96.6	19.32	ppb	1.04	2000.	
66 Zn	363.05	72.61	ppb	0.57	2000.	
68 Zn	478.15	95.63	ppb	0.40	#VALUE!	
75 As	60.4	12.08	ppb	1.88	1000.	
82 Se	5.07	1.014	ppb	16.05	1000.	
88 Sr	3,504.5	700.9	ppb	1.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.285	2.057	ppb	1.95	1000.	
107 Ag	0.5845	0.1169	ppb	4.68	100.	
109 Ag	0.4564	0.0913	ppb	16.17	#VALUE!	
111 Cd	4.247	0.8494	ppb	6.64	#VALUE!	
114 Cd	2.166	0.4332	ppb	3.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.85	9.77	ppb	1.45	1000.	
120 Sn	50.05	10.01	ppb	1.19	#VALUE!	
121 Sb	2.082	0.4164	ppb	2.98	#VALUE!	
123 Sb	2.037	0.4074	ppb	5.33	1000.	
135 Ba	4,288.5	857.7	ppb	2.69	2000.	
137 Ba	4,203.5	840.7	ppb	1.37	#VALUE!	
182 W	1.128	0.2256	ppb	5.53	1000.	
203 Tl	3.3125	0.6625	ppb	4.40	1000.	
205 Tl	3.3075	0.6615	ppb	2.23	#VALUE!	
208 Pb	114.15	22.83	ppb	1.99	2000.	
232 Th	67.7	13.54	ppb	2.97	1000.	
238 U	19.005	3.801	ppb	2.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1695583.00	3.26	1729334.00	98.0	69.5 - 120	
45 Sc	2445985.80	1.33	2274967.30	107.5	69.5 - 120	
72 Ge	602171.38	1.70	590563.19	102.0	69.5 - 120	
159 Tb	6670593.00	1.74	6367688.00	104.8	69.5 - 120	
209 Bi	2724328.00	2.06	2872959.00	94.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000113

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\047SMPL.D\047SMPL.D#
Date Acquired: May 10 2018 08:39 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-021
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	9.28	1.856	ppb	2.51	100.	
11 B	149.2	29.84	ppb	2.26	1000.	
23 Na	4,885.	977.	ppb	1.52	200000.	
25 Mg	84,850.	16,970.	ppb	3.18	200000.	
27 Al	198,550.	39,710.	ppb	2.81	200000.	
28 Si	3,713.	742.6	ppb	1.66	#VALUE!	
29 Si	3,403.5	680.7	ppb	1.91	10000.	
39 K	46,405.	9,281.	ppb	2.36	200000.	
43 Ca	528,500.	105,700.	ppb	2.67	#VALUE!	
44 Ca	482,950.	96,590.	ppb	1.12	200000.	
51 V	382.95	76.59	ppb	1.08	1000.	
52 Cr	187.15	37.43	ppb	1.44	2000.	
53 Cr	197.7	39.54	ppb	2.49	#VALUE!	
55 Mn	1,908.	381.6	ppb	1.73	2000.	
56 Fe	230,650.	46,130.	ppb	1.31	#VALUE!	
57 Fe	229,300.	45,860.	ppb	0.66	100000.	
59 Co	47.325	9.465	ppb	0.60	1000.	
60 Ni	138.15	27.63	ppb	1.82	1000.	
63 Cu	135.7	27.14	ppb	0.61	#VALUE!	
65 Cu	136.	27.2	ppb	0.31	2000.	
66 Zn	467.15	93.43	ppb	1.08	2000.	
68 Zn	499.45	99.89	ppb	1.41	#VALUE!	
75 As	31.44	6.288	ppb	2.48	1000.	
82 Se	3.378	0.6756	ppb	11.27	1000.	
88 Sr	1,168.5	233.7	ppb	1.42	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.2465	0.8493	ppb	1.97	1000.	
107 Ag	0.836	0.1672	ppb	4.26	100.	
109 Ag	0.6335	0.1267	ppb	5.19	#VALUE!	
111 Cd	2.976	0.5952	ppb	4.06	#VALUE!	
114 Cd	0.7105	0.1421	ppb	3.15	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.4	11.08	ppb	0.80	1000.	
120 Sn	55.85	11.17	ppb	1.33	#VALUE!	
121 Sb	2.338	0.4676	ppb	0.82	#VALUE!	
123 Sb	2.2835	0.4567	ppb	5.04	1000.	
135 Ba	1,791.5	358.3	ppb	1.38	2000.	
137 Ba	1,768.	353.6	ppb	1.05	#VALUE!	
182 W	0.5325	0.1065	ppb	12.45	1000.	
203 Tl	3.1115	0.6223	ppb	2.46	1000.	
205 Tl	3.055	0.611	ppb	3.23	#VALUE!	
208 Pb	115.15	23.03	ppb	0.95	2000.	
232 Th	88.45	17.69	ppb	0.31	1000.	
238 U	11.13	2.226	ppb	1.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1769102.90	3.25	1729334.00	102.3	69.5 - 120	
45 Sc	2473060.50	3.06	2274967.30	108.7	69.5 - 120	
72 Ge	623178.88	1.47	590563.19	105.5	69.5 - 120	
159 Tb	6886226.50	0.56	6367688.00	108.1	69.5 - 120	
209 Bi	2939080.30	1.64	2872959.00	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000114

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\048SMPL.D\048SMPL.D#
Date Acquired: May 10 2018 08:43 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	5.635	1.127	ppb	1.29	100.	
11 B	72.25	14.45	ppb	4.39	1000.	
23 Na	1,192.5	238.5	ppb	1.61	200000.	
25 Mg	25,520.	5,104.	ppb	1.27	200000.	
27 Al	101,300.	20,260.	ppb	1.29	200000.	
28 Si	3,489.	697.8	ppb	1.75	#VALUE!	
29 Si	3,084.5	616.9	ppb	4.26	10000.	
39 K	34,440.	6,888.	ppb	1.53	200000.	
43 Ca	26,470.	5,294.	ppb	1.35	#VALUE!	
44 Ca	26,325.	5,265.	ppb	1.92	200000.	
51 V	222.9	44.58	ppb	0.93	1000.	
52 Cr	113.7	22.74	ppb	1.69	2000.	
53 Cr	151.1	30.22	ppb	2.76	#VALUE!	
55 Mn	2,867.5	573.5	ppb	1.99	2000.	
56 Fe	96,900.	19,380.	ppb	0.22	#VALUE!	
57 Fe	96,800.	19,360.	ppb	1.42	100000.	
59 Co	54.7	10.94	ppb	1.57	1000.	
60 Ni	86.95	17.39	ppb	1.44	1000.	
63 Cu	96.4	19.28	ppb	1.41	#VALUE!	
65 Cu	96.8	19.36	ppb	1.47	2000.	
66 Zn	327.5	65.5	ppb	0.70	2000.	
68 Zn	366.75	73.35	ppb	2.46	#VALUE!	
75 As	26.69	5.338	ppb	6.87	1000.	
82 Se	5.325	1.065	ppb	9.23	1000.	
88 Sr	342.65	68.53	ppb	1.56	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.02	2.404	ppb	1.23	1000.	
107 Ag	0.5705	0.1141	ppb	4.36	100.	
109 Ag	0.4891	0.0978	ppb	8.23	#VALUE!	
111 Cd	2.991	0.5982	ppb	3.12	#VALUE!	
114 Cd	2.166	0.4332	ppb	8.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.82	9.764	ppb	0.61	1000.	
120 Sn	50.05	10.01	ppb	1.46	#VALUE!	
121 Sb	1.386	0.2772	ppb	3.41	#VALUE!	
123 Sb	1.413	0.2826	ppb	3.38	1000.	
135 Ba	1,725.	345.	ppb	1.13	2000.	
137 Ba	1,709.	341.8	ppb	1.21	#VALUE!	
182 W	0.8235	0.1647	ppb	2.51	1000.	
203 Tl	2.3105	0.4621	ppb	4.92	1000.	
205 Tl	2.293	0.4586	ppb	1.45	#VALUE!	
208 Pb	135.5	27.1	ppb	0.80	2000.	
232 Th	81.25	16.25	ppb	0.35	1000.	
238 U	18.41	3.682	ppb	1.73	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1778471.90	2.62	1729334.00	102.8	69.5 - 120	
45 Sc	2513771.50	1.19	2274967.30	110.5	69.5 - 120	
72 Ge	642858.19	1.70	590563.19	108.9	69.5 - 120	
159 Tb	6790310.50	0.94	6367688.00	106.6	69.5 - 120	
209 Bi	2899582.00	1.43	2872959.00	100.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000115

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\049SMPL.D\049SMPL.D#
Date Acquired: May 10 2018 08:47 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	7.575	1.515	ppb	3.73	100.	
11 B	147.	29.4	ppb	2.33	1000.	
23 Na	2,078.	415.6	ppb	2.79	200000.	
25 Mg	90,800.	18,160.	ppb	1.99	200000.	
27 Al	169,750.	33,950.	ppb	1.14	200000.	
28 Si	3,989.	797.8	ppb	4.40	#VALUE!	
29 Si	3,658.5	731.7	ppb	2.38	10000.	
39 K	46,455.	9,291.	ppb	1.65	200000.	
43 Ca	341,100.	68,220.	ppb	0.95	#VALUE!	
44 Ca	314,400.	62,880.	ppb	0.32	200000.	
51 V	453.35	90.67	ppb	1.88	1000.	
52 Cr	168.8	33.76	ppb	2.63	2000.	
53 Cr	182.15	36.43	ppb	1.11	#VALUE!	
55 Mn	2,960.5	592.1	ppb	0.88	2000.	
56 Fe	167,500.	33,500.	ppb	1.51	#VALUE!	
57 Fe	163,100.	32,620.	ppb	1.44	100000.	
59 Co	65.2	13.04	ppb	2.52	1000.	
60 Ni	148.65	29.73	ppb	1.09	1000.	
63 Cu	110.1	22.02	ppb	0.97	#VALUE!	
65 Cu	112.45	22.49	ppb	1.99	2000.	
66 Zn	415.7	83.14	ppb	2.24	2000.	
68 Zn	466.3	93.26	ppb	1.38	#VALUE!	
75 As	110.85	22.17	ppb	0.93	1000.	
82 Se	3.372	0.6744	ppb	13.63	1000.	
88 Sr	1,351.5	270.3	ppb	1.20	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.285	2.057	ppb	2.91	1000.	
107 Ag	0.744	0.1488	ppb	3.52	100.	
109 Ag	0.5905	0.1181	ppb	8.22	#VALUE!	
111 Cd	1.893	0.3786	ppb	4.84	#VALUE!	
114 Cd	0.1687	0.0337	ppb	56.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.7	10.34	ppb	2.03	1000.	
120 Sn	51.85	10.37	ppb	1.13	#VALUE!	
121 Sb	2.545	0.509	ppb	4.24	#VALUE!	
123 Sb	2.5835	0.5167	ppb	4.61	1000.	
135 Ba	2,348.	469.6	ppb	1.61	2000.	
137 Ba	2,320.5	464.1	ppb	2.03	#VALUE!	
182 W	0.769	0.1538	ppb	12.20	1000.	
203 Tl	2.921	0.5842	ppb	2.52	1000.	
205 Tl	2.8215	0.5643	ppb	1.67	#VALUE!	
208 Pb	110.65	22.13	ppb	1.58	2000.	
232 Th	75.9	15.18	ppb	2.51	1000.	
238 U	16.075	3.215	ppb	2.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1822559.40	3.12	1729334.00	105.4	69.5 - 120	
45 Sc	2523074.50	1.17	2274967.30	110.9	69.5 - 120	
72 Ge	629925.63	1.10	590563.19	106.7	69.5 - 120	
159 Tb	6778329.00	2.26	6367688.00	106.4	69.5 - 120	
209 Bi	2861047.80	2.91	2872959.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000116

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\050SMPL.D\050SMPL.D#
Date Acquired: May 10 2018 08:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	139.29	100.	
11 B	11.855	2.371	ppb	2.09	1000.	
23 Na	-1.16	-0.232	ppb	147.20	200000.	
25 Mg	1.3375	0.2675	ppb	30.77	200000.	
27 Al	3.7	0.74	ppb	20.05	200000.	
28 Si	-44.18	-8.836	ppb	201.79	#VALUE!	
29 Si	-552.5	-110.5	ppb	10.66	10000.	LOW
39 K	-74.05	-14.81	ppb	12.15	200000.	
43 Ca	-10.715	-2.143	ppb	143.30	#VALUE!	
44 Ca	-1.675	-0.335	ppb	277.52	200000.	
51 V	0.1003	0.0201	ppb	161.07	1000.	
52 Cr	-0.3615	-0.0723	ppb	55.27	2000.	
53 Cr	-9.09	-1.818	ppb	4.47	#VALUE!	
55 Mn	-0.0368	-0.0074	ppb	153.67	2000.	
56 Fe	-20.67	-4.134	ppb	22.44	#VALUE!	
57 Fe	7.445	1.489	ppb	87.78	100000.	
59 Co	-0.01	-0.002	ppb	156.35	1000.	
60 Ni	0.0335	0.0067	ppb	32.11	1000.	
63 Cu	0.4756	0.0951	ppb	16.27	#VALUE!	
65 Cu	0.4681	0.0936	ppb	24.37	2000.	
66 Zn	0.3678	0.0736	ppb	75.46	2000.	
68 Zn	0.3896	0.0779	ppb	46.01	#VALUE!	
75 As	-0.1149	-0.023	ppb	172.28	1000.	
82 Se	-0.1595	-0.0319	ppb	144.87	1000.	
88 Sr	0.0035	0.0007	ppb	193.68	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0067	0.0013	ppb	84.53	1000.	
107 Ag	0.0007	0.0001	ppb	538.87	100.	
109 Ag	0.0049	0.001	ppb	57.29	#VALUE!	
111 Cd	-0.3628	-0.0726	ppb	10.07	#VALUE!	
114 Cd	0.0029	0.0006	ppb	406.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.125	0.025	ppb	54.24	1000.	
120 Sn	0.1098	0.022	ppb	31.04	#VALUE!	
121 Sb	0.0071	0.0014	ppb	2.41	#VALUE!	
123 Sb	0.0046	0.0009	ppb	122.15	1000.	
135 Ba	0.0509	0.0102	ppb	58.57	2000.	
137 Ba	0.0357	0.0071	ppb	88.63	#VALUE!	
182 W	0.0193	0.0039	ppb	82.62	1000.	
203 Tl	-0.1058	-0.0212	ppb	66.43	1000.	
205 Tl	-0.0836	-0.0167	ppb	43.94	#VALUE!	
208 Pb	0.2644	0.0529	ppb	5.73	2000.	
232 Th	0.0666	0.0133	ppb	22.78	1000.	
238 U	-0.0012	-0.0002	ppb	211.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1842216.90	4.72	1729334.00	106.5	69.5 - 120	
45 Sc	2521319.50	1.27	2274967.30	110.8	69.5 - 120	
72 Ge	645720.00	1.53	590563.19	109.3	69.5 - 120	
159 Tb	6430583.00	0.70	6367688.00	101.0	69.5 - 120	
209 Bi	2809786.80	0.86	2872959.00	97.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000117

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\051SMPL.D\051SMPL.D#
Date Acquired: May 10 2018 08:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE07IMS1
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\DATA\JLE10C.B\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\DATA\JLE10C.B\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 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	-0.0102	-0.002	ppb	67.14	100.	
11 B	9.	1.8	ppb	7.48	1000.	
23 Na	37.37	7.474	ppb	11.35	200000.	
25 Mg	22.455	4.491	ppb	16.63	200000.	
27 Al	12.795	2.559	ppb	0.36	200000.	
28 Si	14.455	2.891	ppb	313.52	#VALUE!	
29 Si	-439.15	-87.83	ppb	8.69	10000.	
39 K	-14.525	-2.905	ppb	116.25	200000.	
43 Ca	59.3	11.86	ppb	10.49	#VALUE!	
44 Ca	57.9	11.58	ppb	16.18	200000.	
51 V	0.549	0.1098	ppb	114.57	1000.	
52 Cr	3.126	0.6252	ppb	19.16	2000.	
53 Cr	27.135	5.427	ppb	12.18	#VALUE!	
55 Mn	0.335	0.067	ppb	19.70	2000.	
56 Fe	38.115	7.623	ppb	29.98	#VALUE!	
57 Fe	22.695	4.539	ppb	62.57	100000.	
59 Co	0.034	0.0068	ppb	64.16	1000.	
60 Ni	0.3883	0.0777	ppb	16.36	1000.	
63 Cu	0.859	0.1718	ppb	4.42	#VALUE!	
65 Cu	0.7695	0.1539	ppb	10.16	2000.	
66 Zn	1.204	0.2408	ppb	10.42	2000.	
68 Zn	1.411	0.2822	ppb	20.84	#VALUE!	
75 As	0.617	0.1234	ppb	56.12	1000.	
82 Se	-0.3423	-0.0685	ppb	192.11	1000.	
88 Sr	0.2211	0.0442	ppb	17.68	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0719	0.0144	ppb	14.29	1000.	
107 Ag	0.0134	0.0027	ppb	38.65	100.	
109 Ag	0.0093	0.0019	ppb	56.20	#VALUE!	
111 Cd	-0.4579	-0.0916	ppb	19.71	#VALUE!	
114 Cd	-0.0858	-0.0172	ppb	105.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	42.595	8.519	ppb	3.87	1000.	
120 Sn	42.975	8.595	ppb	2.88	#VALUE!	
121 Sb	0.0229	0.0046	ppb	24.22	#VALUE!	
123 Sb	0.0229	0.0046	ppb	89.27	1000.	
135 Ba	0.4806	0.0961	ppb	9.22	2000.	
137 Ba	0.502	0.1004	ppb	12.49	#VALUE!	
182 W	0.0252	0.005	ppb	41.30	1000.	
203 Tl	-0.0538	-0.0108	ppb	125.67	1000.	
205 Tl	-0.0687	-0.0137	ppb	71.19	#VALUE!	
208 Pb	-0.0805	-0.0161	ppb	110.69	2000.	
232 Th	0.1156	0.0231	ppb	36.32	1000.	
238 U	0.0042	0.0008	ppb	18.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1724166.10	3.83	1729334.00	99.7	69.5 - 120	
45 Sc	2312317.80	0.69	2274967.30	101.6	69.5 - 120	
72 Ge	608874.13	0.40	590563.19	103.1	69.5 - 120	
159 Tb	6364603.00	2.34	6367688.00	100.0	69.5 - 120	
209 Bi	2816318.00	1.01	2872959.00	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000118

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\052_CCV.D\052_CCV.D#
Date Acquired: May 10 2018 09:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.94	ppb	2.50	25	99.76	
11 B	25.9	ppb	3.88	25	103.6	
23 Na	4,943.	ppb	3.08	5,000	98.86	
25 Mg	5,016.	ppb	2.24	5,000	100.32	
27 Al	511.1	ppb	1.07	500	102.22	
28 Si	524.7	ppb	7.12	500	104.94	
29 Si	431.1	ppb	9.10	500	86.22	Fail
39 K	4,929.	ppb	2.29	5,000	98.58	
43 Ca	5,097.	ppb	4.44	5,000	101.94	
44 Ca	5,148.	ppb	3.63	5,000	102.96	
51 V	25.53	ppb	2.54	25	102.12	
52 Cr	25.46	ppb	2.22	25	101.84	
53 Cr	23.7	ppb	1.85	25	94.8	
55 Mn	25.16	ppb	0.58	25	100.64	
56 Fe	5,023.	ppb	2.62	5,000	100.46	
57 Fe	5,166.	ppb	4.17	5,000	103.32	
59 Co	25.55	ppb	2.11	25	102.2	
60 Ni	25.26	ppb	1.59	25	101.04	
63 Cu	25.72	ppb	0.98	25	102.88	
65 Cu	25.67	ppb	1.57	25	102.68	
66 Zn	25.37	ppb	2.59	25	101.48	
68 Zn	25.22	ppb	1.41	25	100.88	
75 As	25.38	ppb	1.52	25	101.52	
82 Se	25.85	ppb	1.13	25	103.4	
88 Sr	24.45	ppb	1.98	25	97.8	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.65	ppb	2.16	25	98.6	
107 Ag	24.79	ppb	2.07	25	99.16	
109 Ag	24.5	ppb	1.55	25	98	
111 Cd	24.67	ppb	2.02	25	98.68	
114 Cd	24.62	ppb	1.90	25	98.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.57	ppb	2.60	25	102.28	
120 Sn	26.07	ppb	3.08	25	104.28	
121 Sb	26.52	ppb	2.89	25	106.08	
123 Sb	26.35	ppb	2.69	25	105.4	
135 Ba	26.36	ppb	2.55	25	105.44	
137 Ba	26.36	ppb	2.68	25	105.44	
182 W	24.39	ppb	3.46	25	97.56	
203 Tl	25.19	ppb	1.09	25	100.76	
205 Tl	25.03	ppb	1.16	25	100.12	
208 Pb	25.29	ppb	1.96	25	101.16	
232 Th	24.58	ppb	2.03	25	98.32	
238 U	24.73	ppb	0.81	25	98.92	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1818783.90	2.24	1729334.00	105.2	80 - 120.4	
45 Sc	2531420.50	3.58	2274967.30	111.3	80 - 120.4	
72 Ge	630552.25	2.66	590563.19	106.8	80 - 120.4	
159 Tb	6475192.00	2.85	6367688.00	101.7	80 - 120.4	
209 Bi	2813602.00	1.75	2872959.00	97.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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 4000119

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\053_CCB.D\053_CCB.D#
Date Acquired: May 10 2018 09:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.002	ppb	38.98	1.00	
11 B	2.107	ppb	4.39	1.00	
23 Na	-0.8898	ppb	28.56	1.00	
25 Mg	-0.0437	ppb	54.51	1.00	
27 Al	-0.0082	ppb	561.56	1.00	
28 Si	13.77	ppb	80.03	1.00	
29 Si	-79.37	ppb	26.96	1.00	
39 K	-7.575	ppb	102.43	1.00	
43 Ca	-4.786	ppb	32.95	1.00	
44 Ca	-1.453	ppb	39.01	1.00	
51 V	0.1018	ppb	35.57	1.00	
52 Cr	0.0175	ppb	135.66	1.00	
53 Cr	-1.235	ppb	14.62	1.00	
55 Mn	-0.0076	ppb	28.78	1.00	
56 Fe	0.7173	ppb	187.37	1.00	
57 Fe	1.687	ppb	110.73	1.00	
59 Co	0.005	ppb	19.44	1.00	
60 Ni	-0.0027	ppb	467.97	1.00	
63 Cu	-0.015	ppb	23.40	1.00	
65 Cu	-0.0176	ppb	22.12	1.00	
66 Zn	-0.0195	ppb	194.46	1.00	
68 Zn	-0.0272	ppb	157.29	1.00	
75 As	0.0238	ppb	575.58	1.00	
82 Se	-0.0395	ppb	66.13	1.00	
88 Sr	0.0003	ppb	320.33	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0315	ppb	36.15	1.00	
107 Ag	0.0032	ppb	54.56	1.00	
109 Ag	0.0025	ppb	34.89	1.00	
111 Cd	-0.0765	ppb	12.67	1.00	
114 Cd	-0.0001	ppb	608.23	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0298	ppb	11.81	1.00	
120 Sn	0.0377	ppb	8.32	1.00	
121 Sb	0.0048	ppb	88.41	1.00	
123 Sb	0.0071	ppb	71.65	1.00	
135 Ba	0.0005	ppb	1999.60	1.00	
137 Ba	0.0012	ppb	270.65	1.00	
182 W	0.0439	ppb	35.80	1.00	
203 Tl	-0.018	ppb	9.64	1.00	
205 Tl	-0.016	ppb	27.80	1.00	
208 Pb	-0.0487	ppb	14.84	1.00	
232 Th	0.0706	ppb	20.76	1.00	
238 U	0.0023	ppb	68.15	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1847757.00	1.38	1729334.00	106.8	79.5 - 120	
45 Sc	2480169.80	3.64	2274967.30	109.0	79.5 - 120	
72 Ge	633408.00	1.46	590563.19	107.3	79.5 - 120	
159 Tb	6225764.50	2.22	6367688.00	97.8	79.5 - 120	
209 Bi	2721876.00	1.51	2872959.00	94.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.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**: JS **ANALYSIS DATE**: 05/11/2018

FILE NAME: JLE11B

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

REVIEWED
JS 5.15.18
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 JS (initals) on 5.11.18 (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17756	05/11/2018	05/11/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17751	05/09/2018	05/15/2018	Varies by Element
ICSAB	MW17752	05/09/2018	05/15/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17712	04/27/2018	07/192018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

JS 5.15.18

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 MW17756 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17756 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17756 (pipet M18)

Post Spike: 0.08mL of MW17698(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	JLE11B	5/11/2018	6:17:00 15:24	JS
200.8 TUNE	1	JLE11B	5/11/2018	6:17:00 15:27	JS
Cal Blank	1	JLE11B	5/11/2018	6:17:00 18:17	JS
Cal Std	1	JLE11B	5/11/2018	6:21:00 18:21	JS
ICV	1	JLE11B	5/11/2018	6:25:00 18:25	JS
ICB	1	JLE11B	5/11/2018	6:29:00 18:29	JS
PQL	1	JLE11B	5/11/2018	6:33:00 18:33	JS
RINSE	1	JLE11B	5/11/2018	6:37:00 18:37	JS
ICSA	1	JLE11B	5/11/2018	6:41:00 18:41	JS
ICSAB	1	JLE11B	5/11/2018	6:45:00 18:45	JS
RINSE	1	JLE11B	5/11/2018	6:50:00 18:50	JS
LRS1	1	JLE11B	5/11/2018	6:54:00 18:54	JS
LRS2	1	JLE11B	5/11/2018	6:57:00 18:57	JS
RINSE	1	JLE11B	5/11/2018	7:01:00 19:01	JS
RINSE	1	JLE11B	5/11/2018	7:05:00 19:05	JS
CCV	1	JLE11B	5/11/2018	7:09:00 19:09	JS
CCB	1	JLE11B	5/11/2018	7:13:00 19:13	JS
SL4044-002	1	JLE11B	5/11/2018	7:17:00 19:17	JS
PBWLE09IMW1	1	JLE11B	5/11/2018	7:21:00 19:21	JS
LCSWLE09IMW1	5	JLE11B	5/11/2018	7:25:00 19:25	JS
SL3844-001	1	JLE11B	5/11/2018	7:29:00 19:29	JS
SL3855-001	1	JLE11B	5/11/2018	7:33:00 19:33	JS
PBWLE11IMW1	1	JLE11B	5/11/2018	7:38:00 19:38	JS
LCSWLE11IMW1	5	JLE11B	5/11/2018	7:42:00 19:42	JS
SL3997-001	1	JLE11B	5/11/2018	7:46:00 19:46	JS
SL3997-002	1	JLE11B	5/11/2018	7:50:00 19:50	JS
SL3998-001	1	JLE11B	5/11/2018	7:54:00 19:54	JS
CCV	1	JLE11B	5/11/2018	7:58:00 19:58	JS
CCB	1	JLE11B	5/11/2018	8:02:00 20:02	JS
SL4027-001	1	JLE11B	5/11/2018	8:06:00 20:06	JS
SL4028-001	1	JLE11B	5/11/2018	8:10:00 20:10	JS
SL4030-001	1	JLE11B	5/11/2018	8:14:00 20:14	JS
SL4038-001	1	JLE11B	5/11/2018	8:19:00 20:19	JS
SL4038-002	1	JLE11B	5/11/2018	8:23:00 20:23	JS
SL4038-003	1	JLE11B	5/11/2018	8:27:00 20:27	JS
SL4044-001	1	JLE11B	5/11/2018	8:31:00 20:31	JS
SL4055-001	1	JLE11B	5/11/2018	8:35:00 20:35	JS
SL4056-001	1	JLE11B	5/11/2018	8:39:00 20:39	JS
SL4057-001	1	JLE11B	5/11/2018	8:44:00 20:44	JS
CCV	1	JLE11B	5/11/2018	8:48:00 20:48	JS
CCB	1	JLE11B	5/11/2018	8:52:00 20:52	JS
SL4060-001	1	JLE11B	5/11/2018	8:56:00 20:56	JS
SL4061-001	1	JLE11B	5/11/2018	9:00:00 21:00	JS
SL4065-001	1	JLE11B	5/11/2018	9:04:00 21:04	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL4066-001	1	JLE11B	5/11/2018	9:09:00 21:09	JS
PBSLE04IMS1	5	JLE11B	5/11/2018	9:13:00 21:13	JS
LCSOLE04IMS1	5	JLE11B	5/11/2018	9:17:00 21:17	JS
SL3708-007	10	JLE11B	5/11/2018	9:21:00 21:21	JS
SL3708-019	10	JLE11B	5/11/2018	9:25:00 21:25	JS
SL3708-020	10	JLE11B	5/11/2018	9:29:00 21:29	JS
TEST	10	JLE11B	5/11/2018	9:33:00 21:33	JS
CCV	1	JLE11B	5/11/2018	9:38:00 21:38	JS
CCB	1	JLE11B	5/11/2018	9:42:00 21:42	JS
SL3807-001	10	JLE11B	5/11/2018	9:46:00 21:46	JS
SL3807-002	10	JLE11B	5/11/2018	9:50:00 21:50	JS
RINSE	1	JLE11B	5/11/2018	9:54:00 21:54	JS
PBSLE11IMS2	5	JLE11B	5/11/2018	9:58:00 21:58	JS
LCSOLE11IMS2	5	JLE11B	5/11/2018	10:03:0 22:03	JS
LC2OLE11IMS2	5	JLE11B	5/11/2018	10:07:0 22:07	JS
SL3756-001	5	JLE11B	5/11/2018	10:11:0 22:11	JS
SL3756-003	5	JLE11B	5/11/2018	10:15:0 22:15	JS
SL3756-004	5	JLE11B	5/11/2018	10:19:0 22:19	JS
SL3756-005	5	JLE11B	5/11/2018	10:23:0 22:23	JS
CCV	1	JLE11B	5/11/2018	10:28:0 22:28	JS
CCB	1	JLE11B	5/11/2018	10:32:0 22:32	JS
SL3756-006	5	JLE11B	5/11/2018	10:36:0 22:36	JS
SL3756-007	5	JLE11B	5/11/2018	10:40:0 22:40	JS
SL3756-008	5	JLE11B	5/11/2018	10:44:0 22:44	JS
SL3756-009	5	JLE11B	5/11/2018	10:48:0 22:48	JS
SL3756-010	5	JLE11B	5/11/2018	10:53:0 22:53	JS
SL3756-011	5	JLE11B	5/11/2018	10:57:0 22:57	JS
SL3756-012	5	JLE11B	5/11/2018	11:01:0 23:01	JS
SL3756-013	5	JLE11B	5/11/2018	11:05:0 23:05	JS
SL3756-014	5	JLE11B	5/11/2018	11:09:0 23:09	JS
SL3756-029	5	JLE11B	5/11/2018	11:14:0 23:14	JS
CCV	1	JLE11B	5/11/2018	11:18:0 23:18	JS
CCB	1	JLE11B	5/11/2018	11:22:0 23:22	JS
SL3756-030	5	JLE11B	5/11/2018	11:26:0 23:26	JS
RINSE	1	JLE11B	5/11/2018	11:31:0 23:31	JS
PBSLE09IMS1	5	JLE11B	5/11/2018	11:35:0 23:35	JS
LCSOLE09IMS1	5	JLE11B	5/11/2018	11:39:0 23:39	JS
SL3809-049	5	JLE11B	5/11/2018	11:43:0 23:43	JS
SL3809-050	5	JLE11B	5/11/2018	11:48:0 23:48	JS
SL3809-051	5	JLE11B	5/11/2018	11:52:0 23:52	JS
SL3809-052	5	JLE11B	5/11/2018	11:56:0 23:56	JS
SL3809-053	5	JLE11B	5/12/2018	12:01:0 0:01	JS
RINSE	1	JLE11B	5/12/2018	12:05:0 0:05	JS
CCV	1	JLE11B	5/12/2018	12:09:0 0:09	JS
CCB	1	JLE11B	5/12/2018	12:13:0 0:13	JS
SL3809-054	5	JLE11B	5/12/2018	12:18:0 0:18	JS
SL3809-055	5	JLE11B	5/12/2018	12:22:0 0:22	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3951-001	5	JLE11B	5/12/2018	12:26:0 0:26	JS
SL3951-001L	25	JLE11B	5/12/2018	12:31:0 0:31	JS
SL3951-001A	5	JLE11B	5/12/2018	12:35:0 0:35	JS
SL3951-001S	5	JLE11B	5/12/2018	12:39:0 0:39	JS
SL3951-001P	5	JLE11B	5/12/2018	12:43:0 0:43	JS
SL3951-002	5	JLE11B	5/12/2018	12:48:0 0:48	JS
RINSE	1	JLE11B	5/12/2018	12:52:0 0:52	JS
PBSLE08IMS1	5	JLE11B	5/12/2018	12:56:0 0:56	JS
CCV	1	JLE11B	5/12/2018	1:00:00 1:00	JS
CCB	1	JLE11B	5/12/2018	1:04:00 1:04	JS
LCSOLE08IMS1	5	JLE11B	5/12/2018	1:08:00 1:08	JS
SL3809-016	5	JLE11B	5/12/2018	1:13:00 1:13	JS
SL3809-016L	25	JLE11B	5/12/2018	1:17:00 1:17	JS
SL3809-016A	5	JLE11B	5/12/2018	1:21:00 1:21	JS
SL3809-016S	5	JLE11B	5/12/2018	1:25:00 1:25	JS
SL3809-016P	5	JLE11B	5/12/2018	1:30:00 1:30	JS
SL3809-021	5	JLE11B	5/12/2018	1:34:00 1:34	JS
SL3809-022	5	JLE11B	5/12/2018	1:38:00 1:38	JS
SL3809-023	5	JLE11B	5/12/2018	1:43:00 1:43	JS
RINSE	1	JLE11B	5/12/2018	1:47:00 1:47	JS
CCV	1	JLE11B	5/12/2018	1:51:00 1:51	JS
CCB	1	JLE11B	5/12/2018	1:55:00 1:55	JS
SL3809-025	5	JLE11B	5/12/2018	2:00:00 2:00	JS
SL3809-026	5	JLE11B	5/12/2018	2:04:00 2:04	JS
SL3809-027	5	JLE11B	5/12/2018	2:08:00 2:08	JS
SL3809-028	5	JLE11B	5/12/2018	2:13:00 2:13	JS
SL3809-028	10	JLE11B	5/12/2018	2:17:00 2:17	JS
SL3809-029	5	JLE11B	5/12/2018	2:21:00 2:21	JS
SL3809-030	5	JLE11B	5/12/2018	2:25:00 2:25	JS
SL3809-031	5	JLE11B	5/12/2018	2:30:00 2:30	JS
SL3809-032	10	JLE11B	5/12/2018	2:34:00 2:34	JS
RINSE	1	JLE11B	5/12/2018	2:38:00 2:38	JS
CCV	1	JLE11B	5/12/2018	2:43:00 2:43	JS
CCB	1	JLE11B	5/12/2018	2:47:00 2:47	JS
SL3809-033	10	JLE11B	5/12/2018	2:51:00 2:51	JS
SL3809-034	10	JLE11B	5/12/2018	2:55:00 2:55	JS
SL3809-035	5	JLE11B	5/12/2018	3:00:00 3:00	JS
SL3809-036	5	JLE11B	5/12/2018	3:04:00 3:04	JS
SL3809-037	5	JLE11B	5/12/2018	3:09:00 3:09	JS
SL3809-038	5	JLE11B	5/12/2018	3:13:00 3:13	JS
SL3809-039	5	JLE11B	5/12/2018	3:17:00 3:17	JS
SL3809-040	5	JLE11B	5/12/2018	3:22:00 3:22	JS
SL3809-048	5	JLE11B	5/12/2018	3:26:00 3:26	JS
RINSE	1	JLE11B	5/12/2018	3:30:00 3:30	JS
CCV	1	JLE11B	5/12/2018	3:35:00 3:35	JS
CCB	1	JLE11B	5/12/2018	3:39:00 3:39	JS
PQL	1	JLE11B	5/12/2018	3:43:00 3:43	JS

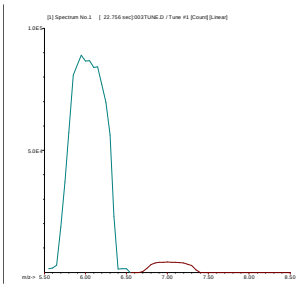
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
CCV	1	JLE11B	5/12/2018 3:47:00	3:47	JS
CCB	1	JLE11B	5/12/2018 3:51:00	3:51	JS

6020 QC Tune Report

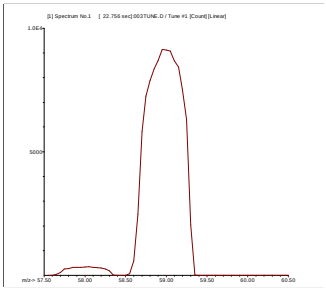
Data File: C:\ICPCHEM\1\DATA\JLE11A.B\003TUNE.D
Date Acquired: May 11 2018 03:24 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

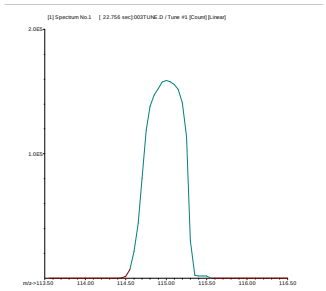
Element	Actual	Required	Flag
7 Li	2.24	5.00	
59 Co	2.52	5.00	
115 In	1.40	5.00	
205 Tl	1.74	5.00	



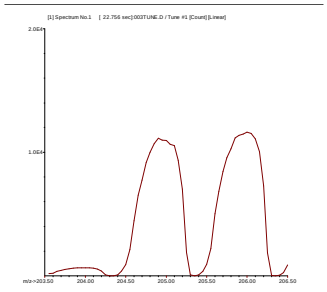
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



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:



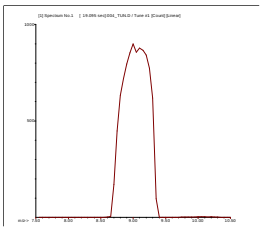
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

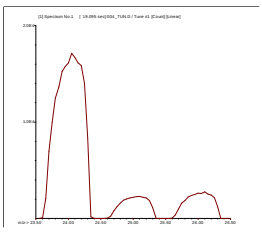
Data File: C:\ICPCHEM\1\DATA\JLE11A.B\004_TUN.D
Date Acquired: May 11 2018 03:27 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

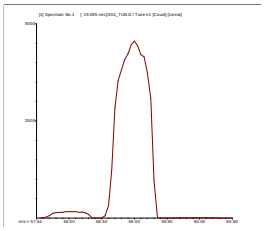
Element	Actual	Required	Flag
9 Be	3.13	5.00	
24 Mg	3.04	5.00	
59 Co	1.06	5.00	
115 In	1.50	5.00	
208 Pb	1.43	5.00	



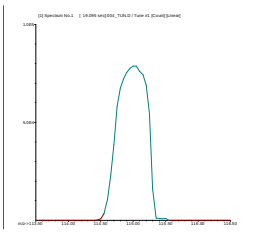
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



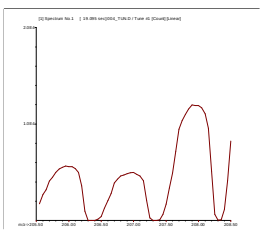
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
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 4000127

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.I
Date Acquired: May 11 2018 06:17 pm
Operator: JS
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: May 11 2018 06:20 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2844111.00	A	139300.00	4.90
9	Be	6.30	P	2.31	36.74
11	B	260.01	P	56.08	21.57
23	Na	35374.57	P	242.20	0.68
25	Mg	93.34	P	6.67	7.14
27	Al	1567.27	P	218.70	13.95
28	Si	1278140.00	A	12690.00	0.99
29	Si	101211.10	P	418.30	0.41
39	K	808431.00	A	11770.00	1.46
43	Ca	129.64	P	27.97	21.57
44	Ca	3503.88	P	44.91	1.28
45	Sc	2809797.00	A	79210.00	2.82
51	V	3077.00	P	322.50	10.48
52	Cr	8163.59	P	266.90	3.27
53	Cr	10389.43	P	228.40	2.20
55	Mn	1106.75	P	58.41	5.28
56	Fe	1699575.00	A	26100.00	1.54
57	Fe	8792.18	P	280.40	3.19
59	Co	124.45	P	27.76	22.31
60	Ni	58.51	P	5.09	8.71
63	Cu	303.35	P	26.03	8.58
65	Cu	183.34	P	45.83	25.00
66	Zn	983.40	P	29.63	3.01
68	Zn	1273.43	P	46.67	3.66
72	Ge	642252.38	P	6295.00	0.98
75	As	-250.96	P	242.20	96.51
82	Se	-15.90	P	10.25	64.45
88	Sr	88.90	P	11.11	12.50
89	Y	4985208.00	A	5424.00	0.11
98	Mo	48.08	P	16.61	34.55
107	Ag	33.33	P	5.77	17.32
109	Ag	18.89	P	5.09	26.96
111	Cd	857.36	P	24.03	2.80
114	Cd	0.74	P	2.95	399.24
115	In	4962449.00	A	44820.00	0.90
118	Sn	456.69	P	18.56	4.06
120	Sn	645.59	P	50.92	7.89
121	Sb	44.45	P	10.18	22.90
123	Sb	31.11	P	3.85	12.37
135	Ba	22.22	P	6.94	31.22
137	Ba	45.56	P	9.62	21.12
159	Tb	7051087.00	A	90010.00	1.28
182	W	38.89	P	1.93	4.95
203	Tl	408.91	P	20.09	4.91
205	Tl	996.74	P	53.34	5.35
208	Pb	1476.75	P	128.40	8.69
209	Bi	3594227.00	A	11450.00	0.32
232	Th	47.78	P	13.88	29.05
238	U	5.56	P	1.93	34.65

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\016CALI.D\016CALI.D#
Date Acquired: May 11 2018 06:21 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 11 2018 06:20 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2931355.00	A	70920.00	2.42
9 Be	106573.70	P	1622.00	1.52
11 B	54089.23	P	1565.00	2.89
23 Na	63601540.00	A	1718000.00	2.70
25 Mg	5438607.00	A	86330.00	1.59
27 Al	5354109.00	A	115400.00	2.16
28 Si	4284597.00	A	41870.00	0.98
29 Si	266486.41	P	998.80	0.37
39 K	80867672.00	A	1090000.00	1.35
43 Ca	150413.30	P	4180.00	2.78
44 Ca	2437266.00	A	6117.00	0.25
45 Sc	2812814.00	A	25690.00	0.91
51 V	517677.41	P	2932.00	0.57
52 Cr	456203.69	P	4227.00	0.93
53 Cr	59004.18	P	1272.00	2.16
55 Mn	589346.38	P	9749.00	1.65
56 Fe	97779520.00	A	768000.00	0.79
57 Fe	2406833.00	A	14720.00	0.61
59 Co	515124.69	P	2619.00	0.51
60 Ni	114913.50	P	1547.00	1.35
63 Cu	274185.00	P	5417.00	1.98
65 Cu	129263.30	P	1710.00	1.32
66 Zn	70025.76	P	676.60	0.97
68 Zn	50598.90	P	1237.00	2.44
72 Ge	622769.31	P	3436.00	0.55
75 As	67639.45	P	531.40	0.79
82 Se	5576.09	P	66.36	1.19
88 Sr	788962.69	A	5345.00	0.68
89 Y	4941294.00	A	21390.00	0.43
98 Mo	243432.09	P	1647.00	0.68
107 Ag	395281.50	P	1376.00	0.35
109 Ag	378730.09	P	2137.00	0.56
111 Cd	80254.87	P	833.30	1.04
114 Cd	176652.41	P	1112.00	0.63
115 In	4820432.00	A	32990.00	0.68
118 Sn	239066.09	P	1061.00	0.44
120 Sn	330234.09	P	1200.00	0.36
121 Sb	287803.41	P	1434.00	0.50
123 Sb	219236.30	P	2085.00	0.95
135 Ba	70655.81	P	216.40	0.31
137 Ba	123398.10	P	1256.00	1.02
159 Tb	7039091.00	A	39390.00	0.56
182 W	311043.59	P	1144.00	0.37
203 Tl	256375.20	P	948.90	0.37
205 Tl	600002.19	P	4261.00	0.71
208 Pb	821089.50	P	1934.00	0.24
209 Bi	3471543.00	A	47460.00	1.37
232 Th	830437.13	A	10630.00	1.28
238 U	770462.13	P	7400.00	0.96

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2931355.30	2.42	2844110.50	103.1	79.5 - 120.4	
45 Sc	2812814.00	0.91	2809797.00	100.1	79.5 - 120.4	
72 Ge	622769.25	0.55	642252.38	97.0	79.5 - 120.4	
159 Tb	7039091.50	0.56	7051087.50	99.8	79.5 - 120.4	
209 Bi	3471542.80	1.37	3594227.50	96.6	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000129

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\017_ICV.D\017_ICV.D#
Date Acquired: May 11 2018 06:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	20.96	ppb	3.05	20	104.8	
11 B	21.75	ppb	4.41	20	108.75	
23 Na	4,156.	ppb	5.35	4,000	103.9	
25 Mg	4,238.	ppb	1.60	4,000	105.95	
27 Al	414.2	ppb	1.79	400	103.55	
28 Si	432.6	ppb	5.03	400	108.15	
29 Si	413.3	ppb	3.95	400	103.325	
39 K	4,053.	ppb	1.13	4,000	101.325	
43 Ca	4,045.	ppb	2.09	4,000	101.125	
44 Ca	4,127.	ppb	2.18	4,000	103.175	
51 V	19.68	ppb	1.06	20	98.4	
52 Cr	19.91	ppb	1.13	20	99.55	
53 Cr	15.66	ppb	2.57	20	78.3	
55 Mn	19.92	ppb	1.46	20	99.6	
56 Fe	3,991.	ppb	0.61	4,000	99.775	
57 Fe	4,102.	ppb	0.98	4,000	102.55	
59 Co	20.2	ppb	1.26	20	101	
60 Ni	19.9	ppb	3.22	20	99.5	
63 Cu	20.28	ppb	0.33	20	101.4	
65 Cu	20.36	ppb	0.81	20	101.8	
66 Zn	20.31	ppb	2.01	20	101.55	
68 Zn	20.74	ppb	0.64	20	103.7	
75 As	20.28	ppb	1.08	20	101.4	
82 Se	20.95	ppb	1.64	20	104.75	
88 Sr	19.71	ppb	0.64	20	98.55	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	39.7	ppb	0.68	40	99.25	
107 Ag	20.44	ppb	0.80	20	102.2	
109 Ag	20.34	ppb	0.51	20	101.7	
111 Cd	20.53	ppb	0.25	20	102.65	
114 Cd	20.57	ppb	0.60	20	102.85	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.2	ppb	1.91	20	101	
120 Sn	20.14	ppb	1.40	20	100.7	
121 Sb	20.33	ppb	1.44	20	101.65	
123 Sb	20.33	ppb	0.81	20	101.65	
135 Ba	20.33	ppb	2.51	20	101.65	
137 Ba	20.54	ppb	1.76	20	102.7	
182 W	20.03	ppb	0.42	20	100.15	
203 Tl	20.52	ppb	0.95	20	102.6	
205 Tl	20.83	ppb	0.58	20	104.15	
208 Pb	20.27	ppb	0.77	20	101.35	
232 Th	19.97	ppb	0.52	20	99.85	
238 U	20.1	ppb	2.47	20	100.5	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2736177.00	6.27	2844110.50	96.2	80 - 120.4	
45 Sc	2715163.00	0.53	2809797.00	96.6	80 - 120.4	
72 Ge	617631.88	0.85	642252.38	96.2	80 - 120.4	
159 Tb	6926850.00	1.00	7051087.50	98.2	80 - 120.4	
209 Bi	3438285.30	0.40	3594227.50	95.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000130

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\018_ICB.D\018_ICB.D#
Date Acquired: May 11 2018 06:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	45.46	1.00	
11 B	1.592	ppb	14.79	1.00	
23 Na	-0.1731	ppb	100.29	1.00	
25 Mg	0.0312	ppb	314.80	1.00	
27 Al	0.0033	ppb	453.22	1.00	
28 Si	22.93	ppb	45.49	1.00	
29 Si	12.47	ppb	40.17	1.00	
39 K	0.3917	ppb	375.80	1.00	
43 Ca	1.051	ppb	214.56	1.00	
44 Ca	0.6982	ppb	45.26	1.00	
51 V	-0.0718	ppb	33.87	1.00	
52 Cr	-0.0611	ppb	14.96	1.00	
53 Cr	-4.619	ppb	4.91	1.00	
55 Mn	-0.0011	ppb	149.17	1.00	
56 Fe	-1.283	ppb	80.83	1.00	
57 Fe	1.667	ppb	36.53	1.00	
59 Co	0.0024	ppb	161.40	1.00	
60 Ni	0.0058	ppb	63.94	1.00	
63 Cu	0.0064	ppb	112.63	1.00	
65 Cu	-0.008	ppb	45.76	1.00	
66 Zn	-0.0432	ppb	49.47	1.00	
68 Zn	-0.0046	ppb	2369.90	1.00	
75 As	0.048	ppb	272.06	1.00	
82 Se	-0.0225	ppb	754.11	1.00	
88 Sr	0.0027	ppb	78.66	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0532	ppb	38.32	1.00	
107 Ag	0.0161	ppb	39.43	1.00	
109 Ag	0.0153	ppb	42.68	1.00	
111 Cd	-0.0343	ppb	27.88	1.00	
114 Cd	-0.0009	ppb	76.83	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0258	ppb	34.91	1.00	
120 Sn	0.0106	ppb	54.13	1.00	
121 Sb	0.0034	ppb	50.51	1.00	
123 Sb	0.0096	ppb	32.78	1.00	
135 Ba	0.0018	ppb	431.05	1.00	
137 Ba	-0.0015	ppb	262.14	1.00	
182 W	0.0498	ppb	18.59	1.00	
203 Tl	0.0023	ppb	306.83	1.00	
205 Tl	0.0008	ppb	230.86	1.00	
208 Pb	-0.0038	ppb	174.53	1.00	
232 Th	0.0534	ppb	10.41	1.00	
238 U	0.0046	ppb	60.53	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2675927.00	1.81	2844110.50	94.1	79.5 - 120	
45 Sc	2724571.30	1.54	2809797.00	97.0	79.5 - 120	
72 Ge	628654.81	0.42	642252.38	97.9	79.5 - 120	
159 Tb	6958238.50	0.68	7051087.50	98.7	79.5 - 120	
209 Bi	3518316.30	0.62	3594227.50	97.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\019_PQL.D\019_PQL.D#
Date Acquired: May 11 2018 06:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1957	ppb	7.68	0.20	97.85	
11 B	4.339	ppb	4.38	4.00	108.475	
23 Na	204.5	ppb	4.58	200.00	102.25	
25 Mg	19.64	ppb	4.58	20.00	98.2	
27 Al	19.77	ppb	2.79	20.00	98.85	
28 Si	112.7	ppb	10.52	100.00	112.7	
29 Si	106.	ppb	9.96	100.00	106	
39 K	200.4	ppb	4.05	200.00	100.2	
43 Ca	19.73	ppb	19.58	20.00	98.65	
44 Ca	19.82	ppb	7.96	20.00	99.1	
51 V	0.9221	ppb	7.51	1.00	92.21	
52 Cr	0.9501	ppb	5.48	1.00	95.01	
53 Cr	-3.128	ppb	3.97	---	#VALUE!	
55 Mn	0.3894	ppb	0.42	0.40	97.35	
56 Fe	16.43	ppb	14.73	20.00	82.15	
57 Fe	20.33	ppb	7.78	20.00	101.65	
59 Co	0.1962	ppb	3.90	0.20	98.1	
60 Ni	0.4064	ppb	11.16	0.40	101.6	
63 Cu	0.6246	ppb	0.76	0.60	104.1	
65 Cu	0.5771	ppb	6.32	0.60	96.1833	
66 Zn	2.015	ppb	2.51	2.00	100.75	
68 Zn	2.068	ppb	8.38	2.00	103.4	
75 As	0.9882	ppb	17.18	1.00	98.82	
82 Se	1.118	ppb	5.31	1.00	111.8	
88 Sr	0.9812	ppb	2.23	1.00	98.12	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9975	ppb	3.65	1.00	99.75	
107 Ag	0.2104	ppb	3.26	0.20	105.2	
109 Ag	0.2125	ppb	6.22	0.20	106.25	
111 Cd	0.2025	ppb	12.57	0.20	101.25	
114 Cd	0.2089	ppb	1.70	0.20	104.45	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	0.9798	ppb	4.59	1.00	97.98	
120 Sn	0.9935	ppb	1.41	1.00	99.35	
121 Sb	0.2096	ppb	11.21	0.20	104.8	
123 Sb	0.2008	ppb	8.78	0.20	100.4	
135 Ba	0.4165	ppb	0.34	0.40	104.125	
137 Ba	0.3766	ppb	5.49	0.40	94.15	
182 W	1.042	ppb	4.04	1.00	104.2	
203 Tl	0.1965	ppb	2.02	0.20	98.25	
205 Tl	0.2017	ppb	3.06	0.20	100.85	
208 Pb	0.2119	ppb	2.60	0.20	105.95	
232 Th	0.2129	ppb	4.36	0.20	106.45	
238 U	0.1866	ppb	2.14	0.20	93.3	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2742700.50	2.55	2844110.50	96.4	80 - 120.4	
45 Sc	2740519.50	2.09	2809797.00	97.5	80 - 120.4	
72 Ge	625656.56	0.05	642252.38	97.4	80 - 120.4	
159 Tb	6956509.00	1.69	7051087.50	98.7	80 - 120.4	
209 Bi	3496871.30	1.56	3594227.50	97.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000132

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\020SMPL.D\020SMPL.D#
Date Acquired: May 11 2018 06:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	101.53	100.	
11 B	0.4463	0.4463	ppb	17.07	1000.	
23 Na	0.031	0.031	ppb	537.94	200000.	
25 Mg	0.065	0.065	ppb	74.75	200000.	
27 Al	0.2511	0.2511	ppb	18.67	200000.	
28 Si	32.42	32.42	ppb	7.29	#VALUE!	
29 Si	15.78	15.78	ppb	33.64	10000.	
39 K	-1.391	-1.391	ppb	94.82	200000.	
43 Ca	-1.991	-1.991	ppb	61.78	#VALUE!	
44 Ca	0.5596	0.5596	ppb	32.36	200000.	
51 V	-0.1106	-0.1106	ppb	93.22	1000.	
52 Cr	-0.0481	-0.0481	ppb	23.31	2000.	
53 Cr	-3.924	-3.924	ppb	5.69	#VALUE!	
55 Mn	0.0107	0.0107	ppb	7.97	2000.	
56 Fe	4.922	4.922	ppb	40.39	#VALUE!	
57 Fe	1.782	1.782	ppb	22.42	100000.	
59 Co	-0.0034	-0.0034	ppb	72.08	1000.	
60 Ni	0.0079	0.0079	ppb	91.90	1000.	
63 Cu	0.0877	0.0877	ppb	15.52	#VALUE!	
65 Cu	0.0558	0.0558	ppb	21.98	2000.	
66 Zn	0.0401	0.0401	ppb	145.01	2000.	
68 Zn	0.1599	0.1599	ppb	19.13	#VALUE!	
75 As	0.1048	0.1048	ppb	65.13	1000.	
82 Se	0.1458	0.1458	ppb	110.36	1000.	
88 Sr	-0.0006	-0.0006	ppb	276.11	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0079	0.0079	ppb	53.65	1000.	
107 Ag	0.0046	0.0046	ppb	34.59	100.	
109 Ag	0.0043	0.0043	ppb	26.86	#VALUE!	
111 Cd	-0.0268	-0.0268	ppb	116.28	#VALUE!	
114 Cd	0.0005	0.0005	ppb	638.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0052	-0.0052	ppb	95.18	1000.	
120 Sn	-0.0009	-0.0009	ppb	384.77	#VALUE!	
121 Sb	0.0017	0.0017	ppb	74.69	#VALUE!	
123 Sb	0.0029	0.0029	ppb	68.41	1000.	
135 Ba	-0.0019	-0.0019	ppb	318.49	2000.	
137 Ba	0.0016	0.0016	ppb	126.57	#VALUE!	
182 W	0.0093	0.0093	ppb	92.57	1000.	
203 Tl	0.0079	0.0079	ppb	46.09	1000.	
205 Tl	0.0031	0.0031	ppb	186.68	#VALUE!	
208 Pb	0.0809	0.0809	ppb	11.28	2000.	
232 Th	0.0092	0.0092	ppb	32.66	1000.	
238 U	0.0005	0.0005	ppb	98.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2502433.00	1.25	2844110.50	88.0	69.5 - 120	
45 Sc	2621208.50	0.60	2809797.00	93.3	69.5 - 120	
72 Ge	597187.56	0.95	642252.38	93.0	69.5 - 120	
159 Tb	6804308.00	0.49	7051087.50	96.5	69.5 - 120	
209 Bi	3393525.00	0.83	3594227.50	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000133

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\021ICSA.D\021ICSA.D#
Date Acquired: May 11 2018 06:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0019	ppb	105.69		
11 B	0.7831	ppb	8.81		
23 Na	97,520.	ppb	2.82		
25 Mg	94,800.	ppb	1.54		
27 Al	96,990.	ppb	2.85		
28 Si	24.08	ppb	47.59		
29 Si	39.81	ppb	21.99		
39 K	96,810.	ppb	0.61		
43 Ca	99,610.	ppb	0.48		
44 Ca	95,750.	ppb	0.80		
51 V	0.1228	ppb	23.91		
52 Cr	0.8825	ppb	3.06		
53 Cr	-3.016	ppb	2.23		
55 Mn	0.3797	ppb	0.67		
56 Fe	96,110.	ppb	0.54		
57 Fe	92,660.	ppb	0.58		
59 Co	0.0776	ppb	4.75		
60 Ni	-0.3165	ppb	10.02		
63 Cu	4.186	ppb	1.25		
65 Cu	1.132	ppb	5.99		
66 Zn	2.127	ppb	1.44		
68 Zn	0.56	ppb	23.23		
75 As	0.2788	ppb	28.90		
82 Se	0.3681	ppb	11.46		
88 Sr	0.9284	ppb	1.75		
89 Y	--------	---	--------		
98 Mo	1,934.	ppb	0.43		
107 Ag	0.0379	ppb	12.24		
109 Ag	0.039	ppb	9.09		
111 Cd	0.0089	ppb	537.07		
114 Cd	0.0162	ppb	120.59		
115 In	--------	---	--------		
118 Sn	0.0388	ppb	42.66		
120 Sn	0.032	ppb	30.93		
121 Sb	0.0516	ppb	18.96		
123 Sb	0.0457	ppb	6.19		
135 Ba	0.1035	ppb	16.92		
137 Ba	0.0739	ppb	20.61		
182 W	0.2336	ppb	1.26		
203 Tl	0.0051	ppb	101.91		
205 Tl	0.0031	ppb	132.75		
208 Pb	0.1577	ppb	6.26		
232 Th	0.0536	ppb	20.12		
238 U	0.0011	ppb	89.67		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2632333.00	2.56	2844110.50	92.6	69.5 - 120.4	
45 Sc	2932201.50	3.17	2809797.00	104.4	69.5 - 120.4	
72 Ge	651694.56	2.88	642252.38	101.5	69.5 - 120.4	
159 Tb	6826769.50	1.05	7051087.50	96.8	69.5 - 120.4	
209 Bi	2913051.80	1.69	3594227.50	81.0	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000134

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\022ICSB.D\022ICSB.D#
Date Acquired: May 11 2018 06:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	21.24	ppb	1.17	20.00	79.5 - 120	
11 B	23.13	ppb	3.66	20.00	79.5 - 120	
23 Na	96,190.	ppb	3.92	#########	79.5 - 120	
25 Mg	95,470.	ppb	3.61	#########	79.5 - 120	
27 Al	96,230.	ppb	2.75	#########	79.5 - 120	
28 Si	513.8	ppb	5.10	---	##### - #####	
29 Si	504.8	ppb	7.41	---	##### - #####	
39 K	95,870.	ppb	3.26	#########	79.5 - 120	
43 Ca	99,650.	ppb	3.62	#########	79.5 - 120	
44 Ca	96,210.	ppb	1.56	#########	79.5 - 120	
51 V	20.51	ppb	2.16	20.00	79.5 - 120	
52 Cr	20.72	ppb	1.78	20.00	79.5 - 120	
53 Cr	19.06	ppb	3.34	---	##### - #####	
55 Mn	20.36	ppb	0.19	20.00	79.5 - 120	
56 Fe	97,540.	ppb	2.01	#########	79.5 - 120	
57 Fe	93,850.	ppb	0.21	#########	79.5 - 120	
59 Co	19.8	ppb	1.72	20.00	79.5 - 120	
60 Ni	18.82	ppb	0.42	20.00	79.5 - 120	
63 Cu	23.14	ppb	1.14	20.00	79.5 - 120	
65 Cu	20.35	ppb	2.74	20.00	79.5 - 120	
66 Zn	19.86	ppb	1.01	20.00	79.5 - 120	
68 Zn	18.55	ppb	0.66	20.00	79.5 - 120	
75 As	20.	ppb	1.14	20.00	79.5 - 120	
82 Se	19.19	ppb	1.36	20.00	79.5 - 120	
88 Sr	20.85	ppb	0.23	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,979.	ppb	1.04	2000.00	79.5 - 120	
107 Ag	18.47	ppb	0.10	20.00	79.5 - 120	
109 Ag	18.35	ppb	1.06	20.00	79.5 - 120	
111 Cd	18.5	ppb	0.84	20.00	79.5 - 120	
114 Cd	18.4	ppb	0.70	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.33	ppb	0.55	20.00	79.5 - 120	
120 Sn	21.19	ppb	0.27	20.00	79.5 - 120	
121 Sb	21.58	ppb	0.41	20.00	79.5 - 120	
123 Sb	21.4	ppb	0.55	20.00	79.5 - 120	
135 Ba	21.58	ppb	0.40	20.00	79.5 - 120	
137 Ba	21.36	ppb	0.30	20.00	79.5 - 120	
182 W	19.88	ppb	1.64	20.00	79.5 - 120	
203 Tl	21.39	ppb	2.15	20.00	79.5 - 120	
205 Tl	21.42	ppb	1.72	20.00	79.5 - 120	
208 Pb	21.46	ppb	1.53	20.00	79.5 - 120	
232 Th	22.17	ppb	1.03	20.00	79.5 - 120	
238 U	21.7	ppb	1.85	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2646425.80	0.63	2844110.50	93.0	69.5 - 120	
45 Sc	3035567.80	1.72	2809797.00	108.0	69.5 - 120	
72 Ge	664811.44	0.42	642252.38	103.5	69.5 - 120	
159 Tb	6890558.00	0.54	7051087.50	97.7	69.5 - 120	
209 Bi	2907023.80	1.18	3594227.50	80.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000135

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\023SMPL.D\023SMPL.D#
Date Acquired: May 11 2018 06:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	23.11	100.	
11 B	0.4741	0.4741	ppb	12.01	1000.	
23 Na	5.605	5.605	ppb	19.23	200000.	
25 Mg	1.254	1.254	ppb	137.40	200000.	
27 Al	1.454	1.454	ppb	115.13	200000.	
28 Si	41.11	41.11	ppb	8.56	#VALUE!	
29 Si	-22.61	-22.61	ppb	19.09	10000.	
39 K	-2.737	-2.737	ppb	59.55	200000.	
43 Ca	-0.1783	-0.1783	ppb	1157.60	#VALUE!	
44 Ca	2.675	2.675	ppb	90.92	200000.	
51 V	-0.0693	-0.0693	ppb	61.57	1000.	
52 Cr	0.0023	0.0023	ppb	1728.00	2000.	
53 Cr	-1.528	-1.528	ppb	29.31	#VALUE!	
55 Mn	0.0071	0.0071	ppb	67.43	2000.	
56 Fe	6.959	6.959	ppb	69.51	#VALUE!	
57 Fe	7.359	7.359	ppb	52.63	100000.	
59 Co	0.0019	0.0019	ppb	185.47	1000.	
60 Ni	0.0231	0.0231	ppb	12.68	1000.	
63 Cu	0.1141	0.1141	ppb	2.55	#VALUE!	
65 Cu	0.1077	0.1077	ppb	6.74	2000.	
66 Zn	0.1929	0.1929	ppb	15.43	2000.	
68 Zn	0.3248	0.3248	ppb	7.22	#VALUE!	
75 As	0.0217	0.0217	ppb	351.20	1000.	
82 Se	0.1498	0.1498	ppb	75.37	1000.	
88 Sr	0.0011	0.0011	ppb	224.60	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.138	1.138	ppb	55.63	1000.	
107 Ag	0.0088	0.0088	ppb	29.45	100.	
109 Ag	0.0091	0.0091	ppb	55.22	#VALUE!	
111 Cd	-0.0764	-0.0764	ppb	15.76	#VALUE!	
114 Cd	0.0016	0.0016	ppb	65.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0099	0.0099	ppb	92.88	1000.	
120 Sn	0.0021	0.0021	ppb	574.26	#VALUE!	
121 Sb	-0.0011	-0.0011	ppb	236.05	#VALUE!	
123 Sb	0.0018	0.0018	ppb	150.03	1000.	
135 Ba	0.0229	0.0229	ppb	53.60	2000.	
137 Ba	0.0254	0.0254	ppb	27.05	#VALUE!	
182 W	0.0079	0.0079	ppb	26.43	1000.	
203 Tl	0.0016	0.0016	ppb	159.18	1000.	
205 Tl	0.0041	0.0041	ppb	31.96	#VALUE!	
208 Pb	0.1048	0.1048	ppb	8.08	2000.	
232 Th	0.0122	0.0122	ppb	18.05	1000.	
238 U	0.0024	0.0024	ppb	48.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2781891.00	0.72	2844110.50	97.8	69.5 - 120	
45 Sc	2959036.50	0.59	2809797.00	105.3	69.5 - 120	
72 Ge	672289.44	1.03	642252.38	104.7	69.5 - 120	
159 Tb	7029585.00	0.72	7051087.50	99.7	69.5 - 120	
209 Bi	3327474.30	1.17	3594227.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000136

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\024SMPL.D\024SMPL.D#
Date Acquired: May 11 2018 06:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	106.	106.	ppb	3.08	100.	>LDR
11 B	0.1924	0.1924	ppb	21.44	1000.	
23 Na	3.99	3.99	ppb	16.53	200000.	
25 Mg	0.915	0.915	ppb	6.38	200000.	
27 Al	2.674	2.674	ppb	4.89	200000.	
28 Si	27.62	27.62	ppb	16.45	#VALUE!	
29 Si	2.321	2.321	ppb	278.80	10000.	
39 K	0.2438	0.2438	ppb	506.15	200000.	
43 Ca	1,281.	1,281.	ppb	1.85	#VALUE!	
44 Ca	-185.5	-185.5	ppb	14.54	200000.	LOW
51 V	1,023.	1,023.	ppb	0.37	1000.	>LDR
52 Cr	2,023.	2,023.	ppb	0.92	2000.	>LDR
53 Cr	2,252.	2,252.	ppb	0.81	#VALUE!	
55 Mn	2,011.	2,011.	ppb	0.93	2000.	>LDR
56 Fe	7.129	7.129	ppb	8.14	#VALUE!	
57 Fe	0.1383	0.1383	ppb	64.01	100000.	
59 Co	1,021.	1,021.	ppb	1.23	1000.	>LDR
60 Ni	1,030.	1,030.	ppb	1.21	1000.	>LDR
63 Cu	1,982.	1,982.	ppb	0.58	#VALUE!	
65 Cu	2,018.	2,018.	ppb	1.39	2000.	>LDR
66 Zn	2,028.	2,028.	ppb	1.34	2000.	>LDR
68 Zn	2,091.	2,091.	ppb	0.71	#VALUE!	
75 As	1,041.	1,041.	ppb	0.65	1000.	>LDR
82 Se	1,067.	1,067.	ppb	0.80	1000.	>LDR
88 Sr	1,921.	1,921.	ppb	0.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,007.	1,007.	ppb	0.32	1000.	>LDR
107 Ag	105.1	105.1	ppb	1.45	100.	>LDR
109 Ag	103.8	103.8	ppb	2.32	#VALUE!	
111 Cd	1,037.	1,037.	ppb	1.59	#VALUE!	
114 Cd	1,012.	1,012.	ppb	1.13	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,027.	1,027.	ppb	1.18	1000.	>LDR
120 Sn	1,019.	1,019.	ppb	0.99	#VALUE!	
121 Sb	1,034.	1,034.	ppb	1.01	#VALUE!	
123 Sb	1,042.	1,042.	ppb	1.25	1000.	>LDR
135 Ba	2,099.	2,099.	ppb	1.22	2000.	>LDR
137 Ba	2,046.	2,046.	ppb	0.62	#VALUE!	
182 W	987.	987.	ppb	0.09	1000.	
203 Tl	995.3	995.3	ppb	1.79	1000.	
205 Tl	997.4	997.4	ppb	1.16	#VALUE!	
208 Pb	1,982.	1,982.	ppb	0.93	2000.	
232 Th	965.9	965.9	ppb	0.19	1000.	
238 U	953.2	953.2	ppb	1.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2764505.30	1.44	2844110.50	97.2	69.5 - 120	
45 Sc	2812327.00	1.28	2809797.00	100.1	69.5 - 120	
72 Ge	628414.06	2.07	642252.38	97.8	69.5 - 120	
159 Tb	6909206.00	0.80	7051087.50	98.0	69.5 - 120	
209 Bi	3423627.50	0.82	3594227.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

16 :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\JLE11B.B\025SMPL.D\025SMPL.D#
Date Acquired: May 11 2018 06:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	0.0096	0.0096	ppb	50.31	100.	
11 B	0.5595	0.5595	ppb	4.10	1000.	
23 Na	202,600.	202,600.	ppb	3.44	200000.	>LDR
25 Mg	195,300.	195,300.	ppb	1.92	200000.	
27 Al	192,600.	192,600.	ppb	1.80	200000.	
28 Si	10,160.	10,160.	ppb	3.71	#VALUE!	
29 Si	10,280.	10,280.	ppb	1.86	10000.	>LDR
39 K	191,700.	191,700.	ppb	2.64	200000.	
43 Ca	192,300.	192,300.	ppb	3.51	#VALUE!	
44 Ca	189,400.	189,400.	ppb	2.55	200000.	
51 V	0.2004	0.2004	ppb	27.92	1000.	
52 Cr	3.062	3.062	ppb	3.95	2000.	
53 Cr	-2.006	-2.006	ppb	20.35	#VALUE!	
55 Mn	7.478	7.478	ppb	0.88	2000.	
56 Fe	95,530.	95,530.	ppb	1.27	#VALUE!	
57 Fe	92,110.	92,110.	ppb	0.08	100000.	
59 Co	2.759	2.759	ppb	1.26	1000.	
60 Ni	2.944	2.944	ppb	2.66	1000.	
63 Cu	10.15	10.15	ppb	1.31	#VALUE!	
65 Cu	3.176	3.176	ppb	2.69	2000.	
66 Zn	3.598	3.598	ppb	4.77	2000.	
68 Zn	1.21	1.21	ppb	3.10	#VALUE!	
75 As	0.5394	0.5394	ppb	8.25	1000.	
82 Se	0.4989	0.4989	ppb	50.49	1000.	
88 Sr	6.541	6.541	ppb	3.35	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.588	1.588	ppb	45.87	1000.	
107 Ag	0.3723	0.3723	ppb	4.50	100.	
109 Ag	0.3649	0.3649	ppb	4.56	#VALUE!	
111 Cd	0.0187	0.0187	ppb	177.21	#VALUE!	
114 Cd	0.0135	0.0135	ppb	265.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.6193	0.6193	ppb	25.14	1000.	
120 Sn	0.6304	0.6304	ppb	22.27	#VALUE!	
121 Sb	0.19	0.19	ppb	24.72	#VALUE!	
123 Sb	0.1966	0.1966	ppb	25.26	1000.	
135 Ba	0.2901	0.2901	ppb	32.51	2000.	
137 Ba	0.2913	0.2913	ppb	21.52	#VALUE!	
182 W	1.205	1.205	ppb	38.16	1000.	
203 Tl	0.0737	0.0737	ppb	54.01	1000.	
205 Tl	0.0566	0.0566	ppb	66.53	#VALUE!	
208 Pb	0.5269	0.5269	ppb	10.50	2000.	
232 Th	1.201	1.201	ppb	23.04	1000.	
238 U	0.1583	0.1583	ppb	38.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2721404.80	5.86	2844110.50	95.7	69.5 - 120	
45 Sc	3005638.50	4.95	2809797.00	107.0	69.5 - 120	
72 Ge	642207.88	3.89	642252.38	100.0	69.5 - 120	
159 Tb	6035088.00	1.07	7051087.50	85.6	69.5 - 120	
209 Bi	2362543.00	2.77	3594227.50	65.7	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

2 :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 4000138

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\026SMPL.D\026SMPL.D#
Date Acquired: May 11 2018 07:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	396.50	100.	
11 B	0.0896	0.0896	ppb	24.21	1000.	
23 Na	16.38	16.38	ppb	73.50	200000.	
25 Mg	5.566	5.566	ppb	164.07	200000.	
27 Al	6.547	6.547	ppb	160.68	200000.	
28 Si	59.83	59.83	ppb	17.23	#VALUE!	
29 Si	-12.02	-12.02	ppb	79.47	10000.	
39 K	4.87	4.87	ppb	179.69	200000.	
43 Ca	7.908	7.908	ppb	82.31	#VALUE!	
44 Ca	6.821	6.821	ppb	128.54	200000.	
51 V	-0.0549	-0.0549	ppb	40.28	1000.	
52 Cr	0.036	0.036	ppb	52.81	2000.	
53 Cr	-0.0637	-0.0637	ppb	504.63	#VALUE!	
55 Mn	0.0213	0.0213	ppb	29.90	2000.	
56 Fe	16.84	16.84	ppb	42.19	#VALUE!	
57 Fe	7.09	7.09	ppb	24.81	100000.	
59 Co	0.0026	0.0026	ppb	151.34	1000.	
60 Ni	0.0342	0.0342	ppb	17.99	1000.	
63 Cu	0.155	0.155	ppb	14.19	#VALUE!	
65 Cu	0.1306	0.1306	ppb	18.31	2000.	
66 Zn	0.1761	0.1761	ppb	11.47	2000.	
68 Zn	0.3532	0.3532	ppb	17.11	#VALUE!	
75 As	0.1769	0.1769	ppb	86.09	1000.	
82 Se	0.0245	0.0245	ppb	394.03	1000.	
88 Sr	0.0021	0.0021	ppb	204.35	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2251	0.2251	ppb	51.53	1000.	
107 Ag	0.0049	0.0049	ppb	86.17	100.	
109 Ag	0.0067	0.0067	ppb	12.41	#VALUE!	
111 Cd	-0.0687	-0.0687	ppb	21.68	#VALUE!	
114 Cd	0.0007	0.0007	ppb	383.66	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1051	0.1051	ppb	22.34	1000.	
120 Sn	0.0864	0.0864	ppb	24.29	#VALUE!	
121 Sb	0.0195	0.0195	ppb	9.29	#VALUE!	
123 Sb	0.0225	0.0225	ppb	18.91	1000.	
135 Ba	0.0339	0.0339	ppb	29.01	2000.	
137 Ba	0.0291	0.0291	ppb	8.20	#VALUE!	
182 W	0.2051	0.2051	ppb	46.87	1000.	
203 Tl	0.001	0.001	ppb	715.68	1000.	
205 Tl	0.0016	0.0016	ppb	418.78	#VALUE!	
208 Pb	0.1185	0.1185	ppb	9.94	2000.	
232 Th	0.0433	0.0433	ppb	73.16	1000.	
238 U	0.0069	0.0069	ppb	16.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3111777.80	1.91	2844110.50	109.4	69.5 - 120	
45 Sc	3177000.30	1.73	2809797.00	113.1	69.5 - 120	
72 Ge	714104.75	1.61	642252.38	111.2	69.5 - 120	
159 Tb	6805341.00	0.26	7051087.50	96.5	69.5 - 120	
209 Bi	3191624.00	0.53	3594227.50	88.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000139

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\027SMPL.D\027SMPL.D#
Date Acquired: May 11 2018 07:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 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	82.02	100.	
11 B	0.0732	0.0732	ppb	53.55	1000.	
23 Na	5.147	5.147	ppb	8.85	200000.	
25 Mg	0.2292	0.2292	ppb	6.25	200000.	
27 Al	0.4453	0.4453	ppb	1.32	200000.	
28 Si	58.17	58.17	ppb	18.27	#VALUE!	
29 Si	-2.456	-2.456	ppb	391.90	10000.	
39 K	-1.004	-1.004	ppb	245.22	200000.	
43 Ca	3.366	3.366	ppb	38.24	#VALUE!	
44 Ca	2.315	2.315	ppb	63.07	200000.	
51 V	-0.0324	-0.0324	ppb	63.94	1000.	
52 Cr	0.0505	0.0505	ppb	40.48	2000.	
53 Cr	0.6189	0.6189	ppb	8.64	#VALUE!	
55 Mn	0.011	0.011	ppb	35.51	2000.	
56 Fe	9.145	9.145	ppb	2.99	#VALUE!	
57 Fe	3.938	3.938	ppb	47.05	100000.	
59 Co	0.0028	0.0028	ppb	67.34	1000.	
60 Ni	0.0191	0.0191	ppb	34.31	1000.	
63 Cu	0.141	0.141	ppb	11.36	#VALUE!	
65 Cu	0.1157	0.1157	ppb	8.89	2000.	
66 Zn	0.2255	0.2255	ppb	16.84	2000.	
68 Zn	0.2499	0.2499	ppb	31.51	#VALUE!	
75 As	0.1267	0.1267	ppb	27.00	1000.	
82 Se	0.2225	0.2225	ppb	93.30	1000.	
88 Sr	0.0006	0.0006	ppb	233.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0908	0.0908	ppb	39.95	1000.	
107 Ag	0.0038	0.0038	ppb	16.35	100.	
109 Ag	0.0027	0.0027	ppb	38.34	#VALUE!	
111 Cd	-0.0693	-0.0693	ppb	27.26	#VALUE!	
114 Cd	0.0012	0.0012	ppb	70.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0403	0.0403	ppb	12.06	1000.	
120 Sn	0.0526	0.0526	ppb	28.15	#VALUE!	
121 Sb	0.0073	0.0073	ppb	30.12	#VALUE!	
123 Sb	0.0071	0.0071	ppb	18.23	1000.	
135 Ba	0.0381	0.0381	ppb	0.98	2000.	
137 Ba	0.0213	0.0213	ppb	50.96	#VALUE!	
182 W	0.0873	0.0873	ppb	42.59	1000.	
203 Tl	0.0015	0.0015	ppb	684.17	1000.	
205 Tl	-0.005	-0.005	ppb	174.91	#VALUE!	
208 Pb	0.1151	0.1151	ppb	8.79	2000.	
232 Th	0.0319	0.0319	ppb	56.94	1000.	
238 U	0.0031	0.0031	ppb	22.01	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2911613.30	0.80	2844110.50	102.4	69.5 - 120	
45 Sc	3008502.50	1.71	2809797.00	107.1	69.5 - 120	
72 Ge	677931.56	0.84	642252.38	105.6	69.5 - 120	
159 Tb	6792393.00	0.69	7051087.50	96.3	69.5 - 120	
209 Bi	3203547.80	1.21	3594227.50	89.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000140

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\028_CCV.D\028_CCV.D#
Date Acquired: May 11 2018 07:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	27.76	ppb	5.19	25	111.04	Fail
11 B	26.04	ppb	1.24	25	104.16	
23 Na	4,936.	ppb	2.99	5,000	98.72	
25 Mg	4,951.	ppb	3.17	5,000	99.02	
27 Al	494.1	ppb	1.07	500	98.82	
28 Si	519.3	ppb	0.68	500	103.86	
29 Si	472.6	ppb	1.17	500	94.52	
39 K	4,949.	ppb	2.47	5,000	98.98	
43 Ca	4,749.	ppb	2.15	5,000	94.98	
44 Ca	4,935.	ppb	1.03	5,000	98.7	
51 V	24.93	ppb	1.34	25	99.72	
52 Cr	25.01	ppb	1.08	25	100.04	
53 Cr	23.34	ppb	3.89	25	93.36	
55 Mn	24.8	ppb	0.73	25	99.2	
56 Fe	4,931.	ppb	1.33	5,000	98.62	
57 Fe	4,986.	ppb	0.94	5,000	99.72	
59 Co	24.99	ppb	0.79	25	99.96	
60 Ni	24.94	ppb	1.90	25	99.76	
63 Cu	25.28	ppb	0.78	25	101.12	
65 Cu	25.17	ppb	0.53	25	100.68	
66 Zn	24.66	ppb	1.59	25	98.64	
68 Zn	24.92	ppb	2.93	25	99.68	
75 As	24.92	ppb	1.93	25	99.68	
82 Se	24.99	ppb	1.25	25	99.96	
88 Sr	23.94	ppb	0.75	25	95.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.63	ppb	0.21	25	98.52	
107 Ag	24.76	ppb	1.12	25	99.04	
109 Ag	24.67	ppb	0.94	25	98.68	
111 Cd	24.68	ppb	0.97	25	98.72	
114 Cd	24.62	ppb	0.90	25	98.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.5	ppb	0.95	25	102	
120 Sn	25.33	ppb	1.27	25	101.32	
121 Sb	25.97	ppb	0.88	25	103.88	
123 Sb	25.86	ppb	0.64	25	103.44	
135 Ba	25.75	ppb	0.87	25	103	
137 Ba	25.49	ppb	0.55	25	101.96	
182 W	23.59	ppb	0.45	25	94.36	
203 Tl	24.61	ppb	2.46	25	98.44	
205 Tl	24.9	ppb	1.29	25	99.6	
208 Pb	24.77	ppb	1.68	25	99.08	
232 Th	23.55	ppb	1.86	25	94.2	
238 U	23.07	ppb	1.56	25	92.28	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2660030.30	3.69	2844110.50	93.5	80 - 120.4	
45 Sc	2924701.50	0.05	2809797.00	104.1	80 - 120.4	
72 Ge	649791.13	1.66	642252.38	101.2	80 - 120.4	
159 Tb	6926449.00	0.55	7051087.50	98.2	80 - 120.4	
209 Bi	3305539.00	1.59	3594227.50	92.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000141

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\029_CCB.D\029_CCB.D#
Date Acquired: May 11 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	77.43	1.00	
11 B	0.9267	ppb	14.28	1.00	
23 Na	2.341	ppb	2.54	1.00	
25 Mg	0.1353	ppb	60.24	1.00	
27 Al	0.0723	ppb	75.29	1.00	
28 Si	44.04	ppb	30.75	1.00	
29 Si	-4.201	ppb	238.28	1.00	
39 K	-2.272	ppb	26.22	1.00	
43 Ca	3.666	ppb	72.12	1.00	
44 Ca	0.9248	ppb	132.68	1.00	
51 V	-0.0141	ppb	613.80	1.00	
52 Cr	-0.0448	ppb	31.61	1.00	
53 Cr	-3.293	ppb	0.53	1.00	
55 Mn	0.0015	ppb	576.12	1.00	
56 Fe	-0.321	ppb	1072.00	1.00	
57 Fe	0.5402	ppb	207.89	1.00	
59 Co	-0.002	ppb	249.06	1.00	
60 Ni	-0.0009	ppb	428.44	1.00	
63 Cu	0.0208	ppb	19.51	1.00	
65 Cu	0.018	ppb	74.82	1.00	
66 Zn	-0.0094	ppb	562.40	1.00	
68 Zn	0.1326	ppb	96.68	1.00	
75 As	0.0655	ppb	116.40	1.00	
82 Se	0.0298	ppb	240.12	1.00	
88 Sr	0.0015	ppb	69.56	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0582	ppb	48.02	1.00	
107 Ag	0.0115	ppb	30.72	1.00	
109 Ag	0.0095	ppb	29.39	1.00	
111 Cd	-0.0303	ppb	57.37	1.00	
114 Cd	0.0012	ppb	55.03	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0389	ppb	29.88	1.00	
120 Sn	0.0443	ppb	13.07	1.00	
121 Sb	0.0099	ppb	6.61	1.00	
123 Sb	0.0103	ppb	57.86	1.00	
135 Ba	0.0036	ppb	241.98	1.00	
137 Ba	0.0097	ppb	118.30	1.00	
182 W	0.0714	ppb	36.22	1.00	
203 Tl	0.0053	ppb	137.64	1.00	
205 Tl	-0.0017	ppb	264.42	1.00	
208 Pb	-0.0118	ppb	41.28	1.00	
232 Th	0.0964	ppb	5.75	1.00	
238 U	0.0036	ppb	69.99	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2737194.30	2.73	2844110.50	96.2	79.5 - 120	
45 Sc	2883470.00	1.36	2809797.00	102.6	79.5 - 120	
72 Ge	652854.25	0.74	642252.38	101.7	79.5 - 120	
159 Tb	6877438.00	0.78	7051087.50	97.5	79.5 - 120	
209 Bi	3380464.30	0.18	3594227.50	94.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000142

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\030SMPL.D\030SMPL.D#
Date Acquired: May 11 2018 07:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4044-002
Misc Info: AQ
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0036	0.0036	ppb	66.29	100.	
11 B	14.33	14.33	ppb	1.50	1000.	
23 Na	15,270.	15,270.	ppb	1.39	200000.	
25 Mg	2,885.	2,885.	ppb	2.32	200000.	
27 Al	42.49	42.49	ppb	3.34	200000.	
28 Si	8,234.	8,234.	ppb	2.79	#VALUE!	
29 Si	8,732.	8,732.	ppb	1.57	10000.	
39 K	2,746.	2,746.	ppb	1.64	200000.	
43 Ca	14,650.	14,650.	ppb	0.86	#VALUE!	
44 Ca	14,620.	14,620.	ppb	1.13	200000.	
51 V	0.3516	0.3516	ppb	7.35	1000.	
52 Cr	1.029	1.029	ppb	4.13	2000.	
53 Cr	-2.241	-2.241	ppb	54.53	#VALUE!	
55 Mn	1.952	1.952	ppb	1.47	2000.	
56 Fe	5.52	5.52	ppb	35.25	#VALUE!	
57 Fe	3.012	3.012	ppb	69.32	100000.	
59 Co	0.0355	0.0355	ppb	24.99	1000.	
60 Ni	0.8047	0.8047	ppb	2.52	1000.	
63 Cu	1,805.	1,805.	ppb	0.50	#VALUE!	
65 Cu	1,831.	1,831.	ppb	0.94	2000.	
66 Zn	21.75	21.75	ppb	1.17	2000.	
68 Zn	22.18	22.18	ppb	0.61	#VALUE!	
75 As	0.3172	0.3172	ppb	27.29	1000.	
82 Se	0.3301	0.3301	ppb	9.98	1000.	
88 Sr	67.96	67.96	ppb	0.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.254	0.254	ppb	4.77	1000.	
107 Ag	0.0419	0.0419	ppb	12.84	100.	
109 Ag	0.0469	0.0469	ppb	11.95	#VALUE!	
111 Cd	-0.0792	-0.0792	ppb	24.55	#VALUE!	
114 Cd	0.0112	0.0112	ppb	47.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0028	-0.0028	ppb	216.93	1000.	
120 Sn	0.0047	0.0047	ppb	78.73	#VALUE!	
121 Sb	0.0593	0.0593	ppb	18.33	#VALUE!	
123 Sb	0.0537	0.0537	ppb	10.62	1000.	
135 Ba	6.441	6.441	ppb	0.58	2000.	
137 Ba	6.268	6.268	ppb	0.58	#VALUE!	
182 W	0.0351	0.0351	ppb	27.87	1000.	
203 Tl	0.0117	0.0117	ppb	78.69	1000.	
205 Tl	0.0094	0.0094	ppb	64.72	#VALUE!	
208 Pb	0.363	0.363	ppb	2.27	2000.	
232 Th	0.0639	0.0639	ppb	12.03	1000.	
238 U	0.3833	0.3833	ppb	1.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2595658.80	0.20	2844110.50	91.3	69.5 - 120	
45 Sc	2770126.80	0.88	2809797.00	98.6	69.5 - 120	
72 Ge	631551.00	0.35	642252.38	98.3	69.5 - 120	
159 Tb	6837805.50	0.80	7051087.50	97.0	69.5 - 120	
209 Bi	3348242.80	0.34	3594227.50	93.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000143

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\031SMPL.D\031SMPL.D#
Date Acquired: May 11 2018 07:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE09IMW1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	336.59	100.	
11 B	0.6679	0.6679	ppb	14.94	1000.	
23 Na	10.41	10.41	ppb	5.00	200000.	
25 Mg	7.884	7.884	ppb	4.84	200000.	
27 Al	4.835	4.835	ppb	0.77	200000.	
28 Si	57.93	57.93	ppb	9.52	#VALUE!	
29 Si	4.313	4.313	ppb	114.28	10000.	
39 K	-2.282	-2.282	ppb	20.89	200000.	
43 Ca	6.389	6.389	ppb	16.61	#VALUE!	
44 Ca	5.85	5.85	ppb	21.28	200000.	
51 V	-0.0633	-0.0633	ppb	189.60	1000.	
52 Cr	0.1218	0.1218	ppb	5.24	2000.	
53 Cr	6.264	6.264	ppb	3.39	#VALUE!	
55 Mn	0.0749	0.0749	ppb	5.50	2000.	
56 Fe	10.77	10.77	ppb	32.04	#VALUE!	
57 Fe	2.959	2.959	ppb	31.70	100000.	
59 Co	0.0051	0.0051	ppb	77.96	1000.	
60 Ni	0.0221	0.0221	ppb	46.38	1000.	
63 Cu	0.1084	0.1084	ppb	14.19	#VALUE!	
65 Cu	0.094	0.094	ppb	19.85	2000.	
66 Zn	0.6921	0.6921	ppb	2.98	2000.	
68 Zn	0.8131	0.8131	ppb	7.71	#VALUE!	
75 As	-0.0359	-0.0359	ppb	310.57	1000.	
82 Se	-0.0946	-0.0946	ppb	218.82	1000.	
88 Sr	0.0176	0.0176	ppb	22.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0202	0.0202	ppb	37.58	1000.	
107 Ag	0.0048	0.0048	ppb	22.84	100.	
109 Ag	0.0064	0.0064	ppb	6.77	#VALUE!	
111 Cd	-0.0731	-0.0731	ppb	27.34	#VALUE!	
114 Cd	-0.0012	-0.0012	ppb	212.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0554	0.0554	ppb	3.83	1000.	
120 Sn	0.0504	0.0504	ppb	9.36	#VALUE!	
121 Sb	0.0307	0.0307	ppb	25.31	#VALUE!	
123 Sb	0.0293	0.0293	ppb	6.82	1000.	
135 Ba	0.0536	0.0536	ppb	21.51	2000.	
137 Ba	0.0554	0.0554	ppb	29.20	#VALUE!	
182 W	0.0235	0.0235	ppb	31.50	1000.	
203 Tl	0.0052	0.0052	ppb	294.54	1000.	
205 Tl	-0.0009	-0.0009	ppb	390.16	#VALUE!	
208 Pb	0.0019	0.0019	ppb	126.82	2000.	
232 Th	0.0253	0.0253	ppb	29.72	1000.	
238 U	0.001	0.001	ppb	46.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2599309.30	3.54	2844110.50	91.4	69.5 - 120	
45 Sc	2729309.30	1.19	2809797.00	97.1	69.5 - 120	
72 Ge	621860.31	0.31	642252.38	96.8	69.5 - 120	
159 Tb	6717940.50	1.83	7051087.50	95.3	69.5 - 120	
209 Bi	3320114.00	2.14	3594227.50	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000144

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\032SMPL.D\032SMPL.D#
Date Acquired: May 11 2018 07:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE09IMW1
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	53.6	10.72	ppb	2.19	100.	
11 B	519.	103.8	ppb	6.71	1000.	
23 Na	8,040.	1,608.	ppb	5.96	200000.	
25 Mg	5,185.	1,037.	ppb	3.73	200000.	
27 Al	2,151.	430.2	ppb	2.97	200000.	
28 Si	1,264.5	252.9	ppb	1.34	#VALUE!	
29 Si	963.5	192.7	ppb	6.69	10000.	
39 K	10,405.	2,081.	ppb	4.93	200000.	
43 Ca	2,936.	587.2	ppb	5.54	#VALUE!	
44 Ca	2,512.5	502.5	ppb	2.96	200000.	
51 V	527.	105.4	ppb	2.29	1000.	
52 Cr	206.35	41.27	ppb	1.09	2000.	
53 Cr	240.55	48.11	ppb	1.76	#VALUE!	
55 Mn	533.	106.6	ppb	1.25	2000.	
56 Fe	1,073.5	214.7	ppb	0.50	#VALUE!	
57 Fe	1,035.5	207.1	ppb	0.28	100000.	
59 Co	545.5	109.1	ppb	0.72	1000.	
60 Ni	529.	105.8	ppb	0.93	1000.	
63 Cu	260.4	52.08	ppb	0.27	#VALUE!	
65 Cu	265.9	53.18	ppb	1.07	2000.	
66 Zn	532.5	106.5	ppb	1.01	2000.	
68 Zn	594.	118.8	ppb	0.34	#VALUE!	
75 As	107.45	21.49	ppb	0.75	1000.	
82 Se	107.8	21.56	ppb	0.53	1000.	
88 Sr	515.	103.	ppb	1.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	106.45	21.29	ppb	0.40	1000.	
107 Ag	53.5	10.7	ppb	1.78	100.	
109 Ag	53.55	10.71	ppb	0.65	#VALUE!	
111 Cd	269.05	53.81	ppb	0.43	#VALUE!	
114 Cd	269.5	53.9	ppb	0.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	536.5	107.3	ppb	2.59	1000.	
120 Sn	538.	107.6	ppb	2.48	#VALUE!	
121 Sb	110.15	22.03	ppb	3.67	#VALUE!	
123 Sb	110.25	22.05	ppb	1.86	1000.	
135 Ba	2,169.5	433.9	ppb	2.39	2000.	
137 Ba	2,200.	440.	ppb	1.59	#VALUE!	
182 W	102.3	20.46	ppb	2.59	1000.	
203 Tl	105.45	21.09	ppb	2.85	1000.	
205 Tl	106.6	21.32	ppb	2.44	#VALUE!	
208 Pb	107.45	21.49	ppb	2.88	2000.	
232 Th	97.35	19.47	ppb	2.84	1000.	
238 U	95.4	19.08	ppb	3.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2678651.80	1.69	2844110.50	94.2	69.5 - 120	
45 Sc	2755301.50	1.16	2809797.00	98.1	69.5 - 120	
72 Ge	621081.13	0.74	642252.38	96.7	69.5 - 120	
159 Tb	6870831.50	1.81	7051087.50	97.4	69.5 - 120	
209 Bi	3362659.00	2.25	3594227.50	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000145

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\033SMPL.D\033SMPL.D#
Date Acquired: May 11 2018 07:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3844-001
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0252	0.0252	ppb	18.86	100.	
11 B	65.91	65.91	ppb	1.72	1000.	
23 Na	183,400.	183,400.	ppb	0.97	200000.	
25 Mg	16,660.	16,660.	ppb	2.52	200000.	
27 Al	1,431.	1,431.	ppb	3.81	200000.	
28 Si	11,950.	11,950.	ppb	3.40	#VALUE!	
29 Si	13,000.	13,000.	ppb	1.81	10000.	>LDR
39 K	71,790.	71,790.	ppb	1.16	200000.	
43 Ca	33,530.	33,530.	ppb	1.75	#VALUE!	
44 Ca	32,340.	32,340.	ppb	1.90	200000.	
51 V	4.89	4.89	ppb	3.72	1000.	
52 Cr	16.05	16.05	ppb	2.93	2000.	
53 Cr	10.02	10.02	ppb	22.96	#VALUE!	
55 Mn	511.6	511.6	ppb	1.34	2000.	
56 Fe	832.3	832.3	ppb	1.51	#VALUE!	
57 Fe	820.4	820.4	ppb	0.84	100000.	
59 Co	0.6858	0.6858	ppb	4.10	1000.	
60 Ni	12.31	12.31	ppb	0.78	1000.	
63 Cu	181.7	181.7	ppb	0.77	#VALUE!	
65 Cu	178.	178.	ppb	0.87	2000.	
66 Zn	273.8	273.8	ppb	0.84	2000.	
68 Zn	271.	271.	ppb	0.84	#VALUE!	
75 As	1.404	1.404	ppb	14.45	1000.	
82 Se	1.652	1.652	ppb	1.63	1000.	
88 Sr	147.9	147.9	ppb	0.40	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.354	4.354	ppb	3.42	1000.	
107 Ag	0.0641	0.0641	ppb	4.65	100.	
109 Ag	0.0604	0.0604	ppb	9.01	#VALUE!	
111 Cd	0.171	0.171	ppb	8.56	#VALUE!	
114 Cd	0.2169	0.2169	ppb	2.71	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.636	4.636	ppb	0.60	1000.	
120 Sn	4.66	4.66	ppb	0.48	#VALUE!	
121 Sb	0.2445	0.2445	ppb	2.84	#VALUE!	
123 Sb	0.2603	0.2603	ppb	5.86	1000.	
135 Ba	63.76	63.76	ppb	0.39	2000.	
137 Ba	63.08	63.08	ppb	0.38	#VALUE!	
182 W	0.3578	0.3578	ppb	4.34	1000.	
203 Tl	0.0283	0.0283	ppb	20.34	1000.	
205 Tl	0.0182	0.0182	ppb	45.66	#VALUE!	
208 Pb	44.85	44.85	ppb	0.61	2000.	
232 Th	0.2807	0.2807	ppb	30.27	1000.	
238 U	0.1542	0.1542	ppb	5.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3827973.80	9.73	2844110.50	134.6	69.5 - 120	IS Fai
45 Sc	3509951.50	5.59	2809797.00	124.9	69.5 - 120	IS Fai
72 Ge	708694.00	4.80	642252.38	110.3	69.5 - 120	
159 Tb	6701818.00	1.89	7051087.50	95.0	69.5 - 120	
209 Bi	2945220.30	0.35	3594227.50	81.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.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 4000146

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\034SMPL.D\034SMPL.D#
Date Acquired: May 11 2018 07:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3855-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.01	0.01	ppb	8.49	100.	
11 B	194.	194.	ppb	5.76	1000.	
23 Na	121,200.	121,200.	ppb	3.69	200000.	
25 Mg	4,992.	4,992.	ppb	2.15	200000.	
27 Al	230.	230.	ppb	0.46	200000.	
28 Si	4,422.	4,422.	ppb	2.15	#VALUE!	
29 Si	4,641.	4,641.	ppb	0.97	10000.	
39 K	10,860.	10,860.	ppb	1.66	200000.	
43 Ca	27,110.	27,110.	ppb	1.27	#VALUE!	
44 Ca	27,000.	27,000.	ppb	1.64	200000.	
51 V	0.4186	0.4186	ppb	10.25	1000.	
52 Cr	1.573	1.573	ppb	3.59	2000.	
53 Cr	7.935	7.935	ppb	12.33	#VALUE!	
55 Mn	51.2	51.2	ppb	0.37	2000.	
56 Fe	450.2	450.2	ppb	1.34	#VALUE!	
57 Fe	445.1	445.1	ppb	0.34	100000.	
59 Co	0.4167	0.4167	ppb	1.99	1000.	
60 Ni	3.259	3.259	ppb	1.31	1000.	
63 Cu	31.99	31.99	ppb	0.75	#VALUE!	
65 Cu	28.23	28.23	ppb	0.80	2000.	
66 Zn	65.17	65.17	ppb	1.23	2000.	
68 Zn	62.99	62.99	ppb	0.39	#VALUE!	
75 As	1.195	1.195	ppb	9.97	1000.	
82 Se	0.5611	0.5611	ppb	9.30	1000.	
88 Sr	118.	118.	ppb	1.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.9841	0.9841	ppb	1.29	1000.	
107 Ag	0.0798	0.0798	ppb	5.72	100.	
109 Ag	0.092	0.092	ppb	2.59	#VALUE!	
111 Cd	0.0368	0.0368	ppb	50.80	#VALUE!	
114 Cd	0.0726	0.0726	ppb	20.51	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.702	3.702	ppb	2.06	1000.	
120 Sn	3.645	3.645	ppb	0.39	#VALUE!	
121 Sb	0.583	0.583	ppb	2.62	#VALUE!	
123 Sb	0.6023	0.6023	ppb	5.85	1000.	
135 Ba	16.48	16.48	ppb	1.90	2000.	
137 Ba	16.47	16.47	ppb	1.00	#VALUE!	
182 W	0.0702	0.0702	ppb	12.82	1000.	
203 Tl	0.0194	0.0194	ppb	33.90	1000.	
205 Tl	0.0112	0.0112	ppb	96.69	#VALUE!	
208 Pb	1.658	1.658	ppb	1.84	2000.	
232 Th	0.029	0.029	ppb	40.26	1000.	
238 U	2.185	2.185	ppb	1.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2730179.80	3.47	2844110.50	96.0	69.5 - 120	
45 Sc	2873332.80	0.97	2809797.00	102.3	69.5 - 120	
72 Ge	636786.06	0.35	642252.38	99.1	69.5 - 120	
159 Tb	6593341.50	0.82	7051087.50	93.5	69.5 - 120	
209 Bi	2974434.00	0.91	3594227.50	82.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000147

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\035SMPL.D\035SMPL.D#
Date Acquired: May 11 2018 07:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE11IMW1
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	139.16	100.	
11 B	8.183	8.183	ppb	16.13	1000.	
23 Na	16.61	16.61	ppb	1.52	200000.	
25 Mg	8.221	8.221	ppb	3.30	200000.	
27 Al	5.079	5.079	ppb	2.56	200000.	
28 Si	61.02	61.02	ppb	11.42	#VALUE!	
29 Si	33.01	33.01	ppb	6.85	10000.	
39 K	6.854	6.854	ppb	26.64	200000.	
43 Ca	4.088	4.088	ppb	38.63	#VALUE!	
44 Ca	3.471	3.471	ppb	32.73	200000.	
51 V	0.0068	0.0068	ppb	1855.50	1000.	
52 Cr	0.3424	0.3424	ppb	4.74	2000.	
53 Cr	9.221	9.221	ppb	3.65	#VALUE!	
55 Mn	0.094	0.094	ppb	6.62	2000.	
56 Fe	24.44	24.44	ppb	10.49	#VALUE!	
57 Fe	5.791	5.791	ppb	22.07	100000.	
59 Co	0.0023	0.0023	ppb	154.35	1000.	
60 Ni	0.0128	0.0128	ppb	18.06	1000.	
63 Cu	0.0516	0.0516	ppb	14.44	#VALUE!	
65 Cu	0.0384	0.0384	ppb	19.46	2000.	
66 Zn	0.5964	0.5964	ppb	13.75	2000.	
68 Zn	0.6599	0.6599	ppb	3.10	#VALUE!	
75 As	0.2156	0.2156	ppb	40.92	1000.	
82 Se	0.0639	0.0639	ppb	75.24	1000.	
88 Sr	0.0064	0.0064	ppb	48.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0073	0.0073	ppb	11.57	1000.	
107 Ag	0.0034	0.0034	ppb	32.28	100.	
109 Ag	0.0037	0.0037	ppb	62.83	#VALUE!	
111 Cd	-0.0334	-0.0334	ppb	0.76	#VALUE!	
114 Cd	0.0022	0.0022	ppb	60.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1795	0.1795	ppb	8.14	1000.	
120 Sn	0.1908	0.1908	ppb	1.21	#VALUE!	
121 Sb	0.0116	0.0116	ppb	33.81	#VALUE!	
123 Sb	0.0134	0.0134	ppb	13.41	1000.	
135 Ba	0.0335	0.0335	ppb	64.57	2000.	
137 Ba	0.0204	0.0204	ppb	10.89	#VALUE!	
182 W	0.0141	0.0141	ppb	41.68	1000.	
203 Tl	0.0181	0.0181	ppb	51.85	1000.	
205 Tl	0.0056	0.0056	ppb	126.42	#VALUE!	
208 Pb	0.1188	0.1188	ppb	7.46	2000.	
232 Th	0.0032	0.0032	ppb	74.79	1000.	
238 U	0.0009	0.0009	ppb	91.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2829275.50	2.58	2844110.50	99.5	69.5 - 120	
45 Sc	2786897.50	0.78	2809797.00	99.2	69.5 - 120	
72 Ge	631357.69	0.80	642252.38	98.3	69.5 - 120	
159 Tb	6534282.00	0.86	7051087.50	92.7	69.5 - 120	
209 Bi	3237179.30	1.33	3594227.50	90.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000148

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\036SMPL.D\036SMPL.D#
Date Acquired: May 11 2018 07:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE11IMW1
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	467.7	93.54	ppb	3.59	1000.	
23 Na	8,210.	1,642.	ppb	1.31	200000.	
25 Mg	5,525.	1,105.	ppb	3.61	200000.	
27 Al	2,181.	436.2	ppb	0.77	200000.	
28 Si	1,004.5	200.9	ppb	4.13	#VALUE!	
29 Si	808.5	161.7	ppb	7.39	10000.	
39 K	10,300.	2,060.	ppb	0.37	200000.	
43 Ca	2,811.5	562.3	ppb	5.43	#VALUE!	
44 Ca	2,471.	494.2	ppb	2.76	200000.	
51 V	533.5	106.7	ppb	1.60	1000.	
52 Cr	205.7	41.14	ppb	0.65	2000.	
53 Cr	250.25	50.05	ppb	1.45	#VALUE!	
55 Mn	530.5	106.1	ppb	1.68	2000.	
56 Fe	1,109.	221.8	ppb	2.36	#VALUE!	
57 Fe	1,023.5	204.7	ppb	0.92	100000.	
59 Co	545.	109.	ppb	2.09	1000.	
60 Ni	530.5	106.1	ppb	0.83	1000.	
63 Cu	265.3	53.06	ppb	0.33	#VALUE!	
65 Cu	267.5	53.5	ppb	0.22	2000.	
66 Zn	536.5	107.3	ppb	0.33	2000.	
68 Zn	593.5	118.7	ppb	1.91	#VALUE!	
75 As	105.95	21.19	ppb	1.21	1000.	
82 Se	107.3	21.46	ppb	1.11	1000.	
88 Sr	486.65	97.33	ppb	0.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	99.45	19.89	ppb	0.78	1000.	
107 Ag	51.2	10.24	ppb	0.46	100.	
109 Ag	51.1	10.22	ppb	1.10	#VALUE!	
111 Cd	257.75	51.55	ppb	0.79	#VALUE!	
114 Cd	257.05	51.41	ppb	1.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	508.5	101.7	ppb	1.45	1000.	
120 Sn	512.5	102.5	ppb	1.99	#VALUE!	
121 Sb	104.65	20.93	ppb	2.70	#VALUE!	
123 Sb	104.2	20.84	ppb	2.01	1000.	
135 Ba	2,106.	421.2	ppb	2.20	2000.	
137 Ba	2,127.5	425.5	ppb	1.35	#VALUE!	
182 W	99.05	19.81	ppb	2.32	1000.	
203 Tl	103.55	20.71	ppb	2.50	1000.	
205 Tl	104.95	20.99	ppb	0.39	#VALUE!	
208 Pb	105.35	21.07	ppb	0.32	2000.	
232 Th	99.15	19.83	ppb	1.80	1000.	
238 U	105.25	21.05	ppb	1.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3304482.80	6.00	2844110.50	116.2	69.5 - 120	
45 Sc	2998253.00	2.96	2809797.00	106.7	69.5 - 120	
72 Ge	639103.19	1.47	642252.38	99.5	69.5 - 120	
159 Tb	6918376.00	1.58	7051087.50	98.1	69.5 - 120	
209 Bi	3430764.80	1.01	3594227.50	95.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000149

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\037SMPL.D\037SMPL.D#
Date Acquired: May 11 2018 07:46 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3997-001
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0023	0.0023	ppb	47.29	100.	
11 B	12.44	12.44	ppb	8.02	1000.	
23 Na	9,040.	9,040.	ppb	3.45	200000.	
25 Mg	6,469.	6,469.	ppb	1.56	200000.	
27 Al	4.602	4.602	ppb	3.05	200000.	
28 Si	3,554.	3,554.	ppb	2.06	#VALUE!	
29 Si	3,620.	3,620.	ppb	4.88	10000.	
39 K	744.5	744.5	ppb	1.06	200000.	
43 Ca	19,530.	19,530.	ppb	1.72	#VALUE!	
44 Ca	19,210.	19,210.	ppb	1.38	200000.	
51 V	0.0404	0.0404	ppb	47.21	1000.	
52 Cr	0.4023	0.4023	ppb	12.64	2000.	
53 Cr	5.817	5.817	ppb	15.69	#VALUE!	
55 Mn	0.2107	0.2107	ppb	8.30	2000.	
56 Fe	12.53	12.53	ppb	35.17	#VALUE!	
57 Fe	4.725	4.725	ppb	65.71	100000.	
59 Co	0.0298	0.0298	ppb	5.18	1000.	
60 Ni	0.2908	0.2908	ppb	9.81	1000.	
63 Cu	0.485	0.485	ppb	4.46	#VALUE!	
65 Cu	0.2311	0.2311	ppb	4.80	2000.	
66 Zn	0.5377	0.5377	ppb	11.41	2000.	
68 Zn	0.9714	0.9714	ppb	11.52	#VALUE!	
75 As	0.2675	0.2675	ppb	58.88	1000.	
82 Se	0.2749	0.2749	ppb	75.26	1000.	
88 Sr	71.23	71.23	ppb	1.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0393	0.0393	ppb	30.03	1000.	
107 Ag	0.0096	0.0096	ppb	7.94	100.	
109 Ag	0.0099	0.0099	ppb	26.51	#VALUE!	
111 Cd	-0.0444	-0.0444	ppb	18.32	#VALUE!	
114 Cd	0.0086	0.0086	ppb	46.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1325	0.1325	ppb	21.29	1000.	
120 Sn	0.1311	0.1311	ppb	18.83	#VALUE!	
121 Sb	0.0155	0.0155	ppb	16.70	#VALUE!	
123 Sb	0.0195	0.0195	ppb	8.04	1000.	
135 Ba	14.29	14.29	ppb	0.87	2000.	
137 Ba	14.44	14.44	ppb	1.41	#VALUE!	
182 W	0.0547	0.0547	ppb	20.28	1000.	
203 Tl	0.0208	0.0208	ppb	3.82	1000.	
205 Tl	0.0166	0.0166	ppb	14.79	#VALUE!	
208 Pb	0.1027	0.1027	ppb	15.07	2000.	
232 Th	0.2462	0.2462	ppb	40.22	1000.	
238 U	0.0074	0.0074	ppb	24.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3158586.00	2.02	2844110.50	111.1	69.5 - 120	
45 Sc	2913932.80	0.16	2809797.00	103.7	69.5 - 120	
72 Ge	638246.50	0.98	642252.38	99.4	69.5 - 120	
159 Tb	6844421.50	0.90	7051087.50	97.1	69.5 - 120	
209 Bi	3393625.00	1.22	3594227.50	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000150

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\038SMPL.D\038SMPL.D#
Date Acquired: May 11 2018 07:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3997-002
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0051	0.0051	ppb	34.80	100.	
11 B	12.97	12.97	ppb	3.07	1000.	
23 Na	16,670.	16,670.	ppb	1.96	200000.	
25 Mg	11,500.	11,500.	ppb	2.45	200000.	
27 Al	5.547	5.547	ppb	3.17	200000.	
28 Si	3,125.	3,125.	ppb	4.02	#VALUE!	
29 Si	3,065.	3,065.	ppb	3.00	10000.	
39 K	1,088.	1,088.	ppb	1.43	200000.	
43 Ca	32,630.	32,630.	ppb	2.76	#VALUE!	
44 Ca	32,000.	32,000.	ppb	2.09	200000.	
51 V	-0.0545	-0.0545	ppb	173.79	1000.	
52 Cr	0.4012	0.4012	ppb	0.55	2000.	
53 Cr	4.881	4.881	ppb	10.40	#VALUE!	
55 Mn	0.5113	0.5113	ppb	3.33	2000.	
56 Fe	17.01	17.01	ppb	15.46	#VALUE!	
57 Fe	9.438	9.438	ppb	41.12	100000.	
59 Co	0.0572	0.0572	ppb	18.04	1000.	
60 Ni	0.5015	0.5015	ppb	6.70	1000.	
63 Cu	0.8229	0.8229	ppb	1.56	#VALUE!	
65 Cu	0.3208	0.3208	ppb	10.39	2000.	
66 Zn	1.605	1.605	ppb	10.86	2000.	
68 Zn	2.961	2.961	ppb	2.92	#VALUE!	
75 As	0.2156	0.2156	ppb	130.29	1000.	
82 Se	0.4305	0.4305	ppb	32.08	1000.	
88 Sr	128.5	128.5	ppb	1.54	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0277	0.0277	ppb	43.54	1000.	
107 Ag	0.0085	0.0085	ppb	17.81	100.	
109 Ag	0.0079	0.0079	ppb	22.18	#VALUE!	
111 Cd	0.0009	0.0009	ppb	2650.70	#VALUE!	
114 Cd	0.0277	0.0277	ppb	20.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0748	0.0748	ppb	15.67	1000.	
120 Sn	0.0718	0.0718	ppb	13.79	#VALUE!	
121 Sb	0.0156	0.0156	ppb	13.48	#VALUE!	
123 Sb	0.0227	0.0227	ppb	22.87	1000.	
135 Ba	42.28	42.28	ppb	2.04	2000.	
137 Ba	42.01	42.01	ppb	2.31	#VALUE!	
182 W	0.0194	0.0194	ppb	58.09	1000.	
203 Tl	0.0285	0.0285	ppb	29.48	1000.	
205 Tl	0.025	0.025	ppb	33.95	#VALUE!	
208 Pb	0.128	0.128	ppb	10.17	2000.	
232 Th	0.0948	0.0948	ppb	5.69	1000.	
238 U	0.0035	0.0035	ppb	30.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2866352.80	2.44	2844110.50	100.8	69.5 - 120	
45 Sc	2794496.00	1.48	2809797.00	99.5	69.5 - 120	
72 Ge	609509.69	0.95	642252.38	94.9	69.5 - 120	
159 Tb	6713810.50	1.00	7051087.50	95.2	69.5 - 120	
209 Bi	3358746.00	1.08	3594227.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000151

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\039SMPL.D\039SMPL.D#
Date Acquired: May 11 2018 07:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3998-001
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0057	0.0057	ppb	27.80	100.	
11 B	15.72	15.72	ppb	4.37	1000.	
23 Na	51,800.	51,800.	ppb	3.07	200000.	
25 Mg	18,500.	18,500.	ppb	2.98	200000.	
27 Al	6.19	6.19	ppb	2.53	200000.	
28 Si	2,353.	2,353.	ppb	2.01	#VALUE!	
29 Si	2,326.	2,326.	ppb	1.48	10000.	
39 K	1,615.	1,615.	ppb	4.60	200000.	
43 Ca	60,500.	60,500.	ppb	3.35	#VALUE!	
44 Ca	57,310.	57,310.	ppb	2.40	200000.	
51 V	-0.0277	-0.0277	ppb	313.98	1000.	
52 Cr	0.7114	0.7114	ppb	11.75	2000.	
53 Cr	3.247	3.247	ppb	3.90	#VALUE!	
55 Mn	0.6467	0.6467	ppb	2.02	2000.	
56 Fe	27.97	27.97	ppb	1.66	#VALUE!	
57 Fe	27.	27.	ppb	6.75	100000.	
59 Co	0.1587	0.1587	ppb	9.82	1000.	
60 Ni	0.6052	0.6052	ppb	8.42	1000.	
63 Cu	2.308	2.308	ppb	1.37	#VALUE!	
65 Cu	0.6703	0.6703	ppb	2.87	2000.	
66 Zn	2.072	2.072	ppb	1.41	2000.	
68 Zn	3.335	3.335	ppb	1.45	#VALUE!	
75 As	0.4455	0.4455	ppb	33.31	1000.	
82 Se	0.5939	0.5939	ppb	26.72	1000.	
88 Sr	232.1	232.1	ppb	0.81	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0267	0.0267	ppb	8.48	1000.	
107 Ag	0.0111	0.0111	ppb	16.45	100.	
109 Ag	0.0103	0.0103	ppb	7.32	#VALUE!	
111 Cd	0.0341	0.0341	ppb	98.07	#VALUE!	
114 Cd	0.0396	0.0396	ppb	22.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0531	0.0531	ppb	33.04	1000.	
120 Sn	0.0574	0.0574	ppb	15.91	#VALUE!	
121 Sb	0.0193	0.0193	ppb	14.86	#VALUE!	
123 Sb	0.0222	0.0222	ppb	19.55	1000.	
135 Ba	46.17	46.17	ppb	0.83	2000.	
137 Ba	45.74	45.74	ppb	1.39	#VALUE!	
182 W	0.0133	0.0133	ppb	17.17	1000.	
203 Tl	0.0194	0.0194	ppb	15.10	1000.	
205 Tl	0.0245	0.0245	ppb	43.65	#VALUE!	
208 Pb	0.1442	0.1442	ppb	3.00	2000.	
232 Th	0.0542	0.0542	ppb	13.80	1000.	
238 U	0.0036	0.0036	ppb	6.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3060444.00	3.56	2844110.50	107.6	69.5 - 120	
45 Sc	2869928.00	1.35	2809797.00	102.1	69.5 - 120	
72 Ge	618023.50	0.95	642252.38	96.2	69.5 - 120	
159 Tb	6832819.50	1.68	7051087.50	96.9	69.5 - 120	
209 Bi	3302295.30	1.29	3594227.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000152

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\040_CCV.D\040_CCV.D#
Date Acquired: May 11 2018 07:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.13	ppb	5.11	25	100.52	
11 B	24.86	ppb	2.79	25	99.44	
23 Na	5,580.	ppb	7.27	5,000	111.6	Fail
25 Mg	5,501.	ppb	4.91	5,000	110.02	
27 Al	521.2	ppb	0.95	500	104.24	
28 Si	465.6	ppb	1.97	500	93.12	
29 Si	463.	ppb	4.29	500	92.6	
39 K	5,091.	ppb	2.49	5,000	101.82	
43 Ca	4,877.	ppb	2.80	5,000	97.54	
44 Ca	5,046.	ppb	1.74	5,000	100.92	
51 V	25.76	ppb	1.11	25	103.04	
52 Cr	25.71	ppb	0.83	25	102.84	
53 Cr	28.09	ppb	11.53	25	112.36	
55 Mn	25.36	ppb	1.05	25	101.44	
56 Fe	4,986.	ppb	1.41	5,000	99.72	
57 Fe	5,072.	ppb	1.86	5,000	101.44	
59 Co	25.57	ppb	1.74	25	102.28	
60 Ni	25.87	ppb	1.09	25	103.48	
63 Cu	25.95	ppb	0.36	25	103.8	
65 Cu	25.82	ppb	1.64	25	103.28	
66 Zn	25.4	ppb	0.83	25	101.6	
68 Zn	26.04	ppb	1.75	25	104.16	
75 As	24.97	ppb	0.84	25	99.88	
82 Se	25.85	ppb	0.06	25	103.4	
88 Sr	23.49	ppb	0.48	25	93.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.1	ppb	1.01	25	96.4	
107 Ag	24.41	ppb	0.23	25	97.64	
109 Ag	24.41	ppb	0.65	25	97.64	
111 Cd	24.4	ppb	1.70	25	97.6	
114 Cd	24.39	ppb	1.22	25	97.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.95	ppb	1.41	25	99.8	
120 Sn	24.77	ppb	1.21	25	99.08	
121 Sb	25.12	ppb	1.13	25	100.48	
123 Sb	25.14	ppb	1.41	25	100.56	
135 Ba	25.43	ppb	1.79	25	101.72	
137 Ba	25.67	ppb	1.59	25	102.68	
182 W	25.03	ppb	1.96	25	100.12	
203 Tl	25.1	ppb	1.20	25	100.4	
205 Tl	25.28	ppb	1.46	25	101.12	
208 Pb	25.49	ppb	1.76	25	101.96	
232 Th	25.23	ppb	2.33	25	100.92	
238 U	26.95	ppb	1.72	25	107.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3708157.50	10.46	2844110.50	130.4	80 - 120.4	ISFail
45 Sc	3090825.50	2.92	2809797.00	110.0	80 - 120.4	
72 Ge	651285.38	2.12	642252.38	101.4	80 - 120.4	
159 Tb	6978229.00	1.67	7051087.50	99.0	80 - 120.4	
209 Bi	3580422.00	1.46	3594227.50	99.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\041_CCB.D\041_CCB.D#
Date Acquired: May 11 2018 08:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0015	ppb	37.14	1.00	
11 B	2.55	ppb	17.38	1.00	
23 Na	2.096	ppb	7.86	1.00	
25 Mg	0.1364	ppb	83.21	1.00	
27 Al	0.0183	ppb	164.57	1.00	
28 Si	4.418	ppb	210.03	1.00	
29 Si	12.24	ppb	157.11	1.00	
39 K	4.247	ppb	37.09	1.00	
43 Ca	-0.6794	ppb	279.66	1.00	
44 Ca	-0.442	ppb	201.33	1.00	
51 V	-0.0287	ppb	58.84	1.00	
52 Cr	0.1983	ppb	11.35	1.00	
53 Cr	-3.238	ppb	10.66	1.00	
55 Mn	0.005	ppb	137.58	1.00	
56 Fe	10.54	ppb	26.12	1.00	
57 Fe	2.123	ppb	82.90	1.00	
59 Co	0.0029	ppb	108.88	1.00	
60 Ni	-0.0054	ppb	141.80	1.00	
63 Cu	0.0124	ppb	65.32	1.00	
65 Cu	0.0014	ppb	449.35	1.00	
66 Zn	0.0026	ppb	2668.40	1.00	
68 Zn	0.1229	ppb	26.89	1.00	
75 As	0.1301	ppb	62.97	1.00	
82 Se	-0.1322	ppb	90.77	1.00	
88 Sr	0.0008	ppb	317.51	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0262	ppb	65.79	1.00	
107 Ag	0.0099	ppb	42.47	1.00	
109 Ag	0.0119	ppb	24.53	1.00	
111 Cd	0.0033	ppb	414.15	1.00	
114 Cd	0.0004	ppb	306.84	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0754	ppb	33.03	1.00	
120 Sn	0.0725	ppb	25.49	1.00	
121 Sb	0.0089	ppb	56.37	1.00	
123 Sb	0.0085	ppb	107.93	1.00	
135 Ba	0.0148	ppb	32.22	1.00	
137 Ba	0.0087	ppb	44.82	1.00	
182 W	0.0454	ppb	46.44	1.00	
203 Tl	0.0156	ppb	39.08	1.00	
205 Tl	0.0111	ppb	46.27	1.00	
208 Pb	0.1201	ppb	9.13	1.00	
232 Th	0.1107	ppb	15.79	1.00	
238 U	0.0043	ppb	29.01	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2805648.50	2.92	2844110.50	98.6	79.5 - 120	
45 Sc	2614487.30	2.31	2809797.00	93.0	79.5 - 120	
72 Ge	586771.06	0.89	642252.38	91.4	79.5 - 120	
159 Tb	6548914.50	1.08	7051087.50	92.9	79.5 - 120	
209 Bi	3461879.80	0.25	3594227.50	96.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000154

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\042SMPL.D\042SMPL.D#
Date Acquired: May 11 2018 08:06 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4027-001
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0218	0.0218	ppb	15.12	100.	
11 B	3,801.	3,801.	ppb	3.85	1000.	>LDR
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	754.5	754.5	ppb	1.98	200000.	
27 Al	800.8	800.8	ppb	2.15	200000.	
28 Si	84,040.	84,040.	ppb	2.48	#VALUE!	
29 Si	84,130.	84,130.	ppb	2.08	10000.	>LDR
39 K	----	--------	ppb	--------	200000.	>LDR
43 Ca	9,832.	9,832.	ppb	1.39	#VALUE!	
44 Ca	9,914.	9,914.	ppb	1.64	200000.	
51 V	5.082	5.082	ppb	3.51	1000.	
52 Cr	21.41	21.41	ppb	1.91	2000.	
53 Cr	15.55	15.55	ppb	21.46	#VALUE!	
55 Mn	6.775	6.775	ppb	0.81	2000.	
56 Fe	110.5	110.5	ppb	4.07	#VALUE!	
57 Fe	80.71	80.71	ppb	0.35	100000.	
59 Co	19.21	19.21	ppb	1.67	1000.	
60 Ni	56.54	56.54	ppb	1.42	1000.	
63 Cu	188.	188.	ppb	1.07	#VALUE!	
65 Cu	138.8	138.8	ppb	1.54	2000.	
66 Zn	40.13	40.13	ppb	1.09	2000.	
68 Zn	41.19	41.19	ppb	0.78	#VALUE!	
75 As	0.7795	0.7795	ppb	33.75	1000.	
82 Se	0.572	0.572	ppb	35.59	1000.	
88 Sr	67.21	67.21	ppb	1.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.011	8.011	ppb	2.57	1000.	
107 Ag	0.0192	0.0192	ppb	15.70	100.	
109 Ag	0.0131	0.0131	ppb	23.98	#VALUE!	
111 Cd	0.0273	0.0273	ppb	136.32	#VALUE!	
114 Cd	0.0053	0.0053	ppb	284.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.127	3.127	ppb	3.01	1000.	
120 Sn	3.111	3.111	ppb	2.57	#VALUE!	
121 Sb	4.434	4.434	ppb	1.82	#VALUE!	
123 Sb	4.411	4.411	ppb	2.01	1000.	
135 Ba	6.052	6.052	ppb	1.23	2000.	
137 Ba	6.01	6.01	ppb	1.86	#VALUE!	
182 W	20.76	20.76	ppb	0.42	1000.	
203 Tl	0.0301	0.0301	ppb	9.72	1000.	
205 Tl	0.0289	0.0289	ppb	40.19	#VALUE!	
208 Pb	14.61	14.61	ppb	0.85	2000.	
232 Th	0.1725	0.1725	ppb	13.66	1000.	
238 U	0.5277	0.5277	ppb	3.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2747715.50	3.15	2844110.50	96.6	69.5 - 120	
45 Sc	2962147.80	1.73	2809797.00	105.4	69.5 - 120	
72 Ge	593431.88	0.91	642252.38	92.4	69.5 - 120	
159 Tb	5736164.00	0.99	7051087.50	81.4	69.5 - 120	
209 Bi	2317942.50	1.45	3594227.50	64.5	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

4 :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 4000155

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\043SMPL.D\043SMPL.D#
Date Acquired: May 11 2018 08:10 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4028-001
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	11.78	100.	
11 B	573.9	573.9	ppb	0.33	1000.	
23 Na	139,300.	139,300.	ppb	1.03	200000.	
25 Mg	178.4	178.4	ppb	1.32	200000.	
27 Al	273.7	273.7	ppb	2.72	200000.	
28 Si	22,360.	22,360.	ppb	2.94	#VALUE!	
29 Si	22,120.	22,120.	ppb	3.24	10000.	>LDR
39 K	46,390.	46,390.	ppb	1.68	200000.	
43 Ca	987.2	987.2	ppb	4.94	#VALUE!	
44 Ca	1,065.	1,065.	ppb	1.82	200000.	
51 V	0.48	0.48	ppb	6.83	1000.	
52 Cr	6.237	6.237	ppb	1.03	2000.	
53 Cr	12.02	12.02	ppb	1.89	#VALUE!	
55 Mn	7.532	7.532	ppb	0.62	2000.	
56 Fe	76.66	76.66	ppb	3.86	#VALUE!	
57 Fe	56.31	56.31	ppb	4.11	100000.	
59 Co	8.306	8.306	ppb	1.79	1000.	
60 Ni	41.72	41.72	ppb	0.35	1000.	
63 Cu	137.3	137.3	ppb	1.72	#VALUE!	
65 Cu	133.2	133.2	ppb	1.02	2000.	
66 Zn	21.5	21.5	ppb	1.48	2000.	
68 Zn	21.92	21.92	ppb	1.81	#VALUE!	
75 As	0.3501	0.3501	ppb	24.91	1000.	
82 Se	0.1454	0.1454	ppb	112.45	1000.	
88 Sr	2.49	2.49	ppb	0.50	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	2.232	2.232	ppb	0.35	1000.	
107 Ag	0.0169	0.0169	ppb	19.66	100.	
109 Ag	0.011	0.011	ppb	36.52	#VALUE!	
111 Cd	-0.0871	-0.0871	ppb	24.24	#VALUE!	
114 Cd	0.0031	0.0031	ppb	111.96	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.7721	0.7721	ppb	3.62	1000.	
120 Sn	0.7731	0.7731	ppb	1.89	#VALUE!	
121 Sb	2.547	2.547	ppb	1.70	#VALUE!	
123 Sb	2.526	2.526	ppb	1.49	1000.	
135 Ba	1.645	1.645	ppb	3.18	2000.	
137 Ba	1.615	1.615	ppb	3.51	#VALUE!	
182 W	5.189	5.189	ppb	1.97	1000.	
203 Tl	0.0117	0.0117	ppb	67.86	1000.	
205 Tl	0.0116	0.0116	ppb	27.00	#VALUE!	
208 Pb	7.391	7.391	ppb	1.69	2000.	
232 Th	0.0452	0.0452	ppb	14.09	1000.	
238 U	0.0941	0.0941	ppb	3.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2784158.30	3.97	2844110.50	97.9	69.5 - 120	
45 Sc	3039975.30	0.90	2809797.00	108.2	69.5 - 120	
72 Ge	649428.81	1.50	642252.38	101.1	69.5 - 120	
159 Tb	6921994.00	0.50	7051087.50	98.2	69.5 - 120	
209 Bi	3137191.80	1.08	3594227.50	87.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000156

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\044SMPL.D\044SMPL.D#
Date Acquired: May 11 2018 08:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4030-001
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0589	0.0589	ppb	9.39	100.	
11 B	33.43	33.43	ppb	5.96	1000.	
23 Na	13,450.	13,450.	ppb	2.12	200000.	
25 Mg	2,157.	2,157.	ppb	1.82	200000.	
27 Al	247.	247.	ppb	3.46	200000.	
28 Si	3,400.	3,400.	ppb	3.54	#VALUE!	
29 Si	3,491.	3,491.	ppb	5.96	10000.	
39 K	1,799.	1,799.	ppb	0.94	200000.	
43 Ca	7,558.	7,558.	ppb	0.24	#VALUE!	
44 Ca	7,602.	7,602.	ppb	1.19	200000.	
51 V	0.7699	0.7699	ppb	16.37	1000.	
52 Cr	1.496	1.496	ppb	1.09	2000.	
53 Cr	6.552	6.552	ppb	13.99	#VALUE!	
55 Mn	114.6	114.6	ppb	1.05	2000.	
56 Fe	1,768.	1,768.	ppb	1.13	#VALUE!	
57 Fe	1,758.	1,758.	ppb	0.79	100000.	
59 Co	1.131	1.131	ppb	5.04	1000.	
60 Ni	5.177	5.177	ppb	2.15	1000.	
63 Cu	7.789	7.789	ppb	1.24	#VALUE!	
65 Cu	7.418	7.418	ppb	0.55	2000.	
66 Zn	27.11	27.11	ppb	1.54	2000.	
68 Zn	26.79	26.79	ppb	0.70	#VALUE!	
75 As	2.846	2.846	ppb	7.89	1000.	
82 Se	0.4328	0.4328	ppb	61.58	1000.	
88 Sr	47.77	47.77	ppb	0.89	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.6353	0.6353	ppb	2.65	1000.	
107 Ag	0.0368	0.0368	ppb	12.06	100.	
109 Ag	0.039	0.039	ppb	6.38	#VALUE!	
111 Cd	0.1365	0.1365	ppb	8.86	#VALUE!	
114 Cd	0.2302	0.2302	ppb	4.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2073	0.2073	ppb	6.59	1000.	
120 Sn	0.2119	0.2119	ppb	6.18	#VALUE!	
121 Sb	0.2209	0.2209	ppb	2.59	#VALUE!	
123 Sb	0.2139	0.2139	ppb	7.98	1000.	
135 Ba	6.037	6.037	ppb	1.40	2000.	
137 Ba	5.981	5.981	ppb	1.38	#VALUE!	
182 W	0.5119	0.5119	ppb	3.22	1000.	
203 Tl	0.0308	0.0308	ppb	10.00	1000.	
205 Tl	0.0223	0.0223	ppb	29.45	#VALUE!	
208 Pb	1.53	1.53	ppb	1.48	2000.	
232 Th	0.1247	0.1247	ppb	0.88	1000.	
238 U	0.3105	0.3105	ppb	3.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2691823.50	2.78	2844110.50	94.6	69.5 - 120	
45 Sc	2880326.50	0.59	2809797.00	102.5	69.5 - 120	
72 Ge	645958.44	0.75	642252.38	100.6	69.5 - 120	
159 Tb	7083885.50	1.29	7051087.50	100.5	69.5 - 120	
209 Bi	3469002.50	0.84	3594227.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000157

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\045SMPL.D\045SMPL.D#
Date Acquired: May 11 2018 08:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4038-001
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0066	0.0066	ppb	5.27	100.	
11 B	49.77	49.77	ppb	0.96	1000.	
23 Na	39,680.	39,680.	ppb	2.03	200000.	
25 Mg	21,620.	21,620.	ppb	2.36	200000.	
27 Al	4.749	4.749	ppb	2.97	200000.	
28 Si	9,208.	9,208.	ppb	3.26	#VALUE!	
29 Si	9,454.	9,454.	ppb	2.93	10000.	
39 K	3,998.	3,998.	ppb	1.59	200000.	
43 Ca	76,090.	76,090.	ppb	1.34	#VALUE!	
44 Ca	72,600.	72,600.	ppb	0.74	200000.	
51 V	0.0426	0.0426	ppb	264.44	1000.	
52 Cr	0.307	0.307	ppb	21.13	2000.	
53 Cr	5.278	5.278	ppb	28.29	#VALUE!	
55 Mn	22.77	22.77	ppb	0.56	2000.	
56 Fe	20.16	20.16	ppb	7.89	#VALUE!	
57 Fe	7.323	7.323	ppb	50.72	100000.	
59 Co	0.1326	0.1326	ppb	1.34	1000.	
60 Ni	-0.1501	-0.1501	ppb	1.84	1000.	
63 Cu	9.588	9.588	ppb	0.80	#VALUE!	
65 Cu	8.261	8.261	ppb	1.11	2000.	
66 Zn	2.645	2.645	ppb	2.77	2000.	
68 Zn	8.719	8.719	ppb	2.32	#VALUE!	
75 As	0.3989	0.3989	ppb	57.13	1000.	
82 Se	0.2757	0.2757	ppb	70.26	1000.	
88 Sr	951.5	951.5	ppb	0.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3417	0.3417	ppb	6.26	1000.	
107 Ag	0.0049	0.0049	ppb	64.94	100.	
109 Ag	0.0019	0.0019	ppb	105.79	#VALUE!	
111 Cd	-0.0528	-0.0528	ppb	27.50	#VALUE!	
114 Cd	0.0009	0.0009	ppb	89.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0269	0.0269	ppb	51.90	1000.	
120 Sn	0.0326	0.0326	ppb	11.27	#VALUE!	
121 Sb	0.198	0.198	ppb	1.89	#VALUE!	
123 Sb	0.1994	0.1994	ppb	8.31	1000.	
135 Ba	189.3	189.3	ppb	1.71	2000.	
137 Ba	189.1	189.1	ppb	1.74	#VALUE!	
182 W	0.0287	0.0287	ppb	26.85	1000.	
203 Tl	0.018	0.018	ppb	28.46	1000.	
205 Tl	0.0135	0.0135	ppb	39.85	#VALUE!	
208 Pb	0.4075	0.4075	ppb	2.38	2000.	
232 Th	0.0174	0.0174	ppb	24.78	1000.	
238 U	15.77	15.77	ppb	1.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2695321.50	2.29	2844110.50	94.8	69.5 - 120	
45 Sc	2896299.00	1.34	2809797.00	103.1	69.5 - 120	
72 Ge	637607.38	0.79	642252.38	99.3	69.5 - 120	
159 Tb	7124118.00	1.43	7051087.50	101.0	69.5 - 120	
209 Bi	3318362.30	1.18	3594227.50	92.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000158

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\046SMPL.D\046SMPL.D#
Date Acquired: May 11 2018 08:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4038-002
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0031	0.0031	ppb	77.77	100.	
11 B	35.67	35.67	ppb	6.30	1000.	
23 Na	20,460.	20,460.	ppb	1.34	200000.	
25 Mg	23,010.	23,010.	ppb	1.47	200000.	
27 Al	4.305	4.305	ppb	4.67	200000.	
28 Si	10,450.	10,450.	ppb	2.13	#VALUE!	
29 Si	11,020.	11,020.	ppb	1.54	10000.	>LDR
39 K	2,720.	2,720.	ppb	1.76	200000.	
43 Ca	88,690.	88,690.	ppb	0.33	#VALUE!	
44 Ca	84,670.	84,670.	ppb	1.15	200000.	
51 V	0.156	0.156	ppb	36.58	1000.	
52 Cr	0.5299	0.5299	ppb	12.63	2000.	
53 Cr	3.445	3.445	ppb	24.69	#VALUE!	
55 Mn	5.889	5.889	ppb	1.54	2000.	
56 Fe	19.91	19.91	ppb	5.16	#VALUE!	
57 Fe	16.38	16.38	ppb	17.58	100000.	
59 Co	0.1484	0.1484	ppb	5.53	1000.	
60 Ni	-0.1898	-0.1898	ppb	9.20	1000.	
63 Cu	3.121	3.121	ppb	2.05	#VALUE!	
65 Cu	2.559	2.559	ppb	0.03	2000.	
66 Zn	3.072	3.072	ppb	2.87	2000.	
68 Zn	7.248	7.248	ppb	2.64	#VALUE!	
75 As	0.6398	0.6398	ppb	15.24	1000.	
82 Se	0.4968	0.4968	ppb	26.63	1000.	
88 Sr	590.	590.	ppb	1.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0509	0.0509	ppb	18.35	1000.	
107 Ag	0.0019	0.0019	ppb	112.59	100.	
109 Ag	0.0024	0.0024	ppb	30.09	#VALUE!	
111 Cd	-0.0423	-0.0423	ppb	37.85	#VALUE!	
114 Cd	0.0067	0.0067	ppb	105.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0189	0.0189	ppb	47.34	1000.	
120 Sn	0.0168	0.0168	ppb	56.83	#VALUE!	
121 Sb	0.116	0.116	ppb	7.67	#VALUE!	
123 Sb	0.1261	0.1261	ppb	5.35	1000.	
135 Ba	142.	142.	ppb	1.47	2000.	
137 Ba	140.5	140.5	ppb	1.25	#VALUE!	
182 W	0.0138	0.0138	ppb	14.28	1000.	
203 Tl	0.0151	0.0151	ppb	46.41	1000.	
205 Tl	0.0128	0.0128	ppb	48.31	#VALUE!	
208 Pb	0.3954	0.3954	ppb	6.98	2000.	
232 Th	0.0113	0.0113	ppb	36.75	1000.	
238 U	13.9	13.9	ppb	0.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2721533.50	3.63	2844110.50	95.7	69.5 - 120	
45 Sc	2841135.30	0.68	2809797.00	101.1	69.5 - 120	
72 Ge	630350.75	0.84	642252.38	98.1	69.5 - 120	
159 Tb	7082381.50	1.56	7051087.50	100.4	69.5 - 120	
209 Bi	3412292.30	1.48	3594227.50	94.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000159

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\047SMPL.D\047SMPL.D#
Date Acquired: May 11 2018 08:27 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4038-003
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0049	0.0049	ppb	40.00	100.	
11 B	78.5	78.5	ppb	2.59	1000.	
23 Na	124,800.	124,800.	ppb	3.79	200000.	
25 Mg	9,894.	9,894.	ppb	0.58	200000.	
27 Al	8.815	8.815	ppb	3.24	200000.	
28 Si	7,283.	7,283.	ppb	2.11	#VALUE!	
29 Si	7,577.	7,577.	ppb	2.33	10000.	
39 K	5,496.	5,496.	ppb	2.39	200000.	
43 Ca	33,310.	33,310.	ppb	0.24	#VALUE!	
44 Ca	32,840.	32,840.	ppb	1.18	200000.	
51 V	0.0066	0.0066	ppb	465.97	1000.	
52 Cr	0.384	0.384	ppb	8.22	2000.	
53 Cr	9.899	9.899	ppb	2.35	#VALUE!	
55 Mn	123.7	123.7	ppb	1.38	2000.	
56 Fe	204.2	204.2	ppb	4.86	#VALUE!	
57 Fe	197.5	197.5	ppb	3.61	100000.	
59 Co	0.1356	0.1356	ppb	12.15	1000.	
60 Ni	0.442	0.442	ppb	2.68	1000.	
63 Cu	44.46	44.46	ppb	0.88	#VALUE!	
65 Cu	40.22	40.22	ppb	0.25	2000.	
66 Zn	7.907	7.907	ppb	1.30	2000.	
68 Zn	11.04	11.04	ppb	2.83	#VALUE!	
75 As	1.23	1.23	ppb	15.59	1000.	
82 Se	0.3538	0.3538	ppb	72.33	1000.	
88 Sr	213.5	213.5	ppb	0.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.725	1.725	ppb	1.60	1000.	
107 Ag	0.0027	0.0027	ppb	8.62	100.	
109 Ag	0.0037	0.0037	ppb	36.98	#VALUE!	
111 Cd	-0.0158	-0.0158	ppb	27.33	#VALUE!	
114 Cd	0.0194	0.0194	ppb	9.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0926	0.0926	ppb	18.94	1000.	
120 Sn	0.1026	0.1026	ppb	20.15	#VALUE!	
121 Sb	0.2539	0.2539	ppb	1.46	#VALUE!	
123 Sb	0.2586	0.2586	ppb	4.79	1000.	
135 Ba	98.75	98.75	ppb	1.49	2000.	
137 Ba	98.06	98.06	ppb	0.49	#VALUE!	
182 W	0.0729	0.0729	ppb	6.63	1000.	
203 Tl	0.0092	0.0092	ppb	75.49	1000.	
205 Tl	0.0106	0.0106	ppb	22.30	#VALUE!	
208 Pb	0.8683	0.8683	ppb	0.82	2000.	
232 Th	0.0162	0.0162	ppb	20.19	1000.	
238 U	15.65	15.65	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2695622.80	2.43	2844110.50	94.8	69.5 - 120	
45 Sc	2908831.30	0.09	2809797.00	103.5	69.5 - 120	
72 Ge	630840.38	0.88	642252.38	98.2	69.5 - 120	
159 Tb	7118420.50	1.03	7051087.50	101.0	69.5 - 120	
209 Bi	3299173.80	0.65	3594227.50	91.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000160

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\048SMPL.D\048SMPL.D#
Date Acquired: May 11 2018 08:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4044-001
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0185	0.0185	ppb	24.25	100.	
11 B	54.32	54.32	ppb	3.80	1000.	
23 Na	15,200.	15,200.	ppb	1.46	200000.	
25 Mg	2,997.	2,997.	ppb	1.71	200000.	
27 Al	478.1	478.1	ppb	1.90	200000.	
28 Si	7,982.	7,982.	ppb	2.56	#VALUE!	
29 Si	8,375.	8,375.	ppb	3.45	10000.	
39 K	2,793.	2,793.	ppb	2.80	200000.	
43 Ca	15,970.	15,970.	ppb	2.65	#VALUE!	
44 Ca	15,730.	15,730.	ppb	1.83	200000.	
51 V	0.3149	0.3149	ppb	22.08	1000.	
52 Cr	0.5659	0.5659	ppb	4.00	2000.	
53 Cr	9.119	9.119	ppb	5.27	#VALUE!	
55 Mn	2.745	2.745	ppb	1.23	2000.	
56 Fe	18.75	18.75	ppb	7.48	#VALUE!	
57 Fe	12.91	12.91	ppb	20.27	100000.	
59 Co	0.0582	0.0582	ppb	10.13	1000.	
60 Ni	2.092	2.092	ppb	2.31	1000.	
63 Cu	924.4	924.4	ppb	0.70	#VALUE!	
65 Cu	948.6	948.6	ppb	0.58	2000.	
66 Zn	1,166.	1,166.	ppb	0.34	2000.	
68 Zn	1,146.	1,146.	ppb	0.62	#VALUE!	
75 As	0.4563	0.4563	ppb	7.87	1000.	
82 Se	0.2389	0.2389	ppb	47.80	1000.	
88 Sr	89.92	89.92	ppb	0.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2315	0.2315	ppb	8.08	1000.	
107 Ag	0.0402	0.0402	ppb	6.71	100.	
109 Ag	0.0321	0.0321	ppb	21.83	#VALUE!	
111 Cd	-0.0314	-0.0314	ppb	25.05	#VALUE!	
114 Cd	-0.0129	-0.0129	ppb	54.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0201	0.0201	ppb	5.28	1000.	
120 Sn	0.0127	0.0127	ppb	36.96	#VALUE!	
121 Sb	0.0626	0.0626	ppb	10.28	#VALUE!	
123 Sb	0.0686	0.0686	ppb	11.94	1000.	
135 Ba	8.948	8.948	ppb	0.12	2000.	
137 Ba	8.904	8.904	ppb	0.56	#VALUE!	
182 W	0.0138	0.0138	ppb	7.58	1000.	
203 Tl	0.0237	0.0237	ppb	17.56	1000.	
205 Tl	0.0314	0.0314	ppb	29.64	#VALUE!	
208 Pb	2.948	2.948	ppb	1.13	2000.	
232 Th	0.0347	0.0347	ppb	4.72	1000.	
238 U	0.4519	0.4519	ppb	2.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2675050.80	2.19	2844110.50	94.1	69.5 - 120	
45 Sc	2895015.50	2.12	2809797.00	103.0	69.5 - 120	
72 Ge	648313.00	0.86	642252.38	100.9	69.5 - 120	
159 Tb	7283897.50	0.31	7051087.50	103.3	69.5 - 120	
209 Bi	3591753.30	1.18	3594227.50	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000161

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\049SMPL.D\049SMPL.D#
Date Acquired: May 11 2018 08:35 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4055-001
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0025	0.0025	ppb	26.50	100.	
11 B	43.16	43.16	ppb	5.40	1000.	
23 Na	83,260.	83,260.	ppb	1.18	200000.	
25 Mg	8,697.	8,697.	ppb	1.67	200000.	
27 Al	9.181	9.181	ppb	3.03	200000.	
28 Si	2,944.	2,944.	ppb	0.62	#VALUE!	
29 Si	2,931.	2,931.	ppb	2.95	10000.	
39 K	3,796.	3,796.	ppb	2.07	200000.	
43 Ca	98,500.	98,500.	ppb	2.52	#VALUE!	
44 Ca	92,080.	92,080.	ppb	1.38	200000.	
51 V	0.0031	0.0031	ppb	1860.20	1000.	
52 Cr	0.3702	0.3702	ppb	7.39	2000.	
53 Cr	1.927	1.927	ppb	73.22	#VALUE!	
55 Mn	55.6	55.6	ppb	0.63	2000.	
56 Fe	59.74	59.74	ppb	5.57	#VALUE!	
57 Fe	65.1	65.1	ppb	10.52	100000.	
59 Co	0.2888	0.2888	ppb	1.45	1000.	
60 Ni	0.071	0.071	ppb	63.53	1000.	
63 Cu	6.266	6.266	ppb	2.07	#VALUE!	
65 Cu	3.294	3.294	ppb	2.03	2000.	
66 Zn	17.31	17.31	ppb	0.36	2000.	
68 Zn	17.83	17.83	ppb	0.80	#VALUE!	
75 As	0.3476	0.3476	ppb	25.73	1000.	
82 Se	0.4164	0.4164	ppb	53.12	1000.	
88 Sr	492.8	492.8	ppb	0.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.531	1.531	ppb	3.16	1000.	
107 Ag	0.0052	0.0052	ppb	69.54	100.	
109 Ag	0.0034	0.0034	ppb	25.49	#VALUE!	
111 Cd	0.0004	0.0004	ppb	1569.10	#VALUE!	
114 Cd	0.0151	0.0151	ppb	18.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1101	0.1101	ppb	16.78	1000.	
120 Sn	0.0966	0.0966	ppb	4.51	#VALUE!	
121 Sb	0.1289	0.1289	ppb	11.78	#VALUE!	
123 Sb	0.1216	0.1216	ppb	7.24	1000.	
135 Ba	24.23	24.23	ppb	0.83	2000.	
137 Ba	24.69	24.69	ppb	1.29	#VALUE!	
182 W	0.0084	0.0084	ppb	5.14	1000.	
203 Tl	0.0147	0.0147	ppb	47.56	1000.	
205 Tl	0.0057	0.0057	ppb	128.81	#VALUE!	
208 Pb	0.1943	0.1943	ppb	7.69	2000.	
232 Th	0.0099	0.0099	ppb	3.90	1000.	
238 U	0.3294	0.3294	ppb	2.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2660913.00	0.28	2844110.50	93.6	69.5 - 120	
45 Sc	2780671.80	1.94	2809797.00	99.0	69.5 - 120	
72 Ge	613966.94	0.54	642252.38	95.6	69.5 - 120	
159 Tb	6959347.00	0.78	7051087.50	98.7	69.5 - 120	
209 Bi	3299206.50	0.18	3594227.50	91.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000162

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\050SMPL.D\050SMPL.D#
Date Acquired: May 11 2018 08:39 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4056-001
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0037	0.0037	ppb	23.45	100.	
11 B	92.5	92.5	ppb	1.00	1000.	
23 Na	79,040.	79,040.	ppb	2.58	200000.	
25 Mg	4,286.	4,286.	ppb	3.10	200000.	
27 Al	51.39	51.39	ppb	2.44	200000.	
28 Si	5,772.	5,772.	ppb	0.74	#VALUE!	
29 Si	6,157.	6,157.	ppb	1.37	10000.	
39 K	9,027.	9,027.	ppb	1.48	200000.	
43 Ca	21,040.	21,040.	ppb	1.84	#VALUE!	
44 Ca	21,260.	21,260.	ppb	1.36	200000.	
51 V	0.3835	0.3835	ppb	16.18	1000.	
52 Cr	0.5768	0.5768	ppb	5.81	2000.	
53 Cr	9.816	9.816	ppb	9.35	#VALUE!	
55 Mn	40.39	40.39	ppb	0.58	2000.	
56 Fe	140.9	140.9	ppb	3.24	#VALUE!	
57 Fe	135.2	135.2	ppb	1.59	100000.	
59 Co	0.2592	0.2592	ppb	1.75	1000.	
60 Ni	3.219	3.219	ppb	1.87	1000.	
63 Cu	20.55	20.55	ppb	0.22	#VALUE!	
65 Cu	17.86	17.86	ppb	1.29	2000.	
66 Zn	145.2	145.2	ppb	0.46	2000.	
68 Zn	141.7	141.7	ppb	0.48	#VALUE!	
75 As	0.9112	0.9112	ppb	15.47	1000.	
82 Se	0.2562	0.2562	ppb	84.54	1000.	
88 Sr	86.83	86.83	ppb	0.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.552	1.552	ppb	0.33	1000.	
107 Ag	0.0181	0.0181	ppb	10.02	100.	
109 Ag	0.0185	0.0185	ppb	17.87	#VALUE!	
111 Cd	0.0453	0.0453	ppb	42.48	#VALUE!	
114 Cd	0.0873	0.0873	ppb	6.84	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3956	0.3956	ppb	7.55	1000.	
120 Sn	0.4077	0.4077	ppb	1.65	#VALUE!	
121 Sb	0.395	0.395	ppb	0.54	#VALUE!	
123 Sb	0.4064	0.4064	ppb	5.05	1000.	
135 Ba	15.86	15.86	ppb	1.13	2000.	
137 Ba	15.9	15.9	ppb	1.63	#VALUE!	
182 W	0.0661	0.0661	ppb	20.20	1000.	
203 Tl	0.0111	0.0111	ppb	23.36	1000.	
205 Tl	0.0097	0.0097	ppb	54.99	#VALUE!	
208 Pb	0.8771	0.8771	ppb	1.88	2000.	
232 Th	0.0195	0.0195	ppb	18.47	1000.	
238 U	0.0651	0.0651	ppb	6.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2646357.00	2.82	2844110.50	93.0	69.5 - 120	
45 Sc	2807630.50	0.76	2809797.00	99.9	69.5 - 120	
72 Ge	620444.06	0.22	642252.38	96.6	69.5 - 120	
159 Tb	7057753.00	0.56	7051087.50	100.1	69.5 - 120	
209 Bi	3382624.00	0.93	3594227.50	94.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\051SMPL.D\051SMPL.D#
Date Acquired: May 11 2018 08:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4057-001
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0046	0.0046	ppb	11.34	100.	
11 B	15.27	15.27	ppb	6.09	1000.	
23 Na	2,947.	2,947.	ppb	2.27	200000.	
25 Mg	5,793.	5,793.	ppb	1.45	200000.	
27 Al	61.97	61.97	ppb	0.89	200000.	
28 Si	4,233.	4,233.	ppb	0.55	#VALUE!	
29 Si	4,579.	4,579.	ppb	4.46	10000.	
39 K	841.7	841.7	ppb	1.95	200000.	
43 Ca	47,820.	47,820.	ppb	0.42	#VALUE!	
44 Ca	45,330.	45,330.	ppb	1.81	200000.	
51 V	0.4706	0.4706	ppb	1.66	1000.	
52 Cr	0.2008	0.2008	ppb	13.14	2000.	
53 Cr	-4.613	-4.613	ppb	31.00	#VALUE!	
55 Mn	14,260.	14,260.	ppb	0.58	2000.	>LDR
56 Fe	103.1	103.1	ppb	4.36	#VALUE!	
57 Fe	112.1	112.1	ppb	7.63	100000.	
59 Co	1.227	1.227	ppb	2.15	1000.	
60 Ni	0.4848	0.4848	ppb	11.08	1000.	
63 Cu	0.6378	0.6378	ppb	1.13	#VALUE!	
65 Cu	0.5631	0.5631	ppb	4.10	2000.	
66 Zn	2.42	2.42	ppb	3.95	2000.	
68 Zn	3.26	3.26	ppb	4.34	#VALUE!	
75 As	0.1868	0.1868	ppb	11.68	1000.	
82 Se	0.202	0.202	ppb	82.08	1000.	
88 Sr	263.	263.	ppb	0.77	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.4673	0.4673	ppb	3.41	1000.	
107 Ag	0.0033	0.0033	ppb	97.08	100.	
109 Ag	0.0035	0.0035	ppb	31.68	#VALUE!	
111 Cd	0.1111	0.1111	ppb	29.43	#VALUE!	
114 Cd	0.1002	0.1002	ppb	1.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0273	0.0273	ppb	23.63	1000.	
120 Sn	0.0295	0.0295	ppb	44.49	#VALUE!	
121 Sb	0.0552	0.0552	ppb	10.84	#VALUE!	
123 Sb	0.0492	0.0492	ppb	5.16	1000.	
135 Ba	27.81	27.81	ppb	1.51	2000.	
137 Ba	27.69	27.69	ppb	0.85	#VALUE!	
182 W	0.01	0.01	ppb	20.85	1000.	
203 Tl	0.0279	0.0279	ppb	19.38	1000.	
205 Tl	0.0171	0.0171	ppb	49.80	#VALUE!	
208 Pb	0.1696	0.1696	ppb	4.19	2000.	
232 Th	0.0153	0.0153	ppb	26.18	1000.	
238 U	0.2909	0.2909	ppb	3.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2772721.80	1.14	2844110.50	97.5	69.5 - 120	
45 Sc	2791117.50	1.60	2809797.00	99.3	69.5 - 120	
72 Ge	614213.94	0.16	642252.38	95.6	69.5 - 120	
159 Tb	6978810.50	0.59	7051087.50	99.0	69.5 - 120	
209 Bi	3536172.50	0.93	3594227.50	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000164

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\052_CCV.D\052_CCV.D#
Date Acquired: May 11 2018 08:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.94	ppb	2.93	25	99.76	
11 B	28.4	ppb	1.68	25	113.6	Fail
23 Na	5,040.	ppb	1.70	5,000	100.8	
25 Mg	5,145.	ppb	1.70	5,000	102.9	
27 Al	501.6	ppb	0.96	500	100.32	
28 Si	482.9	ppb	2.37	500	96.58	
29 Si	459.2	ppb	3.22	500	91.84	
39 K	4,860.	ppb	1.31	5,000	97.2	
43 Ca	4,760.	ppb	1.10	5,000	95.2	
44 Ca	4,978.	ppb	0.42	5,000	99.56	
51 V	25.36	ppb	1.46	25	101.44	
52 Cr	25.08	ppb	0.48	25	100.32	
53 Cr	21.81	ppb	2.62	25	87.24	
55 Mn	25.11	ppb	0.46	25	100.44	
56 Fe	4,953.	ppb	1.12	5,000	99.06	
57 Fe	5,066.	ppb	1.24	5,000	101.32	
59 Co	25.1	ppb	0.46	25	100.4	
60 Ni	25.19	ppb	0.72	25	100.76	
63 Cu	25.39	ppb	0.68	25	101.56	
65 Cu	25.32	ppb	0.67	25	101.28	
66 Zn	25.43	ppb	1.33	25	101.72	
68 Zn	25.55	ppb	1.01	25	102.2	
75 As	25.09	ppb	0.30	25	100.36	
82 Se	25.99	ppb	2.41	25	103.96	
88 Sr	24.3	ppb	0.53	25	97.2	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.74	ppb	1.01	25	98.96	
107 Ag	25.22	ppb	0.73	25	100.88	
109 Ag	24.94	ppb	1.25	25	99.76	
111 Cd	25.41	ppb	0.84	25	101.64	
114 Cd	25.31	ppb	1.18	25	101.24	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.85	ppb	1.97	25	95.4	
120 Sn	23.89	ppb	1.70	25	95.56	
121 Sb	24.15	ppb	1.40	25	96.6	
123 Sb	24.06	ppb	1.57	25	96.24	
135 Ba	24.72	ppb	1.53	25	98.88	
137 Ba	24.52	ppb	0.91	25	98.08	
182 W	24.81	ppb	1.21	25	99.24	
203 Tl	24.61	ppb	0.86	25	98.44	
205 Tl	25.	ppb	1.98	25	100	
208 Pb	24.97	ppb	2.15	25	99.88	
232 Th	25.12	ppb	0.85	25	100.48	
238 U	26.7	ppb	1.62	25	106.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2881501.50	1.28	2844110.50	101.3	80 - 120.4	
45 Sc	2738857.80	0.69	2809797.00	97.5	80 - 120.4	
72 Ge	595223.69	0.59	642252.38	92.7	80 - 120.4	
159 Tb	6933873.00	0.15	7051087.50	98.3	80 - 120.4	
209 Bi	3591840.30	0.69	3594227.50	99.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000165

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\053_CCB.D\053_CCB.D#
Date Acquired: May 11 2018 08:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	131.19	1.00	
11 B	6.104	ppb	10.37	1.00	Fail
23 Na	7.448	ppb	3.05	1.00	
25 Mg	0.152	ppb	137.43	1.00	
27 Al	0.0224	ppb	248.22	1.00	
28 Si	9.745	ppb	83.89	1.00	
29 Si	-2.966	ppb	374.92	1.00	
39 K	1.562	ppb	183.93	1.00	
43 Ca	3.037	ppb	159.33	1.00	
44 Ca	1.215	ppb	95.80	1.00	
51 V	-0.0455	ppb	52.12	1.00	
52 Cr	0.1285	ppb	16.88	1.00	
53 Cr	-4.609	ppb	6.64	1.00	
55 Mn	0.1028	ppb	129.77	1.00	
56 Fe	11.74	ppb	39.39	1.00	
57 Fe	1.716	ppb	68.07	1.00	
59 Co	0.0023	ppb	223.72	1.00	
60 Ni	0.0069	ppb	114.47	1.00	
63 Cu	0.0205	ppb	18.52	1.00	
65 Cu	0.0013	ppb	274.98	1.00	
66 Zn	-0.0112	ppb	371.62	1.00	
68 Zn	0.177	ppb	71.41	1.00	
75 As	0.0033	ppb	4986.40	1.00	
82 Se	-0.058	ppb	169.92	1.00	
88 Sr	0.0022	ppb	169.50	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0292	ppb	63.91	1.00	
107 Ag	0.0103	ppb	40.94	1.00	
109 Ag	0.0117	ppb	10.57	1.00	
111 Cd	0.0143	ppb	75.28	1.00	
114 Cd	-0.0011	ppb	294.97	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0549	ppb	25.50	1.00	
120 Sn	0.0539	ppb	17.28	1.00	
121 Sb	0.01	ppb	31.60	1.00	
123 Sb	0.0084	ppb	41.47	1.00	
135 Ba	0.0092	ppb	76.13	1.00	
137 Ba	0.0115	ppb	29.86	1.00	
182 W	0.0461	ppb	43.58	1.00	
203 Tl	0.0122	ppb	29.50	1.00	
205 Tl	-0.0006	ppb	243.76	1.00	
208 Pb	0.0472	ppb	3.26	1.00	
232 Th	0.0964	ppb	13.54	1.00	
238 U	0.0039	ppb	12.57	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2622576.80	3.58	2844110.50	92.2	79.5 - 120	
45 Sc	2586504.80	3.75	2809797.00	92.1	79.5 - 120	
72 Ge	576457.13	3.16	642252.38	89.8	79.5 - 120	
159 Tb	6679868.50	1.65	7051087.50	94.7	79.5 - 120	
209 Bi	3560855.80	0.82	3594227.50	99.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000166

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\054SMPL.D\054SMPL.D#
Date Acquired: May 11 2018 08:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4060-001
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.0025	0.0025	ppb	100.45	100.	
11 B	316.3	316.3	ppb	5.82	1000.	
23 Na	134,700.	134,700.	ppb	4.46	200000.	
25 Mg	3,146.	3,146.	ppb	1.87	200000.	
27 Al	412.1	412.1	ppb	1.34	200000.	
28 Si	2,111.	2,111.	ppb	5.86	#VALUE!	
29 Si	2,074.	2,074.	ppb	5.14	10000.	
39 K	9,327.	9,327.	ppb	2.06	200000.	
43 Ca	11,420.	11,420.	ppb	1.67	#VALUE!	
44 Ca	11,450.	11,450.	ppb	0.55	200000.	
51 V	0.2225	0.2225	ppb	25.90	1000.	
52 Cr	0.9702	0.9702	ppb	2.06	2000.	
53 Cr	-2.544	-2.544	ppb	15.18	#VALUE!	
55 Mn	15.25	15.25	ppb	0.52	2000.	
56 Fe	58.74	58.74	ppb	4.82	#VALUE!	
57 Fe	46.94	46.94	ppb	9.59	100000.	
59 Co	37.89	37.89	ppb	0.45	1000.	
60 Ni	69.31	69.31	ppb	0.61	1000.	
63 Cu	37.34	37.34	ppb	1.20	#VALUE!	
65 Cu	33.23	33.23	ppb	0.96	2000.	
66 Zn	23.93	23.93	ppb	0.54	2000.	
68 Zn	23.9	23.9	ppb	0.36	#VALUE!	
75 As	1.765	1.765	ppb	8.35	1000.	
82 Se	6.848	6.848	ppb	2.79	1000.	
88 Sr	100.4	100.4	ppb	0.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,970.	1,970.	ppb	0.18	1000.	>LDR
107 Ag	0.0922	0.0922	ppb	8.12	100.	
109 Ag	0.0831	0.0831	ppb	3.87	#VALUE!	
111 Cd	0.1962	0.1962	ppb	7.77	#VALUE!	
114 Cd	0.1511	0.1511	ppb	10.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0394	0.0394	ppb	14.32	1000.	
120 Sn	0.0455	0.0455	ppb	12.43	#VALUE!	
121 Sb	0.4119	0.4119	ppb	1.28	#VALUE!	
123 Sb	0.4058	0.4058	ppb	3.70	1000.	
135 Ba	2.742	2.742	ppb	3.60	2000.	
137 Ba	2.653	2.653	ppb	2.07	#VALUE!	
182 W	37.99	37.99	ppb	2.08	1000.	
203 Tl	0.0235	0.0235	ppb	37.63	1000.	
205 Tl	0.0071	0.0071	ppb	82.79	#VALUE!	
208 Pb	0.9598	0.9598	ppb	3.09	2000.	
232 Th	0.0894	0.0894	ppb	26.02	1000.	
238 U	0.0523	0.0523	ppb	7.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2695303.00	3.45	2844110.50	94.8	69.5 - 120	
45 Sc	2671022.80	1.83	2809797.00	95.1	69.5 - 120	
72 Ge	577719.00	0.88	642252.38	90.0	69.5 - 120	
159 Tb	6563166.00	1.66	7051087.50	93.1	69.5 - 120	
209 Bi	3123846.50	0.55	3594227.50	86.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000167

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\055SMPL.D\055SMPL.D#
Date Acquired: May 11 2018 09:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4061-001
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	175.36	100.	
11 B	16.26	16.26	ppb	15.50	1000.	
23 Na	6,821.	6,821.	ppb	4.36	200000.	
25 Mg	328.4	328.4	ppb	4.67	200000.	
27 Al	1,126.	1,126.	ppb	4.39	200000.	
28 Si	1,063.	1,063.	ppb	0.75	#VALUE!	
29 Si	1,056.	1,056.	ppb	2.38	10000.	
39 K	200.1	200.1	ppb	7.04	200000.	
43 Ca	2,175.	2,175.	ppb	4.85	#VALUE!	
44 Ca	2,179.	2,179.	ppb	1.22	200000.	
51 V	-0.0053	-0.0053	ppb	524.33	1000.	
52 Cr	0.3606	0.3606	ppb	7.37	2000.	
53 Cr	-0.4515	-0.4515	ppb	146.16	#VALUE!	
55 Mn	1.25	1.25	ppb	2.01	2000.	
56 Fe	32.06	32.06	ppb	3.81	#VALUE!	
57 Fe	14.72	14.72	ppb	4.72	100000.	
59 Co	0.0166	0.0166	ppb	52.91	1000.	
60 Ni	0.1097	0.1097	ppb	18.51	1000.	
63 Cu	0.9018	0.9018	ppb	1.53	#VALUE!	
65 Cu	0.6627	0.6627	ppb	3.58	2000.	
66 Zn	1.707	1.707	ppb	4.42	2000.	
68 Zn	1.967	1.967	ppb	8.76	#VALUE!	
75 As	0.4414	0.4414	ppb	17.52	1000.	
82 Se	0.0911	0.0911	ppb	167.67	1000.	
88 Sr	7.36	7.36	ppb	1.50	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.265	2.265	ppb	58.54	1000.	
107 Ag	0.0033	0.0033	ppb	36.15	100.	
109 Ag	0.0037	0.0037	ppb	72.34	#VALUE!	
111 Cd	-0.0247	-0.0247	ppb	110.59	#VALUE!	
114 Cd	0.0049	0.0049	ppb	13.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0282	0.0282	ppb	29.51	1000.	
120 Sn	0.0251	0.0251	ppb	19.48	#VALUE!	
121 Sb	0.0266	0.0266	ppb	8.27	#VALUE!	
123 Sb	0.0276	0.0276	ppb	32.68	1000.	
135 Ba	1.617	1.617	ppb	0.62	2000.	
137 Ba	1.657	1.657	ppb	1.50	#VALUE!	
182 W	0.0712	0.0712	ppb	43.60	1000.	
203 Tl	0.0056	0.0056	ppb	125.15	1000.	
205 Tl	0.0117	0.0117	ppb	35.07	#VALUE!	
208 Pb	0.1663	0.1663	ppb	4.32	2000.	
232 Th	0.0228	0.0228	ppb	16.97	1000.	
238 U	0.0472	0.0472	ppb	10.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2663222.80	4.98	2844110.50	93.6	69.5 - 120	
45 Sc	2584467.80	2.97	2809797.00	92.0	69.5 - 120	
72 Ge	570156.75	0.83	642252.38	88.8	69.5 - 120	
159 Tb	6542575.50	1.27	7051087.50	92.8	69.5 - 120	
209 Bi	3424229.00	1.37	3594227.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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\JLE11B.B\056SMPL.D\056SMPL.D#
Date Acquired: May 11 2018 09:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4065-001
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	0.035	0.035	ppb	12.20	100.	
11 B	13.08	13.08	ppb	3.54	1000.	
23 Na	2,320.	2,320.	ppb	1.26	200000.	
25 Mg	499.5	499.5	ppb	2.14	200000.	
27 Al	31.7	31.7	ppb	4.39	200000.	
28 Si	729.8	729.8	ppb	0.40	#VALUE!	
29 Si	728.	728.	ppb	3.19	10000.	
39 K	423.7	423.7	ppb	1.64	200000.	
43 Ca	2,198.	2,198.	ppb	3.89	#VALUE!	
44 Ca	2,170.	2,170.	ppb	1.27	200000.	
51 V	0.0118	0.0118	ppb	701.69	1000.	
52 Cr	0.3615	0.3615	ppb	3.23	2000.	
53 Cr	0.371	0.371	ppb	117.33	#VALUE!	
55 Mn	3.025	3.025	ppb	0.51	2000.	
56 Fe	37.43	37.43	ppb	8.82	#VALUE!	
57 Fe	15.52	15.52	ppb	9.70	100000.	
59 Co	0.0126	0.0126	ppb	18.87	1000.	
60 Ni	0.1144	0.1144	ppb	15.82	1000.	
63 Cu	0.4088	0.4088	ppb	7.10	#VALUE!	
65 Cu	0.3023	0.3023	ppb	5.95	2000.	
66 Zn	1.17	1.17	ppb	5.88	2000.	
68 Zn	1.356	1.356	ppb	4.99	#VALUE!	
75 As	0.3781	0.3781	ppb	35.86	1000.	
82 Se	-0.0298	-0.0298	ppb	361.90	1000.	
88 Sr	10.13	10.13	ppb	0.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.6785	0.6785	ppb	30.70	1000.	
107 Ag	0.0049	0.0049	ppb	18.87	100.	
109 Ag	0.0018	0.0018	ppb	86.94	#VALUE!	
111 Cd	-0.0347	-0.0347	ppb	17.88	#VALUE!	
114 Cd	0.0044	0.0044	ppb	97.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0346	0.0346	ppb	19.49	1000.	
120 Sn	0.0452	0.0452	ppb	33.29	#VALUE!	
121 Sb	0.0435	0.0435	ppb	17.22	#VALUE!	
123 Sb	0.0423	0.0423	ppb	9.94	1000.	
135 Ba	1.624	1.624	ppb	8.88	2000.	
137 Ba	1.567	1.567	ppb	2.66	#VALUE!	
182 W	0.0197	0.0197	ppb	21.30	1000.	
203 Tl	0.0111	0.0111	ppb	15.48	1000.	
205 Tl	0.0045	0.0045	ppb	78.75	#VALUE!	
208 Pb	0.111	0.111	ppb	2.56	2000.	
232 Th	0.0253	0.0253	ppb	13.08	1000.	
238 U	0.1728	0.1728	ppb	5.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2567440.30	1.99	2844110.50	90.3	69.5 - 120	
45 Sc	2534559.50	1.62	2809797.00	90.2	69.5 - 120	
72 Ge	567541.38	2.11	642252.38	88.4	69.5 - 120	
159 Tb	6457645.00	1.38	7051087.50	91.6	69.5 - 120	
209 Bi	3397901.50	0.46	3594227.50	94.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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\JLE11B.B\057SMPL.D\057SMPL.D#
Date Acquired: May 11 2018 09:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4066-001
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	59.38	100.	
11 B	15.82	15.82	ppb	5.05	1000.	
23 Na	13,330.	13,330.	ppb	3.56	200000.	
25 Mg	5,403.	5,403.	ppb	1.97	200000.	
27 Al	6.518	6.518	ppb	5.23	200000.	
28 Si	5,958.	5,958.	ppb	0.89	#VALUE!	
29 Si	6,295.	6,295.	ppb	1.40	10000.	
39 K	2,344.	2,344.	ppb	4.30	200000.	
43 Ca	58,140.	58,140.	ppb	0.77	#VALUE!	
44 Ca	54,890.	54,890.	ppb	1.00	200000.	
51 V	0.0773	0.0773	ppb	65.52	1000.	
52 Cr	0.4239	0.4239	ppb	4.00	2000.	
53 Cr	-2.087	-2.087	ppb	8.83	#VALUE!	
55 Mn	10.21	10.21	ppb	0.93	2000.	
56 Fe	27.1	27.1	ppb	8.76	#VALUE!	
57 Fe	16.83	16.83	ppb	9.18	100000.	
59 Co	0.0699	0.0699	ppb	2.62	1000.	
60 Ni	1.535	1.535	ppb	3.94	1000.	
63 Cu	42.15	42.15	ppb	1.08	#VALUE!	
65 Cu	41.29	41.29	ppb	0.69	2000.	
66 Zn	10.85	10.85	ppb	2.12	2000.	
68 Zn	11.05	11.05	ppb	2.33	#VALUE!	
75 As	0.8922	0.8922	ppb	9.44	1000.	
82 Se	0.2987	0.2987	ppb	73.12	1000.	
88 Sr	246.2	246.2	ppb	1.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3896	0.3896	ppb	12.74	1000.	
107 Ag	2.674	2.674	ppb	0.04	100.	
109 Ag	2.633	2.633	ppb	1.92	#VALUE!	
111 Cd	0.0302	0.0302	ppb	35.36	#VALUE!	
114 Cd	0.0672	0.0672	ppb	8.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.197	0.197	ppb	12.59	1000.	
120 Sn	0.2138	0.2138	ppb	5.54	#VALUE!	
121 Sb	0.3219	0.3219	ppb	4.00	#VALUE!	
123 Sb	0.342	0.342	ppb	5.14	1000.	
135 Ba	5.133	5.133	ppb	0.46	2000.	
137 Ba	4.936	4.936	ppb	0.58	#VALUE!	
182 W	0.0285	0.0285	ppb	12.52	1000.	
203 Tl	0.0012	0.0012	ppb	125.96	1000.	
205 Tl	0.0058	0.0058	ppb	112.97	#VALUE!	
208 Pb	0.6204	0.6204	ppb	2.26	2000.	
232 Th	0.0232	0.0232	ppb	14.98	1000.	
238 U	0.6417	0.6417	ppb	2.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2559271.80	4.13	2844110.50	90.0	69.5 - 120	
45 Sc	2555737.80	1.84	2809797.00	91.0	69.5 - 120	
72 Ge	563363.19	1.11	642252.38	87.7	69.5 - 120	
159 Tb	6524538.00	0.93	7051087.50	92.5	69.5 - 120	
209 Bi	3393059.00	1.97	3594227.50	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000170

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\058SMPL.D\058SMPL.D#
Date Acquired: May 11 2018 09:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE04IMS1
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	-0.0048	-0.001	ppb	154.26	100.	
11 B	27.415	5.483	ppb	2.53	1000.	
23 Na	85.35	17.07	ppb	5.63	200000.	
25 Mg	24.635	4.927	ppb	6.97	200000.	
27 Al	7.67	1.534	ppb	8.70	200000.	
28 Si	-79.35	-15.87	ppb	42.74	#VALUE!	
29 Si	-23.27	-4.654	ppb	191.08	10000.	
39 K	31.77	6.354	ppb	12.44	200000.	
43 Ca	82.75	16.55	ppb	33.05	#VALUE!	
44 Ca	55.15	11.03	ppb	12.01	200000.	
51 V	0.3931	0.0786	ppb	101.50	1000.	
52 Cr	2.9415	0.5883	ppb	7.70	2000.	
53 Cr	38.235	7.647	ppb	12.80	#VALUE!	
55 Mn	1.492	0.2984	ppb	2.23	2000.	
56 Fe	137.1	27.42	ppb	15.56	#VALUE!	
57 Fe	23.035	4.607	ppb	23.03	100000.	
59 Co	0.0383	0.0077	ppb	26.91	1000.	
60 Ni	0.4005	0.0801	ppb	5.13	1000.	
63 Cu	0.893	0.1786	ppb	6.70	#VALUE!	
65 Cu	0.831	0.1662	ppb	8.43	2000.	
66 Zn	0.638	0.1276	ppb	75.67	2000.	
68 Zn	1.3445	0.2689	ppb	35.40	#VALUE!	
75 As	0.4899	0.098	ppb	130.45	1000.	
82 Se	0.6795	0.1359	ppb	34.18	1000.	
88 Sr	0.1612	0.0322	ppb	22.15	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.4612	0.0922	ppb	28.96	1000.	
107 Ag	0.223	0.0446	ppb	40.95	100.	
109 Ag	0.2135	0.0427	ppb	34.86	#VALUE!	
111 Cd	0.0607	0.0121	ppb	17.82	#VALUE!	
114 Cd	-0.0607	-0.0121	ppb	104.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.69	8.938	ppb	2.50	1000.	
120 Sn	45.1	9.02	ppb	1.53	#VALUE!	
121 Sb	0.0642	0.0128	ppb	47.14	#VALUE!	
123 Sb	0.0678	0.0136	ppb	65.31	1000.	
135 Ba	0.2836	0.0567	ppb	17.13	2000.	
137 Ba	0.299	0.0598	ppb	17.16	#VALUE!	
182 W	0.0608	0.0122	ppb	13.44	1000.	
203 Tl	0.008	0.0016	ppb	146.51	1000.	
205 Tl	0.0187	0.0037	ppb	212.92	#VALUE!	
208 Pb	0.0477	0.0095	ppb	49.11	2000.	
232 Th	0.1048	0.021	ppb	32.27	1000.	
238 U	0.0044	0.0009	ppb	61.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2704507.80	3.52	2844110.50	95.1	69.5 - 120	
45 Sc	2558535.50	1.94	2809797.00	91.1	69.5 - 120	
72 Ge	561896.25	0.90	642252.38	87.5	69.5 - 120	
159 Tb	6491962.50	0.94	7051087.50	92.1	69.5 - 120	
209 Bi	3483833.30	1.62	3594227.50	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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\JLE11B.B\059SMPL.D\059SMPL.D#
Date Acquired: May 11 2018 09:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE04IMS1
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	50.05	10.01	ppb	3.12	100.	
11 B	509.5	101.9	ppb	1.55	1000.	
23 Na	8,035.	1,607.	ppb	5.60	200000.	
25 Mg	5,160.	1,032.	ppb	1.56	200000.	
27 Al	2,150.	430.	ppb	1.37	200000.	
28 Si	895.	179.	ppb	2.60	#VALUE!	
29 Si	897.	179.4	ppb	5.96	10000.	
39 K	10,480.	2,096.	ppb	5.40	200000.	
43 Ca	2,950.5	590.1	ppb	7.73	#VALUE!	
44 Ca	2,536.5	507.3	ppb	1.50	200000.	
51 V	536.5	107.3	ppb	0.43	1000.	
52 Cr	210.25	42.05	ppb	0.50	2000.	
53 Cr	271.3	54.26	ppb	2.18	#VALUE!	
55 Mn	535.5	107.1	ppb	1.44	2000.	
56 Fe	1,169.5	233.9	ppb	1.70	#VALUE!	
57 Fe	1,067.	213.4	ppb	1.34	100000.	
59 Co	538.	107.6	ppb	0.69	1000.	
60 Ni	522.	104.4	ppb	0.98	1000.	
63 Cu	257.2	51.44	ppb	0.63	#VALUE!	
65 Cu	263.05	52.61	ppb	1.11	2000.	
66 Zn	497.9	99.58	ppb	0.37	2000.	
68 Zn	554.5	110.9	ppb	0.47	#VALUE!	
75 As	101.5	20.3	ppb	1.53	1000.	
82 Se	99.75	19.95	ppb	2.67	1000.	
88 Sr	501.5	100.3	ppb	1.77	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.8	20.56	ppb	1.48	1000.	
107 Ag	52.65	10.53	ppb	1.93	100.	
109 Ag	52.45	10.49	ppb	1.18	#VALUE!	
111 Cd	256.2	51.24	ppb	1.43	#VALUE!	
114 Cd	257.25	51.45	ppb	0.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	527.	105.4	ppb	1.76	1000.	
120 Sn	529.5	105.9	ppb	1.46	#VALUE!	
121 Sb	99.45	19.89	ppb	2.55	#VALUE!	
123 Sb	99.25	19.85	ppb	1.88	1000.	
135 Ba	2,037.	407.4	ppb	1.51	2000.	
137 Ba	2,051.5	410.3	ppb	1.45	#VALUE!	
182 W	106.55	21.31	ppb	0.94	1000.	
203 Tl	102.85	20.57	ppb	1.54	1000.	
205 Tl	105.35	21.07	ppb	1.79	#VALUE!	
208 Pb	105.7	21.14	ppb	1.31	2000.	
232 Th	106.25	21.25	ppb	1.71	1000.	
238 U	113.85	22.77	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2871387.30	3.10	2844110.50	101.0	69.5 - 120	
45 Sc	2565921.80	1.67	2809797.00	91.3	69.5 - 120	
72 Ge	558860.31	2.15	642252.38	87.0	69.5 - 120	
159 Tb	6608554.50	1.03	7051087.50	93.7	69.5 - 120	
209 Bi	3549846.50	1.67	3594227.50	98.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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\JLE11B.B\060SMPL.D\060SMPL.D#
Date Acquired: May 11 2018 09:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-007
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	12.87	1.287	ppb	6.21	100.	
11 B	235.4	23.54	ppb	2.80	1000.	
23 Na	20,380.	2,038.	ppb	2.17	200000.	
25 Mg	128,300.	12,830.	ppb	4.10	200000.	
27 Al	268,600.	26,860.	ppb	2.42	200000.	
28 Si	3,146.	314.6	ppb	4.89	#VALUE!	
29 Si	2,909.	290.9	ppb	4.73	10000.	
39 K	61,140.	6,114.	ppb	2.77	200000.	
43 Ca	588,000.	58,800.	ppb	2.07	#VALUE!	
44 Ca	559,000.	55,900.	ppb	1.46	200000.	
51 V	512.9	51.29	ppb	1.13	1000.	
52 Cr	265.9	26.59	ppb	1.55	2000.	
53 Cr	269.1	26.91	ppb	1.89	#VALUE!	
55 Mn	14,460.	1,446.	ppb	1.24	2000.	
56 Fe	280,300.	28,030.	ppb	1.97	#VALUE!	
57 Fe	271,300.	27,130.	ppb	1.35	100000.	
59 Co	104.2	10.42	ppb	1.42	1000.	
60 Ni	274.5	27.45	ppb	1.47	1000.	
63 Cu	184.1	18.41	ppb	0.93	#VALUE!	
65 Cu	184.5	18.45	ppb	1.88	2000.	
66 Zn	714.1	71.41	ppb	1.13	2000.	
68 Zn	816.7	81.67	ppb	1.47	#VALUE!	
75 As	37.57	3.757	ppb	3.40	1000.	
82 Se	5.772	0.5772	ppb	17.21	1000.	
88 Sr	1,550.	155.	ppb	1.84	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	18.72	1.872	ppb	2.81	1000.	
107 Ag	1.166	0.1166	ppb	5.44	100.	
109 Ag	0.9074	0.0907	ppb	6.81	#VALUE!	
111 Cd	4.602	0.4602	ppb	7.45	#VALUE!	
114 Cd	2.103	0.2103	ppb	12.04	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.92	5.292	ppb	2.52	1000.	
120 Sn	53.07	5.307	ppb	1.55	#VALUE!	
121 Sb	2.858	0.2858	ppb	1.60	#VALUE!	
123 Sb	2.744	0.2744	ppb	4.44	1000.	
135 Ba	3,771.	377.1	ppb	0.81	2000.	
137 Ba	3,804.	380.4	ppb	0.90	#VALUE!	
182 W	1.256	0.1256	ppb	11.22	1000.	
203 Tl	4.549	0.4549	ppb	2.14	1000.	
205 Tl	4.545	0.4545	ppb	4.92	#VALUE!	
208 Pb	162.3	16.23	ppb	0.18	2000.	
232 Th	123.5	12.35	ppb	0.31	1000.	
238 U	18.75	1.875	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2544775.30	2.89	2844110.50	89.5	69.5 - 120	
45 Sc	2552964.00	3.54	2809797.00	90.9	69.5 - 120	
72 Ge	541227.13	1.62	642252.38	84.3	69.5 - 120	
159 Tb	6668114.00	0.15	7051087.50	94.6	69.5 - 120	
209 Bi	3480791.50	0.11	3594227.50	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\061SMPL.D\061SMPL.D#
Date Acquired: May 11 2018 09:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-019
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	14.67	1.467	ppb	4.36	100.	
11 B	225.6	22.56	ppb	3.84	1000.	
23 Na	4,958.	495.8	ppb	3.51	200000.	
25 Mg	117,100.	11,710.	ppb	3.07	200000.	
27 Al	316,200.	31,620.	ppb	2.07	200000.	
28 Si	4,096.	409.6	ppb	1.12	#VALUE!	
29 Si	3,780.	378.	ppb	3.77	10000.	
39 K	78,430.	7,843.	ppb	1.63	200000.	
43 Ca	498,400.	49,840.	ppb	3.20	#VALUE!	
44 Ca	478,100.	47,810.	ppb	0.75	200000.	
51 V	658.4	65.84	ppb	1.56	1000.	
52 Cr	293.	29.3	ppb	0.46	2000.	
53 Cr	293.4	29.34	ppb	0.89	#VALUE!	
55 Mn	12,300.	1,230.	ppb	0.68	2000.	
56 Fe	310,200.	31,020.	ppb	0.94	#VALUE!	
57 Fe	298,700.	29,870.	ppb	0.54	100000.	
59 Co	207.7	20.77	ppb	0.83	1000.	
60 Ni	334.9	33.49	ppb	0.72	1000.	
63 Cu	198.6	19.86	ppb	0.85	#VALUE!	
65 Cu	201.7	20.17	ppb	0.95	2000.	
66 Zn	779.7	77.97	ppb	1.94	2000.	
68 Zn	977.5	97.75	ppb	0.76	#VALUE!	
75 As	139.4	13.94	ppb	1.28	1000.	
82 Se	7.845	0.7845	ppb	29.98	1000.	
88 Sr	1,799.	179.9	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.53	1.753	ppb	4.10	1000.	
107 Ag	1.259	0.1259	ppb	3.84	100.	
109 Ag	1.083	0.1083	ppb	8.64	#VALUE!	
111 Cd	6.571	0.6571	ppb	4.54	#VALUE!	
114 Cd	3.277	0.3277	ppb	4.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.02	5.502	ppb	2.13	1000.	
120 Sn	55.	5.5	ppb	2.69	#VALUE!	
121 Sb	3.225	0.3225	ppb	6.03	#VALUE!	
123 Sb	3.274	0.3274	ppb	4.83	1000.	
135 Ba	6,882.	688.2	ppb	1.75	2000.	
137 Ba	6,742.	674.2	ppb	0.91	#VALUE!	
182 W	1.493	0.1493	ppb	5.23	1000.	
203 Tl	5.522	0.5522	ppb	6.31	1000.	
205 Tl	5.673	0.5673	ppb	3.36	#VALUE!	
208 Pb	252.3	25.23	ppb	0.09	2000.	
232 Th	142.6	14.26	ppb	0.44	1000.	
238 U	28.6	2.86	ppb	1.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2591779.80	3.41	2844110.50	91.1	69.5 - 120	
45 Sc	2525621.00	1.05	2809797.00	89.9	69.5 - 120	
72 Ge	534704.00	1.12	642252.38	83.3	69.5 - 120	
159 Tb	6540553.00	0.94	7051087.50	92.8	69.5 - 120	
209 Bi	3464285.30	0.45	3594227.50	96.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000174

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\062SMPL.D\062SMPL.D#
Date Acquired: May 11 2018 09:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-020
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	7.549	0.7549	ppb	11.62	100.	
11 B	176.	17.6	ppb	5.31	1000.	
23 Na	3,470.	347.	ppb	2.94	200000.	
25 Mg	118,300.	11,830.	ppb	0.85	200000.	
27 Al	166,700.	16,670.	ppb	2.14	200000.	
28 Si	2,829.	282.9	ppb	3.92	#VALUE!	
29 Si	2,494.	249.4	ppb	5.98	10000.	
39 K	42,140.	4,214.	ppb	2.54	200000.	
43 Ca	1,577,000.	157,700.	ppb	2.60	#VALUE!	
44 Ca	1,520,000.	152,000.	ppb	2.12	200000.	
51 V	347.1	34.71	ppb	1.12	1000.	
52 Cr	158.7	15.87	ppb	1.35	2000.	
53 Cr	135.2	13.52	ppb	2.41	#VALUE!	
55 Mn	5,315.	531.5	ppb	0.26	2000.	
56 Fe	150,900.	15,090.	ppb	0.35	#VALUE!	
57 Fe	148,800.	14,880.	ppb	0.74	100000.	
59 Co	82.97	8.297	ppb	2.32	1000.	
60 Ni	182.	18.2	ppb	1.97	1000.	
63 Cu	99.06	9.906	ppb	0.53	#VALUE!	
65 Cu	102.5	10.25	ppb	0.85	2000.	
66 Zn	390.2	39.02	ppb	1.94	2000.	
68 Zn	516.9	51.69	ppb	1.45	#VALUE!	
75 As	63.92	6.392	ppb	1.80	1000.	
82 Se	9.438	0.9438	ppb	14.90	1000.	
88 Sr	3,638.	363.8	ppb	1.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.	1.1	ppb	2.12	1000.	
107 Ag	0.6658	0.0666	ppb	19.15	100.	
109 Ag	0.5644	0.0564	ppb	11.19	#VALUE!	
111 Cd	4.82	0.482	ppb	13.81	#VALUE!	
114 Cd	2.386	0.2386	ppb	4.59	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.54	4.754	ppb	0.97	1000.	
120 Sn	47.69	4.769	ppb	0.98	#VALUE!	
121 Sb	2.082	0.2082	ppb	7.44	#VALUE!	
123 Sb	2.127	0.2127	ppb	6.85	1000.	
135 Ba	4,276.	427.6	ppb	0.35	2000.	
137 Ba	4,270.	427.	ppb	0.85	#VALUE!	
182 W	1.248	0.1248	ppb	3.65	1000.	
203 Tl	3.187	0.3187	ppb	4.61	1000.	
205 Tl	3.227	0.3227	ppb	1.85	#VALUE!	
208 Pb	117.9	11.79	ppb	1.07	2000.	
232 Th	72.44	7.244	ppb	0.35	1000.	
238 U	21.21	2.121	ppb	1.45	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2409329.00	3.26	2844110.50	84.7	69.5 - 120	
45 Sc	2348966.30	3.10	2809797.00	83.6	69.5 - 120	
72 Ge	511186.47	1.34	642252.38	79.6	69.5 - 120	
159 Tb	6419857.00	0.28	7051087.50	91.0	69.5 - 120	
209 Bi	3346429.80	1.31	3594227.50	93.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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\JLE11B.B\063SMPL.D\063SMPL.D#
Date Acquired: May 11 2018 09:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: TEST
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 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	248.9	24.89	ppb	2.57	100.	
11 B	278.6	27.86	ppb	4.75	1000.	
23 Na	46,540.	4,654.	ppb	2.05	200000.	
25 Mg	47,400.	4,740.	ppb	5.10	200000.	
27 Al	4,791.	479.1	ppb	2.65	200000.	
28 Si	4,851.	485.1	ppb	3.09	#VALUE!	
29 Si	4,345.	434.5	ppb	2.93	10000.	
39 K	48,200.	4,820.	ppb	0.89	200000.	
43 Ca	48,900.	4,890.	ppb	1.18	#VALUE!	
44 Ca	49,750.	4,975.	ppb	1.20	200000.	
51 V	245.5	24.55	ppb	0.81	1000.	
52 Cr	248.9	24.89	ppb	0.32	2000.	
53 Cr	218.	21.8	ppb	0.97	#VALUE!	
55 Mn	249.6	24.96	ppb	0.96	2000.	
56 Fe	49,060.	4,906.	ppb	1.31	#VALUE!	
57 Fe	50,480.	5,048.	ppb	0.58	100000.	
59 Co	249.4	24.94	ppb	0.60	1000.	
60 Ni	248.1	24.81	ppb	1.17	1000.	
63 Cu	250.5	25.05	ppb	0.87	#VALUE!	
65 Cu	248.8	24.88	ppb	0.68	2000.	
66 Zn	248.4	24.84	ppb	1.55	2000.	
68 Zn	255.8	25.58	ppb	0.63	#VALUE!	
75 As	250.8	25.08	ppb	0.71	1000.	
82 Se	264.2	26.42	ppb	0.75	1000.	
88 Sr	248.5	24.85	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	257.	25.7	ppb	0.44	1000.	
107 Ag	259.1	25.91	ppb	0.34	100.	
109 Ag	259.6	25.96	ppb	0.83	#VALUE!	
111 Cd	260.5	26.05	ppb	0.62	#VALUE!	
114 Cd	260.1	26.01	ppb	0.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	232.4	23.24	ppb	0.49	1000.	
120 Sn	232.1	23.21	ppb	0.40	#VALUE!	
121 Sb	235.7	23.57	ppb	0.54	#VALUE!	
123 Sb	238.	23.8	ppb	1.29	1000.	
135 Ba	245.3	24.53	ppb	1.44	2000.	
137 Ba	242.5	24.25	ppb	1.08	#VALUE!	
182 W	251.2	25.12	ppb	1.03	1000.	
203 Tl	246.4	24.64	ppb	2.24	1000.	
205 Tl	249.1	24.91	ppb	1.68	#VALUE!	
208 Pb	250.2	25.02	ppb	1.63	2000.	
232 Th	251.6	25.16	ppb	1.29	1000.	
238 U	269.2	26.92	ppb	0.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2288071.80	2.28	2844110.50	80.4	69.5 - 120	
45 Sc	2339113.00	0.84	2809797.00	83.2	69.5 - 120	
72 Ge	524915.63	1.08	642252.38	81.7	69.5 - 120	
159 Tb	6506648.00	0.35	7051087.50	92.3	69.5 - 120	
209 Bi	3505412.80	1.01	3594227.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\064_CCV.D\064_CCV.D#
Date Acquired: May 11 2018 09:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.62	ppb	2.29	25	102.48	
11 B	27.07	ppb	2.51	25	108.28	
23 Na	4,418.	ppb	0.81	5,000	88.36	Fail
25 Mg	4,745.	ppb	1.85	5,000	94.9	
27 Al	488.6	ppb	2.69	500	97.72	
28 Si	466.8	ppb	4.24	500	93.36	
29 Si	410.8	ppb	0.48	500	82.16	Fail
39 K	4,694.	ppb	2.51	5,000	93.88	
43 Ca	4,627.	ppb	1.27	5,000	92.54	
44 Ca	4,862.	ppb	2.19	5,000	97.24	
51 V	24.68	ppb	0.55	25	98.72	
52 Cr	24.81	ppb	1.11	25	99.24	
53 Cr	21.71	ppb	1.32	25	86.84	
55 Mn	25.15	ppb	0.54	25	100.6	
56 Fe	4,926.	ppb	1.13	5,000	98.52	
57 Fe	4,955.	ppb	1.23	5,000	99.1	
59 Co	24.68	ppb	0.88	25	98.72	
60 Ni	24.93	ppb	2.29	25	99.72	
63 Cu	25.	ppb	0.81	25	100	
65 Cu	25.21	ppb	0.67	25	100.84	
66 Zn	25.03	ppb	2.11	25	100.12	
68 Zn	25.02	ppb	2.55	25	100.08	
75 As	25.42	ppb	1.08	25	101.68	
82 Se	26.36	ppb	1.53	25	105.44	
88 Sr	24.94	ppb	1.16	25	99.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.5	ppb	0.84	25	102	
107 Ag	25.9	ppb	0.12	25	103.6	
109 Ag	25.82	ppb	1.17	25	103.28	
111 Cd	25.84	ppb	1.19	25	103.36	
114 Cd	25.93	ppb	1.07	25	103.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.51	ppb	0.41	25	94.04	
120 Sn	23.38	ppb	0.39	25	93.52	
121 Sb	23.75	ppb	0.96	25	95	
123 Sb	23.87	ppb	0.86	25	95.48	
135 Ba	24.55	ppb	1.97	25	98.2	
137 Ba	24.48	ppb	0.35	25	97.92	
182 W	25.04	ppb	0.92	25	100.16	
203 Tl	24.66	ppb	0.97	25	98.64	
205 Tl	24.82	ppb	0.66	25	99.28	
208 Pb	24.84	ppb	0.30	25	99.36	
232 Th	25.19	ppb	1.79	25	100.76	
238 U	26.9	ppb	0.64	25	107.6	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2331333.80	2.35	2844110.50	82.0	80 - 120.4	
45 Sc	2450939.80	1.30	2809797.00	87.2	80 - 120.4	
72 Ge	533232.50	1.98	642252.38	83.0	80 - 120.4	
159 Tb	6507687.00	1.03	7051087.50	92.3	80 - 120.4	
209 Bi	3479182.00	1.21	3594227.50	96.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000177

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\065_CCB.D\065_CCB.D#
Date Acquired: May 11 2018 09:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0021	ppb	101.09	1.00	
11 B	4.526	ppb	8.54	1.00	Fail
23 Na	2.289	ppb	8.30	1.00	
25 Mg	0.0965	ppb	117.92	1.00	
27 Al	0.0565	ppb	15.94	1.00	
28 Si	38.18	ppb	13.32	1.00	
29 Si	-0.2181	ppb	2948.20	1.00	
39 K	-0.674	ppb	377.60	1.00	
43 Ca	3.608	ppb	110.42	1.00	
44 Ca	1.459	ppb	56.87	1.00	
51 V	-0.0717	ppb	96.61	1.00	
52 Cr	0.1818	ppb	27.17	1.00	
53 Cr	-5.332	ppb	5.91	1.00	
55 Mn	0.0192	ppb	25.84	1.00	
56 Fe	23.76	ppb	12.37	1.00	
57 Fe	3.983	ppb	13.91	1.00	
59 Co	0.0039	ppb	99.01	1.00	
60 Ni	0.0102	ppb	74.42	1.00	
63 Cu	0.0186	ppb	68.67	1.00	
65 Cu	-0.0034	ppb	325.70	1.00	
66 Zn	-0.0179	ppb	16.07	1.00	
68 Zn	0.2414	ppb	26.90	1.00	
75 As	0.1334	ppb	38.39	1.00	
82 Se	0.2101	ppb	22.95	1.00	
88 Sr	-0.0006	ppb	73.91	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0304	ppb	50.30	1.00	
107 Ag	0.0117	ppb	23.16	1.00	
109 Ag	0.01	ppb	62.73	1.00	
111 Cd	-0.0496	ppb	54.68	1.00	
114 Cd	0.0002	ppb	674.91	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0534	ppb	14.38	1.00	
120 Sn	0.0465	ppb	14.00	1.00	
121 Sb	0.0129	ppb	25.43	1.00	
123 Sb	0.0046	ppb	59.07	1.00	
135 Ba	0.0059	ppb	240.02	1.00	
137 Ba	0.0059	ppb	98.19	1.00	
182 W	0.0592	ppb	30.97	1.00	
203 Tl	0.0078	ppb	15.75	1.00	
205 Tl	0.0073	ppb	41.44	1.00	
208 Pb	0.067	ppb	13.78	1.00	
232 Th	0.0987	ppb	24.01	1.00	
238 U	0.0037	ppb	55.77	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2258364.30	1.08	2844110.50	79.4	79.5 - 120	ISFail
45 Sc	2276785.00	1.30	2809797.00	81.0	79.5 - 120	
72 Ge	514889.16	0.50	642252.38	80.2	79.5 - 120	
159 Tb	6127510.50	0.39	7051087.50	86.9	79.5 - 120	
209 Bi	3335170.30	1.90	3594227.50	92.8	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.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 4000178

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: JS

ANALYSIS DATE: 05/14/2018

REVIEWED
MD 5/25/18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE14A

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

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 JS (initals) on 5.14.18 (date).
5.14.18

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17761	05/14/2018	05/14/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17763	05/14/2018	05/20/2018	Varies by Element
ICSAB	MW17764	05/14/2018	05/20/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17762	05/14/2018	08/142018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

10x diln. Post Spike: 0.1mL of MW17698 (pipet M16) into 10x diln. of sample (pipet M18)

Pb failed in final PQL due to sample carryover; accepted Pb results for all non-DW samples analyzed prior to CCV/CCB for analyte at 20:49/20:53.

MD 5/25/18

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 10x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17761 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

Post Spike: 0.08mL of MW17698 (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	JLE14A	5/14/2018	3:12:00 14:23	JS
200.8 TUNE	1	JLE14A	5/14/2018	3:12:00 14:26	JS
Cal Blank	1	JLE14A	5/14/2018	3:12:00 15:12	JS
Cal Std	1	JLE14A	5/14/2018	3:16:00 15:16	JS
ICV	1	JLE14A	5/14/2018	3:20:00 15:20	JS
ICB	1	JLE14A	5/14/2018	3:23:00 15:23	JS
PQL	1	JLE14A	5/14/2018	3:26:00 15:26	JS
RINSE	1	JLE14A	5/14/2018	3:30:00 15:30	JS
ICSA	1	JLE14A	5/14/2018	3:34:00 15:34	JS
ICSAB	1	JLE14A	5/14/2018	3:38:00 15:38	JS
RINSE	1	JLE14A	5/14/2018	3:41:00 15:41	JS
LRS1	1	JLE14A	5/14/2018	3:45:00 15:45	JS
LRS2	1	JLE14A	5/14/2018	3:48:00 15:48	JS
RINSE	1	JLE14A	5/14/2018	3:52:00 15:52	JS
RINSE	1	JLE14A	5/14/2018	3:56:00 15:56	JS
CCV	1	JLE14A	5/14/2018	4:00:00 16:00	JS
CCB	1	JLE14A	5/14/2018	4:03:00 16:03	JS
SL4088-001	1	JLE14A	5/14/2018	4:07:00 16:07	JS
SL4104-001	1	JLE14A	5/14/2018	4:11:00 16:11	JS
PBWLE11IMW1	1	JLE14A	5/14/2018	4:14:00 16:14	JS
LCSWLE11IMW1	5	JLE14A	5/14/2018	4:18:00 16:18	JS
SL4028-001	1	JLE14A	5/14/2018	4:22:00 16:22	JS
SL4027-001	25	JLE14A	5/14/2018	4:26:00 16:26	JS
RINSE	1	JLE14A	5/14/2018	4:30:00 16:30	JS
RISNE	1	JLE14A	5/14/2018	4:33:00 16:33	JS
PBSLE04IMS1	5	JLE14A	5/14/2018	4:37:00 16:37	JS
LCSOLE04IMS1	5	JLE14A	5/14/2018	4:41:00 16:41	JS
CCV	1	JLE14A	5/14/2018	4:45:00 16:45	JS
CCB	1	JLE14A	5/14/2018	4:49:00 16:49	JS
SL3708-007	10	JLE14A	5/14/2018	4:52:00 16:52	JS
SL3708-019	10	JLE14A	5/14/2018	4:56:00 16:56	JS
SL3708-020	10	JLE14A	5/14/2018	5:00:00 17:00	JS
SL3708-021	10	JLE14A	5/14/2018	5:04:00 17:04	JS
SL3807-001	10	JLE14A	5/14/2018	5:08:00 17:08	JS
SL3807-002	10	JLE14A	5/14/2018	5:12:00 17:12	JS
RINSE	1	JLE14A	5/14/2018	5:16:00 17:16	JS
PBSLE11IMS2	5	JLE14A	5/14/2018	5:20:00 17:20	JS
LCSOLE11IMS2	5	JLE14A	5/14/2018	5:24:00 17:24	JS
LC2OLE11IMS2	5	JLE14A	5/14/2018	5:28:00 17:28	JS
CCV	1	JLE14A	5/14/2018	5:32:00 17:32	JS
CCB	1	JLE14A	5/14/2018	5:36:00 17:36	JS
SL3756-001	5	JLE14A	5/14/2018	5:40:00 17:40	JS
SL3756-003	5	JLE14A	5/14/2018	5:44:00 17:44	JS
SL3756-004	5	JLE14A	5/14/2018	5:48:00 17:48	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3756-005	5	JLE14A	5/14/2018	5:52:00 17:52	JS
PBSLE09IMS1	5	JLE14A	5/14/2018	5:56:00 17:56	JS
LCSOLE09IMS1	5	JLE14A	5/14/2018	6:00:00 18:00	JS
SL3809-048	10	JLE14A	5/14/2018	6:04:00 18:04	JS
SL3951-001	10	JLE14A	5/14/2018	6:08:00 18:08	JS
SL3951-001L	50	JLE14A	5/14/2018	6:12:00 18:12	JS
SL3951-001A	10	JLE14A	5/14/2018	6:16:00 18:16	JS
CCV	1	JLE14A	5/14/2018	6:20:00 18:20	JS
CCB	1	JLE14A	5/14/2018	6:24:00 18:24	JS
SL3951-001S	10	JLE14A	5/14/2018	6:28:00 18:28	JS
SL3951-001P	10	JLE14A	5/14/2018	6:32:00 18:32	JS
SL3809-020	10	JLE14A	5/14/2018	6:37:00 18:37	JS
RINSE	1	JLE14A	5/14/2018	6:41:00 18:41	JS
PBWLE14IMW1	1	JLE14A	5/14/2018	6:45:00 18:45	JS
LCSWLE14IMW1	5	JLE14A	5/14/2018	6:49:00 18:49	JS
SL4085-001	1	JLE14A	5/14/2018	6:53:00 18:53	JS
SL4085-002	1	JLE14A	5/14/2018	6:57:00 18:57	JS
SL4096-002	1	JLE14A	5/14/2018	7:01:00 19:01	JS
SL4105-001	1	JLE14A	5/14/2018	7:05:00 19:05	JS
CCV	1	JLE14A	5/14/2018	7:09:00 19:09	JS
CCB	1	JLE14A	5/14/2018	7:13:00 19:13	JS
SL4105-003	1	JLE14A	5/14/2018	7:17:00 19:17	JS
SL4096-001	1	JLE14A	5/14/2018	7:22:00 19:22	JS
PBWLE07IMW1	5	JLE14A	5/14/2018	7:26:00 19:26	JS
LCSWLE07IMW1	5	JLE14A	5/14/2018	7:30:00 19:30	JS
SL3808-002	5	JLE14A	5/14/2018	7:34:00 19:34	JS
SL3808-003	5	JLE14A	5/14/2018	7:38:00 19:38	JS
SL3808-004	5	JLE14A	5/14/2018	7:42:00 19:42	JS
SL3808-004L	25	JLE14A	5/14/2018	7:47:00 19:47	JS
SL3808-004A	5	JLE14A	5/14/2018	7:51:00 19:51	JS
SL3808-004S	5	JLE14A	5/14/2018	7:55:00 19:55	JS
CCV	1	JLE14A	5/14/2018	7:59:00 19:59	JS
CCB	1	JLE14A	5/14/2018	8:03:00 20:03	JS
SL3808-004P	5	JLE14A	5/14/2018	8:07:00 20:07	JS
SL3808-005	5	JLE14A	5/14/2018	8:11:00 20:11	JS
SL3808-005L	25	JLE14A	5/14/2018	8:16:00 20:16	JS
SL3808-005A	5	JLE14A	5/14/2018	8:20:00 20:20	JS
SL3808-005S	5	JLE14A	5/14/2018	8:24:00 20:24	JS
SL3808-005P	5	JLE14A	5/14/2018	8:28:00 20:28	JS
SL3808-006	5	JLE14A	5/14/2018	8:33:00 20:33	JS
SL3808-007	5	JLE14A	5/14/2018	8:37:00 20:37	JS
SL3808-008	5	JLE14A	5/14/2018	8:41:00 20:41	JS
SL3808-009	5	JLE14A	5/14/2018	8:45:00 20:45	JS
CCV	1	JLE14A	5/14/2018	8:49:00 20:49	JS
CCB	1	JLE14A	5/14/2018	8:53:00 20:53	JS
SL3808-010	5	JLE14A	5/14/2018	8:58:00 20:58	JS
SL3808-011	5	JLE14A	5/14/2018	9:02:00 21:02	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3808-012	5	JLE14A	5/14/2018	9:06:00 21:06	JS
SL3808-013	5	JLE14A	5/14/2018	9:10:00 21:10	JS
SL3808-014	5	JLE14A	5/14/2018	9:14:00 21:14	JS
SL3808-015	5	JLE14A	5/14/2018	9:19:00 21:19	JS
SL3808-016	5	JLE14A	5/14/2018	9:23:00 21:23	JS
SL3808-017	5	JLE14A	5/14/2018	9:27:00 21:27	JS
SL3808-018	5	JLE14A	5/14/2018	9:31:00 21:31	JS
RINSE	1	JLE14A	5/14/2018	9:36:00 21:36	JS
CCV	1	JLE14A	5/14/2018	9:40:00 21:40	JS
CCB	1	JLE14A	5/14/2018	9:44:00 21:44	JS
PBSLE08IMS2	5	JLE14A	5/14/2018	9:48:00 21:48	JS
LCSOLE08IMS2	5	JLE14A	5/14/2018	9:52:00 21:52	JS
SL3809-024	5	JLE14A	5/14/2018	9:56:00 21:56	JS
SL3809-024L	25	JLE14A	5/14/2018	10:01:0 22:01	JS
SL3809-024A	5	JLE14A	5/14/2018	10:05:0 22:05	JS
SL3809-024S	5	JLE14A	5/14/2018	10:09:0 22:09	JS
SL3809-024P	5	JLE14A	5/14/2018	10:13:0 22:13	JS
SL3809-041	5	JLE14A	5/14/2018	10:18:0 22:18	JS
SL3809-042	5	JLE14A	5/14/2018	10:22:0 22:22	JS
RINSE	1	JLE14A	5/14/2018	10:26:0 22:26	JS
CCV	1	JLE14A	5/14/2018	10:31:0 22:31	JS
CCB	1	JLE14A	5/14/2018	10:35:0 22:35	JS
SL3809-043	5	JLE14A	5/14/2018	10:39:0 22:39	JS
SL3809-044	5	JLE14A	5/14/2018	10:43:0 22:43	JS
SL3809-046	5	JLE14A	5/14/2018	10:48:0 22:48	JS
SL3809-047	5	JLE14A	5/14/2018	10:52:0 22:52	JS
RINSE	1	JLE14A	5/14/2018	10:56:0 22:56	JS
PBWLE07IMW2	5	JLE14A	5/14/2018	11:00:0 23:00	JS
LCSWLE07IMW2	5	JLE14A	5/14/2018	11:04:0 23:04	JS
SL3841-002	5	JLE14A	5/14/2018	11:09:0 23:09	JS
SL3841-003	5	JLE14A	5/14/2018	11:13:0 23:13	JS
SL3841-004	5	JLE14A	5/14/2018	11:17:0 23:17	JS
CCV	1	JLE14A	5/14/2018	11:21:0 23:21	JS
CCB	1	JLE14A	5/14/2018	11:25:0 23:25	JS
SL3841-005	5	JLE14A	5/14/2018	11:30:0 23:30	JS
SL3841-006	5	JLE14A	5/14/2018	11:34:0 23:34	JS
SL3841-010	5	JLE14A	5/14/2018	11:38:0 23:38	JS
SL3841-011	5	JLE14A	5/14/2018	11:42:0 23:42	JS
SL3841-011L	25	JLE14A	5/14/2018	11:47:0 23:47	JS
SL3841-011A	5	JLE14A	5/14/2018	11:51:0 23:51	JS
SL3841-011S	5	JLE14A	5/14/2018	11:55:0 23:55	JS
SL3841-011P	5	JLE14A	5/14/2018	11:59:0 23:59	JS
SL3841-012	5	JLE14A	5/15/2018	12:04:0 0:04	JS
SL3841-013	5	JLE14A	5/15/2018	12:08:0 0:08	JS
CCV	1	JLE14A	5/15/2018	12:12:0 0:12	JS
CCB	1	JLE14A	5/15/2018	12:16:0 0:16	JS
SL3841-014	5	JLE14A	5/15/2018	12:21:0 0:21	JS

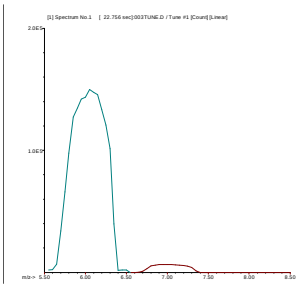
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-015	5	JLE14A	5/15/2018	12:25:0 0:25	JS
SL3841-016	5	JLE14A	5/15/2018	12:29:0 0:29	JS
SL3841-018	5	JLE14A	5/15/2018	12:33:0 0:33	JS
SL3841-019	5	JLE14A	5/15/2018	12:38:0 0:38	JS
SL3841-020	5	JLE14A	5/15/2018	12:42:0 0:42	JS
SL3841-008	5	JLE14A	5/15/2018	12:46:0 0:46	JS
SL3841-009	5	JLE14A	5/15/2018	12:50:0 0:50	JS
SL3841-017	5	JLE14A	5/15/2018	12:55:0 0:55	JS
RINSE	1	JLE14A	5/15/2018	12:59:0 0:59	JS
CCV	1	JLE14A	5/15/2018	1:03:00 1:03	JS
CCB	1	JLE14A	5/15/2018	1:07:00 1:07	JS
PQL	1	JLE14A	5/15/2018	1:11:00 1:11	JS
CCV	1	JLE14A	5/15/2018	1:16:00 1:16	JS
CCB	1	JLE14A	5/15/2018	1:20:00 1:20	JS

6020 QC Tune Report

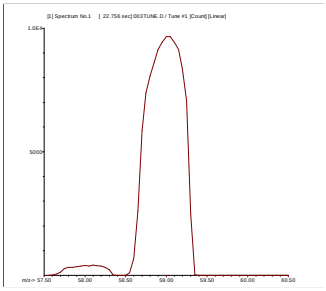
Data File: C:\ICPCHEM\1\DATA\JLE14A.B\003TUNE.D
Date Acquired: May 14 2018 02:23 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

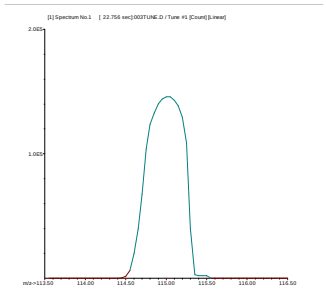
Element	Actual	Required	Flag
7 Li	2.74	5.00	
59 Co	2.02	5.00	
115 In	1.00	5.00	
205 Tl	0.68	5.00	



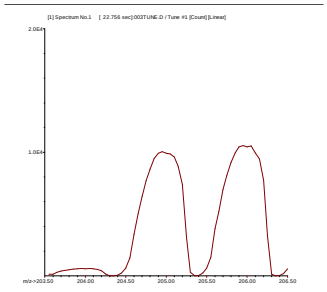
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



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:



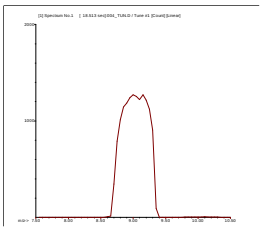
205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

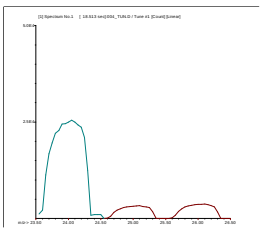
Data File: C:\ICPCHEM\1\DATA\JLE14A.B\004_TUN.D
Date Acquired: May 14 2018 02:26 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

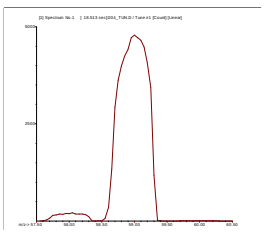
Element	Actual	Required	Flag
9 Be	1.13	5.00	
24 Mg	4.09	5.00	
59 Co	1.47	5.00	
115 In	1.15	5.00	
208 Pb	1.25	5.00	



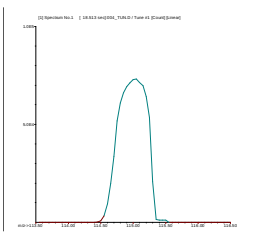
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



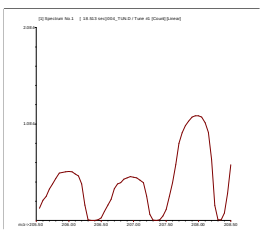
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
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 4000185

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.I
Date Acquired: May 14 2018 03:12 pm
Operator: JS
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: May 14 2018 03:14 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	4492941.00	A	63100.00	1.40
9	Be	8.52	P	3.39	39.84
11	B	363.35	P	23.33	6.42
23	Na	27923.40	P	1151.00	4.12
25	Mg	235.57	P	10.19	4.33
27	Al	2790.18	P	467.30	16.75
28	Si	1028041.00	A	9654.00	0.94
29	Si	87162.95	P	378.00	0.43
39	K	869563.19	A	7103.00	0.82
43	Ca	196.32	P	55.93	28.49
44	Ca	3096.37	P	46.37	1.50
45	Sc	3094961.00	A	25110.00	0.81
51	V	3827.64	P	97.58	2.55
52	Cr	9817.96	P	77.09	0.79
53	Cr	7332.00	P	146.30	2.00
55	Mn	1281.21	P	102.80	8.02
56	Fe	1940419.00	A	6890.00	0.36
57	Fe	9757.58	P	524.30	5.37
59	Co	126.68	P	13.33	10.52
60	Ni	57.42	P	15.40	26.82
63	Cu	493.36	P	50.45	10.23
65	Cu	236.67	P	24.04	10.16
66	Zn	951.17	P	86.57	9.10
68	Zn	1210.09	P	76.24	6.30
72	Ge	631723.63	P	4177.00	0.66
75	As	-79.20	P	79.24	100.05
82	Se	-8.77	P	41.39	471.73
88	Sr	81.49	P	16.97	20.83
89	Y	4547444.00	A	48600.00	1.07
98	Mo	22.20	P	1.96	8.81
107	Ag	33.33	P	8.82	26.46
109	Ag	24.45	P	12.62	51.63
111	Cd	941.05	P	13.84	1.47
114	Cd	10.19	P	20.58	202.01
115	In	4449646.00	A	16060.00	0.36
118	Sn	480.02	P	23.33	4.86
120	Sn	734.49	P	30.25	4.12
121	Sb	35.56	P	3.85	10.83
123	Sb	33.33	P	20.82	62.46
135	Ba	16.67	P	8.82	52.91
137	Ba	36.67	P	5.77	15.75
159	Tb	6220065.00	A	6427.00	0.10
182	W	33.33	P	5.77	17.32
203	Tl	280.01	P	44.10	15.75
205	Tl	720.04	P	45.10	6.26
208	Pb	2367.94	P	207.20	8.75
209	Bi	3318257.00	A	46850.00	1.41
232	Th	17.78	P	7.70	43.30
238	U	8.89	P	5.09	57.28

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\018CALI.D\018CALI.D#
Date Acquired: May 14 2018 03:16 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 14 2018 03:15 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	4392296.00	A	175800.00	4.00
9 Be	155583.41	P	3385.00	2.18
11 B	78512.41	P	4006.00	5.10
23 Na	87351000.00	A	3325000.00	3.81
25 Mg	7282041.00	A	107400.00	1.47
27 Al	6936554.00	A	372500.00	5.37
28 Si	4907787.00	A	166600.00	3.39
29 Si	297128.00	P	4726.00	1.59
39 K	97162120.00	A	1541000.00	1.59
43 Ca	173829.09	P	3799.00	2.19
44 Ca	2787016.00	A	27020.00	0.97
45 Sc	3192133.00	A	13830.00	0.43
51 V	537061.69	P	11930.00	2.22
52 Cr	473225.50	P	4999.00	1.06
53 Cr	61469.20	P	1430.00	2.33
55 Mn	600436.38	P	5586.00	0.93
56 Fe	98280152.00	A	1630000.00	1.66
57 Fe	2402100.00	A	33670.00	1.40
59 Co	526513.63	P	3691.00	0.70
60 Ni	120150.60	P	2336.00	1.94
63 Cu	285760.41	P	394.70	0.14
65 Cu	132106.20	P	1202.00	0.91
66 Zn	67576.40	P	847.30	1.25
68 Zn	49902.06	P	100.30	0.20
72 Ge	614107.69	P	3683.00	0.60
75 As	66479.13	P	1104.00	1.66
82 Se	5359.70	P	46.96	0.88
88 Sr	727325.00	P	2674.00	0.37
89 Y	4523317.00	A	45600.00	1.01
98 Mo	225425.09	P	869.60	0.39
107 Ag	365532.31	P	1726.00	0.47
109 Ag	347452.41	P	1654.00	0.48
111 Cd	72763.38	P	725.70	1.00
114 Cd	160262.80	P	1032.00	0.64
115 In	4357767.00	A	51820.00	1.19
118 Sn	217639.41	P	1337.00	0.61
120 Sn	299108.00	P	2144.00	0.72
121 Sb	254592.59	P	442.80	0.17
123 Sb	193107.09	P	1885.00	0.98
135 Ba	65242.41	P	142.10	0.22
137 Ba	114025.60	P	749.70	0.66
159 Tb	6276308.00	A	43250.00	0.69
182 W	283551.31	P	2614.00	0.92
203 Tl	237673.80	P	1898.00	0.80
205 Tl	563718.38	P	6126.00	1.09
208 Pb	771226.19	P	5415.00	0.70
209 Bi	3189297.00	A	6814.00	0.21
232 Th	792938.38	M	906.20	0.11
238 U	753721.63	P	14960.00	1.98

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4392296.00	4.00	4492941.00	97.8	79.5 - 120.4	
45 Sc	3192133.50	0.43	3094960.50	103.1	79.5 - 120.4	
72 Ge	614107.75	0.60	631723.63	97.2	79.5 - 120.4	
159 Tb	6276308.00	0.69	6220065.50	100.9	79.5 - 120.4	
209 Bi	3189297.50	0.21	3318256.50	96.1	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000187

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\019_ICV.D\019_ICV.D#
Date Acquired: May 14 2018 03:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.07	ppb	2.37	20	95.35	
11 B	21.69	ppb	1.86	20	108.45	
23 Na	4,031.	ppb	1.06	4,000	100.775	
25 Mg	4,031.	ppb	2.23	4,000	100.775	
27 Al	412.6	ppb	1.43	400	103.15	
28 Si	388.7	ppb	5.27	400	97.175	
29 Si	373.9	ppb	3.98	400	93.475	
39 K	3,962.	ppb	1.32	4,000	99.05	
43 Ca	3,896.	ppb	1.89	4,000	97.4	
44 Ca	3,999.	ppb	0.40	4,000	99.975	
51 V	19.56	ppb	1.01	20	97.8	
52 Cr	19.14	ppb	0.86	20	95.7	
53 Cr	16.39	ppb	3.43	20	81.95	
55 Mn	19.33	ppb	0.84	20	96.65	
56 Fe	3,920.	ppb	0.32	4,000	98	
57 Fe	3,963.	ppb	1.52	4,000	99.075	
59 Co	19.7	ppb	1.34	20	98.5	
60 Ni	19.36	ppb	2.27	20	96.8	
63 Cu	19.53	ppb	1.36	20	97.65	
65 Cu	19.99	ppb	1.35	20	99.95	
66 Zn	20.57	ppb	1.51	20	102.85	
68 Zn	20.19	ppb	0.43	20	100.95	
75 As	19.33	ppb	1.13	20	96.65	
82 Se	20.14	ppb	2.10	20	100.7	
88 Sr	19.35	ppb	0.51	20	96.75	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	37.59	ppb	0.47	40	93.975	
107 Ag	19.39	ppb	0.94	20	96.95	
109 Ag	19.53	ppb	0.47	20	97.65	
111 Cd	19.55	ppb	0.17	20	97.75	
114 Cd	19.6	ppb	0.25	20	98	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.83	ppb	1.26	20	99.15	
120 Sn	20.15	ppb	1.25	20	100.75	
121 Sb	20.01	ppb	0.97	20	100.05	
123 Sb	19.92	ppb	0.55	20	99.6	
135 Ba	19.88	ppb	0.74	20	99.4	
137 Ba	19.9	ppb	0.47	20	99.5	
182 W	19.44	ppb	1.81	20	97.2	
203 Tl	19.76	ppb	1.16	20	98.8	
205 Tl	19.79	ppb	0.59	20	98.95	
208 Pb	19.34	ppb	1.19	20	96.7	
232 Th	19.15	ppb	1.38	20	95.75	
238 U	19.17	ppb	2.33	20	95.85	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4554242.00	2.43	4492941.00	101.4	80 - 120.4	
45 Sc	3280234.30	0.99	3094960.50	106.0	80 - 120.4	
72 Ge	646170.63	0.77	631723.63	102.3	80 - 120.4	
159 Tb	6296521.00	0.37	6220065.50	101.2	80 - 120.4	
209 Bi	3282468.30	1.21	3318256.50	98.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000188

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\020_ICB.D\020_ICB.D#
Date Acquired: May 14 2018 03:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0024	ppb	203.14	1.00	
11 B	1.625	ppb	21.03	1.00	
23 Na	0.4833	ppb	128.20	1.00	
25 Mg	0.3642	ppb	185.28	1.00	
27 Al	0.0388	ppb	267.78	1.00	
28 Si	0.4705	ppb	1145.80	1.00	
29 Si	-12.3	ppb	72.41	1.00	
39 K	-0.4823	ppb	405.56	1.00	
43 Ca	0.4224	ppb	175.83	1.00	
44 Ca	1.092	ppb	121.52	1.00	
51 V	-0.1244	ppb	39.87	1.00	
52 Cr	-0.0797	ppb	32.14	1.00	
53 Cr	-1.143	ppb	27.94	1.00	
55 Mn	0.0099	ppb	42.69	1.00	
56 Fe	-6.95	ppb	44.73	1.00	
57 Fe	0.6893	ppb	106.86	1.00	
59 Co	0.0012	ppb	255.72	1.00	
60 Ni	0.0018	ppb	262.78	1.00	
63 Cu	-0.0053	ppb	73.02	1.00	
65 Cu	-0.0111	ppb	172.65	1.00	
66 Zn	0.0008	ppb	4280.90	1.00	
68 Zn	0.0718	ppb	116.03	1.00	
75 As	-0.074	ppb	72.76	1.00	
82 Se	0.1465	ppb	172.08	1.00	
88 Sr	0.0017	ppb	63.36	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0746	ppb	30.42	1.00	
107 Ag	0.0062	ppb	69.51	1.00	
109 Ag	0.0045	ppb	73.59	1.00	
111 Cd	-0.0299	ppb	32.39	1.00	
114 Cd	-0.0009	ppb	254.81	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0363	ppb	20.14	1.00	
120 Sn	0.0206	ppb	14.13	1.00	
121 Sb	0.005	ppb	48.38	1.00	
123 Sb	0.0025	ppb	141.07	1.00	
135 Ba	0.0042	ppb	89.05	1.00	
137 Ba	0.0043	ppb	164.01	1.00	
182 W	0.0606	ppb	26.73	1.00	
203 Tl	0.0088	ppb	126.55	1.00	
205 Tl	0.0054	ppb	107.50	1.00	
208 Pb	-0.0174	ppb	30.95	1.00	
232 Th	0.0573	ppb	11.13	1.00	
238 U	0.0064	ppb	24.96	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4481757.00	3.35	4492941.00	99.8	79.5 - 120	
45 Sc	3096233.80	1.70	3094960.50	100.0	79.5 - 120	
72 Ge	631557.81	0.62	631723.63	100.0	79.5 - 120	
159 Tb	6238624.50	1.48	6220065.50	100.3	79.5 - 120	
209 Bi	3309879.00	1.87	3318256.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000189

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\021_PQL.D\021_PQL.D#
Date Acquired: May 14 2018 03:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1904	ppb	3.58	0.20	95.2	
11 B	4.479	ppb	2.96	4.00	111.975	
23 Na	211.1	ppb	3.65	200.00	105.55	
25 Mg	20.57	ppb	3.21	20.00	102.85	
27 Al	20.37	ppb	1.79	20.00	101.85	
28 Si	107.4	ppb	3.22	100.00	107.4	
29 Si	90.32	ppb	7.79	100.00	90.32	
39 K	198.1	ppb	2.73	200.00	99.05	
43 Ca	14.45	ppb	15.68	20.00	72.25	
44 Ca	20.4	ppb	6.09	20.00	102	
51 V	0.9234	ppb	3.39	1.00	92.34	
52 Cr	0.8888	ppb	4.56	1.00	88.88	
53 Cr	-0.9714	ppb	9.47	---	#VALUE!	
55 Mn	0.4067	ppb	4.84	0.40	101.675	
56 Fe	15.81	ppb	22.02	20.00	79.05	
57 Fe	19.66	ppb	12.74	20.00	98.3	
59 Co	0.1998	ppb	5.49	0.20	99.9	
60 Ni	0.3995	ppb	2.10	0.40	99.875	
63 Cu	0.6149	ppb	8.58	0.60	102.483	
65 Cu	0.5779	ppb	5.29	0.60	96.3167	
66 Zn	2.082	ppb	4.59	2.00	104.1	
68 Zn	1.961	ppb	6.74	2.00	98.05	
75 As	0.9836	ppb	28.33	1.00	98.36	
82 Se	0.9533	ppb	34.25	1.00	95.33	
88 Sr	0.9733	ppb	6.85	1.00	97.33	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9958	ppb	1.59	1.00	99.58	
107 Ag	0.1996	ppb	1.54	0.20	99.8	
109 Ag	0.2023	ppb	4.06	0.20	101.15	
111 Cd	0.1522	ppb	19.26	0.20	76.1	
114 Cd	0.2013	ppb	5.68	0.20	100.65	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.01	ppb	4.66	1.00	101	
120 Sn	1.028	ppb	4.57	1.00	102.8	
121 Sb	0.2139	ppb	1.88	0.20	106.95	
123 Sb	0.2206	ppb	6.49	0.20	110.3	
135 Ba	0.4154	ppb	4.29	0.40	103.85	
137 Ba	0.4108	ppb	4.25	0.40	102.7	
182 W	0.9916	ppb	1.89	1.00	99.16	
203 Tl	0.2199	ppb	5.96	0.20	109.95	
205 Tl	0.2031	ppb	6.07	0.20	101.55	
208 Pb	0.2184	ppb	7.78	0.20	109.2	
232 Th	0.2097	ppb	5.51	0.20	104.85	
238 U	0.2019	ppb	3.11	0.20	100.95	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4444047.50	1.03	4492941.00	98.9	80 - 120.4	
45 Sc	3077699.80	1.28	3094960.50	99.4	80 - 120.4	
72 Ge	629745.25	1.20	631723.63	99.7	80 - 120.4	
159 Tb	6219506.00	1.88	6220065.50	100.0	80 - 120.4	
209 Bi	3244998.80	1.68	3318256.50	97.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000190

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\022SMPL.D\022SMPL.D#
Date Acquired: May 14 2018 03:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	137.77	100.	
11 B	0.436	0.436	ppb	18.90	1000.	
23 Na	0.7888	0.7888	ppb	32.44	200000.	
25 Mg	0.0542	0.0542	ppb	190.30	200000.	
27 Al	0.4346	0.4346	ppb	23.72	200000.	
28 Si	1.401	1.401	ppb	356.46	#VALUE!	
29 Si	-11.54	-11.54	ppb	9.58	10000.	
39 K	-0.8045	-0.8045	ppb	117.92	200000.	
43 Ca	-2.125	-2.125	ppb	183.53	#VALUE!	
44 Ca	1.18	1.18	ppb	33.25	200000.	
51 V	-0.0835	-0.0835	ppb	66.90	1000.	
52 Cr	-0.0481	-0.0481	ppb	23.69	2000.	
53 Cr	-1.862	-1.862	ppb	4.98	#VALUE!	
55 Mn	-0.0058	-0.0058	ppb	18.09	2000.	
56 Fe	-0.139	-0.139	ppb	3915.10	#VALUE!	
57 Fe	0.8098	0.8098	ppb	124.10	100000.	
59 Co	-0.0014	-0.0014	ppb	122.85	1000.	
60 Ni	0.0139	0.0139	ppb	129.62	1000.	
63 Cu	0.1345	0.1345	ppb	8.17	#VALUE!	
65 Cu	0.1353	0.1353	ppb	10.85	2000.	
66 Zn	0.0079	0.0079	ppb	406.56	2000.	
68 Zn	0.0125	0.0125	ppb	657.67	#VALUE!	
75 As	0.0086	0.0086	ppb	1671.70	1000.	
82 Se	0.1142	0.1142	ppb	105.34	1000.	
88 Sr	-0.0008	-0.0008	ppb	64.71	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0104	0.0104	ppb	43.62	1000.	
107 Ag	0.0019	0.0019	ppb	88.65	100.	
109 Ag	0.001	0.001	ppb	18.07	#VALUE!	
111 Cd	-0.0329	-0.0329	ppb	30.45	#VALUE!	
114 Cd	-0.0021	-0.0021	ppb	39.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0033	-0.0033	ppb	179.33	1000.	
120 Sn	-0.014	-0.014	ppb	70.57	#VALUE!	
121 Sb	-0.0008	-0.0008	ppb	128.72	#VALUE!	
123 Sb	0.001	0.001	ppb	451.61	1000.	
135 Ba	0.0134	0.0134	ppb	60.19	2000.	
137 Ba	0.0033	0.0033	ppb	45.96	#VALUE!	
182 W	0.0088	0.0088	ppb	17.26	1000.	
203 Tl	0.0046	0.0046	ppb	34.34	1000.	
205 Tl	-0.0047	-0.0047	ppb	55.81	#VALUE!	
208 Pb	0.1539	0.1539	ppb	7.46	2000.	
232 Th	0.0085	0.0085	ppb	28.43	1000.	
238 U	0.001	0.001	ppb	97.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4664009.00	4.81	4492941.00	103.8	69.5 - 120	
45 Sc	3153090.30	2.15	3094960.50	101.9	69.5 - 120	
72 Ge	638596.25	1.79	631723.63	101.1	69.5 - 120	
159 Tb	6112078.50	0.70	6220065.50	98.3	69.5 - 120	
209 Bi	3190041.30	1.55	3318256.50	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000191

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\023ICSA.D\023ICSA.D#
Date Acquired: May 14 2018 03:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	78.58		
11 B	0.6987	ppb	12.46		
23 Na	102,200.	ppb	1.42		
25 Mg	99,940.	ppb	3.06		
27 Al	99,860.	ppb	3.13		
28 Si	20.08	ppb	6.03		
29 Si	54.59	ppb	8.16		
39 K	99,380.	ppb	1.26		
43 Ca	101,500.	ppb	1.80		
44 Ca	97,280.	ppb	1.99		
51 V	0.1946	ppb	38.18		
52 Cr	1.129	ppb	3.48		
53 Cr	0.434	ppb	116.18		
55 Mn	0.3535	ppb	3.80		
56 Fe	96,200.	ppb	2.31		
57 Fe	92,940.	ppb	0.97		
59 Co	0.0926	ppb	8.26		
60 Ni	-0.2361	ppb	5.15		
63 Cu	4.21	ppb	2.84		
65 Cu	1.045	ppb	3.45		
66 Zn	2.543	ppb	6.28		
68 Zn	0.4309	ppb	15.97		
75 As	0.0733	ppb	175.10		
82 Se	0.1863	ppb	114.06		
88 Sr	0.9453	ppb	3.25		
89 Y	--------	---	--------		
98 Mo	1,890.	ppb	1.29		
107 Ag	0.0248	ppb	24.67		
109 Ag	0.0172	ppb	15.52		
111 Cd	0.0345	ppb	32.33		
114 Cd	0.017	ppb	103.35		
115 In	--------	---	--------		
118 Sn	0.0491	ppb	18.29		
120 Sn	0.0273	ppb	62.33		
121 Sb	0.0373	ppb	5.28		
123 Sb	0.045	ppb	9.56		
135 Ba	0.0925	ppb	7.74		
137 Ba	0.0878	ppb	13.09		
182 W	0.2336	ppb	1.86		
203 Tl	0.0088	ppb	3.85		
205 Tl	-0.0024	ppb	154.03		
208 Pb	0.0625	ppb	19.23		
232 Th	0.0469	ppb	13.67		
238 U	0.0013	ppb	50.10		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4353064.00	1.58	4492941.00	96.9	69.5 - 120.4	
45 Sc	3237120.30	3.31	3094960.50	104.6	69.5 - 120.4	
72 Ge	639350.69	1.73	631723.63	101.2	69.5 - 120.4	
159 Tb	6088915.50	0.18	6220065.50	97.9	69.5 - 120.4	
209 Bi	2721698.50	0.92	3318256.50	82.0	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\024ICSB.D\024ICSB.D#
Date Acquired: May 14 2018 03:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	19.25	ppb	5.62	20.00	79.5 - 120	
11 B	22.54	ppb	4.29	20.00	79.5 - 120	
23 Na	105,400.	ppb	1.28	#########	79.5 - 120	
25 Mg	101,300.	ppb	1.35	#########	79.5 - 120	
27 Al	100,600.	ppb	1.78	#########	79.5 - 120	
28 Si	532.8	ppb	1.77	---	##### - #####	
29 Si	557.7	ppb	2.74	---	##### - #####	
39 K	98,850.	ppb	0.87	#########	79.5 - 120	
43 Ca	101,400.	ppb	1.51	#########	79.5 - 120	
44 Ca	96,790.	ppb	0.63	#########	79.5 - 120	
51 V	20.78	ppb	1.14	20.00	79.5 - 120	
52 Cr	20.93	ppb	1.68	20.00	79.5 - 120	
53 Cr	21.48	ppb	1.61	---	##### - #####	
55 Mn	19.71	ppb	0.89	20.00	79.5 - 120	
56 Fe	96,320.	ppb	0.83	#########	79.5 - 120	
57 Fe	93,950.	ppb	0.96	#########	79.5 - 120	
59 Co	19.52	ppb	2.01	20.00	79.5 - 120	
60 Ni	18.27	ppb	1.76	20.00	79.5 - 120	
63 Cu	22.58	ppb	1.15	20.00	79.5 - 120	
65 Cu	19.98	ppb	1.71	20.00	79.5 - 120	
66 Zn	19.69	ppb	0.24	20.00	79.5 - 120	
68 Zn	17.97	ppb	2.46	20.00	79.5 - 120	
75 As	19.69	ppb	0.59	20.00	79.5 - 120	
82 Se	19.38	ppb	2.06	20.00	79.5 - 120	
88 Sr	21.04	ppb	0.92	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,912.	ppb	1.01	2000.00	79.5 - 120	
107 Ag	17.84	ppb	2.04	20.00	79.5 - 120	
109 Ag	18.	ppb	1.71	20.00	79.5 - 120	
111 Cd	18.08	ppb	1.66	20.00	79.5 - 120	
114 Cd	18.01	ppb	1.07	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.12	ppb	1.37	20.00	79.5 - 120	
120 Sn	21.19	ppb	1.03	20.00	79.5 - 120	
121 Sb	20.82	ppb	0.90	20.00	79.5 - 120	
123 Sb	21.	ppb	0.69	20.00	79.5 - 120	
135 Ba	21.12	ppb	1.60	20.00	79.5 - 120	
137 Ba	20.93	ppb	0.48	20.00	79.5 - 120	
182 W	20.21	ppb	1.42	20.00	79.5 - 120	
203 Tl	21.27	ppb	0.95	20.00	79.5 - 120	
205 Tl	21.31	ppb	2.14	20.00	79.5 - 120	
208 Pb	21.15	ppb	1.50	20.00	79.5 - 120	
232 Th	22.13	ppb	1.43	20.00	79.5 - 120	
238 U	21.82	ppb	1.98	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4469143.00	4.45	4492941.00	99.5	69.5 - 120	
45 Sc	3342195.80	1.59	3094960.50	108.0	69.5 - 120	
72 Ge	656262.25	1.58	631723.63	103.9	69.5 - 120	
159 Tb	6200078.50	1.32	6220065.50	99.7	69.5 - 120	
209 Bi	2746144.30	1.36	3318256.50	82.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000193

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\025SMPL.D\025SMPL.D#
Date Acquired: May 14 2018 03:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	141.83	100.	
11 B	0.382	0.382	ppb	15.94	1000.	
23 Na	8.213	8.213	ppb	75.02	200000.	
25 Mg	6.045	6.045	ppb	95.60	200000.	
27 Al	7.325	7.325	ppb	91.90	200000.	
28 Si	5.261	5.261	ppb	74.40	#VALUE!	
29 Si	-28.5	-28.5	ppb	17.73	10000.	
39 K	1.954	1.954	ppb	276.97	200000.	
43 Ca	4.073	4.073	ppb	73.39	#VALUE!	
44 Ca	5.841	5.841	ppb	83.19	200000.	
51 V	-0.0922	-0.0922	ppb	40.17	1000.	
52 Cr	-0.0064	-0.0064	ppb	162.19	2000.	
53 Cr	1.336	1.336	ppb	10.42	#VALUE!	
55 Mn	0.0023	0.0023	ppb	272.38	2000.	
56 Fe	3.359	3.359	ppb	74.96	#VALUE!	
57 Fe	8.593	8.593	ppb	28.02	100000.	
59 Co	-0.0001	-0.0001	ppb	2888.70	1000.	
60 Ni	0.0223	0.0223	ppb	32.26	1000.	
63 Cu	0.1581	0.1581	ppb	7.33	#VALUE!	
65 Cu	0.1542	0.1542	ppb	5.98	2000.	
66 Zn	0.1394	0.1394	ppb	66.61	2000.	
68 Zn	0.12	0.12	ppb	52.58	#VALUE!	
75 As	0.0177	0.0177	ppb	1054.70	1000.	
82 Se	-0.0035	-0.0035	ppb	2385.10	1000.	
88 Sr	0.0009	0.0009	ppb	220.73	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.214	1.214	ppb	34.62	1000.	
107 Ag	0.0055	0.0055	ppb	76.14	100.	
109 Ag	0.0046	0.0046	ppb	54.44	#VALUE!	
111 Cd	-0.0689	-0.0689	ppb	29.71	#VALUE!	
114 Cd	-0.0003	-0.0003	ppb	869.80	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0071	0.0071	ppb	83.16	1000.	
120 Sn	0.0003	0.0003	ppb	1882.80	#VALUE!	
121 Sb	0.0066	0.0066	ppb	54.91	#VALUE!	
123 Sb	0.	0.	ppb	18969.00	1000.	
135 Ba	0.0284	0.0284	ppb	47.20	2000.	
137 Ba	0.0404	0.0404	ppb	22.28	#VALUE!	
182 W	0.0115	0.0115	ppb	42.11	1000.	
203 Tl	0.0107	0.0107	ppb	46.22	1000.	
205 Tl	-0.0026	-0.0026	ppb	78.42	#VALUE!	
208 Pb	0.1394	0.1394	ppb	5.86	2000.	
232 Th	0.0109	0.0109	ppb	17.75	1000.	
238 U	0.0029	0.0029	ppb	12.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4698673.50	1.50	4492941.00	104.6	69.5 - 120	
45 Sc	3332540.80	0.94	3094960.50	107.7	69.5 - 120	
72 Ge	670699.69	0.52	631723.63	106.2	69.5 - 120	
159 Tb	6211803.50	0.10	6220065.50	99.9	69.5 - 120	
209 Bi	3211532.50	0.71	3318256.50	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000194

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\026SMPL.D\026SMPL.D#
Date Acquired: May 14 2018 03:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	95.75	95.75	ppb	1.77	100.	
11 B	0.175	0.175	ppb	8.77	1000.	
23 Na	3.2	3.2	ppb	10.04	200000.	
25 Mg	1.057	1.057	ppb	3.53	200000.	
27 Al	3.751	3.751	ppb	4.63	200000.	
28 Si	-1.858	-1.858	ppb	250.54	#VALUE!	
29 Si	-6.36	-6.36	ppb	38.52	10000.	
39 K	0.6925	0.6925	ppb	195.81	200000.	
43 Ca	1,593.	1,593.	ppb	0.51	#VALUE!	
44 Ca	124.7	124.7	ppb	5.32	200000.	
51 V	1,078.	1,078.	ppb	1.16	1000.	>LDR
52 Cr	2,077.	2,077.	ppb	1.39	2000.	>LDR
53 Cr	2,120.	2,120.	ppb	0.82	#VALUE!	
55 Mn	2,032.	2,032.	ppb	1.22	2000.	>LDR
56 Fe	-0.0508	-0.0508	ppb	4049.60	#VALUE!	
57 Fe	0.1191	0.1191	ppb	359.78	100000.	
59 Co	1,039.	1,039.	ppb	0.61	1000.	>LDR
60 Ni	1,024.	1,024.	ppb	1.53	1000.	>LDR
63 Cu	2,000.	2,000.	ppb	1.87	#VALUE!	
65 Cu	2,058.	2,058.	ppb	1.60	2000.	>LDR
66 Zn	2,093.	2,093.	ppb	1.70	2000.	>LDR
68 Zn	2,096.	2,096.	ppb	1.45	#VALUE!	
75 As	1,059.	1,059.	ppb	1.27	1000.	>LDR
82 Se	1,095.	1,095.	ppb	0.44	1000.	>LDR
88 Sr	1,972.	1,972.	ppb	0.44	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,002.	1,002.	ppb	0.85	1000.	>LDR
107 Ag	107.2	107.2	ppb	0.35	100.	>LDR
109 Ag	107.5	107.5	ppb	0.42	#VALUE!	
111 Cd	1,050.	1,050.	ppb	2.14	#VALUE!	
114 Cd	1,014.	1,014.	ppb	0.93	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,038.	1,038.	ppb	1.19	1000.	>LDR
120 Sn	1,039.	1,039.	ppb	0.51	#VALUE!	
121 Sb	1,050.	1,050.	ppb	1.03	#VALUE!	
123 Sb	1,065.	1,065.	ppb	0.70	1000.	>LDR
135 Ba	2,124.	2,124.	ppb	1.24	2000.	>LDR
137 Ba	2,091.	2,091.	ppb	1.79	#VALUE!	
182 W	1,008.	1,008.	ppb	1.62	1000.	>LDR
203 Tl	1,013.	1,013.	ppb	1.22	1000.	>LDR
205 Tl	993.6	993.6	ppb	1.44	#VALUE!	
208 Pb	1,981.	1,981.	ppb	1.72	2000.	
232 Th	980.6	980.6	ppb	2.04	1000.	
238 U	964.8	964.8	ppb	0.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4737063.50	1.51	4492941.00	105.4	69.5 - 120	
45 Sc	3138263.00	0.98	3094960.50	101.4	69.5 - 120	
72 Ge	617598.38	1.73	631723.63	97.8	69.5 - 120	
159 Tb	6094814.50	1.26	6220065.50	98.0	69.5 - 120	
209 Bi	3233750.00	0.83	3318256.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

17 :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 4000195

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\027SMPL.D\027SMPL.D#
Date Acquired: May 14 2018 03:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	0.0075	0.0075	ppb	17.13	100.	
11 B	0.5894	0.5894	ppb	7.38	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	204,300.	204,300.	ppb	2.12	200000.	>LDR
27 Al	203,300.	203,300.	ppb	0.75	200000.	>LDR
28 Si	10,460.	10,460.	ppb	2.09	#VALUE!	
29 Si	10,650.	10,650.	ppb	2.02	10000.	>LDR
39 K	194,500.	194,500.	ppb	2.89	200000.	
43 Ca	196,100.	196,100.	ppb	1.72	#VALUE!	
44 Ca	192,800.	192,800.	ppb	0.82	200000.	
51 V	0.1165	0.1165	ppb	63.26	1000.	
52 Cr	3.045	3.045	ppb	2.51	2000.	
53 Cr	1.139	1.139	ppb	13.92	#VALUE!	
55 Mn	7.572	7.572	ppb	0.51	2000.	
56 Fe	98,020.	98,020.	ppb	0.62	#VALUE!	
57 Fe	94,840.	94,840.	ppb	0.63	100000.	
59 Co	2.848	2.848	ppb	0.73	1000.	
60 Ni	3.123	3.123	ppb	4.92	1000.	
63 Cu	10.14	10.14	ppb	1.18	#VALUE!	
65 Cu	3.067	3.067	ppb	2.95	2000.	
66 Zn	3.9	3.9	ppb	1.40	2000.	
68 Zn	1.192	1.192	ppb	3.20	#VALUE!	
75 As	0.2336	0.2336	ppb	28.20	1000.	
82 Se	0.4522	0.4522	ppb	1.83	1000.	
88 Sr	6.963	6.963	ppb	0.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.52	1.52	ppb	41.95	1000.	
107 Ag	0.3507	0.3507	ppb	3.43	100.	
109 Ag	0.361	0.361	ppb	4.13	#VALUE!	
111 Cd	0.0216	0.0216	ppb	80.42	#VALUE!	
114 Cd	-0.0068	-0.0068	ppb	68.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.5872	0.5872	ppb	17.00	1000.	
120 Sn	0.5519	0.5519	ppb	14.27	#VALUE!	
121 Sb	0.173	0.173	ppb	15.17	#VALUE!	
123 Sb	0.1852	0.1852	ppb	6.51	1000.	
135 Ba	0.2458	0.2458	ppb	8.38	2000.	
137 Ba	0.2546	0.2546	ppb	7.39	#VALUE!	
182 W	1.228	1.228	ppb	36.19	1000.	
203 Tl	0.0425	0.0425	ppb	22.16	1000.	
205 Tl	0.046	0.046	ppb	11.64	#VALUE!	
208 Pb	0.4767	0.4767	ppb	3.33	2000.	
232 Th	1.034	1.034	ppb	22.76	1000.	
238 U	0.1286	0.1286	ppb	19.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4356302.50	4.05	4492941.00	97.0	69.5 - 120	
45 Sc	3386027.50	5.69	3094960.50	109.4	69.5 - 120	
72 Ge	633735.94	3.61	631723.63	100.3	69.5 - 120	
159 Tb	5556815.00	1.03	6220065.50	89.3	69.5 - 120	
209 Bi	2277712.30	1.60	3318256.50	68.6	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

4 :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 4000196

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\028SMPL.D\028SMPL.D#
Date Acquired: May 14 2018 03:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	44.51	100.	
11 B	0.1114	0.1114	ppb	33.73	1000.	
23 Na	15.13	15.13	ppb	65.08	200000.	
25 Mg	6.106	6.106	ppb	106.06	200000.	
27 Al	6.494	6.494	ppb	112.26	200000.	
28 Si	19.67	19.67	ppb	8.81	#VALUE!	
29 Si	-24.68	-24.68	ppb	27.35	10000.	
39 K	5.93	5.93	ppb	136.17	200000.	
43 Ca	4.335	4.335	ppb	115.89	#VALUE!	
44 Ca	6.913	6.913	ppb	78.88	200000.	
51 V	0.012	0.012	ppb	621.75	1000.	
52 Cr	0.0059	0.0059	ppb	83.39	2000.	
53 Cr	3.468	3.468	ppb	10.12	#VALUE!	
55 Mn	-0.0026	-0.0026	ppb	201.16	2000.	
56 Fe	8.523	8.523	ppb	84.65	#VALUE!	
57 Fe	7.524	7.524	ppb	46.48	100000.	
59 Co	0.0017	0.0017	ppb	114.89	1000.	
60 Ni	0.0248	0.0248	ppb	16.62	1000.	
63 Cu	0.193	0.193	ppb	11.24	#VALUE!	
65 Cu	0.1661	0.1661	ppb	2.58	2000.	
66 Zn	0.1708	0.1708	ppb	23.37	2000.	
68 Zn	0.2252	0.2252	ppb	32.61	#VALUE!	
75 As	-0.0605	-0.0605	ppb	158.49	1000.	
82 Se	-0.0989	-0.0989	ppb	299.71	1000.	
88 Sr	0.0027	0.0027	ppb	47.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2214	0.2214	ppb	48.51	1000.	
107 Ag	0.0019	0.0019	ppb	95.69	100.	
109 Ag	0.0027	0.0027	ppb	105.00	#VALUE!	
111 Cd	-0.0817	-0.0817	ppb	3.81	#VALUE!	
114 Cd	-0.0008	-0.0008	ppb	367.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0741	0.0741	ppb	31.44	1000.	
120 Sn	0.0713	0.0713	ppb	15.16	#VALUE!	
121 Sb	0.0211	0.0211	ppb	26.27	#VALUE!	
123 Sb	0.0243	0.0243	ppb	24.59	1000.	
135 Ba	0.0428	0.0428	ppb	27.66	2000.	
137 Ba	0.0433	0.0433	ppb	59.15	#VALUE!	
182 W	0.2225	0.2225	ppb	38.54	1000.	
203 Tl	0.0061	0.0061	ppb	49.96	1000.	
205 Tl	0.0043	0.0043	ppb	84.25	#VALUE!	
208 Pb	0.1451	0.1451	ppb	7.34	2000.	
232 Th	0.0378	0.0378	ppb	56.06	1000.	
238 U	0.0056	0.0056	ppb	20.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4675134.00	0.31	4492941.00	104.1	69.5 - 120	
45 Sc	3493044.50	1.14	3094960.50	112.9	69.5 - 120	
72 Ge	694221.38	1.26	631723.63	109.9	69.5 - 120	
159 Tb	6229378.00	0.52	6220065.50	100.1	69.5 - 120	
209 Bi	3102786.50	1.17	3318256.50	93.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000197

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\029SMPL.D\029SMPL.D#
Date Acquired: May 14 2018 03:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	555.95	100.	
11 B	0.1167	0.1167	ppb	8.58	1000.	
23 Na	4.542	4.542	ppb	9.13	200000.	
25 Mg	1.038	1.038	ppb	9.53	200000.	
27 Al	1.248	1.248	ppb	8.46	200000.	
28 Si	15.76	15.76	ppb	39.66	#VALUE!	
29 Si	-17.75	-17.75	ppb	13.71	10000.	
39 K	-0.7393	-0.7393	ppb	244.29	200000.	
43 Ca	-2.352	-2.352	ppb	108.55	#VALUE!	
44 Ca	1.545	1.545	ppb	60.63	200000.	
51 V	-0.0589	-0.0589	ppb	136.21	1000.	
52 Cr	0.0041	0.0041	ppb	552.64	2000.	
53 Cr	4.153	4.153	ppb	5.69	#VALUE!	
55 Mn	0.0009	0.0009	ppb	56.62	2000.	
56 Fe	-3.143	-3.143	ppb	59.66	#VALUE!	
57 Fe	2.474	2.474	ppb	58.04	100000.	
59 Co	-0.003	-0.003	ppb	89.84	1000.	
60 Ni	0.0169	0.0169	ppb	80.76	1000.	
63 Cu	0.183	0.183	ppb	10.08	#VALUE!	
65 Cu	0.159	0.159	ppb	1.77	2000.	
66 Zn	0.125	0.125	ppb	9.12	2000.	
68 Zn	0.1245	0.1245	ppb	75.23	#VALUE!	
75 As	0.123	0.123	ppb	78.81	1000.	
82 Se	-0.0321	-0.0321	ppb	97.66	1000.	
88 Sr	0.0009	0.0009	ppb	133.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0997	0.0997	ppb	43.55	1000.	
107 Ag	0.0014	0.0014	ppb	126.29	100.	
109 Ag	0.0004	0.0004	ppb	165.19	#VALUE!	
111 Cd	-0.0852	-0.0852	ppb	21.00	#VALUE!	
114 Cd	-0.0038	-0.0038	ppb	17.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0279	0.0279	ppb	10.55	1000.	
120 Sn	0.0178	0.0178	ppb	35.91	#VALUE!	
121 Sb	0.0106	0.0106	ppb	32.13	#VALUE!	
123 Sb	0.0082	0.0082	ppb	13.76	1000.	
135 Ba	0.0389	0.0389	ppb	28.69	2000.	
137 Ba	0.0362	0.0362	ppb	46.25	#VALUE!	
182 W	0.0977	0.0977	ppb	23.18	1000.	
203 Tl	0.0014	0.0014	ppb	390.83	1000.	
205 Tl	-0.002	-0.002	ppb	116.99	#VALUE!	
208 Pb	0.1315	0.1315	ppb	5.38	2000.	
232 Th	0.0262	0.0262	ppb	63.84	1000.	
238 U	0.0026	0.0026	ppb	17.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4631282.00	2.10	4492941.00	103.1	69.5 - 120	
45 Sc	3366437.80	1.56	3094960.50	108.8	69.5 - 120	
72 Ge	667159.63	1.04	631723.63	105.6	69.5 - 120	
159 Tb	6194958.00	1.25	6220065.50	99.6	69.5 - 120	
209 Bi	3183284.00	0.98	3318256.50	95.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000198

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\030_CCV.D\030_CCV.D#
Date Acquired: May 14 2018 04:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.14	ppb	3.55	25	92.56	
11 B	24.09	ppb	5.13	25	96.36	
23 Na	5,302.	ppb	3.99	5,000	106.04	
25 Mg	5,259.	ppb	1.70	5,000	105.18	
27 Al	507.1	ppb	1.73	500	101.42	
28 Si	510.4	ppb	3.60	500	102.08	
29 Si	475.5	ppb	5.01	500	95.1	
39 K	4,848.	ppb	1.05	5,000	96.96	
43 Ca	4,937.	ppb	2.37	5,000	98.74	
44 Ca	5,012.	ppb	0.17	5,000	100.24	
51 V	25.17	ppb	2.31	25	100.68	
52 Cr	24.55	ppb	1.37	25	98.2	
53 Cr	25.08	ppb	3.43	25	100.32	
55 Mn	24.45	ppb	0.38	25	97.8	
56 Fe	4,872.	ppb	1.05	5,000	97.44	
57 Fe	4,950.	ppb	1.41	5,000	99	
59 Co	24.75	ppb	0.55	25	99	
60 Ni	24.2	ppb	1.31	25	96.8	
63 Cu	24.74	ppb	1.21	25	98.96	
65 Cu	24.9	ppb	0.84	25	99.6	
66 Zn	24.98	ppb	0.42	25	99.92	
68 Zn	24.58	ppb	0.94	25	98.32	
75 As	24.37	ppb	1.42	25	97.48	
82 Se	24.52	ppb	0.47	25	98.08	
88 Sr	24.07	ppb	1.57	25	96.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.94	ppb	0.82	25	95.76	
107 Ag	24.29	ppb	1.00	25	97.16	
109 Ag	24.38	ppb	0.50	25	97.52	
111 Cd	24.38	ppb	0.59	25	97.52	
114 Cd	24.37	ppb	0.40	25	97.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.11	ppb	0.41	25	100.44	
120 Sn	25.29	ppb	1.06	25	101.16	
121 Sb	25.67	ppb	1.42	25	102.68	
123 Sb	25.82	ppb	1.29	25	103.28	
135 Ba	25.39	ppb	2.94	25	101.56	
137 Ba	25.26	ppb	1.51	25	101.04	
182 W	24.11	ppb	0.96	25	96.44	
203 Tl	24.42	ppb	0.87	25	97.68	
205 Tl	24.41	ppb	1.63	25	97.64	
208 Pb	24.55	ppb	1.56	25	98.2	
232 Th	23.91	ppb	0.96	25	95.64	
238 U	23.76	ppb	1.86	25	95.04	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4779091.00	2.93	4492941.00	106.4	80 - 120.4	
45 Sc	3299230.00	1.20	3094960.50	106.6	80 - 120.4	
72 Ge	642495.13	1.01	631723.63	101.7	80 - 120.4	
159 Tb	6194052.50	0.76	6220065.50	99.6	80 - 120.4	
209 Bi	3159346.30	0.63	3318256.50	95.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000199

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\031_CCB.D\031_CCB.D#
Date Acquired: May 14 2018 04:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	82.34	1.00	
11 B	0.9984	ppb	17.72	1.00	
23 Na	2.923	ppb	22.36	1.00	
25 Mg	0.9045	ppb	69.93	1.00	
27 Al	0.5653	ppb	91.53	1.00	
28 Si	9.482	ppb	32.21	1.00	
29 Si	-7.587	ppb	107.46	1.00	
39 K	1.493	ppb	111.19	1.00	
43 Ca	-1.615	ppb	99.38	1.00	
44 Ca	1.587	ppb	61.22	1.00	
51 V	-0.0448	ppb	284.02	1.00	
52 Cr	-0.0665	ppb	48.82	1.00	
53 Cr	1.351	ppb	26.80	1.00	
55 Mn	0.0035	ppb	265.35	1.00	
56 Fe	-7.403	ppb	18.97	1.00	
57 Fe	-0.6607	ppb	172.24	1.00	
59 Co	0.0004	ppb	612.17	1.00	
60 Ni	0.0009	ppb	864.46	1.00	
63 Cu	0.0158	ppb	45.58	1.00	
65 Cu	0.0148	ppb	45.24	1.00	
66 Zn	0.0134	ppb	185.36	1.00	
68 Zn	-0.0111	ppb	259.04	1.00	
75 As	0.0498	ppb	163.80	1.00	
82 Se	0.1398	ppb	102.36	1.00	
88 Sr	0.0036	ppb	78.30	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0664	ppb	28.45	1.00	
107 Ag	0.0059	ppb	42.48	1.00	
109 Ag	0.0038	ppb	87.51	1.00	
111 Cd	-0.0311	ppb	72.58	1.00	
114 Cd	-0.0004	ppb	622.65	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0411	ppb	10.96	1.00	
120 Sn	0.038	ppb	6.52	1.00	
121 Sb	0.007	ppb	87.78	1.00	
123 Sb	0.0116	ppb	89.66	1.00	
135 Ba	0.0128	ppb	73.91	1.00	
137 Ba	0.0015	ppb	109.77	1.00	
182 W	0.0789	ppb	41.16	1.00	
203 Tl	0.0015	ppb	648.05	1.00	
205 Tl	0.0004	ppb	2219.10	1.00	
208 Pb	-0.0389	ppb	10.84	1.00	
232 Th	0.0825	ppb	10.85	1.00	
238 U	0.0039	ppb	81.62	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4777584.00	0.61	4492941.00	106.3	79.5 - 120	
45 Sc	3181318.30	0.72	3094960.50	102.8	79.5 - 120	
72 Ge	641312.81	0.76	631723.63	101.5	79.5 - 120	
159 Tb	6051368.00	0.87	6220065.50	97.3	79.5 - 120	
209 Bi	3203150.30	1.83	3318256.50	96.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\032SMPL.D\032SMPL.D#
Date Acquired: May 14 2018 04:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4088-001
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: May 14 2018 03:18 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	0.3216	0.3216	ppb	4.29	100.	
11 B	5.6	5.6	ppb	3.36	1000.	
23 Na	145,100.	145,100.	ppb	1.21	200000.	
25 Mg	1,500.	1,500.	ppb	1.50	200000.	
27 Al	676.1	676.1	ppb	1.42	200000.	
28 Si	2,520.	2,520.	ppb	0.37	#VALUE!	
29 Si	2,541.	2,541.	ppb	0.88	10000.	
39 K	2,537.	2,537.	ppb	2.41	200000.	
43 Ca	27,600.	27,600.	ppb	1.58	#VALUE!	
44 Ca	27,060.	27,060.	ppb	0.44	200000.	
51 V	0.1489	0.1489	ppb	39.07	1000.	
52 Cr	0.7271	0.7271	ppb	3.40	2000.	
53 Cr	-1.31	-1.31	ppb	41.38	#VALUE!	
55 Mn	110.2	110.2	ppb	0.80	2000.	
56 Fe	25.5	25.5	ppb	17.24	#VALUE!	
57 Fe	45.32	45.32	ppb	13.92	100000.	
59 Co	0.2846	0.2846	ppb	3.84	1000.	
60 Ni	4.26	4.26	ppb	1.31	1000.	
63 Cu	42.7	42.7	ppb	0.61	#VALUE!	
65 Cu	38.14	38.14	ppb	1.34	2000.	
66 Zn	9.262	9.262	ppb	1.63	2000.	
68 Zn	12.81	12.81	ppb	3.85	#VALUE!	
75 As	0.1692	0.1692	ppb	21.84	1000.	
82 Se	0.4385	0.4385	ppb	12.97	1000.	
88 Sr	102.3	102.3	ppb	1.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0514	0.0514	ppb	28.99	1000.	
107 Ag	0.0857	0.0857	ppb	30.50	100.	
109 Ag	0.0985	0.0985	ppb	31.47	#VALUE!	
111 Cd	0.3008	0.3008	ppb	5.49	#VALUE!	
114 Cd	0.2808	0.2808	ppb	1.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.012	0.012	ppb	66.62	1000.	
120 Sn	-0.0025	-0.0025	ppb	348.39	#VALUE!	
121 Sb	0.0173	0.0173	ppb	17.88	#VALUE!	
123 Sb	0.0173	0.0173	ppb	12.30	1000.	
135 Ba	103.4	103.4	ppb	1.42	2000.	
137 Ba	102.7	102.7	ppb	1.11	#VALUE!	
182 W	0.0442	0.0442	ppb	35.36	1000.	
203 Tl	0.0286	0.0286	ppb	33.65	1000.	
205 Tl	0.0228	0.0228	ppb	12.23	#VALUE!	
208 Pb	0.7485	0.7485	ppb	1.61	2000.	
232 Th	0.0609	0.0609	ppb	23.39	1000.	
238 U	0.0337	0.0337	ppb	11.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4617807.50	5.03	4492941.00	102.8	69.5 - 120	
45 Sc	3355415.30	2.28	3094960.50	108.4	69.5 - 120	
72 Ge	640903.63	0.87	631723.63	101.5	69.5 - 120	
159 Tb	5966605.50	1.34	6220065.50	95.9	69.5 - 120	
209 Bi	2855604.30	1.36	3318256.50	86.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000201

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\033SMPL.D\033SMPL.D#
Date Acquired: May 14 2018 04:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4104-001
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: May 14 2018 03:18 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	43.78	100.	
11 B	3.64	3.64	ppb	7.88	1000.	
23 Na	3,835.	3,835.	ppb	2.60	200000.	
25 Mg	1,086.	1,086.	ppb	2.13	200000.	
27 Al	2.171	2.171	ppb	4.59	200000.	
28 Si	6,355.	6,355.	ppb	2.81	#VALUE!	
29 Si	6,681.	6,681.	ppb	4.03	10000.	
39 K	642.	642.	ppb	4.31	200000.	
43 Ca	4,776.	4,776.	ppb	1.87	#VALUE!	
44 Ca	4,891.	4,891.	ppb	2.01	200000.	
51 V	0.1554	0.1554	ppb	20.36	1000.	
52 Cr	0.7197	0.7197	ppb	2.78	2000.	
53 Cr	12.12	12.12	ppb	20.41	#VALUE!	
55 Mn	0.2532	0.2532	ppb	3.47	2000.	
56 Fe	-4.797	-4.797	ppb	73.96	#VALUE!	
57 Fe	2.634	2.634	ppb	113.21	100000.	
59 Co	0.0054	0.0054	ppb	79.04	1000.	
60 Ni	0.0363	0.0363	ppb	27.72	1000.	
63 Cu	0.2341	0.2341	ppb	2.10	#VALUE!	
65 Cu	0.1398	0.1398	ppb	7.70	2000.	
66 Zn	0.2374	0.2374	ppb	35.02	2000.	
68 Zn	0.3812	0.3812	ppb	18.95	#VALUE!	
75 As	0.3111	0.3111	ppb	83.48	1000.	
82 Se	0.2328	0.2328	ppb	117.78	1000.	
88 Sr	33.35	33.35	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.5272	0.5272	ppb	2.73	1000.	
107 Ag	0.0057	0.0057	ppb	6.97	100.	
109 Ag	0.0027	0.0027	ppb	42.66	#VALUE!	
111 Cd	-0.084	-0.084	ppb	25.74	#VALUE!	
114 Cd	-0.0011	-0.0011	ppb	480.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0079	-0.0079	ppb	103.61	1000.	
120 Sn	-0.0155	-0.0155	ppb	68.26	#VALUE!	
121 Sb	0.0061	0.0061	ppb	26.39	#VALUE!	
123 Sb	0.0071	0.0071	ppb	39.30	1000.	
135 Ba	0.8492	0.8492	ppb	6.68	2000.	
137 Ba	0.8386	0.8386	ppb	1.23	#VALUE!	
182 W	0.0261	0.0261	ppb	27.19	1000.	
203 Tl	0.0023	0.0023	ppb	410.98	1000.	
205 Tl	0.0031	0.0031	ppb	97.65	#VALUE!	
208 Pb	0.0159	0.0159	ppb	84.42	2000.	
232 Th	0.0421	0.0421	ppb	31.64	1000.	
238 U	0.0023	0.0023	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4686413.50	5.12	4492941.00	104.3	69.5 - 120	
45 Sc	3264231.80	3.84	3094960.50	105.5	69.5 - 120	
72 Ge	645425.00	1.56	631723.63	102.2	69.5 - 120	
159 Tb	6166778.00	1.86	6220065.50	99.1	69.5 - 120	
209 Bi	3249049.30	1.03	3318256.50	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000202

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\034SMPL.D\034SMPL.D#
Date Acquired: May 14 2018 04:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE11IMW1
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	1184.50	100.	
11 B	0.3897	0.3897	ppb	5.43	1000.	
23 Na	12.14	12.14	ppb	2.07	200000.	
25 Mg	8.983	8.983	ppb	3.89	200000.	
27 Al	5.288	5.288	ppb	3.53	200000.	
28 Si	-5.42	-5.42	ppb	133.95	#VALUE!	
29 Si	-9.229	-9.229	ppb	201.65	10000.	
39 K	-2.116	-2.116	ppb	161.67	200000.	
43 Ca	-0.4333	-0.4333	ppb	707.82	#VALUE!	
44 Ca	3.	3.	ppb	1.80	200000.	
51 V	0.0311	0.0311	ppb	84.20	1000.	
52 Cr	0.0818	0.0818	ppb	34.03	2000.	
53 Cr	10.41	10.41	ppb	2.71	#VALUE!	
55 Mn	0.0901	0.0901	ppb	9.33	2000.	
56 Fe	0.9356	0.9356	ppb	234.18	#VALUE!	
57 Fe	4.645	4.645	ppb	43.42	100000.	
59 Co	-0.003	-0.003	ppb	32.99	1000.	
60 Ni	0.0239	0.0239	ppb	61.62	1000.	
63 Cu	0.0368	0.0368	ppb	24.77	#VALUE!	
65 Cu	0.0305	0.0305	ppb	37.44	2000.	
66 Zn	0.642	0.642	ppb	9.73	2000.	
68 Zn	0.6056	0.6056	ppb	2.76	#VALUE!	
75 As	-0.0715	-0.0715	ppb	135.62	1000.	
82 Se	-0.1396	-0.1396	ppb	148.28	1000.	
88 Sr	0.0092	0.0092	ppb	61.90	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0176	0.0176	ppb	43.24	1000.	
107 Ag	-0.0008	-0.0008	ppb	122.39	100.	
109 Ag	-0.0017	-0.0017	ppb	28.38	#VALUE!	
111 Cd	-0.0113	-0.0113	ppb	109.88	#VALUE!	
114 Cd	-0.0022	-0.0022	ppb	190.62	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1388	0.1388	ppb	5.46	1000.	
120 Sn	0.1244	0.1244	ppb	5.28	#VALUE!	
121 Sb	0.003	0.003	ppb	119.01	#VALUE!	
123 Sb	0.0013	0.0013	ppb	115.84	1000.	
135 Ba	0.0367	0.0367	ppb	12.83	2000.	
137 Ba	0.0341	0.0341	ppb	21.62	#VALUE!	
182 W	0.0183	0.0183	ppb	30.28	1000.	
203 Tl	0.0014	0.0014	ppb	380.58	1000.	
205 Tl	-0.0007	-0.0007	ppb	763.95	#VALUE!	
208 Pb	0.0058	0.0058	ppb	92.57	2000.	
232 Th	0.0129	0.0129	ppb	48.41	1000.	
238 U	0.0002	0.0002	ppb	146.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4954067.00	4.51	4492941.00	110.3	69.5 - 120	
45 Sc	3286522.50	3.34	3094960.50	106.2	69.5 - 120	
72 Ge	641809.88	1.93	631723.63	101.6	69.5 - 120	
159 Tb	6141080.50	1.72	6220065.50	98.7	69.5 - 120	
209 Bi	3253345.30	1.22	3318256.50	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000203

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\035SMPL.D\035SMPL.D#
Date Acquired: May 14 2018 04:18 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE11IMW1
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	47.585	9.517	ppb	8.22	100.	
11 B	490.9	98.18	ppb	1.06	1000.	
23 Na	8,335.	1,667.	ppb	0.08	200000.	
25 Mg	5,665.	1,133.	ppb	3.57	200000.	
27 Al	2,166.5	433.3	ppb	2.79	200000.	
28 Si	1,066.5	213.3	ppb	3.31	#VALUE!	
29 Si	950.5	190.1	ppb	6.98	10000.	
39 K	10,090.	2,018.	ppb	3.48	200000.	
43 Ca	2,841.	568.2	ppb	6.83	#VALUE!	
44 Ca	2,580.	516.	ppb	3.58	200000.	
51 V	541.	108.2	ppb	1.38	1000.	
52 Cr	205.5	41.1	ppb	2.31	2000.	
53 Cr	235.25	47.05	ppb	3.16	#VALUE!	
55 Mn	521.5	104.3	ppb	0.88	2000.	
56 Fe	1,041.	208.2	ppb	3.51	#VALUE!	
57 Fe	1,070.	214.	ppb	4.04	100000.	
59 Co	532.	106.4	ppb	2.25	1000.	
60 Ni	518.5	103.7	ppb	2.31	1000.	
63 Cu	259.5	51.9	ppb	2.21	#VALUE!	
65 Cu	265.4	53.08	ppb	2.12	2000.	
66 Zn	542.5	108.5	ppb	2.10	2000.	
68 Zn	603.	120.6	ppb	2.72	#VALUE!	
75 As	106.75	21.35	ppb	3.01	1000.	
82 Se	108.05	21.61	ppb	3.77	1000.	
88 Sr	503.5	100.7	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.2	20.24	ppb	3.84	1000.	
107 Ag	52.2	10.44	ppb	3.05	100.	
109 Ag	52.4	10.48	ppb	2.66	#VALUE!	
111 Cd	261.3	52.26	ppb	3.18	#VALUE!	
114 Cd	262.2	52.44	ppb	3.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	521.	104.2	ppb	3.94	1000.	
120 Sn	524.	104.8	ppb	4.13	#VALUE!	
121 Sb	108.5	21.7	ppb	4.12	#VALUE!	
123 Sb	108.95	21.79	ppb	3.93	1000.	
135 Ba	2,139.5	427.9	ppb	4.21	2000.	
137 Ba	2,158.	431.6	ppb	4.03	#VALUE!	
182 W	103.2	20.64	ppb	5.81	1000.	
203 Tl	104.45	20.89	ppb	2.35	1000.	
205 Tl	104.25	20.85	ppb	3.59	#VALUE!	
208 Pb	105.45	21.09	ppb	3.28	2000.	
232 Th	98.55	19.71	ppb	2.17	1000.	
238 U	101.6	20.32	ppb	3.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4804903.00	10.29	4492941.00	106.9	69.5 - 120	
45 Sc	3145366.30	3.68	3094960.50	101.6	69.5 - 120	
72 Ge	608951.25	2.61	631723.63	96.4	69.5 - 120	
159 Tb	6037850.50	2.98	6220065.50	97.1	69.5 - 120	
209 Bi	3200861.80	1.22	3318256.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000204

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\036SMPL.D\036SMPL.D#
Date Acquired: May 14 2018 04:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4028-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0035	0.0035	ppb	55.70	100.	
11 B	563.8	563.8	ppb	2.27	1000.	
23 Na	150,700.	150,700.	ppb	0.50	200000.	
25 Mg	195.1	195.1	ppb	0.72	200000.	
27 Al	295.7	295.7	ppb	1.68	200000.	
28 Si	24,680.	24,680.	ppb	0.60	#VALUE!	
29 Si	24,620.	24,620.	ppb	2.99	10000.	>LDR
39 K	48,120.	48,120.	ppb	3.96	200000.	
43 Ca	1,051.	1,051.	ppb	0.29	#VALUE!	
44 Ca	1,098.	1,098.	ppb	0.98	200000.	
51 V	0.7133	0.7133	ppb	13.54	1000.	
52 Cr	6.615	6.615	ppb	8.53	2000.	
53 Cr	16.38	16.38	ppb	5.43	#VALUE!	
55 Mn	7.324	7.324	ppb	0.86	2000.	
56 Fe	61.91	61.91	ppb	13.21	#VALUE!	
57 Fe	55.46	55.46	ppb	1.42	100000.	
59 Co	8.197	8.197	ppb	1.95	1000.	
60 Ni	40.16	40.16	ppb	0.60	1000.	
63 Cu	131.3	131.3	ppb	2.56	#VALUE!	
65 Cu	132.5	132.5	ppb	0.52	2000.	
66 Zn	21.37	21.37	ppb	0.26	2000.	
68 Zn	21.1	21.1	ppb	0.84	#VALUE!	
75 As	0.3353	0.3353	ppb	52.43	1000.	
82 Se	0.0612	0.0612	ppb	102.01	1000.	
88 Sr	2.529	2.529	ppb	0.85	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.139	2.139	ppb	1.63	1000.	
107 Ag	0.0132	0.0132	ppb	5.37	100.	
109 Ag	0.011	0.011	ppb	19.90	#VALUE!	
111 Cd	-0.0373	-0.0373	ppb	117.29	#VALUE!	
114 Cd	-0.0025	-0.0025	ppb	80.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9024	0.9024	ppb	4.48	1000.	
120 Sn	0.8946	0.8946	ppb	7.66	#VALUE!	
121 Sb	2.505	2.505	ppb	1.14	#VALUE!	
123 Sb	2.519	2.519	ppb	1.77	1000.	
135 Ba	1.653	1.653	ppb	3.87	2000.	
137 Ba	1.596	1.596	ppb	3.34	#VALUE!	
182 W	5.192	5.192	ppb	0.30	1000.	
203 Tl	0.0117	0.0117	ppb	36.96	1000.	
205 Tl	0.0022	0.0022	ppb	87.51	#VALUE!	
208 Pb	7.193	7.193	ppb	0.25	2000.	
232 Th	0.2086	0.2086	ppb	31.49	1000.	
238 U	0.0975	0.0975	ppb	5.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4497600.50	2.67	4492941.00	100.1	69.5 - 120	
45 Sc	3241483.50	0.37	3094960.50	104.7	69.5 - 120	
72 Ge	628529.13	1.41	631723.63	99.5	69.5 - 120	
159 Tb	5964664.00	0.82	6220065.50	95.9	69.5 - 120	
209 Bi	2812955.30	1.78	3318256.50	84.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000205

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\037SMPL.D\037SMPL.D#
Date Acquired: May 14 2018 04:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4027-001
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0127	0.0005	ppb	164.87	100.	
11 B	3,732.5	149.3	ppb	1.83	1000.	
23 Na	1,408,000.	56,320.	ppb	2.36	200000.	
25 Mg	844.25	33.77	ppb	1.56	200000.	
27 Al	871.5	34.86	ppb	2.06	200000.	
28 Si	81,200.	3,248.	ppb	2.64	#VALUE!	
29 Si	86,925.	3,477.	ppb	2.07	10000.	
39 K	431,500.	17,260.	ppb	1.67	200000.	
43 Ca	10,230.	409.2	ppb	1.98	#VALUE!	
44 Ca	10,295.	411.8	ppb	1.68	200000.	
51 V	4.5075	0.1803	ppb	9.12	1000.	
52 Cr	21.29	0.8516	ppb	4.38	2000.	
53 Cr	232.2	9.288	ppb	2.41	#VALUE!	
55 Mn	6.55	0.262	ppb	1.86	2000.	
56 Fe	158.4	6.336	ppb	45.64	#VALUE!	
57 Fe	125.375	5.015	ppb	24.73	100000.	
59 Co	19.7475	0.7899	ppb	5.13	1000.	
60 Ni	57.15	2.286	ppb	8.03	1000.	
63 Cu	191.85	7.674	ppb	0.31	#VALUE!	
65 Cu	151.675	6.067	ppb	1.65	2000.	
66 Zn	49.25	1.97	ppb	1.31	2000.	
68 Zn	52.575	2.103	ppb	3.18	#VALUE!	
75 As	0.8568	0.0343	ppb	222.12	1000.	
82 Se	4.5425	0.1817	ppb	93.34	1000.	
88 Sr	68.6	2.744	ppb	2.40	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	8.115	0.3246	ppb	3.33	1000.	
107 Ag	0.0206	0.0008	ppb	109.12	100.	
109 Ag	0.0384	0.0015	ppb	30.81	#VALUE!	
111 Cd	-1.3383	-0.0535	ppb	18.27	#VALUE!	
114 Cd	0.0195	0.0008	ppb	269.02	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	4.06	0.1624	ppb	15.67	1000.	
120 Sn	3.09	0.1236	ppb	9.92	#VALUE!	
121 Sb	4.3275	0.1731	ppb	2.88	#VALUE!	
123 Sb	4.295	0.1718	ppb	3.20	1000.	
135 Ba	6.16	0.2464	ppb	3.91	2000.	
137 Ba	6.0575	0.2423	ppb	16.05	#VALUE!	
182 W	21.945	0.8778	ppb	1.48	1000.	
203 Tl	0.1601	0.0064	ppb	66.85	1000.	
205 Tl	0.0252	0.001	ppb	248.26	#VALUE!	
208 Pb	16.825	0.673	ppb	1.74	2000.	
232 Th	0.5393	0.0216	ppb	35.81	1000.	
238 U	0.526	0.021	ppb	9.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4764936.00	3.55	4492941.00	106.1	69.5 - 120	
45 Sc	3362311.80	1.74	3094960.50	108.6	69.5 - 120	
72 Ge	655194.25	1.51	631723.63	103.7	69.5 - 120	
159 Tb	6082687.00	0.65	6220065.50	97.8	69.5 - 120	
209 Bi	2980553.30	0.17	3318256.50	89.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000206

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\038SMPL.D\038SMPL.D#
Date Acquired: May 14 2018 04:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	66.65	100.	
11 B	4.519	4.519	ppb	14.00	1000.	
23 Na	15.12	15.12	ppb	10.98	200000.	
25 Mg	0.7485	0.7485	ppb	19.60	200000.	
27 Al	1.042	1.042	ppb	7.84	200000.	
28 Si	4.427	4.427	ppb	88.46	#VALUE!	
29 Si	-13.2	-13.2	ppb	62.88	10000.	
39 K	-0.624	-0.624	ppb	382.85	200000.	
43 Ca	24.82	24.82	ppb	11.97	#VALUE!	
44 Ca	28.8	28.8	ppb	3.46	200000.	
51 V	0.0319	0.0319	ppb	129.70	1000.	
52 Cr	0.1511	0.1511	ppb	18.77	2000.	
53 Cr	7.956	7.956	ppb	1.33	#VALUE!	
55 Mn	0.0384	0.0384	ppb	5.55	2000.	
56 Fe	3.574	3.574	ppb	86.40	#VALUE!	
57 Fe	3.326	3.326	ppb	34.73	100000.	
59 Co	0.0026	0.0026	ppb	47.98	1000.	
60 Ni	0.0124	0.0124	ppb	16.69	1000.	
63 Cu	0.1841	0.1841	ppb	3.19	#VALUE!	
65 Cu	0.1805	0.1805	ppb	1.91	2000.	
66 Zn	0.1586	0.1586	ppb	15.56	2000.	
68 Zn	0.168	0.168	ppb	23.55	#VALUE!	
75 As	0.0962	0.0962	ppb	14.77	1000.	
82 Se	0.1686	0.1686	ppb	91.87	1000.	
88 Sr	0.0168	0.0168	ppb	31.07	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0375	0.0375	ppb	12.34	1000.	
107 Ag	-0.0004	-0.0004	ppb	143.16	100.	
109 Ag	-0.0012	-0.0012	ppb	68.42	#VALUE!	
111 Cd	-0.03	-0.03	ppb	49.97	#VALUE!	
114 Cd	-0.0034	-0.0034	ppb	96.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0112	0.0112	ppb	116.77	1000.	
120 Sn	0.0034	0.0034	ppb	219.38	#VALUE!	
121 Sb	0.0008	0.0008	ppb	156.28	#VALUE!	
123 Sb	-0.0012	-0.0012	ppb	227.02	1000.	
135 Ba	0.0717	0.0717	ppb	18.88	2000.	
137 Ba	0.0587	0.0587	ppb	22.77	#VALUE!	
182 W	0.0155	0.0155	ppb	22.02	1000.	
203 Tl	-0.0018	-0.0018	ppb	123.68	1000.	
205 Tl	-0.0004	-0.0004	ppb	514.25	#VALUE!	
208 Pb	0.1331	0.1331	ppb	5.79	2000.	
232 Th	0.0118	0.0118	ppb	19.77	1000.	
238 U	0.	0.	ppb	2899.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5020043.00	2.40	4492941.00	111.7	69.5 - 120	
45 Sc	3318592.50	1.83	3094960.50	107.2	69.5 - 120	
72 Ge	654051.75	0.66	631723.63	103.5	69.5 - 120	
159 Tb	6254588.00	1.18	6220065.50	100.6	69.5 - 120	
209 Bi	3238309.80	1.34	3318256.50	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000207

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\039SMPL.D\039SMPL.D#
Date Acquired: May 14 2018 04:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RISNE
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	252.44	100.	
11 B	2.42	2.42	ppb	10.42	1000.	
23 Na	5.05	5.05	ppb	7.56	200000.	
25 Mg	0.4762	0.4762	ppb	11.29	200000.	
27 Al	0.8725	0.8725	ppb	2.01	200000.	
28 Si	4.279	4.279	ppb	119.19	#VALUE!	
29 Si	-2.942	-2.942	ppb	148.61	10000.	
39 K	1.716	1.716	ppb	44.18	200000.	
43 Ca	12.35	12.35	ppb	45.25	#VALUE!	
44 Ca	17.3	17.3	ppb	12.74	200000.	
51 V	0.044	0.044	ppb	27.38	1000.	
52 Cr	0.0557	0.0557	ppb	66.25	2000.	
53 Cr	7.444	7.444	ppb	5.62	#VALUE!	
55 Mn	0.0272	0.0272	ppb	34.09	2000.	
56 Fe	-1.589	-1.589	ppb	271.68	#VALUE!	
57 Fe	3.982	3.982	ppb	21.38	100000.	
59 Co	-0.0027	-0.0027	ppb	16.01	1000.	
60 Ni	0.0113	0.0113	ppb	59.88	1000.	
63 Cu	0.1612	0.1612	ppb	11.84	#VALUE!	
65 Cu	0.1965	0.1965	ppb	17.87	2000.	
66 Zn	0.3958	0.3958	ppb	6.24	2000.	
68 Zn	0.4182	0.4182	ppb	12.21	#VALUE!	
75 As	0.0431	0.0431	ppb	569.07	1000.	
82 Se	-0.0846	-0.0846	ppb	221.97	1000.	
88 Sr	0.0123	0.0123	ppb	41.17	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0109	0.0109	ppb	55.91	1000.	
107 Ag	0.0017	0.0017	ppb	49.61	100.	
109 Ag	-0.0012	-0.0012	ppb	41.45	#VALUE!	
111 Cd	-0.0218	-0.0218	ppb	179.87	#VALUE!	
114 Cd	-0.0017	-0.0017	ppb	198.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0052	0.0052	ppb	119.82	1000.	
120 Sn	-0.0123	-0.0123	ppb	53.27	#VALUE!	
121 Sb	0.0014	0.0014	ppb	156.72	#VALUE!	
123 Sb	0.0016	0.0016	ppb	193.43	1000.	
135 Ba	0.0177	0.0177	ppb	38.67	2000.	
137 Ba	0.0048	0.0048	ppb	83.59	#VALUE!	
182 W	0.008	0.008	ppb	35.34	1000.	
203 Tl	-0.0015	-0.0015	ppb	562.90	1000.	
205 Tl	0.0017	0.0017	ppb	210.20	#VALUE!	
208 Pb	0.1397	0.1397	ppb	7.44	2000.	
232 Th	0.0079	0.0079	ppb	35.63	1000.	
238 U	0.0002	0.0002	ppb	47.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4855947.50	2.03	4492941.00	108.1	69.5 - 120	
45 Sc	3177009.80	0.83	3094960.50	102.7	69.5 - 120	
72 Ge	634195.00	1.19	631723.63	100.4	69.5 - 120	
159 Tb	6122523.00	1.33	6220065.50	98.4	69.5 - 120	
209 Bi	3234714.30	2.38	3318256.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000208

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\040SMPL.D\040SMPL.D#
Date Acquired: May 14 2018 04:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE04IMS1
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	-0.0007	-0.0001	ppb	124.74	100.	
11 B	10.07	2.014	ppb	2.04	1000.	
23 Na	69.05	13.81	ppb	4.52	200000.	
25 Mg	23.485	4.697	ppb	3.61	200000.	
27 Al	9.92	1.984	ppb	6.95	200000.	
28 Si	-60.3	-12.06	ppb	33.07	#VALUE!	
29 Si	-49.615	-9.923	ppb	25.13	10000.	
39 K	31.315	6.263	ppb	25.48	200000.	
43 Ca	51.8	10.36	ppb	33.02	#VALUE!	
44 Ca	56.8	11.36	ppb	12.03	200000.	
51 V	0.631	0.1262	ppb	45.84	1000.	
52 Cr	2.706	0.5412	ppb	5.90	2000.	
53 Cr	107.4	21.48	ppb	2.18	#VALUE!	
55 Mn	1.3275	0.2655	ppb	6.10	2000.	
56 Fe	30.185	6.037	ppb	11.41	#VALUE!	
57 Fe	30.74	6.148	ppb	16.06	100000.	
59 Co	-0.0071	-0.0014	ppb	108.70	1000.	
60 Ni	0.3889	0.0778	ppb	19.16	1000.	
63 Cu	1.16	0.232	ppb	9.28	#VALUE!	
65 Cu	1.1645	0.2329	ppb	5.87	2000.	
66 Zn	0.7545	0.1509	ppb	36.69	2000.	
68 Zn	0.901	0.1802	ppb	22.14	#VALUE!	
75 As	0.9225	0.1845	ppb	100.54	1000.	
82 Se	-0.1373	-0.0275	ppb	322.00	1000.	
88 Sr	0.1742	0.0348	ppb	14.58	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1315	0.0263	ppb	21.89	1000.	
107 Ag	0.0331	0.0066	ppb	36.56	100.	
109 Ag	0.0203	0.0041	ppb	17.07	#VALUE!	
111 Cd	0.034	0.0068	ppb	418.34	#VALUE!	
114 Cd	-0.0821	-0.0164	ppb	15.32	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	43.14	8.628	ppb	0.68	1000.	
120 Sn	43.93	8.786	ppb	1.98	#VALUE!	
121 Sb	0.0464	0.0093	ppb	60.85	#VALUE!	
123 Sb	0.0243	0.0049	ppb	76.79	1000.	
135 Ba	0.2755	0.0551	ppb	13.68	2000.	
137 Ba	0.2984	0.0597	ppb	33.69	#VALUE!	
182 W	0.0546	0.0109	ppb	43.37	1000.	
203 Tl	0.0063	0.0013	ppb	567.23	1000.	
205 Tl	-0.0076	-0.0015	ppb	182.45	#VALUE!	
208 Pb	0.1783	0.0357	ppb	44.34	2000.	
232 Th	0.2306	0.0461	ppb	11.66	1000.	
238 U	0.0018	0.0004	ppb	34.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4747934.00	0.82	4492941.00	105.7	69.5 - 120	
45 Sc	3122076.30	0.30	3094960.50	100.9	69.5 - 120	
72 Ge	617412.69	0.78	631723.63	97.7	69.5 - 120	
159 Tb	6130698.00	0.55	6220065.50	98.6	69.5 - 120	
209 Bi	3269302.80	1.00	3318256.50	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000209

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\041SMPL.D\041SMPL.D#
Date Acquired: May 14 2018 04:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE04IMS1
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	47.475	9.495	ppb	2.97	100.	
11 B	521.5	104.3	ppb	1.99	1000.	
23 Na	8,640.	1,728.	ppb	1.65	200000.	
25 Mg	5,855.	1,171.	ppb	1.06	200000.	
27 Al	2,265.5	453.1	ppb	2.94	200000.	
28 Si	1,059.	211.8	ppb	3.19	#VALUE!	
29 Si	1,078.	215.6	ppb	6.15	10000.	
39 K	10,735.	2,147.	ppb	3.52	200000.	
43 Ca	2,909.	581.8	ppb	5.18	#VALUE!	
44 Ca	2,680.5	536.1	ppb	3.42	200000.	
51 V	555.	111.	ppb	2.05	1000.	
52 Cr	212.75	42.55	ppb	1.67	2000.	
53 Cr	307.8	61.56	ppb	2.89	#VALUE!	
55 Mn	534.	106.8	ppb	1.37	2000.	
56 Fe	1,121.5	224.3	ppb	3.42	#VALUE!	
57 Fe	1,123.5	224.7	ppb	3.14	100000.	
59 Co	550.5	110.1	ppb	0.17	1000.	
60 Ni	528.5	105.7	ppb	0.72	1000.	
63 Cu	264.15	52.83	ppb	2.63	#VALUE!	
65 Cu	272.15	54.43	ppb	0.79	2000.	
66 Zn	512.	102.4	ppb	1.93	2000.	
68 Zn	574.	114.8	ppb	2.77	#VALUE!	
75 As	103.4	20.68	ppb	1.16	1000.	
82 Se	101.4	20.28	ppb	1.12	1000.	
88 Sr	518.5	103.7	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.9	20.58	ppb	1.95	1000.	
107 Ag	53.1	10.62	ppb	1.53	100.	
109 Ag	53.	10.6	ppb	2.19	#VALUE!	
111 Cd	261.3	52.26	ppb	1.43	#VALUE!	
114 Cd	259.45	51.89	ppb	1.99	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	565.5	113.1	ppb	2.65	1000.	
120 Sn	570.	114.	ppb	3.30	#VALUE!	
121 Sb	106.4	21.28	ppb	3.02	#VALUE!	
123 Sb	107.75	21.55	ppb	2.37	1000.	
135 Ba	2,154.5	430.9	ppb	3.23	2000.	
137 Ba	2,158.	431.6	ppb	2.07	#VALUE!	
182 W	108.35	21.67	ppb	3.73	1000.	
203 Tl	107.5	21.5	ppb	2.01	1000.	
205 Tl	107.2	21.44	ppb	1.81	#VALUE!	
208 Pb	108.	21.6	ppb	1.84	2000.	
232 Th	104.45	20.89	ppb	0.69	1000.	
238 U	106.3	21.26	ppb	2.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4724471.50	3.73	4492941.00	105.2	69.5 - 120	
45 Sc	3018500.30	2.20	3094960.50	97.5	69.5 - 120	
72 Ge	592091.56	1.17	631723.63	93.7	69.5 - 120	
159 Tb	5988898.50	2.35	6220065.50	96.3	69.5 - 120	
209 Bi	3227712.80	1.37	3318256.50	97.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000210

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\042_CCV.D\042_CCV.D#
Date Acquired: May 14 2018 04:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.76	ppb	1.65	25	91.04	
11 B	28.54	ppb	5.19	25	114.16	Fail
23 Na	5,107.	ppb	3.98	5,000	102.14	
25 Mg	5,149.	ppb	2.15	5,000	102.98	
27 Al	503.3	ppb	2.20	500	100.66	
28 Si	492.9	ppb	3.72	500	98.58	
29 Si	468.	ppb	3.49	500	93.6	
39 K	4,878.	ppb	1.45	5,000	97.56	
43 Ca	4,790.	ppb	2.58	5,000	95.8	
44 Ca	4,893.	ppb	2.26	5,000	97.86	
51 V	25.05	ppb	0.97	25	100.2	
52 Cr	24.65	ppb	1.44	25	98.6	
53 Cr	28.25	ppb	7.25	25	113	
55 Mn	24.54	ppb	1.17	25	98.16	
56 Fe	4,895.	ppb	0.89	5,000	97.9	
57 Fe	4,931.	ppb	1.75	5,000	98.62	
59 Co	24.38	ppb	2.03	25	97.52	
60 Ni	24.47	ppb	0.97	25	97.88	
63 Cu	24.51	ppb	1.90	25	98.04	
65 Cu	24.74	ppb	1.55	25	98.96	
66 Zn	24.91	ppb	2.59	25	99.64	
68 Zn	24.28	ppb	2.19	25	97.12	
75 As	24.38	ppb	2.29	25	97.52	
82 Se	25.09	ppb	2.27	25	100.36	
88 Sr	24.44	ppb	2.11	25	97.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.98	ppb	1.66	25	95.92	
107 Ag	24.55	ppb	0.92	25	98.2	
109 Ag	24.63	ppb	1.59	25	98.52	
111 Cd	24.67	ppb	1.29	25	98.68	
114 Cd	24.71	ppb	2.03	25	98.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.34	ppb	1.16	25	97.36	
120 Sn	24.41	ppb	1.52	25	97.64	
121 Sb	24.67	ppb	1.50	25	98.68	
123 Sb	24.99	ppb	1.02	25	99.96	
135 Ba	24.76	ppb	0.83	25	99.04	
137 Ba	24.7	ppb	1.35	25	98.8	
182 W	24.5	ppb	1.13	25	98	
203 Tl	24.57	ppb	2.61	25	98.28	
205 Tl	24.45	ppb	1.88	25	97.8	
208 Pb	24.44	ppb	1.72	25	97.76	
232 Th	24.06	ppb	2.37	25	96.24	
238 U	24.3	ppb	1.82	25	97.2	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4703443.50	1.20	4492941.00	104.7	80 - 120.4	
45 Sc	3147044.50	1.61	3094960.50	101.7	80 - 120.4	
72 Ge	609165.81	1.27	631723.63	96.4	80 - 120.4	
159 Tb	6157993.00	0.95	6220065.50	99.0	80 - 120.4	
209 Bi	3260452.30	0.88	3318256.50	98.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000211

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\043_CCB.D\043_CCB.D#
Date Acquired: May 14 2018 04:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0004	ppb	244.08	1.00	
11 B	3.044	ppb	11.00	1.00	
23 Na	1.96	ppb	3.69	1.00	
25 Mg	0.0625	ppb	102.15	1.00	
27 Al	0.114	ppb	28.09	1.00	
28 Si	-10.33	ppb	71.35	1.00	
29 Si	-13.34	ppb	59.72	1.00	
39 K	-1.108	ppb	96.84	1.00	
43 Ca	-0.3326	ppb	631.99	1.00	
44 Ca	0.5745	ppb	139.50	1.00	
51 V	0.0066	ppb	714.82	1.00	
52 Cr	0.035	ppb	38.66	1.00	
53 Cr	4.038	ppb	10.31	1.00	
55 Mn	0.0013	ppb	520.97	1.00	
56 Fe	-4.53	ppb	89.51	1.00	
57 Fe	0.5267	ppb	85.00	1.00	
59 Co	-0.0022	ppb	77.97	1.00	
60 Ni	-0.0003	ppb	1758.00	1.00	
63 Cu	0.0081	ppb	38.14	1.00	
65 Cu	0.0103	ppb	1.27	1.00	
66 Zn	0.0423	ppb	134.55	1.00	
68 Zn	-0.0178	ppb	189.80	1.00	
75 As	-0.0144	ppb	532.96	1.00	
82 Se	-0.0077	ppb	1015.30	1.00	
88 Sr	0.0032	ppb	112.30	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.039	ppb	43.16	1.00	
107 Ag	0.0041	ppb	16.81	1.00	
109 Ag	0.0036	ppb	73.16	1.00	
111 Cd	-0.0073	ppb	203.22	1.00	
114 Cd	-0.0031	ppb	145.24	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0353	ppb	11.09	1.00	
120 Sn	0.0304	ppb	39.93	1.00	
121 Sb	0.0021	ppb	157.07	1.00	
123 Sb	0.0057	ppb	24.27	1.00	
135 Ba	0.0124	ppb	52.17	1.00	
137 Ba	-0.0012	ppb	331.83	1.00	
182 W	0.0494	ppb	38.31	1.00	
203 Tl	0.0052	ppb	186.94	1.00	
205 Tl	-0.0025	ppb	304.84	1.00	
208 Pb	-0.0224	ppb	17.37	1.00	
232 Th	0.0829	ppb	2.47	1.00	
238 U	0.0035	ppb	60.37	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4712421.00	2.30	4492941.00	104.9	79.5 - 120	
45 Sc	3125634.50	1.29	3094960.50	101.0	79.5 - 120	
72 Ge	615452.94	0.65	631723.63	97.4	79.5 - 120	
159 Tb	6123339.00	1.02	6220065.50	98.4	79.5 - 120	
209 Bi	3309427.50	1.34	3318256.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: JS

ANALYSIS DATE: 05/15/2018

REVIEWED
MD 5/16/18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE15C

METHOD: ICP-MS
- ☑ 200.8
- ☐ 6020
- ☑ DOD

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	MW17761	05/14/2018	05/14/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17763	05/14/2018	05/20/2018	Varies by Element
ICSAB	MW17764	05/14/2018	05/20/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17762	05/14/2018	08/142018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

MD 5/16/18

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 MW17761 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

Post Spike: 0.08mL of MW17698 (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	JLE15C	5/15/2018	6:36:00 14:18	JS
200.8 TUNE	1	JLE15C	5/15/2018	6:36:00 14:21	JS
Cal Blank	1	JLE15C	5/15/2018	6:36:00 18:36	JS
Cal Std	1	JLE15C	5/15/2018	6:40:00 18:40	JS
ICV	1	JLE15C	5/15/2018	6:44:00 18:44	JS
ICB	1	JLE15C	5/15/2018	6:48:00 18:48	JS
PQL	1	JLE15C	5/15/2018	6:52:00 18:52	JS
RINSE	1	JLE15C	5/15/2018	6:56:00 18:56	JS
ICSA	1	JLE15C	5/15/2018	7:00:00 19:00	JS
ICSAB	1	JLE15C	5/15/2018	7:04:00 19:04	JS
RINSE	1	JLE15C	5/15/2018	7:08:00 19:08	JS
LRS1	1	JLE15C	5/15/2018	7:13:00 19:13	JS
LRS2	1	JLE15C	5/15/2018	7:16:00 19:16	JS
RINSE	1	JLE15C	5/15/2018	7:21:00 19:21	JS
RINSE	1	JLE15C	5/15/2018	7:25:00 19:25	JS
CCV	1	JLE15C	5/15/2018	7:29:00 19:29	JS
CCB	1	JLE15C	5/15/2018	7:33:00 19:33	JS
PBWLE14IMW1	1	JLE15C	5/15/2018	7:37:00 19:37	JS
LCSWLE14IMW1	5	JLE15C	5/15/2018	7:41:00 19:41	JS
SL4085-001	1	JLE15C	5/15/2018	7:45:00 19:45	JS
SL4096-001	1	JLE15C	5/15/2018	7:50:00 19:50	JS
SL3807-001	5	JLE15C	5/15/2018	7:54:00 19:54	JS
SL3807-002	5	JLE15C	5/15/2018	7:58:00 19:58	JS
RINSE	1	JLE15C	5/15/2018	8:02:00 20:02	JS
PBWLE07IMW1	5	JLE15C	5/15/2018	8:07:00 20:07	JS
LCSWLE07IMW1	5	JLE15C	5/15/2018	8:11:00 20:11	JS
SL3808-002	5	JLE15C	5/15/2018	8:15:00 20:15	JS
CCV	1	JLE15C	5/15/2018	8:19:00 20:19	JS
CCB	1	JLE15C	5/15/2018	8:23:00 20:23	JS
SL3808-003	5	JLE15C	5/15/2018	8:27:00 20:27	JS
SL3808-004	5	JLE15C	5/15/2018	8:31:00 20:31	JS
SL3808-004L	25	JLE15C	5/15/2018	8:36:00 20:36	JS
SL3808-004A	5	JLE15C	5/15/2018	8:40:00 20:40	JS
SL3808-004S	5	JLE15C	5/15/2018	8:44:00 20:44	JS
SL3808-004P	5	JLE15C	5/15/2018	8:48:00 20:48	JS
SL3808-005	5	JLE15C	5/15/2018	8:52:00 20:52	JS
SL3808-005L	25	JLE15C	5/15/2018	8:56:00 20:56	JS
SL3808-005A	5	JLE15C	5/15/2018	9:01:00 21:01	JS
RINSE	5	JLE15C	5/15/2018	9:05:00 21:05	JS
CCV	1	JLE15C	5/15/2018	9:09:00 21:09	JS
CCB	1	JLE15C	5/15/2018	9:13:00 21:13	JS
SL3808-005S	5	JLE15C	5/15/2018	9:17:00 21:17	JS
SL3808-005P	5	JLE15C	5/15/2018	9:21:00 21:21	JS
SL3808-006	5	JLE15C	5/15/2018	9:25:00 21:25	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3808-007	5	JLE15C	5/15/2018	9:30:00 21:30	JS
SL3808-008	5	JLE15C	5/15/2018	9:34:00 21:34	JS
SL3808-009	5	JLE15C	5/15/2018	9:38:00 21:38	JS
SL3808-010	5	JLE15C	5/15/2018	9:42:00 21:42	JS
SL3808-011	5	JLE15C	5/15/2018	9:47:00 21:47	JS
SL3808-012	5	JLE15C	5/15/2018	9:51:00 21:51	JS
RINSE	1	JLE15C	5/15/2018	9:55:00 21:55	JS
CCV	1	JLE15C	5/15/2018	9:59:00 21:59	JS
CCB	1	JLE15C	5/15/2018	10:03:0 22:03	JS
SL3808-013	5	JLE15C	5/15/2018	10:07:0 22:07	JS
SL3808-014	5	JLE15C	5/15/2018	10:12:0 22:12	JS
SL3808-015	5	JLE15C	5/15/2018	10:16:0 22:16	JS
SL3808-016	5	JLE15C	5/15/2018	10:20:0 22:20	JS
SL3808-017	5	JLE15C	5/15/2018	10:24:0 22:24	JS
SL3808-018	5	JLE15C	5/15/2018	10:28:0 22:28	JS
RINSE	1	JLE15C	5/15/2018	10:33:0 22:33	JS
RINSE	1	JLE15C	5/15/2018	10:37:0 22:37	JS
PBSLE08IMS2	5	JLE15C	5/15/2018	10:41:0 22:41	JS
LCSOLE08IMS2	5	JLE15C	5/15/2018	10:45:0 22:45	JS
CCV	1	JLE15C	5/15/2018	10:49:0 22:49	JS
CCB	1	JLE15C	5/15/2018	10:53:0 22:53	JS
SL3809-024	5	JLE15C	5/15/2018	10:58:0 22:58	JS
SL3809-024L	25	JLE15C	5/15/2018	11:02:0 23:02	JS
SL3809-024A	5	JLE15C	5/15/2018	11:06:0 23:06	JS
SL3809-024S	5	JLE15C	5/15/2018	11:10:0 23:10	JS
SL3809-024P	5	JLE15C	5/15/2018	11:15:0 23:15	JS
SL3809-041	5	JLE15C	5/15/2018	11:19:0 23:19	JS
SL3809-042	5	JLE15C	5/15/2018	11:23:0 23:23	JS
SL3809-043	5	JLE15C	5/15/2018	11:28:0 23:28	JS
SL3809-044	5	JLE15C	5/15/2018	11:32:0 23:32	JS
RINSE	5	JLE15C	5/15/2018	11:36:0 23:36	JS
CCV	1	JLE15C	5/15/2018	11:41:0 23:41	JS
CCB	1	JLE15C	5/15/2018	11:45:0 23:45	JS
SL3809-046	5	JLE15C	5/15/2018	11:49:0 23:49	JS
SL3809-047	5	JLE15C	5/15/2018	11:53:0 23:53	JS
RINSE	1	JLE15C	5/15/2018	11:57:0 23:57	JS
PBWLE07IMW2	5	JLE15C	5/16/2018	12:02:0 0:02	JS
LCSWLE07IMW2	5	JLE15C	5/16/2018	12:06:0 0:06	JS
SL3841-002	5	JLE15C	5/16/2018	12:10:0 0:10	JS
SL3841-003	5	JLE15C	5/16/2018	12:14:0 0:14	JS
SL3841-004	5	JLE15C	5/16/2018	12:18:0 0:18	JS
SL3841-005	5	JLE15C	5/16/2018	12:23:0 0:23	JS
RINSE	1	JLE15C	5/16/2018	12:27:0 0:27	JS
CCV	1	JLE15C	5/16/2018	12:31:0 0:31	JS
CCB	1	JLE15C	5/16/2018	12:35:0 0:35	JS
SL3841-006	5	JLE15C	5/16/2018	12:39:0 0:39	JS
SL3841-008	5	JLE15C	5/16/2018	12:43:0 0:43	JS

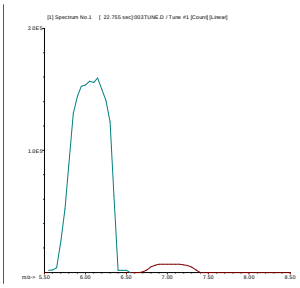
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-009	5	JLE15C	5/16/2018	12:48:0 0:48	JS
SL3841-010	5	JLE15C	5/16/2018	12:52:0 0:52	JS
SL3841-011	5	JLE15C	5/16/2018	12:56:0 0:56	JS
SL3841-011L	25	JLE15C	5/16/2018	1:00:00 1:00	JS
SL3841-011A	5	JLE15C	5/16/2018	1:05:00 1:05	JS
SL3841-011S	5	JLE15C	5/16/2018	1:09:00 1:09	JS
SL3841-011P	5	JLE15C	5/16/2018	1:13:00 1:13	JS
RINSE	1	JLE15C	5/16/2018	1:17:00 1:17	JS
CCV	1	JLE15C	5/16/2018	1:21:00 1:21	JS
CCB	1	JLE15C	5/16/2018	1:25:00 1:25	JS
SL3841-012	5	JLE15C	5/16/2018	1:30:00 1:30	JS
SL3841-013	5	JLE15C	5/16/2018	1:34:00 1:34	JS
SL3841-014	5	JLE15C	5/16/2018	1:38:00 1:38	JS
SL3841-015	5	JLE15C	5/16/2018	1:42:00 1:42	JS
SL3841-016	5	JLE15C	5/16/2018	1:47:00 1:47	JS
SL3841-017	5	JLE15C	5/16/2018	1:51:00 1:51	JS
SL3841-018	5	JLE15C	5/16/2018	1:55:00 1:55	JS
SL3841-019	5	JLE15C	5/16/2018	1:59:00 1:59	JS
SL3841-020	5	JLE15C	5/16/2018	2:04:00 2:04	JS
RINSE	1	JLE15C	5/16/2018	2:08:00 2:08	JS
CCV	1	JLE15C	5/16/2018	2:12:00 2:12	JS
CCB	1	JLE15C	5/16/2018	2:16:00 2:16	JS
PQL	1	JLE15C	5/16/2018	2:20:00 2:20	JS
CCV	1	JLE15C	5/16/2018	2:25:00 2:25	JS
CCB	1	JLE15C	5/16/2018	2:29:00 2:29	JS

6020 QC Tune Report

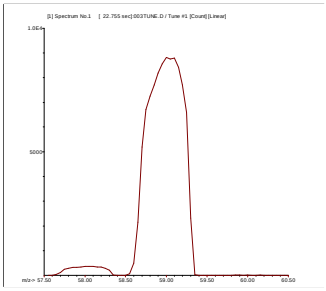
Data File: C:\ICPCHEM\1\DATA\JLE15A.B\003TUNE.D
Date Acquired: May 15 2018 02:18 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

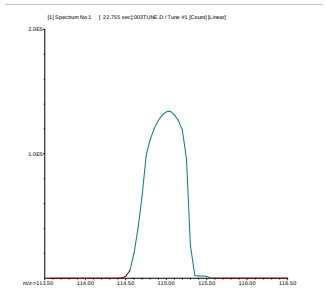
Element	Actual	Required	Flag
7 Li	2.80	5.00	
59 Co	3.05	5.00	
115 In	2.19	5.00	
205 Tl	2.14	5.00	



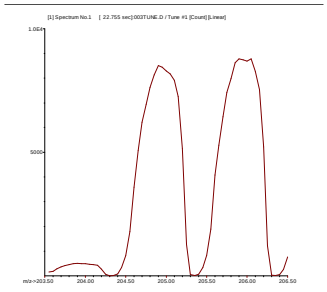
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



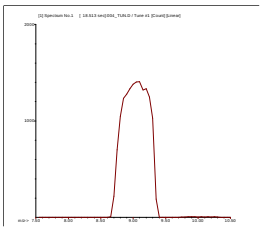
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

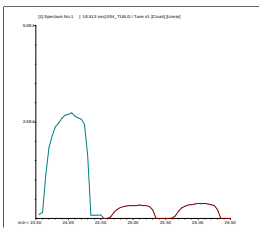
Data File: C:\ICPCHEM\1\DATA\JLE15A.B\004_TUN.D
Date Acquired: May 15 2018 02:21 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

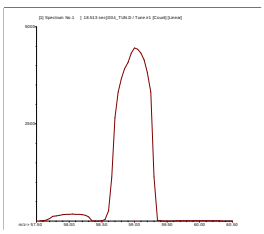
Element	Actual	Required	Flag
9 Be	3.38	5.00	
24 Mg	2.20	5.00	
59 Co	2.04	5.00	
115 In	0.74	5.00	
208 Pb	1.15	5.00	



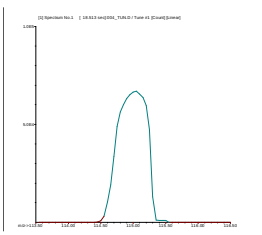
9 Be
Mass Calib.
Actual: 9.10
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



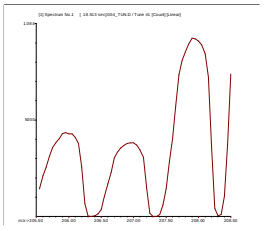
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
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 4000218

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.I
Date Acquired: May 15 2018 06:36 pm
Operator: JS
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: May 15 2018 06:38 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3927739.00	A	92700.00	2.36
9	Be	10.74	P	2.80	26.03
11	B	405.58	P	32.89	8.11
23	Na	30975.03	P	2124.00	6.86
25	Mg	184.46	P	33.56	18.19
27	Al	3168.05	P	290.60	9.17
28	Si	1223969.00	A	8813.00	0.72
29	Si	95690.43	P	1045.00	1.09
39	K	954149.81	A	8107.00	0.85
43	Ca	144.46	P	29.40	20.35
44	Ca	2918.57	P	257.80	8.83
45	Sc	2572659.00	A	24100.00	0.94
51	V	2300.28	P	462.20	20.09
52	Cr	7842.30	P	290.00	3.70
53	Cr	9658.94	P	273.70	2.83
55	Mn	1123.41	P	36.06	3.21
56	Fe	1591633.00	A	6934.00	0.44
57	Fe	10218.73	P	118.10	1.16
59	Co	100.01	P	17.64	17.64
60	Ni	50.77	P	16.76	33.01
63	Cu	604.48	P	90.34	14.95
65	Cu	272.23	P	41.14	15.11
66	Zn	694.48	P	35.64	5.13
68	Zn	1134.52	P	91.56	8.07
72	Ge	510197.59	P	9729.00	1.91
75	As	-130.50	P	112.20	85.98
82	Se	-13.96	P	5.73	41.03
88	Sr	77.79	P	22.22	28.57
89	Y	3568781.00	A	19720.00	0.55
98	Mo	33.96	P	12.62	37.16
107	Ag	28.89	P	10.71	37.07
109	Ag	18.89	P	5.09	26.96
111	Cd	732.00	P	25.56	3.49
114	Cd	-5.19	P	5.21	100.30
115	In	3455556.00	A	37390.00	1.08
118	Sn	375.57	P	38.49	10.25
120	Sn	544.47	P	40.74	7.48
121	Sb	34.45	P	13.47	39.11
123	Sb	17.78	P	8.39	47.19
135	Ba	16.67	P	6.67	40.00
137	Ba	33.33	P	12.02	36.06
159	Tb	4617151.00	A	98870.00	2.14
182	W	43.34	P	6.67	15.39
203	Tl	143.34	P	18.56	12.95
205	Tl	352.24	P	50.92	14.46
208	Pb	1785.67	P	28.35	1.59
209	Bi	2380666.00	A	19250.00	0.81
232	Th	30.00	P	3.33	11.11
238	U	14.44	P	5.09	35.25

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\014CALI.D\014CALI.D#
Date Acquired: May 15 2018 06:40 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 15 2018 06:38 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	4228799.00	A	216000.00	5.11
9 Be	152613.70	P	1257.00	0.82
11 B	78814.19	P	2795.00	3.55
23 Na	92552320.00	A	2234000.00	2.41
25 Mg	7688719.00	A	205000.00	2.67
27 Al	6962852.00	A	258300.00	3.71
28 Si	5154026.00	A	16410.00	0.32
29 Si	301817.31	P	4024.00	1.33
39 K	93881152.00	A	829600.00	0.88
43 Ca	164702.80	P	1280.00	0.78
44 Ca	2657397.00	A	32810.00	1.23
45 Sc	2724980.00	A	49510.00	1.82
51 V	532087.31	P	7822.00	1.47
52 Cr	449933.50	P	6031.00	1.34
53 Cr	58155.10	P	1043.00	1.79
55 Mn	560630.38	P	3608.00	0.64
56 Fe	93014160.00	A	539800.00	0.58
57 Fe	2275517.00	A	26380.00	1.16
59 Co	487875.50	P	4335.00	0.89
60 Ni	108787.00	P	970.10	0.89
63 Cu	264713.59	P	3171.00	1.20
65 Cu	124439.90	P	825.20	0.66
66 Zn	62862.39	P	434.80	0.69
68 Zn	46481.72	P	291.00	0.63
72 Ge	527192.69	P	2630.00	0.50
75 As	64053.79	P	208.10	0.32
82 Se	4956.27	P	61.62	1.24
88 Sr	692280.50	P	4563.00	0.66
89 Y	3815167.00	A	16830.00	0.44
98 Mo	205716.41	P	1796.00	0.87
107 Ag	326894.00	P	286.90	0.09
109 Ag	312567.50	P	646.30	0.21
111 Cd	66605.33	P	284.30	0.43
114 Cd	145799.09	P	1159.00	0.79
115 In	3594212.00	A	35680.00	0.99
118 Sn	199929.80	P	240.40	0.12
120 Sn	276795.50	P	2570.00	0.93
121 Sb	242972.80	P	1593.00	0.66
123 Sb	185082.41	P	671.20	0.36
135 Ba	60633.48	P	631.40	1.04
137 Ba	105096.90	P	686.10	0.65
159 Tb	4910357.00	A	33770.00	0.69
182 W	242783.30	P	1990.00	0.82
203 Tl	202711.30	P	1717.00	0.85
205 Tl	476911.81	P	5110.00	1.07
208 Pb	649529.81	P	7484.00	1.15
209 Bi	2415771.00	A	34190.00	1.42
232 Th	673026.19	P	5913.00	0.88
238 U	651473.31	P	9462.00	1.45

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4228798.50	5.11	3927738.80	107.7	79.5 - 120.4	
45 Sc	2724980.30	1.82	2572658.80	105.9	79.5 - 120.4	
72 Ge	527192.63	0.50	510197.59	103.3	79.5 - 120.4	
159 Tb	4910357.00	0.69	4617151.00	106.4	79.5 - 120.4	
209 Bi	2415771.30	1.42	2380666.00	101.5	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.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 4000220

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\015_ICV.D\015_ICV.D#
Date Acquired: May 15 2018 06:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	20.02	ppb	3.34	20	100.1	
11 B	21.56	ppb	2.89	20	107.8	
23 Na	3,902.	ppb	2.48	4,000	97.55	
25 Mg	3,846.	ppb	2.73	4,000	96.15	
27 Al	400.1	ppb	2.32	400	100.025	
28 Si	385.8	ppb	6.25	400	96.45	
29 Si	373.7	ppb	8.35	400	93.425	
39 K	3,913.	ppb	1.05	4,000	97.825	
43 Ca	3,960.	ppb	1.85	4,000	99	
44 Ca	4,046.	ppb	1.08	4,000	101.15	
51 V	19.62	ppb	1.68	20	98.1	
52 Cr	19.51	ppb	1.03	20	97.55	
53 Cr	15.59	ppb	2.14	20	77.95	
55 Mn	19.59	ppb	2.82	20	97.95	
56 Fe	3,904.	ppb	2.20	4,000	97.6	
57 Fe	3,993.	ppb	1.58	4,000	99.825	
59 Co	20.05	ppb	1.29	20	100.25	
60 Ni	20.07	ppb	1.29	20	100.35	
63 Cu	19.71	ppb	1.71	20	98.55	
65 Cu	19.96	ppb	1.52	20	99.8	
66 Zn	20.48	ppb	2.54	20	102.4	
68 Zn	20.45	ppb	1.29	20	102.25	
75 As	20.14	ppb	0.75	20	100.7	
82 Se	20.39	ppb	1.50	20	101.95	
88 Sr	19.31	ppb	1.65	20	96.55	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.8	ppb	1.31	40	97	
107 Ag	19.93	ppb	0.43	20	99.65	
109 Ag	19.91	ppb	1.21	20	99.55	
111 Cd	19.97	ppb	1.48	20	99.85	
114 Cd	20.08	ppb	0.60	20	100.4	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.24	ppb	1.13	20	101.2	
120 Sn	19.95	ppb	2.66	20	99.75	
121 Sb	20.33	ppb	1.38	20	101.65	
123 Sb	20.22	ppb	2.59	20	101.1	
135 Ba	20.41	ppb	2.42	20	102.05	
137 Ba	20.03	ppb	0.80	20	100.15	
182 W	19.59	ppb	0.89	20	97.95	
203 Tl	19.91	ppb	1.02	20	99.55	
205 Tl	20.23	ppb	0.59	20	101.15	
208 Pb	19.62	ppb	0.65	20	98.1	
232 Th	19.47	ppb	0.36	20	97.35	
238 U	19.29	ppb	0.67	20	96.45	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4194787.00	3.80	3927738.80	106.8	80 - 120.4	
45 Sc	2776944.30	1.30	2572658.80	107.9	80 - 120.4	
72 Ge	533205.75	0.34	510197.59	104.5	80 - 120.4	
159 Tb	4802040.00	1.02	4617151.00	104.0	80 - 120.4	
209 Bi	2413266.30	1.97	2380666.00	101.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\016_ICB.D\016_ICB.D#
Date Acquired: May 15 2018 06:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0019	ppb	93.34	1.00	
11 B	1.377	ppb	23.18	1.00	
23 Na	0.019	ppb	602.31	1.00	
25 Mg	0.1288	ppb	99.85	1.00	
27 Al	0.0246	ppb	271.67	1.00	
28 Si	-5.674	ppb	115.05	1.00	
29 Si	-6.3	ppb	53.00	1.00	
39 K	-2.315	ppb	21.32	1.00	
43 Ca	-1.577	ppb	90.36	1.00	
44 Ca	0.5523	ppb	115.14	1.00	
51 V	0.1102	ppb	35.61	1.00	
52 Cr	-0.037	ppb	48.53	1.00	
53 Cr	-3.395	ppb	5.08	1.00	
55 Mn	-0.0013	ppb	12.22	1.00	
56 Fe	-0.576	ppb	526.56	1.00	
57 Fe	0.0172	ppb	17237.00	1.00	
59 Co	-0.003	ppb	24.23	1.00	
60 Ni	0.0042	ppb	431.72	1.00	
63 Cu	-0.0026	ppb	423.66	1.00	
65 Cu	0.0091	ppb	63.27	1.00	
66 Zn	0.0665	ppb	100.05	1.00	
68 Zn	-0.1183	ppb	48.17	1.00	
75 As	-0.1336	ppb	22.11	1.00	
82 Se	0.2507	ppb	33.83	1.00	
88 Sr	0.0015	ppb	215.59	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0558	ppb	32.22	1.00	
107 Ag	0.0037	ppb	25.72	1.00	
109 Ag	0.005	ppb	51.07	1.00	
111 Cd	0.0229	ppb	64.04	1.00	
114 Cd	0.002	ppb	182.28	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0403	ppb	5.05	1.00	
120 Sn	0.0333	ppb	26.67	1.00	
121 Sb	0.0065	ppb	36.28	1.00	
123 Sb	0.0095	ppb	20.32	1.00	
135 Ba	0.0039	ppb	213.29	1.00	
137 Ba	-0.0039	ppb	101.64	1.00	
182 W	0.0542	ppb	33.09	1.00	
203 Tl	0.0069	ppb	134.58	1.00	
205 Tl	0.0053	ppb	41.78	1.00	
208 Pb	-0.0054	ppb	103.41	1.00	
232 Th	0.0438	ppb	18.17	1.00	
238 U	0.003	ppb	17.33	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4027835.80	6.79	3927738.80	102.5	79.5 - 120	
45 Sc	2697291.80	0.24	2572658.80	104.8	79.5 - 120	
72 Ge	521111.94	0.99	510197.59	102.1	79.5 - 120	
159 Tb	4620834.50	0.79	4617151.00	100.1	79.5 - 120	
209 Bi	2369894.50	0.72	2380666.00	99.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000222

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\017_PQL.D\017_PQL.D#
Date Acquired: May 15 2018 06:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2069	ppb	2.39	0.20	103.45	
11 B	4.574	ppb	1.07	4.00	114.35	
23 Na	194.1	ppb	3.70	200.00	97.05	
25 Mg	19.19	ppb	1.14	20.00	95.95	
27 Al	19.29	ppb	1.73	20.00	96.45	
28 Si	103.1	ppb	5.60	100.00	103.1	
29 Si	102.2	ppb	7.95	100.00	102.2	
39 K	191.1	ppb	2.61	200.00	95.55	
43 Ca	21.83	ppb	11.57	20.00	109.15	
44 Ca	19.83	ppb	6.17	20.00	99.15	
51 V	1.026	ppb	8.88	1.00	102.6	
52 Cr	0.9205	ppb	2.17	1.00	92.05	
53 Cr	-2.266	ppb	11.92	---	#VALUE!	
55 Mn	0.3835	ppb	3.89	0.40	95.875	
56 Fe	15.59	ppb	11.31	20.00	77.95	
57 Fe	19.56	ppb	3.58	20.00	97.8	
59 Co	0.1932	ppb	9.96	0.20	96.6	
60 Ni	0.3786	ppb	4.21	0.40	94.65	
63 Cu	0.592	ppb	6.70	0.60	98.6667	
65 Cu	0.6034	ppb	4.42	0.60	100.567	
66 Zn	2.125	ppb	4.44	2.00	106.25	
68 Zn	1.979	ppb	9.78	2.00	98.95	
75 As	0.9864	ppb	5.23	1.00	98.64	
82 Se	1.156	ppb	20.13	1.00	115.6	
88 Sr	0.961	ppb	0.93	1.00	96.1	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9695	ppb	2.20	1.00	96.95	
107 Ag	0.1977	ppb	5.51	0.20	98.85	
109 Ag	0.206	ppb	7.78	0.20	103	
111 Cd	0.2027	ppb	15.68	0.20	101.35	
114 Cd	0.2031	ppb	2.72	0.20	101.55	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.041	ppb	3.72	1.00	104.1	
120 Sn	1.	ppb	3.13	1.00	100	
121 Sb	0.2042	ppb	7.95	0.20	102.1	
123 Sb	0.2088	ppb	1.39	0.20	104.4	
135 Ba	0.4338	ppb	1.64	0.40	108.45	
137 Ba	0.4102	ppb	10.54	0.40	102.55	
182 W	0.9796	ppb	1.14	1.00	97.96	
203 Tl	0.2056	ppb	8.81	0.20	102.8	
205 Tl	0.1977	ppb	5.54	0.20	98.85	
208 Pb	0.1988	ppb	3.89	0.20	99.4	
232 Th	0.2053	ppb	2.42	0.20	102.65	
238 U	0.1855	ppb	1.14	0.20	92.75	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4007850.30	2.47	3927738.80	102.0	80 - 120.4	
45 Sc	2636955.80	1.28	2572658.80	102.5	80 - 120.4	
72 Ge	518486.31	0.50	510197.59	101.6	80 - 120.4	
159 Tb	4636618.00	1.27	4617151.00	100.4	80 - 120.4	
209 Bi	2377560.50	1.27	2380666.00	99.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\018SMPL.D\018SMPL.D#
Date Acquired: May 15 2018 06:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	280.24	100.	
11 B	0.3801	0.3801	ppb	20.93	1000.	
23 Na	0.7564	0.7564	ppb	19.61	200000.	
25 Mg	0.0737	0.0737	ppb	83.74	200000.	
27 Al	0.4611	0.4611	ppb	16.48	200000.	
28 Si	7.501	7.501	ppb	101.99	#VALUE!	
29 Si	1.871	1.871	ppb	210.15	10000.	
39 K	0.0609	0.0609	ppb	1292.60	200000.	
43 Ca	2.427	2.427	ppb	95.01	#VALUE!	
44 Ca	0.755	0.755	ppb	78.12	200000.	
51 V	0.0287	0.0287	ppb	218.15	1000.	
52 Cr	-0.0265	-0.0265	ppb	64.66	2000.	
53 Cr	-3.643	-3.643	ppb	9.13	#VALUE!	
55 Mn	0.0029	0.0029	ppb	393.23	2000.	
56 Fe	0.8661	0.8661	ppb	242.47	#VALUE!	
57 Fe	3.266	3.266	ppb	23.52	100000.	
59 Co	0.0007	0.0007	ppb	250.22	1000.	
60 Ni	0.0139	0.0139	ppb	47.32	1000.	
63 Cu	0.1533	0.1533	ppb	11.58	#VALUE!	
65 Cu	0.1408	0.1408	ppb	10.03	2000.	
66 Zn	0.0623	0.0623	ppb	40.34	2000.	
68 Zn	-0.1005	-0.1005	ppb	78.43	#VALUE!	
75 As	0.2061	0.2061	ppb	45.43	1000.	
82 Se	0.3767	0.3767	ppb	30.21	1000.	
88 Sr	0.0023	0.0023	ppb	90.76	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0099	0.0099	ppb	23.56	1000.	
107 Ag	-0.0003	-0.0003	ppb	621.03	100.	
109 Ag	-0.0001	-0.0001	ppb	1862.70	#VALUE!	
111 Cd	0.0268	0.0268	ppb	30.56	#VALUE!	
114 Cd	0.0031	0.0031	ppb	94.74	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.022	0.022	ppb	32.72	1000.	
120 Sn	0.0057	0.0057	ppb	150.83	#VALUE!	
121 Sb	0.0001	0.0001	ppb	371.89	#VALUE!	
123 Sb	0.0002	0.0002	ppb	618.01	1000.	
135 Ba	-0.001	-0.001	ppb	1001.00	2000.	
137 Ba	0.006	0.006	ppb	130.28	#VALUE!	
182 W	0.0127	0.0127	ppb	31.93	1000.	
203 Tl	0.0016	0.0016	ppb	170.09	1000.	
205 Tl	0.004	0.004	ppb	59.74	#VALUE!	
208 Pb	0.1351	0.1351	ppb	9.65	2000.	
232 Th	0.0103	0.0103	ppb	29.53	1000.	
238 U	0.0002	0.0002	ppb	141.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4023215.00	0.34	3927738.80	102.4	69.5 - 120	
45 Sc	2616969.30	1.28	2572658.80	101.7	69.5 - 120	
72 Ge	521151.63	0.95	510197.59	102.1	69.5 - 120	
159 Tb	4666094.00	0.50	4617151.00	101.1	69.5 - 120	
209 Bi	2350265.50	0.59	2380666.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\019ICSA.D\019ICSA.D#
Date Acquired: May 15 2018 07:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	27.91		
11 B	0.712	ppb	4.07		
23 Na	92,410.	ppb	1.45		
25 Mg	89,100.	ppb	1.78		
27 Al	91,500.	ppb	0.87		
28 Si	5.718	ppb	107.69		
29 Si	22.94	ppb	22.37		
39 K	95,450.	ppb	1.80		
43 Ca	100,400.	ppb	1.59		
44 Ca	95,500.	ppb	1.95		
51 V	0.2248	ppb	17.08		
52 Cr	0.9327	ppb	5.69		
53 Cr	-1.512	ppb	16.28		
55 Mn	0.3839	ppb	6.31		
56 Fe	93,270.	ppb	0.69		
57 Fe	90,640.	ppb	0.89		
59 Co	0.102	ppb	14.38		
60 Ni	-0.3109	ppb	10.65		
63 Cu	3.713	ppb	2.67		
65 Cu	1.001	ppb	6.41		
66 Zn	2.485	ppb	2.69		
68 Zn	0.3877	ppb	38.41		
75 As	0.2878	ppb	38.08		
82 Se	0.2531	ppb	39.71		
88 Sr	0.8955	ppb	2.13		
89 Y	--------	---	--------		
98 Mo	1,911.	ppb	1.33		
107 Ag	0.0211	ppb	18.21		
109 Ag	0.0217	ppb	8.03		
111 Cd	0.0629	ppb	50.54		
114 Cd	0.0374	ppb	59.40		
115 In	--------	---	--------		
118 Sn	0.0586	ppb	5.87		
120 Sn	0.0568	ppb	10.22		
121 Sb	0.0408	ppb	9.81		
123 Sb	0.0503	ppb	5.31		
135 Ba	0.0954	ppb	17.52		
137 Ba	0.0867	ppb	14.49		
182 W	0.2285	ppb	4.39		
203 Tl	0.0049	ppb	86.14		
205 Tl	0.0054	ppb	122.31		
208 Pb	0.0583	ppb	6.57		
232 Th	0.0589	ppb	16.21		
238 U	0.0002	ppb	287.77		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3656458.80	2.00	3927738.80	93.1	69.5 - 120.4	
45 Sc	2738870.50	0.42	2572658.80	106.5	69.5 - 120.4	
72 Ge	532628.50	1.10	510197.59	104.4	69.5 - 120.4	
159 Tb	4788053.50	1.01	4617151.00	103.7	69.5 - 120.4	
209 Bi	2163522.80	1.25	2380666.00	90.9	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\020ICSB.D\020ICSB.D#
Date Acquired: May 15 2018 07:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	21.05	ppb	1.21	20.00	79.5 - 120	
11 B	22.67	ppb	3.10	20.00	79.5 - 120	
23 Na	94,170.	ppb	3.08	#########	79.5 - 120	
25 Mg	91,850.	ppb	6.27	#########	79.5 - 120	
27 Al	93,940.	ppb	4.47	#########	79.5 - 120	
28 Si	491.5	ppb	6.43	---	##### - #####	
29 Si	513.3	ppb	6.89	---	##### - #####	
39 K	97,210.	ppb	3.26	#########	79.5 - 120	
43 Ca	102,000.	ppb	4.71	#########	79.5 - 120	
44 Ca	96,200.	ppb	2.57	#########	79.5 - 120	
51 V	19.81	ppb	2.04	20.00	79.5 - 120	
52 Cr	20.13	ppb	1.70	20.00	79.5 - 120	
53 Cr	19.85	ppb	1.44	---	##### - #####	
55 Mn	19.54	ppb	1.23	20.00	79.5 - 120	
56 Fe	94,150.	ppb	1.62	#########	79.5 - 120	
57 Fe	91,150.	ppb	1.14	#########	79.5 - 120	
59 Co	19.25	ppb	0.83	20.00	79.5 - 120	
60 Ni	18.31	ppb	1.12	20.00	79.5 - 120	
63 Cu	21.72	ppb	0.97	20.00	79.5 - 120	
65 Cu	19.39	ppb	1.38	20.00	79.5 - 120	
66 Zn	20.19	ppb	2.02	20.00	79.5 - 120	
68 Zn	18.2	ppb	0.81	20.00	79.5 - 120	
75 As	19.62	ppb	0.38	20.00	79.5 - 120	
82 Se	19.32	ppb	2.20	20.00	79.5 - 120	
88 Sr	20.65	ppb	1.44	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,960.	ppb	1.27	2000.00	79.5 - 120	
107 Ag	18.35	ppb	1.18	20.00	79.5 - 120	
109 Ag	18.31	ppb	1.37	20.00	79.5 - 120	
111 Cd	18.45	ppb	1.24	20.00	79.5 - 120	
114 Cd	18.49	ppb	1.43	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	20.3	ppb	2.74	20.00	79.5 - 120	
120 Sn	20.09	ppb	1.46	20.00	79.5 - 120	
121 Sb	20.11	ppb	1.32	20.00	79.5 - 120	
123 Sb	20.	ppb	2.28	20.00	79.5 - 120	
135 Ba	20.62	ppb	1.15	20.00	79.5 - 120	
137 Ba	20.31	ppb	1.83	20.00	79.5 - 120	
182 W	20.4	ppb	2.30	20.00	79.5 - 120	
203 Tl	20.88	ppb	2.29	20.00	79.5 - 120	
205 Tl	20.86	ppb	2.06	20.00	79.5 - 120	
208 Pb	20.8	ppb	2.40	20.00	79.5 - 120	
232 Th	22.	ppb	2.16	20.00	79.5 - 120	
238 U	21.27	ppb	3.12	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3673971.30	0.44	3927738.80	93.5	69.5 - 120	
45 Sc	2730908.80	2.94	2572658.80	106.2	69.5 - 120	
72 Ge	532965.44	0.39	510197.59	104.5	69.5 - 120	
159 Tb	4854034.00	1.28	4617151.00	105.1	69.5 - 120	
209 Bi	2181126.50	2.02	2380666.00	91.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\021SMPL.D\021SMPL.D#
Date Acquired: May 15 2018 07:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	85.96	100.	
11 B	0.4679	0.4679	ppb	22.36	1000.	
23 Na	3.994	3.994	ppb	2.06	200000.	
25 Mg	0.5611	0.5611	ppb	27.62	200000.	
27 Al	0.8498	0.8498	ppb	8.44	200000.	
28 Si	8.632	8.632	ppb	167.28	#VALUE!	
29 Si	-13.32	-13.32	ppb	77.40	10000.	
39 K	-2.2	-2.2	ppb	150.73	200000.	
43 Ca	-0.4594	-0.4594	ppb	333.48	#VALUE!	
44 Ca	2.567	2.567	ppb	29.74	200000.	
51 V	-0.0025	-0.0025	ppb	1716.40	1000.	
52 Cr	0.0551	0.0551	ppb	46.79	2000.	
53 Cr	-0.5508	-0.5508	ppb	47.22	#VALUE!	
55 Mn	0.077	0.077	ppb	10.30	2000.	
56 Fe	2.44	2.44	ppb	137.05	#VALUE!	
57 Fe	4.926	4.926	ppb	20.52	100000.	
59 Co	-0.0004	-0.0004	ppb	886.64	1000.	
60 Ni	0.0084	0.0084	ppb	119.41	1000.	
63 Cu	0.1961	0.1961	ppb	8.80	#VALUE!	
65 Cu	0.2026	0.2026	ppb	7.52	2000.	
66 Zn	0.1233	0.1233	ppb	52.00	2000.	
68 Zn	0.0909	0.0909	ppb	73.82	#VALUE!	
75 As	0.1111	0.1111	ppb	146.44	1000.	
82 Se	0.0108	0.0108	ppb	157.47	1000.	
88 Sr	0.0007	0.0007	ppb	295.56	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.031	1.031	ppb	37.41	1000.	
107 Ag	0.0013	0.0013	ppb	133.48	100.	
109 Ag	0.0036	0.0036	ppb	38.21	#VALUE!	
111 Cd	-0.0179	-0.0179	ppb	246.88	#VALUE!	
114 Cd	0.0004	0.0004	ppb	701.98	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0158	0.0158	ppb	30.69	1000.	
120 Sn	0.0202	0.0202	ppb	21.01	#VALUE!	
121 Sb	-0.0007	-0.0007	ppb	70.86	#VALUE!	
123 Sb	0.0051	0.0051	ppb	95.87	1000.	
135 Ba	0.0573	0.0573	ppb	27.16	2000.	
137 Ba	0.0336	0.0336	ppb	41.79	#VALUE!	
182 W	0.0094	0.0094	ppb	48.14	1000.	
203 Tl	0.0072	0.0072	ppb	139.60	1000.	
205 Tl	0.0078	0.0078	ppb	15.42	#VALUE!	
208 Pb	0.115	0.115	ppb	3.95	2000.	
232 Th	0.0101	0.0101	ppb	10.39	1000.	
238 U	0.0014	0.0014	ppb	17.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3877507.00	2.57	3927738.80	98.7	69.5 - 120	
45 Sc	2636587.00	2.04	2572658.80	102.5	69.5 - 120	
72 Ge	517748.88	1.00	510197.59	101.5	69.5 - 120	
159 Tb	4583198.00	1.51	4617151.00	99.3	69.5 - 120	
209 Bi	2337929.80	2.18	2380666.00	98.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\022SMPL.D\022SMPL.D#
Date Acquired: May 15 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	100.8	100.8	ppb	2.27	100.	>LDR
11 B	0.2195	0.2195	ppb	6.38	1000.	
23 Na	11.36	11.36	ppb	123.94	200000.	
25 Mg	8.451	8.451	ppb	153.00	200000.	
27 Al	10.02	10.02	ppb	136.93	200000.	
28 Si	-11.74	-11.74	ppb	54.42	#VALUE!	
29 Si	-13.3	-13.3	ppb	103.38	10000.	
39 K	4.706	4.706	ppb	293.03	200000.	
43 Ca	1,468.	1,468.	ppb	1.49	#VALUE!	
44 Ca	117.1	117.1	ppb	6.56	200000.	
51 V	1,019.	1,019.	ppb	2.23	1000.	>LDR
52 Cr	2,021.	2,021.	ppb	1.74	2000.	>LDR
53 Cr	2,215.	2,215.	ppb	1.47	#VALUE!	
55 Mn	1,962.	1,962.	ppb	0.64	2000.	
56 Fe	2.243	2.243	ppb	638.88	#VALUE!	
57 Fe	2.776	2.776	ppb	381.48	100000.	
59 Co	1,010.	1,010.	ppb	2.67	1000.	>LDR
60 Ni	1,027.	1,027.	ppb	2.19	1000.	>LDR
63 Cu	1,964.	1,964.	ppb	1.28	#VALUE!	
65 Cu	2,002.	2,002.	ppb	1.62	2000.	>LDR
66 Zn	2,051.	2,051.	ppb	1.56	2000.	>LDR
68 Zn	2,058.	2,058.	ppb	1.76	#VALUE!	
75 As	1,042.	1,042.	ppb	2.49	1000.	>LDR
82 Se	1,071.	1,071.	ppb	0.85	1000.	>LDR
88 Sr	1,926.	1,926.	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,004.	1,004.	ppb	1.27	1000.	>LDR
107 Ag	106.7	106.7	ppb	1.11	100.	>LDR
109 Ag	106.7	106.7	ppb	0.06	#VALUE!	
111 Cd	1,041.	1,041.	ppb	0.90	#VALUE!	
114 Cd	1,012.	1,012.	ppb	1.19	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,003.	1,003.	ppb	1.61	1000.	>LDR
120 Sn	992.	992.	ppb	1.09	#VALUE!	
121 Sb	1,011.	1,011.	ppb	0.93	#VALUE!	
123 Sb	1,023.	1,023.	ppb	0.45	1000.	>LDR
135 Ba	2,046.	2,046.	ppb	0.78	2000.	>LDR
137 Ba	2,011.	2,011.	ppb	1.67	#VALUE!	
182 W	987.7	987.7	ppb	0.62	1000.	
203 Tl	976.3	976.3	ppb	0.73	1000.	
205 Tl	971.6	971.6	ppb	0.44	#VALUE!	
208 Pb	1,925.	1,925.	ppb	0.33	2000.	
232 Th	954.	954.	ppb	0.37	1000.	
238 U	944.5	944.5	ppb	0.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065653.30	1.26	3927738.80	103.5	69.5 - 120	
45 Sc	2626603.30	2.57	2572658.80	102.1	69.5 - 120	
72 Ge	504165.38	2.93	510197.59	98.8	69.5 - 120	
159 Tb	4681912.50	1.99	4617151.00	101.4	69.5 - 120	
209 Bi	2434879.30	1.09	2380666.00	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

15 :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 4000228

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\023SMPL.D\023SMPL.D#
Date Acquired: May 15 2018 07:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	0.0078	0.0078	ppb	40.27	100.	
11 B	0.587	0.587	ppb	5.08	1000.	
23 Na	185,300.	185,300.	ppb	2.58	200000.	
25 Mg	180,600.	180,600.	ppb	1.22	200000.	
27 Al	188,400.	188,400.	ppb	1.12	200000.	
28 Si	9,750.	9,750.	ppb	0.61	#VALUE!	
29 Si	10,270.	10,270.	ppb	1.10	10000.	>LDR
39 K	185,900.	185,900.	ppb	1.19	200000.	
43 Ca	190,600.	190,600.	ppb	0.61	#VALUE!	
44 Ca	187,800.	187,800.	ppb	0.95	200000.	
51 V	0.2079	0.2079	ppb	27.21	1000.	
52 Cr	2.884	2.884	ppb	1.65	2000.	
53 Cr	-1.937	-1.937	ppb	23.20	#VALUE!	
55 Mn	7.344	7.344	ppb	1.21	2000.	
56 Fe	92,580.	92,580.	ppb	1.02	#VALUE!	
57 Fe	89,580.	89,580.	ppb	0.98	100000.	
59 Co	2.682	2.682	ppb	1.06	1000.	
60 Ni	2.983	2.983	ppb	3.88	1000.	
63 Cu	9.04	9.04	ppb	1.13	#VALUE!	
65 Cu	2.837	2.837	ppb	1.67	2000.	
66 Zn	3.443	3.443	ppb	2.33	2000.	
68 Zn	1.031	1.031	ppb	13.18	#VALUE!	
75 As	0.3915	0.3915	ppb	37.42	1000.	
82 Se	0.727	0.727	ppb	15.59	1000.	
88 Sr	6.685	6.685	ppb	1.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.423	1.423	ppb	30.59	1000.	
107 Ag	0.3459	0.3459	ppb	3.06	100.	
109 Ag	0.3428	0.3428	ppb	4.29	#VALUE!	
111 Cd	0.0489	0.0489	ppb	34.39	#VALUE!	
114 Cd	0.0038	0.0038	ppb	150.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.7044	0.7044	ppb	9.76	1000.	
120 Sn	0.7106	0.7106	ppb	6.46	#VALUE!	
121 Sb	0.2144	0.2144	ppb	7.82	#VALUE!	
123 Sb	0.2205	0.2205	ppb	11.74	1000.	
135 Ba	0.2637	0.2637	ppb	17.07	2000.	
137 Ba	0.2318	0.2318	ppb	10.24	#VALUE!	
182 W	1.383	1.383	ppb	31.83	1000.	
203 Tl	0.0382	0.0382	ppb	16.66	1000.	
205 Tl	0.0341	0.0341	ppb	16.80	#VALUE!	
208 Pb	0.4741	0.4741	ppb	4.05	2000.	
232 Th	1.481	1.481	ppb	35.79	1000.	
238 U	0.1043	0.1043	ppb	9.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3663938.30	4.80	3927738.80	93.3	69.5 - 120	
45 Sc	2800012.80	3.57	2572658.80	108.8	69.5 - 120	
72 Ge	521149.97	2.05	510197.59	102.1	69.5 - 120	
159 Tb	4434250.50	1.54	4617151.00	96.0	69.5 - 120	
209 Bi	1849094.40	1.90	2380666.00	77.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.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\JLE15C.B\024SMPL.D\024SMPL.D#
Date Acquired: May 15 2018 07:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	54.23	100.	
11 B	0.1518	0.1518	ppb	15.90	1000.	
23 Na	19.35	19.35	ppb	64.44	200000.	
25 Mg	10.08	10.08	ppb	111.11	200000.	
27 Al	10.01	10.01	ppb	107.59	200000.	
28 Si	23.15	23.15	ppb	45.01	#VALUE!	
29 Si	-0.6374	-0.6374	ppb	2414.50	10000.	
39 K	10.1	10.1	ppb	143.17	200000.	
43 Ca	6.926	6.926	ppb	117.46	#VALUE!	
44 Ca	10.81	10.81	ppb	110.64	200000.	
51 V	0.0198	0.0198	ppb	186.13	1000.	
52 Cr	0.0884	0.0884	ppb	42.14	2000.	
53 Cr	2.746	2.746	ppb	12.92	#VALUE!	
55 Mn	0.0814	0.0814	ppb	2.70	2000.	
56 Fe	14.01	14.01	ppb	63.31	#VALUE!	
57 Fe	11.27	11.27	ppb	62.43	100000.	
59 Co	0.0038	0.0038	ppb	21.45	1000.	
60 Ni	0.0237	0.0237	ppb	26.10	1000.	
63 Cu	0.238	0.238	ppb	11.23	#VALUE!	
65 Cu	0.2157	0.2157	ppb	8.17	2000.	
66 Zn	0.2182	0.2182	ppb	11.52	2000.	
68 Zn	0.12	0.12	ppb	101.58	#VALUE!	
75 As	0.0314	0.0314	ppb	219.20	1000.	
82 Se	0.0859	0.0859	ppb	157.36	1000.	
88 Sr	0.0073	0.0073	ppb	46.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.201	0.201	ppb	42.56	1000.	
107 Ag	0.0035	0.0035	ppb	71.72	100.	
109 Ag	0.0029	0.0029	ppb	24.36	#VALUE!	
111 Cd	-0.0076	-0.0076	ppb	255.91	#VALUE!	
114 Cd	0.0025	0.0025	ppb	148.82	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1086	0.1086	ppb	11.54	1000.	
120 Sn	0.109	0.109	ppb	14.85	#VALUE!	
121 Sb	0.0355	0.0355	ppb	17.18	#VALUE!	
123 Sb	0.0372	0.0372	ppb	13.32	1000.	
135 Ba	0.0459	0.0459	ppb	38.60	2000.	
137 Ba	0.0462	0.0462	ppb	17.98	#VALUE!	
182 W	0.237	0.237	ppb	34.55	1000.	
203 Tl	0.0151	0.0151	ppb	71.93	1000.	
205 Tl	0.0106	0.0106	ppb	28.20	#VALUE!	
208 Pb	0.1204	0.1204	ppb	10.76	2000.	
232 Th	0.067	0.067	ppb	41.51	1000.	
238 U	0.0056	0.0056	ppb	49.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065809.50	3.56	3927738.80	103.5	69.5 - 120	
45 Sc	2737375.50	1.91	2572658.80	106.4	69.5 - 120	
72 Ge	531000.00	1.62	510197.59	104.1	69.5 - 120	
159 Tb	4532983.50	0.78	4617151.00	98.2	69.5 - 120	
209 Bi	2228511.50	1.56	2380666.00	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\025SMPL.D\025SMPL.D#
Date Acquired: May 15 2018 07:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	385.86	100.	
11 B	0.1135	0.1135	ppb	22.78	1000.	
23 Na	5.058	5.058	ppb	12.95	200000.	
25 Mg	0.6796	0.6796	ppb	12.39	200000.	
27 Al	0.9582	0.9582	ppb	4.51	200000.	
28 Si	15.17	15.17	ppb	24.00	#VALUE!	
29 Si	-6.024	-6.024	ppb	181.94	10000.	
39 K	-1.02	-1.02	ppb	226.67	200000.	
43 Ca	0.4981	0.4981	ppb	498.49	#VALUE!	
44 Ca	2.123	2.123	ppb	41.75	200000.	
51 V	0.1367	0.1367	ppb	52.36	1000.	
52 Cr	0.0763	0.0763	ppb	15.89	2000.	
53 Cr	2.089	2.089	ppb	2.67	#VALUE!	
55 Mn	0.0763	0.0763	ppb	13.19	2000.	
56 Fe	2.257	2.257	ppb	186.00	#VALUE!	
57 Fe	2.905	2.905	ppb	71.02	100000.	
59 Co	0.005	0.005	ppb	8.91	1000.	
60 Ni	0.0173	0.0173	ppb	119.57	1000.	
63 Cu	0.1703	0.1703	ppb	2.40	#VALUE!	
65 Cu	0.2131	0.2131	ppb	10.14	2000.	
66 Zn	0.1996	0.1996	ppb	23.12	2000.	
68 Zn	0.0702	0.0702	ppb	98.66	#VALUE!	
75 As	0.1714	0.1714	ppb	112.37	1000.	
82 Se	0.1946	0.1946	ppb	134.02	1000.	
88 Sr	0.0007	0.0007	ppb	248.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0716	0.0716	ppb	27.42	1000.	
107 Ag	0.0025	0.0025	ppb	52.30	100.	
109 Ag	0.0017	0.0017	ppb	144.07	#VALUE!	
111 Cd	-0.0211	-0.0211	ppb	194.25	#VALUE!	
114 Cd	0.0032	0.0032	ppb	55.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.05	0.05	ppb	8.75	1000.	
120 Sn	0.0602	0.0602	ppb	22.18	#VALUE!	
121 Sb	0.0158	0.0158	ppb	48.58	#VALUE!	
123 Sb	0.0214	0.0214	ppb	20.04	1000.	
135 Ba	0.0476	0.0476	ppb	34.20	2000.	
137 Ba	0.0458	0.0458	ppb	18.78	#VALUE!	
182 W	0.0933	0.0933	ppb	29.06	1000.	
203 Tl	0.0117	0.0117	ppb	65.94	1000.	
205 Tl	0.0059	0.0059	ppb	87.85	#VALUE!	
208 Pb	0.1249	0.1249	ppb	4.24	2000.	
232 Th	0.0501	0.0501	ppb	27.72	1000.	
238 U	0.001	0.001	ppb	132.54	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4143091.50	2.40	3927738.80	105.5	69.5 - 120	
45 Sc	2683343.00	1.83	2572658.80	104.3	69.5 - 120	
72 Ge	524120.78	0.64	510197.59	102.7	69.5 - 120	
159 Tb	4561281.50	0.38	4617151.00	98.8	69.5 - 120	
209 Bi	2310591.30	0.90	2380666.00	97.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\026_CCV.D\026_CCV.D#
Date Acquired: May 15 2018 07:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.37	ppb	1.18	25	101.48	
11 B	24.91	ppb	3.35	25	99.64	
23 Na	4,828.	ppb	0.96	5,000	96.56	
25 Mg	4,845.	ppb	0.31	5,000	96.9	
27 Al	490.7	ppb	1.09	500	98.14	
28 Si	477.5	ppb	1.89	500	95.5	
29 Si	464.1	ppb	2.61	500	92.82	
39 K	4,833.	ppb	1.29	5,000	96.66	
43 Ca	4,876.	ppb	0.88	5,000	97.52	
44 Ca	4,941.	ppb	1.36	5,000	98.82	
51 V	24.51	ppb	0.52	25	98.04	
52 Cr	24.81	ppb	0.68	25	99.24	
53 Cr	24.81	ppb	4.33	25	99.24	
55 Mn	24.52	ppb	1.34	25	98.08	
56 Fe	4,816.	ppb	0.79	5,000	96.32	
57 Fe	4,942.	ppb	0.58	5,000	98.84	
59 Co	24.93	ppb	0.78	25	99.72	
60 Ni	24.56	ppb	0.81	25	98.24	
63 Cu	24.74	ppb	1.02	25	98.96	
65 Cu	24.93	ppb	2.15	25	99.72	
66 Zn	24.6	ppb	0.35	25	98.4	
68 Zn	24.54	ppb	2.24	25	98.16	
75 As	24.92	ppb	0.33	25	99.68	
82 Se	25.33	ppb	1.20	25	101.32	
88 Sr	24.37	ppb	0.89	25	97.48	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.72	ppb	0.29	25	98.88	
107 Ag	24.8	ppb	0.53	25	99.2	
109 Ag	24.88	ppb	0.74	25	99.52	
111 Cd	24.64	ppb	1.17	25	98.56	
114 Cd	24.93	ppb	0.57	25	99.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.89	ppb	1.35	25	99.56	
120 Sn	24.84	ppb	1.92	25	99.36	
121 Sb	25.27	ppb	1.81	25	101.08	
123 Sb	25.35	ppb	1.24	25	101.4	
135 Ba	25.44	ppb	0.99	25	101.76	
137 Ba	25.29	ppb	1.79	25	101.16	
182 W	24.44	ppb	2.32	25	97.76	
203 Tl	24.23	ppb	0.44	25	96.92	
205 Tl	24.26	ppb	0.78	25	97.04	
208 Pb	24.35	ppb	0.35	25	97.4	
232 Th	23.63	ppb	1.55	25	94.52	
238 U	23.69	ppb	0.66	25	94.76	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4096449.00	1.77	3927738.80	104.3	80 - 120.4	
45 Sc	2740937.00	1.28	2572658.80	106.5	80 - 120.4	
72 Ge	520514.56	0.41	510197.59	102.0	80 - 120.4	
159 Tb	4732701.50	0.56	4617151.00	102.5	80 - 120.4	
209 Bi	2416532.30	0.56	2380666.00	101.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\027_CCB.D\027_CCB.D#
Date Acquired: May 15 2018 07:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0011	ppb	213.05	1.00	
11 B	0.965	ppb	25.54	1.00	
23 Na	3.869	ppb	10.12	1.00	
25 Mg	0.5357	ppb	80.66	1.00	
27 Al	0.1798	ppb	74.53	1.00	
28 Si	7.003	ppb	32.63	1.00	
29 Si	-5.388	ppb	9.42	1.00	
39 K	-0.1349	ppb	1570.10	1.00	
43 Ca	-0.0073	ppb	21779.00	1.00	
44 Ca	2.206	ppb	8.73	1.00	
51 V	0.0672	ppb	74.14	1.00	
52 Cr	-0.036	ppb	14.04	1.00	
53 Cr	-1.145	ppb	18.93	1.00	
55 Mn	0.0044	ppb	81.19	1.00	
56 Fe	-3.265	ppb	40.06	1.00	
57 Fe	0.1393	ppb	1117.70	1.00	
59 Co	-0.0001	ppb	1988.70	1.00	
60 Ni	0.0061	ppb	188.86	1.00	
63 Cu	0.0201	ppb	49.32	1.00	
65 Cu	0.0245	ppb	36.03	1.00	
66 Zn	0.1076	ppb	51.39	1.00	
68 Zn	-0.0771	ppb	121.94	1.00	
75 As	0.2815	ppb	44.73	1.00	
82 Se	0.2666	ppb	101.76	1.00	
88 Sr	0.0019	ppb	165.64	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0513	ppb	37.49	1.00	
107 Ag	0.0033	ppb	27.01	1.00	
109 Ag	0.0032	ppb	107.70	1.00	
111 Cd	0.0092	ppb	105.82	1.00	
114 Cd	0.0002	ppb	1746.70	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0506	ppb	15.98	1.00	
120 Sn	0.0518	ppb	17.63	1.00	
121 Sb	0.0172	ppb	31.07	1.00	
123 Sb	0.0152	ppb	45.79	1.00	
135 Ba	0.0327	ppb	15.69	1.00	
137 Ba	0.0139	ppb	43.52	1.00	
182 W	0.0687	ppb	42.36	1.00	
203 Tl	0.0049	ppb	195.59	1.00	
205 Tl	0.0024	ppb	135.25	1.00	
208 Pb	-0.0218	ppb	10.92	1.00	
232 Th	0.0766	ppb	21.18	1.00	
238 U	0.0032	ppb	40.96	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4060173.80	1.80	3927738.80	103.4	79.5 - 120	
45 Sc	2641437.00	2.03	2572658.80	102.7	79.5 - 120	
72 Ge	514198.72	0.24	510197.59	100.8	79.5 - 120	
159 Tb	4567900.50	0.40	4617151.00	98.9	79.5 - 120	
209 Bi	2342393.50	0.69	2380666.00	98.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\028SMPL.D\028SMPL.D#
Date Acquired: May 15 2018 07:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE14IMW1
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	1063.80	100.	
11 B	0.452	0.452	ppb	7.04	1000.	
23 Na	9.306	9.306	ppb	1.40	200000.	
25 Mg	8.295	8.295	ppb	6.49	200000.	
27 Al	4.447	4.447	ppb	5.53	200000.	
28 Si	30.35	30.35	ppb	33.61	#VALUE!	
29 Si	20.66	20.66	ppb	30.06	10000.	
39 K	2.143	2.143	ppb	33.54	200000.	
43 Ca	1.724	1.724	ppb	82.48	#VALUE!	
44 Ca	3.39	3.39	ppb	31.24	200000.	
51 V	0.0761	0.0761	ppb	55.57	1000.	
52 Cr	0.0368	0.0368	ppb	29.17	2000.	
53 Cr	-0.747	-0.747	ppb	18.59	#VALUE!	
55 Mn	0.0414	0.0414	ppb	11.16	2000.	
56 Fe	-1.418	-1.418	ppb	120.59	#VALUE!	
57 Fe	1.524	1.524	ppb	106.50	100000.	
59 Co	0.0048	0.0048	ppb	19.23	1000.	
60 Ni	0.0151	0.0151	ppb	19.91	1000.	
63 Cu	0.0381	0.0381	ppb	11.59	#VALUE!	
65 Cu	0.0137	0.0137	ppb	119.02	2000.	
66 Zn	0.1297	0.1297	ppb	36.45	2000.	
68 Zn	-0.0711	-0.0711	ppb	79.76	#VALUE!	
75 As	-0.0295	-0.0295	ppb	26.44	1000.	
82 Se	0.0152	0.0152	ppb	938.61	1000.	
88 Sr	0.0076	0.0076	ppb	37.81	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0188	0.0188	ppb	34.51	1000.	
107 Ag	0.0008	0.0008	ppb	77.32	100.	
109 Ag	0.0015	0.0015	ppb	204.05	#VALUE!	
111 Cd	0.0148	0.0148	ppb	184.37	#VALUE!	
114 Cd	0.0014	0.0014	ppb	279.38	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0593	0.0593	ppb	25.67	1000.	
120 Sn	0.0526	0.0526	ppb	6.35	#VALUE!	
121 Sb	0.0081	0.0081	ppb	16.68	#VALUE!	
123 Sb	0.0106	0.0106	ppb	49.46	1000.	
135 Ba	0.0234	0.0234	ppb	36.24	2000.	
137 Ba	0.0172	0.0172	ppb	10.82	#VALUE!	
182 W	0.029	0.029	ppb	30.82	1000.	
203 Tl	0.0056	0.0056	ppb	117.96	1000.	
205 Tl	0.0053	0.0053	ppb	68.33	#VALUE!	
208 Pb	-0.0182	-0.0182	ppb	21.90	2000.	
232 Th	0.043	0.043	ppb	24.31	1000.	
238 U	0.0001	0.0001	ppb	462.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3923622.00	3.77	3927738.80	99.9	69.5 - 120	
45 Sc	2555535.30	1.18	2572658.80	99.3	69.5 - 120	
72 Ge	506190.56	1.49	510197.59	99.2	69.5 - 120	
159 Tb	4500283.50	0.45	4617151.00	97.5	69.5 - 120	
209 Bi	2313382.30	1.08	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000234

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\029SMPL.D\029SMPL.D#
Date Acquired: May 15 2018 07:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE14IMW1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	49.775	9.955	ppb	0.97	100.	
11 B	522.	104.4	ppb	1.84	1000.	
23 Na	7,425.	1,485.	ppb	3.37	200000.	
25 Mg	5,065.	1,013.	ppb	2.19	200000.	
27 Al	2,055.5	411.1	ppb	3.21	200000.	
28 Si	1,060.	212.	ppb	2.40	#VALUE!	
29 Si	955.5	191.1	ppb	5.34	10000.	
39 K	10,020.	2,004.	ppb	2.00	200000.	
43 Ca	2,945.5	589.1	ppb	3.91	#VALUE!	
44 Ca	2,519.	503.8	ppb	2.02	200000.	
51 V	503.5	100.7	ppb	1.21	1000.	
52 Cr	196.65	39.33	ppb	0.68	2000.	
53 Cr	212.5	42.5	ppb	1.38	#VALUE!	
55 Mn	507.	101.4	ppb	1.50	2000.	
56 Fe	977.5	195.5	ppb	3.09	#VALUE!	
57 Fe	972.5	194.5	ppb	1.43	100000.	
59 Co	517.5	103.5	ppb	0.81	1000.	
60 Ni	512.5	102.5	ppb	0.71	1000.	
63 Cu	248.7	49.74	ppb	1.83	#VALUE!	
65 Cu	253.95	50.79	ppb	0.34	2000.	
66 Zn	522.	104.4	ppb	0.58	2000.	
68 Zn	577.5	115.5	ppb	0.98	#VALUE!	
75 As	104.35	20.87	ppb	0.44	1000.	
82 Se	104.3	20.86	ppb	2.96	1000.	
88 Sr	489.9	97.98	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.1	20.02	ppb	0.92	1000.	
107 Ag	50.95	10.19	ppb	0.31	100.	
109 Ag	51.2	10.24	ppb	1.58	#VALUE!	
111 Cd	254.1	50.82	ppb	0.54	#VALUE!	
114 Cd	255.2	51.04	ppb	1.23	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	506.	101.2	ppb	1.18	1000.	
120 Sn	508.5	101.7	ppb	1.33	#VALUE!	
121 Sb	104.65	20.93	ppb	1.65	#VALUE!	
123 Sb	103.2	20.64	ppb	1.69	1000.	
135 Ba	2,045.5	409.1	ppb	1.50	2000.	
137 Ba	2,049.5	409.9	ppb	1.20	#VALUE!	
182 W	98.8	19.76	ppb	1.41	1000.	
203 Tl	99.1	19.82	ppb	2.38	1000.	
205 Tl	99.6	19.92	ppb	1.74	#VALUE!	
208 Pb	100.15	20.03	ppb	1.44	2000.	
232 Th	93.4	18.68	ppb	1.90	1000.	
238 U	96.8	19.36	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4120364.50	3.12	3927738.80	104.9	69.5 - 120	
45 Sc	2650621.80	2.66	2572658.80	103.0	69.5 - 120	
72 Ge	509866.78	2.02	510197.59	99.9	69.5 - 120	
159 Tb	4653340.00	2.06	4617151.00	100.8	69.5 - 120	
209 Bi	2394147.80	1.71	2380666.00	100.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000235

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\030SMPL.D\030SMPL.D#
Date Acquired: May 15 2018 07:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4085-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.1175	0.1175	ppb	15.15	100.	
11 B	15.69	15.69	ppb	3.80	1000.	
23 Na	39,940.	39,940.	ppb	1.87	200000.	
25 Mg	962.9	962.9	ppb	0.60	200000.	
27 Al	49.07	49.07	ppb	2.78	200000.	
28 Si	4,228.	4,228.	ppb	2.80	#VALUE!	
29 Si	4,548.	4,548.	ppb	2.10	10000.	
39 K	1,113.	1,113.	ppb	1.45	200000.	
43 Ca	6,408.	6,408.	ppb	1.36	#VALUE!	
44 Ca	6,454.	6,454.	ppb	0.45	200000.	
51 V	0.1515	0.1515	ppb	34.49	1000.	
52 Cr	0.2455	0.2455	ppb	6.71	2000.	
53 Cr	2.601	2.601	ppb	99.92	#VALUE!	
55 Mn	23.02	23.02	ppb	0.51	2000.	
56 Fe	419.3	419.3	ppb	2.33	#VALUE!	
57 Fe	434.7	434.7	ppb	1.50	100000.	
59 Co	0.0608	0.0608	ppb	15.02	1000.	
60 Ni	0.6908	0.6908	ppb	3.18	1000.	
63 Cu	71.28	71.28	ppb	0.47	#VALUE!	
65 Cu	70.51	70.51	ppb	1.25	2000.	
66 Zn	36.63	36.63	ppb	0.64	2000.	
68 Zn	35.58	35.58	ppb	0.97	#VALUE!	
75 As	0.0923	0.0923	ppb	178.01	1000.	
82 Se	0.0632	0.0632	ppb	403.20	1000.	
88 Sr	73.15	73.15	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1159	0.1159	ppb	13.62	1000.	
107 Ag	0.0144	0.0144	ppb	14.83	100.	
109 Ag	0.0161	0.0161	ppb	10.08	#VALUE!	
111 Cd	0.0471	0.0471	ppb	35.95	#VALUE!	
114 Cd	0.0656	0.0656	ppb	6.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3867	0.3867	ppb	4.91	1000.	
120 Sn	0.3872	0.3872	ppb	4.50	#VALUE!	
121 Sb	0.0279	0.0279	ppb	17.94	#VALUE!	
123 Sb	0.0383	0.0383	ppb	15.61	1000.	
135 Ba	6.841	6.841	ppb	1.68	2000.	
137 Ba	6.941	6.941	ppb	0.31	#VALUE!	
182 W	0.0556	0.0556	ppb	17.32	1000.	
203 Tl	0.0221	0.0221	ppb	31.92	1000.	
205 Tl	0.0243	0.0243	ppb	12.24	#VALUE!	
208 Pb	0.9841	0.9841	ppb	3.95	2000.	
232 Th	0.2131	0.2131	ppb	14.67	1000.	
238 U	5.175	5.175	ppb	1.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3996066.30	1.24	3927738.80	101.7	69.5 - 120	
45 Sc	2687386.30	0.35	2572658.80	104.5	69.5 - 120	
72 Ge	521394.69	0.60	510197.59	102.2	69.5 - 120	
159 Tb	4748174.50	0.18	4617151.00	102.8	69.5 - 120	
209 Bi	2321555.30	1.60	2380666.00	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\031SMPL.D\031SMPL.D#
Date Acquired: May 15 2018 07:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4096-001
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.0111	0.0111	ppb	15.21	100.	
11 B	17.97	17.97	ppb	2.80	1000.	
23 Na	23,120.	23,120.	ppb	2.21	200000.	
25 Mg	3,894.	3,894.	ppb	2.53	200000.	
27 Al	15.15	15.15	ppb	4.08	200000.	
28 Si	3,109.	3,109.	ppb	2.91	#VALUE!	
29 Si	3,403.	3,403.	ppb	3.06	10000.	
39 K	828.3	828.3	ppb	1.40	200000.	
43 Ca	32,370.	32,370.	ppb	0.89	#VALUE!	
44 Ca	31,370.	31,370.	ppb	1.29	200000.	
51 V	0.1255	0.1255	ppb	65.67	1000.	
52 Cr	0.381	0.381	ppb	12.58	2000.	
53 Cr	-0.8406	-0.8406	ppb	153.46	#VALUE!	
55 Mn	9.425	9.425	ppb	1.33	2000.	
56 Fe	82.31	82.31	ppb	4.13	#VALUE!	
57 Fe	114.5	114.5	ppb	5.28	100000.	
59 Co	0.3615	0.3615	ppb	3.31	1000.	
60 Ni	1.558	1.558	ppb	2.03	1000.	
63 Cu	20.92	20.92	ppb	1.31	#VALUE!	
65 Cu	20.39	20.39	ppb	0.83	2000.	
66 Zn	9.926	9.926	ppb	0.38	2000.	
68 Zn	9.511	9.511	ppb	2.83	#VALUE!	
75 As	0.286	0.286	ppb	28.61	1000.	
82 Se	0.0606	0.0606	ppb	211.68	1000.	
88 Sr	207.5	207.5	ppb	1.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.036	0.036	ppb	9.79	1000.	
107 Ag	0.0159	0.0159	ppb	29.66	100.	
109 Ag	0.0125	0.0125	ppb	18.44	#VALUE!	
111 Cd	0.0342	0.0342	ppb	80.82	#VALUE!	
114 Cd	0.0381	0.0381	ppb	19.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.885	1.885	ppb	2.27	1000.	
120 Sn	1.888	1.888	ppb	2.28	#VALUE!	
121 Sb	0.0434	0.0434	ppb	14.45	#VALUE!	
123 Sb	0.0484	0.0484	ppb	5.26	1000.	
135 Ba	4.922	4.922	ppb	3.79	2000.	
137 Ba	4.974	4.974	ppb	3.41	#VALUE!	
182 W	0.0182	0.0182	ppb	48.36	1000.	
203 Tl	0.0134	0.0134	ppb	49.49	1000.	
205 Tl	0.005	0.005	ppb	77.95	#VALUE!	
208 Pb	0.6766	0.6766	ppb	1.94	2000.	
232 Th	0.0669	0.0669	ppb	28.58	1000.	
238 U	0.0313	0.0313	ppb	13.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4112162.80	1.37	3927738.80	104.7	69.5 - 120	
45 Sc	2705097.80	0.61	2572658.80	105.1	69.5 - 120	
72 Ge	529560.50	0.67	510197.59	103.8	69.5 - 120	
159 Tb	4786442.50	0.46	4617151.00	103.7	69.5 - 120	
209 Bi	2410667.00	0.62	2380666.00	101.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\032SMPL.D\032SMPL.D#
Date Acquired: May 15 2018 07:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info: LE04IMS1
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	5.665	1.133	ppb	2.63	100.	
11 B	61.65	12.33	ppb	2.46	1000.	
23 Na	1,124.	224.8	ppb	1.82	200000.	
25 Mg	23,615.	4,723.	ppb	3.40	200000.	
27 Al	98,300.	19,660.	ppb	2.66	200000.	
28 Si	3,178.	635.6	ppb	2.06	#VALUE!	
29 Si	3,164.5	632.9	ppb	1.93	10000.	
39 K	33,880.	6,776.	ppb	0.76	200000.	
43 Ca	25,265.	5,053.	ppb	2.20	#VALUE!	
44 Ca	25,445.	5,089.	ppb	2.10	200000.	
51 V	210.5	42.1	ppb	0.82	1000.	
52 Cr	107.3	21.46	ppb	0.54	2000.	
53 Cr	143.8	28.76	ppb	4.85	#VALUE!	
55 Mn	2,838.5	567.7	ppb	1.22	2000.	
56 Fe	93,950.	18,790.	ppb	0.21	#VALUE!	
57 Fe	91,700.	18,340.	ppb	0.47	100000.	
59 Co	53.1	10.62	ppb	1.06	1000.	
60 Ni	84.75	16.95	ppb	1.39	1000.	
63 Cu	92.85	18.57	ppb	1.25	#VALUE!	
65 Cu	95.2	19.04	ppb	0.97	2000.	
66 Zn	320.5	64.1	ppb	0.94	2000.	
68 Zn	368.35	73.67	ppb	0.74	#VALUE!	
75 As	25.71	5.142	ppb	3.52	1000.	
82 Se	5.905	1.181	ppb	23.64	1000.	
88 Sr	332.15	66.43	ppb	1.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.77	2.354	ppb	1.13	1000.	
107 Ag	0.587	0.1174	ppb	5.71	100.	
109 Ag	0.545	0.109	ppb	5.83	#VALUE!	
111 Cd	3.9155	0.7831	ppb	4.13	#VALUE!	
114 Cd	1.9825	0.3965	ppb	2.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.605	9.121	ppb	2.18	1000.	
120 Sn	45.345	9.069	ppb	0.45	#VALUE!	
121 Sb	1.3815	0.2763	ppb	1.12	#VALUE!	
123 Sb	1.3885	0.2777	ppb	1.77	1000.	
135 Ba	1,590.5	318.1	ppb	1.71	2000.	
137 Ba	1,602.5	320.5	ppb	1.35	#VALUE!	
182 W	0.8605	0.1721	ppb	2.61	1000.	
203 Tl	2.2645	0.4529	ppb	5.03	1000.	
205 Tl	2.2215	0.4443	ppb	4.94	#VALUE!	
208 Pb	130.55	26.11	ppb	0.86	2000.	
232 Th	79.1	15.82	ppb	0.54	1000.	
238 U	18.015	3.603	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4100547.00	1.42	3927738.80	104.4	69.5 - 120	
45 Sc	2680447.30	1.31	2572658.80	104.2	69.5 - 120	
72 Ge	517377.25	0.53	510197.59	101.4	69.5 - 120	
159 Tb	4881977.00	1.27	4617151.00	105.7	69.5 - 120	
209 Bi	2507848.30	0.82	2380666.00	105.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\033SMPL.D\033SMPL.D#
Date Acquired: May 15 2018 07:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	7.855	1.571	ppb	2.39	100.	
11 B	138.8	27.76	ppb	3.54	1000.	
23 Na	2,017.5	403.5	ppb	5.59	200000.	
25 Mg	89,750.	17,950.	ppb	3.87	200000.	
27 Al	171,200.	34,240.	ppb	3.33	200000.	
28 Si	4,025.	805.	ppb	3.46	#VALUE!	
29 Si	3,970.5	794.1	ppb	4.69	10000.	
39 K	46,935.	9,387.	ppb	2.82	200000.	
43 Ca	336,050.	67,210.	ppb	1.98	#VALUE!	
44 Ca	316,850.	63,370.	ppb	2.23	200000.	
51 V	441.85	88.37	ppb	1.30	1000.	
52 Cr	167.85	33.57	ppb	1.81	2000.	
53 Cr	200.4	40.08	ppb	1.72	#VALUE!	
55 Mn	2,977.	595.4	ppb	1.02	2000.	
56 Fe	163,800.	32,760.	ppb	0.65	#VALUE!	
57 Fe	161,050.	32,210.	ppb	1.80	100000.	
59 Co	65.2	13.04	ppb	2.94	1000.	
60 Ni	150.3	30.06	ppb	1.53	1000.	
63 Cu	111.2	22.24	ppb	0.06	#VALUE!	
65 Cu	112.85	22.57	ppb	1.17	2000.	
66 Zn	425.75	85.15	ppb	2.43	2000.	
68 Zn	487.75	97.55	ppb	0.99	#VALUE!	
75 As	113.05	22.61	ppb	1.02	1000.	
82 Se	3.7585	0.7517	ppb	17.25	1000.	
88 Sr	1,356.	271.2	ppb	0.59	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.695	2.139	ppb	0.84	1000.	
107 Ag	0.7635	0.1527	ppb	8.09	100.	
109 Ag	0.6355	0.1271	ppb	8.25	#VALUE!	
111 Cd	2.7505	0.5501	ppb	4.52	#VALUE!	
114 Cd	-0.0084	-0.0017	ppb	343.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.3	10.06	ppb	1.62	1000.	
120 Sn	50.7	10.14	ppb	2.37	#VALUE!	
121 Sb	2.48	0.496	ppb	2.93	#VALUE!	
123 Sb	2.4245	0.4849	ppb	1.49	1000.	
135 Ba	2,297.5	459.5	ppb	1.69	2000.	
137 Ba	2,288.5	457.7	ppb	1.61	#VALUE!	
182 W	0.821	0.1642	ppb	8.48	1000.	
203 Tl	2.8515	0.5703	ppb	3.51	1000.	
205 Tl	2.8775	0.5755	ppb	3.04	#VALUE!	
208 Pb	109.9	21.98	ppb	2.45	2000.	
232 Th	76.15	15.23	ppb	2.76	1000.	
238 U	16.255	3.251	ppb	3.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4018657.00	3.16	3927738.80	102.3	69.5 - 120	
45 Sc	2614905.30	1.71	2572658.80	101.6	69.5 - 120	
72 Ge	505923.63	0.42	510197.59	99.2	69.5 - 120	
159 Tb	4816300.50	1.40	4617151.00	104.3	69.5 - 120	
209 Bi	2442884.30	3.00	2380666.00	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\034SMPL.D\034SMPL.D#
Date Acquired: May 15 2018 08:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	226.97	100.	
11 B	1.369	1.369	ppb	13.66	1000.	
23 Na	16.46	16.46	ppb	2.47	200000.	
25 Mg	1.985	1.985	ppb	62.72	200000.	
27 Al	3.419	3.419	ppb	74.93	200000.	
28 Si	6.281	6.281	ppb	164.46	#VALUE!	
29 Si	-13.93	-13.93	ppb	81.48	10000.	
39 K	-1.439	-1.439	ppb	123.56	200000.	
43 Ca	44.78	44.78	ppb	15.11	#VALUE!	
44 Ca	37.67	37.67	ppb	9.58	200000.	
51 V	0.0834	0.0834	ppb	41.97	1000.	
52 Cr	-0.0404	-0.0404	ppb	56.58	2000.	
53 Cr	-4.345	-4.345	ppb	0.37	#VALUE!	
55 Mn	0.0833	0.0833	ppb	60.63	2000.	
56 Fe	2.037	2.037	ppb	285.52	#VALUE!	
57 Fe	2.956	2.956	ppb	46.58	100000.	
59 Co	0.0045	0.0045	ppb	99.73	1000.	
60 Ni	0.0348	0.0348	ppb	23.95	1000.	
63 Cu	0.2209	0.2209	ppb	7.21	#VALUE!	
65 Cu	0.234	0.234	ppb	10.47	2000.	
66 Zn	0.6397	0.6397	ppb	8.23	2000.	
68 Zn	0.415	0.415	ppb	5.15	#VALUE!	
75 As	0.0047	0.0047	ppb	4236.90	1000.	
82 Se	0.1101	0.1101	ppb	67.48	1000.	
88 Sr	0.0483	0.0483	ppb	40.56	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0118	0.0118	ppb	27.29	1000.	
107 Ag	0.001	0.001	ppb	165.83	100.	
109 Ag	0.0012	0.0012	ppb	192.54	#VALUE!	
111 Cd	0.0001	0.0001	ppb	6639.10	#VALUE!	
114 Cd	0.0016	0.0016	ppb	52.71	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0613	0.0613	ppb	25.29	1000.	
120 Sn	0.0357	0.0357	ppb	38.76	#VALUE!	
121 Sb	0.0012	0.0012	ppb	159.63	#VALUE!	
123 Sb	0.0051	0.0051	ppb	92.45	1000.	
135 Ba	0.1388	0.1388	ppb	15.95	2000.	
137 Ba	0.1252	0.1252	ppb	12.68	#VALUE!	
182 W	0.0061	0.0061	ppb	39.75	1000.	
203 Tl	0.0097	0.0097	ppb	96.96	1000.	
205 Tl	0.0039	0.0039	ppb	38.20	#VALUE!	
208 Pb	0.1189	0.1189	ppb	10.72	2000.	
232 Th	0.0186	0.0186	ppb	44.47	1000.	
238 U	0.0007	0.0007	ppb	136.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3954243.30	0.87	3927738.80	100.7	69.5 - 120	
45 Sc	2540530.50	0.79	2572658.80	98.8	69.5 - 120	
72 Ge	502235.00	0.90	510197.59	98.4	69.5 - 120	
159 Tb	4602784.00	1.62	4617151.00	99.7	69.5 - 120	
209 Bi	2371603.30	1.39	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\035SMPL.D\035SMPL.D#
Date Acquired: May 15 2018 08:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW1
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	1144.80	100.	
11 B	3.2275	0.6455	ppb	8.17	1000.	
23 Na	15.32	3.064	ppb	11.14	200000.	
25 Mg	9.73	1.946	ppb	7.28	200000.	
27 Al	7.385	1.477	ppb	13.01	200000.	
28 Si	41.275	8.255	ppb	138.95	#VALUE!	
29 Si	-42.75	-8.55	ppb	82.41	10000.	
39 K	-9.28	-1.856	ppb	103.56	200000.	
43 Ca	3.5895	0.7179	ppb	534.34	#VALUE!	
44 Ca	12.675	2.535	ppb	37.94	200000.	
51 V	0.0058	0.0012	ppb	5462.70	1000.	
52 Cr	-0.2075	-0.0415	ppb	46.43	2000.	
53 Cr	-8.63	-1.726	ppb	19.22	#VALUE!	
55 Mn	0.079	0.0158	ppb	22.24	2000.	
56 Fe	-13.51	-2.702	ppb	46.78	#VALUE!	
57 Fe	-0.5155	-0.1031	ppb	2183.30	100000.	
59 Co	-0.0039	-0.0008	ppb	304.24	1000.	
60 Ni	-0.008	-0.0016	ppb	484.06	1000.	
63 Cu	0.086	0.0172	ppb	78.94	#VALUE!	
65 Cu	0.1503	0.0301	ppb	15.06	2000.	
66 Zn	0.5215	0.1043	ppb	14.92	2000.	
68 Zn	0.1087	0.0217	ppb	482.28	#VALUE!	
75 As	0.8845	0.1769	ppb	49.84	1000.	
82 Se	0.998	0.1996	ppb	46.39	1000.	
88 Sr	0.0105	0.0021	ppb	118.26	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0157	0.0031	ppb	81.79	1000.	
107 Ag	0.0023	0.0005	ppb	428.94	100.	
109 Ag	-0.0015	-0.0003	ppb	837.87	#VALUE!	
111 Cd	-0.0551	-0.011	ppb	66.57	#VALUE!	
114 Cd	0.01	0.002	ppb	168.35	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1209	0.0242	ppb	50.95	1000.	
120 Sn	0.0797	0.0159	ppb	95.17	#VALUE!	
121 Sb	0.0027	0.0005	ppb	514.26	#VALUE!	
123 Sb	0.0226	0.0045	ppb	2.70	1000.	
135 Ba	0.0549	0.011	ppb	40.29	2000.	
137 Ba	0.0323	0.0065	ppb	138.31	#VALUE!	
182 W	0.031	0.0062	ppb	28.66	1000.	
203 Tl	0.0109	0.0022	ppb	373.78	1000.	
205 Tl	0.0045	0.0009	ppb	532.52	#VALUE!	
208 Pb	-0.106	-0.0212	ppb	40.14	2000.	
232 Th	0.1015	0.0203	ppb	50.91	1000.	
238 U	-0.0017	-0.0003	ppb	76.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3902003.80	1.95	3927738.80	99.3	69.5 - 120	
45 Sc	2518454.30	1.96	2572658.80	97.9	69.5 - 120	
72 Ge	498793.03	2.06	510197.59	97.8	69.5 - 120	
159 Tb	4580423.50	1.27	4617151.00	99.2	69.5 - 120	
209 Bi	2383297.50	0.73	2380666.00	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\036SMPL.D\036SMPL.D#
Date Acquired: May 15 2018 08:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW1
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	48.89	9.778	ppb	2.28	100.	
11 B	497.2	99.44	ppb	3.34	1000.	
23 Na	7,435.	1,487.	ppb	1.90	200000.	
25 Mg	5,020.	1,004.	ppb	1.97	200000.	
27 Al	2,034.5	406.9	ppb	0.49	200000.	
28 Si	1,032.	206.4	ppb	3.58	#VALUE!	
29 Si	909.	181.8	ppb	5.24	10000.	
39 K	9,920.	1,984.	ppb	0.47	200000.	
43 Ca	2,882.	576.4	ppb	3.58	#VALUE!	
44 Ca	2,512.5	502.5	ppb	0.28	200000.	
51 V	503.	100.6	ppb	1.59	1000.	
52 Cr	196.75	39.35	ppb	0.98	2000.	
53 Cr	204.3	40.86	ppb	2.09	#VALUE!	
55 Mn	502.	100.4	ppb	1.34	2000.	
56 Fe	981.5	196.3	ppb	3.08	#VALUE!	
57 Fe	983.	196.6	ppb	4.09	100000.	
59 Co	518.	103.6	ppb	1.98	1000.	
60 Ni	505.5	101.1	ppb	1.04	1000.	
63 Cu	247.9	49.58	ppb	0.12	#VALUE!	
65 Cu	253.65	50.73	ppb	0.40	2000.	
66 Zn	517.	103.4	ppb	0.92	2000.	
68 Zn	578.5	115.7	ppb	1.39	#VALUE!	
75 As	104.2	20.84	ppb	0.70	1000.	
82 Se	104.15	20.83	ppb	3.65	1000.	
88 Sr	493.15	98.63	ppb	0.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.15	20.23	ppb	0.47	1000.	
107 Ag	51.2	10.24	ppb	0.90	100.	
109 Ag	50.85	10.17	ppb	0.59	#VALUE!	
111 Cd	255.85	51.17	ppb	0.92	#VALUE!	
114 Cd	255.55	51.11	ppb	0.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	503.5	100.7	ppb	1.45	1000.	
120 Sn	501.	100.2	ppb	1.74	#VALUE!	
121 Sb	102.95	20.59	ppb	2.01	#VALUE!	
123 Sb	102.85	20.57	ppb	2.60	1000.	
135 Ba	2,023.	404.6	ppb	1.40	2000.	
137 Ba	2,003.	400.6	ppb	1.26	#VALUE!	
182 W	101.25	20.25	ppb	2.49	1000.	
203 Tl	98.9	19.78	ppb	0.22	1000.	
205 Tl	99.4	19.88	ppb	1.63	#VALUE!	
208 Pb	100.1	20.02	ppb	1.10	2000.	
232 Th	95.7	19.14	ppb	1.00	1000.	
238 U	97.9	19.58	ppb	1.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4077643.30	2.03	3927738.80	103.8	69.5 - 120	
45 Sc	2589261.00	1.20	2572658.80	100.6	69.5 - 120	
72 Ge	504378.34	0.91	510197.59	98.9	69.5 - 120	
159 Tb	4679568.50	1.53	4617151.00	101.4	69.5 - 120	
209 Bi	2421956.80	0.21	2380666.00	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\037SMPL.D\037SMPL.D#
Date Acquired: May 15 2018 08:15 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-002
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.565	0.113	ppb	8.41	100.	
11 B	270.9	54.18	ppb	5.28	1000.	
23 Na	281,450.	56,290.	ppb	2.79	200000.	
25 Mg	66,350.	13,270.	ppb	1.16	200000.	
27 Al	10,425.	2,085.	ppb	2.21	200000.	
28 Si	36,865.	7,373.	ppb	0.68	#VALUE!	
29 Si	39,630.	7,926.	ppb	1.36	10000.	
39 K	20,310.	4,062.	ppb	1.69	200000.	
43 Ca	354,100.	70,820.	ppb	2.05	#VALUE!	
44 Ca	331,150.	66,230.	ppb	1.00	200000.	
51 V	34.26	6.852	ppb	2.68	1000.	
52 Cr	41.56	8.312	ppb	1.28	2000.	
53 Cr	77.25	15.45	ppb	13.81	#VALUE!	
55 Mn	1,451.5	290.3	ppb	1.17	2000.	
56 Fe	14,625.	2,925.	ppb	1.72	#VALUE!	
57 Fe	15,345.	3,069.	ppb	1.17	100000.	
59 Co	6.085	1.217	ppb	3.17	1000.	
60 Ni	21.22	4.244	ppb	2.30	1000.	
63 Cu	23.38	4.676	ppb	2.23	#VALUE!	
65 Cu	15.735	3.147	ppb	3.16	2000.	
66 Zn	140.85	28.17	ppb	3.21	2000.	
68 Zn	139.95	27.99	ppb	2.15	#VALUE!	
75 As	20.38	4.076	ppb	4.63	1000.	
82 Se	1.724	0.3448	ppb	71.11	1000.	
88 Sr	1,422.	284.4	ppb	0.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.97	4.394	ppb	2.38	1000.	
107 Ag	0.0407	0.0081	ppb	31.68	100.	
109 Ag	0.0271	0.0054	ppb	31.30	#VALUE!	
111 Cd	0.0545	0.0109	ppb	198.81	#VALUE!	
114 Cd	0.0201	0.004	ppb	248.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.48	0.496	ppb	0.50	1000.	
120 Sn	2.537	0.5074	ppb	2.84	#VALUE!	
121 Sb	0.922	0.1844	ppb	2.61	#VALUE!	
123 Sb	0.9775	0.1955	ppb	3.55	1000.	
135 Ba	243.45	48.69	ppb	0.75	2000.	
137 Ba	245.65	49.13	ppb	1.19	#VALUE!	
182 W	0.5595	0.1119	ppb	16.59	1000.	
203 Tl	0.1717	0.0343	ppb	31.36	1000.	
205 Tl	0.1416	0.0283	ppb	13.29	#VALUE!	
208 Pb	10.725	2.145	ppb	1.47	2000.	
232 Th	7.525	1.505	ppb	3.38	1000.	
238 U	4.9885	0.9977	ppb	2.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4012288.30	3.19	3927738.80	102.2	69.5 - 120	
45 Sc	2587933.00	2.15	2572658.80	100.6	69.5 - 120	
72 Ge	514773.69	0.82	510197.59	100.9	69.5 - 120	
159 Tb	4848173.50	1.33	4617151.00	105.0	69.5 - 120	
209 Bi	2408503.00	1.63	2380666.00	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\038_CCV.D\038_CCV.D#
Date Acquired: May 15 2018 08:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.66	ppb	0.94	25	98.64	
11 B	26.34	ppb	2.74	25	105.36	
23 Na	4,618.	ppb	3.62	5,000	92.36	
25 Mg	4,686.	ppb	1.60	5,000	93.72	
27 Al	479.7	ppb	1.29	500	95.94	
28 Si	466.9	ppb	0.76	500	93.38	
29 Si	454.	ppb	2.23	500	90.8	
39 K	4,757.	ppb	0.42	5,000	95.14	
43 Ca	4,844.	ppb	1.11	5,000	96.88	
44 Ca	4,918.	ppb	2.07	5,000	98.36	
51 V	24.04	ppb	1.79	25	96.16	
52 Cr	24.45	ppb	0.63	25	97.8	
53 Cr	23.17	ppb	8.70	25	92.68	
55 Mn	24.21	ppb	1.28	25	96.84	
56 Fe	4,774.	ppb	0.61	5,000	95.48	
57 Fe	4,875.	ppb	0.34	5,000	97.5	
59 Co	24.49	ppb	1.48	25	97.96	
60 Ni	24.6	ppb	0.87	25	98.4	
63 Cu	24.61	ppb	0.77	25	98.44	
65 Cu	24.5	ppb	1.15	25	98	
66 Zn	24.97	ppb	2.04	25	99.88	
68 Zn	24.63	ppb	1.10	25	98.52	
75 As	24.72	ppb	0.59	25	98.88	
82 Se	25.41	ppb	0.62	25	101.64	
88 Sr	23.93	ppb	0.92	25	95.72	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.66	ppb	1.01	25	98.64	
107 Ag	24.95	ppb	1.37	25	99.8	
109 Ag	24.86	ppb	0.76	25	99.44	
111 Cd	24.92	ppb	1.49	25	99.68	
114 Cd	24.98	ppb	1.15	25	99.92	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.16	ppb	1.43	25	96.64	
120 Sn	24.04	ppb	2.89	25	96.16	
121 Sb	24.57	ppb	1.69	25	98.28	
123 Sb	24.58	ppb	1.92	25	98.32	
135 Ba	25.06	ppb	2.64	25	100.24	
137 Ba	24.58	ppb	3.28	25	98.32	
182 W	24.52	ppb	3.07	25	98.08	
203 Tl	24.	ppb	2.37	25	96	
205 Tl	24.2	ppb	2.32	25	96.8	
208 Pb	24.23	ppb	1.89	25	96.92	
232 Th	23.78	ppb	2.92	25	95.12	
238 U	23.88	ppb	1.95	25	95.52	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4016574.50	0.62	3927738.80	102.3	80 - 120.4	
45 Sc	2682869.80	1.41	2572658.80	104.3	80 - 120.4	
72 Ge	512815.84	0.70	510197.59	100.5	80 - 120.4	
159 Tb	4822348.00	1.80	4617151.00	104.4	80 - 120.4	
209 Bi	2488946.80	1.42	2380666.00	104.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\039_CCB.D\039_CCB.D#
Date Acquired: May 15 2018 08:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	166.59	1.00	
11 B	2.18	ppb	9.85	1.00	
23 Na	3.602	ppb	60.05	1.00	
25 Mg	0.7431	ppb	127.01	1.00	
27 Al	0.2165	ppb	89.70	1.00	
28 Si	10.97	ppb	16.45	1.00	
29 Si	3.096	ppb	150.32	1.00	
39 K	1.707	ppb	141.07	1.00	
43 Ca	5.974	ppb	112.69	1.00	
44 Ca	2.844	ppb	72.08	1.00	
51 V	0.0613	ppb	73.32	1.00	
52 Cr	-0.0046	ppb	347.31	1.00	
53 Cr	-3.014	ppb	7.23	1.00	
55 Mn	0.0084	ppb	196.07	1.00	
56 Fe	3.556	ppb	114.06	1.00	
57 Fe	0.5631	ppb	162.56	1.00	
59 Co	0.0046	ppb	112.92	1.00	
60 Ni	0.0083	ppb	91.24	1.00	
63 Cu	0.0178	ppb	39.05	1.00	
65 Cu	0.0209	ppb	12.50	1.00	
66 Zn	0.0659	ppb	135.88	1.00	
68 Zn	-0.1338	ppb	14.48	1.00	
75 As	0.1143	ppb	63.07	1.00	
82 Se	0.1674	ppb	170.79	1.00	
88 Sr	0.0093	ppb	156.50	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0311	ppb	15.59	1.00	
107 Ag	0.0036	ppb	102.78	1.00	
109 Ag	0.0026	ppb	162.63	1.00	
111 Cd	0.038	ppb	26.44	1.00	
114 Cd	0.0046	ppb	118.29	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0577	ppb	20.32	1.00	
120 Sn	0.0524	ppb	19.21	1.00	
121 Sb	0.0074	ppb	32.47	1.00	
123 Sb	0.0091	ppb	15.92	1.00	
135 Ba	0.017	ppb	61.72	1.00	
137 Ba	0.0133	ppb	83.11	1.00	
182 W	0.0513	ppb	22.58	1.00	
203 Tl	0.0106	ppb	85.40	1.00	
205 Tl	0.0039	ppb	27.82	1.00	
208 Pb	-0.0135	ppb	81.05	1.00	
232 Th	0.0606	ppb	8.96	1.00	
238 U	0.0023	ppb	85.16	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3855350.00	4.90	3927738.80	98.2	79.5 - 120	
45 Sc	2535912.00	1.46	2572658.80	98.6	79.5 - 120	
72 Ge	503141.22	1.14	510197.59	98.6	79.5 - 120	
159 Tb	4563850.00	0.42	4617151.00	98.8	79.5 - 120	
209 Bi	2369504.00	1.12	2380666.00	99.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MR2C10 Boiling Stones: MS190 Method: 7471

KMNO4: MR2002 NH2OH-HCl: MR1994

Standards/Spiking Information:

1ppm A : MW1721 Heat Source ID : B

Pipet 1ppm B : MW1722 Start Time: 0959 /Temp. 95 °C

M15 LCSO = 500uL of 1ppm A to 100mL End Time: 1009 /Temp. 94 °C

M11 Spike(S/P) = 100uL of 1ppm A to 100mL Thermometer ID/Pos: A1025 16.5

M15 ICV = 600uL of 1ppm B to 100 mL

1 S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: MA

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ams 5/4/18
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LC2OLE04HGS1	LE04HGS1	0.6	g	0.1	L	SL	HG	JS	05/04/2018	N/A
LCSOLE04HGS1	LE04HGS1	1	g	1	L	SL	HG	JS	05/04/2018	
PBSLE04HGS1	LE04HGS1	1	g	1	L	SL	HG	JS	05/04/2018	
SL3708-020	LE04HGS1	0.84	g	1	L	SL	HG	JS	05/04/2018	A
SL3708-021	LE04HGS1	0.73	g	1	L	SL	HG	JS	05/04/2018	1
SL3760-001	LE04HGS1	1.33	g	1	L	SL	HG	JS	05/04/2018	1
SL3782-001	LE04HGS1	1.27	g	1	L	SL	HG	JS	05/04/2018	1
SL3807-001	LE04HGS1	0.80	g	1	L	SL	HG	JS	05/04/2018	E
SL3807-002	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	E
SL3809-002	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	A
SL3809-002P	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-002S	LE04HGS1	0.61	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-003	LE04HGS1	0.75	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-004	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-005	LE04HGS1	0.73	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-006	LE04HGS1	0.89	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-007	LE04HGS1	0.84	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-008	LE04HGS1	0.67	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-009	LE04HGS1	0.86	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-010	LE04HGS1	0.90	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-011	LE04HGS1	0.84	g	1	L	SL	HG	JS	05/04/2018	1
SL3838-001	LE04HGS1	0.87	g	1	L	SL	HG	JS	05/04/2018	1
SL3838-002	LE04HGS1	0.63	g	1	L	SL	HG	JS	05/04/2018	1
SL3838-003	LE04HGS1	0.68	g	1	L	SL	HG	JS	05/04/2018	1

ams 5/4/18

Katahdin Analytical Services 4000247

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MS198 HCL: MS199 H2O2: MS185 Filter Paper: 15243044

Boiling Stones: 175190

Pipet	LCS / Spike	LCS/Spiking Information:
MH	☑ ☑	CLPP-SPK-1 (ID/Vol): MS124 / 0.1 mL
MS	☑ ☑	CLPP-SPK-INT1 (ID/Vol): MW17723 / 1.0 mL
L	☑ ☑	CLPP-SPK-INT2 (ID/Vol): MW17724 / 1.0 mL
MF	☐ ☐	N/A Spike (ID/Vol): N/A / mL

LCSS: N/A Balance ID: Bal15

Heat Source ID : 0

Start Time: 0752 /Temp. 93 °C

End Time: 1416 /Temp. 94 °C

Thermometer ID/Pos: AuC11 16.5

REVIEWED
amj 5/4/18
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE04IMS1	LE04IMS1	1.0	g	0.1	L	SL	IM	~~AMJ~~ JS	05/04/2018	
PBSLE04IMS1	LE04IMS1	"	g		L	SL	IM	AMJ	05/04/2018	
SL3708-007	LE04IMS1	1.92	g		L	SL	IM	AMJ	05/04/2018	
SL3708-019	LE04IMS1	1.89	g		L	SL	IM	AMJ	05/04/2018	A
SL3708-020	LE04IMS1	1.30	g		L	SL	IM	AMJ	05/04/2018	
SL3708-021	LE04IMS1	1.35	g		L	SL	IM	AMJ	05/04/2018	
SL3801-001	LE04IMS1	1.03	g		L	SL	IM	AMJ	05/04/2018	
SL3801-002	LE04IMS1	1.04	g		L	SL	IM	AMJ	05/04/2018	
SL3801-003	LE04IMS1	1.06	g		L	SL	IM	AMJ	05/04/2018	
SL3801-004	LE04IMS1	1.08	g		L	SL	IM	AMJ	05/04/2018	
SL3801-004P	LE04IMS1	1.07	g		L	SL	IM	AMJ	05/04/2018	
SL3801-004S	LE04IMS1	1.09	g		L	SL	IM	AMJ	05/04/2018	
SL3801-005	LE04IMS1	1.19	g		L	SL	IM	AMJ	05/04/2018	
SL3801-006	LE04IMS1	1.01	g		L	SL	IM	AMJ	05/04/2018	
SL3801-007	LE04IMS1	1.02	g		L	SL	IM	AMJ	05/04/2018	
SL3801-008	LE04IMS1	1.08	g		L	SL	IM	AMJ	05/04/2018	
SL3801-009	LE04IMS1	1.17	g		L	SL	IM	AMJ	05/04/2018	
SL3801-010	LE04IMS1	1.10	g		L	SL	IM	AMJ	05/04/2018	
SL3801-011	LE04IMS1	1.07	g		L	SL	IM	AMJ	05/04/2018	
SL3801-012	LE04IMS1	1.18	g		L	SL	IM	~~AMJ~~	05/04/2018	
SL3807-001	L	1.35	g	0.1	L	SL	IM	JS 4-18	L	E
L-002		1.11	g	L	L	SL	IM	JS		L

Samples Switched to GO10 5-14-18 JS 5/4/18

amj 5/4/18

QA-065-Revision 2 - 06/16/2017 Digestion performed by: JS On: 5.4.18 Page: LE023 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	WG228391	SW846 7196A	15-MAY-18	14-MAY-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	WG227675	SW3540C	06-MAY-18	04-MAY-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
WG228391-2	LCS	WG228391	15-MAY-18	14-MAY-18	mg/Kgdrywt	40	36.	90	80-120	

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG227675-2	LCS	WG227675	06-MAY-18	04-MAY-18	%	90	90.	100	90-110	

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: SL3807-1
Report Date: 16-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3807

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SS07	SL	02-MAY-18 09:25:00	03-MAY-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	WG228391	15-MAY-18 16:40:00	SW846 3060A	14-MAY-18	
Total Solids	76. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:20:16	SW3540C	04-MAY-18	

Katahdin Analytical Services 5000007

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3807-2
Report Date: 16-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3807

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SB07	SL	02-MAY-18 09:30:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	0.60 mg/Kgdrywt	0.57	0.17	0.34	SW846 7196A	WG228391	15-MAY-18 16:40:00	SW846 3060A	14-MAY-18	
Total Solids	82. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:20:30	SW3540C	04-MAY-18	

Katahdin Analytical Services 5000008

Raw Data Section

TOTAL SOLIDS BATCH REPORT
May 06 2018, 02:35 pm
Batch: WG227675

Sample	Matrix	Type	Prep Date	Tare	Initial	Final1	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL3807-1	SL	SAMP	04-MAY-18	1.3 g	19.7897 g	15.449 g	15.449 g	BF	06-MAY-18	76.5240	76. %		
SL3807-2	SL	SAMP	04-MAY-18	1.3 g	21.1811 g	17.5274 g	17.5274 g	BF	06-MAY-18	81.6220	82. %		
SL3809-10	SL	SAMP	04-MAY-18	1.3 g	22.3363 g	16.6713 g	16.6713 g	BF	06-MAY-18	73.0700	73. %		
SL3809-11	SL	SAMP	04-MAY-18	1.3 g	20.6856 g	17.0647 g	17.0647 g	BF	06-MAY-18	81.3220	81. %		
SL3809-12	SL	SAMP	04-MAY-18	1.3 g	20.4819 g	15.817 g	15.817 g	BF	06-MAY-18	75.6810	76. %		
SL3809-2	SL	SAMP	04-MAY-18	1.3 g	17.0925 g	13.572 g	13.572 g	BF	06-MAY-18	77.7080	78. %		
SL3809-3	SL	SAMP	04-MAY-18	1.3 g	15.991 g	14.1143 g	14.1143 g	BF	06-MAY-18	87.2260	87. %		
SL3809-4	SL	SAMP	04-MAY-18	1.3 g	20.1172 g	16.306 g	16.306 g	BF	06-MAY-18	79.7460	80. %		
SL3809-5	SL	SAMP	04-MAY-18	1.3 g	21.6717 g	18.6306 g	18.6306 g	BF	06-MAY-18	85.0720	85. %		
SL3809-6	SL	SAMP	04-MAY-18	1.3 g	21.2471 g	17.3955 g	17.3955 g	BF	06-MAY-18	80.6910	81. %		
SL3809-7	SL	SAMP	04-MAY-18	1.3 g	18.8382 g	15.4434 g	15.4434 g	BF	06-MAY-18	80.6430	81. %		
SL3809-8	SL	SAMP	04-MAY-18	1.3 g	14.5827 g	12.2875 g	12.2875 g	BF	06-MAY-18	82.7200	83. %		
SL3809-9	SL	SAMP	04-MAY-18	1.3 g	17.5165 g	14.429 g	14.429 g	BF	06-MAY-18	80.9610	81. %		
WG227675-1	SL	MBLANK	04-MAY-18	1.3 g	5.8061 g	5.8044 g	5.8044 g	BF	06-MAY-18	99.9620	100 %		
WG227675-2	SL	LCS	04-MAY-18	1.3 g	6.2964 g	5.8024 g	5.8024 g	BF	06-MAY-18	90.1130	90. %	100	
WG227675-3	SL	DUP	04-MAY-18	1.3 g	17.0259 g	13.5478 g	13.5478 g	BF	06-MAY-18	77.8830	78. %		0

Comments:

SL3809-2	MS/MSD
WG227675-1	SL3809-2
WG227675-2	SL3809-2
WG227675-3	SL3809-2

Entered by: BF Date: 5-6-18 Accepted by: [signature] Date: 05-07-18

Katahdin Analytical Services 5000010

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Work Group Report (wk02)

04-MAY-18 10:14 AM

R471975

Work Group: WG227675
Department: 100 Wetlab Prep

Operator:

Created: 04-MAY-18
Due:

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR Location
11	SL3807-1	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
12	SL3807-2	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
13	SL3809-2	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
14	SL3809-3	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
15	SL3809-4	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
16	SL3809-5	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
17	SL3809-6	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
18	SL3809-7	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
19	SL3809-8	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
20	SL3809-9	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
21	SL3809-10	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
22	SL3809-11	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
23	SL3809-12	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
8	WG227675-1	MBLANK	TS	Solid	WIP	U	04-MAY-18	
9	WG227675-2	LCS	TS	Solid	WIP	U	04-MAY-18	
24	WG227675-3	DUP	TS	Solid	WIP	U	04-MAY-18	

Comments:

L3809-2	MS/MSD
WG227675-1	SL3809-2
WG227675-2	SL3809-2
WG227675-3	SL3809-2

Start: 11:50

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:	~~5-4-18~~ BM		ANALYST OUT:	BF		In:
DATE IN:	5-4-18		DATE OUT:	5-6-18		Out (TS): BF
TIME IN:	12:26		TIME OUT:	12:35		Balance ID:
TEMP IN:	104		TEMP OUT:	104		S/N 1124016031

WET CHEMISTRY BATCH REPORT
May 15 2018, 05:35 pm
Batch: WG228391

Parameter: Chromium, Hexavalent

Date Analyzed: 15-MAY-18

Analyst Initials: AP

Prep Date: 14-MAY-18

Prep Method: SW846 3060A

Prep Chemist: AP

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL3807-1	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.03	U0.38 mg/Kgdrywt	76.	.4	0.19	0.63		
SL3807-2	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.6	0.60 mg/Kgdrywt	82.	.4	0.17	0.57		
SL3809-14	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.45	J0.45 mg/Kgdrywt	83.	.4	0.17	0.56		
SL3809-24	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.62	0.62 mg/Kgdrywt	80.	.4	0.18	0.59		
SL3809-34	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.49	J0.49 mg/Kgdrywt	80.	.4	0.18	0.61		
SL3809-44	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.5	J0.50 mg/Kgdrywt	76.	.4	0.19	0.62		
SL3809-54	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.5	J0.50 mg/Kgdrywt	79.	.4	0.19	0.63		
SL3809-63	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.58	J0.58 mg/Kgdrywt	78.	.4	0.19	0.62		
SL3995-1	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.24	J0.24 mg/Kgdrywt	85.	.4	0.17	0.57		
SL3995-10	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.55	J0.55 mg/Kgdrywt	80.	.4	0.18	0.60		
SL3995-11	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.48	J0.48 mg/Kgdrywt	81.	.4	0.18	0.60		
SL3995-12	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.49	J0.49 mg/Kgdrywt	82.	.4	0.18	0.61		
SL3995-13	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.48	J0.48 mg/Kgdrywt	80.	.4	0.18	0.60		
SL3995-2	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.83	0.83 mg/Kgdrywt	84.	.4	0.18	0.59		
SL3995-3	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.69	0.69 mg/Kgdrywt	83.	.4	0.18	0.59		
SL3995-4	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.48	J0.48 mg/Kgdrywt	83.	.4	0.18	0.60		
SL3995-6	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.19	U0.19 mg/Kgdrywt	79.	.4	0.19	0.62		
SL3995-7	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.4	J0.40 mg/Kgdrywt	79.	.4	0.18	0.59		
SL3995-8	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.63	0.63 mg/Kgdrywt	81.	.4	0.18	0.60		
SL3995-9	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.47	J0.47 mg/Kgdrywt	81.	.4	0.18	0.59		
WG228391-1	MBLANK	SW846 7196A	20.000mL	25.000mL	1.2	.26	J0.26 mg/Kgdrywt	NA	.4	0.14	0.48		
WG228391-2	LCS	SW846 7196A	20.000mL	25.000mL	1.2	36.1	36. mg/Kgdrywt	NA	.4	0.14	0.48		90
WG228391-3	MS	SW846 7196A	1.0000mL	25.000mL	25	1195.78	1200 mg/Kgdrywt	NA	.4	3.9	13.		90
WG228391-4	MS	SW846 7196A	20.000mL	25.000mL	1.2	46.14	46. mg/Kgdrywt	NA	.4	0.18	0.61		89

Comments:

SL3809-24	MS/MSD
WG228391-1	SL3809-24
WG228391-2	SL3809-24
WG228391-3	SL3809-24
WG228391-4	SL3809-24

Entered by: AP Date: 5/15/18 Accepted by: Date: 05/16/18 ~~05/15/18~~

Katahdin Analytical Services 5000012

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

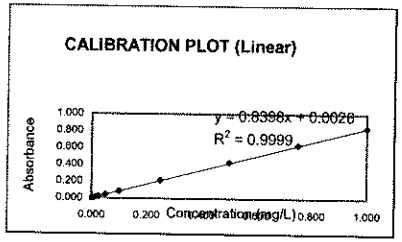
CALIBRATION INFORMATION

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:	051518.XLS
CCV Source Std. Conc. (mg/L):	25	Sample Anal. Date:	5/15/2018
		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	0.424		0.424	0.502	0.502							
CCV	25.0	25.0	1.000	0.420		0.420	0.497	0.497							100.4%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							99.4%
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	0.609		0.609	0.722	0.903	2.5000	0.100	100.000%	0.100	36.10	40.00	90.3%
SL3807-1	20.0	25.0	1.250	0.188	0.185	0.003	0.001	0.001	2.5035	0.100	76.524%		0.03		
SL3807-2	20.0	25.0	1.250	0.011		0.011	0.010	0.013	2.5795	0.100	81.622%		0.60		
SL3809-14	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.5909	0.100	82.977%		0.45		
SL3809-24	20.0	25.0	1.250	0.011		0.011	0.010	0.013	2.5403	0.100	80.080%		0.62		
SL3809-24 Post-Dig MS	20.0	25.0	1.250	0.418		0.418	0.495	0.618	2.5403	0.100	80.080%		30.40		98.9%
SL3809-24 Serial Dilution	4.0	25.0	6.250	0.002		0.002	-0.001	-0.004	2.5403	0.100	80.080%		-0.21		
SL2809-24 Insoluble MS	1.0	25.0	25.000	0.780		0.780	0.926	23.143	2.4168	0.100	80.080%	2.574	1195.78	1330.09	89.9%
SL3809-24 Soluble MS	20.0	25.0	1.250	0.611		0.611	0.724	0.906	2.4508	0.100	80.080%	0.100	46.14	50.95	89.3%
CCV	25.0	25.0	1.000	0.419		0.419	0.496	0.496							99.2%
CCB	25.0	25.0	1.000	0.001		0.001	-0.002	-0.002							
SL3809-34	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4713	0.100	79.604%		0.49		
SL3809-44	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.5267	0.100	76.112%		0.50		
SL3809-54	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4192	0.100	78.746%		0.50		
SL3809-63	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.4736	0.100	77.577%		0.58		
SL3995-1	20.0	25.0	1.250	0.109	0.103	0.006	0.004	0.005	2.4541	0.100	85.108%		0.24		
SL3995-2	20.0	25.0	1.250	0.065	0.051	0.014	0.014	0.017	2.4372	0.100	83.698%		0.83		
SL3995-3	20.0	25.0	1.250	0.088	0.076	0.012	0.011	0.014	2.4456	0.100	83.071%		0.69		
SL3995-4	20.0	25.0	1.250	0.034	0.025	0.009	0.008	0.010	2.4024	0.100	83.459%		0.48		
SL3995-6	20.0	25.0	1.250	0.041	0.036	0.005	0.003	0.004	2.4325	0.100	78.808%		0.19		
SL3995-7	20.0	25.0	1.250	0.093	0.085	0.008	0.006	0.008	2.5705	0.100	79.411%		0.40		
CCV	25.0	25.0	1.000	0.413		0.413	0.489	0.489							97.7%
CCB	25.0	25.0	1.000	0.001		0.001	-0.002	-0.002							
SL3995-8	20.0	25.0	1.250	0.011		0.011	0.010	0.013	2.4639	0.100	81.012%		0.63		
SL3995-9	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.5074	0.100	81.310%		0.47		
SL3995-10	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.5015	0.100	80.441%		0.55		
SL3995-11	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4577	0.100	81.007%		0.48		
SL3995-12	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4027	0.100	81.892%		0.49		
SL3995-13	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.5304	0.100	79.700%		0.48		
CCV	25.0	25.0	1.000	0.415		0.415	0.491	0.491							98.2%
CCB	25.0	25.0	1.000	0.001		0.001	-0.002	-0.002							

Katahdin Analytical Services 5000013

WC228391 M4 73702

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): W16186 25 ug/mL	**CCV ID:** W16186 25 ug/mL
LCS Stock ID: SWL4101 1000 ug/mL	**ICV ID:** W16187 25 ug/mL
Reagents:	**Phosphate Buffer ID:** W14990
Diphenylcarbazide Solution ID: W16492	**10% H2SO4 ID:** Prep Day of Use 20mL H_2SO_4 SWL4212 → 200mL DI
Alkaline Digestion Reagent ID: W16402/W16483	**Alkaline Digestion Reagent pH:** 12.62
SW 3060A Leachate Generation Date: 5/14/18	**Filtration End Time:** 1805

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	1600		✓	✓	25	25		0.424
CCV								0.420
CCB								0.000
Blank					20			0.007
LCS					20			0.609
SL3807-1					20		0.185	0.188
-2					20			0.011
SL3809-14					20			0.009
-24					20			0.011
-24 P.D.S					20			0.418
-24 S.D.					4			0.002
-24 Insol MS					1.00			0.780
-24 Sol MS.					20			0.611
CCV					25			0.419
CCB								0.001
SL3809-34					20			0.009
~~-49~~-44					20			0.009
-54					20			0.009
-63					20			0.010
SL3995-1					20		0.103	0.109
-2	1620				20		~~0.289~~ 0.051	~~0.290~~ 0.065

AP 5/15/18

AP 5/1 *

Notes: W5

* sample centrifuged

Analyst: AP	**Date:** 5/15/18
Checked By: [signature]	**Date:** 05/16/18

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): p13 ug/mL	**CCV ID:** p13 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	
SL3995-3	1620		✓	✓	20	25	0.076	0.088	*
-4					20		0.025	0.034	*
-6					20		0.036	0.041	*
-7					20		0.085	0.093	
CCV					25			0.413	
CCB					1			0.001	
SL3995-8					20			0.011	
-9					20			0.009	
-10					20			0.010	
-11					20			0.009	
-12					20			0.009	
-13					20			0.009	
CCV					25			0.415	
CCB	1640				1			0.001	
				AP 5/15/18					

Notes:

Analyst: AP **Date:** 5/15/18

Checked By: [signature] **Date:** 05/16/18

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: 1124016031

Hot Plate/Block ID: 0
Start Time/Temp.: 1240 / 90 °C
End Time/Temp.: 1340 / 92.5 °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	LE14CRS1	2.5	g	0.1	L	SL	CR	AP	05/14/2018	N/A	N/A	N/A	N/A		
LCS	LE14CRS1	2.5	g	0.1	L	SL	CR	AP	05/14/2018	N/A	N/A	N/A	N/A		
SL3807-1	LE14CRS1	2.5035	g	0.1	L	SL	CR	AP	05/14/2018						
SL3807-2	LE14CRS1	2.5795	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-14	LE14CRS1	2.3909	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-24	LE14CRS1	2.5403	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-24 INSOL MS	LE14CRS1	2.4168	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-24 SOL MS	LE14CRS1	2.4508	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-34	LE14CRS1	2.4713	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-44	LE14CRS1	2.5267	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-54	LE14CRS1	2.4192	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-63	LE14CRS1	2.4736	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-1	LE14CRS1	2.4541	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-10	LE14CRS1	2.5015	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-11	LE14CRS1	2.4577	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-12	LE14CRS1	2.4027	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-13	LE14CRS1	2.5304	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-2	LE14CRS1	2.4372	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-3	LE14CRS1	2.4456	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-4	LE14CRS1	2.4024	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-6	LE14CRS1	2.4325	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-7	LE14CRS1	2.5705	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-8	LE14CRS1	2.4639	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-9	LE14CRS1	2.5074	g	0.1	L	SL	CR	AP	05/14/2018						

Insoluble MS spiked w/ 0.0160g $PbCrO_4$ SWL3761
Soluble MS & LCS spiked w/ 0.100 mL (SWL4101) Cr+6 Std 1000mg/L
W3

Reviewed 05/16/18

Digestion performed by: AP On: 5/14/18

Filtration End: 1805

Katahdin Analytical Services 5000016

Samplenum	Measuredate	Parameter	Result	Moisture
SL3807-1	06-MAY-18	TOTAL SOLIDS	76.524%	23.476%
SL3807-2	06-MAY-18	TOTAL SOLIDS	81.622%	18.378%

Samplenum	Measuredate	Parameter	Result	Moisture
SL3809-2	06-MAY-18	TOTAL SOLIDS	77.708%	22.292%
SL3809-3	06-MAY-18	TOTAL SOLIDS	87.226%	12.774%
SL3809-4	06-MAY-18	TOTAL SOLIDS	79.746%	20.254%
SL3809-5	06-MAY-18	TOTAL SOLIDS	85.072%	14.928%
SL3809-6	06-MAY-18	TOTAL SOLIDS	80.691%	19.309%
SL3809-7	06-MAY-18	TOTAL SOLIDS	80.643%	19.357%
SL3809-8	06-MAY-18	TOTAL SOLIDS	82.72%	17.28%
SL3809-9	06-MAY-18	TOTAL SOLIDS	80.961%	19.039%
SL3809-10	06-MAY-18	TOTAL SOLIDS	73.07%	26.93%
SL3809-11	06-MAY-18	TOTAL SOLIDS	81.322%	18.678%
SL3809-12	06-MAY-18	TOTAL SOLIDS	75.681%	24.319%
SL3809-13	06-MAY-18	TOTAL SOLIDS	79.782%	20.218%
SL3809-14	06-MAY-18	TOTAL SOLIDS	82.977%	17.023%
SL3809-15	06-MAY-18	TOTAL SOLIDS	79.365%	20.635%
SL3809-16	06-MAY-18	TOTAL SOLIDS	77.836%	22.164%
SL3809-17	06-MAY-18	TOTAL SOLIDS	80.852%	19.148%
SL3809-18	06-MAY-18	TOTAL SOLIDS	84.269%	15.731%
SL3809-19	06-MAY-18	TOTAL SOLIDS	83.532%	16.468%
SL3809-20	06-MAY-18	TOTAL SOLIDS	82.2%	17.8%
SL3809-21	06-MAY-18	TOTAL SOLIDS	82.577%	17.423%
SL3809-22	06-MAY-18	TOTAL SOLIDS	82.252%	17.748%
SL3809-23	06-MAY-18	TOTAL SOLIDS	78.414%	21.586%
SL3809-24	06-MAY-18	TOTAL SOLIDS	80.08%	19.92%
SL3809-25	06-MAY-18	TOTAL SOLIDS	82.22%	17.78%
SL3809-26	06-MAY-18	TOTAL SOLIDS	86.116%	13.884%
SL3809-27	06-MAY-18	TOTAL SOLIDS	81.345%	18.655%
SL3809-28	06-MAY-18	TOTAL SOLIDS	74.017%	25.983%
SL3809-29	06-MAY-18	TOTAL SOLIDS	74.074%	25.926%
SL3809-30	06-MAY-18	TOTAL SOLIDS	82.457%	17.543%
SL3809-31	06-MAY-18	TOTAL SOLIDS	78.714%	21.286%
SL3809-32	06-MAY-18	TOTAL SOLIDS	69.643%	30.357%
SL3809-33	06-MAY-18	TOTAL SOLIDS	79.486%	20.514%
SL3809-34	06-MAY-18	TOTAL SOLIDS	79.604%	20.396%
SL3809-35	06-MAY-18	TOTAL SOLIDS	76.54%	23.46%
SL3809-36	06-MAY-18	TOTAL SOLIDS	80.871%	19.129%
SL3809-37	06-MAY-18	TOTAL SOLIDS	62.411%	37.589%
SL3809-38	06-MAY-18	TOTAL SOLIDS	75.89%	24.11%
SL3809-39	06-MAY-18	TOTAL SOLIDS	73.949%	26.051%
SL3809-40	06-MAY-18	TOTAL SOLIDS	79.162%	20.838%
SL3809-41	06-MAY-18	TOTAL SOLIDS	80.09%	19.91%
SL3809-42	06-MAY-18	TOTAL SOLIDS	83.934%	16.066%
SL3809-43	06-MAY-18	TOTAL SOLIDS	85.518%	14.482%
SL3809-44	06-MAY-18	TOTAL SOLIDS	76.112%	23.888%

Samplenum	Measuredate	Parameter	Result	Moisture
SL3809-46	06-MAY-18	TOTAL SOLIDS	80.458%	19.542%
SL3809-47	06-MAY-18	TOTAL SOLIDS	81.082%	18.918%
SL3809-48	06-MAY-18	TOTAL SOLIDS	80.955%	19.045%
SL3809-49	06-MAY-18	TOTAL SOLIDS	78.167%	21.833%
SL3809-50	06-MAY-18	TOTAL SOLIDS	81.815%	18.185%
SL3809-51	07-MAY-18	TOTAL SOLIDS	82.914%	17.086%
SL3809-52	07-MAY-18	TOTAL SOLIDS	79.596%	20.404%
SL3809-53	07-MAY-18	TOTAL SOLIDS	77.66%	22.34%
SL3809-54	07-MAY-18	TOTAL SOLIDS	78.746%	21.254%
SL3809-55	07-MAY-18	TOTAL SOLIDS	75.308%	24.692%
SL3809-56	07-MAY-18	TOTAL SOLIDS	73.006%	26.994%
SL3809-57	07-MAY-18	TOTAL SOLIDS	75.772%	24.228%
SL3809-58	07-MAY-18	TOTAL SOLIDS	78.896%	21.104%
SL3809-59	07-MAY-18	TOTAL SOLIDS	78.472%	21.528%
SL3809-60	07-MAY-18	TOTAL SOLIDS	80.84%	19.16%
SL3809-61	07-MAY-18	TOTAL SOLIDS	76.837%	23.163%
SL3809-62	07-MAY-18	TOTAL SOLIDS	80.458%	19.542%
SL3809-63	07-MAY-18	TOTAL SOLIDS	77.577%	22.423%
SL3809-64	07-MAY-18	TOTAL SOLIDS	81.297%	18.703%
SL3809-65	07-MAY-18	TOTAL SOLIDS	82.819%	17.181%

Samplenum	Measuredate	Parameter	Result	Moisture
SL3995-1	14-MAY-18	TOTAL SOLIDS	85.108%	14.892%
SL3995-2	14-MAY-18	TOTAL SOLIDS	83.698%	16.302%
SL3995-3	14-MAY-18	TOTAL SOLIDS	83.071%	16.929%
SL3995-4	14-MAY-18	TOTAL SOLIDS	83.459%	16.541%
SL3995-5	14-MAY-18	TOTAL SOLIDS	83.168%	16.832%
SL3995-6	14-MAY-18	TOTAL SOLIDS	78.808%	21.192%
SL3995-7	14-MAY-18	TOTAL SOLIDS	79.411%	20.589%
SL3995-8	14-MAY-18	TOTAL SOLIDS	81.012%	18.988%
SL3995-9	14-MAY-18	TOTAL SOLIDS	81.31%	18.69%
SL3995-10	14-MAY-18	TOTAL SOLIDS	80.441%	19.559%
SL3995-11	14-MAY-18	TOTAL SOLIDS	81.007%	18.993%
SL3995-12	14-MAY-18	TOTAL SOLIDS	81.892%	18.108%
SL3995-13	14-MAY-18	TOTAL SOLIDS	79.7%	20.3%
SL3995-14	14-MAY-18	TOTAL SOLIDS	78.494%	21.506%

ATI, INC.
CORNHUSKER
ARMY AMMUNITION PLANT
SL3808

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

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SAMPLE DATA PACKAGE

Katahdin
ANALYTICAL SERVICES

Lab. ID. 2001(non-air)
Lab. ID. 11121 (air only)

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
ATI, INC.
CORNHUSKER ARMY AMMUNITION PLANT
SL3808

Sample Receipt

The following samples were received on May 03, 2018 and were logged in under Katahdin Analytical Services work order number SL3808 for a hardcopy due date of May 15, 2018.

KATAHDIN Sample No.	ATI Sample Identification
SL3808-1	CHAAP-TB-050218-DPT
SL3808-2	CHAAP-19C-UGIA-DPT17
SL3808-3	CHAAP-19C-UGIA-DPT17-FF
SL3808-4	CHAAP-19C-LGIA-DPT18
SL3808-5	CHAAP-19C-LGIA-DPT18-FF
SL3808-6	CHAAP-19C-UGIA-DPT13
SL3808-7	CHAAP-19C-UGIA-DPT13-FF
SL3808-8	CHAAP-19C-LGIA-DPT14
SL3808-9	CHAAP-19C-LGIA-DPT14-FF
SL3808-10	CHAAP-19C-LGIA-DPT114
SL3808-11	CHAAP-19C-LGIA-DPT114-FF
SL3808-12	CHAAP-19C-UGIA-DPT02
SL3808-13	CHAAP-19C-UGIA-DPT02-FF
SL3808-14	CHAAP-EB-050218-DPT
SL3808-15	CHAAP-19C-LGIA-DPT22
SL3808-16	CHAAP-19C-LGIA-DPT22-FF
SL3808-17	CHAAP-19C-UGIA-DPT21
SL3808-18	CHAAP-19C-UGIA-DPT21-FF

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 NELAP standards unless otherwise noted in this narrative or in the Report of Analysis.

We certify that the test results provided in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation L2223.

Analytes which are reported but not listed on our ANAB scope of accreditation will be "^" flagged and the following language will be included in the case narrative for all DoD compliant work: "^" Indicates this analyte is not included on Katahdin Analytical Services DoD-ELAP Scope of Accreditation.

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 SL3808 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 SL3808-4 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as requested by the client.

8270D SIM Analysis

The CV (file U0723) had a high response for the target analyte pyrene which resulted in a %D that was 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.

The target analytes benzo(a)anthracene and chrysene were detected below ½ of the LOQ, and benzo(b)fluoranthene was detected above ½ of the LOQ, but less than the LOQ in the method blank WG227671-1RA. 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). If the target analyte benzo(b)fluoranthene was detected in any samples associated with the blank, the samples were flagged with a "B" qualifier indicating that the analyte was detected in the method blank analyzed and/or extracted concurrently with the sample.

8330B Analysis

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. Sample SL3808-14 was 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.

The independent check standard (file HKH10016), associated with the initial confirmation calibration analyzed on 08/01/17, had high concentrations for the target analytes tetryl, 4-amino-2,6-dinitrotoluene, and 3-nitrotoluene that exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. Since this was associated with the confirmation calibration, no further action was taken.

The opening calibration verification standard (CV) (file HLE10126) had a high response for the target analyte tetryl that resulted in a %D that exceeded the DoD QSM acceptance limit of ± 20%. Since this analyte was not detected above the MDL in the associated samples, no further action was taken.

8260B Analysis

The CV (file P5545) had high responses for the target analytes 4-methyl-2-pentanone and 2-hexanone which resulted in %D's that were greater than the DoD QSM acceptance limit of 20%.

The CV (file P5580) had a high response for the target analyte bromomethane which resulted in a %D that was 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.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SL3808 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)

Aqueous-matrix Katahdin Sample Numbers SL3808-(2-18) were digested for ICP-MS analysis on 05/07/18 (QC Batch LE07IMW1) in accordance with USEPA Method 3010A. Katahdin Sample Numbers SL3808-(4, 5) were prepared with duplicate matrix-spiked aliquots, per client request.

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 SL3808 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 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.

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.

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)

Aqueous-matrix Katahdin Sample Numbers SL3808-(2-18) were digested for mercury analysis on 05/07/18 (QC Batch LE07HGW3) in accordance with USEPA Method 7470A. Katahdin Sample Numbers SL3808-(4, 5) were prepared with duplicate matrix-spiked aliquots, per client request.

Mercury analysis of the Katahdin Work Order SL3808 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Method 7470A. All samples were analyzed within holding times. All analytical run QC criteria were met.

Matrix QC Summary

The measured recoveries of aluminum, calcium, iron, lead, manganese, magnesium, mercury, potassium, and sodium in one or both of the matrix-spiked aliquots of Katahdin Sample Number SL3808-4 are outside the project acceptance criteria. For aluminum, calcium, iron, magnesium, and sodium this may be attributable to the native concentration being significantly greater than the spike added.

The measured recoveries of calcium, magnesium, and sodium in one or both of the matrix-spiked aliquots of Katahdin Sample Number SL3808-5 are outside the project acceptance criteria. This may be attributable to the native concentration being significantly greater than the spike added.

The measured recoveries of calcium, magnesium, manganese, and sodium in the post-digestion spiked aliquot of Katahdin Sample Number SL3808-4 are outside the project's acceptance criteria (80%-120% recovery of the added element). This may be attributable to the native concentration being significantly greater than the spike added.

The measured recoveries of calcium, magnesium, and manganese in the post-digestion spiked aliquot of Katahdin Sample Number SL3808-5 are outside the project's acceptance criteria (80%-120% recovery of the added element). This may be attributable to the native concentration being significantly greater than the spike added.

The matrix-spike duplicate analyses of Katahdin Sample Numbers SL3808-(4, 5) are within the project's acceptance criteria (<20% relative difference between duplicate matrix-spiked aliquots) for all analytes.

The serial dilution analyses of Katahdin Sample Numbers SL3808-(4, 5) are within the project's acceptance criteria (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for all analytes.

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 SL3808 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.

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:

The recoveries of the matrix spike and matrix spike duplicate of Katahdin Sample No. SL3808-4 and 5 in the original analysis on 5/3/18 were outside of the laboratory's acceptance limits. The samples and matrix spike samples were reanalyzed on 5/3/18 at a dilution of 1:5 with low recoveries. The results with the 1:5 dilution were reported.

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.

Leslie Dimond
05.21.18

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: HTM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Fedex	
KAS Work Order#: 523808	KIMS Review By: HTM	Received By: JCB	
SDG #:	Cooler: 1 of 7	Date/Time Rec.: 5/3/18	

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?	✓ HTM 5/3/18		✓		See Below
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): -1.6
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.
HexCr bottle included for sample CHMP-FC-LG1A-DPT18-FF, this was not marked on the COC.
COC was marked for VOA for samples LG1A-DPT22-ff & LG1A-DPT21-FF, these vials were not in coolers

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#: 523808	KIMS Review By: HTM	Received By: JCB	
SDG #:	Cooler: 2 of 7	Date/Time Rec.: 5.3.18	

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): 5.1
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#: 523808	KIMS Review By: HTM	Received By: JCB	
SDG #:	Cooler: 3 of 7	Date/Time Rec.: 5 3 18	

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): 0.7
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: HMM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Fedex	
KAS Work Order#: 523808	KIMS Review By: HMM	Received By: JCB	
SDG #:	Cooler: 4 of 7	Date/Time Rec.: 5.3.18	

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): 3.0
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: [illegible]	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Fedex	
KAS Work Order#: 523808	KIMS Review By: [illegible]	Received By: JCB	
SDG #:	Cooler: 5 of 7	Date/Time Rec.: 5.3.18	

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): 2.1
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: MTM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Fedex	
KAS Work Order#: 523808	KIMS Review By: MTM	Received By: JCB	
SDG #:	Cooler: 6 of 7	Date/Time Rec.: 5-3-18	

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): 5-7
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: ATS	KAS PM: KTM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Fedex	
KAS Work Order#: 523808	KIMS Review By: KTM	Received By: JCB	
SDG #:	Cooler: 7 of 7	Date/Time Rec.: 5 3 18	

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): 3.6
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, May 04, 2018 6:20 PM
To: Heather Manz
Cc: 'Allison Harbottle'
Subject: RE: CHAAP SL3807, SL3808, SL3809 login COCs

Hi Heather,
Yes, please analyze sample CHAAP-19C-LGIA-DPT18-FF for hex chrome. The COC was in error regarding VOAs for dissolved analysis. I'll finish reviewing the COC and let you know if there are any issues.
Thanks,
Jennifer

Jennifer Spies
HGL
85 NE Interstate Loop 410, Suite 605
San Antonio, TX 78216
phone: 512-291-3588
www.hgl.com

From: Heather Manz <hmanz@katahdinlab.com>
Sent: Friday, May 04, 2018 12:16 PM
To: Spies, Jennifer <jspies@hgl.com>
Cc: 'Allison Harbottle' <aharbottle@katahdinlab.com>
Subject: CHAAP SL3807, SL3808, SL3809 login COCs

Hi Jennifer,

Please find the attached logins for samples received yesterday.

In work order SL3808 we received a bottle for dissolved hex Cr for sample CHAAP-19C-LGIA-DPT18-FF, this analysis was not marked on the COC. The COC attached is now marked with an X and a ?, these were added by out login dept. We have logged this sample in for hex Cr, please let us know if we should cancel that.

The COC was marked for VOA for two dissolved samples (CHAAP-19C-LGIA-DPT22-FF and CHAAP-19C-UGIA-DPT21-FF). We did not receive VOA vials for these samples.

Please let me know if you have any questions.

Thank you,

Heather Manz

Federal Programs Project Manager
Katahdin Analytical Services
A Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Office - 207.874.2400 x17
Fax - 207.775.4029
www.katahdinlab.com



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-1.6C

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 / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY Work Order #: 3L3808 (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	Analysis and Container Type / Preservatives: 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	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N		Page 1 of 2
1	CHAAP-19C-UGIA-DPT13 ✓	1050	5/2/2018	W	4	X		X							
2	CHAAP-19C-LGIA-DPT14 ✓	1055	5/2/2018	W	4	X		X							
3	CHAAP-19C-LGIA-DPT114 ✓	1200	5/2/2018	W	4	X		X							
4	CHAAP-19C-UGIA-DPT02 ✓	940	5/2/2018	W	4	X		X							
5	CHAAP-TB-050218-DPT ✓	900	5/2/2018	W	3	X									
6	CHAAP-19C-UGIA-DPT13-FF ✓	1050	5/2/2018	W	1				X						
7	CHAAP-19C-LGIA-DPT14-FF ✓	1055	5/2/2018	W	1				X						
8	CHAAP-19C-LGIA-DPT114-FF ✓	1200	5/2/2018	W	1				X						
9	CHAAP-19C-UGIA-DPT02-FF ✓	940	5/2/2018	W	1				X						
10	CHAAP-19C-UGIA-DPT17 ✓	1435	5/2/2018	W	5	X		X			X				
11	CHAAP-19C-UGIA-DPT17-FF ✓	1435	5/2/2018	W	2				X			X			
12	CHAAP-19C-LGIA-DPT18-MS/MSD ✓	1440	5/2/2018	W	6	X									
14	CHAAP-19C-LGIA-DPT18 ✓	1440	5/2/2018	W	3	X									
15	CHAAP-EB-050218-DPT ✓	1600	5/2/2018	W	4	X		X							
16	CHAAP-19C-LGIA-DPT22 ✓	1300	5/2/2018	W	4	X		X							
17	CHAAP-19C-LGIA-DPT22-FF ✓	1300	5/2/2018	W	1	X			X						
18	CHAAP-19C-UGIA-DPT21 ✓	1250	5/2/2018	W	4	X		X							
19	CHAAP-19C-UGIA-DPT21-FF ✓	1250	5/2/2018	W	1	X			X						
	-END OF SAMPLES														

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/2/2018 1715	5.3.18 900			
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.

2.1C

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 / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY — Work Order #: SL3808 (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	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N		
						Analysis and Container Type Preservatives									
1	CHAAP-19C-UGIA-DPT13 ✓	1050	5/2/2018	W	4		X			X					
2	CHAAP-19C-UGIA-DPT02 ✓	940	5/2/2018	W	4		X			X					
	-END OF SAMPLES														

Page ~~1 of 1~~ 2 of 2

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/2/2018 1715	5-3-18			
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

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5.7C

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 / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY — Work Order #: SL3808 (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)	Explosives (8330B)	Metals (6020)	Metals (6020) Field Filtered	PAHs (8270C-SIM)	CrVI (7196A)	CrVI (7196A) Field filtered	SPLP Metals (1312)		
	Analysis and Container Type Preservatives					Filt. N	Filt. N	Filt. N	Filt. Y	Filt. N	Filt. N	Filt. N	Filt. N	Filt. N	Page ~~1of4~~ 3 of 4
1	CHAAP-19C-LGIA-DPT14 ✓	1055	5/2/2018	W	4		X			X					
2	CHAAP-19C-LGIA-DPT114 ✓	1200	5/2/2018	W	4		X			X					
	-END OF SAMPLES														

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/2/2018 1715	5-3-18			
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.

3.60

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 / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY — Work Order #: 553808 (Katahdin Project Number)

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C: Temp Blank: Intact / Not Intact

Page 1 of 1

	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	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	Filt. N
1	CHAAP-19C-LGIA-DPT22 ✓	1300	5/2/2018	W	4		X			X				
2	CHAAP-19C-UGIA-DPT21 ✓	1250	5/2/2018	W	4		X			X				
3	-END OF SAMPLES													
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
	-END OF SAMPLES													

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/2/2018 1715	5.3.18 905			
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.

0.7C

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 / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY — Work Order #: 5L3808 (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	Analysis and Container Type Preservatives: 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	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	Filt. N
1	CHAAP-19C-UGIA-DPT17 ✓	1435	5/2/2018	W	4		X			X				
2	CHAAP-19C-LGIA-DPT18 ✓	1440	5/2/2018	W	4		X			X				
3	-END OF SAMPLES													
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
	-END OF SAMPLES													

Page ~~1 of 1~~ 2 of 2

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/2/2018 1715	5-3-18 900			
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.

3.0C

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: ATI INC.	Contact: David Nelson	Phone #: 410-992-3424	Fax #: ( )
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 / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY
Work Order #: SL3808
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	Analysis and Container Type Preservatives: 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	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	Filt. N
6	CHAAP-19C-LGIA-DPT18-MS/MSD ✓	1440	5/2/2018	W	8		X			X				
2	-END OF SAMPLES													
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
	-END OF SAMPLES													

Page 1 of 1

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/2/2018 1715	5.3.18			
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.

5.1C

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 / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY

Work Order #: 8L3808
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	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	Filt. N
1	CHAAP-19C-LGIA-DPT18 ✓	1440	5/2/2018	W	2			X			X			
2	CHAAP-19C-LGIA-DPT18-FF ✓	1440	5/2/2018	W	2				X			X		
3	CHAAP-19C-LGIA-DPT18-MS/MSD ✓	1440	5/2/2018	W	4			X			X			
4	CHAAP-19C-LGIA-DPT18-FF-MS/MSD ✓	1440	5/2/2018	W	4				X			X		
5	CHAAP-EB-050218-DPT ✓	1600	5/2/2018	W	4		X			X				
	-END OF SAMPLES													

Analysis and Container Type Preservatives

Page ~~1~~ 1 of 1

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/2/2018 1715	5.3.18 900			
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)

May. 04, 2018
09:23 AM

Login Number: SL3808

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	:	FDS, DOD 5.0, ND to LOD w/ J flags. Report all valid runs. Summary needs all forms. GC/MS IS eval window +/- 10s. Metals ICSA - 2 sigfigs. 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. No explo soil prep needed (8330B Mod). Reprep failing hex cr matrix QC & parent samples, include info in narrative.
CHECK NO.	:	
CLIENT PO#	:	PN:16-027
CLIENT PROJECT MANAGE	:	
CONTRACT	:	W9182F-16-D-0014
COOLER TEMPERATURE	:	-1.6, 5.1, 0.7, 2.1, 3.0, 5.7, 3.6
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	ATI-(ERIS)
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	Cornhusker Army Ammunition Plant
QC LEVEL	:	IV
REPORT INSTRUCTIONS	:	SDS needs all forms. 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, rsullivan@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	PP	Verbal Date	Due Date	Mailed
SL3808-1	CHAAP-TB-050218-DPT	02-MAY-18 09:00	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PP	Verbal Date	Due Date	Mailed
SL3808-2	CHAAP-19C-UGIA-DPT17	02-MAY-18 14:35	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	03-MAY-18	250mL Plastic		
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	09-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	09-MAY-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

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PP	Verbal Date	Due Date	Mailed
SL3808-3	CHAAP-19C-UGIA-DPT17-FF	02-MAY-18 14:35	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	03-MAY-18	250mL Plastic		**Filtered sample of SL3808-2**
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

AMH 5/4/18

Login Number: SL3808

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
SL3808-4	CHAAP-19C-LGIA-DPT18	02-MAY-18 14:40	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	03-MAY-18	250mL Plastic		**MS/MSD**
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	09-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	09-MAY-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

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3808-5	CHAAP-19C-LGIA-DPT18-FF	02-MAY-18 14:40	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	03-MAY-18	250mL Plastic		**MS/MSD**
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3808-6	CHAAP-19C-UGIA-DPT13	02-MAY-18 10:50	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	09-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	09-MAY-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

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3808-7	CHAAP-19C-UGIA-DPT13-FF	02-MAY-18 10:50	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

AMH 5/4/18

Login Number: SL3808

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
SL3808-8	CHAAP-19C-LGIA-DPT14	02-MAY-18 10:55	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	09-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	09-MAY-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

SL3808-9	CHAAP-19C-LGIA-DPT14-FF	02-MAY-18 10:55	03-MAY-18		15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

SL3808-10	CHAAP-19C-LGIA-DPT114	02-MAY-18 12:00	03-MAY-18		15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	09-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	09-MAY-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

SL3808-11	CHAAP-19C-LGIA-DPT114-FF	02-MAY-18 12:00	03-MAY-18		15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

AMH 5/4/18

Login Number: SL3808

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
SL3808-12	CHAAP-19C-UGIA-DPT02	02-MAY-18 09:40	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	09-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	09-MAY-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

SL3808-13	CHAAP-19C-UGIA-DPT02-FF	02-MAY-18 09:40	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

SL3808-14	CHAAP-EB-050218-DPT	02-MAY-18 16:00	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	09-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	09-MAY-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

SL3808-15	CHAAP-19C-LGIA-DPT22	02-MAY-18 13:00	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	09-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	09-MAY-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

AMH 5/4/18

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

May. 04, 2018

09:23 AM

Login Number: SL3808

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
SL3808-16	CHAAP-19C-LGIA-DPT22-FF	02-MAY-18 13:00	03-MAY-18			15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

SL3808-17	CHAAP-19C-UGIA-DPT21	02-MAY-18 12:50	03-MAY-18		15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	16-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	09-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	09-MAY-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

SL3808-18	CHAAP-19C-UGIA-DPT21-FF	02-MAY-18 12:50	03-MAY-18		15-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

Total Samples: ***18*** ***Total Analyses:*** ***49***

AMH 5/4/18

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.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-1
Client ID: CHAAP-TB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5527.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-1
Client ID: CHAAP-TB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5527.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		97.5	%					
1,2-Dichloroethane-d4		98.0	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		97.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-2
Client ID: CHAAP-19C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5558.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-2
Client ID: CHAAP-19C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5558.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		101.	%					
1,2-Dichloroethane-d4		107.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		97.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5594.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5594.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		100.	%					
1,2-Dichloroethane-d4		104.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		95.0	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-6
Client ID: CHAAP-19C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5559.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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: SL3808-6
Client ID: CHAAP-19C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5559.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		104.	%					
1,2-Dichloroethane-d4		108.	%					
Toluene-d8		105.	%					
P-Bromofluorobenzene		97.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-8
Client ID: CHAAP-19C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5560.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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: SL3808-8
Client ID: CHAAP-19C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5560.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		105.	%					
1,2-Dichloroethane-d4		108.	%					
Toluene-d8		102.	%					
P-Bromofluorobenzene		95.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-10
Client ID: CHAAP-19C-LGIA-DPT114
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5590.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-10
Client ID: CHAAP-19C-LGIA-DPT114
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5590.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-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		2.3	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		97.2	%					
1,2-Dichloroethane-d4		99.9	%					
Toluene-d8		98.5	%					
P-Bromofluorobenzene		95.2	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-12
Client ID: CHAAP-19C-UGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5591.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-12
Client ID: CHAAP-19C-UGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5591.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		1.2	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		101.	%					
1,2-Dichloroethane-d4		101.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		97.8	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-14
Client ID: CHAAP-EB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5528.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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	J	3.3	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		42	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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-14
Client ID: CHAAP-EB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5528.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		97.5	%					
1,2-Dichloroethane-d4		98.5	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		97.1	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-15
Client ID: CHAAP-19C-LGIA-DPT22
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5592.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-15
Client ID: CHAAP-19C-LGIA-DPT22
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5592.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		99.8	%					
1,2-Dichloroethane-d4		104.	%					
Toluene-d8		102.	%					
P-Bromofluorobenzene		97.2	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-17
Client ID: CHAAP-19C-UGIA-DPT21
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5593.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-17
Client ID: CHAAP-19C-UGIA-DPT21
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5593.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		98.0	%					
1,2-Dichloroethane-d4		101.	%					
Toluene-d8		102.	%					
P-Bromofluorobenzene		96.5	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227659-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5525.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227659-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5525.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		95.9	%					
1,2-Dichloroethane-d4		94.1	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227659-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5525.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		98.7	%					
P-Bromofluorobenzene		96.1	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		98.4	%					
1,2-Dichloroethane-d4		102.	%					

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Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		101.	%					
P-Bromofluorobenzene		96.5	%					

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Report of Analytical Results

Client:
Lab ID: WG227830-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5583.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227830-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5583.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		98.3	%					
1,2-Dichloroethane-d4		96.2	%					

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Report of Analytical Results

Client:
Lab ID: WG227830-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5583.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		98.9	%					
P-Bromofluorobenzene		94.8	%					

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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:** SL3808

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-TB-050218-DPT	SL3808-1		97.0		97.5		98.0		100.	
CHAAP-19C-LGIA-DPT11	SL3808-10		95.2		97.2		99.9		98.5	
CHAAP-19C-UGIA-DPT02	SL3808-12		97.8		101.		101.		100.	
CHAAP-EB-050218-DPT	SL3808-14		97.1		97.5		98.5		100.	
CHAAP-19C-LGIA-DPT22	SL3808-15		97.2		99.8		104.		102.	
CHAAP-19C-UGIA-DPT21	SL3808-17		96.5		98.0		101.		102.	
CHAAP-19C-UGIA-DPT17	SL3808-2		97.0		101.		107.		101.	
CHAAP-19C-LGIA-DPT18	SL3808-4		95.0		100.		104.		101.	
CHAAP-19C-UGIA-DPT13	SL3808-6		97.6		104.		108.		105.	
CHAAP-19C-LGIA-DPT14	SL3808-8		95.8		105.		108.		102.	
Laboratory Control S	WG227659-1		101.		93.9		91.7		98.4	
Method Blank Sample	WG227659-2		96.1		95.9		94.1		98.7	
Laboratory Control S	WG227763-1		104.		98.2		98.4		101.	
Method Blank Sample	WG227763-2		96.5		98.4		102.		101.	
Laboratory Control S	WG227830-1		103.		96.6		95.4		99.6	
Method Blank Sample	WG227830-2		94.8		98.3		96.2		98.9	
Matrix Spike	WG227830-7		102.		94.8		96.7		100.	
Matrix Spike Duplica	WG227830-8		102.		95.8		96.1		101.	

		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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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227659-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5523.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	98.8	50.0	49.4	ug/L	78-125
1,1,1-Trichloroethane	92.6	50.0	46.3	ug/L	74-131
1,1,2,2-Tetrachloroethane	101.	50.0	50.5	ug/L	71-121
Freon-113	94.4	50.0	47.2	ug/L	70-136
1,1,2-Trichloroethane	98.6	50.0	49.3	ug/L	80-120
1,1-Dichloroethane	95.4	50.0	47.7	ug/L	77-125
1,1-Dichloroethene	82.8	50.0	41.4	ug/L	71-131
1,1-Dichloropropene	98.8	50.0	49.4	ug/L	79-125
1,2,3-Trichlorobenzene	107.	50.0	53.6	ug/L	69-129
1,2,3-Trichloropropane	97.0	50.0	48.5	ug/L	73-122
1,2,4-Trichlorobenzene	97.2	50.0	48.6	ug/L	69-130
1,2,4-Trimethylbenzene	100.	50.0	50.1	ug/L	76-124
1,2-Dibromo-3-Chloropropane	102.	50.0	51.0	ug/L	62-128
1,2-Dichlorobenzene	97.8	50.0	48.9	ug/L	80-120
1,2-Dichloroethane	94.4	50.0	47.2	ug/L	73-128
1,2-Dichloropropane	97.8	50.0	48.9	ug/L	78-122
1,3,5-Trimethylbenzene	100.	50.0	50.2	ug/L	75-124
1,3-Dichlorobenzene	99.8	50.0	49.9	ug/L	80-120
1,3-Dichloropropane	95.8	50.0	47.9	ug/L	80-120
1,4-Dichlorobenzene	96.8	50.0	48.4	ug/L	79-120
2,2-Dichloropropane	102.	50.0	50.9	ug/L	60-139
2-Butanone	99.8	50.0	49.9	ug/L	56-143
2-Chlorotoluene	96.8	50.0	48.4	ug/L	79-122
2-Hexanone	106.	50.0	53.2	ug/L	57-139
4-Chlorotoluene	95.8	50.0	47.9	ug/L	78-122
P-Isopropyltoluene	102.	50.0	50.8	ug/L	77-127
4-Methyl-2-Pentanone	101.	50.0	50.6	ug/L	67-130
Acetone	94.6	50.0	47.3	ug/L	39-160
Benzene	98.8	50.0	49.4	ug/L	79-120
Bromobenzene	100.	50.0	50.1	ug/L	80-120
Bromoform	114.	50.0	56.8	ug/L	66-130
Bromomethane	88.8	50.0	44.4	ug/L	53-141
Carbon Disulfide	81.2	50.0	40.6	ug/L	64-133
Carbon Tetrachloride	103.	50.0	51.4	ug/L	72-136
Chlorobenzene	99.8	50.0	49.9	ug/L	82-120

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227659-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5523.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	96.8	50.0	48.4	ug/L	78-123
Dibromochloromethane	106.	50.0	53.1	ug/L	74-126
Chloroethane	88.6	50.0	44.3	ug/L	60-138
Chloroform	94.6	50.0	47.3	ug/L	79-124
Chloromethane	87.0	50.0	43.5	ug/L	50-139
cis-1,2-Dichloroethene	94.6	50.0	47.3	ug/L	78-123
cis-1,3-Dichloropropene	102.	50.0	51.2	ug/L	75-124
Dibromomethane	106.	50.0	53.1	ug/L	79-123
Bromodichloromethane	103.	50.0	51.6	ug/L	79-125
Dichlorodifluoromethane	89.2	50.0	44.6	ug/L	32-152
Ethylbenzene	101.	50.0	50.3	ug/L	79-121
1,2-Dibromoethane	104.	50.0	52.0	ug/L	77-121
Hexachlorobutadiene	103.	50.0	51.4	ug/L	66-134
Isopropylbenzene	103.	50.0	51.4	ug/L	72-131
Methyl tert-butyl Ether	95.0	50.0	47.5	ug/L	71-124
Methylene Chloride	89.6	50.0	44.8	ug/L	74-124
m+p-Xylenes	102.	100.	102.	ug/L	80-121
Naphthalene	101.	50.0	50.7	ug/L	61-128
N-Butylbenzene	98.8	50.0	49.4	ug/L	75-128
N-Propylbenzene	98.6	50.0	49.3	ug/L	76-126
o-Xylene	100.	50.0	50.2	ug/L	78-122
sec-Butylbenzene	99.8	50.0	49.9	ug/L	77-126
Styrene	105.	50.0	52.6	ug/L	78-123
tert-Butylbenzene	98.8	50.0	49.4	ug/L	78-124
Tetrachloroethene	104.	50.0	51.8	ug/L	74-129
Toluene	99.8	50.0	49.9	ug/L	80-121
trans-1,2-Dichloroethene	92.6	50.0	46.3	ug/L	75-124
trans-1,3-Dichloropropene	98.0	50.0	49.0	ug/L	73-127
Trichloroethene	98.0	50.0	49.0	ug/L	79-123
Trichlorofluoromethane	83.4	50.0	41.7	ug/L	65-141
Vinyl Chloride	86.2	50.0	43.1	ug/L	58-137
Dibromofluoromethane	93.9				80-120
1,2-Dichloroethane-d4	91.7				81-120
Toluene-d8	98.4				89-120
P-Bromofluorobenzene	101.				85-120

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227763-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5546.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	91.8	50.0	45.9	ug/L	78-125
1,1,1-Trichloroethane	96.6	50.0	48.3	ug/L	74-131
1,1,2,2-Tetrachloroethane	102.	50.0	50.8	ug/L	71-121
Freon-113	95.2	50.0	47.6	ug/L	70-136
1,1,2-Trichloroethane	98.6	50.0	49.3	ug/L	80-120
1,1-Dichloroethane	100.	50.0	50.2	ug/L	77-125
1,1-Dichloroethene	92.2	50.0	46.1	ug/L	71-131
1,1-Dichloropropene	95.2	50.0	47.6	ug/L	79-125
1,2,3-Trichlorobenzene	111.	50.0	55.4	ug/L	69-129
1,2,3-Trichloropropane	96.8	50.0	48.4	ug/L	73-122
1,2,4-Trichlorobenzene	95.6	50.0	47.8	ug/L	69-130
1,2,4-Trimethylbenzene	96.8	50.0	48.4	ug/L	76-124
1,2-Dibromo-3-Chloropropane	102.	50.0	51.2	ug/L	62-128
1,2-Dichlorobenzene	96.0	50.0	48.0	ug/L	80-120
1,2-Dichloroethane	93.8	50.0	46.9	ug/L	73-128
1,2-Dichloropropane	100.	50.0	50.1	ug/L	78-122
1,3,5-Trimethylbenzene	96.2	50.0	48.1	ug/L	75-124
1,3-Dichlorobenzene	96.8	50.0	48.4	ug/L	80-120
1,3-Dichloropropane	95.8	50.0	47.9	ug/L	80-120
1,4-Dichlorobenzene	94.0	50.0	47.0	ug/L	79-120
2,2-Dichloropropane	106.	50.0	52.8	ug/L	60-139
2-Butanone	115.	50.0	57.3	ug/L	56-143
2-Chlorotoluene	93.4	50.0	46.7	ug/L	79-122
2-Hexanone	114.	50.0	56.8	ug/L	57-139
4-Chlorotoluene	92.0	50.0	46.0	ug/L	78-122
P-Isopropyltoluene	98.2	50.0	49.1	ug/L	77-127
4-Methyl-2-Pentanone	112.	50.0	55.9	ug/L	67-130
Acetone	110.	50.0	55.2	ug/L	39-160
Benzene	97.0	50.0	48.5	ug/L	79-120
Bromobenzene	94.0	50.0	47.0	ug/L	80-120
Bromoform	107.	50.0	53.6	ug/L	66-130
Bromomethane	114.	50.0	56.9	ug/L	53-141
Carbon Disulfide	91.4	50.0	45.7	ug/L	64-133
Carbon Tetrachloride	98.4	50.0	49.2	ug/L	72-136
Chlorobenzene	96.0	50.0	48.0	ug/L	82-120

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227763-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5546.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	96.0	50.0	48.0	ug/L	78-123
Dibromochloromethane	100.	50.0	50.2	ug/L	74-126
Chloroethane	99.2	50.0	49.6	ug/L	60-138
Chloroform	98.0	50.0	49.0	ug/L	79-124
Chloromethane	105.	50.0	52.3	ug/L	50-139
cis-1,2-Dichloroethene	98.0	50.0	49.0	ug/L	78-123
cis-1,3-Dichloropropene	101.	50.0	50.3	ug/L	75-124
Dibromomethane	106.	50.0	52.8	ug/L	79-123
Bromodichloromethane	103.	50.0	51.4	ug/L	79-125
Dichlorodifluoromethane	92.0	50.0	46.0	ug/L	32-152
Ethylbenzene	96.4	50.0	48.2	ug/L	79-121
1,2-Dibromoethane	108.	50.0	53.8	ug/L	77-121
Hexachlorobutadiene	90.8	50.0	45.4	ug/L	66-134
Isopropylbenzene	98.4	50.0	49.2	ug/L	72-131
Methyl tert-butyl Ether	98.2	50.0	49.1	ug/L	71-124
Methylene Chloride	93.0	50.0	46.5	ug/L	74-124
m+p-Xylenes	97.2	100.	97.2	ug/L	80-121
Naphthalene	107.	50.0	53.5	ug/L	61-128
N-Butylbenzene	99.4	50.0	49.7	ug/L	75-128
N-Propylbenzene	95.4	50.0	47.7	ug/L	76-126
o-Xylene	98.8	50.0	49.4	ug/L	78-122
sec-Butylbenzene	97.4	50.0	48.7	ug/L	77-126
Styrene	102.	50.0	51.2	ug/L	78-123
tert-Butylbenzene	96.0	50.0	48.0	ug/L	78-124
Tetrachloroethene	96.8	50.0	48.4	ug/L	74-129
Toluene	98.8	50.0	49.4	ug/L	80-121
trans-1,2-Dichloroethene	94.4	50.0	47.2	ug/L	75-124
trans-1,3-Dichloropropene	96.8	50.0	48.4	ug/L	73-127
Trichloroethene	96.6	50.0	48.3	ug/L	79-123
Trichlorofluoromethane	94.6	50.0	47.3	ug/L	65-141
Vinyl Chloride	101.	50.0	50.7	ug/L	58-137
Dibromofluoromethane	98.2				80-120
1,2-Dichloroethane-d4	98.4				81-120
Toluene-d8	101.				89-120
P-Bromofluorobenzene	104.				85-120

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LCS Recovery Report

Client:
Lab ID: WG227830-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5581.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	93.8	50.0	46.9	ug/L	78-125
1,1,1-Trichloroethane	93.2	50.0	46.6	ug/L	74-131
1,1,2,2-Tetrachloroethane	101.	50.0	50.4	ug/L	71-121
Freon-113	97.6	50.0	48.8	ug/L	70-136
1,1,2-Trichloroethane	99.2	50.0	49.6	ug/L	80-120
1,1-Dichloroethane	97.6	50.0	48.8	ug/L	77-125
1,1-Dichloroethene	89.2	50.0	44.6	ug/L	71-131
1,1-Dichloropropene	97.0	50.0	48.5	ug/L	79-125
1,2,3-Trichlorobenzene	113.	50.0	56.3	ug/L	69-129
1,2,3-Trichloropropane	94.8	50.0	47.4	ug/L	73-122
1,2,4-Trichlorobenzene	93.6	50.0	46.8	ug/L	69-130
1,2,4-Trimethylbenzene	95.8	50.0	47.9	ug/L	76-124
1,2-Dibromo-3-Chloropropane	102.	50.0	51.2	ug/L	62-128
1,2-Dichlorobenzene	97.2	50.0	48.6	ug/L	80-120
1,2-Dichloroethane	93.4	50.0	46.7	ug/L	73-128
1,2-Dichloropropane	98.0	50.0	49.0	ug/L	78-122
1,3,5-Trimethylbenzene	96.0	50.0	48.0	ug/L	75-124
1,3-Dichlorobenzene	98.0	50.0	49.0	ug/L	80-120
1,3-Dichloropropane	93.6	50.0	46.8	ug/L	80-120
1,4-Dichlorobenzene	94.0	50.0	47.0	ug/L	79-120
2,2-Dichloropropane	96.8	50.0	48.4	ug/L	60-139
2-Butanone	106.	50.0	53.0	ug/L	56-143
2-Chlorotoluene	92.4	50.0	46.2	ug/L	79-122
2-Hexanone	108.	50.0	53.8	ug/L	57-139
4-Chlorotoluene	91.6	50.0	45.8	ug/L	78-122
P-Isopropyltoluene	96.0	50.0	48.0	ug/L	77-127
4-Methyl-2-Pentanone	106.	50.0	53.1	ug/L	67-130
Acetone	106.	50.0	52.8	ug/L	39-160
Benzene	98.2	50.0	49.1	ug/L	79-120
Bromobenzene	94.6	50.0	47.3	ug/L	80-120
Bromoform	109.	50.0	54.6	ug/L	66-130
Bromomethane	116.	50.0	58.2	ug/L	53-141
Carbon Disulfide	86.6	50.0	43.3	ug/L	64-133
Carbon Tetrachloride	98.0	50.0	49.0	ug/L	72-136
Chlorobenzene	97.6	50.0	48.8	ug/L	82-120

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LCS Recovery Report

Client:
Lab ID: WG227830-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5581.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	96.8	50.0	48.4	ug/L	78-123
Dibromochloromethane	102.	50.0	51.1	ug/L	74-126
Chloroethane	95.0	50.0	47.5	ug/L	60-138
Chloroform	97.2	50.0	48.6	ug/L	79-124
Chloromethane	98.0	50.0	49.0	ug/L	50-139
cis-1,2-Dichloroethene	96.8	50.0	48.4	ug/L	78-123
cis-1,3-Dichloropropene	99.4	50.0	49.7	ug/L	75-124
Dibromomethane	107.	50.0	53.5	ug/L	79-123
Bromodichloromethane	101.	50.0	50.5	ug/L	79-125
Dichlorodifluoromethane	82.2	50.0	41.1	ug/L	32-152
Ethylbenzene	96.8	50.0	48.4	ug/L	79-121
1,2-Dibromoethane	108.	50.0	53.8	ug/L	77-121
Hexachlorobutadiene	91.8	50.0	45.9	ug/L	66-134
Isopropylbenzene	98.4	50.0	49.2	ug/L	72-131
Methyl tert-butyl Ether	94.8	50.0	47.4	ug/L	71-124
Methylene Chloride	91.0	50.0	45.5	ug/L	74-124
m+p-Xylenes	101.	100.	101.	ug/L	80-121
Naphthalene	107.	50.0	53.6	ug/L	61-128
N-Butylbenzene	94.2	50.0	47.1	ug/L	75-128
N-Propylbenzene	95.0	50.0	47.5	ug/L	76-126
o-Xylene	97.6	50.0	48.8	ug/L	78-122
sec-Butylbenzene	94.6	50.0	47.3	ug/L	77-126
Styrene	103.	50.0	51.5	ug/L	78-123
tert-Butylbenzene	94.6	50.0	47.3	ug/L	78-124
Tetrachloroethene	97.4	50.0	48.7	ug/L	74-129
Toluene	98.0	50.0	49.0	ug/L	80-121
trans-1,2-Dichloroethene	94.2	50.0	47.1	ug/L	75-124
trans-1,3-Dichloropropene	94.8	50.0	47.4	ug/L	73-127
Trichloroethene	97.6	50.0	48.8	ug/L	79-123
Trichlorofluoromethane	89.4	50.0	44.7	ug/L	65-141
Vinyl Chloride	94.4	50.0	47.2	ug/L	58-137
Dibromofluoromethane	96.6				80-120
1,2-Dichloroethane-d4	95.4				81-120
Toluene-d8	99.6				89-120
P-Bromofluorobenzene	103.				85-120

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MS/MSD Recovery Report

MS ID: WG227830-7
MSD ID: WG227830-8
Sample ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project:
SDG: SL3808
MS File ID: P5595.D

Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830
Report Date: 18-MAY-18
MSD File ID: P5596.D

Analysis Date: 08-MAY-18
Analyst: hg
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	46.6	43.3	93.2	86.6	7	20	78-125
1,1,1-Trichloroethane	50.0	50.0	ug/L	U0.50	49.1	45.4	98.2	90.8	8	20	74-131
1,1,2,2-Tetrachloroethane	50.0	50.0	ug/L	U0.50	51.2	46.9	102.	93.8	9	20	71-121
Freon-113	50.0	50.0	ug/L	U0.50	48.5	48.8	97.0	97.6	1	20	70-136
1,1,2-Trichloroethane	50.0	50.0	ug/L	U0.50	51.8	47.0	104.	94.0	10	20	80-120
1,1-Dichloroethane	50.0	50.0	ug/L	U0.50	51.3	47.2	103.	94.4	8	20	77-125
1,1-Dichloroethene	50.0	50.0	ug/L	U0.50	50.9	47.0	102.	94.0	8	20	71-131
1,1-Dichloropropene	50.0	50.0	ug/L	U0.50	50.3	46.2	101.	92.4	8	20	79-125
1,2,3-Trichlorobenzene	50.0	50.0	ug/L	U0.50	54.3	51.5	109.	103.	5	20	69-129
1,2,3-Trichloropropane	50.0	50.0	ug/L	U0.50	48.2	44.7	96.4	89.4	8	20	73-122
1,2,4-Trichlorobenzene	50.0	50.0	ug/L	U0.50	46.4	42.6	92.8	85.2	8	20	69-130
1,2,4-Trimethylbenzene	50.0	50.0	ug/L	U0.50	48.1	45.2	96.2	90.4	6	20	76-124
1,2-Dibromo-3-Chloropropane	50.0	50.0	ug/L	U0.50	47.7	46.2	95.4	92.4	3	20	62-128
1,2-Dichlorobenzene	50.0	50.0	ug/L	U0.50	48.1	45.0	96.2	90.0	7	20	80-120
1,2-Dichloroethane	50.0	50.0	ug/L	U0.50	48.6	45.0	97.2	90.0	8	20	73-128
1,2-Dichloropropane	50.0	50.0	ug/L	U0.50	50.4	46.5	101.	93.0	8	20	78-122
1,3,5-Trimethylbenzene	50.0	50.0	ug/L	U0.50	48.6	44.9	97.2	89.8	8	20	75-124
1,3-Dichlorobenzene	50.0	50.0	ug/L	U0.50	49.0	46.3	98.0	92.6	6	20	80-120
1,3-Dichloropropane	50.0	50.0	ug/L	U0.50	48.4	44.3	96.8	88.6	9	20	80-120
1,4-Dichlorobenzene	50.0	50.0	ug/L	U0.50	47.1	43.8	94.2	87.6	7	20	79-120
2,2-Dichloropropane	50.0	50.0	ug/L	U0.50	38.5	34.8	77.0	69.6	10	20	60-139
2-Butanone	50.0	50.0	ug/L	U2.5	59.3	51.4	119.	103.	14	20	56-143
2-Chlorotoluene	50.0	50.0	ug/L	U0.50	47.4	43.8	94.8	87.6	8	20	79-122
2-Hexanone	50.0	50.0	ug/L	U2.5	54.3	50.7	109.	101.	7	20	57-139
4-Chlorotoluene	50.0	50.0	ug/L	U0.50	47.0	43.6	94.0	87.2	8	20	78-122
P-Isopropyltoluene	50.0	50.0	ug/L	U0.50	48.4	45.4	96.8	90.8	6	20	77-127
4-Methyl-2-Pentanone	50.0	50.0	ug/L	U2.5	56.6	51.2	113.	102.	10	20	67-130
Acetone	50.0	50.0	ug/L	U2.5	59.8	54.5	120.	109.	9	20	39-160
Benzene	50.0	50.0	ug/L	U0.50	50.5	47.2	101.	94.4	7	20	79-120
Bromobenzene	50.0	50.0	ug/L	U0.50	46.8	44.1	93.6	88.2	6	20	80-120
Bromoform	50.0	50.0	ug/L	U0.50	48.9	45.4	97.8	90.8	7	20	66-130
Bromomethane	50.0	50.0	ug/L	U1.0	56.0	56.5	112.	113.	1	20	53-141
Carbon Disulfide	50.0	50.0	ug/L	U0.50	50.0	44.6	100.	89.2	11	20	64-133

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MS/MSD Recovery Report

MS ID: WG227830-7
MSD ID: WG227830-8
Sample ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project:
SDG: SL3808
MS File ID: P5595.D

Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830
Report Date: 18-MAY-18
MSD File ID: P5596.D

Analysis Date: 08-MAY-18
Analyst: hg
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	47.1	44.7	94.2	89.4	5	20	72-136
Chlorobenzene	50.0	50.0	ug/L	U0.50	50.3	46.2	101.	92.4	8	20	82-120
Bromochloromethane	50.0	50.0	ug/L	U0.50	48.3	45.4	96.6	90.8	6	20	78-123
Dibromochloromethane	50.0	50.0	ug/L	U0.50	47.9	44.9	95.8	89.8	6	20	74-126
Chloroethane	50.0	50.0	ug/L	U1.0	59.9	51.6	120.	103.	15	20	60-138
Chloroform	50.0	50.0	ug/L	U0.50	51.0	46.2	102.	92.4	10	20	79-124
Chloromethane	50.0	50.0	ug/L	U1.0	57.6	50.9	115.	102.	12	20	50-139
cis-1,2-Dichloroethene	50.0	50.0	ug/L	U0.50	49.8	46.8	99.6	93.6	6	20	78-123
cis-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	46.6	43.8	93.2	87.6	6	20	75-124
Dibromomethane	50.0	50.0	ug/L	U0.50	54.3	50.2	109.	100.	8	20	79-123
Bromodichloromethane	50.0	50.0	ug/L	U0.50	50.7	47.5	101.	95.0	6	20	79-125
Dichlorodifluoromethane	50.0	50.0	ug/L	U1.0	44.6	42.2	89.2	84.4	6	20	32-152
Ethylbenzene	50.0	50.0	ug/L	U0.50	49.8	45.7	99.6	91.4	8	20	79-121
1,2-Dibromoethane	50.0	50.0	ug/L	U0.50	55.8	49.5	112.	99.0	12	20	77-121
Hexachlorobutadiene	50.0	50.0	ug/L	U0.75	42.7	39.5	85.4	79.0	8	20	66-134
Isopropylbenzene	50.0	50.0	ug/L	U0.50	50.0	46.8	100.	93.6	7	20	72-131
Methyl tert-butyl Ether	50.0	50.0	ug/L	U0.50	46.0	42.2	92.0	84.4	9	20	71-124
Methylene Chloride	50.0	50.0	ug/L	U2.5	47.4	42.8	94.8	85.6	10	20	74-124
m+p-Xylenes	100.	100.	ug/L	U1.0	102.	95.8	102.	95.8	6	20	80-121
Naphthalene	50.0	50.0	ug/L	U0.50	51.8	49.2	104.	98.4	5	20	61-128
N-Butylbenzene	50.0	50.0	ug/L	U0.50	47.9	44.3	95.8	88.6	8	20	75-128
N-Propylbenzene	50.0	50.0	ug/L	U0.50	48.7	45.3	97.4	90.6	7	20	76-126
o-Xylene	50.0	50.0	ug/L	U0.50	50.9	47.1	102.	94.2	8	20	78-122
sec-Butylbenzene	50.0	50.0	ug/L	U0.50	48.2	45.1	96.4	90.2	7	20	77-126
Styrene	50.0	50.0	ug/L	U0.50	53.8	48.8	108.	97.6	10	20	78-123
tert-Butylbenzene	50.0	50.0	ug/L	U0.50	47.0	44.2	94.0	88.4	6	20	78-124
Tetrachloroethene	50.0	50.0	ug/L	U0.50	48.8	46.0	97.6	92.0	6	20	74-129
Toluene	50.0	50.0	ug/L	U0.50	51.6	48.0	103.	96.0	7	20	80-121
trans-1,2-Dichloroethene	50.0	50.0	ug/L	U0.50	47.6	45.2	95.2	90.4	5	20	75-124
trans-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	45.3	42.3	90.6	84.6	7	20	73-127
Trichloroethene	50.0	50.0	ug/L	U0.50	51.7	48.5	103.	97.0	6	20	79-123
Trichlorofluoromethane	50.0	50.0	ug/L	U1.0	51.7	46.8	103.	93.6	10	20	65-141
Vinyl Chloride	50.0	50.0	ug/L	U1.0	55.1	50.7	110.	101.	8	20	58-137

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MS/MSD Recovery Report

MS ID: WG227830-7
MSD ID: WG227830-8
Sample ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project:
SDG: SL3808
MS File ID: P5595.D

Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830
Report Date: 18-MAY-18
MSD File ID: P5596.D

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Dibromofluoromethane		94.8	95.8	80-120
1,2-Dichloroethane-d4		96.7	96.1	81-120
Toluene-d8		100.	101.	89-120
P-Bromofluorobenzene		102.	102.	85-120

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P5525.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL3808
Lab Sample ID : WG227659-2
Date Analyzed : 04-MAY-18
Time Analyzed : 14:20

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	WG227659-1	P5523.D	05/04/18	13:05
CHAAP-TB-050218-DPT	SL3808-1	P5527.D	05/04/18	15:28
CHAAP-EB-050218-DPT	SL3808-14	P5528.D	05/04/18	16:02

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P5548.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL3808
Lab Sample ID : WG227763-2
Date Analyzed : 07-MAY-18
Time Analyzed : 10:51

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	WG227763-1	P5546.D	05/07/18	09:38
CHAAP-19C-UGIA-DPT17	SL3808-2	P5558.D	05/07/18	16:34
CHAAP-19C-UGIA-DPT13	SL3808-6	P5559.D	05/07/18	17:08
CHAAP-19C-LGIA-DPT14	SL3808-8	P5560.D	05/07/18	17:43

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P5583.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL3808
Lab Sample ID : WG227830-2
Date Analyzed : 08-MAY-18
Time Analyzed : 11:51

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	WG227830-1	P5581.D	05/08/18	10:35
CHAAP-19C-LGIA-DPT114	SL3808-10	P5590.D	05/08/18	15:52
CHAAP-19C-UGIA-DPT02	SL3808-12	P5591.D	05/08/18	16:27
CHAAP-19C-LGIA-DPT22	SL3808-15	P5592.D	05/08/18	17:01
CHAAP-19C-UGIA-DPT21	SL3808-17	P5593.D	05/08/18	17:35
CHAAP-19C-LGIA-DPT18	SL3808-4	P5594.D	05/08/18	18:10
Matrix Spike	WG227830-7	P5595.D	05/08/18	18:44
Matrix Spike Duplica	WG227830-8	P5596.D	05/08/18	19:18

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB018A.D
Instrument ID : GCMS-P

SDG : SL3808
Date Analyzed : 03-MAY-18
Time Analyzed : 12:30
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	56.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	5.6		
173	Less than 2.0% of mass 174	0.8	1.02	1
174	Greater than 50.0% of mass 95	76.6		
175	5.0 - 9.0% of mass 174	5.2	6.78	1
176	95.0 - 101.0% of mass 174	73.1	95.46	1
177	5.0 - 9.0% of mass 176	5.3	7.29	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	WG227568-4	P5508.D	05/03/18	12:56
Initial Calibration	WG227568-3	P5509.D	05/03/18	13:30
Initial Calibration	WG227568-2	P5510.D	05/03/18	14:04
Initial Calibration	WG227568-1	P5511.D	05/03/18	14:39
Initial Calibration	WG227568-6	P5512.D	05/03/18	15:13
Initial Calibration	WG227568-5	P5513.D	05/03/18	15:47

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB020A.D
Instrument ID : GCMS-P

SDG : SL3808
Date Analyzed : 04-MAY-18
Time Analyzed : 11:13
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	21.4		
75	30.0 - 60.0% of mass 95	56.4		
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	0.3	0.32	1
174	Greater than 50.0% of mass 95	93.6		
175	5.0 - 9.0% of mass 174	5.4	5.75	1
176	95.0 - 101.0% of mass 174	90.1	96.24	1
177	5.0 - 9.0% of mass 176	6.5	7.24	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	WG227659-4	P5522.D	05/04/18	12:26
Laboratory Control S	WG227659-1	P5523.D	05/04/18	13:05
Independent Source	WG227659-7	P5523A.D	05/04/18	13:05
Method Blank Sample	WG227659-2	P5525.D	05/04/18	14:20
CHAAP-TB-050218-DPT	SL3808-1	P5527.D	05/04/18	15:28
CHAAP-EB-050218-DPT	SL3808-14	P5528.D	05/04/18	16:02
Continuing Calibrati	WG227659-5	P5538.D	05/04/18	21:46

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB021A.D
Instrument ID : GCMS-P

SDG : SL3808
Date Analyzed : 07-MAY-18
Time Analyzed : 07:45
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	21.3		
75	30.0 - 60.0% of mass 95	58.4		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.8		
173	Less than 2.0% of mass 174	0.2	0.19	1
174	Greater than 50.0% of mass 95	88.5		
175	5.0 - 9.0% of mass 174	6.9	7.75	1
176	95.0 - 101.0% of mass 174	86.3	97.50	1
177	5.0 - 9.0% of mass 176	6.2	7.21	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	WG227763-4	P5545.D	05/07/18	08:50
Laboratory Control S	WG227763-1	P5546.D	05/07/18	09:38
Method Blank Sample	WG227763-2	P5548.D	05/07/18	10:51
CHAAP-19C-UGIA-DPT17	SL3808-2	P5558.D	05/07/18	16:34
CHAAP-19C-UGIA-DPT13	SL3808-6	P5559.D	05/07/18	17:08
CHAAP-19C-LGIA-DPT14	SL3808-8	P5560.D	05/07/18	17:43
Continuing Calibrati	WG227763-5	P5562.D	05/07/18	18:51

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB023A.D
Instrument ID : GCMS-P

SDG : SL3808
Date Analyzed : 08-MAY-18
Time Analyzed : 09:18
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	19.4		
75	30.0 - 60.0% of mass 95	54.7		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.7		
173	Less than 2.0% of mass 174	0.4	0.48	1
174	Greater than 50.0% of mass 95	76.0		
175	5.0 - 9.0% of mass 174	5.0	6.61	1
176	95.0 - 101.0% of mass 174	76.3	100.43	1
177	5.0 - 9.0% of mass 176	5.7	7.43	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	WG227830-4	P5580.D	05/08/18	09:48
Laboratory Control S	WG227830-1	P5581.D	05/08/18	10:35
Method Blank Sample	WG227830-2	P5583.D	05/08/18	11:51
CHAAP-19C-LGIA-DPT114	SL3808-10	P5590.D	05/08/18	15:52
CHAAP-19C-UGIA-DPT02	SL3808-12	P5591.D	05/08/18	16:27
CHAAP-19C-LGIA-DPT22	SL3808-15	P5592.D	05/08/18	17:01
CHAAP-19C-UGIA-DPT21	SL3808-17	P5593.D	05/08/18	17:35
CHAAP-19C-LGIA-DPT18	SL3808-4	P5594.D	05/08/18	18:10
Matrix Spike	WG227830-7	P5595.D	05/08/18	18:44
Matrix Spike Duplica	WG227830-8	P5596.D	05/08/18	19:18
Continuing Calibrati	WG227830-5	P5597.D	05/08/18	19:53

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P5511a.D P5510a.D P5509a.D P5508a.D P5513a.D P5512a.D
Column ID:
Calibration Date(s): 03-MAY-18 12:56 03-MAY-18 15:47

	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	0.48415	0.45282	0.39107	0.43996	0.41195	0.40756	AVG		0.43125		7.95758	15.00000	O
Chloromethane	0.46988	0.42974	0.37716	0.40724	0.37963	0.41423	AVG		0.41298		8.35157	15.00000	O
Vinyl chloride	0.49456	0.49536	0.40340	0.45136	0.41679	0.44827	AVG		0.45162		8.46432	15.00000	O
Bromomethane	3898	16615	79029	211364	566905	842644	QUA	0.02063	5.10911	-1.54031	0.99945	0.99000	O
Chloroethane	0.30946	0.27357	0.23622	0.24417	0.21907	0.23431	AVG		0.25280		13.0845	15.00000	O
Trichlorofluoromethane	0.93088	0.84439	0.71426	0.80644	0.74433	0.76347	AVG		0.80063		9.82262	15.00000	O
1,1-Dichloroethene	0.32240	0.39978	0.31812	0.33055	0.30350	0.32441	AVG		0.33313		10.1741	15.00000	O
Freon-113	0.32302	0.30775	0.31238	0.33618	0.32405	0.32080	AVG		0.32070		3.09707	15.00000	O
Carbon Disulfide	1.02531	1.24786	1.05788	1.17585	1.08533	1.16717	AVG		1.12657		7.47525	15.00000	O
Methylene Chloride	0.46811	0.46967	0.40581	0.42344	0.39818	0.41004	AVG		0.42921		7.41304	15.00000	O
Acetone	0.09783	0.11349	0.10274	0.10905	0.09612	0.09910	AVG		0.10305		6.66596	15.00000	O
trans-1,2-Dichloroethene	0.34327	0.48236	0.38656	0.40457	0.38841	0.39941	AVG		0.40076		11.3439	15.00000	O
Methyl tert-butyl ether	1.01118	1.22205	1.19149	1.24489	1.19014	1.17513	AVG		1.17248		7.07431	15.00000	O
1,1-Dichloroethane	0.69374	0.86030	0.76181	0.78712	0.73922	0.76436	AVG		0.76776		7.20017	15.00000	O
cis-1,2-Dichloroethene	0.37549	0.46083	0.42582	0.43739	0.43334	0.44208	AVG		0.42916		6.71034	15.00000	O
2,2-Dichloropropane	0.45890	0.59293	0.56724	0.59901	0.51563	0.51090	AVG		0.54077		10.1425	15.00000	O
Bromochloromethane	0.18939	0.21069	0.19185	0.19921	0.17751	0.17577	AVG		0.19074		6.92362	15.00000	O
Chloroform	0.67412	0.83030	0.73054	0.77353	0.74782	0.76352	AVG		0.75331		6.83652	15.00000	O
Carbon Tetrachloride	0.27668	0.37507	0.35325	0.36074	0.36644	0.36628	AVG		0.34975		10.4395	15.00000	O
1,1,1-Trichloroethane	0.57152	0.75593	0.66477	0.69426	0.66901	0.68455	AVG		0.67334		8.87212	15.00000	O
2-Butanone	0.13804	0.17748	0.17332	0.18002	0.16381	0.16944	AVG		0.16702		9.17409	15.00000	O
1,1-Dichloropropene	0.34138	0.42390	0.36893	0.37558	0.37918	0.38933	AVG		0.37972		7.11343	15.00000	O
Benzene	0.89113	1.18125	1.04885	1.05323	1.06047	1.08477	AVG		1.05328		8.87923	15.00000	O
1,2-Dichloroethane	0.43322	0.43964	0.40234	0.40003	0.39405	0.40096	AVG		0.41171		4.72817	15.00000	O
Trichloroethene	0.23496	0.28491	0.25344	0.25631	0.25729	0.27065	AVG		0.25959		6.50084	15.00000	O
Dibromomethane	0.13465	0.16481	0.15942	0.15931	0.16224	0.16153	AVG		0.15699		7.09038	15.00000	O
1,2-Dichloropropane	0.23187	0.27314	0.26261	0.26707	0.27209	0.28466	AVG		0.26524		6.76588	15.00000	O
Bromodichloromethane	0.30356	0.37567	0.36134	0.37422	0.37479	0.38973	AVG		0.36322		8.41857	15.00000	O
cis-1,3-dichloropropene	0.33747	0.44867	0.47483	0.48153	0.47911	0.50618	AVG		0.45463		13.2522	15.00000	O
Toluene	0.58715	0.72063	0.66125	0.65692	0.66076	0.68683	AVG		0.66226		6.64541	15.00000	O
Tetrachloroethene	0.19198	0.22640	0.19547	0.19938	0.19782	0.20180	AVG		0.20214		6.10876	15.00000	O
4-methyl-2-pentanone	0.16676	0.23088	0.24317	0.24161	0.23658	0.24157	AVG		0.22676		13.1153	15.00000	O
trans-1,3-Dichloropropene	9096	69335	288952	778870	1702360	2431609	LNR	0.02365	0.45292		0.99927	0.99000	O
1,1,2-Trichloroethane	4369	35212	140800	346680	780934	1104065	LNR	0.01782	0.20554		0.99942	0.99000	O
Dibromochloromethane	0.21896	0.25566	0.24562	0.26249	0.26592	0.27393	AVG		0.25376		7.70536	15.00000	O
1,3-Dichloropropane	0.42370	0.48710	0.46560	0.47138	0.46456	0.47641	AVG		0.46479		4.67999	15.00000	O
1,2-Dibromoethane	0.20405	0.25019	0.24259	0.25028	0.24915	0.25297	AVG		0.24154		7.73740	15.00000	O

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P5511a.D P5510a.D P5509a.D P5508a.D P5513a.D P5512a.D
Column ID:
Calibration Date(s): 03-MAY-18 12:56 03-MAY-18 15:47

2-Hexanone	0.10673	0.15002	0.15829	0.16489	0.16035	0.16158	AVG		0.15031		14.5869(	15.00000	O
Chlorobenzene	0.66630	0.80756	0.73688	0.76033	0.75762	0.76227	AVG		0.74849		6.20723	15.00000	O
Ethylbenzene	0.35921	0.44476	0.41083	0.41509	0.41168	0.42514	AVG		0.41112		6.91355	15.00000	O
1,1,1,2-Tetrachloroethane	5661	46537	180453	458484	1021606	1495615	LNR	0.01852	0.26450		0.99914	0.99000	O
m+p-Xylenes	0.41915	0.54476	0.49159	0.51112	0.51119	0.52024	AVG		0.49968		8.61714	15.00000	O
o-Xylene	0.36541	0.51989	0.48138	0.49070	0.49966	0.51270	AVG		0.47829		11.9293(	15.00000	O
Styrene	0.58132	0.86367	0.82079	0.85577	0.86085	0.88201	AVG		0.81074		14.0799-	15.00000	O
Bromoform	0.13656	0.17364	0.17141	0.18554	0.19897	0.20559	AVG		0.17862		13.7939(	15.00000	O
Isopropylbenzene	1.75498	2.45866	2.19300	2.13560	2.10859	2.04916	AVG		2.11666		10.7439:	15.00000	O
Bromobenzene	0.51351	0.59805	0.55527	0.54169	0.56339	0.55985	AVG		0.55530		4.99461	15.00000	O
N-Propylbenzene	2.27628	2.96486	2.66605	2.59267	2.48369	2.33070	AVG		2.55237		9.83042	15.00000	O
1,1,2,2-Tetrachloroethane	0.50673	0.60137	0.55660	0.54313	0.53938	0.54729	AVG		0.54908		5.59363	15.00000	O
2-Chlorotoluene	1.39419	1.71319	1.59475	1.54149	1.53444	1.51623	AVG		1.54905		6.73115	15.00000	O
1,2,3-Trichloropropane	0.47172	0.52817	0.50976	0.49702	0.50169	0.51366	AVG		0.50367		3.77330	15.00000	O
1,3,5-Trimethylbenzene	1.44491	1.99231	1.89669	1.86215	1.83349	1.80854	AVG		1.80635		10.42307	15.00000	O
4-Chlorotoluene	1.49906	1.83507	1.71234	1.64142	1.62500	1.59456	AVG		1.65124		6.88809	15.00000	O
tert-Butylbenzene	1.42646	1.92423	1.77374	1.76359	1.79673	1.77918	AVG		1.74399		9.54672	15.00000	O
1,2,4-Trimethylbenzene	1.49761	2.10980	1.94838	1.91693	1.90177	1.83704	AVG		1.86859		10.8786(	15.00000	O
sec-Butylbenzene	1.89856	2.55893	2.25977	2.23925	2.18238	2.08922	AVG		2.20469		9.88054	15.00000	O
P-Isopropyltoluene	1.44098	2.02828	1.85464	1.86710	1.86115	1.82068	AVG		1.81214		10.8074(	15.00000	O
1,3-Dichlorobenzene	0.89897	1.04003	0.99085	0.98183	0.99242	1.00308	AVG		0.98453		4.73244	15.00000	O
1,4-Dichlorobenzene	0.98362	1.12126	1.06209	1.02155	1.03897	1.05132	AVG		1.04647		4.37673	15.00000	O
N-Butylbenzene	1.33547	1.84559	1.66597	1.67046	1.63287	1.61097	AVG		1.62689		10.1548:	15.00000	O
1,2-Dichlorobenzene	0.95904	0.98903	0.93035	0.94005	0.95821	0.95615	AVG		0.95547		2.10129	15.00000	O
1,2-Dibromo-3-Chloropropane	1033	9790	43098	110420	260996	375489	LNR	0.02403	0.11519		0.99938	0.99000	O
Hexachlorobutadiene	0.23699	0.26379	0.24452	0.24434	0.26145	0.26211	AVG		0.25220		4.59092	15.00000	O
1,2,4-Trichlorobenzene	7299	56264	242871	606814	1462057	2118253	LNR	0.02705	0.64853		0.99895	0.99000	O
Naphthalene	13965	98475	496939	1258877	3078609	4197177	LNR	0.01897	1.30717		0.99867	0.99000	O
1,2,3-Trichlorobenzene	0.36761	0.42169	0.45905	0.44194	0.49967	0.49326	AVG		0.44720		10.9673:	15.00000	O
Dibromofluoromethane	0.49361	0.49416	0.49036	0.51055	0.48733	0.49096	AVG		0.49449		1.66656	15.00000	
1,2-Dichloroethane-D4	0.66680	0.66321	0.64872	0.66920	0.61538	0.64908	AVG		0.65206		3.06784	15.00000	
Toluene-D8	1.19049	1.18445	1.18696	1.18577	1.16923	1.18999	AVG		1.18448		0.66128	15.00000	
P-Bromofluorobenzene	0.50963	0.51551	0.52872	0.53277	0.52553	0.53899	AVG		0.52519		2.07942	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227659-4
Analytical Date: 05/04/18 12:26
Lab File ID : P5522.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.36248	0.36248	0.010	-15.94699	20.00000	Averaged	
2	Chloromethane	0.41298	0.32920	0.32920	0.100	-20.28678	20.00000	Averaged	*
3	Vinyl chloride	0.45162	0.37484	0.37484	0.010	-17.00092	20.00000	Averaged	
4	Bromomethane	50.00000	52.12767	0.21380	0.010	4.25534	20.00000	Quadratic	
5	Chloroethane	0.25280	0.20603	0.20603	0.010	-18.50070	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.66978	0.66978	0.010	-16.34250	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.28803	0.28803	0.100	-13.53650	20.00000	Averaged	
9	Freon-113	0.32070	0.30577	0.30577	0.010	-4.65405	20.00000	Averaged	
10	Carbon Disulfide	1.12657	0.99443	0.99443	0.010	-11.72881	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.38594	0.38594	0.010	-10.08019	20.00000	Averaged	
15	Acetone	0.10305	0.12351	0.12351	0.010	19.84912	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.36471	0.36471	0.010	-8.99474	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.13956	1.13956	0.010	-2.80766	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.69948	0.69948	0.100	-8.89382	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.41295	0.41295	0.010	-3.77665	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.58522	0.58522	0.010	8.22003	20.00000	Averaged	
29	Bromochloromethane	0.19074	0.18970	0.18970	0.010	-0.54560	20.00000	Averaged	
31	Chloroform	0.75331	0.71650	0.71650	0.010	-4.88599	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.35793	0.35793	0.010	2.33980	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.64253	0.64253	0.010	-4.57601	20.00000	Averaged	
36	2-Butanone	0.16702	0.17609	0.17609	0.010	5.43329	20.00000	Averaged	
37	1,1-Dichloropropene	0.37972	0.37074	0.37074	0.010	-2.36270	20.00000	Averaged	
38	Benzene	1.05328	1.02443	1.02443	0.010	-2.73932	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38072	0.38072	0.010	-7.52747	20.00000	Averaged	
47	Trichloroethene	0.25959	0.25385	0.25385	0.010	-2.21366	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16060	0.16060	0.010	2.29523	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26014	0.26014	0.010	-1.92290	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35739	0.35739	0.010	-1.60511	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.47865	0.47865	0.010	5.28418	20.00000	Averaged	
59	Toluene	0.66226	0.64238	0.64238	0.010	-3.00156	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.20539	0.20539	0.010	1.60718	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.22771	0.22771	0.010	0.41896	20.00000	Averaged	
62	trans-1,3-Dichloropropene	50.00000	47.83169	0.42257	0.010	-4.33662	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	48.25626	0.19471	0.010	-3.48749	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.25585	0.25585	0.010	0.82142	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.44518	0.44518	0.010	-4.21896	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.25362	0.25362	0.010	5.00372	20.00000	Averaged	
67	2-Hexanone	0.15031	0.16099	0.16099	0.010	7.10518	20.00000	Averaged	
69	Chlorobenzene	0.74849	0.74103	0.74103	0.300	-0.99622	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.40701	0.40701	0.010	-0.99853	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	48.60055	0.25220	0.010	-2.79889	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227659-4
Analytical Date: 05/04/18 12:26
Lab File ID : P5522.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.50874	0.50874	0.010	1.81356	20.00000	Averaged
74 o-Xylene	0.47829	0.48695	0.48695	0.010	1.81119	20.00000	Averaged
75 Styrene	0.81074	0.84211	0.84211	0.010	3.87003	20.00000	Averaged
76 Bromoform	0.17862	0.19417	0.19417	0.100	8.70562	20.00000	Averaged
77 Isopropylbenzene	2.11666	2.11785	2.11785	0.010	0.05614	20.00000	Averaged
80 Bromobenzene	0.55530	0.55932	0.55932	0.010	0.72486	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.54148	2.54148	0.010	-0.42685	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.52966	0.52966	0.300	-3.53792	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.51103	1.51103	0.010	-2.45424	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.47684	0.47684	0.010	-5.32688	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.81225	1.81225	0.010	0.32656	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.59352	1.59352	0.010	-3.49538	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.75699	1.75699	0.010	0.74547	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.88824	1.88824	0.010	1.05192	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.20015	2.20015	0.010	-0.20586	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.84078	1.84078	0.010	1.58051	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.98045	0.98045	0.010	-0.41492	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	1.02866	1.02866	0.010	-1.70125	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.62595	1.62595	0.010	-0.05789	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.94523	0.94523	0.010	-1.07168	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	50.32637	0.11318	0.010	0.65274	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.26471	0.26471	0.010	4.95843	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	49.48253	0.62427	0.010	-1.03495	20.00000	Linear
104 Naphthalene	50.00000	50.51437	1.29582	0.010	1.02874	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.49244	0.49244	0.010	10.11496	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.47231	0.47231	0.010	-4.48536	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.60565	0.60565	0.010	-7.11756	20.00000	Averaged
58 Toluene-D8	1.18448	1.17930	1.17930	0.010	-0.43737	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.52692	0.52692	0.010	0.32983	20.00000	Averaged

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227659-4
Lab File ID : P5522.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/04/18 12:26
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

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 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227659-5
Analytical Date: 05/04/18 21:46
Lab File ID : P5538.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.37238	0.37238	0.010	-13.65157	20.00000	Averaged	
2	Chloromethane	0.41298	0.47746	0.47746	0.100	15.61422	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.48145	0.48145	0.010	6.60447	20.00000	Averaged	
4	Bromomethane	50.00000	55.88393	0.23078	0.010	11.76787	20.00000	Quadratic	
5	Chloroethane	0.25280	0.28969	0.28969	0.010	14.59066	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.76756	0.76756	0.010	-4.12952	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.31157	0.31157	0.100	-6.47001	20.00000	Averaged	
9	Freon-113	0.32070	0.26423	0.26423	0.010	-17.60828	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.20341	1.20341	0.010	6.82094	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.39919	0.39919	0.010	-6.99333	20.00000	Averaged	
15	Acetone	0.10305	0.11922	0.11922	0.010	15.68395	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.37589	0.37589	0.010	-6.20483	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.12627	1.12627	0.010	-3.94101	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.73963	0.73963	0.100	-3.66339	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.42372	0.42372	0.010	-1.26630	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.40958	0.40958	0.010	-24.26031	20.00000	Averaged	*
29	Bromochloromethane	0.19074	0.18832	0.18832	0.010	-1.26828	20.00000	Averaged	
31	Chloroform	0.75331	0.74945	0.74945	0.010	-0.51219	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.30416	0.30416	0.010	-13.03445	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.63540	0.63540	0.010	-5.63463	20.00000	Averaged	
36	2-Butanone	0.16702	0.20877	0.20877	0.010	25.00160	20.00000	Averaged	*
37	1,1-Dichloropropene	0.37972	0.33920	0.33920	0.010	-10.67084	20.00000	Averaged	
38	Benzene	1.05328	1.00846	1.00846	0.010	-4.25514	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.39733	0.39733	0.010	-3.49100	20.00000	Averaged	
47	Trichloroethene	0.25959	0.25707	0.25707	0.010	-0.97173	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16975	0.16975	0.010	8.12394	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26882	0.26882	0.010	1.34960	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.36220	0.36220	0.010	-0.28149	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.45609	0.45609	0.010	0.32154	20.00000	Averaged	
59	Toluene	0.66226	0.64616	0.64616	0.010	-2.43056	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.17915	0.17915	0.010	-11.37238	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.29019	0.29019	0.010	27.97305	20.00000	Averaged	*
62	trans-1,3-Dichloropropene	50.00000	47.64847	0.42091	0.010	-4.70307	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.84635	0.20536	0.010	1.69269	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.25430	0.25430	0.010	0.21307	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.47549	0.47549	0.010	2.30250	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.26032	0.26032	0.010	7.77382	20.00000	Averaged	
67	2-Hexanone	0.15031	0.19263	0.19263	0.010	28.15410	20.00000	Averaged	*
69	Chlorobenzene	0.74849	0.73025	0.73025	0.300	-2.43742	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39574	0.39574	0.010	-3.74093	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	46.33101	0.24019	0.010	-7.33798	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227659-5
Analytical Date: 05/04/18 21:46
Lab File ID : P5538.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.49748	0.49748	0.010	-0.43839	20.00000	Averaged
74 o-Xylene	0.47829	0.47431	0.47431	0.010	-0.83279	20.00000	Averaged
75 Styrene	0.81074	0.84357	0.84357	0.010	4.05044	20.00000	Averaged
76 Bromoform	0.17862	0.18764	0.18764	0.100	5.05086	20.00000	Averaged
77 Isopropylbenzene	2.11666	2.02479	2.02479	0.010	-4.34034	20.00000	Averaged
80 Bromobenzene	0.55530	0.52452	0.52452	0.010	-5.54242	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.49358	2.49358	0.010	-2.30347	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.59460	0.59460	0.300	8.29024	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.48308	1.48308	0.010	-4.25881	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.53408	0.53408	0.010	6.03761	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.75833	1.75833	0.010	-2.65817	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.58641	1.58641	0.010	-3.92597	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.68461	1.68461	0.010	-3.40450	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.85195	1.85195	0.010	-0.89018	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.13056	2.13056	0.010	-3.36238	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.76165	1.76165	0.010	-2.78597	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.93716	0.93716	0.010	-4.81135	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	0.99681	0.99681	0.010	-4.74466	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.59553	1.59553	0.010	-1.92750	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.92729	0.92729	0.010	-2.94938	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	51.87413	0.11674	0.010	3.74825	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.21091	0.21091	0.010	-16.37278	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	46.16754	0.58128	0.010	-7.66492	20.00000	Linear
104 Naphthalene	50.00000	53.71646	1.37953	0.010	7.43291	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.49497	0.49497	0.010	10.68099	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.49483	0.49483	0.010	0.06777	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.70071	0.70071	0.010	7.46054	20.00000	Averaged
58 Toluene-D8	1.18448	1.19517	1.19517	0.010	0.90254	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.54427	0.54427	0.010	3.63184	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227659-5
Lab File ID : P5538.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/04/18 21:46
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227763-4
Analytical Date: 05/07/18 08:50
Lab File ID : P5545.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.35442	0.35442	0.010	-17.81504	20.00000	Averaged	
2	Chloromethane	0.41298	0.40232	0.40232	0.100	-2.58034	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.44138	0.44138	0.010	-2.26727	20.00000	Averaged	
4	Bromomethane	50.00000	58.56231	0.24301	0.010	17.12461	20.00000	Quadratic	
5	Chloroethane	0.25280	0.24041	0.24041	0.010	-4.90201	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.76700	0.76700	0.010	-4.20023	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.29954	0.29954	0.100	-10.08293	20.00000	Averaged	
9	Freon-113	0.32070	0.29020	0.29020	0.010	-9.51029	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.09108	1.09108	0.010	-3.14996	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.38839	0.38839	0.010	-9.51048	20.00000	Averaged	
15	Acetone	0.10305	0.11632	0.11632	0.010	12.87089	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.36220	0.36220	0.010	-9.62296	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.18610	1.18610	0.010	1.16155	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.70410	0.70410	0.100	-8.29201	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.41507	0.41507	0.010	-3.28212	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.55215	0.55215	0.010	2.10445	20.00000	Averaged	
29	Bromochloromethane	0.19074	0.18709	0.18709	0.010	-1.91073	20.00000	Averaged	
31	Chloroform	0.75331	0.70742	0.70742	0.010	-6.09139	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.32571	0.32571	0.010	-6.87293	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.62079	0.62079	0.010	-7.80361	20.00000	Averaged	
36	2-Butanone	0.16702	0.20142	0.20142	0.010	20.59773	20.00000	Averaged	*
37	1,1-Dichloropropene	0.37972	0.35396	0.35396	0.010	-6.78279	20.00000	Averaged	
38	Benzene	1.05328	0.99835	0.99835	0.010	-5.21487	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38357	0.38357	0.010	-6.83424	20.00000	Averaged	
47	Trichloroethene	0.25959	0.24719	0.24719	0.010	-4.77841	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16372	0.16372	0.010	4.28386	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26396	0.26396	0.010	-0.48287	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35533	0.35533	0.010	-2.17311	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.46942	0.46942	0.010	3.25242	20.00000	Averaged	
59	Toluene	0.66226	0.64142	0.64142	0.010	-3.14592	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.17465	0.17465	0.010	-13.59882	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.27874	0.27874	0.010	22.92228	20.00000	Averaged	*
62	trans-1,3-Dichloropropene	50.00000	48.79748	0.43132	0.010	-2.40504	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.09516	0.20227	0.010	0.19032	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.24864	0.24864	0.010	-2.01961	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.45824	0.45824	0.010	-1.40939	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.26864	0.26864	0.010	11.22198	20.00000	Averaged	
67	2-Hexanone	0.15031	0.18355	0.18355	0.010	22.11369	20.00000	Averaged	*
69	Chlorobenzene	0.74849	0.71542	0.71542	0.300	-4.41875	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39094	0.39094	0.010	-4.90715	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	45.92400	0.23804	0.010	-8.15200	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227763-4
Analytical Date: 05/07/18 08:50
Lab File ID : P5545.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.47842	0.47842	0.010	-4.25406	20.00000	Averaged
74 o-Xylene	0.47829	0.45856	0.45856	0.010	-4.12501	20.00000	Averaged
75 Styrene	0.81074	0.80520	0.80520	0.010	-0.68295	20.00000	Averaged
76 Bromoform	0.17862	0.18903	0.18903	0.100	5.82809	20.00000	Averaged
77 Isopropylbenzene	2.11666	1.97337	1.97337	0.010	-6.76981	20.00000	Averaged
80 Bromobenzene	0.55530	0.51066	0.51066	0.010	-8.03871	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.42182	2.42182	0.010	-5.11514	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.57669	0.57669	0.300	5.02686	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.41332	1.41332	0.010	-8.76199	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.52157	0.52157	0.010	3.55444	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.70983	1.70983	0.010	-5.34320	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.54045	1.54045	0.010	-6.70936	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.64034	1.64034	0.010	-5.94307	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.80059	1.80059	0.010	-3.63903	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.09561	2.09561	0.010	-4.94722	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.74905	1.74905	0.010	-3.48165	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.94197	0.94197	0.010	-4.32257	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	0.98257	0.98257	0.010	-6.10563	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.56923	1.56923	0.010	-3.54385	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.90521	0.90521	0.010	-5.26045	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	54.51037	0.12281	0.010	9.02075	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.23289	0.23289	0.010	-7.65828	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	46.70621	0.58826	0.010	-6.58757	20.00000	Linear
104 Naphthalene	50.00000	55.00245	1.41315	0.010	10.00490	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.49369	0.49369	0.010	10.39547	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.48168	0.48168	0.010	-2.59051	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.64805	0.64805	0.010	-0.61582	20.00000	Averaged
58 Toluene-D8	1.18448	1.21111	1.21111	0.010	2.24781	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.54815	0.54815	0.010	4.37187	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227763-4
Lab File ID : P5545.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/07/18 08:50
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227763-5
Analytical Date: 05/07/18 18:51
Lab File ID : P5562.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.37216	0.37216	0.010	-13.70283	20.00000	Averaged	
2	Chloromethane	0.41298	0.42619	0.42619	0.100	3.19917	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.46592	0.46592	0.010	3.16566	20.00000	Averaged	
4	Bromomethane	50.00000	54.16164	0.22297	0.010	8.32328	20.00000	Quadratic	
5	Chloroethane	0.25280	0.26537	0.26537	0.010	4.97179	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.79928	0.79928	0.010	-0.16844	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.32331	0.32331	0.100	-2.94828	20.00000	Averaged	
9	Freon-113	0.32070	0.31875	0.31875	0.010	-0.60833	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.15757	1.15757	0.010	2.75222	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.41335	0.41335	0.010	-3.69563	20.00000	Averaged	
15	Acetone	0.10305	0.12174	0.12174	0.010	18.13362	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.38581	0.38581	0.010	-3.73087	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.16075	1.16075	0.010	-0.99994	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.73307	0.73307	0.100	-4.51783	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.42466	0.42466	0.010	-1.04825	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.39884	0.39884	0.010	-26.24601	20.00000	Averaged	*
29	Bromochloromethane	0.19074	0.18127	0.18127	0.010	-4.96107	20.00000	Averaged	
31	Chloroform	0.75331	0.74056	0.74056	0.010	-1.69245	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.31589	0.31589	0.010	-9.67948	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.64690	0.64690	0.010	-3.92623	20.00000	Averaged	
36	2-Butanone	0.16702	0.20775	0.20775	0.010	24.38891	20.00000	Averaged	*
37	1,1-Dichloropropene	0.37972	0.36307	0.36307	0.010	-4.38482	20.00000	Averaged	
38	Benzene	1.05328	1.04056	1.04056	0.010	-1.20744	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38815	0.38815	0.010	-5.72182	20.00000	Averaged	
47	Trichloroethene	0.25959	0.25324	0.25324	0.010	-2.44607	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16737	0.16737	0.010	6.60939	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26436	0.26436	0.010	-0.33350	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35691	0.35691	0.010	-1.73815	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.43924	0.43924	0.010	-3.38458	20.00000	Averaged	
59	Toluene	0.66226	0.65872	0.65872	0.010	-0.53468	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.18805	0.18805	0.010	-6.97044	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.28429	0.28429	0.010	25.37150	20.00000	Averaged	*
62	trans-1,3-Dichloropropene	50.00000	45.63025	0.40263	0.010	-8.73951	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.94836	0.20578	0.010	1.89671	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.25175	0.25175	0.010	-0.79497	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.46580	0.46580	0.010	0.21787	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.26769	0.26769	0.010	10.82760	20.00000	Averaged	
67	2-Hexanone	0.15031	0.19150	0.19150	0.010	27.40204	20.00000	Averaged	*
69	Chlorobenzene	0.74849	0.73996	0.73996	0.300	-1.13921	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39822	0.39822	0.010	-3.13770	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	46.29868	0.24002	0.010	-7.40264	20.00000	Linear	

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227763-5
Analytical Date: 05/07/18 18:51
Lab File ID : P5562.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.50275	0.50275	0.010	0.61588	20.00000	Averaged
74 o-Xylene	0.47829	0.48346	0.48346	0.010	1.08088	20.00000	Averaged
75 Styrene	0.81074	0.84478	0.84478	0.010	4.19902	20.00000	Averaged
76 Bromoform	0.17862	0.18510	0.18510	0.100	3.63084	20.00000	Averaged
77 Isopropylbenzene	2.11666	2.04357	2.04357	0.010	-3.45312	20.00000	Averaged
80 Bromobenzene	0.55530	0.53545	0.53545	0.010	-3.57305	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.49382	2.49382	0.010	-2.29417	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.59487	0.59487	0.300	8.33846	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.46915	1.46915	0.010	-5.15783	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.53722	0.53722	0.010	6.66085	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.76277	1.76277	0.010	-2.41268	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.57919	1.57919	0.010	-4.36330	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.68518	1.68518	0.010	-3.37199	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.86089	1.86089	0.010	-0.41161	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.11753	2.11753	0.010	-3.95323	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.74673	1.74673	0.010	-3.60943	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.98024	0.98024	0.010	-0.43599	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	1.00845	1.00845	0.010	-3.63305	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.52097	1.52097	0.010	-6.51065	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.94084	0.94084	0.010	-1.53131	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	54.90158	0.12372	0.010	9.80316	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.21132	0.21132	0.010	-16.21075	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	47.53538	0.59902	0.010	-4.92925	20.00000	Linear
104 Naphthalene	50.00000	59.42205	1.52870	0.010	18.84411	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.50921	0.50921	0.010	13.86552	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.48104	0.48104	0.010	-2.72000	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.65051	0.65051	0.010	-0.23786	20.00000	Averaged
58 Toluene-D8	1.18448	1.18950	1.18950	0.010	0.42386	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.53258	0.53258	0.010	1.40727	20.00000	Averaged

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227763-5
Lab File ID : P5562.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/07/18 18:51
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227830-4
Analytical Date: 05/08/18 09:48
Lab File ID : P5580.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.39851	0.39851	0.010	-7.59116	20.00000	Averaged	
2	Chloromethane	0.41298	0.40978	0.40978	0.100	-0.77373	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.44565	0.44565	0.010	-1.32341	20.00000	Averaged	
4	Bromomethane	50.00000	63.55057	0.26608	0.010	27.10114	20.00000	Quadratic	*
5	Chloroethane	0.25280	0.24096	0.24096	0.010	-4.68350	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.79857	0.79857	0.010	-0.25657	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.30777	0.30777	0.100	-7.61328	20.00000	Averaged	
9	Freon-113	0.32070	0.31478	0.31478	0.010	-1.84609	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.09754	1.09754	0.010	-2.57635	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.39920	0.39920	0.010	-6.99203	20.00000	Averaged	
15	Acetone	0.10305	0.10362	0.10362	0.010	0.54904	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.37324	0.37324	0.010	-6.86660	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.12529	1.12529	0.010	-4.02445	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.72390	0.72390	0.100	-5.71217	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.43252	0.43252	0.010	0.78221	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.57682	0.57682	0.010	6.66548	20.00000	Averaged	
29	Bromochloromethane	0.19074	0.19332	0.19332	0.010	1.35574	20.00000	Averaged	
31	Chloroform	0.75331	0.72953	0.72953	0.010	-3.15655	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.34156	0.34156	0.010	-2.34196	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.63741	0.63741	0.010	-5.33570	20.00000	Averaged	
36	2-Butanone	0.16702	0.18274	0.18274	0.010	9.41250	20.00000	Averaged	
37	1,1-Dichloropropene	0.37972	0.35989	0.35989	0.010	-5.22012	20.00000	Averaged	
38	Benzene	1.05328	1.03051	1.03051	0.010	-2.16236	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38349	0.38349	0.010	-6.85365	20.00000	Averaged	
47	Trichloroethene	0.25959	0.25007	0.25007	0.010	-3.66955	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16419	0.16419	0.010	4.58588	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26089	0.26089	0.010	-1.64096	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35728	0.35728	0.010	-1.63551	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.46150	0.46150	0.010	1.51033	20.00000	Averaged	
59	Toluene	0.66226	0.66006	0.66006	0.010	-0.33130	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.18547	0.18547	0.010	-8.24898	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.24988	0.24988	0.010	10.19445	20.00000	Averaged	
62	trans-1,3-Dichloropropene	50.00000	48.05794	0.42462	0.010	-3.88413	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	49.85500	0.20129	0.010	-0.28999	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.25214	0.25214	0.010	-0.63867	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.44292	0.44292	0.010	-4.70523	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.25964	0.25964	0.010	7.49534	20.00000	Averaged	
67	2-Hexanone	0.15031	0.16309	0.16309	0.010	8.50357	20.00000	Averaged	
69	Chlorobenzene	0.74849	0.73859	0.73859	0.300	-1.32347	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39271	0.39271	0.010	-4.47803	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	46.24053	0.23971	0.010	-7.51894	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227830-4
Analytical Date: 05/08/18 09:48
Lab File ID : P5580.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.48921	0.48921	0.010	-2.09529	20.00000	Averaged
74 o-Xylene	0.47829	0.48066	0.48066	0.010	0.49428	20.00000	Averaged
75 Styrene	0.81074	0.82684	0.82684	0.010	1.98594	20.00000	Averaged
76 Bromoform	0.17862	0.18481	0.18481	0.100	3.46755	20.00000	Averaged
77 Isopropylbenzene	2.11666	1.98752	1.98752	0.010	-6.10107	20.00000	Averaged
80 Bromobenzene	0.55530	0.51545	0.51545	0.010	-7.17499	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.42727	2.42727	0.010	-4.90148	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.52607	0.52607	0.300	-4.19131	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.43794	1.43794	0.010	-7.17293	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.47531	0.47531	0.010	-5.62993	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.72106	1.72106	0.010	-4.72157	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.52329	1.52329	0.010	-7.74860	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.65699	1.65699	0.010	-4.98824	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.80901	1.80901	0.010	-3.18816	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.07196	2.07196	0.010	-6.02028	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.72172	1.72172	0.010	-4.98957	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.95008	0.95008	0.010	-3.49893	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	0.98758	0.98758	0.010	-5.62686	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.53067	1.53067	0.010	-5.91395	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.90336	0.90336	0.010	-5.45364	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	47.80198	0.10736	0.010	-4.39605	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.22675	0.22675	0.010	-10.09239	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	47.33364	0.59640	0.010	-5.33273	20.00000	Linear
104 Naphthalene	50.00000	51.35745	1.31786	0.010	2.71490	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.49148	0.49148	0.010	9.89984	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.49355	0.49355	0.010	-0.19120	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.62186	0.62186	0.010	-4.63274	20.00000	Averaged
58 Toluene-D8	1.18448	1.19170	1.19170	0.010	0.60940	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.55142	0.55142	0.010	4.99402	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227830-4
Lab File ID : P5580.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/08/18 09:48
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227830-5
Analytical Date: 05/08/18 19:53
Lab File ID : P5597.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.37799	0.37799	0.010	-12.34920	20.00000	Averaged	
2	Chloromethane	0.41298	0.37803	0.37803	0.100	-8.46351	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.43015	0.43015	0.010	-4.75526	20.00000	Averaged	
4	Bromomethane	50.00000	57.98166	0.24035	0.010	15.96332	20.00000	Quadratic	
5	Chloroethane	0.25280	0.24295	0.24295	0.010	-3.89629	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.72705	0.72705	0.010	-9.18958	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.29208	0.29208	0.100	-12.32081	20.00000	Averaged	
9	Freon-113	0.32070	0.29028	0.29028	0.010	-9.48499	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.00622	1.00622	0.010	-10.68276	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.37487	0.37487	0.010	-12.65960	20.00000	Averaged	
15	Acetone	0.10305	0.10198	0.10198	0.010	-1.04217	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.35456	0.35456	0.010	-11.52823	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.06034	1.06034	0.010	-9.56382	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.66450	0.66450	0.100	-13.44983	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.40592	0.40592	0.010	-5.41457	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.32920	0.32920	0.010	-39.12394	20.00000	Averaged	*
29	Bromochloromethane	0.19074	0.18269	0.18269	0.010	-4.21837	20.00000	Averaged	
31	Chloroform	0.75331	0.67987	0.67987	0.010	-9.74842	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.30548	0.30548	0.010	-12.65641	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.58936	0.58936	0.010	-12.47162	20.00000	Averaged	
36	2-Butanone	0.16702	0.17618	0.17618	0.010	5.48846	20.00000	Averaged	
37	1,1-Dichloropropene	0.37972	0.34739	0.34739	0.010	-8.51298	20.00000	Averaged	
38	Benzene	1.05328	1.01461	1.01461	0.010	-3.67185	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.37426	0.37426	0.010	-9.09670	20.00000	Averaged	
47	Trichloroethene	0.25959	0.24559	0.24559	0.010	-5.39499	20.00000	Averaged	
49	Dibromomethane	0.15699	0.15870	0.15870	0.010	1.08416	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26029	0.26029	0.010	-1.86764	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.34330	0.34330	0.010	-5.48467	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.42160	0.42160	0.010	-7.26490	20.00000	Averaged	
59	Toluene	0.66226	0.64157	0.64157	0.010	-3.12372	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.18222	0.18222	0.010	-9.85513	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.25295	0.25295	0.010	11.54766	20.00000	Averaged	
62	trans-1,3-Dichloropropene	50.00000	42.42285	0.37357	0.010	-15.15430	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.13252	0.20243	0.010	0.26505	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.23293	0.23293	0.010	-8.20893	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.44763	0.44763	0.010	-3.69169	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.25475	0.25475	0.010	5.46968	20.00000	Averaged	
67	2-Hexanone	0.15031	0.16777	0.16777	0.010	11.61496	20.00000	Averaged	
69	Chlorobenzene	0.74849	0.71736	0.71736	0.300	-4.15874	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.38475	0.38475	0.010	-6.41245	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	45.16116	0.23400	0.010	-9.67768	20.00000	Linear	

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227830-5
Analytical Date: 05/08/18 19:53
Lab File ID : P5597.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.48791	0.48791	0.010	-2.35485	20.00000	Averaged
74 o-Xylene	0.47829	0.46733	0.46733	0.010	-2.29228	20.00000	Averaged
75 Styrene	0.81074	0.80823	0.80823	0.010	-0.30873	20.00000	Averaged
76 Bromoform	0.17862	0.16978	0.16978	0.100	-4.94736	20.00000	Averaged
77 Isopropylbenzene	2.11666	1.89652	1.89652	0.010	-10.40040	20.00000	Averaged
80 Bromobenzene	0.55530	0.50741	0.50741	0.010	-8.62294	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.29439	2.29439	0.010	-10.10748	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.52018	0.52018	0.300	-5.26353	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.37973	1.37973	0.010	-10.93024	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.47590	0.47590	0.010	-5.51343	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.63615	1.63615	0.010	-9.42219	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.47090	1.47090	0.010	-10.92159	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.58816	1.58816	0.010	-8.93505	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.73237	1.73237	0.010	-7.28970	20.00000	Averaged
91 sec-Butylbenzene	2.20469	1.95899	1.95899	0.010	-11.14422	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.63807	1.63807	0.010	-9.60561	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.92766	0.92766	0.010	-5.77606	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	0.96016	0.96016	0.010	-8.24723	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.41110	1.41110	0.010	-13.26370	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.90930	0.90930	0.010	-4.83188	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	47.39591	0.10642	0.010	-5.20818	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.20716	0.20716	0.010	-17.85728	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	45.23421	0.56917	0.010	-9.53157	20.00000	Linear
104 Naphthalene	50.00000	50.50931	1.29569	0.010	1.01862	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.47636	0.47636	0.010	6.52045	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.46918	0.46918	0.010	-5.11997	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.60973	0.60973	0.010	-6.49260	20.00000	Averaged
58 Toluene-D8	1.18448	1.20029	1.20029	0.010	1.33423	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.54782	0.54782	0.010	4.30809	20.00000	Averaged

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227830-5
Lab File ID : P5597.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/08/18 19:53
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227568-4
Lab File ID : P5508.D

SDG: SL3808
Analytical Date: 05/03/18 12:56
Instrument ID: GCMS-P

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	1074176		6.44		1785427		7.38		1800386		11.80	
	Upper Limit	2148352		6.61		3570854		7.55		3600772		11.96	
	Lower Limit	537088		6.28		892713.5		7.21		900193		11.63	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG227659-4	1272877		6.44		1973639		7.38		2034895		11.80	
Laboratory Control S	WG227659-1	1322716		6.44		2001979		7.38		2038077		11.80	
Method Blank Sample	WG227659-2	1186121		6.44		1855362		7.38		1856395		11.80	
CHAAP-TB-050218-D	SL3808-1	1081521		6.44		1711161		7.38		1745990		11.80	
CHAAP-EB-050218-D	SL3808-14	1027020		6.44		1625792		7.39		1668953		11.80	
Continuing Calibrati	WG227659-5	673598		6.44		1137636		7.39		1219288		11.81	
Continuing Calibrati	WG227763-4	914402		6.44		1473084		7.38		1580139		11.80	
Laboratory Control S	WG227763-1	958436		6.44		1552546		7.38		1623933		11.81	
Method Blank Sample	WG227763-2	808263		6.45		1322931		7.38		1360309		11.81	
CHAAP-19C-UGIA-DI	SL3808-2	708865		6.44		1198848		7.38		1229065		11.80	
CHAAP-19C-UGIA-DI	SL3808-6	679198		6.44		1140411		7.39		1193389		11.80	
CHAAP-19C-LGIA-DI	SL3808-8	658487		6.44		1124468		7.39		1175833		11.81	
Continuing Calibrati	WG227763-5	938642		6.44		1529437		7.38		1613599		11.80	
Continuing Calibrati	WG227830-4	948490		6.43		1531043		7.38		1651300		11.80	
Laboratory Control S	WG227830-1	1027534		6.45		1625363		7.38		1713562		11.80	
Method Blank Sample	WG227830-2	877734		6.44		1419587		7.38		1452884		11.80	
CHAAP-19C-LGIA-DI	SL3808-10	937649		6.44		1552757		7.38		1584862		11.80	
CHAAP-19C-UGIA-DI	SL3808-12	865315		6.44		1433803		7.38		1501626		11.80	
CHAAP-19C-LGIA-DI	SL3808-15	824431		6.44		1388967		7.38		1456863		11.80	
CHAAP-19C-UGIA-DI	SL3808-17	805278		6.44		1330019		7.38		1390937		11.80	
CHAAP-19C-LGIA-DI	SL3808-4	772415		6.44		1305807		7.38		1352184		11.80	
Matrix Spike	WG227830-7	863933		6.44		1391533		7.38		1483461		11.80	
Matrix Spike Duplica	WG227830-8	930113		6.44		1476171		7.38		1568522		11.80	
Continuing Calibrati	WG227830-5	986446		6.44		1536197		7.39		1642230		11.80	

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 : WG227568-4
Lab File ID : P5508.D

SDG: SL3808
Analytical Date: 05/03/18 12:56
Instrument ID: GCMS-P

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	1047820		14.77	
	Upper Limit	2095640		14.93	
	Lower Limit	523910		14.60	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG227659-4	1168516		14.77	
Laboratory Control S	WG227659-1	1191939		14.77	
Method Blank Sample	WG227659-2	1042131		14.77	
CHAAP-TB-050218-D	SL3808-1	983602		14.77	
CHAAP-EB-050218-D	SL3808-14	916316		14.77	
Continuing Calibrati	WG227659-5	713580		14.77	
Continuing Calibrati	WG227763-4	926121		14.77	
Laboratory Control S	WG227763-1	958018		14.77	
Method Blank Sample	WG227763-2	728553		14.77	
CHAAP-19C-UGIA-DI	SL3808-2	677206		14.77	
CHAAP-19C-UGIA-DI	SL3808-6	655335		14.77	
CHAAP-19C-LGIA-DI	SL3808-8	632365		14.77	
Continuing Calibrati	WG227763-5	945636		14.77	
Continuing Calibrati	WG227830-4	980650		14.77	
Laboratory Control S	WG227830-1	1019473		14.77	
Method Blank Sample	WG227830-2	789399		14.76	
CHAAP-19C-LGIA-DI	SL3808-10	902089		14.77	
CHAAP-19C-UGIA-DI	SL3808-12	838858		14.77	
CHAAP-19C-LGIA-DI	SL3808-15	799251		14.77	
CHAAP-19C-UGIA-DI	SL3808-17	763211		14.77	
CHAAP-19C-LGIA-DI	SL3808-4	735322		14.77	
Matrix Spike	WG227830-7	902450		14.77	
Matrix Spike Duplica	WG227830-8	939015		14.77	
Continuing Calibrati	WG227830-5	995190		14.77	

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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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-2
Client ID: CHAAP-19C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0712.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	JB	0.12	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		81.6	%					
Fluorene-D10		85.1	%					
Pyrene-D10		89.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0713.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.096	ug/L	1	.2	0.19	0.062	0.096
2-Methylnaphthalene	U	0.096	ug/L	1	.2	0.19	0.074	0.096
Acenaphthylene	U	0.096	ug/L	1	.2	0.19	0.052	0.096
Acenaphthene	U	0.096	ug/L	1	.2	0.19	0.062	0.096
Fluorene	U	0.096	ug/L	1	.2	0.19	0.059	0.096
Phenanthrene	U	0.096	ug/L	1	.2	0.19	0.049	0.096
Anthracene	U	0.096	ug/L	1	.2	0.19	0.042	0.096
Fluoranthene	U	0.096	ug/L	1	.2	0.19	0.070	0.096
Pyrene	U	0.096	ug/L	1	.2	0.19	0.057	0.096
Benzo(a)anthracene	U	0.096	ug/L	1	.2	0.19	0.044	0.096
Chrysene	U	0.096	ug/L	1	.2	0.19	0.035	0.096
Benzo(b)Fluoranthene	JB	0.11	ug/L	1	.2	0.19	0.086	0.096
Benzo(k)fluoranthene	U	0.096	ug/L	1	.2	0.19	0.047	0.096
Benzo(a)pyrene	U	0.096	ug/L	1	.2	0.19	0.063	0.096
Indeno(1,2,3-cd)pyrene	U	0.096	ug/L	1	.2	0.19	0.050	0.096
Dibenzo(a,h)anthracene	U	0.096	ug/L	1	.2	0.19	0.067	0.096
Benzo(g,h,i)perylene	U	0.096	ug/L	1	.2	0.19	0.062	0.096
2-Methylnaphthalene-D10		83.0	%					
Fluorene-D10		87.4	%					
Pyrene-D10		96.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-6
Client ID: CHAAP-19C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0716.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.078	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.055	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.062	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.045	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.074	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.060	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.047	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.037	0.10
Benzo(b)Fluoranthene	JB	0.12	ug/L	1	.2	0.20	0.091	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.050	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.067	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.053	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.071	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
2-Methylnaphthalene-D10		76.2	%					
Fluorene-D10		77.1	%					
Pyrene-D10		88.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-8
Client ID: CHAAP-19C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0717.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Acenaphthylene	U	0.094	ug/L	1	.2	0.19	0.051	0.094
Acenaphthene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Fluorene	U	0.094	ug/L	1	.2	0.19	0.058	0.094
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Anthracene	U	0.094	ug/L	1	.2	0.19	0.042	0.094
Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.069	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	J	0.046	ug/L	1	.2	0.19	0.043	0.094
Chrysene	U	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)Fluoranthene	JB	0.14	ug/L	1	.2	0.19	0.084	0.094
Benzo(k)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.046	0.094
Benzo(a)pyrene	J	0.067	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
Benzo(g,h,i)perylene	U	0.094	ug/L	1	.2	0.19	0.061	0.094
2-Methylnaphthalene-D10		83.4	%					
Fluorene-D10		84.6	%					
Pyrene-D10		90.7	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-10
Client ID: CHAAP-19C-LGIA-DPT114
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0718.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
2-Methylnaphthalene	U	0.098	ug/L	1	.2	0.20	0.075	0.098
Acenaphthylene	U	0.098	ug/L	1	.2	0.20	0.053	0.098
Acenaphthene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
Fluorene	U	0.098	ug/L	1	.2	0.20	0.060	0.098
Phenanthrene	U	0.098	ug/L	1	.2	0.20	0.050	0.098
Anthracene	U	0.098	ug/L	1	.2	0.20	0.043	0.098
Fluoranthene	U	0.098	ug/L	1	.2	0.20	0.072	0.098
Pyrene	U	0.098	ug/L	1	.2	0.20	0.058	0.098
Benzo(a)anthracene	J	0.050	ug/L	1	.2	0.20	0.045	0.098
Chrysene	U	0.098	ug/L	1	.2	0.20	0.035	0.098
Benzo(b)Fluoranthene	U	0.098	ug/L	1	.2	0.20	0.087	0.098
Benzo(k)fluoranthene	U	0.098	ug/L	1	.2	0.20	0.048	0.098
Benzo(a)pyrene	J	0.094	ug/L	1	.2	0.20	0.065	0.098
Indeno(1,2,3-cd)pyrene	U	0.098	ug/L	1	.2	0.20	0.051	0.098
Dibenzo(a,h)anthracene	U	0.098	ug/L	1	.2	0.20	0.069	0.098
Benzo(g,h,i)perylene	U	0.098	ug/L	1	.2	0.20	0.064	0.098
2-Methylnaphthalene-D10		78.5	%					
Fluorene-D10		82.4	%					
Pyrene-D10		94.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-12
Client ID: CHAAP-19C-UGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0719.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	JB	0.12	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	J	0.065	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		78.4	%					
Fluorene-D10		79.3	%					
Pyrene-D10		83.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-14
Client ID: CHAAP-EB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0720.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	JB	0.13	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	J	0.067	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		79.0	%					
Fluorene-D10		80.8	%					
Pyrene-D10		91.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-15
Client ID: CHAAP-19C-LGIA-DPT22
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0729.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 08-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	J	0.12	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	J	0.048	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		83.9	%					
Fluorene-D10		88.0	%					
Pyrene-D10		97.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-17
Client ID: CHAAP-19C-UGIA-DPT21
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0730.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 08-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.099	ug/L	1	.2	0.20	0.063	0.099
2-Methylnaphthalene	U	0.099	ug/L	1	.2	0.20	0.076	0.099
Acenaphthylene	U	0.099	ug/L	1	.2	0.20	0.053	0.099
Acenaphthene	U	0.099	ug/L	1	.2	0.20	0.063	0.099
Fluorene	U	0.099	ug/L	1	.2	0.20	0.060	0.099
Phenanthrene	U	0.099	ug/L	1	.2	0.20	0.050	0.099
Anthracene	U	0.099	ug/L	1	.2	0.20	0.044	0.099
Fluoranthene	J	0.082	ug/L	1	.2	0.20	0.072	0.099
Pyrene	U	0.099	ug/L	1	.2	0.20	0.058	0.099
Benzo(a)anthracene	J	0.048	ug/L	1	.2	0.20	0.046	0.099
Chrysene	U	0.099	ug/L	1	.2	0.20	0.036	0.099
Benzo(b)Fluoranthene	JB	0.12	ug/L	1	.2	0.20	0.088	0.099
Benzo(k)fluoranthene	U	0.099	ug/L	1	.2	0.20	0.048	0.099
Benzo(a)pyrene	U	0.099	ug/L	1	.2	0.20	0.065	0.099
Indeno(1,2,3-cd)pyrene	U	0.099	ug/L	1	.2	0.20	0.051	0.099
Dibenzo(a,h)anthracene	U	0.099	ug/L	1	.2	0.20	0.069	0.099
Benzo(g,h,i)perylene	U	0.099	ug/L	1	.2	0.20	0.064	0.099
2-Methylnaphthalene-D10		80.5	%					
Fluorene-D10		87.2	%					
Pyrene-D10		94.1	%					

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Report of Analytical Results

Client:
Lab ID: WG227671-1RA
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: U0724.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 08-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-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	U	0.10	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	J	0.087	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	J	0.16	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		84.9	%					
Fluorene-D10		85.1	%					
Pyrene-D10		102.	%					

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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:** SL3808

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-19C-LGIA-DPT11	SL3808-10		78.5		82.4		94.4	
CHAAP-19C-UGIA-DPT02	SL3808-12		78.4		79.3		83.2	
CHAAP-EB-050218-DPT	SL3808-14		79.0		80.8		91.8	
CHAAP-19C-LGIA-DPT22	SL3808-15		83.9		88.0		97.0	
CHAAP-19C-UGIA-DPT21	SL3808-17		80.5		87.2		94.1	
CHAAP-19C-UGIA-DPT17	SL3808-2		81.6		85.1		89.6	
CHAAP-19C-LGIA-DPT18	SL3808-4		83.0		87.4		96.2	
CHAAP-19C-UGIA-DPT13	SL3808-6		76.2		77.1		88.8	
CHAAP-19C-LGIA-DPT14	SL3808-8		83.4		84.6		90.7	
Method Blank Sample	WG227671-1RA		84.9		85.1		102.	
Laboratory Control S	WG227671-2		87.8		82.8		94.9	
Matrix Spike	WG227671-3		85.4		83.1		85.3	
Matrix Spike Duplica	WG227671-4		76.4		76.3		82.0	

		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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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227671-2
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: U0708.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	91.5	2.00	1.83	ug/L	43-120
2-Methylnaphthalene	87.0	2.00	1.74	ug/L	39-120
Acenaphthylene	85.0	2.00	1.70	ug/L	35-121
Acenaphthene	87.5	2.00	1.75	ug/L	48-120
Fluorene	84.0	2.00	1.68	ug/L	50-120
Phenanthrene	89.5	2.00	1.79	ug/L	53-120
Anthracene	93.5	2.00	1.87	ug/L	53-120
Fluoranthene	89.5	2.00	1.79	ug/L	58-120
Pyrene	111.	2.00	2.22	ug/L	53-121
Benzo(a)anthracene	94.0	2.00	1.88	ug/L	59-120
Chrysene	108.	2.00	2.15	ug/L	57-120
Benzo(b)Fluoranthene	90.0	2.00	1.80	ug/L	53-126
Benzo(k)fluoranthene	104.	2.00	2.08	ug/L	54-125
Benzo(a)pyrene	85.5	2.00	1.71	ug/L	53-120
Indeno(1,2,3-cd)pyrene	94.0	2.00	1.88	ug/L	48-130
Dibenzo(a,h)anthracene	92.0	2.00	1.84	ug/L	44-131
Benzo(g,h,i)perylene	96.0	2.00	1.92	ug/L	44-128
2-Methylnaphthalene-D10	87.8				43-120
Fluorene-D10	82.8				29-120
Pyrene-D10	94.9				53-166

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MS/MSD Recovery Report

MS ID: WG227671-3
MSD ID: WG227671-4
Sample ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project:
SDG: SL3808
MS File ID: U0714.D

Received Date:
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671
Report Date: 14-MAY-18
MSD File ID: U0715.D

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
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
Naphthalene	1.90	1.92	ug/L	U0.096	1.7	1.6	88.2	82.2	6	20	43-120
2-Methylnaphthalene	1.90	1.92	ug/L	U0.096	1.6	1.5	85.6	76.4	10	20	39-120
Acenaphthylene	1.90	1.92	ug/L	U0.096	1.6	1.5	85.0	77.0	9	20	35-121
Acenaphthene	1.90	1.92	ug/L	U0.096	1.7	1.5	87.7	79.0	9	20	48-120
Fluorene	1.90	1.92	ug/L	U0.096	1.6	1.5	86.1	76.4	11	20	50-120
Phenanthrene	1.90	1.92	ug/L	U0.096	1.6	1.6	85.0	84.2	0	20	53-120
Anthracene	1.90	1.92	ug/L	U0.096	1.6	1.6	84.0	83.7	1	20	53-120
Fluoranthene	1.90	1.92	ug/L	U0.096	1.6	1.6	84.0	82.2	1	20	58-120
Pyrene	1.90	1.92	ug/L	U0.096	1.8	1.8	96.6	93.6	2	20	53-121
Benzo(a)anthracene	1.90	1.92	ug/L	U0.096	1.8	1.7	96.6	88.9	7	20	59-120
Chrysene	1.90	1.92	ug/L	U0.096	1.8	1.9	96.1	96.7	2	20	57-120
Benzo(b)Fluoranthene	1.90	1.92	ug/L	JB0.11	1.5	1.5	72.8	74.2	3	20	53-126
Benzo(k)fluoranthene	1.90	1.92	ug/L	U0.096	1.7	1.6	88.7	83.2	5	20	54-125
Benzo(a)pyrene	1.90	1.92	ug/L	U0.096	1.3	1.2	68.2	62.4	8	20	53-120
Indeno(1,2,3-cd)pyrene	1.90	1.92	ug/L	U0.096	1.2	1.3	60.4	66.0	10	20	48-130
Dibenzo(a,h)anthracene	1.90	1.92	ug/L	U0.096	1.2	1.3	60.9	66.0	9	20	44-131
Benzo(g,h,i)perylene	1.90	1.92	ug/L	U0.096	1.0	1.2	53.6	59.8	12	20	44-128
2-Methylnaphthalene-D10							85.4	76.4			43-120
Fluorene-D10							83.1	76.3			29-120
Pyrene-D10							85.3	82.0			53-166

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : U0724.D
Instrument ID : GCMS-U
Matrix : AQ

SDG : SL3808
Lab Sample ID : WG227671-1RA
Date Extracted : 04-MAY-18
Date Analyzed : 08-MAY-18
Time Analyzed : 11:38

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	WG227671-2	U0708.D	05/07/18	15:08
CHAAP-19C-UGIA-DPT17	SL3808-2	U0712.D	05/07/18	17:11
CHAAP-19C-LGIA-DPT18	SL3808-4	U0713.D	05/07/18	17:41
Matrix Spike	WG227671-3	U0714.D	05/07/18	18:11
Matrix Spike Duplica	WG227671-4	U0715.D	05/07/18	18:42
CHAAP-19C-UGIA-DPT13	SL3808-6	U0716.D	05/07/18	19:13
CHAAP-19C-LGIA-DPT14	SL3808-8	U0717.D	05/07/18	19:44
CHAAP-19C-LGIA-DPT114	SL3808-10	U0718.D	05/07/18	20:15
CHAAP-19C-UGIA-DPT02	SL3808-12	U0719.D	05/07/18	20:47
CHAAP-EB-050218-DPT	SL3808-14	U0720.D	05/07/18	21:18
CHAAP-19C-LGIA-DPT22	SL3808-15	U0729.D	05/08/18	14:11
CHAAP-19C-UGIA-DPT21	SL3808-17	U0730.D	05/08/18	14:42

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ANALYTICAL SERVICES

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : UD891.D
Instrument ID : GCMS-U

SDG : SL3808
Date Analyzed : 07-MAY-18
Time Analyzed : 10:33

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	34.1		
68	Less than 2.0% of mass 69	0.6	1.56	1
69	Less than 100.0% of mass 198	37.1		
70	Less than 2.0% of mass 69	0.0	0.0	1
127	40.0 - 60.0% of mass 198	43.3		
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	6.8		
275	10.0 - 30.0% of mass 198	18.6		
365	1.0 - 100.0% of mass 198	2.4		
441	0.0 - 100.0% of mass 443	10.0	87.90	2
442	40.0 - 100.0% of mass 198	61.4		
443	17.0 - 23.0% of mass 442	11.4	18.52	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	WG227762-4	U0700.D	05/07/18	10:52
Initial Calibration	WG227762-2	U0701.D	05/07/18	11:25
Initial Calibration	WG227762-3	U0702.D	05/07/18	11:56
Initial Calibration	WG227762-5	U0703.D	05/07/18	12:27
Initial Calibration	WG227762-6	U0704.D	05/07/18	12:59
Initial Calibration	WG227762-7	U0705.D	05/07/18	13:29
Independent Source	WG227762-8	U0706.D	05/07/18	14:00
Laboratory Control S	WG227671-2	U0708.D	05/07/18	15:08
CHAAP-19C-UGIA-DPT17	SL3808-2	U0712.D	05/07/18	17:11
CHAAP-19C-LGIA-DPT18	SL3808-4	U0713.D	05/07/18	17:41
Matrix Spike	WG227671-3	U0714.D	05/07/18	18:11
Matrix Spike Duplica	WG227671-4	U0715.D	05/07/18	18:42
CHAAP-19C-UGIA-DPT13	SL3808-6	U0716.D	05/07/18	19:13
CHAAP-19C-LGIA-DPT14	SL3808-8	U0717.D	05/07/18	19:44
CHAAP-19C-LGIA-DPT114	SL3808-10	U0718.D	05/07/18	20:15
CHAAP-19C-UGIA-DPT02	SL3808-12	U0719.D	05/07/18	20:47
CHAAP-EB-050218-DPT	SL3808-14	U0720.D	05/07/18	21:18
Continuing Calibrati	WG227762-9	U0721.D	05/07/18	21:50

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : UD892.D
Instrument ID : GCMS-U

SDG : SL3808
Date Analyzed : 08-MAY-18
Time Analyzed : 10:39

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	32.2		
68	Less than 2.0% of mass 69	0.6	1.57	1
69	Less than 100.0% of mass 198	35.0		
70	Less than 2.0% of mass 69	0.2	0.59	1
127	40.0 - 60.0% of mass 198	44.0		
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	7.1		
275	10.0 - 30.0% of mass 198	20.5		
365	1.0 - 100.0% of mass 198	2.8		
441	0.0 - 100.0% of mass 443	12.0	84.05	2
442	40.0 - 100.0% of mass 198	72.2		
443	17.0 - 23.0% of mass 442	14.2	19.74	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	WG227838-2	U0723.D	05/08/18	10:57
Method Blank Sample	WG227671-1RA	U0724.D	05/08/18	11:38
CHAAP-19C-LGIA-DPT22	SL3808-15	U0729.D	05/08/18	14:11
CHAAP-19C-UGIA-DPT21	SL3808-17	U0730.D	05/08/18	14:42
Continuing Calibrati	WG227838-3	U0745.D	05/08/18	22:26

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-U
Lab File IDs : U0701.D U0702.D U0700.D U0703.D U0704.D U0705.D
Column ID:
Calibration Date(s): 07-MAY-18 10:52, 07-MAY-18 13:29

	0.200000(Level 1	0.500000(Level 2	2.0000 Level 3	7.0000 Level 4	10.0000 Level 5	15.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.88542	0.88307	0.81957	0.70383	0.67196	0.61045	AVG		0.76238		15.2585(	15.00000	W(
2-Methylnaphthalene	0.17778	0.21097	0.19125	0.17867	0.17919	0.16932	AVG		0.18453		7.97858	15.00000	O
Acenaphthylene	1.64042	1.70167	1.64788	1.46001	1.38995	1.29267	AVG		1.52210		10.8362(	15.00000	O
Acenaphthene	1.09966	1.09741	1.01833	0.93865	0.89247	0.83236	AVG		0.97981		11.2490(	15.00000	O
Fluorene	1.23599	1.31261	1.16973	1.05581	0.99735	0.90728	AVG		1.11313		13.7516(	15.00000	O
Phenanthrene	1.05654	1.04300	0.99667	0.91392	0.84873	0.77937	AVG		0.93970		11.8705(	15.00000	O
Anthracene	1.08763	1.08203	1.01890	0.94217	0.94158	0.82651	AVG		0.98314		10.1628(	15.00000	O
Fluoranthene	1.19570	1.10964	1.01521	0.93477	0.87679	0.82487	AVG		0.99283		14.2690(	15.00000	O
Pyrene	27616	90269	261257	755561	919972	1284872	LNR	-0.16850	1.23824		0.99979	0.99000	O
Benzo(a)anthracene	0.98312	0.87280	0.89511	0.90161	0.85086	0.90605	AVG		0.90159		4.98781	15.00000	O
Chrysene	36038	79088	206631	588656	706566	1033815	LNR	-0.19558	0.97882		0.99875	0.99000	O
Benzo(b)fluoranthene	18185	36278	128778	423517	460999	703705	LNR	0.07529	1.04066		0.99709	0.99000	O
Benzo(k)fluoranthene	29202	61059	193349	536586	642404	866364	LNR	-0.19538	1.30334		0.99944	0.99000	O
Benzo(a)pyrene	1.38616	1.10129	0.94532	1.01574	1.00508	1.04683	AVG		1.08340		14.4829(	15.00000	O
Indeno(1,2,3-cd)pyrene	15884	26975	108952	359406	401525	587525	LNR	0.04652	0.87729		0.99898	0.99000	O
Dibenzo(a,h)anthracene	11177	18271	79578	267575	284670	445530	LNR	0.14279	0.65822		0.99560	0.99000	O
Benzo(g,h,i)perylene	17824	27930	109342	334725	369252	526704	LNR	-0.10470	0.78765		0.99949	0.99000	O
2-Methylnaphthalene-D10	1.09357	1.06667	1.02885	0.92391	0.87558	0.79900	AVG		0.96460		12.1062(	15.00000	
Fluorene-D10	0.83330	0.92878	0.85036	0.78662	0.75145	0.73738	AVG		0.81465		8.74877	15.00000	
Pyrene-D10	0.99669	1.08789	0.92373	0.89217	0.89170	0.90873	AVG		0.95015		8.19714	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227762-9
Analytical Date: 05/07/18 21:50
Lab File ID : U0721.D
Instrument ID: GCMS-U
Initial Calibration Date(s): 05/07/18 10:52 05/07/18 13:29
Column ID:

	Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27	Naphthalene	0.76238	0.83830	0.83830	0.010	9.95841	20.00000	Averaged	
33	2-Methylnaphthalene	0.18453	0.19636	0.19636	0.010	6.40901	20.00000	Averaged	
45	Acenaphthylene	1.52210	1.73860	1.73860	0.010	14.22376	20.00000	Averaged	
48	Acenaphthene	0.97981	1.05567	1.05567	0.010	7.74230	20.01000	Averaged	
56	Fluorene	1.11313	1.23213	1.23213	0.010	10.69096	20.00000	Averaged	
66	Phenanthrene	0.93970	1.00476	1.00476	0.010	6.92340	20.00000	Averaged	
67	Anthracene	0.98314	1.03724	1.03724	0.010	5.50265	20.00000	Averaged	
70	Fluoranthene	0.99283	1.00897	1.00897	0.010	1.62595	20.01000	Averaged	
72	Pyrene	2.00000	2.37455	1.55359	0.010	18.72751	20.00000	Linear	
74	Benzo(a)anthracene	0.90159	0.85496	0.85496	0.010	-5.17214	20.00000	Averaged	
77	Chrysene	2.00000	2.41568	1.25883	0.010	20.78390	20.00000	Linear	*
80	Benzo(b)fluoranthene	2.00000	1.83891	0.92550	0.010	-8.05467	20.00000	Linear	
81	Benzo(k)fluoranthene	2.00000	2.11691	1.48139	0.010	5.84570	20.00000	Linear	
82	Benzo(a)pyrene	1.08340	1.05315	1.05315	0.010	-2.79222	20.01000	Averaged	
84	Indeno(1,2,3-cd)pyrene	2.00000	1.64742	0.70631	0.010	-17.62908	20.00000	Linear	
85	Dibenzo(a,h)anthracene	2.00000	1.61783	0.49485	0.010	-19.10854	20.00000	Linear	
86	Benzo(g,h,i)perylene	2.00000	1.75917	0.72579	0.010	-12.04154	20.00000	Linear	
32	2-Methylnaphthalene-D10	0.96460	1.07247	1.07247	0.010	11.18287	20.00000	Averaged	
55	Fluorene-D10	0.81465	0.92300	0.92300	0.010	13.30050	20.00000	Averaged	
71	Pyrene-D10	0.95015	1.05572	1.05572	0.010	11.11064	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
SDG: SL3808
Lab ID : WG227838-2
Analytical Date: 05/08/18 10:57
Lab File ID : U0723.D
Instrument ID: GCMS-U
Initial Calibration Date(s): 05/07/18 10:52 05/07/18 13:29
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	0.76238	0.80826	0.80826	0.010	6.01799	20.00000	Averaged	
33 2-Methylnaphthalene	0.18453	0.19821	0.19821	0.010	7.41125	20.00000	Averaged	
45 Acenaphthylene	1.52210	1.62157	1.62157	0.010	6.53532	20.00000	Averaged	
48 Acenaphthene	0.97981	0.99883	0.99883	0.010	1.94111	20.01000	Averaged	
56 Fluorene	1.11313	1.18195	1.18195	0.010	6.18245	20.00000	Averaged	
66 Phenanthrene	0.93970	1.00923	1.00923	0.010	7.39896	20.00000	Averaged	
67 Anthracene	0.98314	1.05088	1.05088	0.010	6.89100	20.00000	Averaged	
70 Fluoranthene	0.99283	1.02508	1.02508	0.010	3.24817	20.01000	Averaged	
72 Pyrene	2.00000	2.41723	1.58001	0.010	20.86133	20.00000	Linear	*
74 Benzo(a)anthracene	0.90159	0.89052	0.89052	0.010	-1.22812	20.00000	Averaged	
77 Chrysene	2.00000	2.38284	1.24276	0.010	19.14201	20.00000	Linear	
80 Benzo(b)fluoranthene	2.00000	1.84236	0.92729	0.010	-7.88208	20.00000	Linear	
81 Benzo(k)fluoranthene	2.00000	2.13567	1.49362	0.010	6.78369	20.00000	Linear	
82 Benzo(a)pyrene	1.08340	0.94973	0.94973	0.010	-12.33839	20.01000	Averaged	
84 Indeno(1,2,3-cd)pyrene	2.00000	1.64174	0.70382	0.010	-17.91307	20.00000	Linear	
85 Dibenzo(a,h)anthracene	2.00000	1.61961	0.49544	0.010	-19.01944	20.00000	Linear	
86 Benzo(g,h,i)perylene	2.00000	1.75433	0.72389	0.010	-12.28327	20.00000	Linear	
32 2-Methylnaphthalene-D10	0.96460	0.99837	0.99837	0.010	3.50149	20.00000	Averaged	
55 Fluorene-D10	0.81465	0.86587	0.86587	0.010	6.28791	20.00000	Averaged	
71 Pyrene-D10	0.95015	1.05418	1.05418	0.010	10.94889	20.00000	Averaged	

*** = Compound out of QC criteria**

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Tel:(207) 874-2400 Fax:(207) 775-4029
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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227838-3
Analytical Date: 05/08/18 22:26
Lab File ID : U0745.D
Instrument ID: GCMS-U
Initial Calibration Date(s): 05/07/18 10:52 05/07/18 13:29
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	0.76238	0.80602	0.80602	0.010	5.72440	20.00000	Averaged
33 2-Methylnaphthalene	0.18453	0.20010	0.20010	0.010	8.43607	20.00000	Averaged
45 Acenaphthylene	1.52210	1.58721	1.58721	0.010	4.27801	20.00000	Averaged
48 Acenaphthene	0.97981	0.97099	0.97099	0.010	-0.90013	20.01000	Averaged
56 Fluorene	1.11313	1.16690	1.16690	0.010	4.83066	20.00000	Averaged
66 Phenanthrene	0.93970	0.94116	0.94116	0.010	0.15479	20.00000	Averaged
67 Anthracene	0.98314	1.01819	1.01819	0.010	3.56547	20.00000	Averaged
70 Fluoranthene	0.99283	0.95986	0.95986	0.010	-3.32008	20.01000	Averaged
72 Pyrene	2.00000	2.31615	1.51744	0.010	15.80772	20.00000	Linear
74 Benzo(a)anthracene	0.90159	0.94494	0.94494	0.010	4.80776	20.00000	Averaged
77 Chrysene	2.00000	2.29199	1.19830	0.010	14.59973	20.00000	Linear
80 Benzo(b)fluoranthene	2.00000	1.85433	0.93353	0.010	-7.28334	20.00000	Linear
81 Benzo(k)fluoranthene	2.00000	2.20777	1.54060	0.010	10.38850	20.00000	Linear
82 Benzo(a)pyrene	1.08340	1.01710	1.01710	0.010	-6.11975	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	1.64320	0.70446	0.010	-17.84000	20.00000	Linear
85 Dibenzo(a,h)anthracene	2.00000	1.68791	0.51791	0.010	-15.60467	20.00000	Linear
86 Benzo(g,h,i)perylene	2.00000	1.63807	0.67810	0.010	-18.09639	20.00000	Linear
32 2-Methylnaphthalene-D10	0.96460	0.99143	0.99143	0.010	2.78202	20.00000	Averaged
55 Fluorene-D10	0.81465	0.85758	0.85758	0.010	5.26937	20.00000	Averaged
71 Pyrene-D10	0.95015	1.06528	1.06528	0.010	12.11686	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 : WG227762-4
Lab File ID : U0700.D

SDG: SL3808
Analytical Date: 05/07/18 10:52
Instrument ID: GCMS-U

		1,4-DICHLOROBENZENE-D4				NAPHTHALENE-D8				ACENAPHTHENE-D10			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	51585		6.02		137647		7.65		60128		9.97	
	Upper Limit	103170		6.19		275294		7.81		120256		10.13	
	Lower Limit	25792.5		5.86		68823.5		7.48		30064		9.80	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG227671-2	41647		6.02		109374		7.66		48195		9.97	
CHAAP-19C-UGIA-DI	SL3808-2	48001		6.04		120169		7.67		56310		9.98	
CHAAP-19C-LGIA-DI	SL3808-4	44420		6.05		126057		7.68		58045		9.98	
Matrix Spike	WG227671-3	50862		6.03		122350		7.65		55169		9.97	
Matrix Spike Duplica	WG227671-4	45558		6.03		111166		7.66		49915		9.97	
CHAAP-19C-UGIA-DI	SL3808-6	45946		6.04		126868		7.67		57601		9.98	
CHAAP-19C-LGIA-DI	SL3808-8	41664		6.05		118044		7.68		52303		9.98	
CHAAP-19C-LGIA-DI	SL3808-10	41532		6.04		121251		7.68		55694		9.98	
CHAAP-19C-UGIA-DI	SL3808-12	51291		6.04		159766		7.67		60352		9.98	
CHAAP-EB-050218-D	SL3808-14	45406		6.04		128715		7.66		57348		9.98	
Continuing Calibrati	WG227762-9	39728		6.03		108449		7.65		46780		9.97	
Continuing Calibrati	WG227838-2	46490		6.03		127174		7.65		57389		9.97	
Method Blank Sample	WG227671-1RA	46496		6.03		149142		7.67		54416		9.98	
CHAAP-19C-LGIA-DI	SL3808-15	49850		6.04		135701		7.66		63054		9.97	
CHAAP-19C-UGIA-DI	SL3808-17	49361		6.03		154270		7.67		61929		9.97	
Continuing Calibrati	WG227838-3	43462		6.03		115995		7.65		53995		9.97	

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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ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227762-4
Lab File ID : U0700.D

SDG: SL3808
Analytical Date: 05/07/18 10:52
Instrument ID: GCMS-U

		PHENANTHRENE-D10				CHRYSENE-D12				PERYLENE-D12			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	97557		11.97		75196		15.74		54533		18.77	
	Upper Limit	195114		12.13		150392		15.91		109066		18.93	
	Lower Limit	48778.5		11.80		37598		15.58		27266.5		18.60	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG227671-2	77243		11.97		48072		15.74		33004		18.78	
CHAAP-19C-UGIA-DI	SL3808-2	93228		11.98		57194		15.77		41317		18.78	
CHAAP-19C-LGIA-DI	SL3808-4	95389		11.98		58600		15.76		41611		18.78	
Matrix Spike	WG227671-3	97139		11.97		64969		15.75		48504		18.76	
Matrix Spike Duplica	WG227671-4	79958		11.97		54075		15.74		40762		18.77	
CHAAP-19C-UGIA-DI	SL3808-6	96860		11.98		60614		15.77		41203		18.78	
CHAAP-19C-LGIA-DI	SL3808-8	86885		11.99		56061		15.77		37971		18.78	
CHAAP-19C-LGIA-DI	SL3808-10	94740		11.99		58572		15.77		36971		18.78	
CHAAP-19C-UGIA-DI	SL3808-12	101640		11.98		66585		15.77		45311		18.78	
CHAAP-EB-050218-D	SL3808-14	95754		11.98		56410		15.77		37311		18.79	
Continuing Calibrati	WG227762-9	80735		11.97		55109		15.75		38018		18.78	
Continuing Calibrati	WG227838-2	88946		11.95		61397		15.74		43342		18.77	
Method Blank Sample	WG227671-1RA	87677		11.98		47484		15.77		30742		18.80	
CHAAP-19C-LGIA-DI	SL3808-15	111470		11.97		74247		15.74		55595		18.74	
CHAAP-19C-UGIA-DI	SL3808-17	106098		11.97		66300		15.75		51497		18.74	
Continuing Calibrati	WG227838-3	90389		11.96		58723		15.73		40250		18.75	

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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-2
Client ID: CHAAP-19C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10160.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 05-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		98.6	%					

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10161.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 05-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		94.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-6
Client ID: CHAAP-19C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10162.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 05-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		94.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-8
Client ID: CHAAP-19C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10163.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 05-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		95.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-10
Client ID: CHAAP-19C-LGIA-DPT114
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10286.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-12
Client ID: CHAAP-19C-UGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10287.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		97.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-14
Client ID: CHAAP-EB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10288.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		95.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-15
Client ID: CHAAP-19C-LGIA-DPT22
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10289.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		94.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-17
Client ID: CHAAP-19C-UGIA-DPT21
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10290.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		96.7	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227670-1
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: HLE10127.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 04-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		98.0	%					

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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:** SL3808

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-19C-LGIA-DPT11	SL3808-10	B	96.3	
CHAAP-19C-UGIA-DPT02	SL3808-12	B	97.5	
CHAAP-EB-050218-DPT	SL3808-14	B	95.8	
CHAAP-19C-LGIA-DPT22	SL3808-15	B	94.6	
CHAAP-19C-UGIA-DPT21	SL3808-17	B	96.7	
CHAAP-19C-UGIA-DPT17	SL3808-2	B	98.6	
CHAAP-19C-LGIA-DPT18	SL3808-4	B	94.4	
CHAAP-19C-UGIA-DPT13	SL3808-6	B	94.2	
CHAAP-19C-LGIA-DPT14	SL3808-8	B	95.8	
Method Blank Sample	WG227670-1	B	98.0	
Laboratory Control S	WG227670-2	B	95.7	
Matrix Spike	WG227670-3	B	97.2	
Matrix Spike Duplica	WG227670-4	B	97.7	

		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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Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227670-2
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: HLE10128.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 04-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	104.	5.00	5.21	ug/L	65-135
RDX	103.	5.00	5.13	ug/L	68-130
1,3,5-Trinitrobenzene	104.	5.00	5.18	ug/L	73-125
1,3-Dinitrobenzene	105.	5.00	5.23	ug/L	78-120
Tetryl	121.	5.00	6.06	ug/L	64-128
Nitrobenzene	101.	5.00	5.07	ug/L	65-134
2,4,6-Trinitrotoluene	106.	5.00	5.31	ug/L	71-123
4-Am-DNT	110.	5.00	5.52	ug/L	76-125
2-Am-DNT	105.	5.00	5.25	ug/L	79-120
2,6-Dinitrotoluene	101.	5.00	5.04	ug/L	77-127
2,4-Dinitrotoluene	105.	5.00	5.25	ug/L	78-120
2-Nitrotoluene	106.	5.00	5.28	ug/L	70-127
4-Nitrotoluene	110.	5.00	5.49	ug/L	71-127
3-Nitrotoluene	103.	5.00	5.13	ug/L	73-125
Nitroglycerin	89.0	20.0	17.8	ug/L	74-127
PETN	99.5	20.0	19.9	ug/L	73-127
1,2-Dinitrobenzene	95.7				83-120

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MS/MSD Recovery Report

MS ID: WG227670-3
MSD ID: WG227670-4
Sample ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project:
SDG: SL3808
MS File ID: HLE10129.D

Received Date:
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670
Report Date: 18-MAY-18
MSD File ID: HLE10130.D

Analysis Date: 04-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
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
HMX	5.00	5.00	ug/L	U0.12	5.2	4.9	103.	98.2	5	20	65-135
RDX	5.00	5.00	ug/L	U0.12	5.1	4.9	103.	98.0	4	20	68-130
1,3,5-Trinitrobenzene	5.00	5.00	ug/L	U0.12	5.3	5.1	106.	101.	4	20	73-125
1,3-Dinitrobenzene	5.00	5.00	ug/L	U0.12	5.2	5.1	105.	102.	3	20	78-120
Tetryl	5.00	5.00	ug/L	U0.12	6.1	5.8	121.	116.	4	20	64-128
Nitrobenzene	5.00	5.00	ug/L	U0.12	5.1	4.9	103.	97.8	5	20	65-134
2,4,6-Trinitrotoluene	5.00	5.00	ug/L	U0.12	5.4	5.2	107.	104.	3	20	71-123
4-Am-DNT	5.00	5.00	ug/L	U0.12	5.6	5.3	112.	106.	5	20	76-125
2-Am-DNT	5.00	5.00	ug/L	U0.12	5.4	5.1	107.	101.	6	20	79-120
2,6-Dinitrotoluene	5.00	5.00	ug/L	U0.12	5.1	4.9	102.	97.8	4	20	77-127
2,4-Dinitrotoluene	5.00	5.00	ug/L	U0.12	5.4	5.1	107.	103.	4	20	78-120
2-Nitrotoluene	5.00	5.00	ug/L	U0.12	5.3	5.1	107.	102.	4	20	70-127
4-Nitrotoluene	5.00	5.00	ug/L	U0.12	6.2	6.0	124.	121.	3	20	71-127
3-Nitrotoluene	5.00	5.00	ug/L	U0.12	5.0	4.8	101.	96.2	5	20	73-125
Nitroglycerin	20.0	20.0	ug/L	U2.0	18.	20.	91.5	99.5	8	20	74-127
PETN	20.0	20.0	ug/L	U2.0	20.	21.	101.	105.	4	20	73-127
1,2-Dinitrobenzene							97.2	97.7			83-120

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10127.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL3808
Lab Sample ID : WG227670-1
Date Extracted : 04-MAY-18
Date Analyzed : 04-MAY-18
Time Analyzed : 15:22

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	WG227670-2	HLE10128.	05/04/18	15:53
Matrix Spike	WG227670-3	HLE10129.	05/04/18	16:23
Matrix Spike Duplica	WG227670-4	HLE10130.	05/04/18	16:54
CHAAP-19C-UGIA-DPT17	SL3808-2	HLE10160.	05/05/18	08:17
CHAAP-19C-LGIA-DPT18	SL3808-4	HLE10161.	05/05/18	08:48
CHAAP-19C-UGIA-DPT13	SL3808-6	HLE10162.	05/05/18	09:19
CHAAP-19C-LGIA-DPT14	SL3808-8	HLE10163.	05/05/18	09:49
CHAAP-19C-LGIA-DPT114	SL3808-10	HLE10286.	05/10/18	10:12
CHAAP-19C-UGIA-DPT02	SL3808-12	HLE10287.	05/10/18	10:43
CHAAP-EB-050218-DPT	SL3808-14	HLE10288.	05/10/18	11:14
CHAAP-19C-LGIA-DPT22	SL3808-15	HLE10289.	05/10/18	11:45
CHAAP-19C-UGIA-DPT21	SL3808-17	HLE10290.	05/10/18	12:16

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10438.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL3808
Lab Sample ID : WG227670-1C
Date Extracted : 04-MAY-18
Date Analyzed : 14-MAY-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-EB-050218-DPT	SL3808-14C	HLE10551.	05/17/18	17:21

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
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
	0.100000(	0.200000(	0.400000(	1.0000	2.0000	0.000000(	0.000000(		New	b	m1	%RSD	%RSD	
NITROGLYCERIN	387	842	1740	4623	9365	17883	35504		LNR	0.000e+00	4458	0.99971	0.99000	O
PETN	146	338	682	1700	3598	6996	13848		LNR	0.00110	1738	0.99984	0.99000	O

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
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
4-AM-DNT	63.00000	118	244	663	1299	2450	4682		LNR	-0.01508	2353	0.99890	0.99000	O
2-AM-DNT	65.00000	171	311	854	1698	3193	6303		LNR	-0.00832	3155	0.99955	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
4-nitrotoluene	101	120	227	531	1075	2023	3902		LNR	-0.02177	1947	0.99936	0.99000	O
3-nitrotoluene	72.00000	124	256	701	1390	2617	5111		LNR	-0.01061	2561	0.99942	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

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
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	
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

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
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
4-AM-DNT	4200	4040	4240	4260	4366	4695	4318		AVG		4303	4.68155	20.00000	O
2-AM-DNT	5360	5700	5640	5720	5838	6280	5787		AVG		5761	4.78978	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
4-nitrotoluene	2280	1980	2350	2484	2298	2635	2370		AVG		2342	8.60342	20.00000	O
3-nitrotoluene	3360	3180	3390	3404	3136	3585	3225		AVG		3326	4.69272	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

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227584-17
Lab File ID : HLE10126.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/04/18 14:47
Instrument ID: HPLC02
Column ID: A

Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5372	0.010	-2.57013	20.00000	Averaged
155 PETN	2876	3063	0.010	6.49065	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 : WG227584-17
Lab File ID : HLE10126.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/04/18 14:47
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	5390	5390	0.010	-0.01193	20.00000	Averaged	
4	RDX	0.50000	0.49274	5406	0.010	-1.45172	20.00000	Linear	
5	1,3,5-trinitrobenzene	3689	3952	3952	0.010	7.13345	20.00000	Averaged	
6	1,3-dinitrobenzene	7444	7740	7740	0.010	3.98035	20.00000	Averaged	
7	nitrobenzene	6867	6790	6790	0.010	-1.11616	20.00000	Averaged	
9	TETRYL	2535	3100	3100	0.010	22.30865	20.00000	Averaged	*
10	2,4,6-trinitrotoluene	2526	2596	2596	0.010	2.75665	20.00000	Averaged	
11	4-AM-DNT	4303	4274	4274	0.010	-0.66735	20.00000	Averaged	
12	2-AM-DNT	5761	5898	5898	0.010	2.38314	20.00000	Averaged	
13	2,6-dinitrotoluene	0.50000	0.50039	2944	0.010	0.07714	20.00000	Linear	
14	2,4-dinitrotoluene	4619	4786	4786	0.010	3.62672	20.00000	Averaged	
15	2-nitrotoluene	2890	3020	3020	0.010	4.51377	20.00000	Averaged	
16	4-nitrotoluene	2342	2486	2486	0.010	6.12917	20.00000	Averaged	
17	3-nitrotoluene	3326	3376	3376	0.010	1.51421	20.00000	Averaged	
2	1,2-dinitrobenzene	4627	4844	4844	0.010	4.68017	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 : WG227584-18
Lab File ID : HLE10137.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/04/18 20:30
Instrument ID: HPLC02
Column ID: A

	Compound	$\overline{RRF}$/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150	NITROGLYCERIN	5513	5273	0.010	-4.35675	20.00000	Averaged
155	PETN	2876	3005	0.010	4.49124	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
SDG: SL3808
Lab ID : WG227584-18
Analytical Date: 05/04/18 20:30
Lab File ID : HLE10137.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/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	0.24471	5304	0.010	-2.11449	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3868	3868	0.010	4.85632	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7592	7592	0.010	1.99209	20.00000	Averaged
7	nitrobenzene	6867	6680	6680	0.010	-2.71811	20.00000	Averaged
9	TETRYL	2535	2832	2832	0.010	11.73487	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2548	2548	0.010	0.85668	20.00000	Averaged
11	4-AM-DNT	4303	4304	4304	0.010	0.02988	20.00000	Averaged
12	2-AM-DNT	5761	5828	5828	0.010	1.16801	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.24277	2932	0.010	-2.89023	20.00000	Linear
14	2,4-dinitrotoluene	4619	4724	4724	0.010	2.28429	20.00000	Averaged
15	2-nitrotoluene	2890	2980	2980	0.010	3.12948	20.00000	Averaged
16	4-nitrotoluene	2342	2456	2456	0.010	4.84845	20.00000	Averaged
17	3-nitrotoluene	3326	3352	3352	0.010	0.79254	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4808	4808	0.010	3.90220	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 : WG227584-20
Lab File ID : HLE10159.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/05/18 07:46
Instrument ID: HPLC02
Column ID: A

Compound	$\overline{RRF}$/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5205	0.010	-5.59016	20.00000	Averaged
155 PETN	2876	2952	0.010	2.64830	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
SDG: SL3808
Lab ID : WG227584-20
Analytical Date: 05/05/18 07:46
Lab File ID : HLE10159.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	5244	5244	0.010	-2.72032	20.00000	Averaged
4	RDX	0.25000	0.24507	5312	0.010	-1.97039	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3812	3812	0.010	3.33824	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7524	7524	0.010	1.07857	20.00000	Averaged
7	nitrobenzene	6867	6620	6620	0.010	-3.59190	20.00000	Averaged
9	TETRYL	2535	2708	2708	0.010	6.84252	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2512	2512	0.010	-0.56829	20.00000	Averaged
11	4-AM-DNT	4303	4232	4232	0.010	-1.64348	20.00000	Averaged
12	2-AM-DNT	5761	5736	5736	0.010	-0.42901	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23650	2860	0.010	-5.40011	20.00000	Linear
14	2,4-dinitrotoluene	4619	4648	4648	0.010	0.63874	20.00000	Averaged
15	2-nitrotoluene	2890	2940	2940	0.010	1.74519	20.00000	Averaged
16	4-nitrotoluene	2342	2400	2400	0.010	2.45777	20.00000	Averaged
17	3-nitrotoluene	3326	3288	3288	0.010	-1.13190	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4676	4676	0.010	1.04964	20.00000	Averaged

*** = Compound out of QC criteria**

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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227584-21
Lab File ID : HLE10164.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/05/18 10:20
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5384	0.010	-2.34340	20.00000	Averaged
155 PETN	2876	3053	0.010	6.14293	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
SDG: SL3808
Lab ID : WG227584-21
Analytical Date: 05/05/18 10:20
Lab File ID : HLE10164.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5374	5374	0.010	-0.30874	20.00000	Averaged
4	RDX	0.50000	0.49815	5466	0.010	-0.37099	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3904	3904	0.010	5.83224	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7724	7724	0.010	3.76540	20.00000	Averaged
7	nitrobenzene	6867	6818	6818	0.010	-0.70839	20.00000	Averaged
9	TETRYL	2535	2788	2788	0.010	9.99887	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2578	2578	0.010	2.04416	20.00000	Averaged
11	4-AM-DNT	4303	4388	4388	0.010	1.98214	20.00000	Averaged
12	2-AM-DNT	5761	5938	5938	0.010	3.07750	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.50178	2952	0.010	0.35601	20.00000	Linear
14	2,4-dinitrotoluene	4619	4778	4778	0.010	3.45350	20.00000	Averaged
15	2-nitrotoluene	2890	3006	3006	0.010	4.02927	20.00000	Averaged
16	4-nitrotoluene	2342	2468	2468	0.010	5.36074	20.00000	Averaged
17	3-nitrotoluene	3326	3348	3348	0.010	0.67227	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4880	4880	0.010	5.45814	20.00000	Averaged

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227584-35
Lab File ID : HLE10281.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/10/18 06:58
Instrument ID: HPLC02
Column ID: A

Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5322	0.010	-3.46798	20.00000	Averaged
155 PETN	2876	3040	0.010	5.69089	20.00000	Averaged

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-35
Analytical Date: 05/10/18 06:58
Lab File ID : HLE10281.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/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	0.49310	5410	0.010	-1.37968	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3810	3810	0.010	3.28402	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7616	7616	0.010	2.31451	20.00000	Averaged
7	nitrobenzene	6867	6754	6754	0.010	-1.64044	20.00000	Averaged
9	TETRYL	2535	2780	2780	0.010	9.68324	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2538	2538	0.010	0.46086	20.00000	Averaged
11	4-AM-DNT	4303	4360	4360	0.010	1.33139	20.00000	Averaged
12	2-AM-DNT	5761	5886	5886	0.010	2.17483	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.49028	2886	0.010	-1.94471	20.00000	Linear
14	2,4-dinitrotoluene	4619	4730	4730	0.010	2.41420	20.00000	Averaged
15	2-nitrotoluene	2890	2970	2970	0.010	2.78341	20.00000	Averaged
16	4-nitrotoluene	2342	2428	2428	0.010	3.65311	20.00000	Averaged
17	3-nitrotoluene	3326	3314	3314	0.010	-0.35009	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4808	4808	0.010	3.90220	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 : WG227584-36
Lab File ID : HLE10292.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/10/18 13:18
Instrument ID: HPLC02
Column ID: A

Compound	$\overline{\text{RRF}}$/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5222	0.010	-5.28181	20.00000	Averaged
155 PETN	2876	2999	0.010	4.28260	20.00000	Averaged

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-36
Analytical Date: 05/10/18 13:18
Lab File ID : HLE10292.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5236	5236	0.010	-2.86873	20.00000	Averaged
4	RDX	0.25000	0.24381	5284	0.010	-2.47473	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3772	3772	0.010	2.25389	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7564	7564	0.010	1.61594	20.00000	Averaged
7	nitrobenzene	6867	6608	6608	0.010	-3.76666	20.00000	Averaged
9	TETRYL	2535	2568	2568	0.010	1.31890	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2484	2484	0.010	-1.67661	20.00000	Averaged
11	4-AM-DNT	4303	4248	4248	0.010	-1.27162	20.00000	Averaged
12	2-AM-DNT	5761	5736	5736	0.010	-0.42901	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23267	2816	0.010	-6.93393	20.00000	Linear
14	2,4-dinitrotoluene	4619	4628	4628	0.010	0.20569	20.00000	Averaged
15	2-nitrotoluene	2890	2944	2944	0.010	1.88362	20.00000	Averaged
16	4-nitrotoluene	2342	2628	2628	0.010	12.19125	20.00000	Averaged
17	3-nitrotoluene	3326	3584	3584	0.010	7.76864	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4732	4732	0.010	2.25982	20.00000	Averaged

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227584-37
Lab File ID : HLE10433.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL3808
Analytical Date: 05/14/18 10:03
Instrument ID: HPLC02
Column ID: A

	Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
8	NITROGLYCERIN	2.00000	2.11976	4725	0.010	5.98822	20.00000	Linear
18	PETN	2.00000	2.01541	1750	0.010	0.77036	20.00000	Linear

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227584-37
Lab File ID : HLE10433.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL3808
Analytical Date: 05/14/18 10:03
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	0.47050	3986	0.010	-5.89919	20.00000	Linear
4	RDX	0.50000	0.47282	3832	0.010	-5.43691	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.47487	9866	0.010	-5.02517	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.47586	11084	0.010	-4.82886	20.00000	Linear
7	nitrobenzene	0.50000	0.48165	6436	0.010	-3.66948	20.00000	Linear
9	TETRYL	0.50000	0.51746	4920	0.010	3.49177	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.47695	5948	0.010	-4.61006	20.00000	Linear
11	4-AM-DNT	0.50000	0.47878	2324	0.010	-4.24443	20.00000	Linear
12	2-AM-DNT	0.50000	0.48512	3114	0.010	-2.97629	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.47989	3622	0.010	-4.02174	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.48332	6728	0.010	-3.33511	20.00000	Linear
15	2-nitrotoluene	0.50000	0.48568	2576	0.010	-2.86354	20.00000	Linear
16	4-nitrotoluene	0.50000	0.53205	2156	0.010	6.40905	20.00000	Linear
17	3-nitrotoluene	0.50000	0.47467	2486	0.010	-5.06655	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.47121	5006	0.010	-5.75761	20.00000	Linear

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227584-38
Lab File ID : HLE10441.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL3808
Analytical Date: 05/14/18 19:20
Instrument ID: HPLC02
Column ID: A

	Compound	$\overline{RRF}$/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
8	NITROGLYCERIN	1.00000	1.02018	4548	0.010	2.01786	20.00000	Linear
18	PETN	1.00000	0.91675	1591	0.010	-8.32544	20.00000	Linear

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-38
Analytical Date: 05/14/18 19:20
Lab File ID : HLE10441.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.25000	0.22691	3880	0.010	-9.23618	20.00000	Linear
4	RDX	0.25000	0.23429	3780	0.010	-6.28380	20.00000	Linear
5	1,3,5-trinitrobenzene	0.25000	0.23424	9748	0.010	-6.30532	20.00000	Linear
6	1,3-dinitrobenzene	0.25000	0.23257	10876	0.010	-6.97361	20.00000	Linear
7	nitrobenzene	0.25000	0.23628	6336	0.010	-5.48718	20.00000	Linear
9	TETRYL	0.25000	0.25154	4900	0.010	0.61708	20.00000	Linear
10	2,4,6-trinitrotoluene	0.25000	0.23331	5892	0.010	-6.67604	20.00000	Linear
11	4-AM-DNT	0.25000	0.22632	2272	0.010	-9.47119	20.00000	Linear
12	2-AM-DNT	0.25000	0.23222	3036	0.010	-7.11236	20.00000	Linear
13	2,6-dinitrotoluene	0.25000	0.23242	3532	0.010	-7.03331	20.00000	Linear
14	2,4-dinitrotoluene	0.25000	0.23188	6516	0.010	-7.24783	20.00000	Linear
15	2-nitrotoluene	0.25000	0.23360	2500	0.010	-6.55805	20.00000	Linear
16	4-nitrotoluene	0.25000	0.25719	2172	0.010	2.87782	20.00000	Linear
17	3-nitrotoluene	0.25000	0.22598	2424	0.010	-9.60807	20.00000	Linear
2	1,2-dinitrobenzene	0.25000	0.22814	4872	0.010	-8.74592	20.00000	Linear

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227584-42
Lab File ID : HLE10549.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL3808
Analytical Date: 05/17/18 15:43
Instrument ID: HPLC02
Column ID: A

	Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
8	NITROGLYCERIN	2.00000	2.12066	4727	0.010	6.03308	20.00000	Linear
18	PETN	2.00000	2.00447	1741	0.010	0.22362	20.00000	Linear

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-42
Analytical Date: 05/17/18 15:43
Lab File ID : HLE10549.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.46788	3964	0.010	-6.42305	20.00000	Linear
4	RDX	0.50000	0.47208	3826	0.010	-5.58430	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.47420	9852	0.010	-5.16014	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.47465	11056	0.010	-5.07017	20.00000	Linear
7	nitrobenzene	0.50000	0.47985	6412	0.010	-4.02988	20.00000	Linear
9	TETRYL	0.50000	0.50540	4808	0.010	1.08022	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.47224	5890	0.010	-5.55151	20.00000	Linear
11	4-AM-DNT	0.50000	0.46263	2248	0.010	-7.47450	20.00000	Linear
12	2-AM-DNT	0.50000	0.47815	3070	0.010	-4.37072	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.47509	3586	0.010	-4.98177	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.47608	6628	0.010	-4.78436	20.00000	Linear
15	2-nitrotoluene	0.50000	0.47770	2534	0.010	-4.46041	20.00000	Linear
16	4-nitrotoluene	0.50000	0.50225	2040	0.010	0.44967	20.00000	Linear
17	3-nitrotoluene	0.50000	0.46530	2438	0.010	-6.94049	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.46592	4950	0.010	-6.81693	20.00000	Linear

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227584-43
Lab File ID : HLE10560.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL3808
Analytical Date: 05/18/18 00:43
Instrument ID: HPLC02
Column ID: A

	Compound	$\overline{RRF}$/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
8	NITROGLYCERIN	1.00000	1.02938	4589	0.010	2.93755	20.00000	Linear
18	PETN	1.00000	0.93228	1618	0.010	-6.77154	20.00000	Linear

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-43
Analytical Date: 05/18/18 00:43
Lab File ID : HLE10560.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.25000	0.22762	3892	0.010	-8.95044	20.00000	Linear
4	RDX	0.25000	0.22889	3692	0.010	-8.44551	20.00000	Linear
5	1,3,5-trinitrobenzene	0.25000	0.23115	9620	0.010	-7.53936	20.00000	Linear
6	1,3-dinitrobenzene	0.25000	0.22989	10752	0.010	-8.04226	20.00000	Linear
7	nitrobenzene	0.25000	0.23073	6188	0.010	-7.70963	20.00000	Linear
9	TETRYL	0.25000	0.22872	4476	0.010	-8.51235	20.00000	Linear
10	2,4,6-trinitrotoluene	0.25000	0.22454	5676	0.010	-10.18211	20.00000	Linear
11	4-AM-DNT	0.25000	0.21910	2204	0.010	-12.36126	20.00000	Linear
12	2-AM-DNT	0.25000	0.22715	2972	0.010	-9.14062	20.00000	Linear
13	2,6-dinitrotoluene	0.25000	0.22895	3480	0.010	-8.42002	20.00000	Linear
14	2,4-dinitrotoluene	0.25000	0.22884	6432	0.010	-8.46520	20.00000	Linear
15	2-nitrotoluene	0.25000	0.22676	2428	0.010	-9.29554	20.00000	Linear
16	4-nitrotoluene	0.25000	0.24692	2092	0.010	-1.23210	20.00000	Linear
17	3-nitrotoluene	0.25000	0.21817	2344	0.010	-12.73131	20.00000	Linear
2	1,2-dinitrobenzene	0.25000	0.22738	4856	0.010	-9.04858	20.00000	Linear

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SL3808
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		
Continuing Calibrati	WG227584-17	05/04/18	14:47	8.468	
Method Blank Sample	WG227670-1	05/04/18	15:22	8.492	
Laboratory Control S	WG227670-2	05/04/18	15:53	8.504	
Matrix Spike	WG227670-3	05/04/18	16:23	8.503	
Matrix Spike Duplica	WG227670-4	05/04/18	16:54	8.496	
Continuing Calibrati	WG227584-18	05/04/18	20:30	8.502	
Continuing Calibrati	WG227584-20	05/05/18	07:46	8.524	
CHAAP-19C-UGIA-DPT17	SL3808-2	05/05/18	08:17	8.52	
CHAAP-19C-LGIA-DPT18	SL3808-4	05/05/18	08:48	8.526	
CHAAP-19C-UGIA-DPT13	SL3808-6	05/05/18	09:19	8.534	
CHAAP-19C-LGIA-DPT14	SL3808-8	05/05/18	09:49	8.533	
Continuing Calibrati	WG227584-21	05/05/18	10:20	8.518	
Continuing Calibrati	WG227584-35	05/10/18	06:58	8.54	
CHAAP-19C-LGIA-DPT11	SL3808-10	05/10/18	10:12	8.547	
CHAAP-19C-UGIA-DPT02	SL3808-12	05/10/18	10:43	8.542	
CHAAP-EB-050218-DPT	SL3808-14	05/10/18	11:14	8.543	
CHAAP-19C-LGIA-DPT22	SL3808-15	05/10/18	11:45	8.545	
CHAAP-19C-UGIA-DPT21	SL3808-17	05/10/18	12:16	8.549	
Continuing Calibrati	WG227584-36	05/10/18	13:18	8.546	

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL3808
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	WG227584-37	05/14/18	10:03	13.30	
Method Blank Sample	WG227670-1C	05/14/18	16:52	13.28	
Continuing Calibrati	WG227584-38	05/14/18	19:20	13.28	
Continuing Calibrati	WG227584-42	05/17/18	15:43	13.37	
CHAAP-EB-050218-DPT	SL3808-14C	05/17/18	17:21	13.39	
Continuing Calibrati	WG227584-43	05/18/18	00:43	13.39	

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Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT17

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	10400			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.974	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	20			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	245			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.565	J		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	331000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	41.6			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	6.26			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	15.4			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	15600			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	10.7			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	66400			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1480			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.014	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	20.2			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	20300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	1.4	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	281000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.25	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	34.9			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	142			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT17-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-003

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.9	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.764	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	13			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	38.3			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	355000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.24	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	1.55			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	5.28			MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	1780			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	71200			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1410			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	5.68			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	19100			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.4	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	305000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.076	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.4	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	27			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-004

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	3140		N	MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.30	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	12			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	96.8			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.16	J		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	372000		NA	MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	27.8			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	1.96			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	12.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	11200		N	MS	5	100	13	60
7439-92-1	LEAD, TOTAL	3.40		N	MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	79200		NA	MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1370		NA	MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.044	J	N	CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	10.9			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	19600		N	MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.12	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	319000		NA	MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.11	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	7.28			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	142			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-005

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, DISSOLVED	9.8	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.26	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	12			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	30.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	381000		NA	MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.9	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.805	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.5	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	6960			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	81900		NA	MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1340		A	MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	4.24			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	19100			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	2.31	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	330000		N	MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.82	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	49.1			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT13

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-006

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	34000			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.667	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	15			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	364			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	1.73			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.327	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	378000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	114			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	17.8			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	47.8			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	43600			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	34.5			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	77100			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1720			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.030	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	55.8			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	24800			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	4.24	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.11	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	297000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.50	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	78.8			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	197			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT13-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-007

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	20	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.10	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.8			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	32.4			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	350000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.44	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.622	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.4	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	6580			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	68600			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1330			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	4.24			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	17200			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.9	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	288000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.2	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	18			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT14

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-008

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	26600			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.49	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	45.5			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	704			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	1.76			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.14	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	419000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	92.1			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	10.3			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	42.4			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	43000			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	23.4			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	77100			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1870			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.028	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	47.2			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	24100			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	4.80	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.14	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	274000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.38	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	75.6			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	207			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT14-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-009

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	17	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.15	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	26.6			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	40.7			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	377000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.9	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	1.09			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.6	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	4090			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	69200			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1280			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	20.4			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18400			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	2.63	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	272000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.3	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	52.4			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT114

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-010

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	40900			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.779	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	16			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	448			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	2.10			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.391	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	366000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	145			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	22.7			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	54.5			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	52000			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	41.2			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	74800			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1740			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.026	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	71.6			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	25100			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	3.88	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.11	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	282000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.59	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	99.8			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	225			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT114-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-011

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	11	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.14	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.4			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	32.3			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	349000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.32	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.605	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.4	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	6380			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	68800			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1300			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	3.64			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	17200			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.96	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	280000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.1	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	15			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT02

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-012

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	24400			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.41	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	31.2			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	330			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	1.48			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.478	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	419000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	106			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	12.3			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	31.8			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	35400			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	22.8			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	81400			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1990			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	63.8			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	23800			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	6.90			MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.12	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	296000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.43	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	60.0			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	143			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT02-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-013

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.9	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.095	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	10			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	41.8			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	390000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.30	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.49	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.6	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	5120			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	76200			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1380			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.90	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18700			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	2.94	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	308000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.3	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	21			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-EB-050218-DPT

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-014

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	9.5	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.50	U		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	54	J		MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	1.9	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	1.0	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	18	J		MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	0.59	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	0.65	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	49	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	1.6	J		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-19C-LGIA-DPT22

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-015

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	10300			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.32	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	13			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	224			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.508	J		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	361000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	56.1			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	5.53			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	26.0			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	21000			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	10.3			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	66800			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1410			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	28.4			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	20500			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.79	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	280000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.16	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	34.6			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	90.3			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT22-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-016

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	10	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.12	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.2			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	36.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	362000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.2	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.736	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.94	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	6240			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	64200			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1320			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	7.23			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	17800			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.4	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	281000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	27			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT21

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-017

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	8650			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.43	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	28.2			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	198			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.509	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.12	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	361000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	33.6			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	4.07			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	17.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	16100			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	12.2			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	59100			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1400			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	13.8			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	19400			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.62	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	238000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.11	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	26.1			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	60.5			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT21-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-018

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.1	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.19	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	22			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	30.0			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	349000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.6	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.51	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.4	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	2300			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	58000			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1240			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.014	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.67	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	17800			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.7	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	240000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.74	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	13			MS	5	10	3.9	8.0

Comments:

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICV

File: HLE07A May 07, 2018 12:13

Analyte	True	Found	%R (1)
MERCURY	6.0	5.74	95.7

SAMPLE: CCV

File: HLE07A May 07, 2018 12:19

Analyte	True	Found	%R (1)
MERCURY	5.0	4.84	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:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 12:42

Analyte	True	Found	%R (1)
MERCURY	5.0	4.89	97.8

SAMPLE: CCV

File: HLE07A May 07, 2018 13:08

Analyte	True	Found	%R (1)
MERCURY	5.0	4.83	96.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 13:34

Analyte	True	Found	%R (1)
MERCURY	5.0	4.78	95.6

SAMPLE: CCV

File: HLE07A May 07, 2018 14:01

Analyte	True	Found	%R (1)
MERCURY	5.0	4.67	93.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 14:27

Analyte	True	Found	%R (1)
MERCURY	5.0	4.66	93.2

SAMPLE: CCV

File: HLE07A May 07, 2018 14:57

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:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 15:26

Analyte	True	Found	%R (1)
MERCURY	5.0	4.61	92.2

SAMPLE: CCV

File: HLE07A May 07, 2018 15:52

Analyte	True	Found	%R (1)
MERCURY	5.0	4.59	91.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 16:18

Analyte	True	Found	%R (1)
MERCURY	5.0	4.53	90.6

SAMPLE: CCV

File: HLE07A May 07, 2018 16:24

Analyte	True	Found	%R (1)
MERCURY	5.0	4.58	91.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICV

File: JLE14A May 14, 2018 15:20

Analyte	True	Found	%R (1)
ALUMINUM	400.0	412.60	103.2
ANTIMONY	20.0	19.92	99.6
ARSENIC	20.0	19.33	96.6
BARIUM	20.0	19.88	99.4
CADMIUM	20.0	19.60	98.0
CALCIUM	4000.0	3999.00	100.0
COBALT	20.0	19.70	98.5
COPPER	20.0	19.99	99.9
IRON	4000.0	3963.00	99.1
MAGNESIUM	4000.0	4031.00	100.8
MANGANESE	20.0	19.33	96.6
MOLYBDENUM	40.0	37.59	94.0
NICKEL	20.0	19.36	96.8
POTASSIUM	4000.0	3962.00	99.1
SELENIUM	20.0	20.14	100.7
SILVER	20.0	19.39	97.0
SODIUM	4000.0	4031.00	100.8
THALLIUM	20.0	19.76	98.8
VANADIUM	20.0	19.56	97.8
ZINC	20.0	20.57	102.8

SAMPLE: CCV

File: JLE14A May 14, 2018 16:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.10	101.4
ANTIMONY	25.0	25.82	103.3
ARSENIC	25.0	24.37	97.5
BARIUM	25.0	25.39	101.6
CADMIUM	25.0	24.37	97.5
CALCIUM	5000.0	5012.00	100.2
COBALT	25.0	24.75	99.0
COPPER	25.0	24.90	99.6
IRON	5000.0	4950.00	99.0
MAGNESIUM	5000.0	5259.00	105.2
MANGANESE	25.0	24.45	97.8
MOLYBDENUM	25.0	23.94	95.8
NICKEL	25.0	24.20	96.8
POTASSIUM	5000.0	4848.00	97.0
SELENIUM	25.0	24.52	98.1
SILVER	25.0	24.29	97.2
SODIUM	5000.0	5302.00	106.0
THALLIUM	25.0	24.42	97.7
VANADIUM	25.0	25.17	100.7
ZINC	25.0	24.98	99.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 16:45

Analyte	True	Found	%R (1)
ALUMINUM	500.0	503.30	100.7
ANTIMONY	25.0	24.99	100.0
ARSENIC	25.0	24.38	97.5
BARIUM	25.0	24.76	99.0
CADMIUM	25.0	24.71	98.8
CALCIUM	5000.0	4893.00	97.9
COBALT	25.0	24.38	97.5
COPPER	25.0	24.74	99.0
IRON	5000.0	4931.00	98.6
MAGNESIUM	5000.0	5149.00	103.0
MANGANESE	25.0	24.54	98.2
MOLYBDENUM	25.0	23.98	95.9
NICKEL	25.0	24.47	97.9
POTASSIUM	5000.0	4878.00	97.6
SELENIUM	25.0	25.09	100.4
SILVER	25.0	24.55	98.2
SODIUM	5000.0	5107.00	102.1
THALLIUM	25.0	24.57	98.3
VANADIUM	25.0	25.05	100.2
ZINC	25.0	24.91	99.6

SAMPLE: CCV

File: JLE14A May 14, 2018 17:32

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.00	101.2
ANTIMONY	25.0	25.34	101.4
ARSENIC	25.0	24.56	98.2
BARIUM	25.0	25.80	103.2
CADMIUM	25.0	24.64	98.6
CALCIUM	5000.0	4998.00	100.0
COBALT	25.0	25.15	100.6
COPPER	25.0	25.61	102.4
IRON	5000.0	5048.00	101.0
MAGNESIUM	5000.0	5154.00	103.1
MANGANESE	25.0	24.75	99.0
MOLYBDENUM	25.0	24.29	97.2
NICKEL	25.0	24.53	98.1
POTASSIUM	5000.0	4993.00	99.9
SELENIUM	25.0	25.35	101.4
SILVER	25.0	24.69	98.8
SODIUM	5000.0	5166.00	103.3
THALLIUM	25.0	24.62	98.5
VANADIUM	25.0	25.26	101.0
ZINC	25.0	24.81	99.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 18:20

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.30	98.9
ANTIMONY	25.0	25.61	102.4
ARSENIC	25.0	24.70	98.8
BARIUM	25.0	25.53	102.1
CADMIUM	25.0	24.39	97.6
CALCIUM	5000.0	4984.00	99.7
COBALT	25.0	24.85	99.4
COPPER	25.0	25.29	101.2
IRON	5000.0	4996.00	99.9
MAGNESIUM	5000.0	5172.00	103.4
MANGANESE	25.0	24.19	96.8
MOLYBDENUM	25.0	24.03	96.1
NICKEL	25.0	24.28	97.1
POTASSIUM	5000.0	4926.00	98.5
SELENIUM	25.0	24.99	100.0
SILVER	25.0	24.33	97.3
SODIUM	5000.0	5178.00	103.6
THALLIUM	25.0	24.63	98.5
VANADIUM	25.0	25.00	100.0
ZINC	25.0	24.73	98.9

SAMPLE: CCV

File: JLE14A May 14, 2018 19:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	510.50	102.1
ANTIMONY	25.0	25.50	102.0
ARSENIC	25.0	24.83	99.3
BARIUM	25.0	25.50	102.0
CADMIUM	25.0	24.24	97.0
CALCIUM	5000.0	5012.00	100.2
COBALT	25.0	24.72	98.9
COPPER	25.0	25.06	100.2
IRON	5000.0	4965.00	99.3
MAGNESIUM	5000.0	5289.00	105.8
MANGANESE	25.0	24.55	98.2
MOLYBDENUM	25.0	23.71	94.8
NICKEL	25.0	24.43	97.7
POTASSIUM	5000.0	4923.00	98.5
SELENIUM	25.0	25.02	100.1
SILVER	25.0	24.03	96.1
SODIUM	5000.0	5316.00	106.3
THALLIUM	25.0	24.93	99.7
VANADIUM	25.0	25.70	102.8
ZINC	25.0	24.98	99.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 19:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	454.70	90.9
ANTIMONY	25.0	24.19	96.8
ARSENIC	25.0	24.80	99.2
BARIUM	25.0	24.39	97.6
CADMIUM	25.0	26.34	105.4
CALCIUM	5000.0	5001.00	100.0
COBALT	25.0	24.42	97.7
COPPER	25.0	24.68	98.7
IRON	5000.0	5021.00	100.4
MAGNESIUM	5000.0	4572.00	91.4
MANGANESE	25.0	24.81	99.2
MOLYBDENUM	25.0	25.79	103.2
NICKEL	25.0	23.77	95.1
POTASSIUM	5000.0	4776.00	95.5
SELENIUM	25.0	25.80	103.2
SILVER	25.0	26.14	104.6
SODIUM	5000.0	4536.00	90.7
THALLIUM	25.0	24.49	98.0
VANADIUM	25.0	24.41	97.6
ZINC	25.0	25.44	101.8

SAMPLE: CCV

File: JLE14A May 14, 2018 20:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	462.60	92.5
ANTIMONY	25.0	23.87	95.5
ARSENIC	25.0	25.07	100.3
BARIUM	25.0	24.17	96.7
CADMIUM	25.0	26.62	106.5
CALCIUM	5000.0	5012.00	100.2
COBALT	25.0	24.29	97.2
COPPER	25.0	24.69	98.8
IRON	5000.0	4952.00	99.0
MAGNESIUM	5000.0	4604.00	92.1
MANGANESE	25.0	24.57	98.3
MOLYBDENUM	25.0	26.10	104.4
NICKEL	25.0	23.99	96.0
POTASSIUM	5000.0	4649.00	93.0
SELENIUM	25.0	26.09	104.4
SILVER	25.0	26.37	105.5
SODIUM	5000.0	4412.00	88.2•
THALLIUM	25.0	24.81	99.2
VANADIUM	25.0	24.30	97.2
ZINC	25.0	25.25	101.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 21:40

Analyte	True	Found	%R (1)
ALUMINUM	500.0	469.40	93.9
ANTIMONY	25.0	23.62	94.5
ARSENIC	25.0	24.63	98.5
BARIUM	25.0	24.17	96.7
CADMIUM	25.0	26.24	105.0
CALCIUM	5000.0	5035.00	100.7
COBALT	25.0	24.31	97.2
COPPER	25.0	24.54	98.2
IRON	5000.0	5023.00	100.5
MAGNESIUM	5000.0	4663.00	93.3
MANGANESE	25.0	24.53	98.1
MOLYBDENUM	25.0	25.76	103.0
NICKEL	25.0	23.97	95.9
POTASSIUM	5000.0	4803.00	96.1
SELENIUM	25.0	25.43	101.7
SILVER	25.0	26.04	104.2
SODIUM	5000.0	4447.00	88.9•
THALLIUM	25.0	24.53	98.1
VANADIUM	25.0	24.57	98.3
ZINC	25.0	25.03	100.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICV

File: JLE15C May 15, 2018 18:44

Analyte	True	Found	%R (1)
ALUMINUM	400.0	400.10	100.0
ARSENIC	20.0	20.14	100.7
BERYLLIUM	20.0	20.02	100.1
CADMIUM	20.0	20.08	100.4
CALCIUM	4000.0	4046.00	101.2
CHROMIUM	20.0	19.51	97.5
COBALT	20.0	20.05	100.3
COPPER	20.0	19.96	99.8
IRON	4000.0	3993.00	99.8
LEAD	20.0	19.62	98.1
MAGNESIUM	4000.0	3846.00	96.2
MANGANESE	20.0	19.59	98.0
MOLYBDENUM	40.0	38.80	97.0
NICKEL	20.0	20.07	100.4
POTASSIUM	4000.0	3913.00	97.8
SELENIUM	20.0	20.39	102.0
SILVER	20.0	19.93	99.6
SODIUM	4000.0	3902.00	97.5
VANADIUM	20.0	19.62	98.1
ZINC	20.0	20.48	102.4

SAMPLE: CCV

File: JLE15C May 15, 2018 19:29

Analyte	True	Found	%R (1)
ALUMINUM	500.0	490.70	98.1
ARSENIC	25.0	24.92	99.7
BERYLLIUM	25.0	25.37	101.5
CADMIUM	25.0	24.93	99.7
CALCIUM	5000.0	4941.00	98.8
CHROMIUM	25.0	24.81	99.2
COBALT	25.0	24.93	99.7
COPPER	25.0	24.93	99.7
IRON	5000.0	4942.00	98.8
LEAD	25.0	24.35	97.4
MAGNESIUM	5000.0	4845.00	96.9
MANGANESE	25.0	24.52	98.1
MOLYBDENUM	25.0	24.72	98.9
NICKEL	25.0	24.56	98.2
POTASSIUM	5000.0	4833.00	96.7
SELENIUM	25.0	25.33	101.3
SILVER	25.0	24.80	99.2
SODIUM	5000.0	4828.00	96.6
VANADIUM	25.0	24.51	98.0
ZINC	25.0	24.60	98.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 20:19

Analyte	True	Found	%R (1)
ALUMINUM	500.0	479.70	95.9
ARSENIC	25.0	24.72	98.9
BERYLLIUM	25.0	24.66	98.6
CADMIUM	25.0	24.98	99.9
CALCIUM	5000.0	4918.00	98.4
CHROMIUM	25.0	24.45	97.8
COBALT	25.0	24.49	98.0
COPPER	25.0	24.50	98.0
IRON	5000.0	4875.00	97.5
LEAD	25.0	24.23	96.9
MAGNESIUM	5000.0	4686.00	93.7
MANGANESE	25.0	24.21	96.8
MOLYBDENUM	25.0	24.66	98.6
NICKEL	25.0	24.60	98.4
POTASSIUM	5000.0	4757.00	95.1
SELENIUM	25.0	25.41	101.6
SILVER	25.0	24.95	99.8
SODIUM	5000.0	4618.00	92.4
VANADIUM	25.0	24.04	96.2
ZINC	25.0	24.97	99.9

SAMPLE: CCV

File: JLE15C May 15, 2018 21:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	498.70	99.7
ARSENIC	25.0	24.61	98.4
BERYLLIUM	25.0	25.11	100.4
CADMIUM	25.0	24.53	98.1
CALCIUM	5000.0	4924.00	98.5
CHROMIUM	25.0	24.44	97.8
COBALT	25.0	24.20	96.8
COPPER	25.0	24.54	98.2
IRON	5000.0	4884.00	97.7
LEAD	25.0	24.22	96.9
MAGNESIUM	5000.0	4897.00	97.9
MANGANESE	25.0	24.44	97.8
MOLYBDENUM	25.0	24.22	96.9
NICKEL	25.0	24.70	98.8
POTASSIUM	5000.0	4848.00	97.0
SELENIUM	25.0	25.19	100.8
SILVER	25.0	24.61	98.4
SODIUM	5000.0	4816.00	96.3
VANADIUM	25.0	24.16	96.6
ZINC	25.0	24.76	99.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 21:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.30	98.9
ARSENIC	25.0	24.69	98.8
BERYLLIUM	25.0	24.84	99.4
CADMIUM	25.0	24.33	97.3
CALCIUM	5000.0	4870.00	97.4
CHROMIUM	25.0	24.43	97.7
COBALT	25.0	24.26	97.0
COPPER	25.0	24.18	96.7
IRON	5000.0	4840.00	96.8
LEAD	25.0	24.02	96.1
MAGNESIUM	5000.0	4900.00	98.0
MANGANESE	25.0	24.20	96.8
MOLYBDENUM	25.0	24.17	96.7
NICKEL	25.0	24.47	97.9
POTASSIUM	5000.0	4812.00	96.2
SELENIUM	25.0	24.95	99.8
SILVER	25.0	24.49	98.0
SODIUM	5000.0	4835.00	96.7
VANADIUM	25.0	24.27	97.1
ZINC	25.0	24.60	98.4

SAMPLE: CCV

File: JLE15C May 15, 2018 22:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	488.70	97.7
ARSENIC	25.0	24.31	97.2
BERYLLIUM	25.0	24.94	99.8
CADMIUM	25.0	24.29	97.2
CALCIUM	5000.0	4898.00	98.0
CHROMIUM	25.0	24.50	98.0
COBALT	25.0	24.11	96.4
COPPER	25.0	24.27	97.1
IRON	5000.0	4806.00	96.1
LEAD	25.0	23.81	95.2
MAGNESIUM	5000.0	4900.00	98.0
MANGANESE	25.0	24.05	96.2
MOLYBDENUM	25.0	23.96	95.8
NICKEL	25.0	24.46	97.8
POTASSIUM	5000.0	4846.00	96.9
SELENIUM	25.0	24.99	100.0
SILVER	25.0	24.21	96.8
SODIUM	5000.0	4891.00	97.8
VANADIUM	25.0	24.14	96.6
ZINC	25.0	24.40	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: PQL

File: HLE07A May 07, 2018 12:17

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.23	115.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: PQL

File: JLE14A May 14, 2018 15:26

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.37	101.8
ANTIMONY	0.2	0.22	110.0
ARSENIC	1.0	0.98	98.0
BARIUM	0.4	0.42	105.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	20.40	102.0
COBALT	0.2	0.20	100.0
COPPER	0.6	0.58	96.7
IRON	20.0	19.66	98.3
MAGNESIUM	20.0	20.57	102.8
MANGANESE	0.4	0.41	102.5
MOLYBDENUM	1.0	1.00	100.0
NICKEL	0.4	0.40	100.0
POTASSIUM	200.0	198.10	99.0
SELENIUM	1.0	0.95	95.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	211.10	105.5
THALLIUM	0.2	0.22	110.0
VANADIUM	1.0	0.92	92.0
ZINC	2.0	2.08	104.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: PQL

File: JLE15C May 15, 2018 18:52

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.29	96.4
ARSENIC	1.0	0.99	99.0
BERYLLIUM	0.2	0.21	105.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	19.83	99.1
CHROMIUM	1.0	0.92	92.0
COBALT	0.2	0.19	95.0
COPPER	0.6	0.60	100.0
IRON	20.0	19.56	97.8
LEAD	0.2	0.20	100.0
MAGNESIUM	20.0	19.19	96.0
MANGANESE	0.4	0.38	95.0
MOLYBDENUM	1.0	0.97	97.0
NICKEL	0.4	0.38	95.0
POTASSIUM	200.0	191.10	95.5
SELENIUM	1.0	1.16	116.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	194.10	97.0
VANADIUM	1.0	1.03	103.0
ZINC	2.0	2.13	106.5

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICB

File: HLE07A May 07, 2018 12:15

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 12:21

Analyte	Result	C
MERCURY	0.027	J

SAMPLE: CCB

File: HLE07A May 07, 2018 12:44

Analyte	Result	C
MERCURY	0.025	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCB

File: HLE07A May 07, 2018 13:10

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 13:36

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 14:03

Analyte	Result	C
MERCURY	0.025	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCB

File: HLE07A May 07, 2018 14:29

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 14:59

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 15:28

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCB
File: HLE07A May 07, 2018 15:54

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB
File: HLE07A May 07, 2018 16:20

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB
File: HLE07A May 07, 2018 16:27

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICB
File: JLE14A May 14, 2018 15:23

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.075	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.006	J
SODIUM	4.400	U
THALLIUM	0.009	J
VANADIUM	-0.124	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 16:03

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.012	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.066	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.006	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 16:49

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.039	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
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:** SL3808

Concentration Units: ug/L

SAMPLE: CCB
File: JLE14A May 14, 2018 17:36

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	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	0.006	J
SODIUM	4.400	U
THALLIUM	0.009	J
VANADIUM	-0.163	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 18:24

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	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	0.007	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 19:13

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	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	0.004	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	-0.103	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCB
File: JLE14A May 14, 2018 20:03

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.039	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	-0.114	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 20:53

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.010	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	7.151	J
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.509	J
MANGANESE	0.043	J
MOLYBDENUM	0.036	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	8.908	J
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 21:44

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.008	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.025	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.005	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	-0.133	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICB
File: JLE15C May 15, 2018 18:48

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	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	0.021	U
MOLYBDENUM	0.056	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	4.400	U
VANADIUM	0.110	J
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 19:33

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.282	J
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	-0.022	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.051	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	J
SODIUM	4.400	U
VANADIUM	0.067	J
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 20:23

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	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	-0.014	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	0.004	J
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCB
File: JLE15C May 15, 2018 21:13

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.041	J
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	4.937	J
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 22:03

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.042	J
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	J
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 22:53

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.060	J
IRON	4.300	U
LEAD	0.016	J
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

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLE07HGW3

Matrix: WATER **SDG Name:** SL3808

QC Batch ID: LE07HGW3

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.10	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLE07IMW1

Matrix: WATER **SDG Name:** SL3808

QC Batch ID: LE07IMW1

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	7.4	J
ANTIMONY	0.50	U
ARSENIC	4.0	U
BARIUM	1.0	U
BERYLLIUM	0.20	U
CADMIUM	0.20	U
CALCIUM	80	U
CHROMIUM	4.0	U
COBALT	0.30	U
COPPER	2.0	U
IRON	60	U
LEAD	0.50	U
MAGNESIUM	9.7	J
MANGANESE	1.0	U
NICKEL	1.2	U
POTASSIUM	400	U
SELENIUM	0.73	J
SILVER	0.40	U
SODIUM	400	U
THALLIUM	0.063	J
VANADIUM	4.0	U
ZINC	8.0	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE14A May 14, 2018 15:34

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	99860.00	99.9
ANTIMONY	0	0.04	
ARSENIC	0	0.07	
BARIUM	0	0.09	
CADMIUM	0	0.02	
CALCIUM	100000.00	97280.00	97.3
COBALT	0	0.09	
COPPER	0	1.04	
IRON	100000.00	92940.00	92.9
MAGNESIUM	100000.00	99940.00	99.9
MANGANESE	0	0.35	
MOLYBDENUM	2000.00	1890.00	94.5
NICKEL	0	-0.24	
POTASSIUM	100000.00	99380.00	99.4
SELENIUM	0	0.19	
SILVER	0	0.02	
SODIUM	100000.00	102200.00	102.2
THALLIUM	0	0.01	
VANADIUM	0	0.19	
ZINC	0	2.54	

SAMPLE: ICSAB

File: JLE14A May 14, 2018 15:38

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	100600.00	100.6
ANTIMONY	20.00	21.00	105.0
ARSENIC	20.00	19.69	100.0
BARIUM	21.00	21.12	100.0
CADMIUM	20.00	18.01	90.0
CALCIUM	100000.00	96790.00	96.8
COBALT	20.00	19.52	100.0
COPPER	20.00	19.98	100.0
IRON	100000.00	93950.00	94.0
MAGNESIUM	100000.00	101300.00	101.3
MANGANESE	20.00	19.71	100.0
MOLYBDENUM	2000.00	1912.00	95.6
NICKEL	20.00	18.27	90.0
POTASSIUM	100000.00	98850.00	98.9
SELENIUM	20.00	19.38	95.0
SILVER	20.00	17.84	90.0
SODIUM	100000.00	105400.00	105.4
THALLIUM	20.00	21.27	105.0
VANADIUM	20.00	20.78	105.0
ZINC	20.00	19.69	100.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE15C May 15, 2018 19:00

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	91500.00	91.5
ARSENIC	0	0.29	
BERYLLIUM	0	0.00	
CADMIUM	0	0.04	
CALCIUM	100000.00	95500.00	95.5
CHROMIUM	0	0.93	
COBALT	0	0.10	
COPPER	0	1.00	
IRON	100000.00	90640.00	90.6
LEAD	0	0.06	
MAGNESIUM	100000.00	89100.00	89.1
MANGANESE	0	0.38	
MOLYBDENUM	2000.00	1911.00	95.5
NICKEL	0	-0.31	
POTASSIUM	100000.00	95450.00	95.5
SELENIUM	0	0.25	
SILVER	0	0.02	
SODIUM	100000.00	92410.00	92.4
VANADIUM	0	0.22	
ZINC	0	2.48	

SAMPLE: ICSAB

File: JLE15C May 15, 2018 19:04

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	93940.00	93.9
ARSENIC	20.00	19.62	100.0
BERYLLIUM	20.00	21.05	105.0
CADMIUM	20.00	18.49	90.0
CALCIUM	100000.00	96200.00	96.2
CHROMIUM	20.00	20.13	100.0
COBALT	20.00	19.25	95.0
COPPER	20.00	19.39	95.0
IRON	100000.00	91150.00	91.1
LEAD	20.00	20.80	105.0
MAGNESIUM	100000.00	91850.00	91.8
MANGANESE	20.00	19.54	100.0
MOLYBDENUM	2000.00	1960.00	98.0
NICKEL	20.00	18.31	90.0
POTASSIUM	100000.00	97210.00	97.2
SELENIUM	20.00	19.32	95.0
SILVER	20.00	18.35	90.0
SODIUM	100000.00	94170.00	94.2
VANADIUM	20.00	19.81	100.0
ZINC	20.00	20.19	100.0

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18S

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-004P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	5490		3140		2000	117.5	N	84	117	MS
ANTIMONY, TOTAL	96.0		0.30	J	100	95.7		85	117	MS
ARSENIC, TOTAL	111		12		100	99.3		84	116	MS
BARIUM, TOTAL	2070		96.8		2000	98.8		86	114	MS
BERYLLIUM, TOTAL	49.4		0.16	J	50	98.5		83	121	MS
CADMIUM, TOTAL	231		0.20	U	250	92.3		87	115	MS
CALCIUM, TOTAL	374000		372000		2500	96.0		87	118	MS
CHROMIUM, TOTAL	220		27.8		200	96.0		85	116	MS
COBALT, TOTAL	504		1.96		500	100.5		86	115	MS
COPPER, TOTAL	248		12.6		250	94.2		85	118	MS
IRON, TOTAL	11900		11200		1000	69.0	N	87	118	MS
LEAD, TOTAL	104		3.40		100	100.4		88	115	MS
MAGNESIUM, TOTAL	86600		79200		5000	148.0	N	83	118	MS
MANGANESE, TOTAL	1820		1370		500	89.4		87	115	MS
MERCURY, TOTAL	0.816		0.044	J	1	77.2	N	82	119	CV
NICKEL, TOTAL	489		10.9		500	95.6		85	117	MS
POTASSIUM, TOTAL	29200		19600		10000	96.2		87	115	MS
SELENIUM, TOTAL	96.4		2.12	J	100	94.3		80	120	MS
SILVER, TOTAL	46.1		0.40	U	50	92.2		85	116	MS
SODIUM, TOTAL	337000		319000		7500	239.3	N	85	117	MS
THALLIUM, TOTAL	104		0.11	J	100	104.3		82	116	MS
VANADIUM, TOTAL	516		7.28		500	101.7		86	115	MS
ZINC, TOTAL	594		142		500	90.3		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18S

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-004S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	5830		3140		2000	134.5	N	84	117	MS
ANTIMONY, TOTAL	101		0.30	J	100	100.8		85	117	MS
ARSENIC, TOTAL	120		12		100	108.3		84	116	MS
BARIUM, TOTAL	2170		96.8		2000	103.5		86	114	MS
BERYLLIUM, TOTAL	56.0		0.16	J	50	111.8		83	121	MS
CADMIUM, TOTAL	270		0.20	U	250	108.1		87	115	MS
CALCIUM, TOTAL	418000		372000		2500	1850.0	N	87	118	MS
CHROMIUM, TOTAL	246		27.8		200	109.1		85	116	MS
COBALT, TOTAL	533		1.96		500	106.2		86	115	MS
COPPER, TOTAL	265		12.6		250	100.9		85	118	MS
IRON, TOTAL	12600		11200		1000	141.0	N	87	118	MS
LEAD, TOTAL	119		3.40		100	115.7	N	88	115	MS
MAGNESIUM, TOTAL	94200		79200		5000	300.0	N	83	118	MS
MANGANESE, TOTAL	1950		1370		500	115.2	N	87	115	MS
MERCURY, TOTAL	0.965		0.044	J	1	92.1		82	119	CV
NICKEL, TOTAL	506		10.9		500	98.9		85	117	MS
POTASSIUM, TOTAL	31900		19600		10000	123.3	N	87	115	MS
SELENIUM, TOTAL	107		2.12	J	100	104.8		80	120	MS
SILVER, TOTAL	53.9		0.40	U	50	107.8		85	116	MS
SODIUM, TOTAL	357000		319000		7500	510.0	N	85	117	MS
THALLIUM, TOTAL	110		0.11	J	100	109.6		82	116	MS
VANADIUM, TOTAL	554		7.28		500	109.2		86	115	MS
ZINC, TOTAL	638		142		500	99.2		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FFS

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-005P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	2090		9.8	J	2000	104.1		84	117	MS
ANTIMONY, DISSOLVED	95.4		0.26	J	100	95.1		85	117	MS
ARSENIC, DISSOLVED	113		12		100	100.8		84	116	MS
BARIUM, DISSOLVED	1970		30.6		2000	96.8		86	114	MS
BERYLLIUM, DISSOLVED	50.9		0.20	U	50	101.8		83	121	MS
CADMIUM, DISSOLVED	235		0.20	U	250	94.0		87	115	MS
CALCIUM, DISSOLVED	387000		381000		2500	242.0	N	87	118	MS
CHROMIUM, DISSOLVED	198		1.9	J	200	98.2		85	116	MS
COBALT, DISSOLVED	511		0.805	J	500	102.0		86	115	MS
COPPER, DISSOLVED	243		1.5	J	250	96.5		85	118	MS
IRON, DISSOLVED	8140		6960		1000	117.5		87	118	MS
LEAD, DISSOLVED	102		0.50	U	100	101.8		88	115	MS
MAGNESIUM, DISSOLVED	87800		81900		5000	117.0		83	118	MS
MANGANESE, DISSOLVED	1870		1340		500	106.1		87	115	MS
MERCURY, DISSOLVED	0.905		0.10	U	1	90.5		82	119	CV
NICKEL, DISSOLVED	488		4.24		500	96.7		85	117	MS
POTASSIUM, DISSOLVED	29100		19100		10000	99.8		87	115	MS
SELENIUM, DISSOLVED	97.5		2.31	J	100	95.2		80	120	MS
SILVER, DISSOLVED	47.2		0.40	U	50	94.4		85	116	MS
SODIUM, DISSOLVED	352000		330000		7500	296.0	N	85	117	MS
THALLIUM, DISSOLVED	102		0.40	U	100	101.8		82	116	MS
VANADIUM, DISSOLVED	516		0.82	J	500	103.1		86	115	MS
ZINC, DISSOLVED	514		49.1		500	92.9		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FFS

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-005S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	2050		9.8	J	2000	101.9		84	117	MS
ANTIMONY, DISSOLVED	98.4		0.26	J	100	98.1		85	117	MS
ARSENIC, DISSOLVED	111		12		100	99.0		84	116	MS
BARIUM, DISSOLVED	2020		30.6		2000	99.5		86	114	MS
BERYLLIUM, DISSOLVED	49.9		0.20	U	50	99.8		83	121	MS
CADMIUM, DISSOLVED	234		0.20	U	250	93.5		87	115	MS
CALCIUM, DISSOLVED	390000		381000		2500	366.0	N	87	118	MS
CHROMIUM, DISSOLVED	195		1.9	J	200	96.7		85	116	MS
COBALT, DISSOLVED	500		0.805	J	500	99.8		86	115	MS
COPPER, DISSOLVED	239		1.5	J	250	95.0		85	118	MS
IRON, DISSOLVED	8020		6960		1000	106.0		87	118	MS
LEAD, DISSOLVED	102		0.50	U	100	101.6		88	115	MS
MAGNESIUM, DISSOLVED	88500		81900		5000	132.0	N	83	118	MS
MANGANESE, DISSOLVED	1850		1340		500	102.1		87	115	MS
MERCURY, DISSOLVED	0.892		0.10	U	1	89.2		82	119	CV
NICKEL, DISSOLVED	487		4.24		500	96.5		85	117	MS
POTASSIUM, DISSOLVED	29600		19100		10000	105.3		87	115	MS
SELENIUM, DISSOLVED	96.2		2.31	J	100	93.8		80	120	MS
SILVER, DISSOLVED	47.2		0.40	U	50	94.3		85	116	MS
SODIUM, DISSOLVED	347000		330000		7500	225.3	N	85	117	MS
THALLIUM, DISSOLVED	102		0.40	U	100	102.4		82	116	MS
VANADIUM, DISSOLVED	504		0.82	J	500	100.5		86	115	MS
ZINC, DISSOLVED	508		49.1		500	91.8		83	119	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18S

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-004A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	806		628		200	88.9		80	120	MS
ANTIMONY, TOTAL	2.04		0.061	J	2	99.0		80	120	MS
ARSENIC, TOTAL	12.8		2.4		10	103.5		80	120	MS
BARIUM, TOTAL	22.9		19.4		4	87.5		80	120	MS
BERYLLIUM, TOTAL	2.14		0.032	J	2	105.1		80	120	MS
CADMIUM, TOTAL	2.06		0.0059	U	2	102.9		80	120	MS
CALCIUM, TOTAL	72700		74400		200	-860.0	A	80	120	MS
CHROMIUM, TOTAL	15.3		5.55		10	97.5		80	120	MS
COBALT, TOTAL	2.36		0.392		2	98.2		80	120	MS
COPPER, TOTAL	8.42		2.52		6	98.4		80	120	MS
IRON, TOTAL	2430		2250		200	91.0		80	120	MS
LEAD, TOTAL	2.77		0.680		2	104.7		80	120	MS
MAGNESIUM, TOTAL	15800		15800		200	-20.0	A	80	120	MS
MANGANESE, TOTAL	275		275		4	7.5	A	80	120	MS
MERCURY, TOTAL	0.846		0.044	J	1	80.2		80	120	CV
NICKEL, TOTAL	5.74		2.17		4	89.3		80	120	MS
POTASSIUM, TOTAL	5820		3920		2000	95.0		80	120	MS
SELENIUM, TOTAL	10.3		0.424	J	10	98.5		80	120	MS
SILVER, TOTAL	2.03		0.010	U	2	101.5		80	120	MS
SODIUM, TOTAL	64700		63800		2000	46.0	A	80	120	MS
THALLIUM, TOTAL	2.12		0.022	J	2	105.2		80	120	MS
VANADIUM, TOTAL	11.4		1.46		10	99.6		80	120	MS
ZINC, TOTAL	47.1		28.4		20	93.7		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FFS

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-005A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	212		2.0	J	200	104.8		80	120	MS
ANTIMONY, DISSOLVED	1.83		0.051	J	2	88.8		80	120	MS
ARSENIC, DISSOLVED	12.6		2.4		10	101.7		80	120	MS
BARIUM, DISSOLVED	9.90		6.12		4	94.6		80	120	MS
BERYLLIUM, DISSOLVED	2.10		0.0067	U	2	104.8		80	120	MS
CADMIUM, DISSOLVED	1.88		0.0059	U	2	94.0		80	120	MS
CALCIUM, DISSOLVED	75800		76200		200	-205.0	A	80	120	MS
CHROMIUM, DISSOLVED	10.5		0.38	J	10	101.2		80	120	MS
COBALT, DISSOLVED	2.11		0.161	J	2	97.3		80	120	MS
COPPER, DISSOLVED	6.06		0.30	J	6	96.0		80	120	MS
IRON, DISSOLVED	1590		1390		200	101.0		80	120	MS
LEAD, DISSOLVED	2.00		0.015	U	2	100.3		80	120	MS
MAGNESIUM, DISSOLVED	16400		16400		200	5.0	A	80	120	MS
MANGANESE, DISSOLVED	269		268		4	35.0	A	80	120	MS
MERCURY, DISSOLVED	0.813		0.013	U	1	81.3		80	120	CV
NICKEL, DISSOLVED	4.74		0.848		4	97.2		80	120	MS
POTASSIUM, DISSOLVED	5750		3820		2000	96.6		80	120	MS
SELENIUM, DISSOLVED	9.95		0.462	J	10	94.9		80	120	MS
SILVER, DISSOLVED	1.89		0.010	U	2	94.5		80	120	MS
SODIUM, DISSOLVED	68400		66000		2000	118.5		80	120	MS
THALLIUM, DISSOLVED	1.93		0.012	U	2	96.7		80	120	MS
VANADIUM, DISSOLVED	10.4		0.16	J	10	102.0		80	120	MS
ZINC, DISSOLVED	28.4		9.81		20	93.1		80	120	MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-004

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ALUMINUM, TOTAL		5830		5490		6.0		MS
ANTIMONY, TOTAL		101		96.0		5.1		MS
ARSENIC, TOTAL		120		111		7.8		MS
BARIUM, TOTAL		2170		2070		4.4		MS
BERYLLIUM, TOTAL		56.0		49.4		12.6		MS
CADMIUM, TOTAL		270		231		15.8		MS
CALCIUM, TOTAL		418000		374000		11.1		MS
CHROMIUM, TOTAL		246		220		11.2		MS
COBALT, TOTAL		533		504		5.5		MS
COPPER, TOTAL		265		248		6.5		MS
IRON, TOTAL		12600		11900		5.9		MS
LEAD, TOTAL		119		104		13.7		MS
MAGNESIUM, TOTAL		94200		86600		8.4		MS
MANGANESE, TOTAL		1950		1820		6.9		MS
MERCURY, TOTAL		0.965		0.816		16.7		CV
NICKEL, TOTAL		506		489		3.3		MS
POTASSIUM, TOTAL		31900		29200		8.8		MS
SELENIUM, TOTAL		107		96.4		10.4		MS
SILVER, TOTAL		53.9		46.1		15.6		MS
SODIUM, TOTAL		357000		337000		5.8		MS
THALLIUM, TOTAL		110		104		5.0		MS
VANADIUM, TOTAL		554		516		7.0		MS
ZINC, TOTAL		638		594		7.2		MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-005

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ALUMINUM, DISSOLVED		2050		2090		2.1		MS
ANTIMONY, DISSOLVED		98.4		95.4		3.1		MS
ARSENIC, DISSOLVED		111		113		1.7		MS
BARIUM, DISSOLVED		2020		1970		2.7		MS
BERYLLIUM, DISSOLVED		49.9		50.9		2.0		MS
CADMIUM, DISSOLVED		234		235		0.5		MS
CALCIUM, DISSOLVED		390000		387000		0.8		MS
CHROMIUM, DISSOLVED		195		198		1.6		MS
COBALT, DISSOLVED		500		511		2.2		MS
COPPER, DISSOLVED		239		243		1.6		MS
IRON, DISSOLVED		8020		8140		1.4		MS
LEAD, DISSOLVED		102		102		0.3		MS
MAGNESIUM, DISSOLVED		88500		87800		0.9		MS
MANGANESE, DISSOLVED		1850		1870		1.1		MS
MERCURY, DISSOLVED		0.892		0.905		1.4		CV
NICKEL, DISSOLVED		487		488		0.2		MS
POTASSIUM, DISSOLVED		29600		29100		1.9		MS
SELENIUM, DISSOLVED		96.2		97.5		1.4		MS
SILVER, DISSOLVED		47.2		47.2		0.0		MS
SODIUM, DISSOLVED		347000		352000		1.5		MS
THALLIUM, DISSOLVED		102		102		0.6		MS
VANADIUM, DISSOLVED		504		516		2.5		MS
ZINC, DISSOLVED		508		514		1.1		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLE07HGW3

Matrix: WATER **SDG Name:** SL3808

QC Batch ID: LE07HGW3

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	4.32	86.4	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLE07IMW1

Matrix: WATER **SDG Name:** SL3808

QC Batch ID: LE07IMW1

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000	2030	101.7	84	117
ANTIMONY	100	101	101.3	85	117
ARSENIC	100	105	104.7	84	116
BARIUM	2000	2030	101.4	86	114
BERYLLIUM	50.0	48.9	97.8	83	121
CADMIUM	250	270	108.1	87	115
CALCIUM	2500	2510	100.5	87	118
CHROMIUM	200	197	98.4	85	116
COBALT	500	525	105.0	86	115
COPPER	250	258	103.2	85	118
IRON	1000	1050	105.5	87	118
LEAD	100	100	100.1	88	115
MAGNESIUM	5000	5020	100.4	83	118
MANGANESE	500	522	104.5	87	115
NICKEL	500	507	101.4	85	117
POTASSIUM	10000	9920	99.2	87	115
SELENIUM	100	104	104.0	80	120
SILVER	50.0	54.6	109.2	85	116
SODIUM	7500	7440	99.1	85	117
THALLIUM	100	104	104.5	82	116
VANADIUM	500	528	105.5	86	115
ZINC	500	518	103.6	83	119

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18L

Matrix: WATER **SDG Name:** SL3808

Lab Sample ID: SL3808-004L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	628		668		6.4		MS
ANTIMONY, TOTAL	0.061	J	0.079	J	29.5		MS
ARSENIC, TOTAL	2.4		2.3	U	100.0		MS
BARIUM, TOTAL	19.4		20.0		3.1		MS
BERYLLIUM, TOTAL	0.032	J	0.034	U	100.0		MS
CADMIUM, TOTAL	0.0059	U	0.029	U			MS
CALCIUM, TOTAL	74400		75400		1.3		MS
CHROMIUM, TOTAL	5.55		5.55		0.0		MS
COBALT, TOTAL	0.392		0.42	J	7.1		MS
COPPER, TOTAL	2.52		2.74	J	8.7		MS
IRON, TOTAL	2250		2300		2.2		MS
LEAD, TOTAL	0.680		0.51	J	25.0		MS
MAGNESIUM, TOTAL	15800		16100		1.9		MS
MANGANESE, TOTAL	275		295		7.3		MS
MERCURY, TOTAL	0.044	J	0.070	J	59.1		CV
NICKEL, TOTAL	2.17		2.20		1.4		MS
POTASSIUM, TOTAL	3920		3840		2.0		MS
SELENIUM, TOTAL	0.424	J	0.19	U	100.0		MS
SILVER, TOTAL	0.010	U	0.050	U			MS
SODIUM, TOTAL	63800		64700		1.4		MS
THALLIUM, TOTAL	0.022	J	0.072	J	227.3		MS
VANADIUM, TOTAL	1.46		1.1	J	24.7		MS
ZINC, TOTAL	28.4		33		16.2		MS

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FFL

Matrix: WATER **SDG Name:** SL3808

Lab Sample ID: SL3808-005L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, DISSOLVED	2.0	J	4.6	J	130.0		MS
ANTIMONY, DISSOLVED	0.051	J	0.069	J	35.3		MS
ARSENIC, DISSOLVED	2.4		3.0	J	25.0		MS
BARIUM, DISSOLVED	6.12		6.06		1.0		MS
BERYLLIUM, DISSOLVED	0.0067	U	0.034	U			MS
CADMIUM, DISSOLVED	0.0059	U	0.029	U			MS
CALCIUM, DISSOLVED	76200		78800		3.4		MS
CHROMIUM, DISSOLVED	0.38	J	0.59	J	55.3		MS
COBALT, DISSOLVED	0.161	J	0.14	J	13.0		MS
COPPER, DISSOLVED	0.30	J	0.56	J	86.7		MS
IRON, DISSOLVED	1390		1510		8.6		MS
LEAD, DISSOLVED	0.015	U	0.075	U			MS
MAGNESIUM, DISSOLVED	16400		17200		4.9		MS
MANGANESE, DISSOLVED	268		292		9.0		MS
MERCURY, DISSOLVED	0.013	U	0.065	U			CV
NICKEL, DISSOLVED	0.848		0.89	J	5.0		MS
POTASSIUM, DISSOLVED	3820		3940		3.1		MS
SELENIUM, DISSOLVED	0.462	J	0.19	U	100.0		MS
SILVER, DISSOLVED	0.010	U	0.050	U			MS
SODIUM, DISSOLVED	66000		68200		3.3		MS
THALLIUM, DISSOLVED	0.012	U	0.060	U			MS
VANADIUM, DISSOLVED	0.16	J	0.50	U	100.0		MS
ZINC, DISSOLVED	9.81		12		22.3		MS

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 4/6/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
MERCURY	0.20	0.025	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:** 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

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

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:** LE07HGW3

Matrix: WATER **SDG Name:** SL3808

Method: CV **Prep Date:** 05/07/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLE07HGW3	LCSWLE07HGW3	0.025	0.025	
PBWLE07HGW3	PBWLE07HGW3	0.025	0.025	
CHAAP-19C-UGIA-DPT17	SL3808-002	0.025	0.025	D
CHAAP-19C-UGIA-DPT17-FF	SL3808-003	0.025	0.025	A
CHAAP-19C-LGIA-DPT18	SL3808-004	0.025	0.025	L
CHAAP-19C-LGIA-DPT18P	SL3808-004P	0.025	0.025	L
CHAAP-19C-LGIA-DPT18S	SL3808-004S	0.025	0.025	L
CHAAP-19C-LGIA-DPT18-FF	SL3808-005	0.025	0.025	A
CHAAP-19C-LGIA-DPT18-FFP	SL3808-005P	0.025	0.025	A
CHAAP-19C-LGIA-DPT18-FFS	SL3808-005S	0.025	0.025	A
CHAAP-19C-UGIA-DPT13	SL3808-006	0.025	0.025	D
CHAAP-19C-UGIA-DPT13-FF	SL3808-007	0.025	0.025	A
CHAAP-19C-LGIA-DPT14	SL3808-008	0.025	0.025	D
CHAAP-19C-LGIA-DPT14-FF	SL3808-009	0.025	0.025	A
CHAAP-19C-LGIA-DPT114	SL3808-010	0.025	0.025	D
CHAAP-19C-LGIA-DPT114-FF	SL3808-011	0.025	0.025	A
CHAAP-19C-UGIA-DPT02	SL3808-012	0.025	0.025	D
CHAAP-19C-UGIA-DPT02-FF	SL3808-013	0.025	0.025	A
CHAAP-EB-050218-DPT	SL3808-014	0.025	0.025	D
CHAAP-19C-LGIA-DPT22	SL3808-015	0.025	0.025	D
CHAAP-19C-LGIA-DPT22-FF	SL3808-016	0.025	0.025	A
CHAAP-19C-UGIA-DPT21	SL3808-017	0.025	0.025	D
CHAAP-19C-UGIA-DPT21-FF	SL3808-018	0.025	0.025	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LE07IMW1

Matrix: WATER **SDG Name:** SL3808

Method: MS **Prep Date:** 05/07/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLE07IMW1	LCSWLE07IMW1	0.05	0.05	
PBWLE07IMW1	PBWLE07IMW1	0.05	0.05	
CHAAP-19C-UGIA-DPT17	SL3808-002	0.05	0.05	E
CHAAP-19C-UGIA-DPT17-FF	SL3808-003	0.05	0.05	A
CHAAP-19C-LGIA-DPT18	SL3808-004	0.05	0.05	J
CHAAP-19C-LGIA-DPT18P	SL3808-004P	0.05	0.05	J
CHAAP-19C-LGIA-DPT18S	SL3808-004S	0.05	0.05	J
CHAAP-19C-LGIA-DPT18-FF	SL3808-005	0.05	0.05	C
CHAAP-19C-LGIA-DPT18-FFP	SL3808-005P	0.05	0.05	C
CHAAP-19C-LGIA-DPT18-FFS	SL3808-005S	0.05	0.05	C
CHAAP-19C-UGIA-DPT13	SL3808-006	0.05	0.05	D
CHAAP-19C-UGIA-DPT13-FF	SL3808-007	0.05	0.05	A
CHAAP-19C-LGIA-DPT14	SL3808-008	0.05	0.05	D
CHAAP-19C-LGIA-DPT14-FF	SL3808-009	0.05	0.05	A
CHAAP-19C-LGIA-DPT114	SL3808-010	0.05	0.05	D
CHAAP-19C-LGIA-DPT114-FF	SL3808-011	0.05	0.05	A
CHAAP-19C-UGIA-DPT02	SL3808-012	0.05	0.05	D
CHAAP-19C-UGIA-DPT02-FF	SL3808-013	0.05	0.05	A
CHAAP-EB-050218-DPT	SL3808-014	0.05	0.05	D
CHAAP-19C-LGIA-DPT22	SL3808-015	0.05	0.05	A
CHAAP-19C-LGIA-DPT22-FF	SL3808-016	0.05	0.05	D
CHAAP-19C-UGIA-DPT21	SL3808-017	0.05	0.05	A
CHAAP-19C-UGIA-DPT21-FF	SL3808-018	0.05	0.05	D

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	12:00	Hg
Standard #1 (0.2 ppb		1	12:02	Hg
Standard #2 (0.5 ppb		1	12:04	Hg
Standard #3 (1.0 ppb		1	12:06	Hg
Standard #4 (5.0 ppb		1	12:08	Hg
Standard #5 (10.0 pp		1	12:10	Hg
ICV		1	12:13	HG
ICB		1	12:15	HG
PQL		1	12:17	HG
CCV		1	12:19	HG
CCB		1	12:21	HG
ZZZZZZ		1	12:23	
ZZZZZZ		1	12:25	
ZZZZZZ		1	12:27	
ZZZZZZ		1	12:29	
ZZZZZZ		1	12:32	
ZZZZZZ		1	12:34	
ZZZZZZ		5	12:36	
ZZZZZZ		1	12:38	
ZZZZZZ		1	12:40	
CCV		1	12:42	HG
CCB		1	12:44	HG
ZZZZZZ		1	12:47	
ZZZZZZ		1	12:49	
ZZZZZZ		1	12:51	
ZZZZZZ		1	12:53	
ZZZZZZ		1	12:55	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	12:57	
ZZZZZZ		1	12:59	
ZZZZZZ		1	13:01	
ZZZZZZ		1	13:04	
ZZZZZZ		1	13:06	
CCV		1	13:08	HG
CCB		1	13:10	HG
ZZZZZZ		1	13:12	
ZZZZZZ		1	13:14	
ZZZZZZ		1	13:16	
ZZZZZZ		5	13:19	
ZZZZZZ		1	13:21	
ZZZZZZ		1	13:23	
ZZZZZZ		1	13:25	
ZZZZZZ		1	13:27	
ZZZZZZ		1	13:29	
ZZZZZZ		1	13:32	
CCV		1	13:34	HG
CCB		1	13:36	HG
ZZZZZZ		1	13:38	
ZZZZZZ		1	13:40	
ZZZZZZ		1	13:42	
ZZZZZZ		1	13:44	
ZZZZZZ		1	13:47	
ZZZZZZ		1	13:49	
ZZZZZZ		1	13:52	
ZZZZZZ		1	13:54	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	13:56	
ZZZZZZ		1	13:59	
CCV		1	14:01	HG
CCB		1	14:03	HG
SL3808-002	CHAAP-19C-UGIA-DPT17	1	14:05	HG
SL3808-003	CHAAP-19C-UGIA-DPT17-FF	1	14:07	HG
SL3808-004	CHAAP-19C-LGIA-DPT18	1	14:09	HG
SL3808-004L	CHAAP-19C-LGIA-DPT18L	5	14:12	HG
SL3808-004A	CHAAP-19C-LGIA-DPT18A	1	14:14	HG
SL3808-004S	CHAAP-19C-LGIA-DPT18S	1	14:16	HG
SL3808-004P	CHAAP-19C-LGIA-DPT18P	1	14:18	HG
SL3808-005	CHAAP-19C-LGIA-DPT18-FF	1	14:20	HG
SL3808-005L	CHAAP-19C-LGIA-DPT18-FFL	5	14:22	HG
SL3808-005A	HAAP-19C-LGIA-DPT18-FFA	1	14:25	HG
CCV		1	14:27	HG
CCB		1	14:29	HG
SL3808-006	CHAAP-19C-UGIA-DPT13	1	14:31	HG
SL3808-007	CHAAP-19C-UGIA-DPT13-FF	1	14:35	HG
SL3808-009	CHAAP-19C-LGIA-DPT14-FF	1	14:37	HG
SL3808-010	CHAAP-19C-LGIA-DPT114	1	14:39	HG
SL3808-011	CHAAP-19C-LGIA-DPT114-FF	1	14:41	HG
SL3808-012	CHAAP-19C-UGIA-DPT02	1	14:43	HG
SL3808-013	CHAAP-19C-UGIA-DPT02-FF	1	14:46	HG
SL3808-014	CHAAP-EB-050218-DPT	1	14:48	HG
SL3808-015	CHAAP-19C-LGIA-DPT22	1	14:50	HG
SL3808-017	CHAAP-19C-UGIA-DPT21	1	14:52	HG
CCV		1	14:57	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
CCB		1	14:59	HG
SL3808-018	CHAAP-19C-UGIA-DPT21-FF	1	15:01	HG
ZZZZZZ		1	15:03	
ZZZZZZ		1	15:05	
ZZZZZZ		1	15:07	
ZZZZZZ		1	15:10	
ZZZZZZ		1	15:15	
ZZZZZZ		1	15:18	
ZZZZZZ		1	15:20	
ZZZZZZ		1	15:22	
ZZZZZZ		1	15:24	
CCV		1	15:26	HG
CCB		1	15:28	HG
ZZZZZZ		1	15:30	
ZZZZZZ		5	15:33	
ZZZZZZ		1	15:35	
ZZZZZZ		1	15:37	
ZZZZZZ		1	15:39	
ZZZZZZ		1	15:41	
ZZZZZZ		1	15:43	
ZZZZZZ		1	15:45	
ZZZZZZ		1	15:48	
ZZZZZZ		1	15:50	
CCV		1	15:52	HG
CCB		1	15:54	HG
ZZZZZZ		1	15:56	
ZZZZZZ		1	15:58	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	16:00	
ZZZZZZ		1	16:03	
ZZZZZZ		1	16:05	
PBWLE07HGW3		1	16:07	HG
LCSWLE07HGW3		1	16:09	HG
SL3808-005S	HAAP-19C-LGIA-DPT18-FFS	1	16:11	HG
SL3808-005P	HAAP-19C-LGIA-DPT18-FFP	1	16:13	HG
SL3808-008	CHAAP-19C-LGIA-DPT14	1	16:16	HG
CCV		1	16:18	HG
CCB		1	16:20	HG
SL3808-016	CHAAP-19C-LGIA-DPT22-FF	1	16:22	HG
CCV		1	16:24	HG
CCB		1	16:27	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:23	
200.8 TUNE		1	14:26	
Cal Blank		1	15:12	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std		1	15:16	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	15:20	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	15:23	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	15:26	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	15:30	
ICSA		1	15:34	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	15:38	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	15:41	
ZZZZZZ		1	15:45	
ZZZZZZ		1	15:48	
ZZZZZZ		1	15:52	
ZZZZZZ		1	15:56	
CCV		1	16:00	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:03	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	16:07	
ZZZZZZ		1	16:11	
ZZZZZZ		1	16:14	
ZZZZZZ		5	16:18	
ZZZZZZ		1	16:22	
ZZZZZZ		25	16:26	
ZZZZZZ		1	16:30	
ZZZZZZ		1	16:33	
ZZZZZZ		5	16:37	
ZZZZZZ		5	16:41	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	16:45	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:49	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		10	16:52	
ZZZZZZ		10	16:56	
ZZZZZZ		10	17:00	
ZZZZZZ		10	17:04	
ZZZZZZ		10	17:08	
ZZZZZZ		10	17:12	
ZZZZZZ		1	17:16	
ZZZZZZ		5	17:20	
ZZZZZZ		5	17:24	
ZZZZZZ		5	17:28	
CCV		1	17:32	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:36	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	17:40	
ZZZZZZ		5	17:44	
ZZZZZZ		5	17:48	
ZZZZZZ		5	17:52	
ZZZZZZ		5	17:56	
ZZZZZZ		5	18:00	
ZZZZZZ		10	18:04	
ZZZZZZ		10	18:08	
ZZZZZZ		50	18:12	
ZZZZZZ		10	18:16	
CCV		1	18:20	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:24	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		10	18:28	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		10	18:32	
ZZZZZZ		10	18:37	
ZZZZZZ		1	18:41	
ZZZZZZ		1	18:45	
ZZZZZZ		5	18:49	
ZZZZZZ		1	18:53	
ZZZZZZ		1	18:57	
ZZZZZZ		1	19:01	
ZZZZZZ		1	19:05	
CCV		1	19:09	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:13	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	19:17	
ZZZZZZ		1	19:22	
PBWLE07IMW1		5	19:26	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
LCSWLE07IMW1		5	19:30	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-002	CHAAP-19C-UGIA-DPT17	5	19:34	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-003	CHAAP-19C-UGIA-DPT17-FF	5	19:38	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-004	CHAAP-19C-LGIA-DPT18	5	19:42	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-004L	CHAAP-19C-LGIA-DPT18L	25	19:47	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-004A	CHAAP-19C-LGIA-DPT18A	5	19:51	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-004S	CHAAP-19C-LGIA-DPT18S	5	19:55	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
CCV		1	19:59	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:03	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
SL3808-004P	CHAAP-19C-LGIA-DPT18P	5	20:07	Sb Ba Tl
SL3808-005	CHAAP-19C-LGIA-DPT18-FF	5	20:11	Sb Ba Tl
SL3808-005L	CHAAP-19C-LGIA-DPT18-FFL	25	20:16	Sb Ba Tl
SL3808-005A	CHAAP-19C-LGIA-DPT18-FFA	5	20:20	Sb Ba Tl

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements																						
SL3808-005S	HAAP-19C-LGIA-DPT18-FFS	5	20:24				Sb			Ba														Tl		
SL3808-005P	HAAP-19C-LGIA-DPT18-FFP	5	20:28				Sb			Ba														Tl		
SL3808-006	CHAAP-19C-UGIA-DPT13	5	20:33				Sb			Ba														Tl		
SL3808-007	CHAAP-19C-UGIA-DPT13-FF	5	20:37				Sb			Ba														Tl		
SL3808-008	CHAAP-19C-LGIA-DPT14	5	20:41				Sb			Ba														Tl		
SL3808-009	CHAAP-19C-LGIA-DPT14-FF	5	20:45				Sb			Ba														Tl		
CCV		1	20:49	Al		Sb		As		Ba		Cd	Ca		Co	Cu		Fe		Mg	Mn		Mo	Ni	K	Se	Ag	Na	Tl		V	Zn
CCB		1	20:53	Al		Sb		As		Ba		Cd	Ca		Co	Cu		Fe		Mg	Mn		Mo	Ni	K	Se	Ag	Na	Tl		V	Zn
SL3808-010	CHAAP-19C-LGIA-DPT114	5	20:58				Sb			Ba														Tl		
SL3808-011	CHAAP-19C-LGIA-DPT114-FF	5	21:02				Sb			Ba														Tl		
SL3808-012	CHAAP-19C-UGIA-DPT02	5	21:06				Sb			Ba														Tl		
SL3808-013	CHAAP-19C-UGIA-DPT02-FF	5	21:10				Sb			Ba														Tl		
SL3808-014	CHAAP-EB-050218-DPT	5	21:14				Sb			Ba														Tl		
SL3808-015	CHAAP-19C-LGIA-DPT22	5	21:19				Sb			Ba														Tl		
SL3808-016	CHAAP-19C-LGIA-DPT22-FF	5	21:23				Sb			Ba														Tl		
SL3808-017	CHAAP-19C-UGIA-DPT21	5	21:27				Sb			Ba														Tl		
SL3808-018	CHAAP-19C-UGIA-DPT21-FF	5	21:31				Sb			Ba														Tl		
ZZZZZZ		1	21:36																							
CCV		1	21:40	Al		Sb		As		Ba		Cd	Ca		Co	Cu		Fe		Mg	Mn		Mo	Ni	K	Se	Ag	Na	Tl		V	Zn
CCB		1	21:44	Al		Sb		As		Ba		Cd	Ca		Co	Cu		Fe		Mg	Mn		Mo	Ni	K	Se	Ag	Na	Tl		V	Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:18	
200.8 TUNE		1	14:21	
Cal Blank		1	18:36	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
Cal Std		1	18:40	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ICV		1	18:44	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ICB		1	18:48	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
PQL		1	18:52	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	18:56	
ICSA		1	19:00	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ICSAB		1	19:04	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	19:08	
ZZZZZZ		1	19:13	
ZZZZZZ		1	19:16	
ZZZZZZ		1	19:21	
ZZZZZZ		1	19:25	
CCV		1	19:29	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	19:33	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	19:37	
ZZZZZZ		5	19:41	
ZZZZZZ		1	19:45	
ZZZZZZ		1	19:50	
ZZZZZZ		5	19:54	
ZZZZZZ		5	19:58	
ZZZZZZ		1	20:02	
PBWLE07IMW1		5	20:07	Al Be Ca Cr Pb Mg K Na
LCSWLE07IMW1		5	20:11	Al Be Ca Cr Pb Mg K Na
SL3808-002	CHAAP-19C-UGIA-DPT17	5	20:15	Al Be Ca Cr Pb Mg K Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements																						
CCV		1	20:19	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
CCB		1	20:23	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
SL3808-003	CHAAP-19C-UGIA-DPT17-FF	5	20:27	Al		Be		Ca	Cr				Pb	Mg				K			Na					
SL3808-004	CHAAP-19C-LGIA-DPT18	5	20:31	Al		Be		Ca	Cr				Pb	Mg				K			Na					
SL3808-004L	CHAAP-19C-LGIA-DPT18L	25	20:36	Al		Be		Ca	Cr				Pb	Mg				K			Na					
SL3808-004A	CHAAP-19C-LGIA-DPT18A	5	20:40	Al		Be		Ca	Cr				Pb	Mg				K			Na					
SL3808-004S	CHAAP-19C-LGIA-DPT18S	5	20:44	Al		Be		Ca	Cr				Pb	Mg				K			Na					
SL3808-004P	CHAAP-19C-LGIA-DPT18P	5	20:48	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-005	CHAAP-19C-LGIA-DPT18-FF	5	20:52	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-005L	CHAAP-19C-LGIA-DPT18-FFL	25	20:56	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-005A	HAAP-19C-LGIA-DPT18-FFA	5	21:01	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
ZZZZZZ		5	21:05																							
CCV		1	21:09	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
CCB		1	21:13	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
SL3808-005S	HAAP-19C-LGIA-DPT18-FFS	5	21:17	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-005P	HAAP-19C-LGIA-DPT18-FFP	5	21:21	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-006	CHAAP-19C-UGIA-DPT13	5	21:25	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-007	CHAAP-19C-UGIA-DPT13-FF	5	21:30	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-008	CHAAP-19C-LGIA-DPT14	5	21:34	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-009	CHAAP-19C-LGIA-DPT14-FF	5	21:38	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-010	CHAAP-19C-LGIA-DPT114	5	21:42	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-011	CHAAP-19C-LGIA-DPT114-FF	5	21:47	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-012	CHAAP-19C-UGIA-DPT02	5	21:51	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
ZZZZZZ		1	21:55																							
CCV		1	21:59	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
CCB		1	22:03	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
SL3808-013	CHAAP-19C-UGIA-DPT02-FF	5	22:07	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SL3808-014	CHAAP-EB-050218-DPT	5	22:12	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na V Zn
SL3808-015	CHAAP-19C-LGIA-DPT22	5	22:16	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na V Zn
SL3808-016	CHAAP-19C-LGIA-DPT22-FF	5	22:20	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na V Zn
SL3808-017	CHAAP-19C-UGIA-DPT21	5	22:24	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na V Zn
SL3808-018	CHAAP-19C-UGIA-DPT21-FF	5	22:28	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na V Zn
ZZZZZZ		1	22:33	
ZZZZZZ		1	22:37	
ZZZZZZ		5	22:41	
ZZZZZZ		5	22:45	
CCV		1	22:49	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	22:53	Al As Be Cd Ca Cr Co Cu Fe Pb 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: SL3808-2
Report Date: 21-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3808

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-UGIA-DPT17	AQ	02-MAY-18 14:35:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U.0125 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227686	03-MAY-18 13:15:02	N/A	N/A	

Katahdin Analytical Services A0002216

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3808-3
Report Date: 21-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3808

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-UGIA-DPT17-FF	AQ	02-MAY-18 14:35:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0034 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227686	03-MAY-18 13:15:03	N/A	N/A	

Katahdin Analytical Services A0002217

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3808-4
Report Date: 21-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3808

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT18	AQ	02-MAY-18 14:40:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.062 mg/L	0.12	0.0038	0.062	SW846 7196A	WG227686	03-MAY-18 13:39:01	N/A	N/A	M1

Katahdin Analytical Services A0002218

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3808-5
Report Date: 21-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3808

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT18-FF	AQ	02-MAY-18 14:40:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0077 mg/L	0.12	0.0038	0.062	SW846 7196A	WG227686	03-MAY-18 13:39:04	N/A	N/A	M1

Katahdin Analytical Services A0002219

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH
nelac
Cert No E87604

Quality Control Report

Blank Sample Summary Report

Chromium, Hexavalent

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG227686	SW846 7196A	03-MAY-18	N/A	J 0.0010 mg/L	0.025 mg/L	.0125

Katahdin Analytical Services A000220

Katahdin
ANALYTICAL SERVICES

Cert No E87604

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
WG227686-2	LCS	WG227686	03-MAY-18	N/A	mg/L	.5	0.51	103	85-115	

Katahdin Analytical Services A000221

Katahdin
ANALYTICAL SERVICES

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nelac
Cert No E87604

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
WG227686-5	MS	SL3808-5	WG227686	03-MAY-18	mg/L	2.5	J 0.0077	1.3	53*	85 - 115
WG227686-4	MSD	SL3808-4	WG227686	03-MAY-18	mg/L	2.5	U 0.062	1.0	41*	85 - 115
WG227686-6	MSD	SL3808-5	WG227686	03-MAY-18	mg/L	2.5	J 0.0077	1.3	52*	85 - 115
WG227686-3	MS	SL3808-4	WG227686	03-MAY-18	mg/L	2.5	U 0.062	1.0	41*	85 - 115

Katahdin Analytical Services A000222

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:** SL3808

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-TB-050218-DPT	SL3808-1		97.0		97.5		98.0		100.	
CHAAP-19C-LGIA-DPT11	SL3808-10		95.2		97.2		99.9		98.5	
CHAAP-19C-UGIA-DPT02	SL3808-12		97.8		101.		101.		100.	
CHAAP-EB-050218-DPT	SL3808-14		97.1		97.5		98.5		100.	
CHAAP-19C-LGIA-DPT22	SL3808-15		97.2		99.8		104.		102.	
CHAAP-19C-UGIA-DPT21	SL3808-17		96.5		98.0		101.		102.	
CHAAP-19C-UGIA-DPT17	SL3808-2		97.0		101.		107.		101.	
CHAAP-19C-LGIA-DPT18	SL3808-4		95.0		100.		104.		101.	
CHAAP-19C-UGIA-DPT13	SL3808-6		97.6		104.		108.		105.	
CHAAP-19C-LGIA-DPT14	SL3808-8		95.8		105.		108.		102.	
Laboratory Control S	WG227659-1		101.		93.9		91.7		98.4	
Method Blank Sample	WG227659-2		96.1		95.9		94.1		98.7	
Laboratory Control S	WG227763-1		104.		98.2		98.4		101.	
Method Blank Sample	WG227763-2		96.5		98.4		102.		101.	
Laboratory Control S	WG227830-1		103.		96.6		95.4		99.6	
Method Blank Sample	WG227830-2		94.8		98.3		96.2		98.9	
Matrix Spike	WG227830-7		102.		94.8		96.7		100.	
Matrix Spike Duplica	WG227830-8		102.		95.8		96.1		101.	

		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.

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 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P5525.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL3808
Lab Sample ID : WG227659-2
Date Analyzed : 04-MAY-18
Time Analyzed : 14:20

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	WG227659-1	P5523.D	05/04/18	13:05
CHAAP-TB-050218-DPT	SL3808-1	P5527.D	05/04/18	15:28
CHAAP-EB-050218-DPT	SL3808-14	P5528.D	05/04/18	16:02

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P5548.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL3808
Lab Sample ID : WG227763-2
Date Analyzed : 07-MAY-18
Time Analyzed : 10:51

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	WG227763-1	P5546.D	05/07/18	09:38
CHAAP-19C-UGIA-DPT17	SL3808-2	P5558.D	05/07/18	16:34
CHAAP-19C-UGIA-DPT13	SL3808-6	P5559.D	05/07/18	17:08
CHAAP-19C-LGIA-DPT14	SL3808-8	P5560.D	05/07/18	17:43

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P5583.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL3808
Lab Sample ID : WG227830-2
Date Analyzed : 08-MAY-18
Time Analyzed : 11:51

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	WG227830-1	P5581.D	05/08/18	10:35
CHAAP-19C-LGIA-DPT114	SL3808-10	P5590.D	05/08/18	15:52
CHAAP-19C-UGIA-DPT02	SL3808-12	P5591.D	05/08/18	16:27
CHAAP-19C-LGIA-DPT22	SL3808-15	P5592.D	05/08/18	17:01
CHAAP-19C-UGIA-DPT21	SL3808-17	P5593.D	05/08/18	17:35
CHAAP-19C-LGIA-DPT18	SL3808-4	P5594.D	05/08/18	18:10
Matrix Spike	WG227830-7	P5595.D	05/08/18	18:44
Matrix Spike Duplica	WG227830-8	P5596.D	05/08/18	19:18

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB018A.D
Instrument ID : GCMS-P

SDG : SL3808
Date Analyzed : 03-MAY-18
Time Analyzed : 12:30
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	56.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	5.6		
173	Less than 2.0% of mass 174	0.8	1.02	1
174	Greater than 50.0% of mass 95	76.6		
175	5.0 - 9.0% of mass 174	5.2	6.78	1
176	95.0 - 101.0% of mass 174	73.1	95.46	1
177	5.0 - 9.0% of mass 176	5.3	7.29	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	WG227568-4	P5508.D	05/03/18	12:56
Initial Calibration	WG227568-3	P5509.D	05/03/18	13:30
Initial Calibration	WG227568-2	P5510.D	05/03/18	14:04
Initial Calibration	WG227568-1	P5511.D	05/03/18	14:39
Initial Calibration	WG227568-6	P5512.D	05/03/18	15:13
Initial Calibration	WG227568-5	P5513.D	05/03/18	15:47

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB020A.D
Instrument ID : GCMS-P

SDG : SL3808
Date Analyzed : 04-MAY-18
Time Analyzed : 11:13
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	21.4		
75	30.0 - 60.0% of mass 95	56.4		
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	0.3	0.32	1
174	Greater than 50.0% of mass 95	93.6		
175	5.0 - 9.0% of mass 174	5.4	5.75	1
176	95.0 - 101.0% of mass 174	90.1	96.24	1
177	5.0 - 9.0% of mass 176	6.5	7.24	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	WG227659-4	P5522.D	05/04/18	12:26
Laboratory Control S	WG227659-1	P5523.D	05/04/18	13:05
Independent Source	WG227659-7	P5523A.D	05/04/18	13:05
Method Blank Sample	WG227659-2	P5525.D	05/04/18	14:20
CHAAP-TB-050218-DPT	SL3808-1	P5527.D	05/04/18	15:28
CHAAP-EB-050218-DPT	SL3808-14	P5528.D	05/04/18	16:02
Continuing Calibrati	WG227659-5	P5538.D	05/04/18	21:46

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB021A.D
Instrument ID : GCMS-P

SDG : SL3808
Date Analyzed : 07-MAY-18
Time Analyzed : 07:45
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	21.3		
75	30.0 - 60.0% of mass 95	58.4		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.8		
173	Less than 2.0% of mass 174	0.2	0.19	1
174	Greater than 50.0% of mass 95	88.5		
175	5.0 - 9.0% of mass 174	6.9	7.75	1
176	95.0 - 101.0% of mass 174	86.3	97.50	1
177	5.0 - 9.0% of mass 176	6.2	7.21	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	WG227763-4	P5545.D	05/07/18	08:50
Laboratory Control S	WG227763-1	P5546.D	05/07/18	09:38
Method Blank Sample	WG227763-2	P5548.D	05/07/18	10:51
CHAAP-19C-UGIA-DPT17	SL3808-2	P5558.D	05/07/18	16:34
CHAAP-19C-UGIA-DPT13	SL3808-6	P5559.D	05/07/18	17:08
CHAAP-19C-LGIA-DPT14	SL3808-8	P5560.D	05/07/18	17:43
Continuing Calibrati	WG227763-5	P5562.D	05/07/18	18:51

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB023A.D
Instrument ID : GCMS-P

SDG : SL3808
Date Analyzed : 08-MAY-18
Time Analyzed : 09:18
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	19.4		
75	30.0 - 60.0% of mass 95	54.7		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.7		
173	Less than 2.0% of mass 174	0.4	0.48	1
174	Greater than 50.0% of mass 95	76.0		
175	5.0 - 9.0% of mass 174	5.0	6.61	1
176	95.0 - 101.0% of mass 174	76.3	100.43	1
177	5.0 - 9.0% of mass 176	5.7	7.43	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	WG227830-4	P5580.D	05/08/18	09:48
Laboratory Control S	WG227830-1	P5581.D	05/08/18	10:35
Method Blank Sample	WG227830-2	P5583.D	05/08/18	11:51
CHAAP-19C-LGIA-DPT114	SL3808-10	P5590.D	05/08/18	15:52
CHAAP-19C-UGIA-DPT02	SL3808-12	P5591.D	05/08/18	16:27
CHAAP-19C-LGIA-DPT22	SL3808-15	P5592.D	05/08/18	17:01
CHAAP-19C-UGIA-DPT21	SL3808-17	P5593.D	05/08/18	17:35
CHAAP-19C-LGIA-DPT18	SL3808-4	P5594.D	05/08/18	18:10
Matrix Spike	WG227830-7	P5595.D	05/08/18	18:44
Matrix Spike Duplica	WG227830-8	P5596.D	05/08/18	19:18
Continuing Calibrati	WG227830-5	P5597.D	05/08/18	19:53

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227568-4
Lab File ID : P5508.D

SDG: SL3808
Analytical Date: 05/03/18 12:56
Instrument ID: GCMS-P

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	1074176		6.44		1785427		7.38		1800386		11.80	
	Upper Limit	2148352		6.61		3570854		7.55		3600772		11.96	
	Lower Limit	537088		6.28		892713.5		7.21		900193		11.63	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG227659-4	1272877		6.44		1973639		7.38		2034895		11.80	
Laboratory Control S	WG227659-1	1322716		6.44		2001979		7.38		2038077		11.80	
Method Blank Sample	WG227659-2	1186121		6.44		1855362		7.38		1856395		11.80	
CHAAP-TB-050218-D	SL3808-1	1081521		6.44		1711161		7.38		1745990		11.80	
CHAAP-EB-050218-D	SL3808-14	1027020		6.44		1625792		7.39		1668953		11.80	
Continuing Calibrati	WG227659-5	673598		6.44		1137636		7.39		1219288		11.81	
Continuing Calibrati	WG227763-4	914402		6.44		1473084		7.38		1580139		11.80	
Laboratory Control S	WG227763-1	958436		6.44		1552546		7.38		1623933		11.81	
Method Blank Sample	WG227763-2	808263		6.45		1322931		7.38		1360309		11.81	
CHAAP-19C-UGIA-DI	SL3808-2	708865		6.44		1198848		7.38		1229065		11.80	
CHAAP-19C-UGIA-DI	SL3808-6	679198		6.44		1140411		7.39		1193389		11.80	
CHAAP-19C-LGIA-DI	SL3808-8	658487		6.44		1124468		7.39		1175833		11.81	
Continuing Calibrati	WG227763-5	938642		6.44		1529437		7.38		1613599		11.80	
Continuing Calibrati	WG227830-4	948490		6.43		1531043		7.38		1651300		11.80	
Laboratory Control S	WG227830-1	1027534		6.45		1625363		7.38		1713562		11.80	
Method Blank Sample	WG227830-2	877734		6.44		1419587		7.38		1452884		11.80	
CHAAP-19C-LGIA-DI	SL3808-10	937649		6.44		1552757		7.38		1584862		11.80	
CHAAP-19C-UGIA-DI	SL3808-12	865315		6.44		1433803		7.38		1501626		11.80	
CHAAP-19C-LGIA-DI	SL3808-15	824431		6.44		1388967		7.38		1456863		11.80	
CHAAP-19C-UGIA-DI	SL3808-17	805278		6.44		1330019		7.38		1390937		11.80	
CHAAP-19C-LGIA-DI	SL3808-4	772415		6.44		1305807		7.38		1352184		11.80	
Matrix Spike	WG227830-7	863933		6.44		1391533		7.38		1483461		11.80	
Matrix Spike Duplica	WG227830-8	930113		6.44		1476171		7.38		1568522		11.80	
Continuing Calibrati	WG227830-5	986446		6.44		1536197		7.39		1642230		11.80	

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.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227568-4
Lab File ID : P5508.D

SDG: SL3808
Analytical Date: 05/03/18 12:56
Instrument ID: GCMS-P

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	1047820		14.77	
	Upper Limit	2095640		14.93	
	Lower Limit	523910		14.60	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG227659-4	1168516		14.77	
Laboratory Control S	WG227659-1	1191939		14.77	
Method Blank Sample	WG227659-2	1042131		14.77	
CHAAP-TB-050218-D	SL3808-1	983602		14.77	
CHAAP-EB-050218-D	SL3808-14	916316		14.77	
Continuing Calibrati	WG227659-5	713580		14.77	
Continuing Calibrati	WG227763-4	926121		14.77	
Laboratory Control S	WG227763-1	958018		14.77	
Method Blank Sample	WG227763-2	728553		14.77	
CHAAP-19C-UGIA-DI	SL3808-2	677206		14.77	
CHAAP-19C-UGIA-DI	SL3808-6	655335		14.77	
CHAAP-19C-LGIA-DI	SL3808-8	632365		14.77	
Continuing Calibrati	WG227763-5	945636		14.77	
Continuing Calibrati	WG227830-4	980650		14.77	
Laboratory Control S	WG227830-1	1019473		14.77	
Method Blank Sample	WG227830-2	789399		14.76	
CHAAP-19C-LGIA-DI	SL3808-10	902089		14.77	
CHAAP-19C-UGIA-DI	SL3808-12	838858		14.77	
CHAAP-19C-LGIA-DI	SL3808-15	799251		14.77	
CHAAP-19C-UGIA-DI	SL3808-17	763211		14.77	
CHAAP-19C-LGIA-DI	SL3808-4	735322		14.77	
Matrix Spike	WG227830-7	902450		14.77	
Matrix Spike Duplica	WG227830-8	939015		14.77	
Continuing Calibrati	WG227830-5	995190		14.77	

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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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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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).

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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.

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-1
Client ID: CHAAP-TB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5527.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-1
Client ID: CHAAP-TB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5527.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		97.5	%					
1,2-Dichloroethane-d4		98.0	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		97.0	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5527.D
Report Date: 18-May-2018 13:36

Katahdin Analytical Services

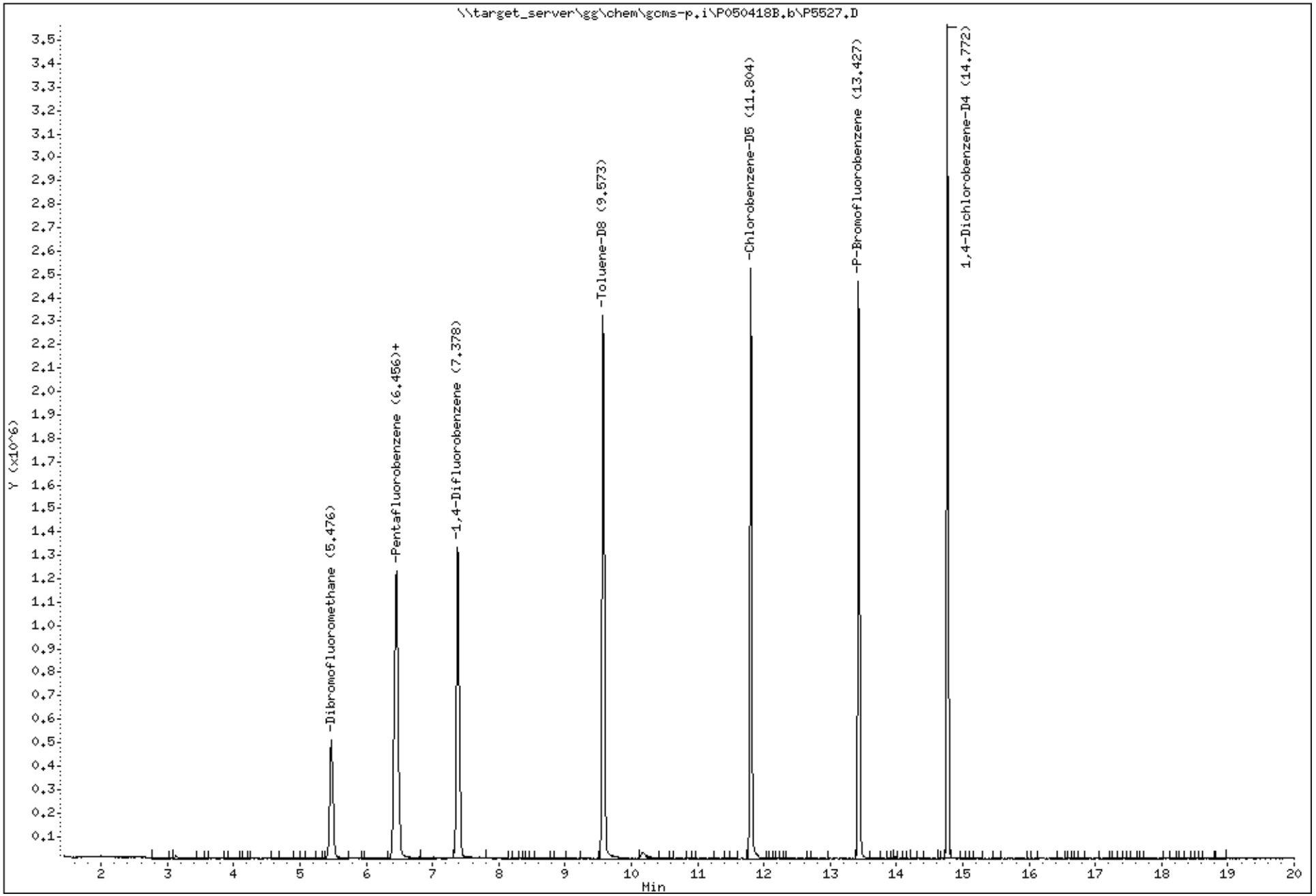
Data file : \\target_server\gg\chem\gcms-p.i\P050418B.b\P5527.D
Lab Smp Id: SL3808-1 Client Smp ID: CHAAP-TB-050218-DPT
Inj Date : 04-MAY-2018 15:28 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3808-1
Misc Info : WG227659,WG227568-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050418B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:35 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 7
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
$	34 Dibromofluoromethane	113	5.476	5.469	(0.850)	521476	48.7538	48.8	
*	41 Pentafluorobenzene	168	6.441	6.441	(1.000)	1081521	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.463	6.470	(1.003)	691526	49.0290	49.0	
*	48 1,4-Difluorobenzene	114	7.378	7.385	(1.000)	1711161	50.0000		
$	58 Toluene-D8	98	9.573	9.573	(1.298)	2032754	50.1459	50.1	
*	68 Chlorobenzene-D5	117	11.804	11.804	(1.000)	1745990	50.0000		
$	78 P-Bromofluorobenzene	95	13.427	13.427	(1.820)	871969	48.5135	48.5	
*	94 1,4-Dichlorobenzene-D4	152	14.771	14.771	(1.000)	983602	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5527.D
Date : 04-MAY-2018 15:28
Client ID: CHAAP-TB-050218-DPT
Instrument: gcms-p.i
Sample Info: SL3808-1



Katahdin Analytical Services 1000019

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-2
Client ID: CHAAP-19C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5558.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-2
Client ID: CHAAP-19C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5558.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		101.	%					
1,2-Dichloroethane-d4		107.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		97.0	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5558.D
Report Date: 18-May-2018 13:38

Katahdin Analytical Services

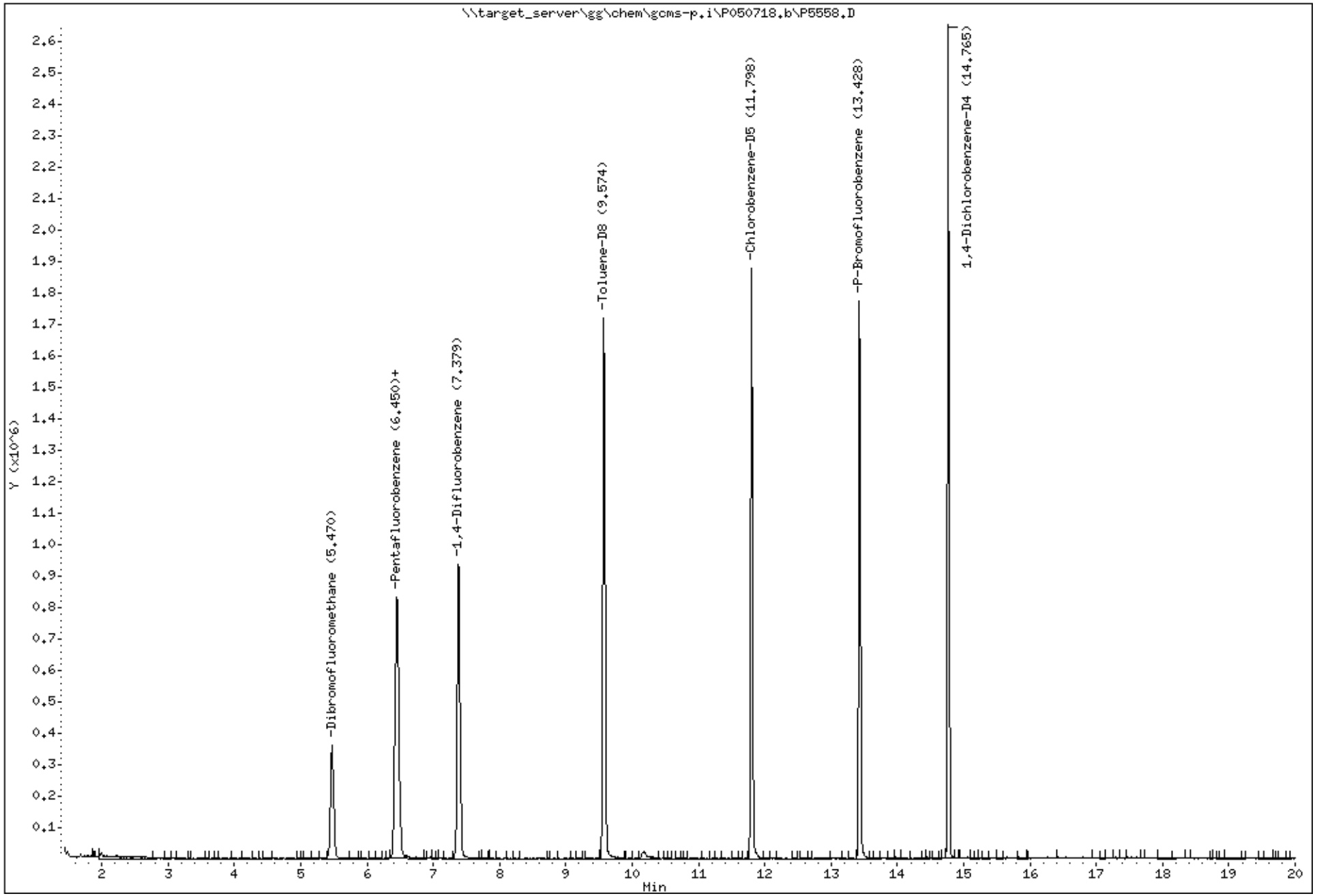
Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5558.D
Lab Smp Id: SL3808-2
Inj Date : 07-MAY-2018 16:34 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3808-2
Misc Info : WG227763,WG227568-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:37 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 15
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	5.477	5.469	(0.850)	354048	50.5019	50.5	
* 41 Pentafluorobenzene	168	6.442	6.441	(1.000)	708865	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	495995	53.6529	53.6	
* 48 1,4-Difluorobenzene	114	7.379	7.385	(1.000)	1198848	50.0000		
$ 58 Toluene-D8	98	9.574	9.573	(1.297)	1438302	50.6439	50.6	
* 68 Chlorobenzene-D5	117	11.797	11.804	(1.000)	1229065	50.0000		
$ 78 P-Bromofluorobenzene	95	13.428	13.427	(1.820)	610693	48.4966	48.5	
* 94 1,4-Dichlorobenzene-D4	152	14.765	14.771	(1.000)	677206	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5558.D
Date : 07-MAY-2018 16:34
Client ID:
Instrument: gcms-p.i
Sample Info: SL3808-2



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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5594.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5594.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		100.	%					
1,2-Dichloroethane-d4		104.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		95.0	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5594.D
Report Date: 18-May-2018 13:43

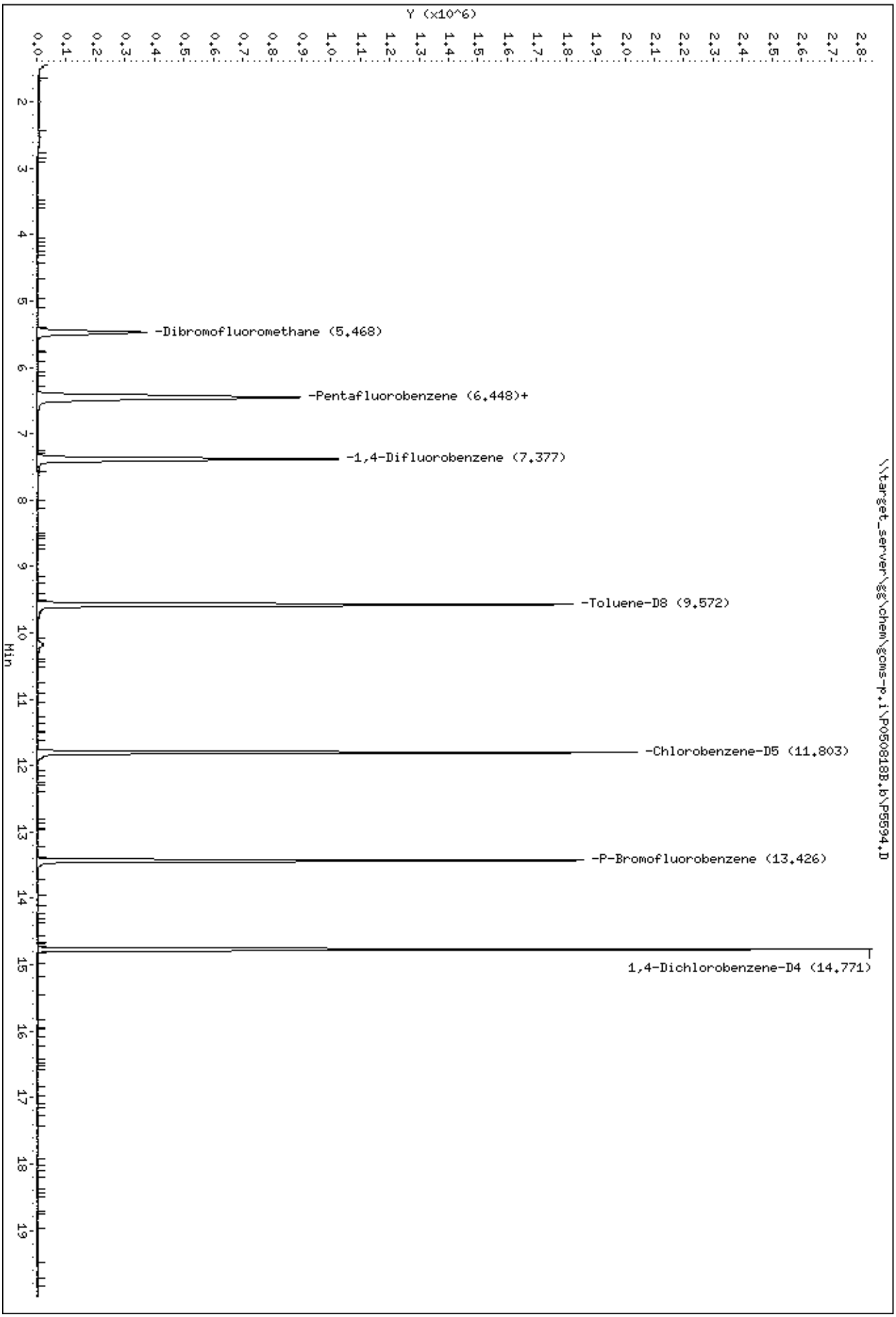
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5594.D
Lab Smp Id: SL3808-4
Inj Date : 08-MAY-2018 18:10 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3808-4
Misc Info : WG227830,WG227568-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 15
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	5.468	5.469	(0.849)	381958	50.0004	50.0	
* 41 Pentafluorobenzene	168	6.440	6.441	(1.000)	772415	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.469	6.470	(1.004)	523531	51.9722	52.0	
* 48 1,4-Difluorobenzene	114	7.384	7.385	(1.000)	1305807	50.0000		
$ 58 Toluene-D8	98	9.572	9.573	(1.296)	1564620	50.5791	50.6	
* 68 Chlorobenzene-D5	117	11.803	11.804	(1.000)	1352184	50.0000		
$ 78 P-Bromofluorobenzene	95	13.426	13.427	(1.818)	651888	47.5277	47.5	
* 94 1,4-Dichlorobenzene-D4	152	14.770	14.771	(1.000)	735322	50.0000		


Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5594.D
Date : 08-MAY-2018 18:10
Client ID:
Sample Info: SL3808-4
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P050818B.b\P5594.D
Y (x10^6)
Min
-Dibromofluoromethane (5.468)
-Pentafluorobenzene (6.448)+
-1,4-Difluorobenzene (7.377)
-Toluene-D8 (9.572)
-Chlorobenzene-D5 (11.803)
-P-Bromofluorobenzene (13.426)
1,4-Dichlorobenzene-D4 (14.771)

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-6
Client ID: CHAAP-19C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5559.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-6
Client ID: CHAAP-19C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5559.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		104.	%					
1,2-Dichloroethane-d4		108.	%					
Toluene-d8		105.	%					
P-Bromofluorobenzene		97.6	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5559.D
Report Date: 18-May-2018 13:38

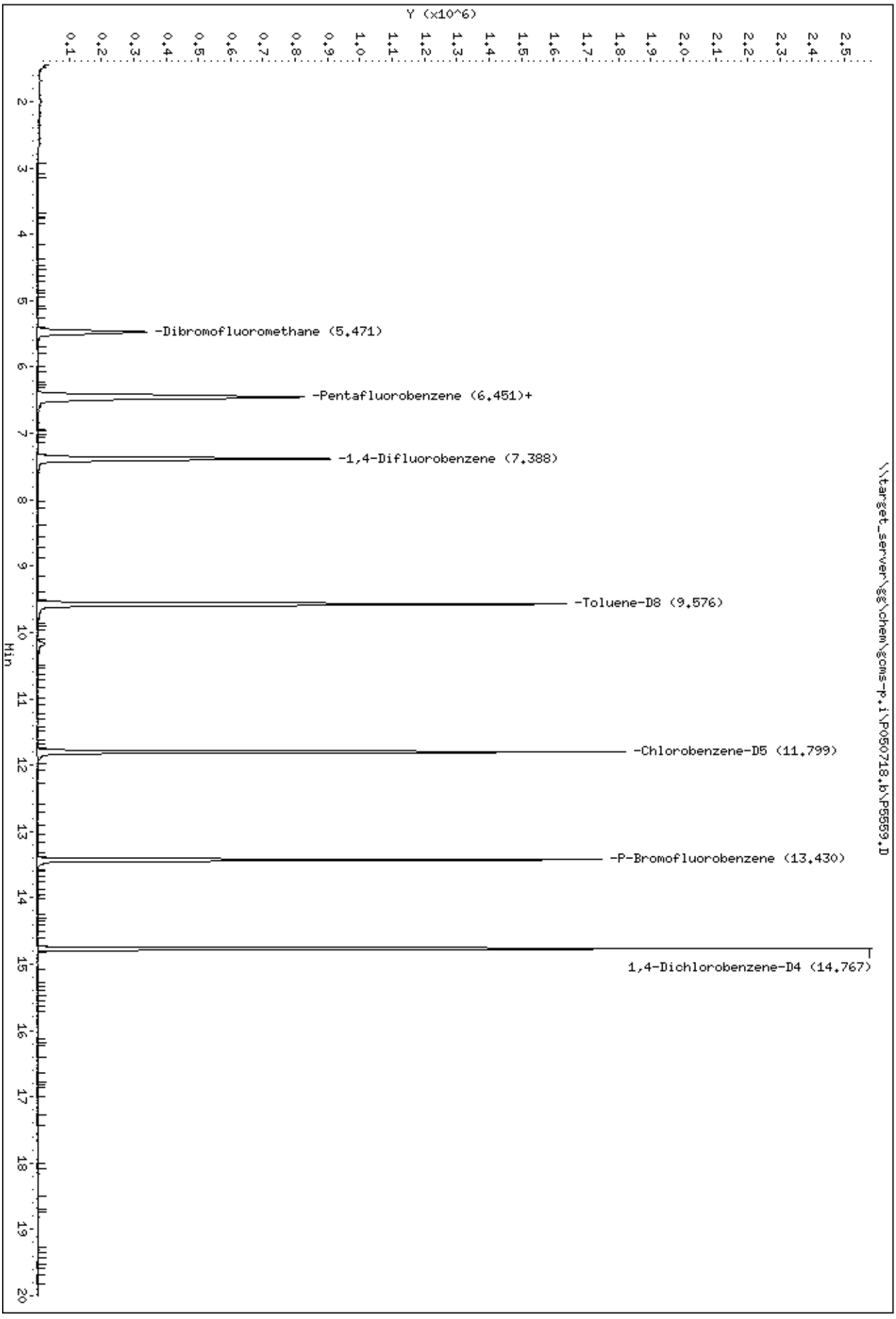
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5559.D
Lab Smp Id: SL3808-6
Inj Date : 07-MAY-2018 17:08 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3808-6
Misc Info : WG227763,WG227568-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:37 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 16
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	5.471	5.469	(0.849)	347734	51.7678	51.8	
*	41 Pentafluorobenzene	168	6.443	6.441	(1.000)	679198	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.472	6.470	(1.004)	476696	53.8177	53.8	
*	48 1,4-Difluorobenzene	114	7.387	7.385	(1.000)	1140411	50.0000		
$	58 Toluene-D8	98	9.575	9.573	(1.296)	1415875	52.4089	52.4	
*	68 Chlorobenzene-D5	117	11.799	11.804	(1.000)	1193389	50.0000		
$	78 P-Bromofluorobenzene	95	13.429	13.427	(1.818)	584402	48.7868	48.8	
*	94 1,4-Dichlorobenzene-D4	152	14.766	14.771	(1.000)	655335	50.0000		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Date : 07-MAY-2018 17:08
Client ID:
Sample Info: SL3808-6
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P050718.b\P5559.D
Y (x10^6)
Min
-Dibromofluoromethane (5.471)
-Pentafluorobenzene (6.451)+
-1,4-Difluorobenzene (7.388)
-Toluene-D8 (9.576)
-Chlorobenzene-D5 (11.799)
-P-Bromofluorobenzene (13.430)
1,4-Dichlorobenzene-D4 (14.767)

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-8
Client ID: CHAAP-19C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5560.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-8
Client ID: CHAAP-19C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5560.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		105.	%					
1,2-Dichloroethane-d4		108.	%					
Toluene-d8		102.	%					
P-Bromofluorobenzene		95.8	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5560.D
Report Date: 18-May-2018 13:38

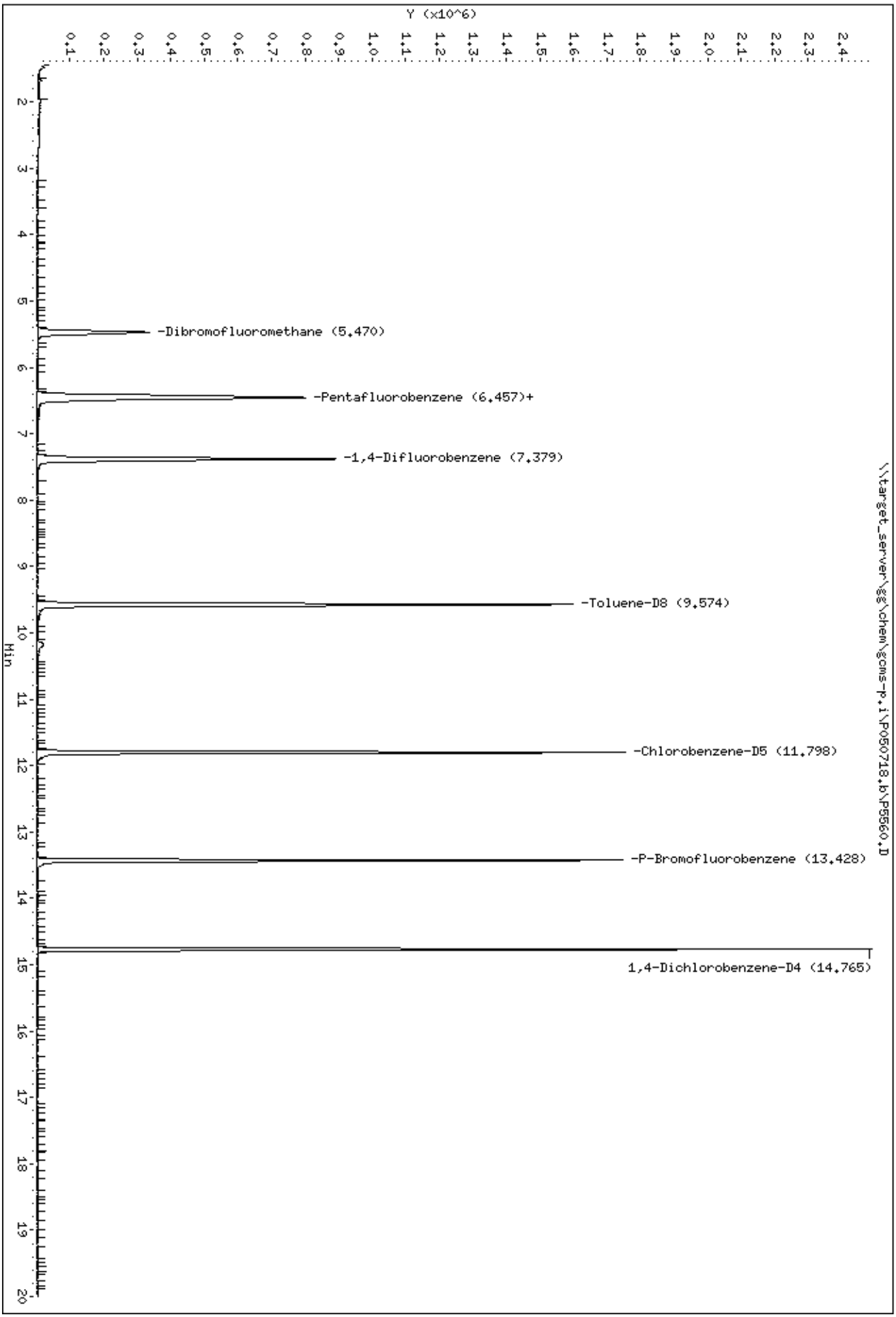
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5560.D
Lab Smp Id: SL3808-8
Inj Date : 07-MAY-2018 17:43 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3808-8
Misc Info : WG227763,WG227568-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:37 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 17
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	5.470	5.469	(0.849)	340742	52.3224	52.3	
*	41 Pentafluorobenzene	168	6.442	6.441	(1.000)	658487	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.471	6.470	(1.004)	463434	53.9660	54.0	
*	48 1,4-Difluorobenzene	114	7.386	7.385	(1.000)	1124468	50.0000		
$	58 Toluene-D8	98	9.574	9.573	(1.296)	1358048	50.9811	51.0	
*	68 Chlorobenzene-D5	117	11.805	11.804	(1.000)	1175833	50.0000		
$	78 P-Bromofluorobenzene	95	13.428	13.427	(1.818)	565831	47.9062	47.9	
*	94 1,4-Dichlorobenzene-D4	152	14.765	14.771	(1.000)	632365	50.0000		


Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5560.D
Date : 07-MAY-2018 17:43
Client ID:
Sample Info: SL3808-8
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P050718.b\P5560.D
Y (x10^6)
Min
-Dibromofluoromethane (5.470)
-Pentafluorobenzene (6.457)+
-1,4-Difluorobenzene (7.379)
-Toluene-D8 (9.574)
-Chlorobenzene-D5 (11.798)
-P-Bromofluorobenzene (13.428)
1,4-Dichlorobenzene-D4 (14.765)

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-10
Client ID: CHAAP-19C-LGIA-DPT114
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5590.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-10
Client ID: CHAAP-19C-LGIA-DPT114
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5590.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-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		2.3	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		97.2	%					
1,2-Dichloroethane-d4		99.9	%					
Toluene-d8		98.5	%					
P-Bromofluorobenzene		95.2	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5590.D
Report Date: 21-May-2018 11:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5590.D
Lab Smp Id: SL3808-10
Inj Date : 08-MAY-2018 15:52 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3808-10
Misc Info : WG227830,WG227568-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12
Processing Host: TARGET_SERVER

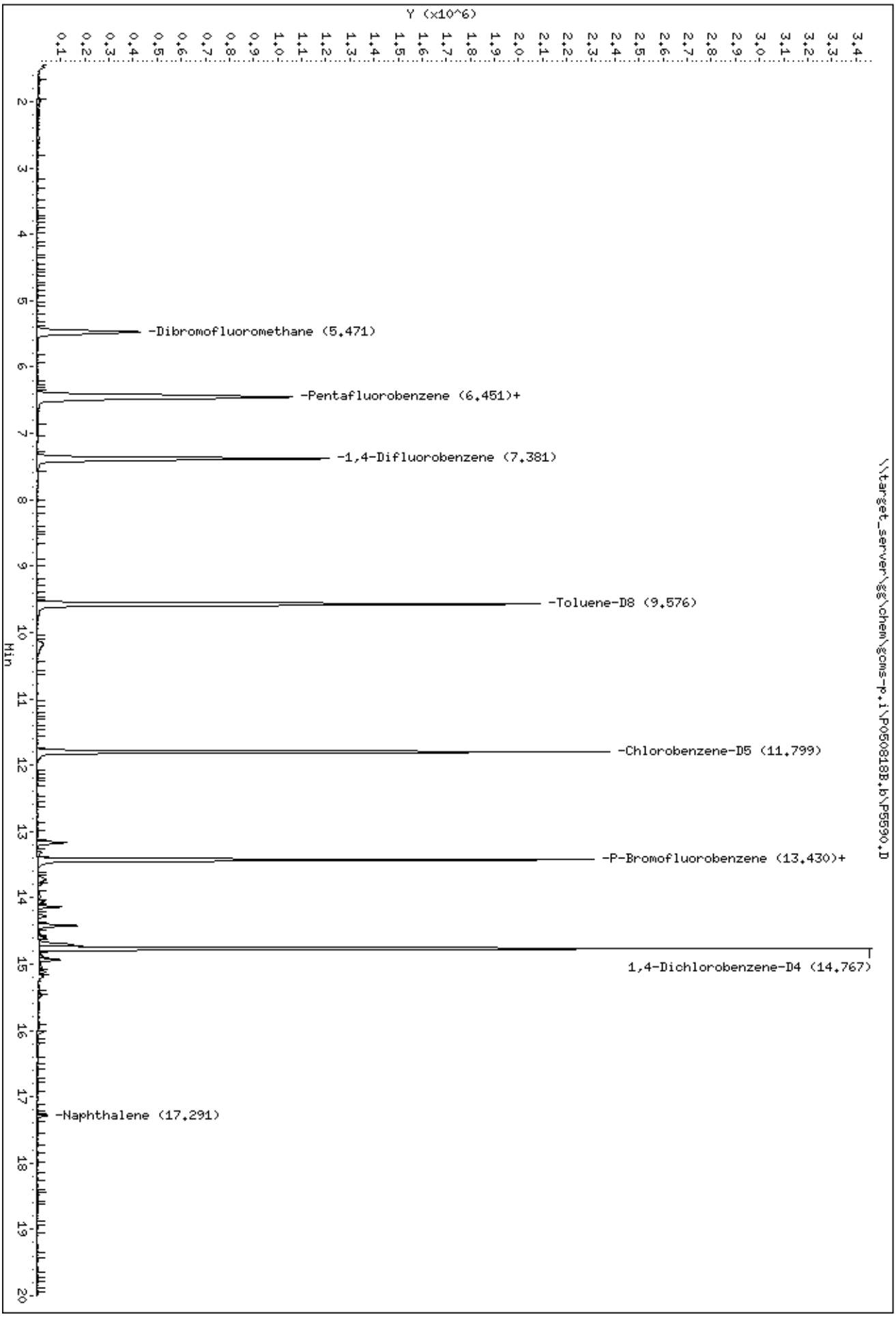
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

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	5.471	5.469	(0.849)	450684	48.6005	48.6	
*	41 Pentafluorobenzene	168	6.443	6.441	(1.000)	937649	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.472	6.470	(1.004)	611099	49.9748	50.0	
*	48 1,4-Difluorobenzene	114	7.380	7.385	(1.000)	1552757	50.0000		
$	58 Toluene-D8	98	9.575	9.573	(1.297)	1812472	49.2730	49.3	
*	68 Chlorobenzene-D5	117	11.799	11.804	(1.000)	1584862	50.0000		
$	78 P-Bromofluorobenzene	95	13.429	13.427	(1.820)	776556	47.6126	47.6	
	79 cis-1,4-Dichloro-2-Butene	53	13.436	13.548	(0.910)	2130	0.58273	0.58(a)	
*	94 1,4-Dichlorobenzene-D4	152	14.766	14.771	(1.000)	902089	50.0000		
	104 Naphthalene	128	17.283	17.288	(1.170)	32843	2.34120	2.3	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Date : 08-MAY-2018 15:52
Client ID:
Sample Info: SL3808-10
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P050818B.b\P5590.D
Y (x10^6)
Min
-Dibromofluoromethane (5.471)
-Pentafluorobenzene (6.451)+
-1,4-Difluorobenzene (7.381)
-Toluene-D8 (9.576)
-Chlorobenzene-D5 (11.799)
-P-Bromofluorobenzene (13.430)+
1,4-Dichlorobenzene-D4 (14.767)
-Naphthalene (17.291)

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5590.D

Date : 08-MAY-2018 15:52

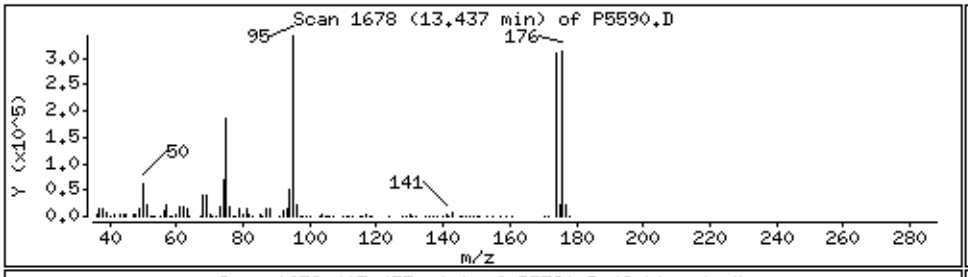
Client ID:

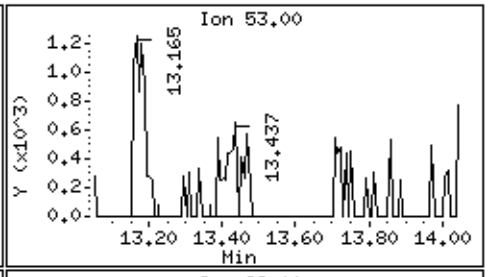
Instrument: gcms-p.i

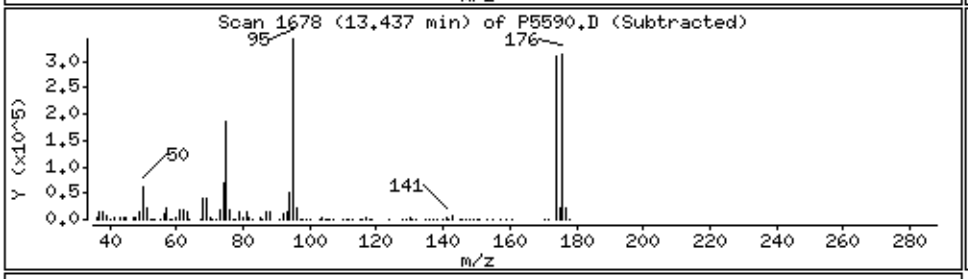
Sample Info: SL3808-10

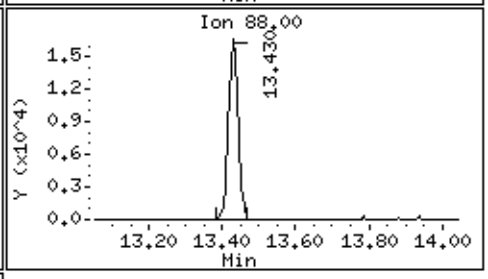
79 cis-1,4-Dichloro-2-Butene

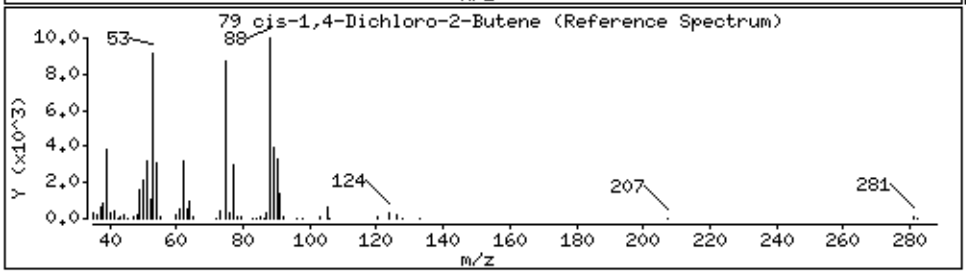
Concentration: 0.58 ug/l





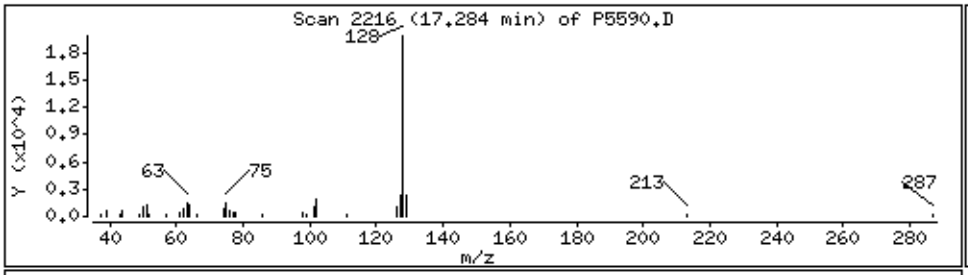


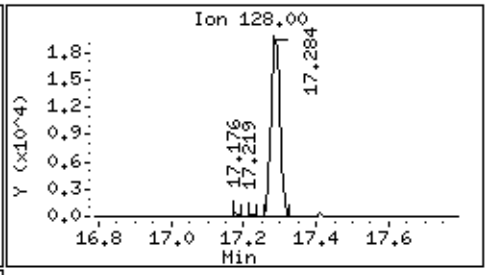


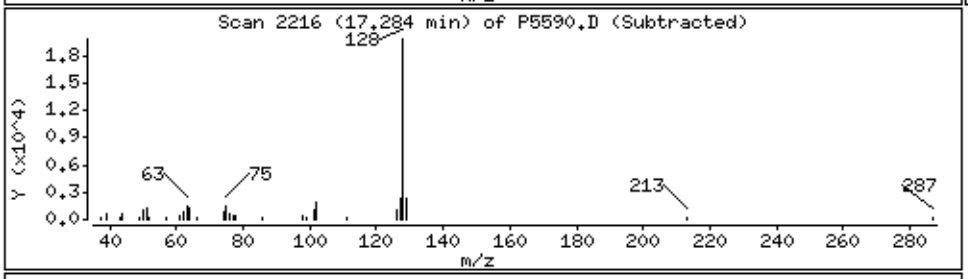


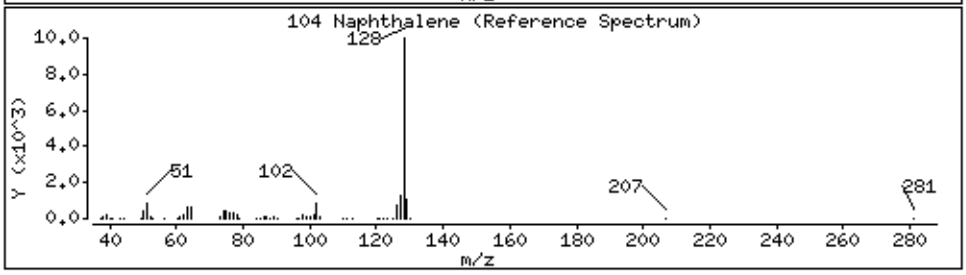
104 Naphthalene

Concentration: 2.3 ug/l









Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-12
Client ID: CHAAP-19C-UGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5591.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-12
Client ID: CHAAP-19C-UGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5591.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		1.2	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		101.	%					
1,2-Dichloroethane-d4		101.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		97.8	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5591.D
Report Date: 18-May-2018 13:42

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5591.D
Lab Smp Id: SL3808-12
Inj Date : 08-MAY-2018 16:27 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3808-12
Misc Info : WG227830,WG227568-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

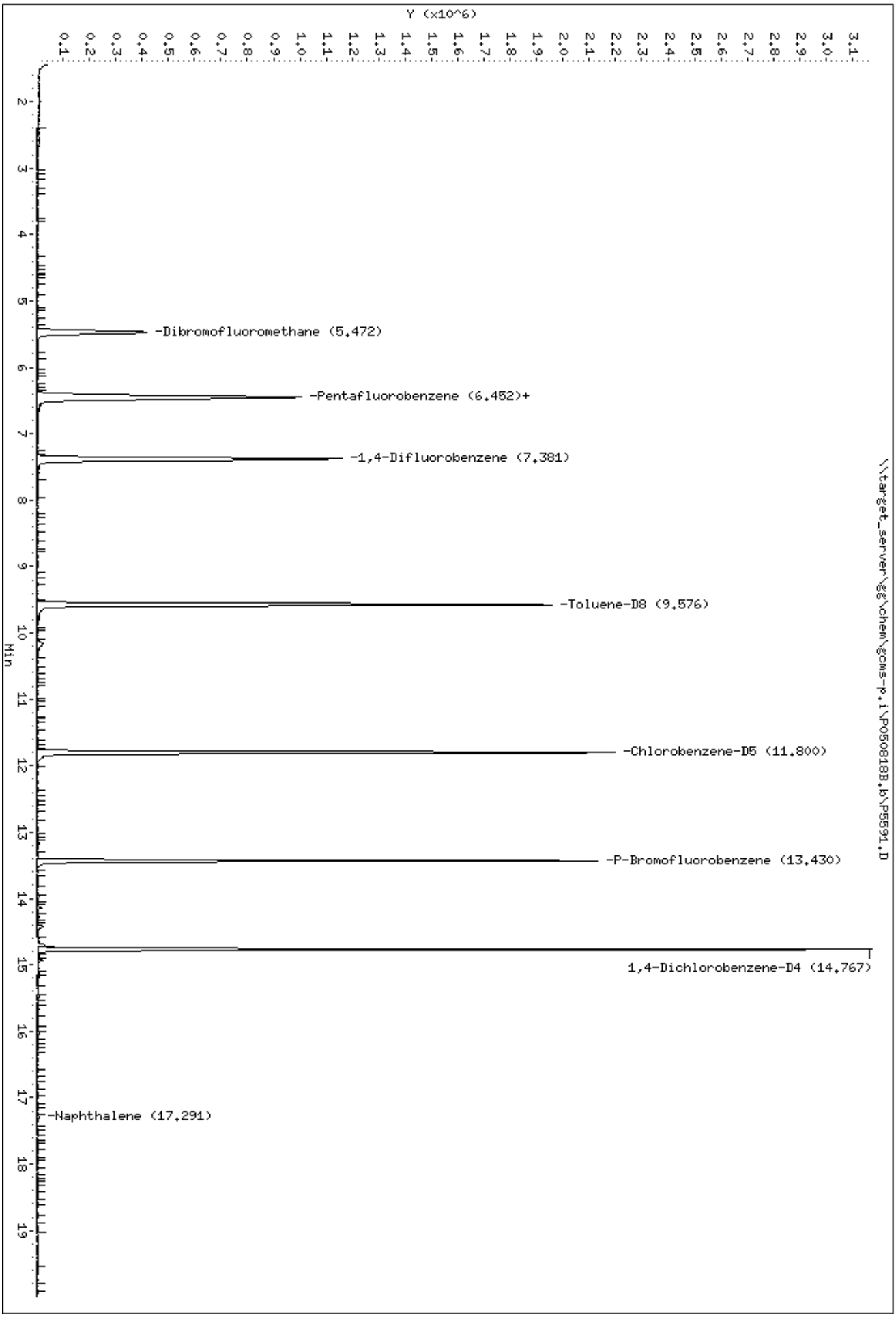
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

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	5.472	5.469	(0.849)	430484	50.3027	50.3	
* 41 Pentafluorobenzene	168	6.444	6.441	(1.000)	865315	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.466	6.470	(1.003)	570070	50.5165	50.5	
* 48 1,4-Difluorobenzene	114	7.381	7.385	(1.000)	1433803	50.0000		
$ 58 Toluene-D8	98	9.576	9.573	(1.297)	1703329	50.1477	50.1	
* 68 Chlorobenzene-D5	117	11.800	11.804	(1.000)	1501626	50.0000		
$ 78 P-Bromofluorobenzene	95	13.430	13.427	(1.820)	736818	48.9241	48.9	
* 94 1,4-Dichlorobenzene-D4	152	14.767	14.771	(1.000)	838858	50.0000		
104 Naphthalene	128	17.291	17.288	(1.171)	5600	1.20394	1.2(H)	

QC Flag Legend

H - Operator selected an alternate compound hit.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Date : 08-MAY-2018 16:27
Client ID:
Sample Info: SL3808-12
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P050818B.b\P5591.D
Y (x10^6)
Min
-Dibromofluoromethane (5.472)
-Pentafluorobenzene (6.452)+
-1,4-Difluorobenzene (7.381)
-Toluene-D8 (9.576)
-Chlorobenzene-D5 (11.800)
-P-Bromofluorobenzene (13.430)
1,4-Dichlorobenzene-D4 (14.767)
-Naphthalene (17.291)

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5591.D

Date : 08-MAY-2018 16:27

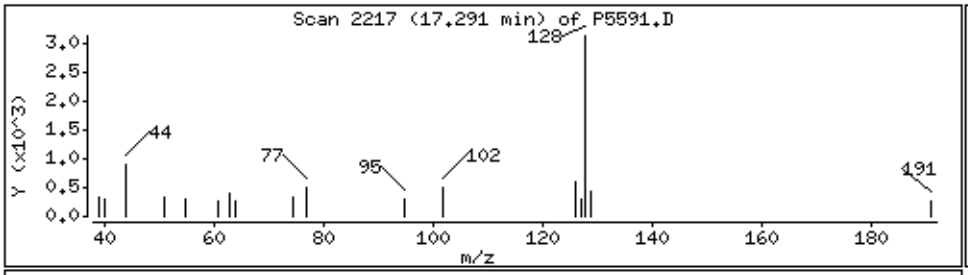
Client ID:

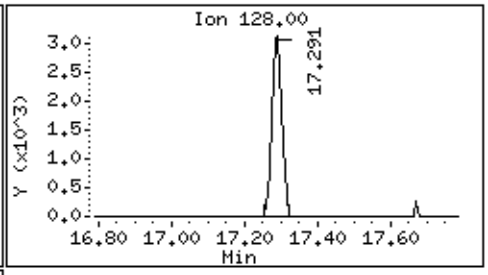
Instrument: gcms-p.i

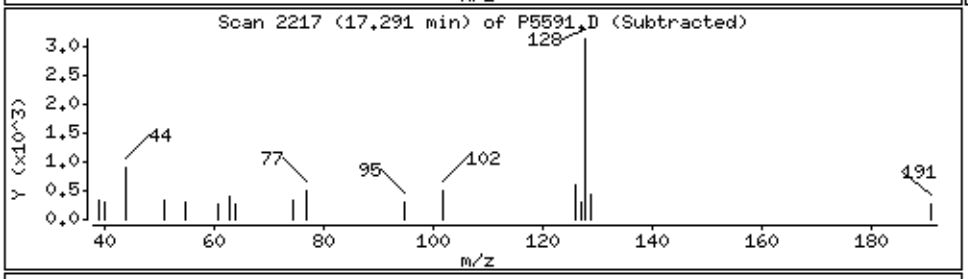
Sample Info: SL3808-12

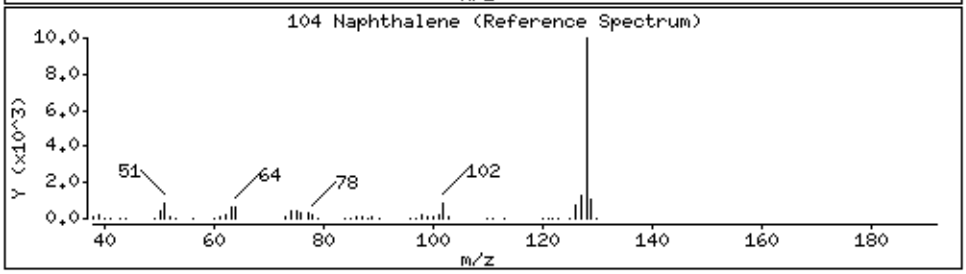
104 Naphthalene

Concentration: 1.2 ug/l









Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-14
Client ID: CHAAP-EB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5528.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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	J	3.3	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		42	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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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-14
Client ID: CHAAP-EB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5528.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		97.5	%					
1,2-Dichloroethane-d4		98.5	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		97.1	%					

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Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5528.D
Report Date: 18-May-2018 13:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050418B.b\P5528.D
Lab Smp Id: SL3808-14 Client Smp ID: CHAAP-EB-050218-DPT
Inj Date : 04-MAY-2018 16:02 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3808-14
Misc Info : WG227659,WG227568-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050418B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:35 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

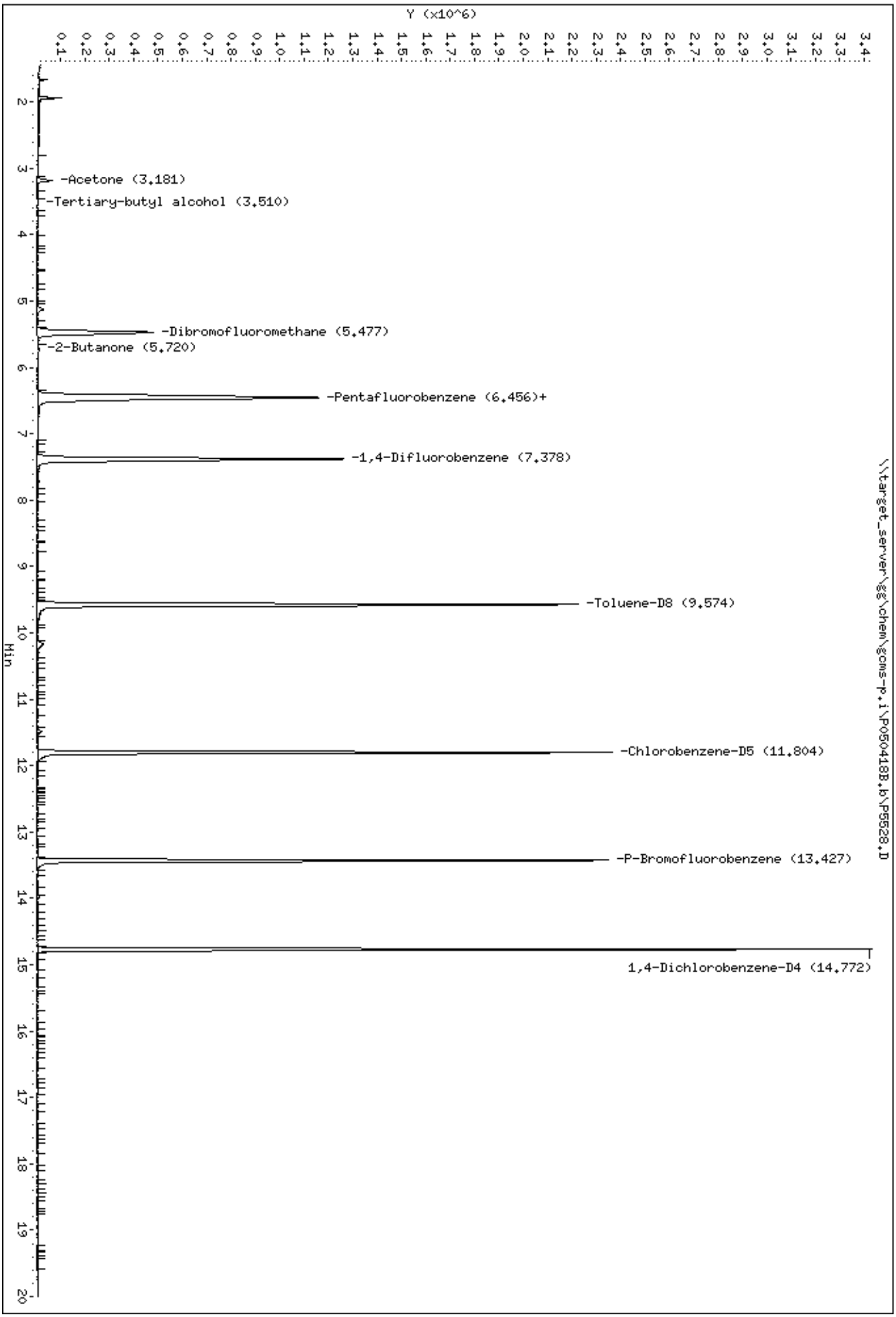
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

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)	FINAL (ug/l)	REVIEW CODE
	19 Tertiary-butyl alcohol	59	3.510	3.510	(0.545)	2995	5.81219	5.8	
	15 Acetone	43	3.181	3.188	(0.494)	87868	41.5106	41.5	
$	34 Dibromofluoromethane	113	5.476	5.469	(0.850)	495207	48.7547	48.8	
	36 2-Butanone	43	5.719	5.741	(0.888)	11483	3.34723	3.3(a)	
*	41 Pentafluorobenzene	168	6.441	6.441	(1.000)	1027020	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.477	6.470	(1.006)	659481	49.2383	49.2	
*	48 1,4-Difluorobenzene	114	7.385	7.385	(1.000)	1625792	50.0000		
$	58 Toluene-D8	98	9.573	9.573	(1.296)	1929223	50.0909	50.1	
*	68 Chlorobenzene-D5	117	11.804	11.804	(1.000)	1668953	50.0000		
$	78 P-Bromofluorobenzene	95	13.427	13.427	(1.818)	829455	48.5714	48.6	
*	94 1,4-Dichlorobenzene-D4	152	14.771	14.771	(1.000)	916316	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Date : 04-MAY-2018 16:02
Client ID: CHAAP-EB-050218-DPT
Sample Info: SL3808-14
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P050418B.b\P5528.D
Y (x10^6)
Min
-Acetone (3.181)
-Tertiary-butyl alcohol (3.510)
-Dibromofluoromethane (5.477)
-2-Butanone (5.720)
-Pentafluorobenzene (6.456)+
-1,4-Difluorobenzene (7.378)
-Toluene-D8 (9.574)
-Chlorobenzene-D5 (11.804)
-P-Bromofluorobenzene (13.427)
1,4-Dichlorobenzene-D4 (14.772)

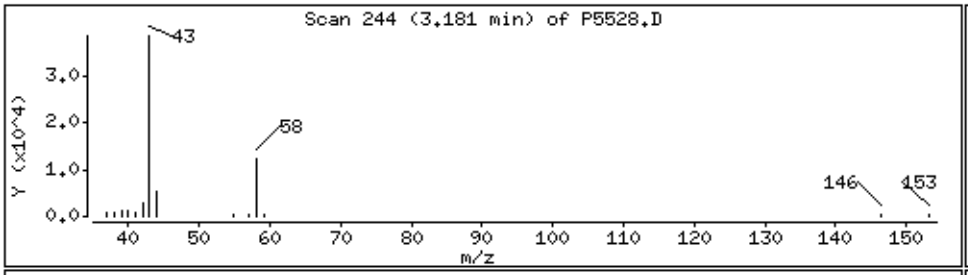
Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5528.D

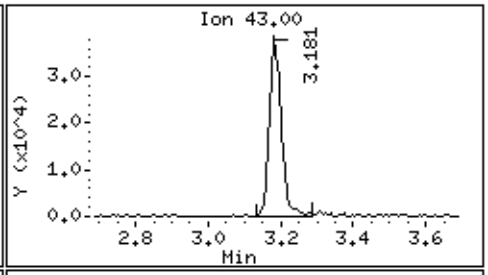
Date : 04-MAY-2018 16:02

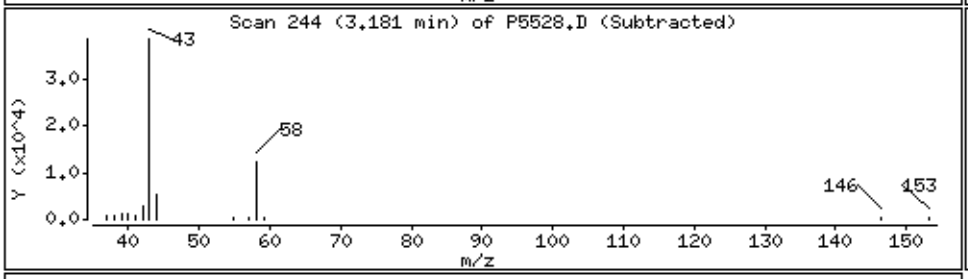
Client ID: CHAAP-EB-050218-DPT Instrument: gcms-p.i

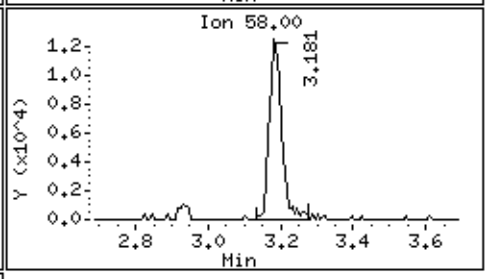
Sample Info: SL3808-14

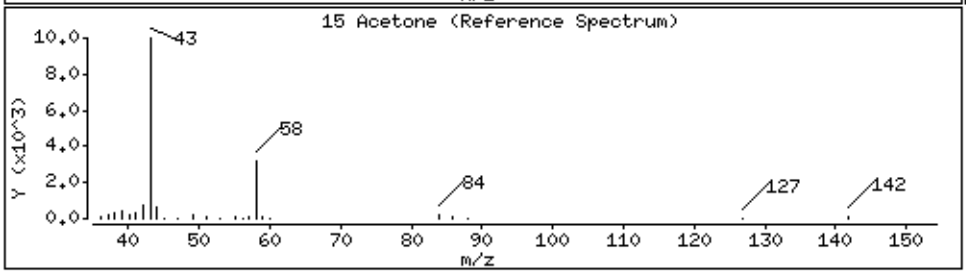
15 Acetone Concentration: 41.5 ug/l



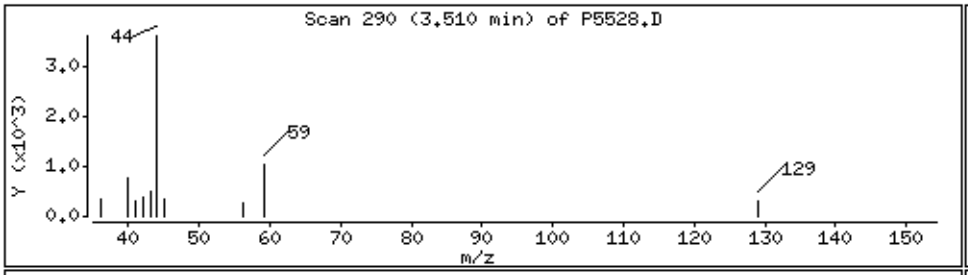


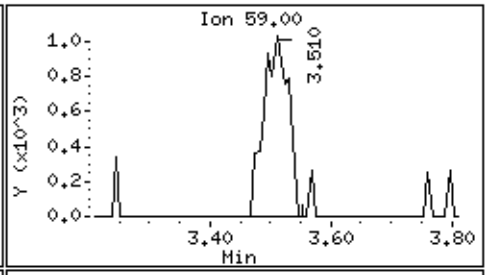


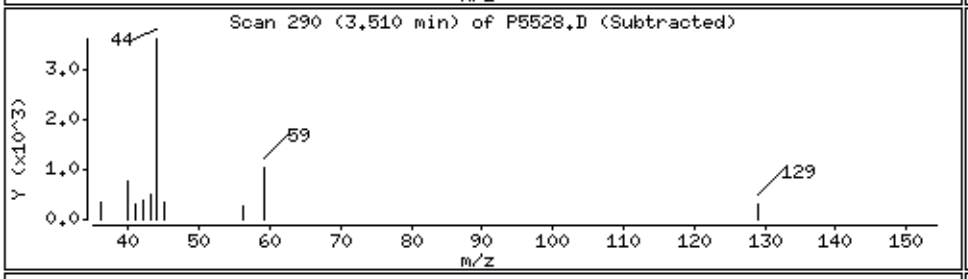


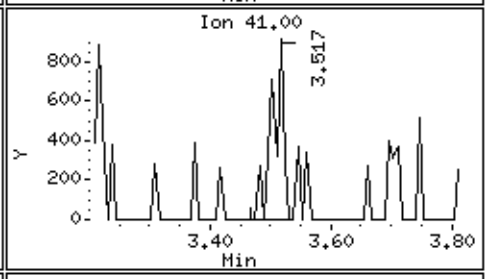


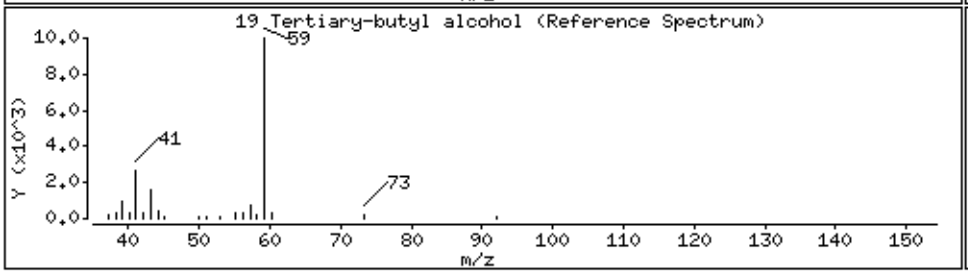
19 Tertiary-butyl alcohol Concentration: 5.8 ug/l

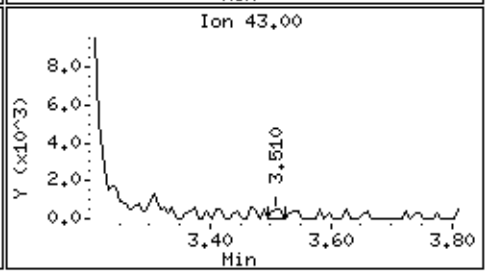












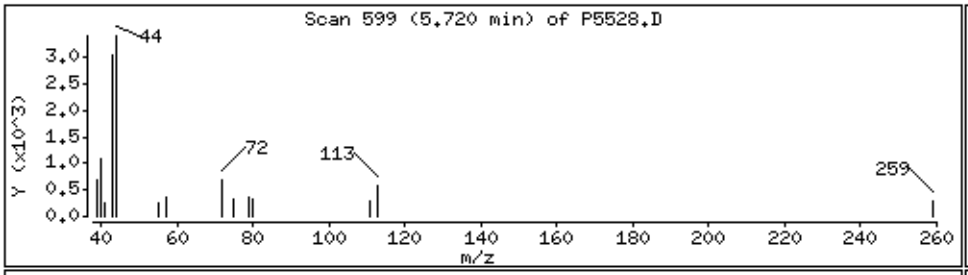
Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5528.D

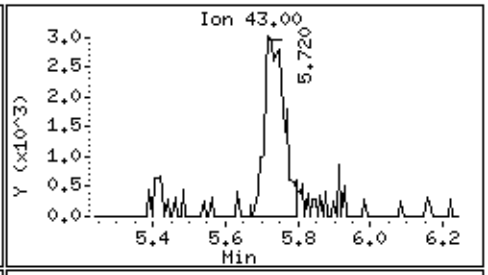
Date : 04-MAY-2018 16:02

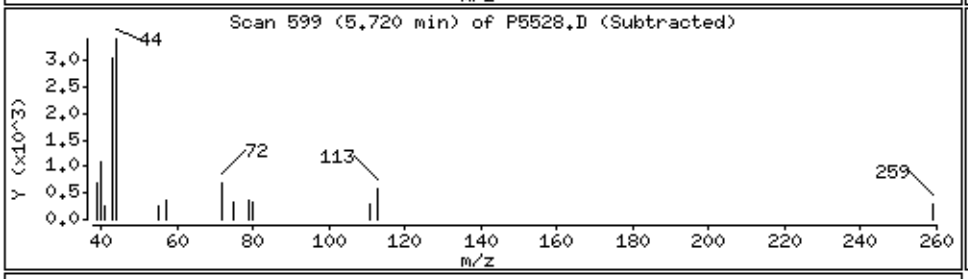
Client ID: CHAAP-EB-050218-DPT Instrument: gcms-p.i

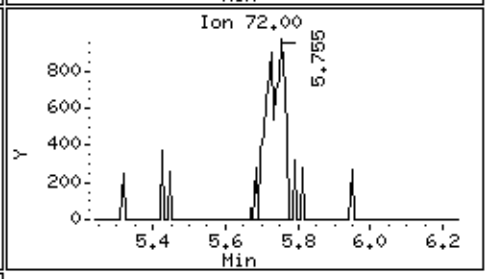
Sample Info: SL3808-14

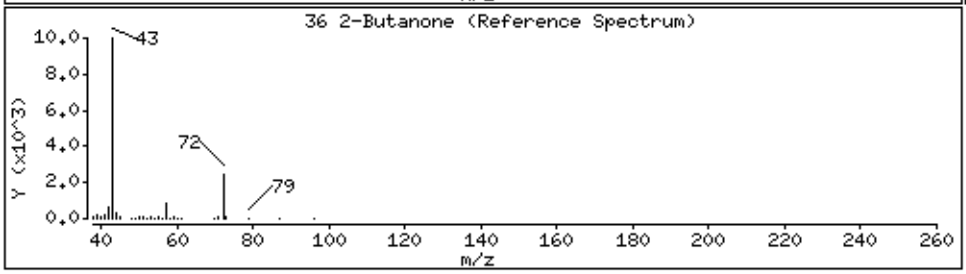
36 2-Butanone Concentration: 3.3 ug/l











Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-15
Client ID: CHAAP-19C-LGIA-DPT22
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5592.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-15
Client ID: CHAAP-19C-LGIA-DPT22
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5592.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		99.8	%					
1,2-Dichloroethane-d4		104.	%					
Toluene-d8		102.	%					
P-Bromofluorobenzene		97.2	%					

600 Technology Way
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http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5592.D
Report Date: 18-May-2018 13:42

Katahdin Analytical Services

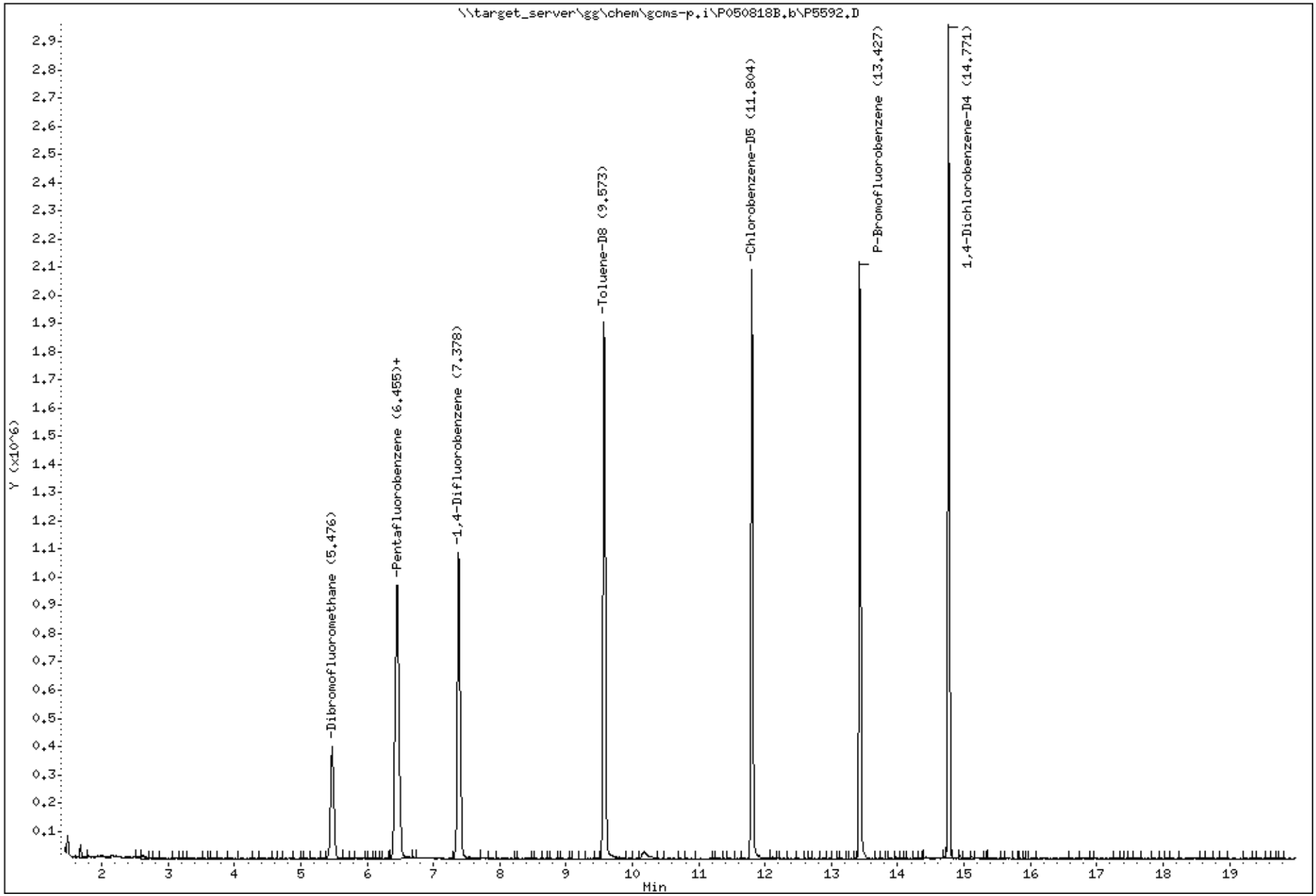
Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5592.D
Lab Smp Id: SL3808-15
Inj Date : 08-MAY-2018 17:01 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3808-15
Misc Info : WG227830,WG227568-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 13
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	5.475	5.469	(0.850)	406806	49.8933	49.9	
*	41 Pentafluorobenzene	168	6.441	6.441	(1.000)	824431	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.469	6.470	(1.004)	558550	51.9502	52.0	
*	48 1,4-Difluorobenzene	114	7.377	7.385	(1.000)	1388967	50.0000		
$	58 Toluene-D8	98	9.572	9.573	(1.298)	1670651	50.7733	50.8	
*	68 Chlorobenzene-D5	117	11.803	11.804	(1.000)	1456863	50.0000		
$	78 P-Bromofluorobenzene	95	13.426	13.427	(1.820)	708766	48.5807	48.6	
*	94 1,4-Dichlorobenzene-D4	152	14.771	14.771	(1.000)	799251	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5592.D
Date : 08-MAY-2018 17:01
Client ID:
Instrument: gcms-p.i
Sample Info: SL3808-15



Katahdin Analytical Services 1000055

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-17
Client ID: CHAAP-19C-UGIA-DPT21
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5593.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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: SL3808-17
Client ID: CHAAP-19C-UGIA-DPT21
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: P5593.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		98.0	%					
1,2-Dichloroethane-d4		101.	%					
Toluene-d8		102.	%					
P-Bromofluorobenzene		96.5	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5593.D
Report Date: 18-May-2018 13:42

Katahdin Analytical Services

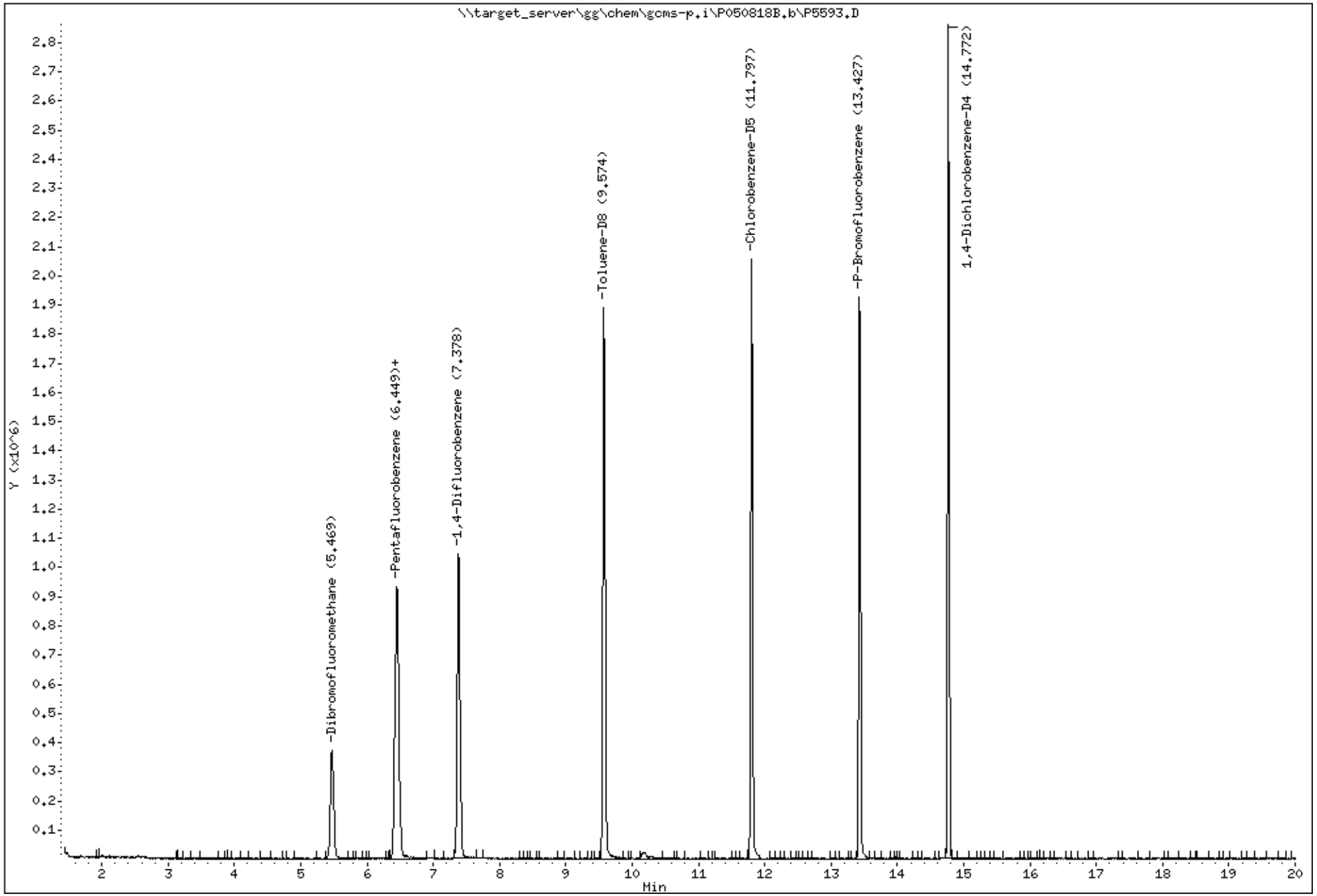
Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5593.D
Lab Smp Id: SL3808-17
Inj Date : 08-MAY-2018 17:35 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3808-17
Misc Info : WG227830,WG227568-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 14
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	5.476	5.469	(0.850)	390459	49.0274	49.0	
* 41 Pentafluorobenzene	168	6.441	6.441	(1.000)	805278	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.463	6.470	(1.003)	531330	50.5939	50.6	
* 48 1,4-Difluorobenzene	114	7.378	7.385	(1.000)	1330019	50.0000		
$ 58 Toluene-D8	98	9.573	9.573	(1.298)	1604919	50.9374	50.9	
* 68 Chlorobenzene-D5	117	11.804	11.804	(1.000)	1390937	50.0000		
$ 78 P-Bromofluorobenzene	95	13.427	13.427	(1.820)	674016	48.2464	48.2	
* 94 1,4-Dichlorobenzene-D4	152	14.771	14.771	(1.000)	763211	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5593.D
Date : 08-MAY-2018 17:35
Client ID:
Instrument: gcms-p.i
Sample Info: SL3808-17



Katahdin Analytical Services 1000059

Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P5511a.D P5510a.D P5509a.D P5508a.D P5513a.D P5512a.D
Column ID:
Calibration Date(s): 03-MAY-18 12:56 03-MAY-18 15:47

	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	0.48415	0.45282	0.39107	0.43996	0.41195	0.40756	AVG		0.43125		7.95758	15.00000	O
Chloromethane	0.46988	0.42974	0.37716	0.40724	0.37963	0.41423	AVG		0.41298		8.35157	15.00000	O
Vinyl chloride	0.49456	0.49536	0.40340	0.45136	0.41679	0.44827	AVG		0.45162		8.46432	15.00000	O
Bromomethane	3898	16615	79029	211364	566905	842644	QUA	0.02063	5.10911	-1.54031	0.99945	0.99000	O
Chloroethane	0.30946	0.27357	0.23622	0.24417	0.21907	0.23431	AVG		0.25280		13.0845	15.00000	O
Trichlorofluoromethane	0.93088	0.84439	0.71426	0.80644	0.74433	0.76347	AVG		0.80063		9.82262	15.00000	O
1,1-Dichloroethene	0.32240	0.39978	0.31812	0.33055	0.30350	0.32441	AVG		0.33313		10.1741	15.00000	O
Freon-113	0.32302	0.30775	0.31238	0.33618	0.32405	0.32080	AVG		0.32070		3.09707	15.00000	O
Carbon Disulfide	1.02531	1.24786	1.05788	1.17585	1.08533	1.16717	AVG		1.12657		7.47525	15.00000	O
Methylene Chloride	0.46811	0.46967	0.40581	0.42344	0.39818	0.41004	AVG		0.42921		7.41304	15.00000	O
Acetone	0.09783	0.11349	0.10274	0.10905	0.09612	0.09910	AVG		0.10305		6.66596	15.00000	O
trans-1,2-Dichloroethene	0.34327	0.48236	0.38656	0.40457	0.38841	0.39941	AVG		0.40076		11.3439	15.00000	O
Methyl tert-butyl ether	1.01118	1.22205	1.19149	1.24489	1.19014	1.17513	AVG		1.17248		7.07431	15.00000	O
1,1-Dichloroethane	0.69374	0.86030	0.76181	0.78712	0.73922	0.76436	AVG		0.76776		7.20017	15.00000	O
cis-1,2-Dichloroethene	0.37549	0.46083	0.42582	0.43739	0.43334	0.44208	AVG		0.42916		6.71034	15.00000	O
2,2-Dichloropropane	0.45890	0.59293	0.56724	0.59901	0.51563	0.51090	AVG		0.54077		10.1425	15.00000	O
Bromochloromethane	0.18939	0.21069	0.19185	0.19921	0.17751	0.17577	AVG		0.19074		6.92362	15.00000	O
Chloroform	0.67412	0.83030	0.73054	0.77353	0.74782	0.76352	AVG		0.75331		6.83652	15.00000	O
Carbon Tetrachloride	0.27668	0.37507	0.35325	0.36074	0.36644	0.36628	AVG		0.34975		10.4395	15.00000	O
1,1,1-Trichloroethane	0.57152	0.75593	0.66477	0.69426	0.66901	0.68455	AVG		0.67334		8.87212	15.00000	O
2-Butanone	0.13804	0.17748	0.17332	0.18002	0.16381	0.16944	AVG		0.16702		9.17409	15.00000	O
1,1-Dichloropropene	0.34138	0.42390	0.36893	0.37558	0.37918	0.38933	AVG		0.37972		7.11343	15.00000	O
Benzene	0.89113	1.18125	1.04885	1.05323	1.06047	1.08477	AVG		1.05328		8.87923	15.00000	O
1,2-Dichloroethane	0.43322	0.43964	0.40234	0.40003	0.39405	0.40096	AVG		0.41171		4.72817	15.00000	O
Trichloroethene	0.23496	0.28491	0.25344	0.25631	0.25729	0.27065	AVG		0.25959		6.50084	15.00000	O
Dibromomethane	0.13465	0.16481	0.15942	0.15931	0.16224	0.16153	AVG		0.15699		7.09038	15.00000	O
1,2-Dichloropropane	0.23187	0.27314	0.26261	0.26707	0.27209	0.28466	AVG		0.26524		6.76588	15.00000	O
Bromodichloromethane	0.30356	0.37567	0.36134	0.37422	0.37479	0.38973	AVG		0.36322		8.41857	15.00000	O
cis-1,3-dichloropropene	0.33747	0.44867	0.47483	0.48153	0.47911	0.50618	AVG		0.45463		13.2522	15.00000	O
Toluene	0.58715	0.72063	0.66125	0.65692	0.66076	0.68683	AVG		0.66226		6.64541	15.00000	O
Tetrachloroethene	0.19198	0.22640	0.19547	0.19938	0.19782	0.20180	AVG		0.20214		6.10876	15.00000	O
4-methyl-2-pentanone	0.16676	0.23088	0.24317	0.24161	0.23658	0.24157	AVG		0.22676		13.1153	15.00000	O
trans-1,3-Dichloropropene	9096	69335	288952	778870	1702360	2431609	LNR	0.02365	0.45292		0.99927	0.99000	O
1,1,2-Trichloroethane	4369	35212	140800	346680	780934	1104065	LNR	0.01782	0.20554		0.99942	0.99000	O
Dibromochloromethane	0.21896	0.25566	0.24562	0.26249	0.26592	0.27393	AVG		0.25376		7.70536	15.00000	O
1,3-Dichloropropane	0.42370	0.48710	0.46560	0.47138	0.46456	0.47641	AVG		0.46479		4.67999	15.00000	O
1,2-Dibromoethane	0.20405	0.25019	0.24259	0.25028	0.24915	0.25297	AVG		0.24154		7.73740	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P5511a.D P5510a.D P5509a.D P5508a.D P5513a.D P5512a.D
Column ID:
Calibration Date(s): 03-MAY-18 12:56 03-MAY-18 15:47

2-Hexanone	0.10673	0.15002	0.15829	0.16489	0.16035	0.16158	AVG		0.15031		14.5869(	15.00000	O
Chlorobenzene	0.66630	0.80756	0.73688	0.76033	0.75762	0.76227	AVG		0.74849		6.20723	15.00000	O
Ethylbenzene	0.35921	0.44476	0.41083	0.41509	0.41168	0.42514	AVG		0.41112		6.91355	15.00000	O
1,1,1,2-Tetrachloroethane	5661	46537	180453	458484	1021606	1495615	LNR	0.01852	0.26450		0.99914	0.99000	O
m+p-Xylenes	0.41915	0.54476	0.49159	0.51112	0.51119	0.52024	AVG		0.49968		8.61714	15.00000	O
o-Xylene	0.36541	0.51989	0.48138	0.49070	0.49966	0.51270	AVG		0.47829		11.9293(	15.00000	O
Styrene	0.58132	0.86367	0.82079	0.85577	0.86085	0.88201	AVG		0.81074		14.0799-	15.00000	O
Bromoform	0.13656	0.17364	0.17141	0.18554	0.19897	0.20559	AVG		0.17862		13.7939(	15.00000	O
Isopropylbenzene	1.75498	2.45866	2.19300	2.13560	2.10859	2.04916	AVG		2.11666		10.7439:	15.00000	O
Bromobenzene	0.51351	0.59805	0.55527	0.54169	0.56339	0.55985	AVG		0.55530		4.99461	15.00000	O
N-Propylbenzene	2.27628	2.96486	2.66605	2.59267	2.48369	2.33070	AVG		2.55237		9.83042	15.00000	O
1,1,2,2-Tetrachloroethane	0.50673	0.60137	0.55660	0.54313	0.53938	0.54729	AVG		0.54908		5.59363	15.00000	O
2-Chlorotoluene	1.39419	1.71319	1.59475	1.54149	1.53444	1.51623	AVG		1.54905		6.73115	15.00000	O
1,2,3-Trichloropropane	0.47172	0.52817	0.50976	0.49702	0.50169	0.51366	AVG		0.50367		3.77330	15.00000	O
1,3,5-Trimethylbenzene	1.44491	1.99231	1.89669	1.86215	1.83349	1.80854	AVG		1.80635		10.42307	15.00000	O
4-Chlorotoluene	1.49906	1.83507	1.71234	1.64142	1.62500	1.59456	AVG		1.65124		6.88809	15.00000	O
tert-Butylbenzene	1.42646	1.92423	1.77374	1.76359	1.79673	1.77918	AVG		1.74399		9.54672	15.00000	O
1,2,4-Trimethylbenzene	1.49761	2.10980	1.94838	1.91693	1.90177	1.83704	AVG		1.86859		10.8786(	15.00000	O
sec-Butylbenzene	1.89856	2.55893	2.25977	2.23925	2.18238	2.08922	AVG		2.20469		9.88054	15.00000	O
P-Isopropyltoluene	1.44098	2.02828	1.85464	1.86710	1.86115	1.82068	AVG		1.81214		10.8074(	15.00000	O
1,3-Dichlorobenzene	0.89897	1.04003	0.99085	0.98183	0.99242	1.00308	AVG		0.98453		4.73244	15.00000	O
1,4-Dichlorobenzene	0.98362	1.12126	1.06209	1.02155	1.03897	1.05132	AVG		1.04647		4.37673	15.00000	O
N-Butylbenzene	1.33547	1.84559	1.66597	1.67046	1.63287	1.61097	AVG		1.62689		10.1548:	15.00000	O
1,2-Dichlorobenzene	0.95904	0.98903	0.93035	0.94005	0.95821	0.95615	AVG		0.95547		2.10129	15.00000	O
1,2-Dibromo-3-Chloropropane	1033	9790	43098	110420	260996	375489	LNR	0.02403	0.11519		0.99938	0.99000	O
Hexachlorobutadiene	0.23699	0.26379	0.24452	0.24434	0.26145	0.26211	AVG		0.25220		4.59092	15.00000	O
1,2,4-Trichlorobenzene	7299	56264	242871	606814	1462057	2118253	LNR	0.02705	0.64853		0.99895	0.99000	O
Naphthalene	13965	98475	496939	1258877	3078609	4197177	LNR	0.01897	1.30717		0.99867	0.99000	O
1,2,3-Trichlorobenzene	0.36761	0.42169	0.45905	0.44194	0.49967	0.49326	AVG		0.44720		10.9673:	15.00000	O
Dibromofluoromethane	0.49361	0.49416	0.49036	0.51055	0.48733	0.49096	AVG		0.49449		1.66656	15.00000	
1,2-Dichloroethane-D4	0.66680	0.66321	0.64872	0.66920	0.61538	0.64908	AVG		0.65206		3.06784	15.00000	
Toluene-D8	1.19049	1.18445	1.18696	1.18577	1.16923	1.18999	AVG		1.18448		0.66128	15.00000	
P-Bromofluorobenzene	0.50963	0.51551	0.52872	0.53277	0.52553	0.53899	AVG		0.52519		2.07942	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
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Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Report Date: 09-May-2018 12:35

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG227659-7
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\P050418B.b\P8A05(68)D.m
Misc Info: WG227659,WG227568-4

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	44.6	89.30	80-120
	2	Chloromethane	50.0	43.5	87.07	80-120
	3	Vinyl chloride	50.0	43.1	86.27	80-120
	4	Bromomethane	50.0	44.4	88.79	80-120
	5	Chloroethane	50.0	44.3	88.70	80-120
	6	Trichlorofluoromet	50.0	41.7	83.48	80-120
	7	Diethyl Ether	50.0	42.4	84.83	80-120
	19	Tertiary-butyl alc	250	230	91.85	80-120
	8	1,1-Dichloroethene	50.0	41.4	82.86	80-120
	10	Carbon Disulfide	50.0	40.6	81.22	80-120
	9	Freon-113	50.0	47.2	94.38	80-120
	11	Iodomethane	50.0	60.3	120.63*	80-120
	12	Acrolein	250	233	93.36	80-120
	14	Methylene Chloride	50.0	44.8	89.66	80-120
	15	Acetone	50.0	47.3	94.63	80-120
	45	Isobutyl Alcohol	1000	827	82.74	80-120
	16	trans-1,2-Dichloro	50.0	46.3	92.70	80-120
	13	Allyl Chloride	50.0	43.9	87.80	80-120
	18	Methyl tert-butyl	50.0	47.5	95.08	80-120
	20	Acetonitrile	500	427	85.50	80-120
	21	Di-isopropyl ether	50.0	43.8	87.56	80-120
	22	Chloroprene	50.0	44.8	89.68	80-120
	39	Propionitrile	500	469	93.75	80-120
	40	Methacrylonitrile	500	460	92.07	80-120
	23	1,1-Dichloroethane	50.0	47.7	95.32	80-120
	24	Acrylonitrile	250	240	96.04	80-120
	25	Ethyl tertiary-but	50.0	45.1	90.25	80-120
	26	Vinyl Acetate	50.0	54.3	108.58	80-120
	27	cis-1,2-Dichloroet	50.0	47.3	94.56	80-120
M	98	1,2-Dichloroethyle	100	93.6	93.63	80-120
	52	Methyl Methacrylat	50.0	51.7	103.36	80-120
	28	2,2-Dichloropropan	50.0	50.9	101.88	80-120
	29	Bromochloromethane	50.0	48.4	96.87	80-120
	31	Chloroform	50.0	47.3	94.65	80-120
	32	Carbon Tetrachlori	50.0	51.4	102.77	80-120
	33	Tetrahydrofuran	50.0	44.1	88.15	80-120
	35	1,1,1-Trichloroeth	50.0	46.3	92.56	80-120
	37	1,1-Dichloropropen	50.0	49.4	98.82	80-120
	36	2-Butanone	50.0	49.9	99.75	80-120
	38	Benzene	50.0	49.4	98.86	80-120

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SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
30	Cyclohexane	50.0	43.8	87.57	80-120
53	Ethyl Methacrylate	50.0	47.6	95.20	80-120
43	Tertiary-amyl meth	50.0	46.4	92.80	80-120
44	1,2-Dichloroethane	50.0	47.2	94.45	80-120
47	Trichloroethene	50.0	49.0	97.97	80-120
49	Dibromomethane	50.0	53.1	106.21	80-120
50	1,2-Dichloropropan	50.0	48.9	97.87	80-120
51	Bromodichlorometha	50.0	51.6	103.17	80-120
57	cis-1,3-dichloropr	50.0	51.2	102.41	80-120
54	1,4-Dioxane	1000	638	63.83*	80-120
56	2-Chloroethylviny	50.0	0.00	*	80-120
59	Toluene	50.0	49.9	99.74	80-120
61	4-methyl-2-pentano	50.0	50.6	101.25	80-120
60	Tetrachloroethene	50.0	51.8	103.70	80-120
62	trans-1,3-Dichloro	50.0	49.0	97.97	80-120
63	1,1,2-Trichloroeth	50.0	49.3	98.61	80-120
64	Dibromochlorometha	50.0	53.1	106.27	80-120
65	1,3-Dichloropropan	50.0	47.9	95.82	80-120
66	1,2-Dibromoethane	50.0	52.0	104.08	80-120
67	2-Hexanone	50.0	53.2	106.44	80-120
69	Chlorobenzene	50.0	49.9	99.88	80-120
70	1-Chlorohexane	50.0	0.00	*	80-120
71	Ethylbenzene	50.0	50.3	100.56	80-120
72	1,1,1,2-Tetrachlor	50.0	49.4	98.73	80-120
M 106	Xylenes (total)	150	152	101.69	80-120
73	m+p-Xylenes	100	102	102.29	80-120
74	o-Xylene	50.0	50.2	100.49	80-120
75	Styrene	50.0	52.6	105.18	80-120
76	Bromoform	50.0	56.8	113.50	80-120
77	Isopropylbenzene	50.0	51.4	102.81	80-120
79	cis-1,4-Dichloro-2	50.0	48.6	97.22	80-120
86	trans-1,4-Dichloro	50.0	53.0	106.00	80-120
80	Bromobenzene	50.0	50.1	100.16	80-120
81	N-Propylbenzene	50.0	49.3	98.62	80-120
82	1,1,2,2-Tetrachlor	50.0	50.5	100.96	80-120
85	1,3,5-Trimethylben	50.0	50.2	100.43	80-120
83	2-Chlorotoluene	50.0	48.4	96.80	80-120
84	1,2,3-Trichloropro	50.0	48.5	96.94	80-120
87	4-Chlorotoluene	50.0	47.9	95.89	80-120
88	tert-Butylbenzene	50.0	49.4	98.77	80-120
89	Pentachloroethane	50.0	50.5	101.08	80-120
90	1,2,4-Trimethylben	50.0	50.1	100.24	80-120
92	P-Isopropyltoluene	50.0	50.8	101.51	80-120
93	1,3-Dichlorobenzen	50.0	49.9	99.76	80-120
95	1,4-Dichlorobenzen	50.0	48.4	96.83	80-120
97	N-Butylbenzene	50.0	49.4	98.78	80-120
91	sec-Butylbenzene	50.0	49.9	99.87	80-120
99	1,2-Dichlorobenzen	50.0	48.9	97.74	80-120
100	1,2-Dibromo-3-Chlo	50.0	51.0	101.96	80-120
101	1,3,5-Trichloroben	50.0	49.0	98.10	80-120
102	Hexachlorobutadien	50.0	51.4	102.90	80-120
103	1,2,4-Trichloroben	50.0	48.6	97.24	80-120
96	1,2,3-Trimethylben	50.0	48.8	97.71	80-120
104	Naphthalene	50.0	50.7	101.43	80-120

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	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	105 1,2,3-Trichloroben	50.0	53.6	107.11	80-120
	17 Methyl Acetate	50.0	40.8	81.69	80-120
	46 Methylcyclohexane	50.0	46.2	92.40	80-120
M	55 Total Alkylbenzene	350	349	99.75	80-120

	SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$	34 Dibromofluorometha	50.0	47.0	93.91	80-119
$	42 1,2-Dichloroethane	50.0	45.8	91.66	81-118
$	58 Toluene-D8	50.0	49.2	98.44	89-112
$	78 P-Bromofluorobenze	50.0	50.3	100.61	85-114

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Report Date: 09-May-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5513.D
Lab Smp Id: WG227568-5
Inj Date : 03-MAY-2018 15:47 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227568-5
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 07-May-2018 16:14 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 15:47 Cal File: P5513.D
Als bottle: 6 Calibration Sample, Level: 5
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)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.515	1.515	(0.235)	1019480	100.000	95.5	
2	Chloromethane	50	1.673	1.673	(0.260)	939491	100.000	91.9	
3	Vinyl chloride	62	1.730	1.730	(0.269)	1031473	100.000	92.3	
4	Bromomethane	94	1.973	1.973	(0.306)	566905	100.000	116	
5	Chloroethane	64	2.066	2.066	(0.321)	542158	100.000	85.4	
6	Trichlorofluoromethane	101	2.173	2.173	(0.337)	1842051	100.000	93.0	
7	Diethyl Ether	59	2.416	2.416	(0.375)	661228	100.000	92.4	
19	Tertiary-butyl alcohol	59	3.503	3.503	(0.544)	291617	500.000	470	
8	1,1-Dichloroethene	96	2.595	2.595	(0.403)	751093	100.000	91.1	
10	Carbon Disulfide	76	2.624	2.624	(0.407)	2685968	100.000	96.3	
9	Freon-113	151	2.616	2.616	(0.406)	801948	100.000	101	
11	Iodomethane	142	2.731	2.731	(0.424)	613526	100.000	134	
12	Acrolein	56	2.903	2.903	(0.451)	719619	500.000	514	
14	Methylene Chloride	84	3.131	3.131	(0.486)	985404	100.000	92.8	
15	Acetone	43	3.181	3.181	(0.494)	1189325	500.000	472	
45	Isobutyl Alcohol	43	6.785	6.785	(1.053)	602295	2000.00	2840	
16	trans-1,2-Dichloroethene	96	3.281	3.281	(0.509)	961229	100.000	96.9	
13	Allyl Chloride	41	3.024	3.024	(0.469)	1331833	100.000	96.5	
18	Methyl tert-butyl ether	73	3.396	3.396	(0.527)	2945339	100.000	102	
20	Acetonitrile	41	3.689	3.689	(0.573)	1246723	1000.00	922	
21	Di-isopropyl ether	45	3.825	3.825	(0.594)	3245653	100.000	98.4	
22	Chloroprene	53	3.946	3.946	(0.613)	1615937	100.000	97.7	
39	Propionitrile	54	6.306	6.306	(0.979)	1562742	1000.00	1000	

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			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	6.335	6.335	(0.983)	6188893	1000.00	983	
	23	1,1-Dichloroethane	63	3.982	3.982	(0.618)	1829414	100.000	96.3	
	24	Acrylonitrile	52	4.068	4.068	(0.632)	1690667	500.000	501	
	25	Ethyl tertiary-butyl ether	59	4.297	4.297	(0.667)	3119582	100.000	102	
	26	Vinyl Acetate	43	4.325	4.325	(0.586)	2321232	100.000	105	
	27	cis-1,2-Dichloroethene	96	4.719	4.719	(0.733)	1072422	100.000	101	
M	98	1,2-Dichloroethylene (total)	96				2033651	100.000	198	
	52	Methyl Methacrylate	41	8.630	8.630	(1.170)	907550	100.000	106	
	28	2,2-Dichloropropane	77	4.876	4.876	(0.757)	1276078	100.000	104	
	29	Bromochloromethane	128	5.019	5.019	(0.779)	439292	100.000	93.1	
	31	Chloroform	83	5.162	5.162	(0.801)	1850690	100.000	99.3	
	32	Carbon Tetrachloride	117	5.348	5.348	(0.725)	1431643	100.000	105	
	33	Tetrahydrofuran	42	5.412	5.412	(0.840)	1436479	500.000	506	
$	34	Dibromofluoromethane	113	5.469	5.469	(0.849)	603017	50.0000	49.3	
	35	1,1,1-Trichloroethane	97	5.484	5.484	(0.851)	1655644	100.000	99.4	
	37	1,1-Dichloropropene	75	5.705	5.705	(0.773)	1481424	100.000	99.9	
	36	2-Butanone	43	5.720	5.720	(0.888)	2026979	500.000	536	
	38	Benzene	78	6.192	6.192	(0.839)	4143131	100.000	101	
*	41	Pentafluorobenzene	168	6.442	6.442	(1.000)	1237392	50.0000		
	30	Cyclohexane	56	4.997	4.997	(0.776)	1810432	100.000	101	
	53	Ethyl Methacrylate	69	10.610	10.610	(1.438)	1541073	100.000	118	
$	42	1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	761464	50.0000	47.2	
	43	Tertiary-amyl methyl ether	73	6.478	6.478	(1.006)	2826506	100.000	104	
	44	1,2-Dichloroethane	62	6.599	6.599	(0.894)	1539482	100.000	95.7	
	47	Trichloroethene	95	7.278	7.278	(0.986)	1005196	100.000	99.8	
*	48	1,4-Difluorobenzene	114	7.378	7.378	(1.000)	1953432	50.0000		
	49	Dibromomethane	93	7.986	7.986	(1.082)	633843	100.000	103	
	50	1,2-Dichloropropane	63	8.158	8.158	(1.106)	1063032	100.000	102	
	51	Bromodichloromethane	83	8.301	8.301	(1.125)	1464273	100.000	103	
	57	cis-1,3-dichloropropene	75	9.302	9.302	(1.261)	1871804	100.000	105	
	54	1,4-Dioxane	88	8.637	8.637	(1.171)	154491	2000.00	1830	
$	58	Toluene-D8	98	9.574	9.574	(1.297)	2284018	50.0000	49.4	
	56	2-Chloroethylvinylether	63	10.203	10.203	(1.383)	300	100.000	22.5	
	59	Toluene	92	9.645	9.645	(1.307)	2581513	100.000	99.8	
	61	4-methyl-2-pentanone	43	10.274	10.274	(1.392)	4621453	500.000	522	
	60	Tetrachloroethene	164	10.196	10.196	(0.864)	795491	100.000	97.9	
	62	trans-1,3-Dichloropropene	75	10.310	10.310	(1.397)	1702360	100.000	110	
	63	1,1,2-Trichloroethane	83	10.525	10.525	(1.426)	780934	100.000	107	
	64	Dibromochloromethane	129	10.753	10.753	(0.911)	1069318	100.000	110	
	65	1,3-Dichloropropane	76	10.904	10.904	(0.924)	1868116	100.000	100	
	66	1,2-Dibromoethane	107	11.054	11.054	(1.498)	973396	100.000	103	
	67	2-Hexanone	43	11.490	11.490	(0.973)	3223978	500.000	533	
*	68	Chlorobenzene-D5	117	11.804	11.804	(1.000)	2010625	50.0000		
	69	Chlorobenzene	112	11.826	11.826	(1.002)	3046565	100.000	101	
	70	1-Chlorohexane	91	11.854	11.854	(1.004)	1469130	100.000	99.5	
	71	Ethylbenzene	106	11.905	11.905	(1.008)	1655451	100.000	100	
	72	1,1,1,2-Tetrachloroethane	131	11.933	11.933	(1.011)	1021606	100.000	106	
M	106	Xylenes (total)	106				6120522	100.000	309	
	73	m+p-Xylenes	106	12.112	12.112	(1.026)	4111269	200.000	205	
	74	o-Xylene	106	12.677	12.677	(1.074)	2009253	100.000	104	
	75	Styrene	104	12.755	12.755	(1.081)	3461712	100.000	106	
	76	Bromoform	173	12.755	12.755	(1.081)	800121	100.000	111	
	77	Isopropylbenzene	105	13.099	13.099	(0.887)	4833512	100.000	99.6	
$	78	P-Bromofluorobenzene	95	13.428	13.428	(1.820)	1026589	50.0000	50.0	

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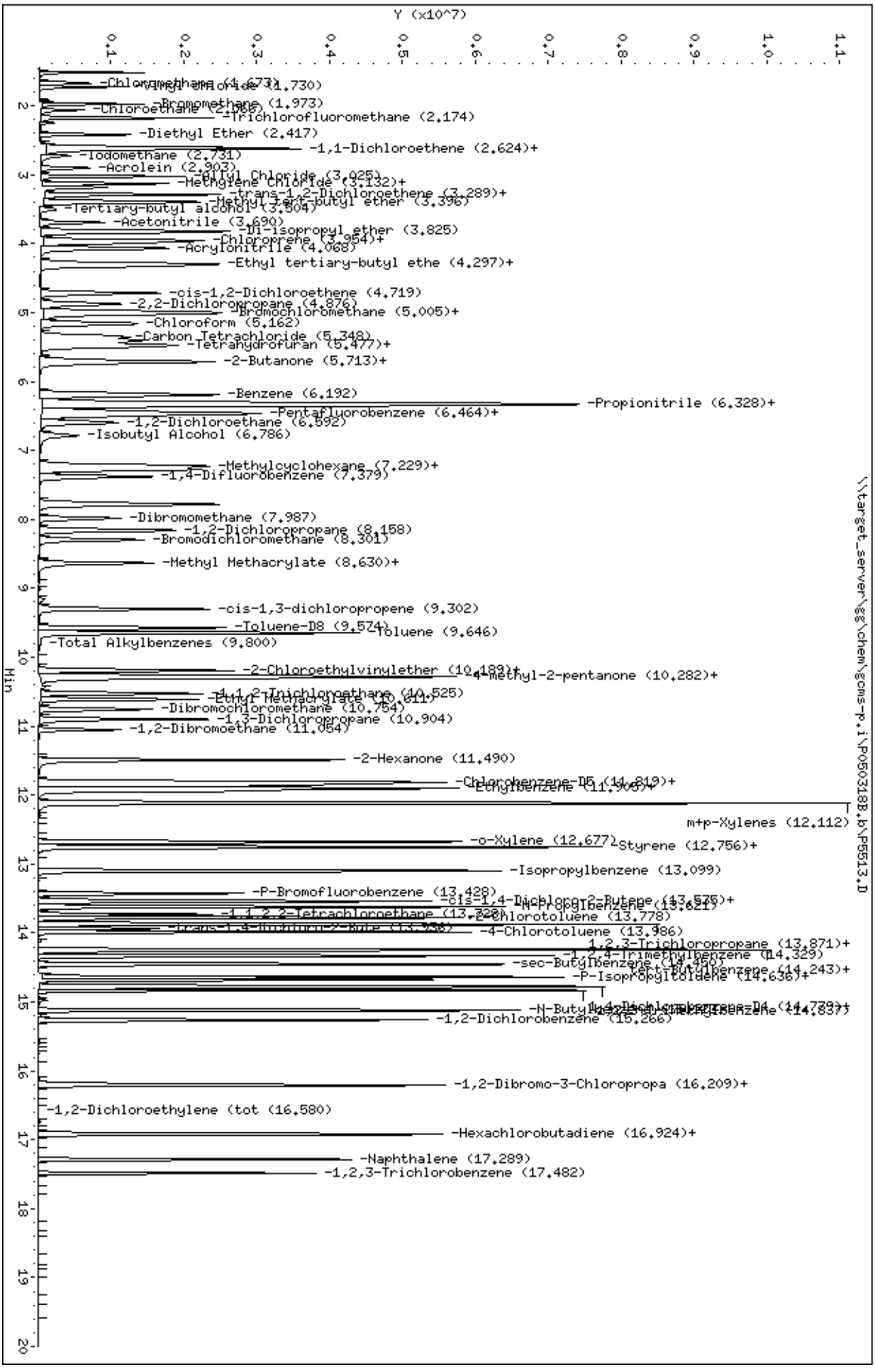
							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	13.549	13.549	(0.917)	470124	100.000	101	
	86 trans-1,4-Dichloro-2-Butene	53	13.935	13.935	(0.943)	347480	100.000	98.9	
	80 Bromobenzene	156	13.535	13.535	(0.916)	1291465	100.000	101	
	81 N-Propylbenzene	91	13.621	13.621	(0.922)	5693345	100.000	97.3	
	82 1,1,2,2-Tetrachloroethane	83	13.728	13.728	(0.929)	1236428	100.000	98.2	
	85 1,3,5-Trimethylbenzene	105	13.878	13.878	(0.939)	4202906	100.000	102	
	83 2-Chlorotoluene	91	13.778	13.778	(0.933)	3517393	100.000	99.0	
	84 1,2,3-Trichloropropane	75	13.864	13.864	(0.939)	1150018	100.000	99.6	
	87 4-Chlorotoluene	91	13.985	13.985	(0.947)	3724982	100.000	98.4	
	88 tert-Butylbenzene	119	14.243	14.243	(0.964)	4118632	100.000	103	
	89 Pentachloroethane	165	14.250	14.250	(0.965)	640659	100.000	110	
	90 1,2,4-Trimethylbenzene	105	14.328	14.328	(0.970)	4359413	100.000	102	
	92 P-Isopropyltoluene	119	14.636	14.636	(0.991)	4266314	100.000	103	
	93 1,3-Dichlorobenzene	146	14.679	14.679	(0.994)	2274923	100.000	101	
*	94 1,4-Dichlorobenzene-D4	152	14.772	14.772	(1.000)	1146147	50.0000		
	95 1,4-Dichlorobenzene	146	14.786	14.786	(1.001)	2381623	100.000	99.3	
	97 N-Butylbenzene	91	15.122	15.122	(1.024)	3743013	100.000	100	
	91 sec-Butylbenzene	105	14.457	14.457	(0.979)	5002657	100.000	99.0	
	99 1,2-Dichlorobenzene	146	15.265	15.265	(1.033)	2196496	100.000	100	
	100 1,2-Dibromo-3-Chloropropane	157	16.180	16.180	(1.095)	260996	100.000	115	
	101 1,3,5-Trichlorobenzene	180	16.209	16.209	(1.097)	1674396	100.000	103	
	102 Hexachlorobutadiene	225	16.910	16.910	(1.145)	599326	100.000	104	
	103 1,2,4-Trichlorobenzene	180	16.931	16.931	(1.146)	1462057	100.000	112	
	96 1,2,3-Trimethylbenzene	105	14.836	14.836	(1.004)	4495918	100.000	100	
	104 Naphthalene	128	17.289	17.289	(1.170)	3078609	100.000	118	
	105 1,2,3-Trichlorobenzene	180	17.489	17.489	(1.184)	1145385	100.000	112	
	17 Methyl Acetate	43	3.303	3.303	(0.513)	783333	100.000	97.7	
	46 Methylcyclohexane	83	7.228	7.228	(1.122)	1756187	100.000	104	
M	55 Total Alkylbenzenes	100				31386280	100.000	706	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Client ID:
Sample Info: WG227568-5
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\P050318B.b\P5513.D
Y (x10^7)
Min
-Chloromethane (1.730)
-Bromomethane (1.973)
-Chloroethane (2.106)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.731)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.132)+
-trans-1,2-Dichloroethene (3.289)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.504)
-Acetonitrile (3.690)
-Di-isopropyl ether (3.825)
-Chloroprene (3.954)+
-Acrylonitrile (4.068)
-Ethyl tertiary-butyl ethe (4.297)+
-cis-1,2-Dichloroethene (4.719)
-2,2-Dichloropropane (4.876)
-Bromochloromethane (5.005)+
-Chloroform (5.162)
-Carbon Tetrachloride (5.348)
-Tetrahydrofuran (5.477)+
-2-Butanone (5.713)+
-Benzene (6.192)
-Propionitrile (6.328)+
-Pentafluorobenzene (6.464)+
-1,2-Dichloroethane (6.592)
-Isobutyl Alcohol (6.786)
-Methylcyclohexane (7.229)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.158)
-Bromodichloromethane (8.301)
-Methyl Methacrylate (8.630)+
-cis-1,3-dichloropropene (9.302)
-Toluene-D8 (9.574)
-Toluene (9.646)
-Total Alkylbenzenes (9.800)
-2-Chloroethylvinylether (10.182)+
-4-Methyl-2-pentanone (10.282)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.754)
-1,3-Dichloropropane (10.904)
-1,2-Dibromoethane (11.054)
-2-Hexanone (11.490)
-Chlorobenzene-D5 (11.819)+
-Ethylbenzene (11.906)+
m+p-Xylenes (12.112)
-o-Xylene (12.677)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.525)+
-N-Propylbenzene (13.621)
-1,1,2,2-Tetrachloroethane (13.728)
-2-Chlorotoluene (13.778)
-trans-1,4-Dichloro-2-Bute (13.938)
-4-Chlorotoluene (13.986)
-1,2,3-Trichloropropane (13.871)+
-1,3,5-Trimethylbenzene (14.329)
-sec-Butylbenzene (14.460)
-tert-Butylbenzene (14.243)+
-P-Isopropyltoluene (14.636)+
-N-Butylbenzene (14.779)+
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.209)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.924)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5508.D
Report Date: 09-May-2018 12:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5508.D
Lab Smp Id: WG227568-4
Inj Date : 03-MAY-2018 12:56 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info :
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 09-May-2018 12:33 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 12:56 Cal File: P5508.D
Als bottle: 1 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

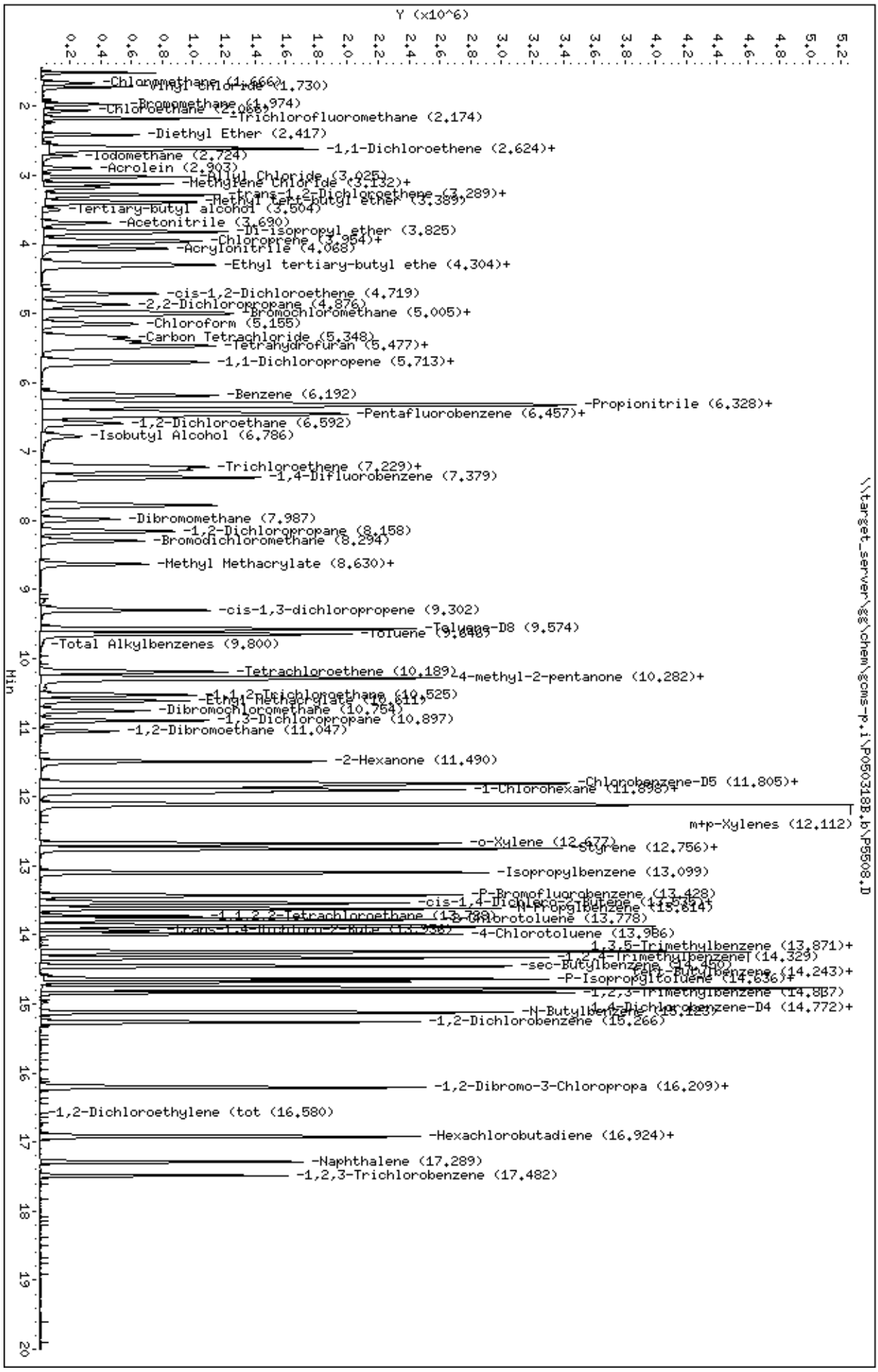
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.515	1.515	(0.235)	472590	50.0000	51.0	
2	Chloromethane	50	1.666	1.666	(0.259)	437451	50.0000	49.3	
3	Vinyl chloride	62	1.730	1.730	(0.269)	484838	50.0000	50.0	
4	Bromomethane	94	1.973	1.973	(0.306)	211364	50.0000	48.3	
5	Chloroethane	64	2.066	2.066	(0.321)	262281	50.0000	48.3	
6	Trichlorofluoromethane	101	2.173	2.173	(0.337)	866255	50.0000	50.4	
7	Diethyl Ether	59	2.416	2.416	(0.375)	329832	50.0000	53.1	
19	Tertiary-butyl alcohol	59	3.496	3.496	(0.543)	159376	250.000	296	
8	1,1-Dichloroethene	96	2.595	2.595	(0.403)	355074	50.0000	49.6	
10	Carbon Disulfide	76	2.624	2.624	(0.407)	1263070	50.0000	52.2	
9	Freon-113	151	2.624	2.624	(0.407)	361116	50.0000	52.4	
11	Iodomethane	142	2.724	2.724	(0.423)	277754	50.0000	53.3	
12	Acrolein	56	2.903	2.903	(0.451)	327091	250.000	269	
14	Methylene Chloride	84	3.131	3.131	(0.486)	454848	50.0000	49.3	
15	Acetone	43	3.181	3.181	(0.494)	585672	250.000	264	
45	Isobutyl Alcohol	43	6.785	6.785	(1.053)	290035	1000.00	1110	
16	trans-1,2-Dichloroethene	96	3.281	3.281	(0.509)	434581	50.0000	50.5	
13	Allyl Chloride	41	3.024	3.024	(0.469)	635843	50.0000	53.1	
18	Methyl tert-butyl ether	73	3.396	3.396	(0.527)	1337232	50.0000	53.1	
20	Acetonitrile	41	3.689	3.689	(0.573)	638461	500.000	544	
21	Di-isopropyl ether	45	3.825	3.825	(0.594)	1509548	50.0000	52.7	
22	Chloroprene	53	3.946	3.946	(0.613)	753713	50.0000	52.5	
39	Propionitrile	54	6.299	6.299	(0.978)	719381	500.000	532	
40	Methacrylonitrile	41	6.327	6.327	(0.982)	2948885	500.000	539	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5508.D
Report Date: 09-May-2018 12:34

							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	3.982	3.982	(0.618)	845506	50.0000	51.3	
	24 Acrylonitrile	52	4.068	4.068	(0.632)	778173	250.000	266	
	25 Ethyl tertiary-butyl ether	59	4.297	4.297	(0.667)	1402363	50.0000	52.6	
	26 Vinyl Acetate	43	4.325	4.325	(0.586)	1069085	50.0000	52.8	
	27 cis-1,2-Dichloroethene	96	4.712	4.712	(0.731)	469837	50.0000	51.0	
	52 Methyl Methacrylate	41	8.630	8.630	(1.170)	418044	50.0000	53.5	
	28 2,2-Dichloropropane	77	4.876	4.876	(0.757)	643447	50.0000	55.4	
	29 Bromochloromethane	128	5.019	5.019	(0.779)	213990	50.0000	52.2	
	31 Chloroform	83	5.162	5.162	(0.801)	830910	50.0000	51.3	
	32 Carbon Tetrachloride	117	5.348	5.348	(0.725)	644081	50.0000	51.6	
	33 Tetrahydrofuran	42	5.412	5.412	(0.840)	655194	250.000	267	
$	34 Dibromofluoromethane	113	5.469	5.469	(0.849)	548419	50.0000	51.6	
	35 1,1,1-Trichloroethane	97	5.484	5.484	(0.851)	745754	50.0000	51.6	
	37 1,1-Dichloropropene	75	5.705	5.705	(0.773)	670572	50.0000	49.4	
	36 2-Butanone	43	5.720	5.720	(0.888)	966856	250.000	269	
	38 Benzene	78	6.192	6.192	(0.839)	1880461	50.0000	50.0	
*	41 Pentafluorobenzene	168	6.442	6.442	(1.000)	1074176	50.0000		
	30 Cyclohexane	56	4.990	4.990	(0.775)	842101	50.0000	54.0	
	53 Ethyl Methacrylate	69	10.610	10.610	(1.438)	672279	50.0000	48.3	
$	42 1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	718843	50.0000	51.3	
	43 Tertiary-amyl methyl ether	73	6.478	6.478	(1.006)	1285401	50.0000	54.4	
	44 1,2-Dichloroethane	62	6.592	6.592	(0.893)	714232	50.0000	48.6	
	47 Trichloroethene	95	7.278	7.278	(0.986)	457620	50.0000	49.4	
*	48 1,4-Difluorobenzene	114	7.379	7.379	(1.000)	1785427	50.0000		
	49 Dibromomethane	93	7.986	7.986	(1.082)	284440	50.0000	50.7	
	50 1,2-Dichloropropane	63	8.158	8.158	(1.106)	476841	50.0000	50.3	
	51 Bromodichloromethane	83	8.294	8.294	(1.124)	668138	50.0000	51.5	
	57 cis-1,3-dichloropropene	75	9.302	9.302	(1.261)	859728	50.0000	53.0	
	54 1,4-Dioxane	88	8.637	8.637	(1.171)	97094	1000.00	1070	
$	58 Toluene-D8	98	9.574	9.574	(1.297)	2117101	50.0000	50.0	
	59 Toluene	92	9.645	9.645	(1.307)	1172890	50.0000	49.6	
	61 4-methyl-2-pentanone	43	10.274	10.274	(1.392)	2156912	250.000	266	
	60 Tetrachloroethene	164	10.196	10.196	(0.864)	358966	50.0000	49.3	
	62 trans-1,3-Dichloropropene	75	10.303	10.303	(1.396)	778870	50.0000	49.3	
	63 1,1,2-Trichloroethane	83	10.525	10.525	(1.426)	346680	50.0000	48.1	
	64 Dibromochloromethane	129	10.753	10.753	(0.912)	472580	50.0000	51.7	
	65 1,3-Dichloropropane	76	10.896	10.896	(0.924)	848670	50.0000	50.7	
	66 1,2-Dibromoethane	107	11.047	11.047	(1.497)	446860	50.0000	51.8	
	67 2-Hexanone	43	11.490	11.490	(0.974)	1484332	250.000	274	
*	68 Chlorobenzene-D5	117	11.797	11.797	(1.000)	1800386	50.0000		
	69 Chlorobenzene	112	11.826	11.826	(1.002)	1368883	50.0000	50.8	
	70 1-Chlorohexane	91	11.854	11.854	(1.005)	674193	50.0000	51.0	
	71 Ethylbenzene	106	11.897	11.897	(1.008)	747324	50.0000	50.5	
	72 1,1,1,2-Tetrachloroethane	131	11.933	11.933	(1.012)	458484	50.0000	49.1	
	73 m+p-Xylenes	106	12.112	12.112	(1.027)	1840433	100.000	102	
	74 o-Xylene	106	12.677	12.677	(1.075)	883451	50.0000	51.3	
	75 Styrene	104	12.755	12.755	(1.081)	1540713	50.0000	52.8	
	76 Bromoform	173	12.755	12.755	(1.081)	334038	50.0000	51.9	
	77 Isopropylbenzene	105	13.099	13.099	(0.887)	2237729	50.0000	50.4	
$	78 P-Bromofluorobenzene	95	13.428	13.428	(1.820)	951214	50.0000	50.7	
	79 cis-1,4-Dichloro-2-Butene	53	13.549	13.549	(0.918)	225904	50.0000	53.2	
	86 trans-1,4-Dichloro-2-Butene	53	13.935	13.935	(0.944)	177038	50.0000	55.1	
	80 Bromobenzene	156	13.535	13.535	(0.917)	567596	50.0000	48.8	
	81 N-Propylbenzene	91	13.621	13.621	(0.923)	2716648	50.0000	50.8	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5508.D
Report Date: 09-May-2018 12:34

	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	13.728	13.728	(0.930)	569103	50.0000	49.4	
85	1,3,5-Trimethylbenzene	105	13.871	13.871	(0.939)	1951200	50.0000	51.5	
83	2-Chlorotoluene	91	13.778	13.778	(0.933)	1615201	50.0000	49.8	
84	1,2,3-Trichloropropane	75	13.864	13.864	(0.939)	520792	50.0000	49.3	
87	4-Chlorotoluene	91	13.985	13.985	(0.947)	1719916	50.0000	49.7	
88	tert-Butylbenzene	119	14.243	14.243	(0.965)	1847927	50.0000	50.6	
89	Pentachloroethane	165	14.250	14.250	(0.965)	273041	50.0000	51.3	
90	1,2,4-Trimethylbenzene	105	14.328	14.328	(0.970)	2008597	50.0000	51.3	
92	P-Isopropyltoluene	119	14.636	14.636	(0.991)	1956380	50.0000	51.5	
93	1,3-Dichlorobenzene	146	14.679	14.679	(0.994)	1028784	50.0000	49.9	
* 94	1,4-Dichlorobenzene-D4	152	14.765	14.765	(1.000)	1047820	50.0000		
95	1,4-Dichlorobenzene	146	14.786	14.786	(1.001)	1070399	50.0000	48.8	
97	N-Butylbenzene	91	15.122	15.122	(1.024)	1750345	50.0000	51.3	
91	sec-Butylbenzene	105	14.450	14.450	(0.979)	2346330	50.0000	50.8	
99	1,2-Dichlorobenzene	146	15.265	15.265	(1.034)	985000	50.0000	49.2	
100	1,2-Dibromo-3-Chloropropane	157	16.180	16.180	(1.096)	110420	50.0000	46.9	
101	1,3,5-Trichlorobenzene	180	16.209	16.209	(1.098)	718342	50.0000	48.2	
102	Hexachlorobutadiene	225	16.910	16.910	(1.145)	256027	50.0000	48.4	
103	1,2,4-Trichlorobenzene	180	16.924	16.924	(1.146)	606814	50.0000	46.0	
96	1,2,3-Trimethylbenzene	105	14.836	14.836	(1.005)	2109640	50.0000	51.5	
104	Naphthalene	128	17.289	17.289	(1.171)	1258877	50.0000	46.9	
105	1,2,3-Trichlorobenzene	180	17.489	17.489	(1.185)	463076	50.0000	49.4	
17	Methyl Acetate	43	3.303	3.303	(0.513)	358507	50.0000	51.5	
46	Methylcyclohexane	83	7.228	7.228	(1.122)	794367	50.0000	54.0	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Date : 03-MAY-2018 12:56
Client ID:
Sample Info:
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\P050318B.b\P5508.D
-Chloromethane (1.666)
-Vinyl Chloride (1.730)
-Bromomethane (1.974)
-Chloroethane (2.068)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.724)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.132)+
-trans-1,2-Dichloroethene (3.289)+
-Methyl tert-butyl ether (3.389)
-Tertiary-butyl alcohol (3.504)
-Acetonitrile (3.690)
-Di-isopropyl ether (3.825)
-Chloroprene (3.954)+
-Acrylonitrile (4.068)
-Ethyl tertiary-butyl ethe (4.304)+
-cis-1,2-Dichloroethene (4.719)
-2,2-Dichloropropane (4.876)
-Bromochloromethane (5.005)+
-Chloroform (5.155)
-Carbon Tetrachloride (5.348)
-Tetrahydrofuran (5.477)+
-1,1-Dichloropropene (5.713)+
-Benzene (6.192)
-Propionitrile (6.328)+
-Pentafluorobenzene (6.457)+
-1,2-Dichloroethane (6.592)
-Isobutyl Alcohol (6.786)
-Trichloroethene (7.229)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.158)
-Bromodichloromethane (8.294)
-Methyl Methacrylate (8.630)+
-cis-1,3-dichloropropene (9.302)
-Toluene-D8 (9.574)
-Toluene (9.648)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-methyl-2-pentanone (10.282)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.754)
-1,3-Dichloropropane (10.897)
-1,2-Dibromoethane (11.047)
-2-Hexanone (11.490)
-Chlorobenzene-D5 (11.805)+
-1-Chlorohexane (11.898)+
m+p-Xylenes (12.112)
-o-Xylene (12.477)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.572)+
-N-Propylbenzene (13.614)
-1,1,2,2-Tetrachloroethane (13.739)
-3-Chlorotoluene (13.778)
-trans-1,4-Dichloro-2-Bute (13.936)
-4-Chlorotoluene (13.986)
-1,3,5-Trimethylbenzene (13.871)+
-1,2,4-Trimethylbenzene (14.329)
-sec-Butylbenzene (14.460)
-para-Butylbenzene (14.243)+
-P-Isopropyltoluene (14.636)+
-1,2,3-Trimethylbenzene (14.887)
-N-Butylbenzene (15.123)
-1,4-Dichlorobenzene-D4 (14.772)+
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.209)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.924)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5509.D
Report Date: 09-May-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5509.D
Lab Smp Id: WG227568-3
Inj Date : 03-MAY-2018 13:30 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227568-3
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 07-May-2018 16:14 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 13:30 Cal File: P5509.D
Als bottle: 2 Calibration Sample, Level: 3
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

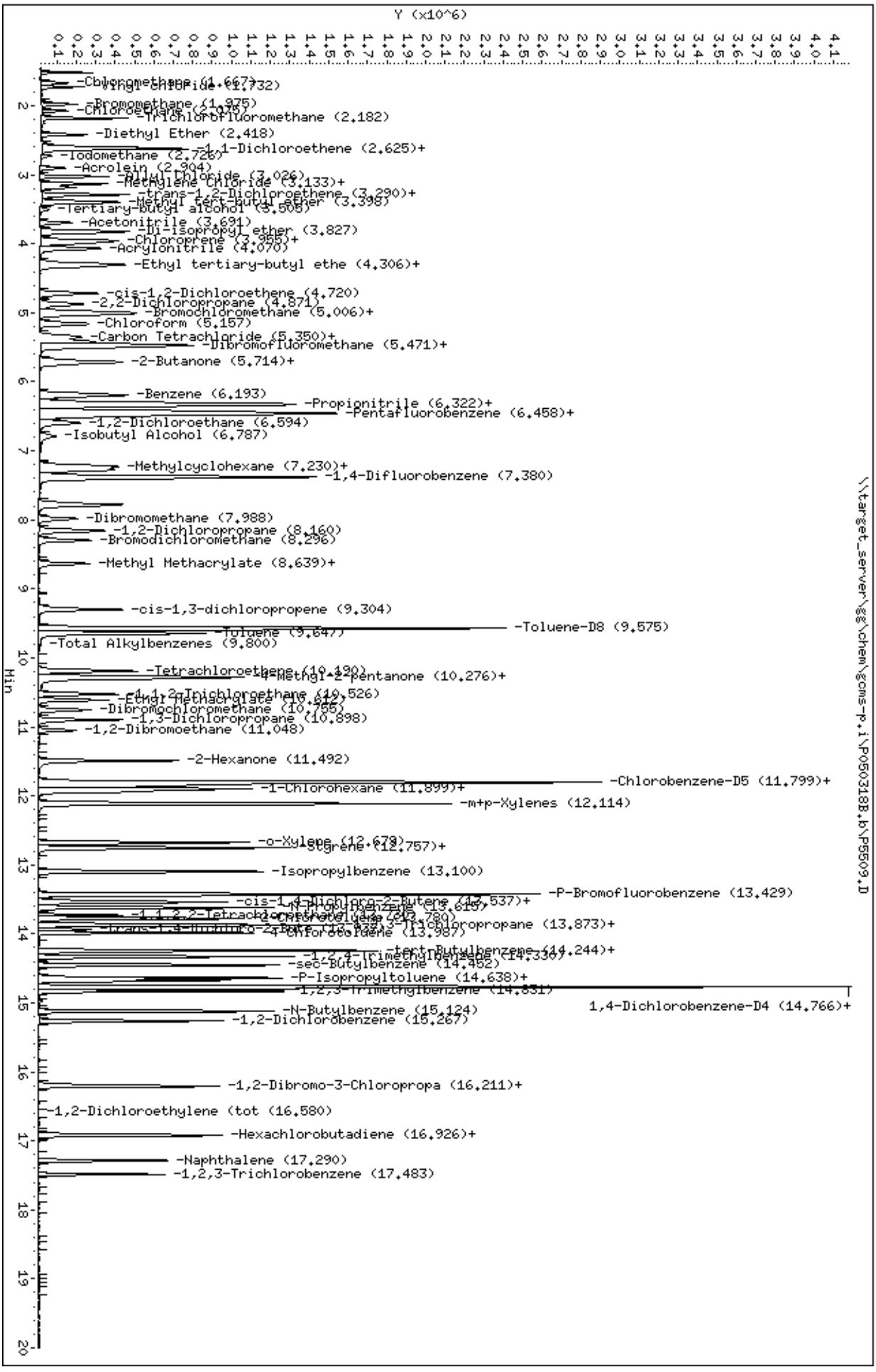
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.517	1.515	(0.235)	177303	20.0000	18.8	
2	Chloromethane	50	1.667	1.673	(0.259)	171000	20.0000	19.2	
3	Vinyl chloride	62	1.731	1.730	(0.269)	182895	20.0000	18.9	
4	Bromomethane	94	1.974	1.973	(0.306)	79029	20.0000	18.8	
5	Chloroethane	64	2.074	2.066	(0.322)	107097	20.0000	19.7	
6	Trichlorofluoromethane	101	2.182	2.173	(0.339)	323834	20.0000	18.8	
7	Diethyl Ether	59	2.418	2.416	(0.375)	121012	20.0000	18.6	
19	Tertiary-butyl alcohol	59	3.512	3.503	(0.545)	62030	100.000	95.9	
8	1,1-Dichloroethene	96	2.596	2.595	(0.403)	144231	20.0000	19.6	
10	Carbon Disulfide	76	2.625	2.624	(0.407)	479625	20.0000	18.9	
9	Freon-113	151	2.618	2.616	(0.406)	141626	20.0000	19.3	
11	Iodomethane	142	2.732	2.731	(0.424)	78303	20.0000	16.0	
12	Acrolein	56	2.904	2.903	(0.451)	125676	100.000	95.3	
14	Methylene Chloride	84	3.133	3.131	(0.486)	183988	20.0000	19.6	
15	Acetone	43	3.183	3.181	(0.494)	232907	100.000	97.0	
45	Isobutyl Alcohol	43	6.779	6.785	(1.052)	96383	400.000	352	
16	trans-1,2-Dichloroethene	96	3.290	3.281	(0.511)	175260	20.0000	19.5	
13	Allyl Chloride	41	3.025	3.024	(0.470)	246697	20.0000	19.2	
18	Methyl tert-butyl ether	73	3.397	3.396	(0.527)	540202	20.0000	19.6	
20	Acetonitrile	41	3.690	3.689	(0.573)	241524	200.000	189	
21	Di-isopropyl ether	45	3.826	3.825	(0.594)	580127	20.0000	19.1	
22	Chloroprene	53	3.948	3.946	(0.613)	299780	20.0000	19.4	
39	Propionitrile	54	6.300	6.306	(0.978)	276979	200.000	191	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5509.D
Report Date: 09-May-2018 12:05

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	6.322	6.335	(0.981)	1132886	200.000	190	
	23	1,1-Dichloroethane	63	3.984	3.982	(0.618)	345392	20.0000	19.7	
	24	Acrylonitrile	52	4.062	4.068	(0.630)	299241	100.000	95.3	
	25	Ethyl tertiary-butyl ether	59	4.291	4.297	(0.666)	546464	20.0000	19.2	
	26	Vinyl Acetate	43	4.327	4.325	(0.586)	413448	20.0000	19.5	
	27	cis-1,2-Dichloroethene	96	4.713	4.719	(0.731)	193060	20.0000	19.7	
M	98	1,2-Dichloroethylene (total)	96				368320	20.0000	39.3	
	52	Methyl Methacrylate	41	8.631	8.630	(1.170)	155530	20.0000	19.2	
	28	2,2-Dichloropropane	77	4.870	4.876	(0.756)	257179	20.0000	19.4	
	29	Bromochloromethane	128	5.020	5.019	(0.779)	86982	20.0000	19.6	
	31	Chloroform	83	5.163	5.162	(0.801)	331214	20.0000	19.4	
	32	Carbon Tetrachloride	117	5.349	5.348	(0.725)	255230	20.0000	19.8	
	33	Tetrahydrofuran	42	5.406	5.412	(0.839)	260563	100.000	97.0	
$	34	Dibromofluoromethane	113	5.471	5.469	(0.849)	555801	50.0000	49.0	
	35	1,1,1-Trichloroethane	97	5.478	5.484	(0.850)	301394	20.0000	19.6	
	37	1,1-Dichloropropene	75	5.714	5.705	(0.774)	266556	20.0000	19.8	
	36	2-Butanone	43	5.721	5.720	(0.888)	392903	100.000	98.1	
	38	Benzene	78	6.193	6.192	(0.839)	757809	20.0000	20.0	
*	41	Pentafluorobenzene	168	6.443	6.442	(1.000)	1133458	50.0000		
	30	Cyclohexane	56	4.999	4.997	(0.776)	324271	20.0000	19.1	
	53	Ethyl Methacrylate	69	10.612	10.610	(1.438)	245531	20.0000	19.0	
$	42	1,2-Dichloroethane-D4	65	6.465	6.470	(1.003)	735298	50.0000	49.2	
	43	Tertiary-amyl methyl ether	73	6.472	6.478	(1.004)	479709	20.0000	18.8	
	44	1,2-Dichloroethane	62	6.586	6.599	(0.892)	290698	20.0000	20.0	
	47	Trichloroethene	95	7.273	7.278	(0.985)	183115	20.0000	19.9	
*	48	1,4-Difluorobenzene	114	7.380	7.378	(1.000)	1806289	50.0000		
	49	Dibromomethane	93	7.988	7.986	(1.082)	115186	20.0000	20.0	
	50	1,2-Dichloropropane	63	8.159	8.158	(1.106)	189737	20.0000	19.8	
	51	Bromodichloromethane	83	8.302	8.301	(1.125)	261073	20.0000	19.6	
	57	cis-1,3-dichloropropene	75	9.303	9.302	(1.261)	343075	20.0000	19.9	
	54	1,4-Dioxane	88	8.631	8.637	(1.170)	36812	400.000	387	
$	58	Toluene-D8	98	9.575	9.574	(1.297)	2143993	50.0000	50.0	
	59	Toluene	92	9.646	9.645	(1.307)	477766	20.0000	20.1	
	61	4-methyl-2-pentanone	43	10.276	10.274	(1.392)	878469	100.000	100	
	60	Tetrachloroethene	164	10.190	10.196	(0.864)	144394	20.0000	19.8	
	62	trans-1,3-Dichloropropene	75	10.304	10.310	(1.396)	288952	20.0000	19.1	
	63	1,1,2-Trichloroethane	83	10.526	10.525	(1.426)	140800	20.0000	20.0	
	64	Dibromochloromethane	129	10.762	10.753	(0.912)	181442	20.0000	19.3	
	65	1,3-Dichloropropane	76	10.898	10.904	(0.924)	343939	20.0000	19.9	
	66	1,2-Dibromoethane	107	11.048	11.054	(1.497)	175272	20.0000	19.7	
	67	2-Hexanone	43	11.491	11.490	(0.974)	584651	100.000	98.0	
*	68	Chlorobenzene-D5	117	11.799	11.804	(1.000)	1846760	50.0000		
	69	Chlorobenzene	112	11.820	11.826	(1.002)	544334	20.0000	19.7	
	70	1-Chlorohexane	91	11.856	11.854	(1.005)	276746	20.0000	20.0	
	71	Ethylbenzene	106	11.899	11.905	(1.008)	303481	20.0000	19.9	
	72	1,1,1,2-Tetrachloroethane	131	11.934	11.933	(1.012)	180453	20.0000	19.6	
M	106	Xylenes (total)	106				1081875	60.0000	59.0	
	73	m+p-Xylenes	106	12.113	12.112	(1.027)	726276	40.0000	39.2	
	74	o-Xylene	106	12.678	12.677	(1.075)	355599	20.0000	19.8	
	75	Styrene	104	12.757	12.755	(1.081)	606320	20.0000	19.6	
	76	Bromoform	173	12.757	12.755	(1.081)	126624	20.0000	19.2	
	77	Isopropylbenzene	105	13.100	13.099	(0.887)	888081	20.0000	20.3	
$	78	P-Bromofluorobenzene	95	13.429	13.428	(1.820)	955030	50.0000	49.8	
	79	cis-1,4-Dichloro-2-Butene	53	13.543	13.549	(0.917)	84164	20.0000	19.6	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5509.D
Report Date: 09-May-2018 12:05

			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	13.936	13.935	(0.944)	59404	20.0000	18.6	
	80	Bromobenzene	156	13.536	13.535	(0.917)	224864	20.0000	20.2	
	81	N-Propylbenzene	91	13.615	13.621	(0.922)	1079650	20.0000	20.3	
	82	1,1,2,2-Tetrachloroethane	83	13.729	13.728	(0.930)	225401	20.0000	20.2	
	85	1,3,5-Trimethylbenzene	105	13.872	13.878	(0.939)	768088	20.0000	20.2	
	83	2-Chlorotoluene	91	13.779	13.778	(0.933)	645815	20.0000	20.3	
	84	1,2,3-Trichloropropane	75	13.865	13.864	(0.939)	206433	20.0000	20.2	
	87	4-Chlorotoluene	91	13.987	13.985	(0.947)	693433	20.0000	20.4	
	88	tert-Butylbenzene	119	14.244	14.243	(0.965)	718298	20.0000	20.0	
	89	Pentachloroethane	165	14.251	14.250	(0.965)	102908	20.0000	19.7	
	90	1,2,4-Trimethylbenzene	105	14.330	14.328	(0.970)	789020	20.0000	20.2	
	92	P-Isopropyltoluene	119	14.637	14.636	(0.991)	751060	20.0000	19.9	
	93	1,3-Dichlorobenzene	146	14.673	14.679	(0.994)	401256	20.0000	20.1	
*	94	1,4-Dichlorobenzene-D4	152	14.766	14.772	(1.000)	1012406	50.0000		
	95	1,4-Dichlorobenzene	146	14.787	14.786	(1.001)	430106	20.0000	20.4	
	97	N-Butylbenzene	91	15.123	15.122	(1.024)	674655	20.0000	20.0	
	91	sec-Butylbenzene	105	14.451	14.457	(0.979)	915123	20.0000	20.1	
	99	1,2-Dichlorobenzene	146	15.266	15.265	(1.034)	376758	20.0000	19.9	
	100	1,2-Dibromo-3-Chloropropane	157	16.182	16.180	(1.096)	43098	20.0000	20.1	
	101	1,3,5-Trichlorobenzene	180	16.210	16.209	(1.098)	273010	20.0000	19.8	
	102	Hexachlorobutadiene	225	16.911	16.910	(1.145)	99020	20.0000	20.0	
	103	1,2,4-Trichlorobenzene	180	16.925	16.931	(1.146)	242871	20.0000	20.3	
	96	1,2,3-Trimethylbenzene	105	14.830	14.836	(1.004)	787658	20.0000	19.6	
	104	Naphthalene	128	17.290	17.289	(1.171)	496939	20.0000	20.2	
	105	1,2,3-Trichlorobenzene	180	17.483	17.489	(1.184)	185899	20.0000	20.4	
	17	Methyl Acetate	43	3.304	3.303	(0.513)	139595	20.0000	19.2	
	46	Methylcyclohexane	83	7.223	7.228	(1.121)	300277	20.0000	18.9	
M	55	Total Alkylbenzenes	100				5695894	20.0000	141	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Sample Info: WG227568-3
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\P050318B.b\P5509.D
Y (x10^6)
Min
-Chloromethane (1.667)
-Vinyl Chloride (1.732)
-Bromomethane (1.975)
-Chloroethane (1.975)
-Trichlorofluoromethane (2.182)
-Diethyl Ether (2.418)
-1,1-Dichloroethene (2.625)+
-Iodomethane (2.726)
-Acrolein (2.904)
-Allyl Chloride (3.026)
-Methylene Chloride (3.133)+
-trans-1,2-Dichloroethene (3.290)+
-Methyl tert-butyl ether (3.398)
-Tertiary-butyl alcohol (3.508)
-Acetonitrile (3.691)
-Di-isopropyl ether (3.827)
-Chloroprene (3.955)+
-Acrylonitrile (4.070)
-Ethyl tertiary-butyl ethe (4.306)+
-cis-1,2-Dichloroethene (4.720)
-2,2-Dichloropropane (4.871)
-Bromochloromethane (5.006)+
-Chloroform (5.157)
-Carbon Tetrachloride (5.350)+
-Dibromofluoromethane (5.471)+
-2-Butanone (5.714)+
-Benzene (6.193)
-Propionitrile (6.322)+
-Pentafluorobenzene (6.458)+
-1,2-Dichloroethane (6.594)
-Isobutyl Alcohol (6.787)
-Methylcyclohexane (7.230)+
-1,4-Difluorobenzene (7.380)
-Dibromomethane (7.988)
-1,2-Dichloropropane (8.160)
-Bromodichloromethane (8.296)
-Methyl Methacrylate (8.639)+
-cis-1,3-dichloropropene (9.304)
-Toluene-D8 (9.575)
-Toluene (9.647)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.120)
-4-Methyl-2-pentanone (10.276)+
-trans-1,3-Dichloropropene (10.766)
-1,1,2-Trichloroethane (10.898)
-1,2-Dibromoethane (11.048)
-2-Hexanone (11.492)
-Chlorobenzene-D5 (11.799)+
-1-Chlorohexane (11.899)+
-m+p-Xylenes (12.114)
-o-Xylene (12.678)
-Styrene (12.757)+
-Isopropylbenzene (13.100)
-P-Bromofluorobenzene (13.429)
-N-Propylbenzene (13.619)
-1,3-Dichloropropane (13.873)+
-1,2,3-Trichloropropane (13.987)
-tert-Butylbenzene (14.244)+
-1,2,4-Trimethylbenzene (14.336)
-sec-Butylbenzene (14.492)
-P-Isopropyltoluene (14.638)+
-1,3-Dichlorobenzene (14.831)
1,4-Dichlorobenzene-D4 (14.766)+
-N-Butylbenzene (15.124)
-1,2-Dichlorobenzene (15.267)
-1,2-Dibromo-3-Chloropropa (16.211)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.926)+
-Naphthalene (17.290)
-1,2,3-Trichlorobenzene (17.483)

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5510.D
Report Date: 09-May-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5510.D
Lab Smp Id: WG227568-2
Inj Date : 03-MAY-2018 14:04 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227568-2
Misc Info :
Comment : SW846 5030
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Meth Date : 07-May-2018 16:14 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:04 Cal File: P5510.D
Als bottle: 3 Calibration Sample, Level: 2
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

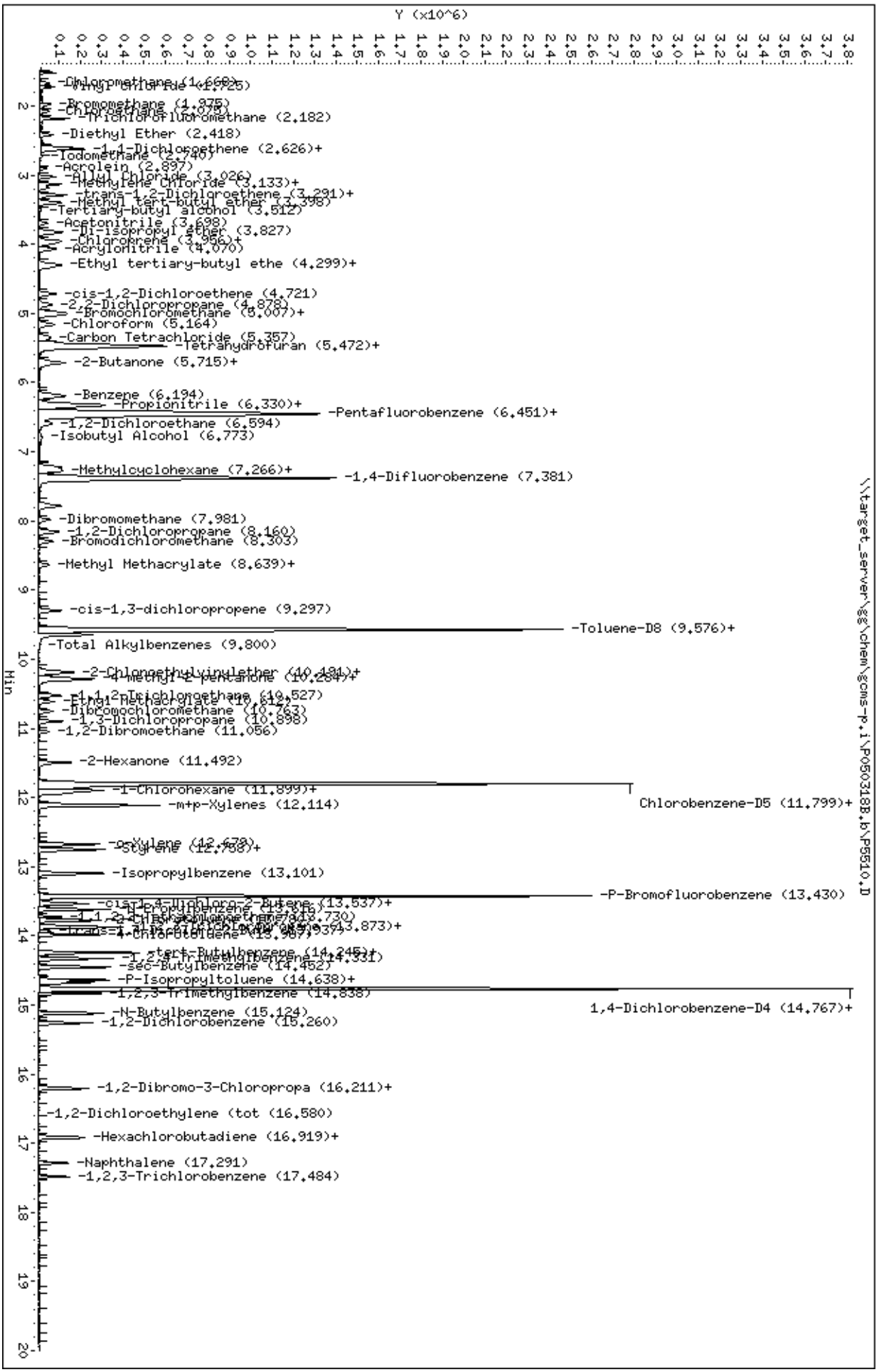
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.517	1.515	(0.236)	49689	5.00000	5.3	
2	Chloromethane	50	1.667	1.673	(0.259)	47156	5.00000	5.3	
3	Vinyl chloride	62	1.732	1.730	(0.269)	54357	5.00000	5.5	
4	Bromomethane	94	1.975	1.973	(0.307)	16615	5.00000	4.3	
5	Chloroethane	64	2.075	2.066	(0.322)	30019	5.00000	5.4	
6	Trichlorofluoromethane	101	2.182	2.173	(0.339)	92657	5.00000	5.4	
7	Diethyl Ether	59	2.418	2.416	(0.376)	32301	5.00000	5.1	
19	Tertiary-butyl alcohol	59	3.512	3.503	(0.546)	12297	25.0000	21.2	
8	1,1-Dichloroethene	96	2.597	2.595	(0.403)	43869	5.00000	5.7	
10	Carbon Disulfide	76	2.625	2.624	(0.408)	136930	5.00000	5.4	
9	Freon-113	151	2.618	2.616	(0.407)	33770	5.00000	4.8	
11	Iodomethane	142	2.740	2.731	(0.426)	12608	5.00000	3.2	
12	Acrolein	56	2.904	2.903	(0.451)	30251	25.0000	24.1	
14	Methylene Chloride	84	3.133	3.131	(0.487)	51538	5.00000	5.4	
15	Acetone	43	3.183	3.181	(0.495)	62267	25.0000	26.2	
45	Isobutyl Alcohol	43	6.772	6.785	(1.052)	4104	100.000	21.6	
16	trans-1,2-Dichloroethene	96	3.283	3.281	(0.510)	52930	5.00000	5.7	
13	Allyl Chloride	41	3.026	3.024	(0.470)	56151	5.00000	4.6	
18	Methyl tert-butyl ether	73	3.397	3.396	(0.528)	134098	5.00000	5.0	
20	Acetonitrile	41	3.698	3.689	(0.575)	59407	50.0000	48.7	
21	Di-isopropyl ether	45	3.826	3.825	(0.595)	139505	5.00000	4.8	
22	Chloroprene	53	3.955	3.946	(0.615)	76617	5.00000	5.1	
39	Propionitrile	54	6.300	6.306	(0.979)	64482	50.0000	47.2	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5510.D
Report Date: 09-May-2018 12:05

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	6.329	6.335	(0.983)	273802	50.0000	48.4	
	23	1,1-Dichloroethane	63	3.984	3.982	(0.619)	94403	5.00000	5.4	
	24	Acrylonitrile	52	4.070	4.068	(0.632)	70204	25.0000	23.7	
	25	Ethyl tertiary-butyl ether	59	4.298	4.297	(0.668)	125615	5.00000	4.7	
	26	Vinyl Acetate	43	4.327	4.325	(0.586)	101661	5.00000	4.9	
	27	cis-1,2-Dichloroethene	96	4.720	4.719	(0.733)	50568	5.00000	5.2	
M	98	1,2-Dichloroethylene (total)	96				103498	5.00000	10.9	
	52	Methyl Methacrylate	41	8.639	8.630	(1.171)	32371	5.00000	4.3	
	28	2,2-Dichloropropane	77	4.878	4.876	(0.758)	65064	5.00000	5.0	
	29	Bromochloromethane	128	5.021	5.019	(0.780)	23119	5.00000	5.2	
	31	Chloroform	83	5.156	5.162	(0.801)	91111	5.00000	5.3	
	32	Carbon Tetrachloride	117	5.349	5.348	(0.725)	66845	5.00000	5.2	
	33	Tetrahydrofuran	42	5.428	5.412	(0.843)	64866	25.0000	25.0	
$	34	Dibromofluoromethane	113	5.471	5.469	(0.850)	542248	50.0000	49.6	
	35	1,1,1-Trichloroethane	97	5.471	5.484	(0.850)	82950	5.00000	5.4	
	37	1,1-Dichloropropene	75	5.714	5.705	(0.774)	75546	5.00000	5.4	
	36	2-Butanone	43	5.714	5.720	(0.888)	97374	25.0000	25.1	
	38	Benzene	78	6.193	6.192	(0.839)	210520	5.00000	5.4	
*	41	Pentafluorobenzene	168	6.436	6.442	(1.000)	1097322	50.0000		
	30	Cyclohexane	56	4.992	4.997	(0.776)	87413	5.00000	5.2	
	53	Ethyl Methacrylate	69	10.612	10.610	(1.438)	45277	5.00000	3.9	
$	42	1,2-Dichloroethane-D4	65	6.472	6.470	(1.006)	727750	50.0000	50.2	
	43	Tertiary-amyl methyl ether	73	6.472	6.478	(1.006)	106321	5.00000	4.5	
	44	1,2-Dichloroethane	62	6.594	6.599	(0.893)	78352	5.00000	5.3	
	47	Trichloroethene	95	7.273	7.278	(0.985)	50776	5.00000	5.4	
*	48	1,4-Difluorobenzene	114	7.380	7.378	(1.000)	1782181	50.0000		
	49	Dibromomethane	93	7.981	7.986	(1.081)	29372	5.00000	5.1	
	50	1,2-Dichloropropane	63	8.159	8.158	(1.106)	48679	5.00000	5.1	
	51	Bromodichloromethane	83	8.295	8.301	(1.124)	66951	5.00000	5.1	
	57	cis-1,3-dichloropropene	75	9.303	9.302	(1.261)	79962	5.00000	4.8	
	54	1,4-Dioxane	88	8.639	8.637	(1.171)	6898	100.000	80.6	
$	58	Toluene-D8	98	9.575	9.574	(1.297)	2110902	50.0000	49.9	
	56	2-Chloroethylvinylether	63	10.119	10.203	(1.371)	108	5.00000	5.0	
	59	Toluene	92	9.647	9.645	(1.307)	128430	5.00000	5.3	
	61	4-methyl-2-pentanone	43	10.283	10.274	(1.393)	205733	25.0000	24.2	
	60	Tetrachloroethene	164	10.197	10.196	(0.864)	40686	5.00000	5.5	
	62	trans-1,3-Dichloropropene	75	10.305	10.310	(1.396)	69335	5.00000	4.8	
	63	1,1,2-Trichloroethane	83	10.526	10.525	(1.426)	35212	5.00000	5.0	
	64	Dibromochloromethane	129	10.762	10.753	(0.912)	45946	5.00000	5.0	
	65	1,3-Dichloropropane	76	10.905	10.904	(0.924)	87538	5.00000	5.1	
	66	1,2-Dibromoethane	107	11.055	11.054	(1.498)	44589	5.00000	5.0	
	67	2-Hexanone	43	11.491	11.490	(0.974)	134805	25.0000	23.8	
*	68	Chlorobenzene-D5	117	11.799	11.804	(1.000)	1797123	50.0000		
	69	Chlorobenzene	112	11.820	11.826	(1.002)	145128	5.00000	5.2	
	70	1-Chlorohexane	91	11.849	11.854	(1.004)	76533	5.00000	5.4	
	71	Ethylbenzene	106	11.899	11.905	(1.008)	79928	5.00000	5.2	
	72	1,1,1,2-Tetrachloroethane	131	11.935	11.933	(1.012)	46537	5.00000	5.1	
M	106	Xylenes (total)	106				289232	15.0000	15.8	
	73	m+p-Xylenes	106	12.113	12.112	(1.027)	195801	10.0000	10.6	
	74	o-Xylene	106	12.678	12.677	(1.075)	93431	5.00000	5.2	
	75	Styrene	104	12.757	12.755	(1.081)	155212	5.00000	5.1	
	76	Bromoform	173	12.757	12.755	(1.081)	31205	5.00000	4.9	
	77	Isopropylbenzene	105	13.100	13.099	(0.887)	241884	5.00000	5.4	
$	78	P-Bromofluorobenzene	95	13.429	13.428	(1.820)	918732	50.0000	49.0	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5510.D
Report Date: 09-May-2018 12:05

			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	13.551	13.549	(0.918)	17479	5.00000	4.4	
	86	trans-1,4-Dichloro-2-Butene	53	13.937	13.935	(0.944)	14853	5.00000	4.8	
	80	Bromobenzene	156	13.536	13.535	(0.917)	58837	5.00000	5.3	
	81	N-Propylbenzene	91	13.615	13.621	(0.922)	291685	5.00000	5.4	
	82	1,1,2,2-Tetrachloroethane	83	13.722	13.728	(0.929)	59163	5.00000	5.3	
	85	1,3,5-Trimethylbenzene	105	13.872	13.878	(0.939)	196005	5.00000	5.2	
	83	2-Chlorotoluene	91	13.779	13.778	(0.933)	168545	5.00000	5.3	
	84	1,2,3-Trichloropropane	75	13.865	13.864	(0.939)	51962	5.00000	5.2	
	87	4-Chlorotoluene	91	13.987	13.985	(0.947)	180535	5.00000	5.3	
	88	tert-Butylbenzene	119	14.244	14.243	(0.965)	189307	5.00000	5.3	
	89	Pentachloroethane	165	14.244	14.250	(0.965)	23275	5.00000	4.7	
	90	1,2,4-Trimethylbenzene	105	14.330	14.328	(0.970)	207563	5.00000	5.3	
	92	P-Isopropyltoluene	119	14.637	14.636	(0.991)	199543	5.00000	5.3	
	93	1,3-Dichlorobenzene	146	14.673	14.679	(0.994)	102319	5.00000	5.2	
*	94	1,4-Dichlorobenzene-D4	152	14.766	14.772	(1.000)	983806	50.0000		
	95	1,4-Dichlorobenzene	146	14.788	14.786	(1.001)	110310	5.00000	5.2	
	97	N-Butylbenzene	91	15.124	15.122	(1.024)	181570	5.00000	5.3	
	91	sec-Butylbenzene	105	14.452	14.457	(0.979)	251749	5.00000	5.4	
	99	1,2-Dichlorobenzene	146	15.267	15.265	(1.034)	97301	5.00000	5.2	
	100	1,2-Dibromo-3-Chloropropane	157	16.175	16.180	(1.095)	9790	5.00000	4.8	
	101	1,3,5-Trichlorobenzene	180	16.211	16.209	(1.098)	66337	5.00000	5.0	
	102	Hexachlorobutadiene	225	16.904	16.910	(1.145)	25952	5.00000	5.2	
	103	1,2,4-Trichlorobenzene	180	16.933	16.931	(1.147)	56264	5.00000	4.9	
	96	1,2,3-Trimethylbenzene	105	14.838	14.836	(1.005)	190148	5.00000	4.9	
	104	Naphthalene	128	17.290	17.289	(1.171)	98475	5.00000	4.4	
	105	1,2,3-Trichlorobenzene	180	17.483	17.489	(1.184)	41486	5.00000	4.8	
	17	Methyl Acetate	43	3.305	3.303	(0.513)	35241	5.00000	5.0	
	46	Methylcyclohexane	83	7.230	7.228	(1.123)	74727	5.00000	4.9	
M	55	Total Alkylbenzenes	100				1517422	5.00000	37.2	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Date : 03-MAY-2018 14:04
Client ID:
Sample Info: WG227568-2
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
Y (x10^6)
Min
-Chloromethane (1.668)
-Vinyl Chloride (1.725)
-Bromomethane (1.975)
-Chloroethane (2.070)
-Trichlorofluoromethane (2.182)
-Diethyl Ether (2.418)
-1,1-Dichloroethene (2.626)+
-Iodomethane (2.740)
-Acrolein (2.897)
-Allyl Chloride (3.026)
-Methylene Chloride (3.133)+
-trans-1,2-Dichloroethene (3.291)+
-Methyl tert-butyl ether (3.398)
-Tertiary-butyl alcohol (3.512)
-Acetonitrile (3.698)
-Di-isopropyl ether (3.827)
-Chloroprene (3.956)+
-Acrylonitrile (4.070)
-Ethyl tertiary-butyl ethe (4.299)+
-cis-1,2-Dichloroethene (4.721)
-2,2-Dichloropropane (4.878)
-Bromochloromethane (5.007)+
-Chloroform (5.164)
-Carbon Tetrachloride (5.357)
-Tetrahydrofuran (5.472)+
-2-Butanone (5.715)+
-Benzene (6.194)
-Propionitrile (6.330)+
-Pentafluorobenzene (6.451)+
-1,2-Dichloroethane (6.594)
-Isobutyl Alcohol (6.773)
-Methylcyclohexane (7.266)+
-1,4-Difluorobenzene (7.381)
-Dibromomethane (7.981)
-1,2-Dichloropropane (8.160)
-Bromodichloromethane (8.303)
-Methyl Methacrylate (8.639)+
-cis-1,3-dichloropropene (9.297)
-Toluene-D8 (9.576)+
-Total Alkylbenzenes (9.800)
-2-Chloroethylvinylether (10.481)+
-4-Methyl-2-pentanone (10.284)+
-1,1,2-Trichloroethane (10.527)
-Ethyl Methacrylate (10.612)
-Dibromochloromethane (10.763)
-1,3-Dichloropropane (10.898)
-1,2-Dibromoethane (11.056)
-2-Hexanone (11.492)
-1-Chlorohexane (11.899)+
-m+p-Xylenes (12.114)
Chlorobenzene-D5 (11.799)+
-o-Xylene (12.678)
-Styrene (12.788)+
-Isopropylbenzene (13.101)
-P-Bromofluorobenzene (13.430)
-cis-1,4-Dichloro-2-Butene (13.537)+
-N-Propylbenzene (13.576)
-1,1,2,2-Tetrachloroethane (13.730)
-trans-1,4-Dichloro-2-Butene (13.873)+
-4-Chlorotoluene (13.907)
-1,3,5-Trimethylbenzene (14.331)
-tert-Butylbenzene (14.245)+
-sec-Butylbenzene (14.452)
-P-Isopropyltoluene (14.638)+
-1,2,3-Trimethylbenzene (14.838)
1,4-Dichlorobenzene-D4 (14.767)+
-N-Butylbenzene (15.124)
-1,2-Dichlorobenzene (15.260)
-1,2-Dibromo-3-Chloropropa (16.211)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.919)+
-Naphthalene (17.291)
-1,2,3-Trichlorobenzene (17.484)
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Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5511.D
Report Date: 09-May-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5511.D
Lab Smp Id: WG227568-1
Inj Date : 03-MAY-2018 14:39 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227568-1
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 07-May-2018 16:14 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 4 Calibration Sample, Level: 1
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)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.514	1.515	(0.235)	10141	1.00000	1.1	
2	Chloromethane	50	1.664	1.673	(0.258)	9842	1.00000	1.1	
3	Vinyl chloride	62	1.729	1.730	(0.268)	10359	1.00000	1.1	
4	Bromomethane	94	1.986	1.973	(0.308)	3898	1.00000	2.0	
5	Chloroethane	64	2.079	2.066	(0.323)	6482	1.00000	1.2	
6	Trichlorofluoromethane	101	2.179	2.173	(0.338)	19498	1.00000	1.2	
7	Diethyl Ether	59	2.415	2.416	(0.375)	6370	1.00000	1.0	
19	Tertiary-butyl alcohol	59	3.509	3.503	(0.545)	2707	5.00000	5.2	
8	1,1-Dichloroethene	96	2.587	2.595	(0.402)	6753	1.00000	0.97(a)	
10	Carbon Disulfide	76	2.623	2.624	(0.407)	21476	1.00000	0.91(a)	
9	Freon-113	151	2.637	2.616	(0.409)	6766	1.00000	1.0	
11	Iodomethane	142	2.730	2.731	(0.424)	1379	1.00000	2.0	
12	Acrolein	56	2.901	2.903	(0.451)	5481	5.00000	4.6(a)	
14	Methylene Chloride	84	3.130	3.131	(0.486)	9805	1.00000	1.1(a)	
15	Acetone	43	3.187	3.181	(0.495)	10246	5.00000	4.7(a)	
45	Isobutyl Alcohol	43	6.791	6.785	(1.054)	2922	20.0000	14.6(Ta)	
16	trans-1,2-Dichloroethene	96	3.280	3.281	(0.509)	7190	1.00000	0.86(a)	
13	Allyl Chloride	41	3.016	3.024	(0.468)	12730	1.00000	1.1	
18	Methyl tert-butyl ether	73	3.395	3.396	(0.527)	21180	1.00000	0.86(a)	
20	Acetonitrile	41	3.695	3.689	(0.574)	12712	10.0000	11.1(a)	
21	Di-isopropyl ether	45	3.824	3.825	(0.594)	29080	1.00000	1.0	
22	Chloroprene	53	3.960	3.946	(0.615)	13305	1.00000	0.95(a)	
39	Propionitrile	54	6.298	6.306	(0.978)	13122	10.0000	9.9(a)	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5511.D
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							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	40 Methacrylonitrile	41	6.326	6.335	(0.982)	52013	10.0000	9.8(a)	
	23 1,1-Dichloroethane	63	3.988	3.982	(0.619)	14531	1.00000	0.90(a)	
	24 Acrylonitrile	52	4.067	4.068	(0.631)	14533	5.00000	5.1	
	25 Ethyl tertiary-butyl ether	59	4.303	4.297	(0.668)	26510	1.00000	1.0	
	26 Vinyl Acetate	43	4.324	4.325	(0.586)	15322	1.00000	0.79(a)	
	27 cis-1,2-Dichloroethene	96	4.732	4.719	(0.735)	7865	1.00000	0.87(a)	
M	98 1,2-Dichloroethylene (total)	96				15055	1.00000	1.7(a)	
	52 Methyl Methacrylate	41	8.643	8.630	(1.170)	7084	1.00000	0.95(a)	
	28 2,2-Dichloropropane	77	4.889	4.876	(0.759)	9612	1.00000	(a)	
	29 Bromochloromethane	128	5.025	5.019	(0.780)	3967	1.00000	0.99(a)	
	31 Chloroform	83	5.154	5.162	(0.800)	14120	1.00000	0.89(a)	
	32 Carbon Tetrachloride	117	5.347	5.348	(0.724)	9417	1.00000	0.79(a)	
	33 Tetrahydrofuran	42	5.418	5.412	(0.841)	9694	5.00000	4.0(a)	
$	34 Dibromofluoromethane	113	5.468	5.469	(0.849)	516959	50.0000	49.9	
	35 1,1,1-Trichloroethane	97	5.483	5.484	(0.851)	11971	1.00000	0.85(a)	
	37 1,1-Dichloropropene	75	5.697	5.705	(0.772)	11619	1.00000	0.90(a)	
	36 2-Butanone	43	5.740	5.720	(0.891)	14457	5.00000	2.0(a)	
	38 Benzene	78	6.183	6.192	(0.837)	30330	1.00000	0.85(a)	
*	41 Pentafluorobenzene	168	6.441	6.442	(1.000)	1047294	50.0000		
	30 Cyclohexane	56	4.989	4.997	(0.775)	12579	1.00000	0.83(a)	
	53 Ethyl Methacrylate	69	10.616	10.610	(1.438)	8031	1.00000	2.2	
$	42 1,2-Dichloroethane-D4	65	6.469	6.470	(1.004)	698331	50.0000	51.1	
	43 Tertiary-amyl methyl ether	73	6.462	6.478	(1.003)	22724	1.00000	0.99(a)	
	44 1,2-Dichloroethane	62	6.591	6.599	(0.893)	14745	1.00000	1.0	
	47 Trichloroethene	95	7.263	7.278	(0.984)	7997	1.00000	0.90(a)	
*	48 1,4-Difluorobenzene	114	7.385	7.378	(1.000)	1701781	50.0000		
	49 Dibromomethane	93	7.978	7.986	(1.080)	4583	1.00000	0.86(a)	
	50 1,2-Dichloropropane	63	8.164	8.158	(1.106)	7892	1.00000	0.87(Ta)	
	51 Bromodichloromethane	83	8.307	8.301	(1.125)	10332	1.00000	0.84(a)	
	57 cis-1,3-dichloropropene	75	9.301	9.302	(1.259)	11486	1.00000	0.74(a)	
$	58 Toluene-D8	98	9.573	9.574	(1.296)	2025953	50.0000	50.2	
	59 Toluene	92	9.651	9.645	(1.307)	19984	1.00000	0.89(a)	
	61 4-methyl-2-pentanone	43	10.280	10.274	(1.392)	28379	5.00000	3.7(a)	
	60 Tetrachloroethene	164	10.187	10.196	(0.863)	6561	1.00000	0.95(a)	
	62 trans-1,3-Dichloropropene	75	10.302	10.310	(1.395)	9096	1.00000	1.8	
	63 1,1,2-Trichloroethane	83	10.531	10.525	(1.426)	4369	1.00000	1.5	
	64 Dibromochloromethane	129	10.767	10.753	(0.912)	7483	1.00000	1.7	
	65 1,3-Dichloropropane	76	10.895	10.904	(0.923)	14480	1.00000	0.91(a)	
	66 1,2-Dibromoethane	107	11.053	11.054	(1.497)	6945	1.00000	0.84(Ta)	
	67 2-Hexanone	43	11.496	11.490	(0.974)	18237	5.00000	3.6(a)	
*	68 Chlorobenzene-D5	117	11.803	11.804	(1.000)	1708773	50.0000		
	69 Chlorobenzene	112	11.825	11.826	(1.002)	22771	1.00000	0.89(a)	
	70 1-Chlorohexane	91	11.861	11.854	(1.005)	10123	1.00000	0.81(a)	
	71 Ethylbenzene	106	11.903	11.905	(1.008)	12276	1.00000	0.87(a)	
	72 1,1,1,2-Tetrachloroethane	131	11.939	11.933	(1.012)	5661	1.00000	1.6	
M	106 Xylenes (total)	106				41137	5.00000	2.4(a)	
	73 m+p-Xylenes	106	12.111	12.112	(1.026)	28649	2.00000	1.7(a)	
	74 o-Xylene	106	12.683	12.677	(1.075)	12488	1.00000	0.76(a)	
	75 Styrene	104	12.754	12.755	(1.081)	19867	1.00000	0.72(a)	
	76 Bromoform	173	12.754	12.755	(1.081)	4667	1.00000	0.76(a)	
	77 Isopropylbenzene	105	13.098	13.099	(0.887)	32635	1.00000	0.83(a)	
$	78 P-Bromofluorobenzene	95	13.426	13.428	(1.818)	867274	50.0000	48.5	
	79 cis-1,4-Dichloro-2-Butene	53	13.548	13.549	(0.917)	3693	1.00000	0.98(a)	
	86 trans-1,4-Dichloro-2-Butene	53	13.941	13.935	(0.944)	2408	1.00000	0.84(a)	

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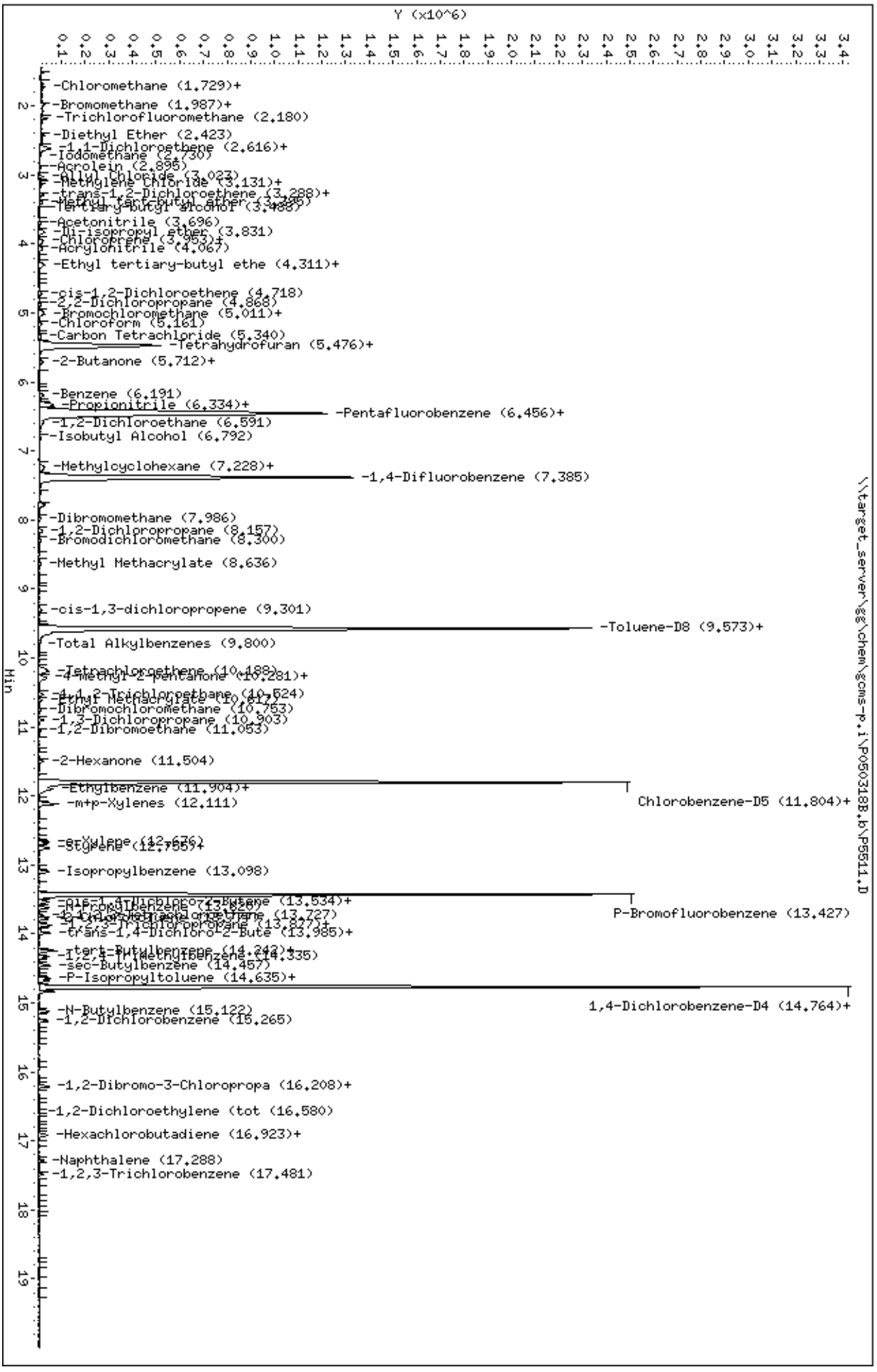
		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
Compounds									
	80 Bromobenzene	156	13.527	13.535	(0.916)	9549	1.00000	0.92(a)	
	81 N-Propylbenzene	91	13.612	13.621	(0.922)	42329	1.00000	0.89(a)	
	82 1,1,2,2-Tetrachloroethane	83	13.727	13.728	(0.929)	9423	1.00000	0.92(a)	
	85 1,3,5-Trimethylbenzene	105	13.877	13.878	(0.939)	26869	1.00000	0.80(a)	
	83 2-Chlorotoluene	91	13.777	13.778	(0.933)	25926	1.00000	0.90(a)	
	84 1,2,3-Trichloropropane	75	13.855	13.864	(0.938)	8772	1.00000	0.94(a)	
	87 4-Chlorotoluene	91	13.984	13.985	(0.947)	27876	1.00000	0.91(a)	
	88 tert-Butylbenzene	119	14.242	14.243	(0.964)	26526	1.00000	0.82(a)	
	89 Pentachloroethane	165	14.249	14.250	(0.965)	3858	1.00000	0.82(a)	
	90 1,2,4-Trimethylbenzene	105	14.334	14.328	(0.970)	27849	1.00000	0.80(a)	
	92 P-Isopropyltoluene	119	14.635	14.636	(0.991)	26796	1.00000	0.80(a)	
	93 1,3-Dichlorobenzene	146	14.678	14.679	(0.994)	16717	1.00000	0.91(a)	
*	94 1,4-Dichlorobenzene-D4	152	14.771	14.772	(1.000)	929784	50.0000		
	95 1,4-Dichlorobenzene	146	14.785	14.786	(1.001)	18291	1.00000	0.94(a)	
	97 N-Butylbenzene	91	15.121	15.122	(1.024)	24834	1.00000	0.82(a)	
	91 sec-Butylbenzene	105	14.456	14.457	(0.979)	35305	1.00000	0.86(a)	
	99 1,2-Dichlorobenzene	146	15.264	15.265	(1.033)	17834	1.00000	1.0	
	100 1,2-Dibromo-3-Chloropropane	157	16.172	16.180	(1.095)	1033	1.00000	1.7	
	101 1,3,5-Trichlorobenzene	180	16.208	16.209	(1.097)	14114	1.00000	1.1	
	102 Hexachlorobutadiene	225	16.909	16.910	(1.145)	4407	1.00000	0.94(a)	
	103 1,2,4-Trichlorobenzene	180	16.923	16.931	(1.146)	7299	1.00000	2.0	
	96 1,2,3-Trimethylbenzene	105	14.835	14.836	(1.004)	37305	1.00000	1.0	
	104 Naphthalene	128	17.287	17.289	(1.170)	13965	1.00000	1.5	
	105 1,2,3-Trichlorobenzene	180	17.488	17.489	(1.184)	6836	1.00000	0.82(a)	
	17 Methyl Acetate	43	3.302	3.303	(0.513)	7386	1.00000	1.1	
	46 Methylcyclohexane	83	7.227	7.228	(1.122)	13250	1.00000	0.92(a)	
M	55 Total Alkylbenzenes	100				210508	1.00000	5.8(a)	

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-p.i\P050318B.b\P5511.D
Date : 03-MAY-2018 14:39
Client ID:
Sample Info: WG227568-1
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\P050318B.b\P5511.D
Y (x10^6)
Min
-Chloromethane (1.729)+
-Bromomethane (1.987)+
-Trichlorofluoromethane (2.180)
-Diethyl Ether (2.423)
-1,1-Dichloroethene (2.616)+
-Iodomethane (2.730)
-Acrolein (2.895)
-Allyl Chloride (3.023)
-Methylene Chloride (3.131)+
-trans-1,2-Dichloroethene (3.288)+
-Methyl tertbutyl ether (3.335)
-Tertiary-butyl alcohol (3.488)
-Acetonitrile (3.696)
-Di-isopropyl ether (3.831)
-Chloroprene (3.952)+
-Acrylonitrile (4.067)
-Ethyl tertiary-butyl ethe (4.311)+
-cis-1,2-Dichloroethene (4.718)
-2,2-Dichloropropane (4.868)
-Bromochloromethane (5.011)+
-Chloroform (5.161)
-Carbon Tetrachloride (5.340)
-Tetrahydrofuran (5.476)+
-2-Butanone (5.712)+
-Benzene (6.191)
-Propionitrile (6.334)+
-Pentafluorobenzene (6.456)+
-1,2-Dichloroethane (6.591)
-Isobutyl Alcohol (6.792)
-Methylcyclohexane (7.228)+
-1,4-Difluorobenzene (7.385)
-Dibromomethane (7.986)
-1,2-Dichloropropane (8.157)
-Bromodichloromethane (8.300)
-Methyl Methacrylate (8.636)
-cis-1,3-dichloropropene (9.301)
-Toluene-D8 (9.573)+
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-Methyl-2-pentanone (10.281)+
-1,1,2-Trichloroethane (10.524)
-Ethyl Methacrylate (10.617)
-Dibromochloromethane (10.753)
-1,3-Dichloropropane (10.903)
-1,2-Dibromoethane (11.053)
-2-Hexanone (11.504)
-Ethylbenzene (11.904)+
-m+p-Xylenes (12.111)
Chlorobenzene-D5 (11.804)+
-o-Xylene (12.676)
-Styrene (12.755)+
-Isopropylbenzene (13.098)
-cis-1,4-Dichloro-2-Butene (13.534)+
-n-Propylbenzene (13.920)
-2-Chlorotoluene (13.727)
-1,2,3-Trichloropropane (13.827)+
-trans-1,4-Dichloro-2-Bute (13.985)+
P-Bromofluorobenzene (13.427)
-tert-Butylbenzene (14.243)+
-1,2,4-Trimethylbenzene (14.335)
-sec-Butylbenzene (14.457)
-P-Isopropyltoluene (14.635)+
1,4-Dichlorobenzene-D4 (14.764)+
-N-Butylbenzene (15.122)
-1,2-Dichlorobenzene (15.265)
-1,2-Dibromo-3-Chloropropa (16.208)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.923)+
-Naphthalene (17.288)
-1,2,3-Trichlorobenzene (17.481)

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5512.D
Report Date: 09-May-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5512.D
Lab Smp Id: WG227568-6
Inj Date : 03-MAY-2018 15:13 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227568-6
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 07-May-2018 16:14 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 15:13 Cal File: P5512.D
Als bottle: 5 Calibration Sample, Level: 6
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	1.515	1.515	(0.235)	1372154	150.000	140	
2	Chloromethane	50	1.665	1.673	(0.259)	1394606	150.000	148	
3	Vinyl chloride	62	1.730	1.730	(0.269)	1509203	150.000	147	
4	Bromomethane	94	1.973	1.973	(0.306)	842644	150.000	196(A)	
5	Chloroethane	64	2.059	2.066	(0.320)	788882	150.000	132	
6	Trichlorofluoromethane	101	2.173	2.173	(0.337)	2570409	150.000	141	
7	Diethyl Ether	59	2.416	2.416	(0.375)	995889	150.000	151(A)	
19	Tertiary-butyl alcohol	59	3.503	3.503	(0.544)	364573	750.000	640	
8	1,1-Dichloroethene	96	2.595	2.595	(0.403)	1092205	150.000	144	
10	Carbon Disulfide	76	2.624	2.624	(0.407)	3929582	150.000	154(A)	
9	Freon-113	151	2.624	2.616	(0.407)	1080068	150.000	150(A)	
11	Iodomethane	142	2.731	2.731	(0.424)	828894	150.000	215(A)	
12	Acrolein	56	2.902	2.903	(0.451)	965553	750.000	765(A)	
14	Methylene Chloride	84	3.131	3.131	(0.486)	1380500	150.000	141	
15	Acetone	43	3.181	3.181	(0.494)	1668172	750.000	722	
45	Isobutyl Alcohol	43	6.785	6.785	(1.053)	822172	3000.00	4660(A)	
16	trans-1,2-Dichloroethene	96	3.289	3.281	(0.511)	1344702	150.000	148	
13	Allyl Chloride	41	3.024	3.024	(0.469)	1858409	150.000	147	
18	Methyl tert-butyl ether	73	3.396	3.396	(0.527)	3956363	150.000	151(A)	
20	Acetonitrile	41	3.689	3.689	(0.573)	1678494	1500.00	1350	
21	Di-isopropyl ether	45	3.825	3.825	(0.594)	4513743	150.000	150(A)	
22	Chloroprene	53	3.954	3.946	(0.614)	2225005	150.000	148	
39	Propionitrile	54	6.306	6.306	(0.979)	2200513	1500.00	1560(A)	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5512.D
Report Date: 09-May-2018 12:05

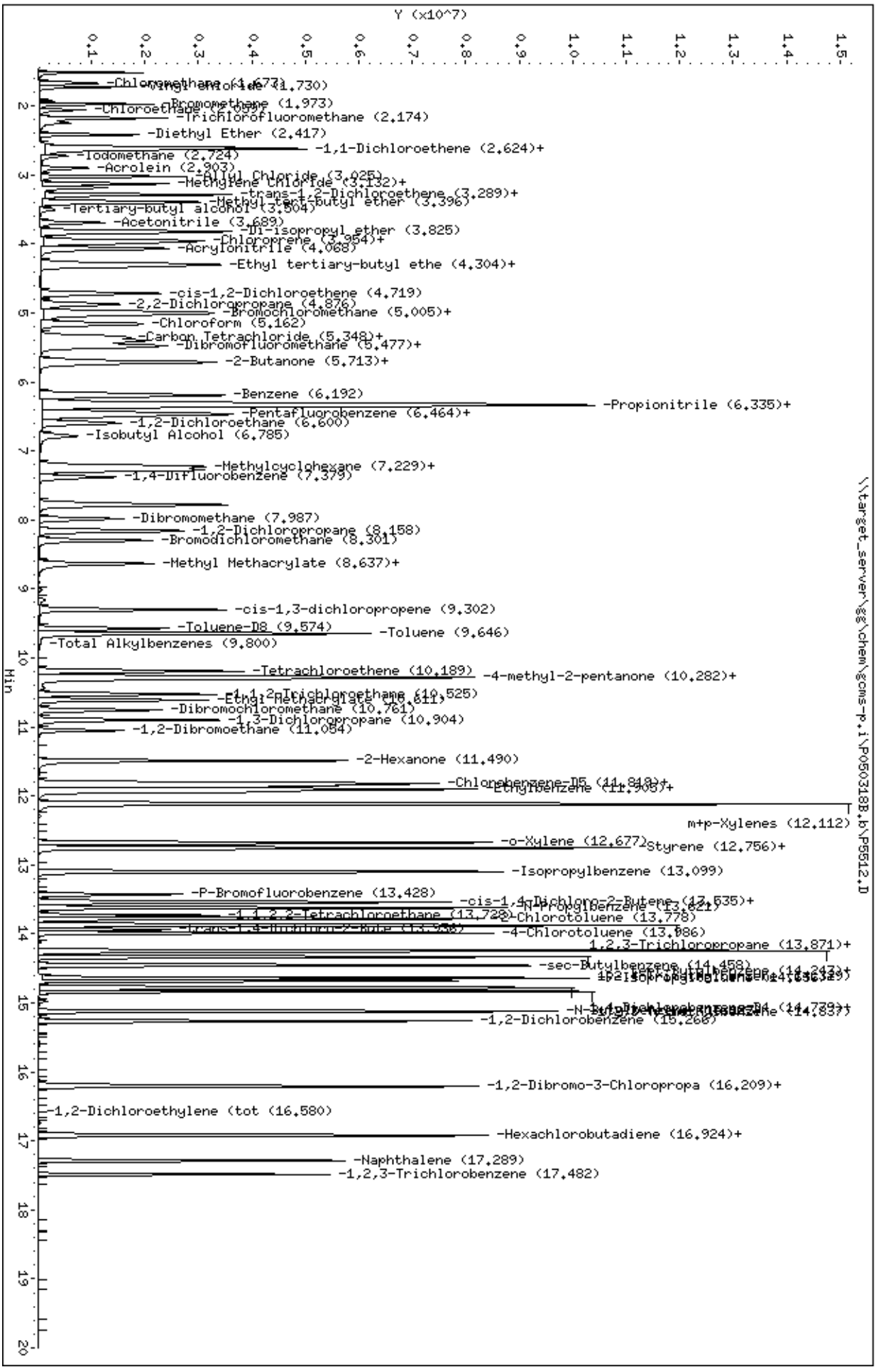
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40 Methacrylonitrile	41	6.335	6.335	(0.983)	8569935	1500.00	1500	
	23 1,1-Dichloroethane	63	3.982	3.982	(0.618)	2573429	150.000	148	
	24 Acrylonitrile	52	4.068	4.068	(0.632)	2321394	750.000	759(A)	
	25 Ethyl tertiary-butyl ether	59	4.297	4.297	(0.667)	4235933	150.000	153(A)	
	26 Vinyl Acetate	43	4.325	4.325	(0.586)	3284195	150.000	164(A)	
	27 cis-1,2-Dichloroethene	96	4.719	4.719	(0.733)	1488370	150.000	155(A)	
M	98 1,2-Dichloroethylene (total)	96				2833072	150.000	303	
	52 Methyl Methacrylate	41	8.630	8.630	(1.170)	1290102	150.000	168(A)	
	28 2,2-Dichloropropane	77	4.876	4.876	(0.757)	1720086	150.000	157(A)	
	29 Bromochloromethane	128	5.026	5.019	(0.780)	591765	150.000	136	
	31 Chloroform	83	5.162	5.162	(0.801)	2570590	150.000	152(A)	
	32 Carbon Tetrachloride	117	5.348	5.348	(0.725)	1955874	150.000	159(A)	
	33 Tetrahydrofuran	42	5.405	5.412	(0.839)	2029757	750.000	790(A)	
$	34 Dibromofluoromethane	113	5.476	5.469	(0.850)	550980	50.0000	49.5	
	35 1,1,1-Trichloroethane	97	5.484	5.484	(0.851)	2304714	150.000	152(A)	
	37 1,1-Dichloropropene	75	5.705	5.705	(0.773)	2078928	150.000	154(A)	
	36 2-Butanone	43	5.720	5.720	(0.888)	2852256	750.000	844(A)	
	38 Benzene	78	6.192	6.192	(0.839)	5792391	150.000	155(A)	
*	41 Pentafluorobenzene	168	6.442	6.442	(1.000)	1122253	50.0000		
	30 Cyclohexane	56	4.997	4.997	(0.776)	2459434	150.000	151(A)	
	53 Ethyl Methacrylate	69	10.610	10.610	(1.438)	2144203	150.000	187(A)	
$	42 1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	728433	50.0000	49.2	
	43 Tertiary-amyl methyl ether	73	6.478	6.478	(1.006)	3873684	150.000	158(A)	
	44 1,2-Dichloroethane	62	6.599	6.599	(0.894)	2141021	150.000	145	
	47 Trichloroethene	95	7.278	7.278	(0.986)	1445217	150.000	157(A)	
*	48 1,4-Difluorobenzene	114	7.378	7.378	(1.000)	1779921	50.0000		
	49 Dibromomethane	93	7.986	7.986	(1.082)	862532	150.000	155(A)	
	50 1,2-Dichloropropane	63	8.158	8.158	(1.106)	1520043	150.000	162(A)	
	51 Bromodichloromethane	83	8.301	8.301	(1.125)	2081067	150.000	162(A)	
	57 cis-1,3-dichloropropene	75	9.302	9.302	(1.261)	2702868	150.000	169(A)	
	54 1,4-Dioxane	88	8.637	8.637	(1.171)	172791	3000.00	2200	
$	58 Toluene-D8	98	9.574	9.574	(1.297)	2118091	50.0000	50.1	
	59 Toluene	92	9.645	9.645	(1.307)	3667490	150.000	155(A)	
	61 4-methyl-2-pentanone	43	10.274	10.274	(1.392)	6449582	750.000	806(A)	
	60 Tetrachloroethene	164	10.188	10.196	(0.863)	1131010	150.000	149	
	62 trans-1,3-Dichloropropene	75	10.310	10.310	(1.397)	2431609	150.000	175(A)	
	63 1,1,2-Trichloroethane	83	10.524	10.525	(1.426)	1104065	150.000	168(A)	
	64 Dibromochloromethane	129	10.760	10.753	(0.912)	1535265	150.000	174(A)	
	65 1,3-Dichloropropane	76	10.903	10.904	(0.924)	2670144	150.000	154(A)	
	66 1,2-Dibromoethane	107	11.054	11.054	(1.498)	1350793	150.000	158(A)	
	67 2-Hexanone	43	11.490	11.490	(0.973)	4527919	750.000	817(A)	
*	68 Chlorobenzene-D5	117	11.804	11.804	(1.000)	1868221	50.0000		
	69 Chlorobenzene	112	11.826	11.826	(1.002)	4272284	150.000	153(A)	
	70 1-Chlorohexane	91	11.854	11.854	(1.004)	2056756	150.000	150	
	71 Ethylbenzene	106	11.904	11.905	(1.008)	2382775	150.000	155(A)	
	72 1,1,1,2-Tetrachloroethane	131	11.940	11.933	(1.012)	1495615	150.000	168(A)	
M	106 Xylenes (total)	106				8705074	150.000	476	
	73 m+p-Xylenes	106	12.112	12.112	(1.026)	5831539	300.000	314(A)	
	74 o-Xylene	106	12.677	12.677	(1.074)	2873535	150.000	162(A)	
	75 Styrene	104	12.755	12.755	(1.081)	4943346	150.000	165(A)	
	76 Bromoform	173	12.755	12.755	(1.081)	1152267	150.000	177(A)	
	77 Isopropylbenzene	105	13.099	13.099	(0.887)	6691866	150.000	145	
$	78 P-Bromofluorobenzene	95	13.427	13.428	(1.820)	959359	50.0000	51.3	
	79 cis-1,4-Dichloro-2-Butene	53	13.549	13.549	(0.917)	688447	150.000	156(A)	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5512.D
Report Date: 09-May-2018 12:05

		QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	86 trans-1,4-Dichloro-2-Butene	53	13.935	13.935	(0.943)	560223	150.000	168(A)	
	80 Bromobenzene	156	13.535	13.535	(0.916)	1828296	150.000	152(A)	
	81 N-Propylbenzene	91	13.621	13.621	(0.922)	7611291	150.000	136	
	82 1,1,2,2-Tetrachloroethane	83	13.728	13.728	(0.929)	1787281	150.000	149	
	85 1,3,5-Trimethylbenzene	105	13.878	13.878	(0.939)	5906082	150.000	151(A)	
	83 2-Chlorotoluene	91	13.778	13.778	(0.933)	4951489	150.000	146	
	84 1,2,3-Trichloropropane	75	13.864	13.864	(0.939)	1677432	150.000	153(A)	
	87 4-Chlorotoluene	91	13.985	13.985	(0.947)	5207290	150.000	144	
	88 tert-Butylbenzene	119	14.243	14.243	(0.964)	5810200	150.000	154(A)	
	89 Pentachloroethane	165	14.250	14.250	(0.965)	930236	150.000	172(A)	
	90 1,2,4-Trimethylbenzene	105	14.328	14.328	(0.970)	5999154	150.000	148	
	92 P-Isopropyltoluene	119	14.636	14.636	(0.991)	5945741	150.000	152(A)	
	93 1,3-Dichlorobenzene	146	14.679	14.679	(0.994)	3275727	150.000	153(A)	
*	94 1,4-Dichlorobenzene-D4	152	14.772	14.772	(1.000)	1088556	50.0000		
	95 1,4-Dichlorobenzene	146	14.786	14.786	(1.001)	3433247	150.000	150(A)	
	97 N-Butylbenzene	91	15.122	15.122	(1.024)	5260885	150.000	149	
	91 sec-Butylbenzene	105	14.457	14.457	(0.979)	6822710	150.000	142	
	99 1,2-Dichlorobenzene	146	15.265	15.265	(1.033)	3122472	150.000	150(A)	
	100 1,2-Dibromo-3-Chloropropane	157	16.180	16.180	(1.095)	375489	150.000	179(A)	
	101 1,3,5-Trichlorobenzene	180	16.209	16.209	(1.097)	2414709	150.000	157(A)	
	102 Hexachlorobutadiene	225	16.910	16.910	(1.145)	855964	150.000	157(A)	
	103 1,2,4-Trichlorobenzene	180	16.931	16.931	(1.146)	2118253	150.000	174(A)	
	96 1,2,3-Trimethylbenzene	105	14.836	14.836	(1.004)	6098182	150.000	143	
	104 Naphthalene	128	17.289	17.289	(1.170)	4197177	150.000	176(A)	
	105 1,2,3-Trichlorobenzene	180	17.489	17.489	(1.184)	1610836	150.000	169(A)	
	17 Methyl Acetate	43	3.303	3.303	(0.513)	1050897	150.000	144	
	46 Methylcyclohexane	83	7.228	7.228	(1.122)	2309658	150.000	151(A)	
M	55 Total Alkylbenzenes	100				43356063	150.000	1030	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.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Date : 03-MAY-2018 15:13
Client ID:
Sample Info: WG227568-6
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\P050318B.b\P5512.D
Y (x10^7)
Min
-Chloromethane (1.677)
-Vinyl chloride (1.730)
-Bromomethane (1.973)
-Chloroethane (2.009)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.724)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.132)+
-trans-1,2-Dichloroethene (3.289)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.504)
-Acetonitrile (3.689)
-Di-isopropyl ether (3.825)
-Chloroprene (3.964)+
-Acrylonitrile (4.068)
-Ethyl tertiary-butyl ethe (4.304)+
-cis-1,2-Dichloroethene (4.719)
-2,2-Dichloropropane (4.876)
-Bromochloromethane (5.005)+
-Chloroform (5.162)
-Carbon Tetrachloride (5.348)+
-Dibromofluoromethane (5.477)+
-2-Butanone (5.713)+
-Benzene (6.192)
-Propionitrile (6.335)+
-Pentafluorobenzene (6.464)+
-1,2-Dichloroethane (6.600)
-Isobutyl Alcohol (6.785)
-Methylcyclohexane (7.229)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.158)
-Bromodichloromethane (8.301)
-Methyl Methacrylate (8.637)+
-cis-1,3-dichloropropene (9.302)
-Toluene-D8 (9.574)
-Toluene (9.646)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-methyl-2-pentanone (10.282)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.761)
-1,3-Dichloropropane (10.904)
-1,2-Dibromoethane (11.084)
-2-Hexanone (11.490)
-Chlorobenzene-D5 (11.848)+
-Ethylbenzene (11.905)+
m+p-Xylenes (12.112)
-o-Xylene (12.677)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.535)+
-N-Propylbenzene (13.621)
-1,1,2,2-Tetrachloroethane (13.728)
-2-Chlorotoluene (13.778)
-trans-1,4-dichloro-2-bute (13.836)
-4-Chlorotoluene (13.986)
-1,2,3-Trichloropropane (13.871)+
-sec-Butylbenzene (14.458)
-1,4-Dichlorobenzene-D4 (14.779)+
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.209)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.924)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Report Date: 09-May-2018 12:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Lab Smp Id: WG227659-7
Inj Date : 04-MAY-2018 13:05 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227659-7
Misc Info : WG227659,WG227568-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050418B.b\P8A05(68)D.m
Meth Date : 09-May-2018 12:08 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 3 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)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.514	1.515	(0.235)	509398	44.6510	44.6	
2	Chloromethane	50	1.671	1.665	(0.260)	475638	43.5363	43.5	
3	Vinyl chloride	62	1.729	1.729	(0.268)	515355	43.1354	43.1	
4	Bromomethane	94	1.979	1.987	(0.307)	237360	44.3925	44.4	
5	Chloroethane	64	2.072	2.080	(0.322)	296587	44.3483	44.3	
6	Trichlorofluoromethane	101	2.179	2.180	(0.338)	884059	41.7402	41.7	
7	Diethyl Ether	59	2.422	2.416	(0.376)	324559	42.4171	42.4	WAS
19	Tertiary-butyl alcohol	59	3.502	3.510	(0.544)	152399	229.635	230	
8	1,1-Dichloroethene	96	2.594	2.587	(0.403)	365100	41.4290	41.4	1:51 pm, May 18, 2018
10	Carbon Disulfide	76	2.630	2.623	(0.408)	1210275	40.6098	40.6	
9	Freon-113	151	2.622	2.637	(0.407)	400366	47.1918	47.2	
11	Iodomethane	142	2.730	2.730	(0.424)	388817	60.3159	60.3(R)	
12	Acrolein	56	2.901	2.902	(0.451)	349203	233.409	233	
14	Methylene Chloride	84	3.130	3.131	(0.486)	509038	44.8318	44.8	
15	Acetone	43	3.180	3.188	(0.494)	128993	47.3158	47.3	
45	Isobutyl Alcohol	43	6.784	6.792	(1.053)	264605	827.385	827(M)	M6
16	trans-1,2-Dichloroethene	96	3.287	3.281	(0.510)	491396	46.3499	46.3	
13	Allyl Chloride	41	3.023	3.016	(0.469)	647608	43.9019	43.9	
18	Methyl tert-butyl ether	73	3.395	3.395	(0.527)	1474488	47.5379	47.5	
20	Acetonitrile	41	3.688	3.696	(0.573)	617796	427.496	427	
21	Di-isopropyl ether	45	3.824	3.824	(0.594)	1543523	43.7782	43.8	
22	Chloroprene	53	3.952	3.960	(0.614)	792784	44.8384	44.8	
39	Propionitrile	54	6.298	6.298	(0.978)	781206	468.762	469	
40	Methacrylonitrile	41	6.326	6.327	(0.982)	3099096	460.352	460	

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Report Date: 09-May-2018 12:35

			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	3.988	3.989	(0.619)	968023	47.6610	47.7	
	24	Acrylonitrile	52	4.067	4.067	(0.631)	866096	240.099	240	
	25	Ethyl tertiary-butyl ether	59	4.295	4.303	(0.667)	1480161	45.1227	45.1	
	26	Vinyl Acetate	43	4.324	4.325	(0.586)	1232039	54.2880	54.3	
	27	cis-1,2-Dichloroethene	96	4.717	4.732	(0.732)	536773	47.2798	47.3	
M	98	1,2-Dichloroethylene (total)	96				1028169	93.6298	93.6	
	52	Methyl Methacrylate	41	8.636	8.643	(1.171)	452863	51.6820	51.7	
	28	2,2-Dichloropropane	77	4.875	4.890	(0.757)	728715	50.9387	50.9	
	29	Bromochloromethane	128	5.018	5.026	(0.779)	244391	48.4346	48.4	
	31	Chloroform	83	5.154	5.154	(0.800)	943087	47.3243	47.3	
	32	Carbon Tetrachloride	117	5.347	5.347	(0.725)	719563	51.3838	51.4	
	33	Tetrahydrofuran	42	5.411	5.419	(0.840)	132995	44.0747	44.1	
$	34	Dibromofluoromethane	113	5.475	5.469	(0.850)	614273	46.9574	47.0	
	35	1,1,1-Trichloroethane	97	5.482	5.483	(0.851)	824337	46.2780	46.3	
	37	1,1-Dichloropropene	75	5.704	5.698	(0.773)	751248	49.4123	49.4	
	36	2-Butanone	43	5.733	5.741	(0.890)	220359	49.8739	49.9	
	38	Benzene	78	6.190	6.184	(0.839)	2084523	49.4280	49.4	
*	41	Pentafluorobenzene	168	6.441	6.441	(1.000)	1322716	50.0000		
	30	Cyclohexane	56	4.996	4.990	(0.776)	841361	43.7836	43.8	
	53	Ethyl Methacrylate	69	10.609	10.617	(1.438)	741931	47.5995	47.6	
$	42	1,2-Dichloroethane-D4	65	6.469	6.470	(1.004)	790574	45.8306	45.8	
	43	Tertiary-amyl methyl ether	73	6.469	6.463	(1.004)	1350512	46.4013	46.4	
	44	1,2-Dichloroethane	62	6.591	6.591	(0.893)	778500	47.2259	47.2	
	47	Trichloroethene	95	7.270	7.264	(0.985)	509161	48.9860	49.0	
*	48	1,4-Difluorobenzene	114	7.377	7.385	(1.000)	2001979	50.0000		
	49	Dibromomethane	93	7.978	7.979	(1.081)	333828	53.1067	53.1	
	50	1,2-Dichloropropane	63	8.157	8.164	(1.106)	519701	48.9351	48.9	
	51	Bromodichloromethane	83	8.300	8.307	(1.125)	750215	51.5855	51.6	
	57	cis-1,3-dichloropropene	75	9.301	9.301	(1.261)	932131	51.2068	51.2	
	54	1,4-Dioxane	88	8.636	8.664	(1.171)	79014	638.264	638(R)	
$	58	Toluene-D8	98	9.572	9.573	(1.298)	2334302	49.2197	49.2	
	59	Toluene	92	9.644	9.652	(1.307)	1322364	49.8694	49.9	
	61	4-methyl-2-pentanone	43	10.280	10.281	(1.393)	459640	50.6242	50.6	
	60	Tetrachloroethene	164	10.194	10.188	(0.864)	427238	51.8519	51.8	
	62	trans-1,3-Dichloropropene	75	10.302	10.302	(1.396)	866878	48.9845	49.0	
	63	1,1,2-Trichloroethane	83	10.530	10.531	(1.427)	398449	49.3057	49.3	
	64	Dibromochloromethane	129	10.752	10.767	(0.911)	549620	53.1354	53.1	
	65	1,3-Dichloropropane	76	10.902	10.896	(0.924)	907733	47.9125	47.9	
	66	1,2-Dibromoethane	107	11.052	11.053	(1.498)	503292	52.0408	52.0	
	67	2-Hexanone	43	11.489	11.496	(0.973)	326058	53.2181	53.2	
*	68	Chlorobenzene-D5	117	11.803	11.804	(1.000)	2038077	50.0000		
	69	Chlorobenzene	112	11.825	11.825	(1.002)	1523605	49.9384	49.9	
	71	Ethylbenzene	106	11.896	11.904	(1.008)	842547	50.2781	50.3	
	72	1,1,1,2-Tetrachloroethane	131	11.932	11.940	(1.011)	522222	49.3635	49.4	
M	106	Xylenes (total)	106				3063071	152.540	152	
	73	m+p-Xylenes	106	12.111	12.111	(1.026)	2083491	102.295	102	
	74	o-Xylene	106	12.675	12.683	(1.074)	979580	50.2455	50.2	
	75	Styrene	104	12.754	12.755	(1.081)	1737860	52.5878	52.6	
	76	Bromoform	173	12.754	12.755	(1.081)	413197	56.7517	56.8	
	77	Isopropylbenzene	105	13.097	13.098	(0.887)	2593758	51.4036	51.4	
$	78	P-Bromofluorobenzene	95	13.426	13.427	(1.820)	1057888	50.3075	50.3	
	79	cis-1,4-Dichloro-2-Butene	53	13.548	13.548	(0.917)	234764	48.6084	48.6	
	86	trans-1,4-Dichloro-2-Butene	53	13.934	13.942	(0.943)	193573	53.0002	53.0	
	80	Bromobenzene	156	13.533	13.527	(0.916)	662940	50.0802	50.1	

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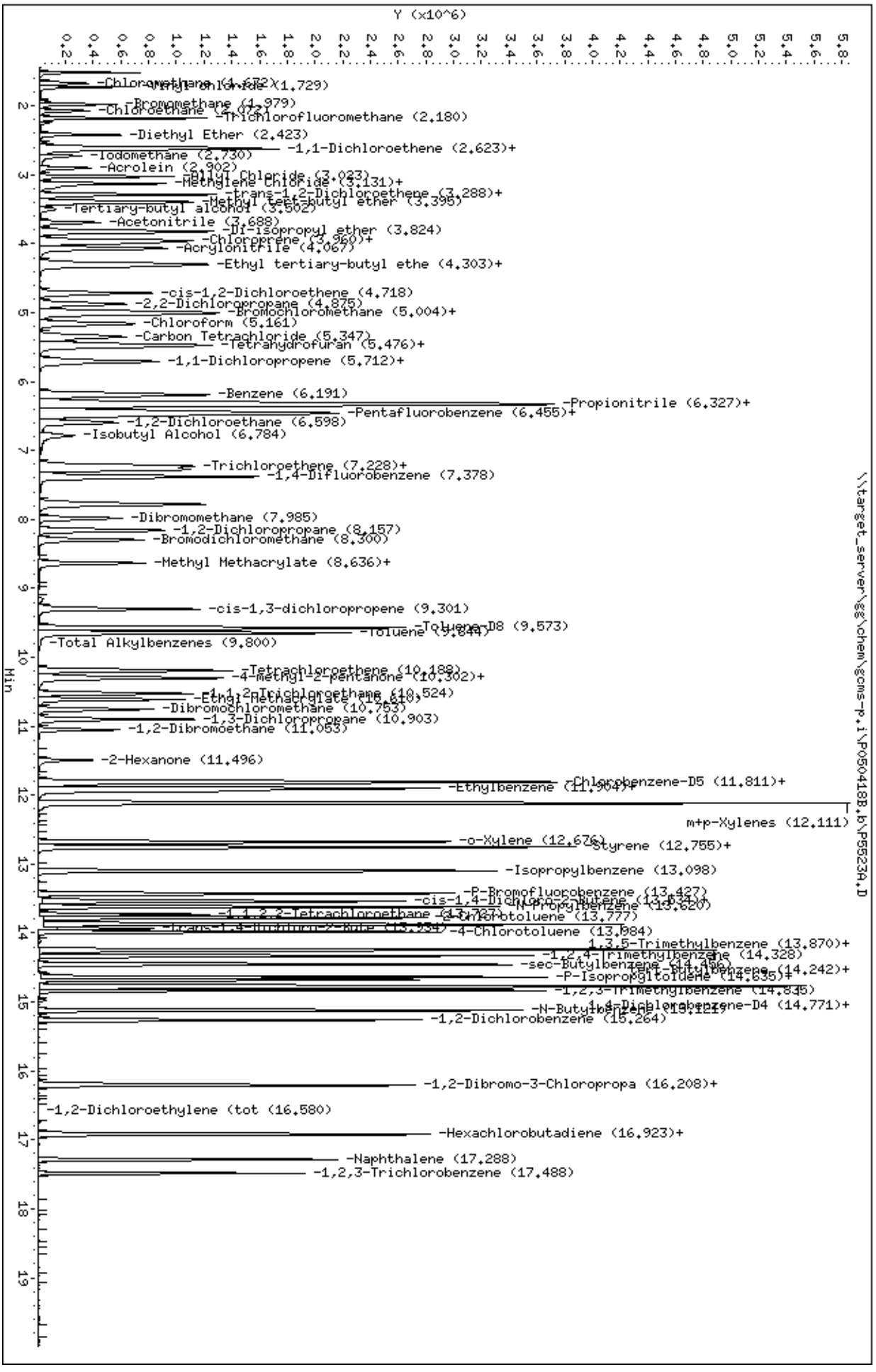
Report Date: 09-May-2018 12:35

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	81	N-Propylbenzene	91	13.619	13.613	(0.922)	3000254	49.3094	49.3	
	82	1,1,2,2-Tetrachloroethane	83	13.727	13.727	(0.929)	660783	50.4819	50.5	
	85	1,3,5-Trimethylbenzene	105	13.877	13.877	(0.939)	2162409	50.2172	50.2	
	83	2-Chlorotoluene	91	13.777	13.777	(0.933)	1787346	48.4016	48.4	
	84	1,2,3-Trichloropropane	75	13.862	13.856	(0.939)	581983	48.4707	48.5	
	87	4-Chlorotoluene	91	13.984	13.985	(0.947)	1887299	47.9453	47.9	
	88	tert-Butylbenzene	119	14.241	14.242	(0.964)	2053094	49.3834	49.4	
	89	Pentachloroethane	165	14.248	14.249	(0.965)	305830	50.5387	50.5	
	90	1,2,4-Trimethylbenzene	105	14.334	14.335	(0.970)	2232484	50.1177	50.1	
	92	P-Isopropyltoluene	119	14.635	14.635	(0.991)	2192543	50.7543	50.8	
	93	1,3-Dichlorobenzene	146	14.677	14.678	(0.994)	1170667	49.8792	49.9	
*	94	1,4-Dichlorobenzene-D4	152	14.770	14.771	(1.000)	1191939	50.0000		
	95	1,4-Dichlorobenzene	146	14.785	14.785	(1.001)	1207733	48.4130	48.4	
	97	N-Butylbenzene	91	15.121	15.122	(1.024)	1915584	49.3923	49.4	
	91	sec-Butylbenzene	105	14.456	14.457	(0.979)	2624413	49.9346	49.9	
	99	1,2-Dichlorobenzene	146	15.264	15.265	(1.033)	1113092	48.8686	48.9	
	100	1,2-Dibromo-3-Chloropropane	157	16.179	16.172	(1.095)	136694	50.9804	51.0	
	101	1,3,5-Trichlorobenzene	180	16.208	16.207	(1.097)	830787	49.0518	49.0	
	102	Hexachlorobutadiene	225	16.908	16.908	(1.145)	309336	51.4518	51.4	
	103	1,2,4-Trichlorobenzene	180	16.930	16.922	(1.146)	730774	48.6207	48.6	
	96	1,2,3-Trimethylbenzene	105	14.835	14.835	(1.004)	2276091	48.8550	48.8	
	104	Naphthalene	128	17.287	17.288	(1.170)	1550842	50.7166	50.7	
	105	1,2,3-Trichlorobenzene	180	17.487	17.488	(1.184)	570923	53.5534	53.6	
	17	Methyl Acetate	43	3.302	3.302	(0.513)	350127	40.8474	40.8	
	46	Methylcyclohexane	83	7.227	7.228	(1.122)	837391	46.1988	46.2	
M	55	Total Alkylbenzenes	100				16180781	349.109	349	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.


Y (x10^6)
Min
Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Date : 04-MAY-2018 13:05
Client ID:
Sample Info: WG227659-7
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\P050418B.b\P5523A.D
-Chloromethane (1.672)
-Vinyl chloride (1.729)
-Bromomethane (1.979)
-Chloroethane (2.072)
-Trichlorofluoromethane (2.180)
-Diethyl Ether (2.423)
-1,1-Dichloroethene (2.623)+
-Iodomethane (2.730)
-Acrolein (2.902)
-Allyl Chloride (3.083)
-Methylene Chloride (3.131)+
-trans-1,2-Dichloroethene (3.288)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.502)
-Acetonitrile (3.688)
-Di-isopropyl ether (3.824)
-Chloroprene (3.960)+
-Acrylonitrile (4.067)
-Ethyl tertiary-butyl ethe (4.303)+
-cis-1,2-Dichloroethene (4.718)
-2,2-Dichloropropane (4.875)
-BromoChloromethane (5.004)+
-Chloroform (5.161)
-Carbon Tetrachloride (5.347)
-Tetrahydrofuran (5.476)+
-1,1-Dichloropropene (5.712)+
-Benzene (6.191)
-Propionitrile (6.327)+
-Pentafluorobenzene (6.455)+
-1,2-Dichloroethane (6.598)
-Isobutyl Alcohol (6.784)
-Trichloroethene (7.228)+
-1,4-Difluorobenzene (7.378)
-Dibromomethane (7.985)
-1,2-Dichloropropane (8.157)
-Bromodichloromethane (8.300)
-Methyl Methacrylate (8.636)+
-cis-1,3-dichloropropene (9.301)
-Toluene-D8 (9.573)
-Toluene (9.644)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-methyl-2-pentanone (10.302)+
-1,1,2-Trichloroethane (10.524)
-Ethyl Methacrylate (10.610)
-Dibromochloromethane (10.753)
-1,3-Dichloropropane (10.903)
-1,2-Dibromoethane (11.053)
-2-Hexanone (11.496)
-Chlorobenzene-D5 (11.811)+
-Ethylbenzene (11.904)+
m+p-Xylenes (12.111)
-o-Xylene (12.676)
-Styrene (12.755)+
-Isopropylbenzene (13.098)
-P-Bromofluorobenzene (13.427)
-cis-1,4-Dichloro-2-Butene (13.634)+
-N-Propylbenzene (13.620)
-1,1,2,2-Tetrachloroethane (13.737)
-2-Chlorotoluene (13.777)
-trans-1,4-Dichloro-2-Bute (13.934)
-4-Chlorotoluene (13.984)
-1,3,5-Trimethylbenzene (13.870)+
-1,2,4-Trimethylbenzene (14.328)
-sec-Butylbenzene (14.466)
-tert-Butylbenzene (14.242)+
-P-Isopropyltoluene (14.635)+
-1,2,3-Trimethylbenzene (14.845)
-1,4-Dichlorobenzene-D4 (14.771)+
-N-Butylbenzene (15.121)
-1,2-Dichlorobenzene (15.264)
-1,2-Dibromo-3-Chloropropa (16.208)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.923)+
-Naphthalene (17.288)
-1,2,3-Trichlorobenzene (17.488)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227659-4
Analytical Date: 05/04/18 12:26
Lab File ID : P5522.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.36248	0.36248	0.010	-15.94699	20.00000	Averaged	
2	Chloromethane	0.41298	0.32920	0.32920	0.100	-20.28678	20.00000	Averaged	*
3	Vinyl chloride	0.45162	0.37484	0.37484	0.010	-17.00092	20.00000	Averaged	
4	Bromomethane	50.00000	52.12767	0.21380	0.010	4.25534	20.00000	Quadratic	
5	Chloroethane	0.25280	0.20603	0.20603	0.010	-18.50070	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.66978	0.66978	0.010	-16.34250	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.28803	0.28803	0.100	-13.53650	20.00000	Averaged	
9	Freon-113	0.32070	0.30577	0.30577	0.010	-4.65405	20.00000	Averaged	
10	Carbon Disulfide	1.12657	0.99443	0.99443	0.010	-11.72881	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.38594	0.38594	0.010	-10.08019	20.00000	Averaged	
15	Acetone	0.10305	0.12351	0.12351	0.010	19.84912	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.36471	0.36471	0.010	-8.99474	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.13956	1.13956	0.010	-2.80766	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.69948	0.69948	0.100	-8.89382	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.41295	0.41295	0.010	-3.77665	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.58522	0.58522	0.010	8.22003	20.00000	Averaged	
29	Bromochloromethane	0.19074	0.18970	0.18970	0.010	-0.54560	20.00000	Averaged	
31	Chloroform	0.75331	0.71650	0.71650	0.010	-4.88599	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.35793	0.35793	0.010	2.33980	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.64253	0.64253	0.010	-4.57601	20.00000	Averaged	
36	2-Butanone	0.16702	0.17609	0.17609	0.010	5.43329	20.00000	Averaged	
37	1,1-Dichloropropene	0.37972	0.37074	0.37074	0.010	-2.36270	20.00000	Averaged	
38	Benzene	1.05328	1.02443	1.02443	0.010	-2.73932	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38072	0.38072	0.010	-7.52747	20.00000	Averaged	
47	Trichloroethene	0.25959	0.25385	0.25385	0.010	-2.21366	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16060	0.16060	0.010	2.29523	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26014	0.26014	0.010	-1.92290	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35739	0.35739	0.010	-1.60511	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.47865	0.47865	0.010	5.28418	20.00000	Averaged	
59	Toluene	0.66226	0.64238	0.64238	0.010	-3.00156	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.20539	0.20539	0.010	1.60718	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.22771	0.22771	0.010	0.41896	20.00000	Averaged	
62	trans-1,3-Dichloropropene	50.00000	47.83169	0.42257	0.010	-4.33662	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	48.25626	0.19471	0.010	-3.48749	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.25585	0.25585	0.010	0.82142	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.44518	0.44518	0.010	-4.21896	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.25362	0.25362	0.010	5.00372	20.00000	Averaged	
67	2-Hexanone	0.15031	0.16099	0.16099	0.010	7.10518	20.00000	Averaged	
69	Chlorobenzene	0.74849	0.74103	0.74103	0.300	-0.99622	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.40701	0.40701	0.010	-0.99853	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	48.60055	0.25220	0.010	-2.79889	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227659-4
Analytical Date: 05/04/18 12:26
Lab File ID : P5522.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.50874	0.50874	0.010	1.81356	20.00000	Averaged
74 o-Xylene	0.47829	0.48695	0.48695	0.010	1.81119	20.00000	Averaged
75 Styrene	0.81074	0.84211	0.84211	0.010	3.87003	20.00000	Averaged
76 Bromoform	0.17862	0.19417	0.19417	0.100	8.70562	20.00000	Averaged
77 Isopropylbenzene	2.11666	2.11785	2.11785	0.010	0.05614	20.00000	Averaged
80 Bromobenzene	0.55530	0.55932	0.55932	0.010	0.72486	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.54148	2.54148	0.010	-0.42685	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.52966	0.52966	0.300	-3.53792	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.51103	1.51103	0.010	-2.45424	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.47684	0.47684	0.010	-5.32688	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.81225	1.81225	0.010	0.32656	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.59352	1.59352	0.010	-3.49538	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.75699	1.75699	0.010	0.74547	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.88824	1.88824	0.010	1.05192	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.20015	2.20015	0.010	-0.20586	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.84078	1.84078	0.010	1.58051	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.98045	0.98045	0.010	-0.41492	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	1.02866	1.02866	0.010	-1.70125	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.62595	1.62595	0.010	-0.05789	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.94523	0.94523	0.010	-1.07168	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	50.32637	0.11318	0.010	0.65274	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.26471	0.26471	0.010	4.95843	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	49.48253	0.62427	0.010	-1.03495	20.00000	Linear
104 Naphthalene	50.00000	50.51437	1.29582	0.010	1.02874	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.49244	0.49244	0.010	10.11496	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.47231	0.47231	0.010	-4.48536	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.60565	0.60565	0.010	-7.11756	20.00000	Averaged
58 Toluene-D8	1.18448	1.17930	1.17930	0.010	-0.43737	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.52692	0.52692	0.010	0.32983	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227659-4
Lab File ID : P5522.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/04/18 12:26
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5522.D
Report Date: 18-May-2018 13:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050418B.b\P5522.D
Lab Smp Id: WG227659-4
Inj Date : 04-MAY-2018 12:26 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227659-4,SL3808
Misc Info : WG227659,WG227568-4,SL3808-1
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050418B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:35 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.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	1.516	1.515	(0.235)	461391	50.0000	42.0	
2 Chloromethane	50	1.666	1.665	(0.259)	419030	50.0000	39.8	
3 Vinyl chloride	62	1.723	1.729	(0.268)	477129	50.0000	41.5	
4 Bromomethane	94	1.974	1.987	(0.306)	272143	50.0000	52.1	
5 Chloroethane	64	2.067	2.080	(0.321)	262252	50.0000	40.7	
6 Trichlorofluoromethane	101	2.174	2.180	(0.337)	852553	50.0000	41.8	
7 Diethyl Ether	59	2.417	2.416	(0.375)	316880	50.0000	43.0	
19 Tertiary-butyl alcohol	59	3.504	3.510	(0.544)	149082	250.000	233	WAS
8 1,1-Dichloroethene	96	2.596	2.587	(0.403)	366632	50.0000	43.2	
10 Carbon Disulfide	76	2.624	2.623	(0.407)	1265792	50.0000	44.1	1:52 pm, May 18, 2018
9 Freon-113	151	2.624	2.637	(0.407)	389209	50.0000	47.7	
11 Iodomethane	142	2.724	2.730	(0.423)	377914	50.0000	60.9	
12 Acrolein	56	2.903	2.902	(0.451)	339225	250.000	236	
14 Methylene Chloride	84	3.132	3.131	(0.486)	491258	50.0000	45.0	
15 Acetone	43	3.182	3.188	(0.494)	786058	250.000	300	
45 Isobutyl Alcohol	43	6.786	6.792	(1.053)	242059	1000.00	788(M)	M6
16 trans-1,2-Dichloroethene	96	3.282	3.281	(0.509)	464236	50.0000	45.5	
13 Allyl Chloride	41	3.025	3.016	(0.470)	646328	50.0000	45.5	
18 Methyl tert-butyl ether	73	3.397	3.395	(0.527)	1450519	50.0000	48.6	
20 Acetonitrile	41	3.690	3.696	(0.573)	598494	500.000	430	
21 Di-isopropyl ether	45	3.826	3.824	(0.594)	1522045	50.0000	44.8	
22 Chloroprene	53	3.947	3.960	(0.613)	775269	50.0000	45.6	
39 Propionitrile	54	6.300	6.298	(0.978)	741108	500.000	462	
40 Methacrylonitrile	41	6.328	6.327	(0.982)	2961453	500.000	457	

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5522.D
Report Date: 18-May-2018 13:36

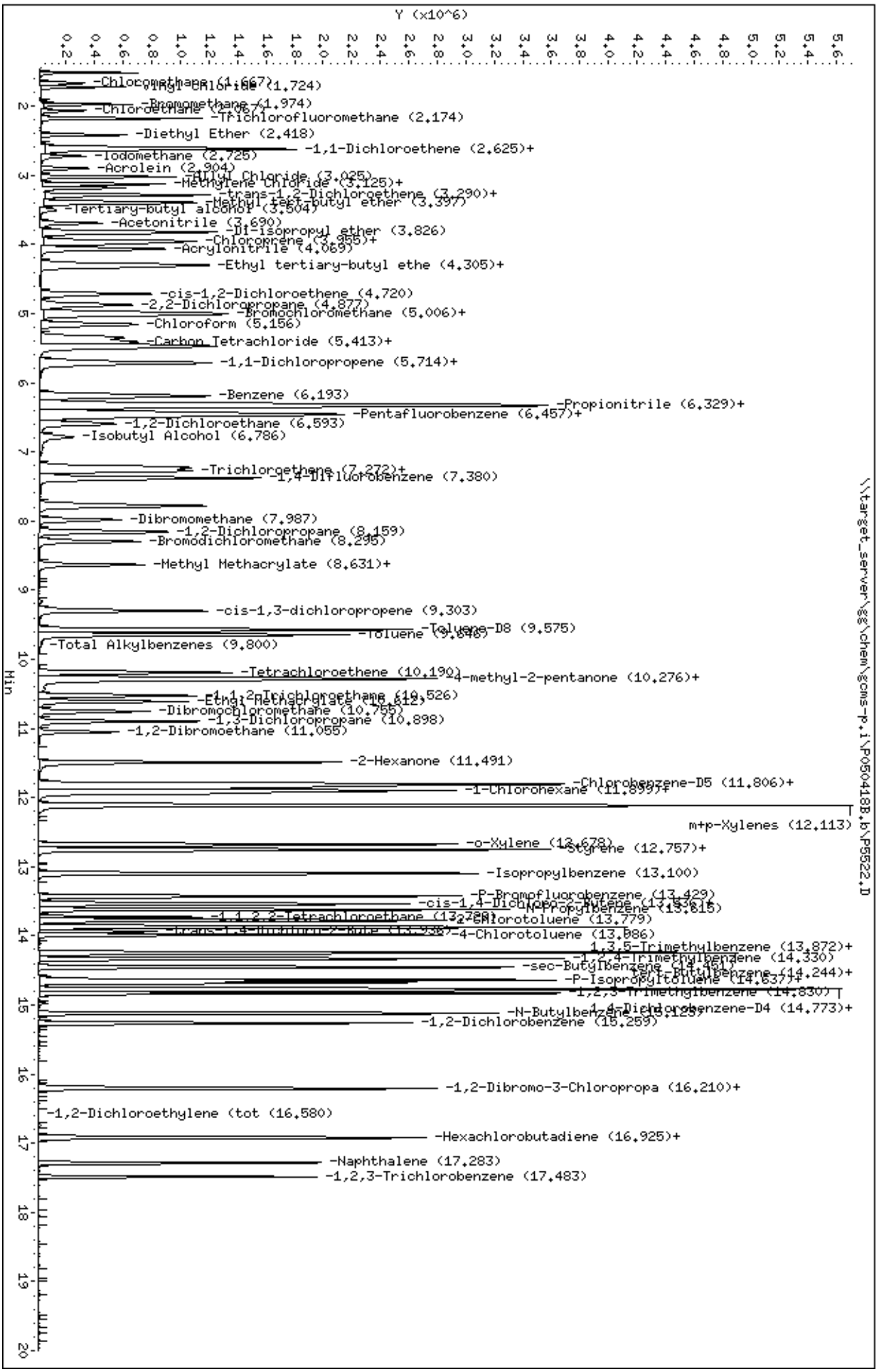
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.983	3.989	(0.618)	890348	50.0000	45.6	
	24 Acrylonitrile	52	4.069	4.067	(0.632)	814853	250.000	235	
	25 Ethyl tertiary-butyl ether	59	4.298	4.303	(0.667)	1488288	50.0000	47.1	
	26 Vinyl Acetate	43	4.326	4.325	(0.586)	1097082	50.0000	49.0	
	27 cis-1,2-Dichloroethene	96	4.719	4.732	(0.733)	525636	50.0000	48.1	
	52 Methyl Methacrylate	41	8.631	8.643	(1.170)	421653	50.0000	48.8	
	28 2,2-Dichloropropane	77	4.877	4.890	(0.757)	744916	50.0000	54.1	
	29 Bromochloromethane	128	5.013	5.026	(0.778)	241459	50.0000	49.7	
	31 Chloroform	83	5.156	5.154	(0.800)	912015	50.0000	47.6	
	32 Carbon Tetrachloride	117	5.349	5.347	(0.725)	706424	50.0000	51.2	
	33 Tetrahydrofuran	42	5.413	5.419	(0.840)	672629	250.000	232	
$	34 Dibromofluoromethane	113	5.470	5.469	(0.849)	601198	50.0000	47.8	
	35 1,1,1-Trichloroethane	97	5.484	5.483	(0.851)	817857	50.0000	47.7	
	37 1,1-Dichloropropene	75	5.706	5.698	(0.773)	731716	50.0000	48.8	
	36 2-Butanone	43	5.720	5.741	(0.888)	1120715	250.000	264	
	38 Benzene	78	6.192	6.184	(0.839)	2021853	50.0000	48.6	
*	41 Pentafluorobenzene	168	6.443	6.441	(1.000)	1272877	50.0000		
	30 Cyclohexane	56	4.998	4.990	(0.776)	846326	50.0000	45.8	
	53 Ethyl Methacrylate	69	10.611	10.617	(1.438)	725263	50.0000	47.2	
$	42 1,2-Dichloroethane-D4	65	6.464	6.470	(1.003)	770922	50.0000	46.4	
	43 Tertiary-amyl methyl ether	73	6.471	6.463	(1.004)	1347012	50.0000	48.1	
	44 1,2-Dichloroethane	62	6.593	6.591	(0.893)	751396	50.0000	46.2	
	47 Trichloroethene	95	7.279	7.264	(0.986)	501002	50.0000	48.9	
*	48 1,4-Difluorobenzene	114	7.379	7.385	(1.000)	1973639	50.0000		
	49 Dibromomethane	93	7.987	7.979	(1.082)	316962	50.0000	51.1	
	50 1,2-Dichloropropane	63	8.159	8.164	(1.106)	513427	50.0000	49.0	
	51 Bromodichloromethane	83	8.294	8.307	(1.124)	705357	50.0000	49.2	
	57 cis-1,3-dichloropropene	75	9.303	9.301	(1.261)	944692	50.0000	52.6	
	54 1,4-Dioxane	88	8.638	8.664	(1.171)	80957	1000.00	677	
$	58 Toluene-D8	98	9.574	9.573	(1.297)	2327515	50.0000	49.8	
	59 Toluene	92	9.646	9.652	(1.307)	1267827	50.0000	48.5	
	61 4-methyl-2-pentanone	43	10.275	10.281	(1.392)	2247104	250.000	251	
	60 Tetrachloroethene	164	10.189	10.188	(0.864)	417947	50.0000	50.8	
	62 trans-1,3-Dichloropropene	75	10.311	10.302	(1.397)	833996	50.0000	47.8	
	63 1,1,2-Trichloroethane	83	10.525	10.531	(1.426)	384294	50.0000	48.2	
	64 Dibromochloromethane	129	10.754	10.767	(0.912)	520622	50.0000	50.4	
	65 1,3-Dichloropropane	76	10.904	10.896	(0.924)	905900	50.0000	47.9	
	66 1,2-Dibromoethane	107	11.054	11.053	(1.498)	500563	50.0000	52.5	
	67 2-Hexanone	43	11.491	11.496	(0.974)	1637976	250.000	268	
*	68 Chlorobenzene-D5	117	11.798	11.804	(1.000)	2034895	50.0000		
	69 Chlorobenzene	112	11.819	11.825	(1.002)	1507928	50.0000	49.5	
	70 1-Chlorohexane	91	11.855	11.861	(1.005)	739675	50.0000	49.5	
	71 Ethylbenzene	106	11.898	11.904	(1.008)	828225	50.0000	49.5	
	72 1,1,1,2-Tetrachloroethane	131	11.934	11.940	(1.012)	513194	50.0000	48.6	
	73 m+p-Xylenes	106	12.113	12.111	(1.027)	2070453	100.000	102	
	74 o-Xylene	106	12.677	12.683	(1.075)	990900	50.0000	50.9	
	75 Styrene	104	12.756	12.755	(1.081)	1713607	50.0000	51.9	
	76 Bromoform	173	12.756	12.755	(1.081)	395113	50.0000	54.4	
	77 Isopropylbenzene	105	13.099	13.098	(0.887)	2474744	50.0000	50.0	
$	78 P-Bromofluorobenzene	95	13.428	13.427	(1.820)	1039957	50.0000	50.2	
	79 cis-1,4-Dichloro-2-Butene	53	13.550	13.548	(0.918)	232087	50.0000	49.0	
	86 trans-1,4-Dichloro-2-Butene	53	13.936	13.942	(0.944)	191411	50.0000	53.4	
	80 Bromobenzene	156	13.536	13.527	(0.917)	653575	50.0000	50.4	
	81 N-Propylbenzene	91	13.614	13.613	(0.922)	2969760	50.0000	49.8	

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5522.D
Report Date: 18-May-2018 13:36

	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	13.729	13.727	(0.930)	618914	50.0000	48.2	
85	1,3,5-Trimethylbenzene	105	13.872	13.877	(0.939)	2117640	50.0000	50.2	
83	2-Chlorotoluene	91	13.779	13.777	(0.933)	1765665	50.0000	48.8	
84	1,2,3-Trichloropropane	75	13.864	13.856	(0.939)	557196	50.0000	47.3	
87	4-Chlorotoluene	91	13.986	13.985	(0.947)	1862058	50.0000	48.2	
88	tert-Butylbenzene	119	14.243	14.242	(0.965)	2053070	50.0000	50.4	
89	Pentachloroethane	165	14.251	14.249	(0.965)	306028	50.0000	51.6	
90	1,2,4-Trimethylbenzene	105	14.329	14.335	(0.970)	2206441	50.0000	50.5	
92	P-Isopropyltoluene	119	14.637	14.635	(0.991)	2150980	50.0000	50.8	
93	1,3-Dichlorobenzene	146	14.672	14.678	(0.994)	1145667	50.0000	49.8	
* 94	1,4-Dichlorobenzene-D4	152	14.765	14.771	(1.000)	1168516	50.0000		
95	1,4-Dichlorobenzene	146	14.787	14.785	(1.001)	1202009	50.0000	49.1	
97	N-Butylbenzene	91	15.123	15.122	(1.024)	1899944	50.0000	50.0	
91	sec-Butylbenzene	105	14.451	14.457	(0.979)	2570907	50.0000	49.9	
99	1,2-Dichlorobenzene	146	15.266	15.265	(1.034)	1104518	50.0000	49.5	
100	1,2-Dibromo-3-Chloropropane	157	16.181	16.172	(1.096)	132247	50.0000	50.3	
101	1,3,5-Trichlorobenzene	180	16.210	16.207	(1.098)	849867	50.0000	51.2	
102	Hexachlorobutadiene	225	16.910	16.908	(1.145)	309313	50.0000	52.5	
103	1,2,4-Trichlorobenzene	180	16.925	16.922	(1.146)	729475	50.0000	49.5	
96	1,2,3-Trimethylbenzene	105	14.830	14.835	(1.004)	2286236	50.0000	50.0	
104	Naphthalene	128	17.289	17.288	(1.171)	1514187	50.0000	50.5	
105	1,2,3-Trichlorobenzene	180	17.482	17.488	(1.184)	575423	50.0000	55.0	
17	Methyl Acetate	43	3.304	3.302	(0.513)	372043	50.0000	45.1	
46	Methylcyclohexane	83	7.222	7.228	(1.121)	812044	50.0000	46.6	

QC Flag Legend

M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5522.D
Date : 04-MAY-2018 12:26
Client ID:
Sample Info: WG227659-4,SL3808
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\P050418B.b\P5522.D
Y (x10^6)
Min
-Chloromethane (1.667)
-Vinyl Chloride (1.724)
-Bromomethane (1.974)
-Chloroethane (2.067)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.418)
-1,1-Dichloroethene (2.625)+
-Iodomethane (2.725)
-Acrolein (2.904)
-Allyl Chloride (3.025)
-Methylene Chloride (3.125)+
-trans-1,2-Dichloroethene (3.290)+
-Methyl tert-butyl ether (3.397)
-Tertiary-butyl alcohol (3.504)
-Acetonitrile (3.690)
-Di-isopropyl ether (3.826)
-Chloroprene (3.955)+
-Acrylonitrile (4.069)
-Ethyl tertiary-butyl ethe (4.305)+
-cis-1,2-Dichloroethene (4.720)
-2,2-Dichloropropane (4.877)
-Bromochloromethane (5.006)+
-Chloroform (5.156)
-Carbon Tetrachloride (5.413)+
-1,1-Dichloropropene (5.714)+
-Benzene (6.193)
-Propionitrile (6.329)+
-Pentafluorobenzene (6.457)+
-1,2-Dichloroethane (6.593)
-Isobutyl Alcohol (6.786)
-Trichloroethene (7.272)+
-1,4-Difluorobenzene (7.380)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.159)
-Bromodichloromethane (8.296)
-Methyl Methacrylate (8.631)+
-cis-1,3-dichloropropene (9.303)
-Toluene-D8 (9.575)
-Toluene (9.648)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.190)
-4-methyl-2-pentanone (10.276)+
-1,1,2-Trichloroethane (10.526)
-Ethyl Methacrylate (10.612)
-Dibromochloromethane (10.765)
-1,3-Dichloropropane (10.898)
-1,2-Dibromoethane (11.055)
-2-Hexanone (11.491)
-Chlorobenzene-D5 (11.806)+
-1-Chlorohexane (11.899)+
m+p-Xylenes (12.113)
-o-Xylene (12.478)
-Styrene (12.757)+
-Isopropylbenzene (13.100)
-P-Bromofluorobenzene (13.429)
-cis-1,4-Dichloro-2-Butene (13.536)
-N-Propylbenzene (13.615)
-1,1,2,2-Tetrachloroethane (13.728)
-2-Chlorotoluene (13.779)
-trans-1,4-Dichloro-2-Bute (13.938)
-4-Chlorotoluene (13.986)
-1,3,5-Trimethylbenzene (13.872)+
-1,2,4-Trimethylbenzene (14.330)
-sec-Butylbenzene (14.401)
-tert-Butylbenzene (14.244)+
-P-Isopropyltoluene (14.637)+
-1,2,3-Trimethylbenzene (14.830)
-4,4-Dichlorobenzene-D4 (14.773)+
-N-Butylbenzene (15.125)
-1,2-Dichlorobenzene (15.259)
-1,2-Dibromo-3-Chloropropa (16.210)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.925)+
-Naphthalene (17.283)
-1,2,3-Trichlorobenzene (17.483)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227659-5
Analytical Date: 05/04/18 21:46
Lab File ID : P5538.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.37238	0.37238	0.010	-13.65157	20.00000	Averaged	
2	Chloromethane	0.41298	0.47746	0.47746	0.100	15.61422	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.48145	0.48145	0.010	6.60447	20.00000	Averaged	
4	Bromomethane	50.00000	55.88393	0.23078	0.010	11.76787	20.00000	Quadratic	
5	Chloroethane	0.25280	0.28969	0.28969	0.010	14.59066	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.76756	0.76756	0.010	-4.12952	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.31157	0.31157	0.100	-6.47001	20.00000	Averaged	
9	Freon-113	0.32070	0.26423	0.26423	0.010	-17.60828	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.20341	1.20341	0.010	6.82094	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.39919	0.39919	0.010	-6.99333	20.00000	Averaged	
15	Acetone	0.10305	0.11922	0.11922	0.010	15.68395	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.37589	0.37589	0.010	-6.20483	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.12627	1.12627	0.010	-3.94101	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.73963	0.73963	0.100	-3.66339	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.42372	0.42372	0.010	-1.26630	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.40958	0.40958	0.010	-24.26031	20.00000	Averaged	*
29	Bromochloromethane	0.19074	0.18832	0.18832	0.010	-1.26828	20.00000	Averaged	
31	Chloroform	0.75331	0.74945	0.74945	0.010	-0.51219	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.30416	0.30416	0.010	-13.03445	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.63540	0.63540	0.010	-5.63463	20.00000	Averaged	
36	2-Butanone	0.16702	0.20877	0.20877	0.010	25.00160	20.00000	Averaged	*
37	1,1-Dichloropropene	0.37972	0.33920	0.33920	0.010	-10.67084	20.00000	Averaged	
38	Benzene	1.05328	1.00846	1.00846	0.010	-4.25514	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.39733	0.39733	0.010	-3.49100	20.00000	Averaged	
47	Trichloroethene	0.25959	0.25707	0.25707	0.010	-0.97173	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16975	0.16975	0.010	8.12394	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26882	0.26882	0.010	1.34960	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.36220	0.36220	0.010	-0.28149	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.45609	0.45609	0.010	0.32154	20.00000	Averaged	
59	Toluene	0.66226	0.64616	0.64616	0.010	-2.43056	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.17915	0.17915	0.010	-11.37238	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.29019	0.29019	0.010	27.97305	20.00000	Averaged	*
62	trans-1,3-Dichloropropene	50.00000	47.64847	0.42091	0.010	-4.70307	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.84635	0.20536	0.010	1.69269	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.25430	0.25430	0.010	0.21307	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.47549	0.47549	0.010	2.30250	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.26032	0.26032	0.010	7.77382	20.00000	Averaged	
67	2-Hexanone	0.15031	0.19263	0.19263	0.010	28.15410	20.00000	Averaged	*
69	Chlorobenzene	0.74849	0.73025	0.73025	0.300	-2.43742	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39574	0.39574	0.010	-3.74093	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	46.33101	0.24019	0.010	-7.33798	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227659-5
Analytical Date: 05/04/18 21:46
Lab File ID : P5538.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.49748	0.49748	0.010	-0.43839	20.00000	Averaged
74 o-Xylene	0.47829	0.47431	0.47431	0.010	-0.83279	20.00000	Averaged
75 Styrene	0.81074	0.84357	0.84357	0.010	4.05044	20.00000	Averaged
76 Bromoform	0.17862	0.18764	0.18764	0.100	5.05086	20.00000	Averaged
77 Isopropylbenzene	2.11666	2.02479	2.02479	0.010	-4.34034	20.00000	Averaged
80 Bromobenzene	0.55530	0.52452	0.52452	0.010	-5.54242	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.49358	2.49358	0.010	-2.30347	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.59460	0.59460	0.300	8.29024	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.48308	1.48308	0.010	-4.25881	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.53408	0.53408	0.010	6.03761	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.75833	1.75833	0.010	-2.65817	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.58641	1.58641	0.010	-3.92597	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.68461	1.68461	0.010	-3.40450	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.85195	1.85195	0.010	-0.89018	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.13056	2.13056	0.010	-3.36238	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.76165	1.76165	0.010	-2.78597	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.93716	0.93716	0.010	-4.81135	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	0.99681	0.99681	0.010	-4.74466	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.59553	1.59553	0.010	-1.92750	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.92729	0.92729	0.010	-2.94938	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	51.87413	0.11674	0.010	3.74825	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.21091	0.21091	0.010	-16.37278	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	46.16754	0.58128	0.010	-7.66492	20.00000	Linear
104 Naphthalene	50.00000	53.71646	1.37953	0.010	7.43291	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.49497	0.49497	0.010	10.68099	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.49483	0.49483	0.010	0.06777	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.70071	0.70071	0.010	7.46054	20.00000	Averaged
58 Toluene-D8	1.18448	1.19517	1.19517	0.010	0.90254	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.54427	0.54427	0.010	3.63184	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227659-5
Lab File ID : P5538.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/04/18 21:46
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5538.D
Report Date: 18-May-2018 13:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050418B.b\P5538.D
Lab Smp Id: WG227659-5
Inj Date : 04-MAY-2018 21:46 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227659-5,SL3808
Misc Info : WG227659,WG227568-4,SL3808-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050418B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:35 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.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

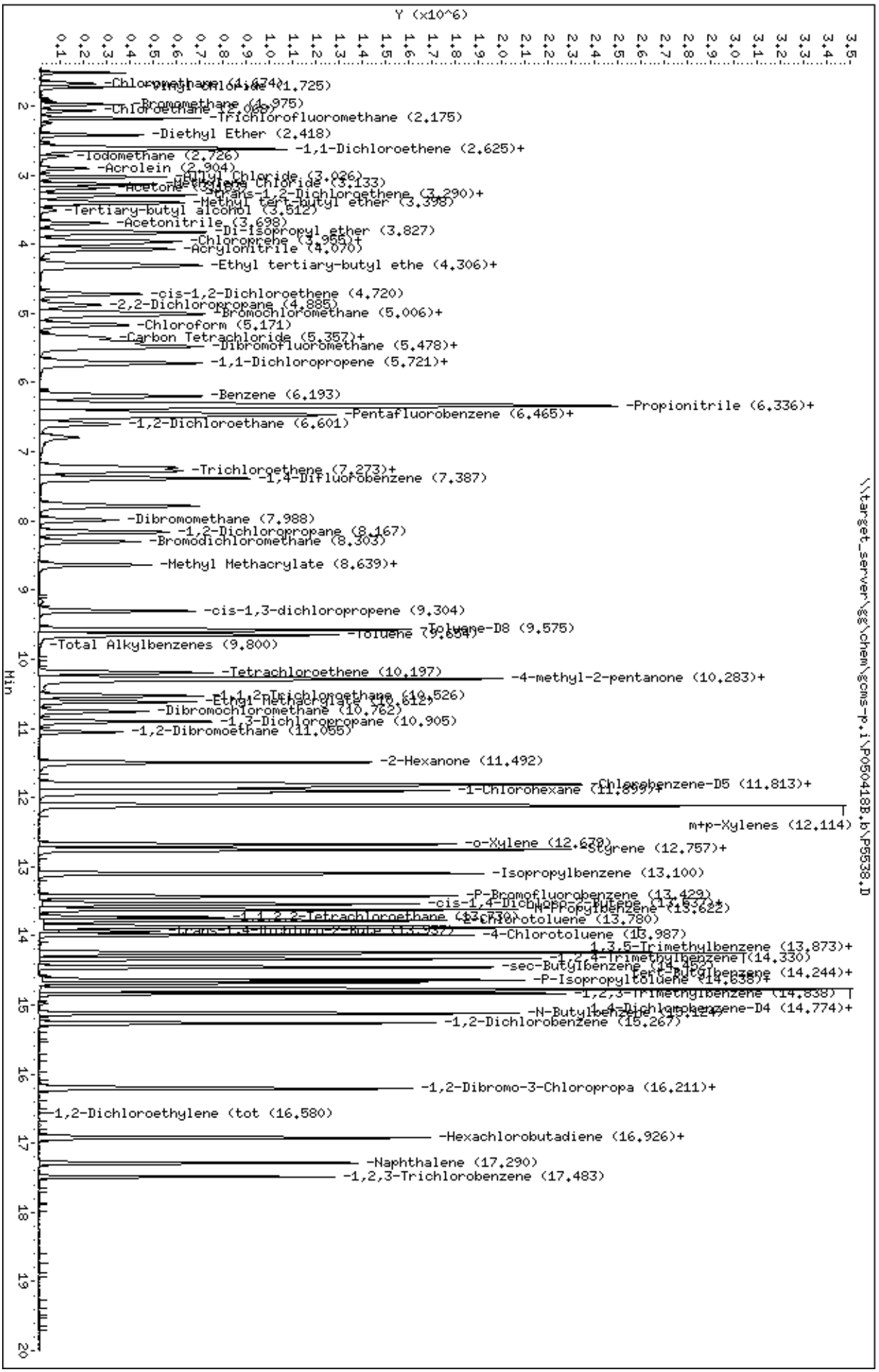
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.517	1.515	(0.235)	250833	50.0000	43.2	
2	Chloromethane	50	1.667	1.665	(0.259)	321618	50.0000	57.8	
3	Vinyl chloride	62	1.724	1.729	(0.268)	324304	50.0000	53.3	
4	Bromomethane	94	1.974	1.987	(0.306)	155454	50.0000	55.9	
5	Chloroethane	64	2.067	2.080	(0.321)	195132	50.0000	57.3	
6	Trichlorofluoromethane	101	2.174	2.180	(0.338)	517030	50.0000	47.9	
7	Diethyl Ether	59	2.418	2.416	(0.375)	228615	50.0000	58.7	
19	Tertiary-butyl alcohol	59	3.504	3.510	(0.544)	80381	250.000	238	
8	1,1-Dichloroethene	96	2.596	2.587	(0.403)	209876	50.0000	46.8	
10	Carbon Disulfide	76	2.625	2.623	(0.407)	810614	50.0000	53.4	
9	Freon-113	151	2.625	2.637	(0.407)	177983	50.0000	41.2	
11	Iodomethane	142	2.725	2.730	(0.423)	151511	50.0000	46.6	
12	Acrolein	56	2.904	2.902	(0.451)	210173	250.000	276	
14	Methylene Chloride	84	3.133	3.131	(0.486)	268895	50.0000	46.5	
15	Acetone	43	3.183	3.188	(0.494)	401520	250.000	289	
16	trans-1,2-Dichloroethene	96	3.290	3.281	(0.511)	253202	50.0000	46.9	
13	Allyl Chloride	41	3.025	3.016	(0.470)	356196	50.0000	47.4	
18	Methyl tert-butyl ether	73	3.397	3.395	(0.527)	758654	50.0000	48.0	
20	Acetonitrile	41	3.697	3.696	(0.574)	406582	500.000	552	
21	Di-isopropyl ether	45	3.826	3.824	(0.594)	876736	50.0000	48.8	
22	Chloroprene	53	3.955	3.960	(0.614)	423862	50.0000	47.1	
39	Propionitrile	54	6.307	6.298	(0.979)	509184	500.000	600	
40	Methacrylonitrile	41	6.336	6.327	(0.983)	2123741	500.000	619	
23	1,1-Dichloroethane	63	3.991	3.989	(0.619)	498216	50.0000	48.2	

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5538.D
Report Date: 18-May-2018 13:36

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	4.069	4.067	(0.632)	523275	250.000	285	
	25 Ethyl tertiary-butyl ether	59	4.298	4.303	(0.667)	792013	50.0000	47.4	
	26 Vinyl Acetate	43	4.327	4.325	(0.586)	684986	50.0000	53.1	
	27 cis-1,2-Dichloroethene	96	4.727	4.732	(0.734)	285420	50.0000	49.4	
	52 Methyl Methacrylate	41	8.638	8.643	(1.169)	284008	50.0000	57.0	
	28 2,2-Dichloropropane	77	4.877	4.890	(0.757)	275891	50.0000	37.9	
	29 Bromochloromethane	128	5.027	5.026	(0.780)	126850	50.0000	49.4	
	31 Chloroform	83	5.163	5.154	(0.801)	504826	50.0000	49.7	
	32 Carbon Tetrachloride	117	5.356	5.347	(0.725)	346022	50.0000	43.5	
	33 Tetrahydrofuran	42	5.413	5.419	(0.840)	467199	250.000	304	
$	34 Dibromofluoromethane	113	5.478	5.469	(0.850)	333316	50.0000	50.0	
	35 1,1,1-Trichloroethane	97	5.485	5.483	(0.851)	428003	50.0000	47.2	
	37 1,1-Dichloropropene	75	5.714	5.698	(0.774)	385883	50.0000	44.7	
	36 2-Butanone	43	5.728	5.741	(0.889)	703149	250.000	312	
	38 Benzene	78	6.193	6.184	(0.838)	1147264	50.0000	47.9	
*	41 Pentafluorobenzene	168	6.443	6.441	(1.000)	673598	50.0000		
	30 Cyclohexane	56	4.999	4.990	(0.776)	454243	50.0000	46.4	
	53 Ethyl Methacrylate	69	10.612	10.617	(1.437)	465631	50.0000	52.4	
$	42 1,2-Dichloroethane-D4	65	6.472	6.470	(1.004)	471998	50.0000	53.7	
	43 Tertiary-amyl methyl ether	73	6.486	6.463	(1.007)	735563	50.0000	49.6	
	44 1,2-Dichloroethane	62	6.600	6.591	(0.894)	452022	50.0000	48.2	
	47 Trichloroethene	95	7.280	7.264	(0.985)	292453	50.0000	49.5	
*	48 1,4-Difluorobenzene	114	7.387	7.385	(1.000)	1137636	50.0000		
	49 Dibromomethane	93	7.988	7.979	(1.081)	193112	50.0000	54.1	
	50 1,2-Dichloropropane	63	8.166	8.164	(1.105)	305822	50.0000	50.7	
	51 Bromodichloromethane	83	8.302	8.307	(1.124)	412048	50.0000	49.8	
	57 cis-1,3-dichloropropene	75	9.303	9.301	(1.259)	518868	50.0000	50.2	
	54 1,4-Dioxane	88	8.638	8.664	(1.169)	45492	1000.00	651	
$	58 Toluene-D8	98	9.575	9.573	(1.296)	1359671	50.0000	50.4	
	59 Toluene	92	9.646	9.652	(1.306)	735097	50.0000	48.8	
	61 4-methyl-2-pentanone	43	10.283	10.281	(1.392)	1650675	250.000	320	
	60 Tetrachloroethene	164	10.197	10.188	(0.864)	218439	50.0000	44.3	
	62 trans-1,3-Dichloropropene	75	10.311	10.302	(1.396)	478840	50.0000	47.6	
	63 1,1,2-Trichloroethane	83	10.533	10.531	(1.426)	233626	50.0000	50.8	
	64 Dibromochloromethane	129	10.762	10.767	(0.912)	310069	50.0000	50.1	
	65 1,3-Dichloropropane	76	10.905	10.896	(0.924)	579764	50.0000	51.2	
	66 1,2-Dibromoethane	107	11.055	11.053	(1.497)	296144	50.0000	53.9	
	67 2-Hexanone	43	11.491	11.496	(0.973)	1174340	250.000	320	
*	68 Chlorobenzene-D5	117	11.806	11.804	(1.000)	1219288	50.0000		
	69 Chlorobenzene	112	11.827	11.825	(1.002)	890382	50.0000	48.8	
	70 1-Chlorohexane	91	11.856	11.861	(1.004)	393080	50.0000	43.9	
	71 Ethylbenzene	106	11.899	11.904	(1.008)	482517	50.0000	48.1	
	72 1,1,1,2-Tetrachloroethane	131	11.934	11.940	(1.011)	292862	50.0000	46.3	
	73 m+p-Xylenes	106	12.113	12.111	(1.026)	1213154	100.000	99.6	
	74 o-Xylene	106	12.678	12.683	(1.074)	578318	50.0000	49.6	
	75 Styrene	104	12.757	12.755	(1.081)	1028559	50.0000	52.0	
	76 Bromoform	173	12.757	12.755	(1.081)	228788	50.0000	52.5	
	77 Isopropylbenzene	105	13.100	13.098	(0.887)	1444852	50.0000	47.8	
$	78 P-Bromofluorobenzene	95	13.429	13.427	(1.818)	619176	50.0000	51.8	
	79 cis-1,4-Dichloro-2-Butene	53	13.550	13.548	(0.917)	146605	50.0000	50.7	
	86 trans-1,4-Dichloro-2-Butene	53	13.936	13.942	(0.943)	123942	50.0000	56.7	
	80 Bromobenzene	156	13.536	13.527	(0.916)	374286	50.0000	47.2	
	81 N-Propylbenzene	91	13.622	13.613	(0.922)	1779370	50.0000	48.8	
	82 1,1,2,2-Tetrachloroethane	83	13.729	13.727	(0.929)	424298	50.0000	54.1	

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5538.D
Report Date: 18-May-2018 13:36

	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	13.879	13.877	(0.940)	1254711	50.0000	48.7	
83	2-Chlorotoluene	91	13.779	13.777	(0.933)	1058295	50.0000	47.9	
84	1,2,3-Trichloropropane	75	13.865	13.856	(0.939)	381109	50.0000	53.0	
87	4-Chlorotoluene	91	13.987	13.985	(0.947)	1132033	50.0000	48.0	
88	tert-Butylbenzene	119	14.244	14.242	(0.964)	1202107	50.0000	48.3	
89	Pentachloroethane	165	14.251	14.249	(0.965)	174433	50.0000	48.1	
90	1,2,4-Trimethylbenzene	105	14.330	14.335	(0.970)	1321516	50.0000	49.6	
92	P-Isopropyltoluene	119	14.637	14.635	(0.991)	1257080	50.0000	48.6	
93	1,3-Dichlorobenzene	146	14.680	14.678	(0.994)	668740	50.0000	47.6	
* 94	1,4-Dichlorobenzene-D4	152	14.773	14.771	(1.000)	713580	50.0000		
95	1,4-Dichlorobenzene	146	14.787	14.785	(1.001)	711307	50.0000	47.6	
97	N-Butylbenzene	91	15.123	15.122	(1.024)	1138538	50.0000	49.0	
91	sec-Butylbenzene	105	14.451	14.457	(0.978)	1520322	50.0000	48.3	
99	1,2-Dichlorobenzene	146	15.266	15.265	(1.033)	661696	50.0000	48.5	
100	1,2-Dibromo-3-Chloropropane	157	16.182	16.172	(1.095)	83304	50.0000	51.9	
101	1,3,5-Trichlorobenzene	180	16.210	16.207	(1.097)	467440	50.0000	46.1	
102	Hexachlorobutadiene	225	16.911	16.908	(1.145)	150500	50.0000	41.8	
103	1,2,4-Trichlorobenzene	180	16.925	16.922	(1.146)	414788	50.0000	46.2	
96	1,2,3-Trimethylbenzene	105	14.837	14.835	(1.004)	1387452	50.0000	49.7	
104	Naphthalene	128	17.290	17.288	(1.170)	984408	50.0000	53.7	
105	1,2,3-Trichlorobenzene	180	17.483	17.488	(1.183)	353201	50.0000	55.3	
17	Methyl Acetate	43	3.304	3.302	(0.513)	246247	50.0000	56.4	
46	Methylcyclohexane	83	7.230	7.228	(1.122)	424789	50.0000	46.0	


Y (x10^6)
Min
-Chloromethane (1.674)
-Vinyl Chloride (1.725)
-Bromomethane (1.975)
-Chloroethane (2.066)
-Trichlorofluoromethane (2.175)
-Diethyl Ether (2.418)
-1,1-Dichloroethene (2.625)+
-Iodomethane (2.726)
-Acrolein (2.904)
-Methylene Chloride (3.133)
-Acetone
-trans-1,2-Dichloroethene (3.290)+
-Methyl tert-butyl ether (3.398)
-Tertiary-butyl alcohol (3.512)
-Acetonitrile (3.698)
-Di-isopropyl ether (3.827)
-Chloroprene (3.955)+
-Acrylonitrile (4.070)
-Ethyl tertiary-butyl ethe (4.306)+
-cis-1,2-Dichloroethene (4.720)
-2,2-Dichloropropane (4.885)
-Bromochloromethane (5.006)+
-Chloroform (5.171)
-Carbon Tetrachloride (5.357)+
-Dibromofluoromethane (5.478)+
-1,1-Dichloropropene (5.721)+
-Benzene (6.193)
-Propionitrile (6.336)+
-Pentafluorobenzene (6.465)+
-1,2-Dichloroethane (6.601)
-Trichloroethene (7.273)+
-1,4-Difluorobenzene (7.387)
-Dibromomethane (7.988)
-1,2-Dichloropropane (8.167)
-Bromodichloromethane (8.303)
-Methyl Methacrylate (8.639)+
-cis-1,3-dichloropropene (9.304)
-Toluene-D8 (9.575)
-Toluene (9.654)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.197)
-4-methyl-2-pentanone (10.283)+
-1,1,2-Trichloroethane (10.526)
-Ethyl Methacrylate (10.612)
-Dibromochloromethane (10.762)
-1,3-Dichloropropane (10.905)
-1,2-Dibromoethane (11.055)
-2-Hexanone (11.492)
-Chlorobenzene-D5 (11.813)+
-1-Chlorohexane (11.899)+
m+p-Xylenes (12.114)
-o-Xylene (12.670)
-Styrene (12.757)+
-Isopropylbenzene (13.100)
-P-Bromofluorobenzene (13.429)
-cis-1,4-Dichloro-2-Butene (13.537)+
-N-Propylbenzene (13.622)
-1,1,2,2-Tetrachloroethane (13.730)
-2-Chlorotoluene (13.780)
-trans-1,4-Dichloro-2-Bute (13.957)
-4-Chlorotoluene (13.987)
-1,3,5-Trimethylbenzene (13.873)+
-1,2,4-Trimethylbenzene (14.330)
-sec-Butylbenzene (14.402)
-Tert-Butylbenzene (14.244)+
-P-Isopropyltoluene (14.638)+
-1,2,3-Trimethylbenzene (14.838)
-N-Butylbenzene (14.924)
-1,4-Dichlorobenzene-D4 (14.774)+
-1,2-Dichlorobenzene (15.267)
-1,2-Dibromo-3-Chloropropa (16.211)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.926)+
-Naphthalene (17.290)
-1,2,3-Trichlorobenzene (17.483)
\\target_server\gg\chem\gcms-p.i\P050418B.b\P5538.D
Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5538.D
Date : 04-MAY-2018 21:46
Client ID:
Sample Info: WG227659-5,SL3808
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: SL3808
Lab ID : WG227763-4
Analytical Date: 05/07/18 08:50
Lab File ID : P5545.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.35442	0.35442	0.010	-17.81504	20.00000	Averaged	
2	Chloromethane	0.41298	0.40232	0.40232	0.100	-2.58034	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.44138	0.44138	0.010	-2.26727	20.00000	Averaged	
4	Bromomethane	50.00000	58.56231	0.24301	0.010	17.12461	20.00000	Quadratic	
5	Chloroethane	0.25280	0.24041	0.24041	0.010	-4.90201	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.76700	0.76700	0.010	-4.20023	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.29954	0.29954	0.100	-10.08293	20.00000	Averaged	
9	Freon-113	0.32070	0.29020	0.29020	0.010	-9.51029	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.09108	1.09108	0.010	-3.14996	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.38839	0.38839	0.010	-9.51048	20.00000	Averaged	
15	Acetone	0.10305	0.11632	0.11632	0.010	12.87089	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.36220	0.36220	0.010	-9.62296	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.18610	1.18610	0.010	1.16155	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.70410	0.70410	0.100	-8.29201	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.41507	0.41507	0.010	-3.28212	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.55215	0.55215	0.010	2.10445	20.00000	Averaged	
29	Bromochloromethane	0.19074	0.18709	0.18709	0.010	-1.91073	20.00000	Averaged	
31	Chloroform	0.75331	0.70742	0.70742	0.010	-6.09139	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.32571	0.32571	0.010	-6.87293	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.62079	0.62079	0.010	-7.80361	20.00000	Averaged	
36	2-Butanone	0.16702	0.20142	0.20142	0.010	20.59773	20.00000	Averaged	*
37	1,1-Dichloropropene	0.37972	0.35396	0.35396	0.010	-6.78279	20.00000	Averaged	
38	Benzene	1.05328	0.99835	0.99835	0.010	-5.21487	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38357	0.38357	0.010	-6.83424	20.00000	Averaged	
47	Trichloroethene	0.25959	0.24719	0.24719	0.010	-4.77841	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16372	0.16372	0.010	4.28386	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26396	0.26396	0.010	-0.48287	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35533	0.35533	0.010	-2.17311	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.46942	0.46942	0.010	3.25242	20.00000	Averaged	
59	Toluene	0.66226	0.64142	0.64142	0.010	-3.14592	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.17465	0.17465	0.010	-13.59882	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.27874	0.27874	0.010	22.92228	20.00000	Averaged	*
62	trans-1,3-Dichloropropene	50.00000	48.79748	0.43132	0.010	-2.40504	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.09516	0.20227	0.010	0.19032	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.24864	0.24864	0.010	-2.01961	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.45824	0.45824	0.010	-1.40939	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.26864	0.26864	0.010	11.22198	20.00000	Averaged	
67	2-Hexanone	0.15031	0.18355	0.18355	0.010	22.11369	20.00000	Averaged	*
69	Chlorobenzene	0.74849	0.71542	0.71542	0.300	-4.41875	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39094	0.39094	0.010	-4.90715	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	45.92400	0.23804	0.010	-8.15200	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227763-4
Analytical Date: 05/07/18 08:50
Lab File ID : P5545.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.47842	0.47842	0.010	-4.25406	20.00000	Averaged
74 o-Xylene	0.47829	0.45856	0.45856	0.010	-4.12501	20.00000	Averaged
75 Styrene	0.81074	0.80520	0.80520	0.010	-0.68295	20.00000	Averaged
76 Bromoform	0.17862	0.18903	0.18903	0.100	5.82809	20.00000	Averaged
77 Isopropylbenzene	2.11666	1.97337	1.97337	0.010	-6.76981	20.00000	Averaged
80 Bromobenzene	0.55530	0.51066	0.51066	0.010	-8.03871	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.42182	2.42182	0.010	-5.11514	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.57669	0.57669	0.300	5.02686	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.41332	1.41332	0.010	-8.76199	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.52157	0.52157	0.010	3.55444	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.70983	1.70983	0.010	-5.34320	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.54045	1.54045	0.010	-6.70936	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.64034	1.64034	0.010	-5.94307	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.80059	1.80059	0.010	-3.63903	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.09561	2.09561	0.010	-4.94722	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.74905	1.74905	0.010	-3.48165	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.94197	0.94197	0.010	-4.32257	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	0.98257	0.98257	0.010	-6.10563	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.56923	1.56923	0.010	-3.54385	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.90521	0.90521	0.010	-5.26045	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	54.51037	0.12281	0.010	9.02075	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.23289	0.23289	0.010	-7.65828	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	46.70621	0.58826	0.010	-6.58757	20.00000	Linear
104 Naphthalene	50.00000	55.00245	1.41315	0.010	10.00490	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.49369	0.49369	0.010	10.39547	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.48168	0.48168	0.010	-2.59051	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.64805	0.64805	0.010	-0.61582	20.00000	Averaged
58 Toluene-D8	1.18448	1.21111	1.21111	0.010	2.24781	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.54815	0.54815	0.010	4.37187	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227763-4
Lab File ID : P5545.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/07/18 08:50
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Report Date: 18-May-2018 13:38

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Lab Smp Id: WG227763-4
Inj Date : 07-MAY-2018 08:50 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227763-4,SL3808
Misc Info : WG227763,WG227568-4,SL3808-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:37 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.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	1.517	1.515	(0.236)	324085	50.0000	41.1	
2	Chloromethane	50	1.668	1.665	(0.259)	367885	50.0000	48.7	
3	Vinyl chloride	62	1.725	1.729	(0.268)	403602	50.0000	48.9	
4	Bromomethane	94	1.975	1.987	(0.307)	222212	50.0000	58.6	
5	Chloroethane	64	2.068	2.080	(0.321)	219830	50.0000	47.5	
6	Trichlorofluoromethane	101	2.175	2.180	(0.338)	701345	50.0000	47.9	
7	Diethyl Ether	59	2.418	2.416	(0.376)	284314	50.0000	53.7	
19	Tertiary-butyl alcohol	59	3.505	3.510	(0.545)	146364	250.000	319	
8	1,1-Dichloroethene	96	2.590	2.587	(0.402)	273899	50.0000	45.0	
10	Carbon Disulfide	76	2.626	2.623	(0.408)	997686	50.0000	48.4	
9	Freon-113	151	2.619	2.637	(0.407)	265357	50.0000	45.2	
11	Iodomethane	142	2.726	2.730	(0.424)	240911	50.0000	54.2	
12	Acrolein	56	2.897	2.902	(0.450)	296467	250.000	287	
14	Methylene Chloride	84	3.126	3.131	(0.486)	355143	50.0000	45.2	
15	Acetone	43	3.183	3.188	(0.495)	531805	250.000	282	
45	Isobutyl Alcohol	43	6.787	6.792	(1.054)	272993	1000.00	1220(M)	M6
16	trans-1,2-Dichloroethene	96	3.283	3.281	(0.510)	331193	50.0000	45.2	
13	Allyl Chloride	41	3.026	3.016	(0.470)	482770	50.0000	47.3	
18	Methyl tert-butyl ether	73	3.398	3.395	(0.528)	1084570	50.0000	50.6	
20	Acetonitrile	41	3.691	3.696	(0.573)	537527	500.000	538	
21	Di-isopropyl ether	45	3.827	3.824	(0.595)	1141175	50.0000	46.8	
22	Chloroprene	53	3.948	3.960	(0.613)	562909	50.0000	46.0	
39	Propionitrile	54	6.301	6.298	(0.979)	678649	500.000	589	
40	Methacrylonitrile	41	6.329	6.327	(0.983)	2670394	500.000	574	

WKS
1:53 pm, May 18, 2018

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Report Date: 18-May-2018 13:38

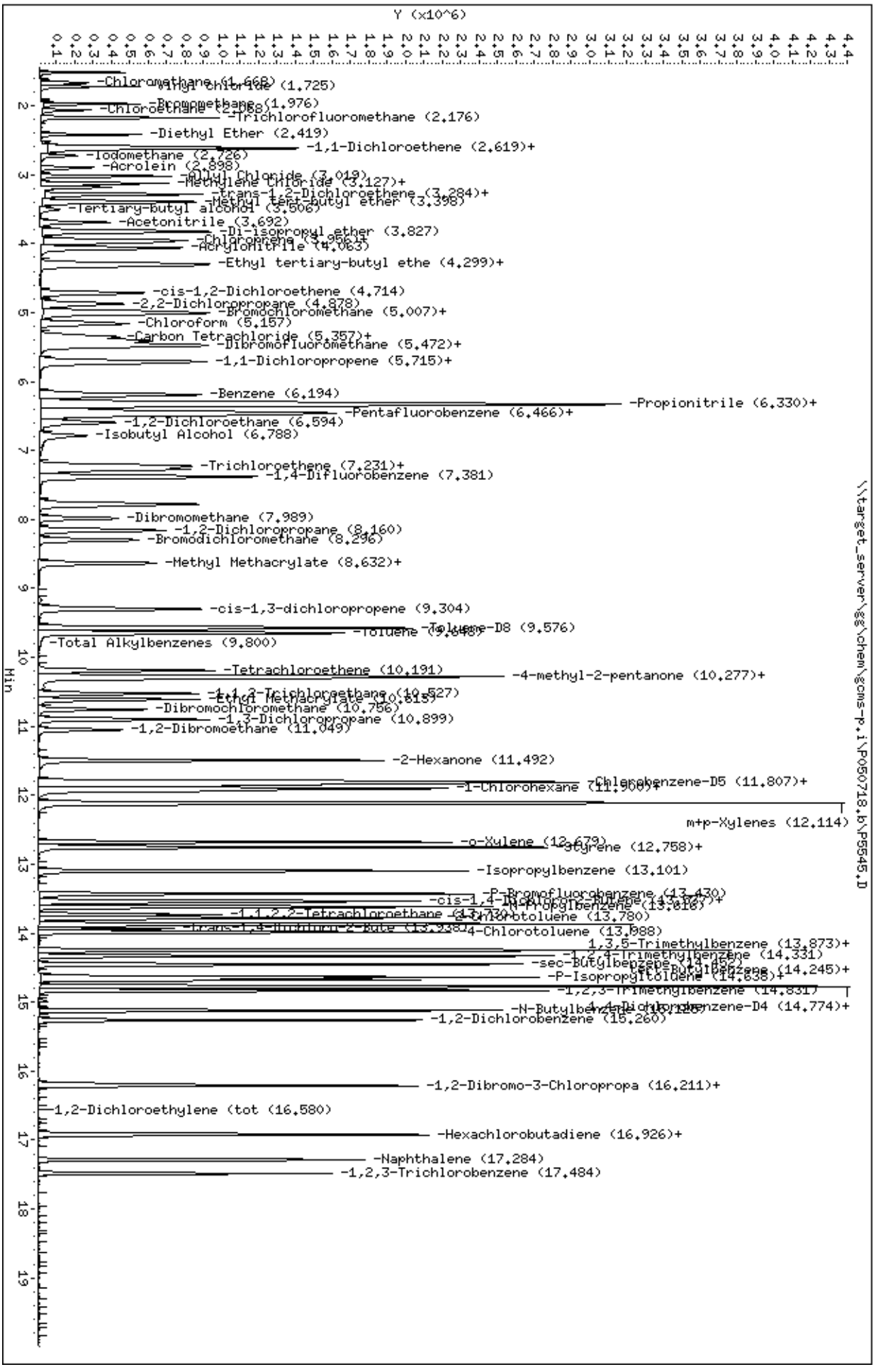
							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.984	3.989	(0.619)	643828	50.0000	45.8	
	24 Acrylonitrile	52	4.063	4.067	(0.631)	715190	250.000	287	
	25 Ethyl tertiary-butyl ether	59	4.299	4.303	(0.668)	1082330	50.0000	47.7	
	26 Vinyl Acetate	43	4.320	4.325	(0.585)	902804	50.0000	54.1	
	27 cis-1,2-Dichloroethene	96	4.721	4.732	(0.733)	379544	50.0000	48.4	
	52 Methyl Methacrylate	41	8.632	8.643	(1.170)	361508	50.0000	56.1	
	28 2,2-Dichloropropane	77	4.878	4.890	(0.758)	504888	50.0000	51.0	
	29 Bromochloromethane	128	5.021	5.026	(0.780)	171077	50.0000	49.0	
	31 Chloroform	83	5.157	5.154	(0.801)	646865	50.0000	47.0	
	32 Carbon Tetrachloride	117	5.357	5.347	(0.726)	479796	50.0000	46.6	
	33 Tetrahydrofuran	42	5.407	5.419	(0.840)	609524	250.000	292	
$	34 Dibromofluoromethane	113	5.471	5.469	(0.850)	440453	50.0000	48.7	
	35 1,1,1-Trichloroethane	97	5.479	5.483	(0.851)	567655	50.0000	46.1	
	37 1,1-Dichloropropene	75	5.707	5.698	(0.773)	521414	50.0000	46.6	
	36 2-Butanone	43	5.722	5.741	(0.889)	920889	250.000	301	
	38 Benzene	78	6.194	6.184	(0.839)	1470660	50.0000	47.4	
*	41 Pentafluorobenzene	168	6.437	6.441	(1.000)	914402	50.0000		
	30 Cyclohexane	56	4.992	4.990	(0.776)	606286	50.0000	45.6	
	53 Ethyl Methacrylate	69	10.612	10.617	(1.438)	593426	50.0000	51.6	
$	42 1,2-Dichloroethane-D4	65	6.472	6.470	(1.006)	592577	50.0000	49.7	
	43 Tertiary-amyl methyl ether	73	6.472	6.463	(1.006)	1010203	50.0000	50.2	
	44 1,2-Dichloroethane	62	6.594	6.591	(0.893)	565031	50.0000	46.6	
	47 Trichloroethene	95	7.273	7.264	(0.985)	364130	50.0000	47.6	
*	48 1,4-Difluorobenzene	114	7.381	7.385	(1.000)	1473084	50.0000		
	49 Dibromomethane	93	7.988	7.979	(1.082)	241173	50.0000	52.1	
	50 1,2-Dichloropropane	63	8.160	8.164	(1.106)	388838	50.0000	49.8	
	51 Bromodichloromethane	83	8.296	8.307	(1.124)	523425	50.0000	48.9	
	57 cis-1,3-dichloropropene	75	9.304	9.301	(1.261)	691492	50.0000	51.6	
	54 1,4-Dioxane	88	8.646	8.664	(1.171)	81124	1000.00	1090	
$	58 Toluene-D8	98	9.576	9.573	(1.297)	1784062	50.0000	51.1	
	59 Toluene	92	9.647	9.652	(1.307)	944872	50.0000	48.4	
	61 4-methyl-2-pentanone	43	10.276	10.281	(1.392)	2053042	250.000	307	
	60 Tetrachloroethene	164	10.191	10.188	(0.864)	275975	50.0000	43.2	
	62 trans-1,3-Dichloropropene	75	10.305	10.302	(1.396)	635365	50.0000	48.8	
	63 1,1,2-Trichloroethane	83	10.527	10.531	(1.426)	297965	50.0000	50.1	
	64 Dibromochloromethane	129	10.755	10.767	(0.912)	392882	50.0000	49.0	
	65 1,3-Dichloropropane	76	10.898	10.896	(0.924)	724085	50.0000	49.3	
	66 1,2-Dibromoethane	107	11.049	11.053	(1.497)	395735	50.0000	55.6	
	67 2-Hexanone	43	11.492	11.496	(0.974)	1450156	250.000	305	
*	68 Chlorobenzene-D5	117	11.799	11.804	(1.000)	1580139	50.0000		
	69 Chlorobenzene	112	11.821	11.825	(1.002)	1130459	50.0000	47.8	
	70 1-Chlorohexane	91	11.856	11.861	(1.005)	554181	50.0000	47.7	
	71 Ethylbenzene	106	11.899	11.904	(1.008)	617743	50.0000	47.5	
	72 1,1,1,2-Tetrachloroethane	131	11.935	11.940	(1.012)	376133	50.0000	45.9	
	73 m+p-Xylenes	106	12.114	12.111	(1.027)	1511936	100.000	95.7	
	74 o-Xylene	106	12.679	12.683	(1.075)	724591	50.0000	47.9	
	75 Styrene	104	12.757	12.755	(1.081)	1272325	50.0000	49.6	
	76 Bromoform	173	12.750	12.755	(1.081)	298692	50.0000	52.9	
	77 Isopropylbenzene	105	13.101	13.098	(0.887)	1827579	50.0000	46.6	
$	78 P-Bromofluorobenzene	95	13.430	13.427	(1.820)	807474	50.0000	52.2	
	79 cis-1,4-Dichloro-2-Butene	53	13.551	13.548	(0.918)	208285	50.0000	55.5	
	86 trans-1,4-Dichloro-2-Butene	53	13.937	13.942	(0.944)	169831	50.0000	59.8	
	80 Bromobenzene	156	13.537	13.527	(0.917)	472930	50.0000	46.0	
	81 N-Propylbenzene	91	13.615	13.613	(0.922)	2242896	50.0000	47.4	

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Report Date: 18-May-2018 13:38

	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	13.730	13.727	(0.930)	534081	50.0000	52.5	
85	1,3,5-Trimethylbenzene	105	13.873	13.877	(0.939)	1583511	50.0000	47.3	
83	2-Chlorotoluene	91	13.780	13.777	(0.933)	1308907	50.0000	45.6	
84	1,2,3-Trichloropropane	75	13.859	13.856	(0.939)	483040	50.0000	51.8	
87	4-Chlorotoluene	91	13.987	13.985	(0.947)	1426646	50.0000	46.6	
88	tert-Butylbenzene	119	14.245	14.242	(0.965)	1519155	50.0000	47.0	
89	Pentachloroethane	165	14.252	14.249	(0.965)	234038	50.0000	49.8	
90	1,2,4-Trimethylbenzene	105	14.330	14.335	(0.970)	1667562	50.0000	48.2	
92	P-Isopropyltoluene	119	14.638	14.635	(0.991)	1619828	50.0000	48.2	
93	1,3-Dichlorobenzene	146	14.681	14.678	(0.994)	872382	50.0000	47.8	
* 94	1,4-Dichlorobenzene-D4	152	14.767	14.771	(1.000)	926121	50.0000		
95	1,4-Dichlorobenzene	146	14.788	14.785	(1.001)	909981	50.0000	46.9	
97	N-Butylbenzene	91	15.124	15.122	(1.024)	1453300	50.0000	48.2	
91	sec-Butylbenzene	105	14.452	14.457	(0.979)	1940793	50.0000	47.5	
99	1,2-Dichlorobenzene	146	15.267	15.265	(1.034)	838333	50.0000	47.4	
100	1,2-Dibromo-3-Chloropropane	157	16.182	16.172	(1.096)	113741	50.0000	54.5	
101	1,3,5-Trichlorobenzene	180	16.211	16.207	(1.098)	623848	50.0000	47.4	
102	Hexachlorobutadiene	225	16.904	16.908	(1.145)	215681	50.0000	46.2	
103	1,2,4-Trichlorobenzene	180	16.926	16.922	(1.146)	544804	50.0000	46.7	
96	1,2,3-Trimethylbenzene	105	14.831	14.835	(1.004)	1736612	50.0000	48.0	
104	Naphthalene	128	17.291	17.288	(1.171)	1308752	50.0000	55.0	
105	1,2,3-Trichlorobenzene	180	17.484	17.488	(1.184)	457220	50.0000	55.2	
17	Methyl Acetate	43	3.305	3.302	(0.513)	333045	50.0000	56.2	
46	Methylcyclohexane	83	7.230	7.228	(1.123)	604668	50.0000	48.2	

QC Flag Legend

M - Compound response manually integrated.


Y (x10^6)
Min
-Chloromethane (1.668)
-Vinyl Chloride (1.725)
-Bromomethane (1.976)
-Chloroethane (2.068)
-Trichlorofluoromethane (2.176)
-Diethyl Ether (2.419)
-1,1-Dichloroethene (2.619)+
-Iodomethane (2.726)
-Acrolein (2.898)
-Allyl Chloride (3.019)
-Methylene Chloride (3.127)+
-trans-1,2-Dichloroethene (3.284)+
-Methyl tert-butyl ether (3.398)
-Tertiary-Butyl alcohol (3.506)
-Acetonitrile (3.692)
-Di-isopropyl ether (3.827)
-Chloroprene (3.960)+
-Acrylonitrile (4.063)
-Ethyl tertiary-butyl ethe (4.299)+
-cis-1,2-Dichloroethene (4.714)
-2,2-Dichloropropane (4.878)
-Bromochloromethane (5.007)+
-Chloroform (5.157)
-Carbon Tetrachloride (5.357)+
-Dibromofluoromethane (5.472)+
-1,1-Dichloropropene (5.715)+
-Benzene (6.194)
-Propionitrile (6.330)+
-Pentafluorobenzene (6.466)+
-1,2-Dichloroethane (6.594)
-Isobutyl Alcohol (6.788)
-Trichloroethene (7.231)+
-1,4-Difluorobenzene (7.381)
-Dibromomethane (7.989)
-1,2-Dichloropropane (8.160)
-Bromodichloromethane (8.296)
-Methyl Methacrylate (8.632)+
-cis-1,3-dichloropropene (9.304)
-Toluene-D8 (9.576)
-Toluene (9.648)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.191)
-4-methyl-2-pentanone (10.277)+
-1,1,2-Trichloroethane (10.527)
-Ethyl Methacrylate (10.615)
-Dibromochloromethane (10.756)
-1,3-Dichloropropane (10.899)
-1,2-Dibromoethane (11.049)
-2-Hexanone (11.492)
-Chlorobenzene-D5 (11.807)+
-1-Chlorohexane (11.900)+
m+p-Xylenes (12.114)
-o-Xylene (12.679)
-Styrene (12.758)+
-Isopropylbenzene (13.101)
-P-Bromofluorobenzene (13.430)
-cis-1,4-Dichloro-2-Butene (13.527)+
-N-Propylbenzene (13.616)
-1,1,2,2-Tetrachloroethane (13.730)
-2-Chlorotoluene (13.780)
-trans-1,4-Dichloro-2-Bute (13.938)
-4-Chlorotoluene (13.988)
-1,3,5-Trimethylbenzene (13.873)+
-1,2,4-Trimethylbenzene (14.331)
-sec-Butylbenzene (14.467)
-4-Isopropyltoluene (14.638)+
-1,2,3-Trimethylbenzene (14.831)
-1,4-Dichlorobenzene-D4 (14.774)+
-N-Butylbenzene (14.926)
-1,2-Dichlorobenzene (15.260)
-1,2-Dibromo-3-Chloropropa (16.211)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.926)+
-Naphthalene (17.284)
-1,2,3-Trichlorobenzene (17.484)
\\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Date : 07-MAY-2018 08:50
Client ID:
Sample Info: WG227763-4,SL3808
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: SL3808
Lab ID : WG227763-5
Analytical Date: 05/07/18 18:51
Lab File ID : P5562.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.37216	0.37216	0.010	-13.70283	20.00000	Averaged	
2	Chloromethane	0.41298	0.42619	0.42619	0.100	3.19917	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.46592	0.46592	0.010	3.16566	20.00000	Averaged	
4	Bromomethane	50.00000	54.16164	0.22297	0.010	8.32328	20.00000	Quadratic	
5	Chloroethane	0.25280	0.26537	0.26537	0.010	4.97179	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.79928	0.79928	0.010	-0.16844	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.32331	0.32331	0.100	-2.94828	20.00000	Averaged	
9	Freon-113	0.32070	0.31875	0.31875	0.010	-0.60833	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.15757	1.15757	0.010	2.75222	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.41335	0.41335	0.010	-3.69563	20.00000	Averaged	
15	Acetone	0.10305	0.12174	0.12174	0.010	18.13362	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.38581	0.38581	0.010	-3.73087	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.16075	1.16075	0.010	-0.99994	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.73307	0.73307	0.100	-4.51783	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.42466	0.42466	0.010	-1.04825	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.39884	0.39884	0.010	-26.24601	20.00000	Averaged	*
29	Bromochloromethane	0.19074	0.18127	0.18127	0.010	-4.96107	20.00000	Averaged	
31	Chloroform	0.75331	0.74056	0.74056	0.010	-1.69245	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.31589	0.31589	0.010	-9.67948	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.64690	0.64690	0.010	-3.92623	20.00000	Averaged	
36	2-Butanone	0.16702	0.20775	0.20775	0.010	24.38891	20.00000	Averaged	*
37	1,1-Dichloropropene	0.37972	0.36307	0.36307	0.010	-4.38482	20.00000	Averaged	
38	Benzene	1.05328	1.04056	1.04056	0.010	-1.20744	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38815	0.38815	0.010	-5.72182	20.00000	Averaged	
47	Trichloroethene	0.25959	0.25324	0.25324	0.010	-2.44607	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16737	0.16737	0.010	6.60939	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26436	0.26436	0.010	-0.33350	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35691	0.35691	0.010	-1.73815	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.43924	0.43924	0.010	-3.38458	20.00000	Averaged	
59	Toluene	0.66226	0.65872	0.65872	0.010	-0.53468	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.18805	0.18805	0.010	-6.97044	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.28429	0.28429	0.010	25.37150	20.00000	Averaged	*
62	trans-1,3-Dichloropropene	50.00000	45.63025	0.40263	0.010	-8.73951	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.94836	0.20578	0.010	1.89671	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.25175	0.25175	0.010	-0.79497	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.46580	0.46580	0.010	0.21787	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.26769	0.26769	0.010	10.82760	20.00000	Averaged	
67	2-Hexanone	0.15031	0.19150	0.19150	0.010	27.40204	20.00000	Averaged	*
69	Chlorobenzene	0.74849	0.73996	0.73996	0.300	-1.13921	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39822	0.39822	0.010	-3.13770	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	46.29868	0.24002	0.010	-7.40264	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227763-5
Analytical Date: 05/07/18 18:51
Lab File ID : P5562.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.50275	0.50275	0.010	0.61588	20.00000	Averaged
74 o-Xylene	0.47829	0.48346	0.48346	0.010	1.08088	20.00000	Averaged
75 Styrene	0.81074	0.84478	0.84478	0.010	4.19902	20.00000	Averaged
76 Bromoform	0.17862	0.18510	0.18510	0.100	3.63084	20.00000	Averaged
77 Isopropylbenzene	2.11666	2.04357	2.04357	0.010	-3.45312	20.00000	Averaged
80 Bromobenzene	0.55530	0.53545	0.53545	0.010	-3.57305	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.49382	2.49382	0.010	-2.29417	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.59487	0.59487	0.300	8.33846	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.46915	1.46915	0.010	-5.15783	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.53722	0.53722	0.010	6.66085	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.76277	1.76277	0.010	-2.41268	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.57919	1.57919	0.010	-4.36330	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.68518	1.68518	0.010	-3.37199	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.86089	1.86089	0.010	-0.41161	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.11753	2.11753	0.010	-3.95323	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.74673	1.74673	0.010	-3.60943	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.98024	0.98024	0.010	-0.43599	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	1.00845	1.00845	0.010	-3.63305	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.52097	1.52097	0.010	-6.51065	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.94084	0.94084	0.010	-1.53131	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	54.90158	0.12372	0.010	9.80316	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.21132	0.21132	0.010	-16.21075	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	47.53538	0.59902	0.010	-4.92925	20.00000	Linear
104 Naphthalene	50.00000	59.42205	1.52870	0.010	18.84411	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.50921	0.50921	0.010	13.86552	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.48104	0.48104	0.010	-2.72000	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.65051	0.65051	0.010	-0.23786	20.00000	Averaged
58 Toluene-D8	1.18448	1.18950	1.18950	0.010	0.42386	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.53258	0.53258	0.010	1.40727	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227763-5
Lab File ID : P5562.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/07/18 18:51
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
Report Date: 18-May-2018 13:38

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
Lab Smp Id: WG227763-5
Inj Date : 07-MAY-2018 18:51 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227763-5,SL3808
Misc Info : WG227763,WG227568-4,SL3808-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:37 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.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

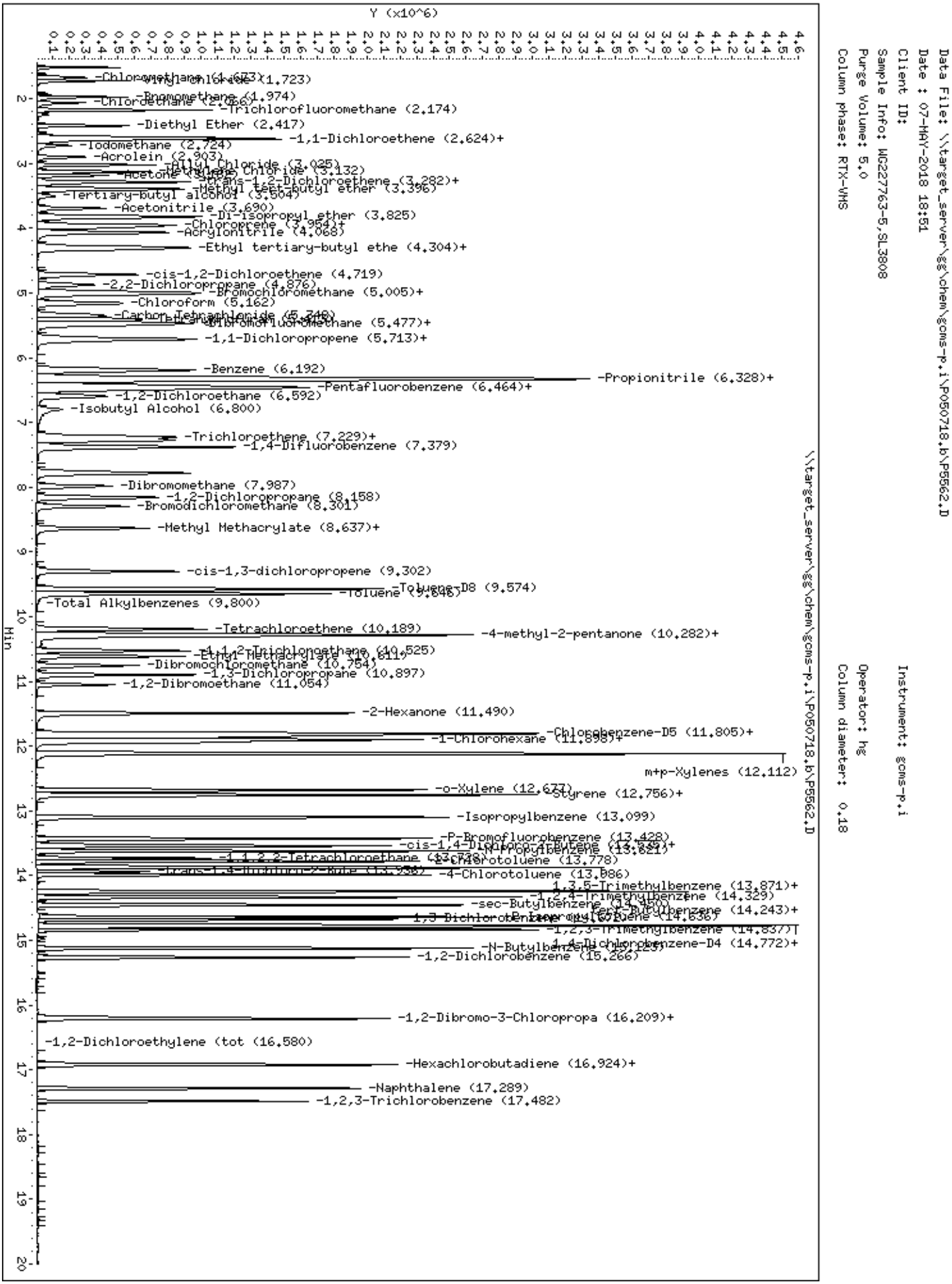
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.515	1.515	(0.235)	349322	50.0000	43.1	
2	Chloromethane	50	1.673	1.665	(0.260)	400041	50.0000	51.6	
3	Vinyl chloride	62	1.723	1.729	(0.267)	437332	50.0000	51.6	
4	Bromomethane	94	1.973	1.987	(0.306)	209290	50.0000	54.2	
5	Chloroethane	64	2.066	2.080	(0.321)	249087	50.0000	52.5	
6	Trichlorofluoromethane	101	2.173	2.180	(0.337)	750236	50.0000	49.9	
7	Diethyl Ether	59	2.416	2.416	(0.375)	295792	50.0000	54.5	
19	Tertiary-butyl alcohol	59	3.510	3.510	(0.545)	120912	250.000	257	
8	1,1-Dichloroethene	96	2.588	2.587	(0.402)	303469	50.0000	48.5	
10	Carbon Disulfide	76	2.624	2.623	(0.407)	1086546	50.0000	51.4	
9	Freon-113	151	2.617	2.637	(0.406)	299188	50.0000	49.7	
11	Iodomethane	142	2.724	2.730	(0.423)	256839	50.0000	56.3	
12	Acrolein	56	2.903	2.902	(0.451)	288726	250.000	272	
14	Methylene Chloride	84	3.131	3.131	(0.486)	387984	50.0000	48.2	
15	Acetone	43	3.181	3.188	(0.494)	571356	250.000	295	
45	Isobutyl Alcohol	43	6.799	6.792	(1.055)	191752	1000.00	844	
16	trans-1,2-Dichloroethene	96	3.289	3.281	(0.511)	362137	50.0000	48.1	
13	Allyl Chloride	41	3.024	3.016	(0.469)	466507	50.0000	44.6	
18	Methyl tert-butyl ether	73	3.396	3.395	(0.527)	1089533	50.0000	49.5	
20	Acetonitrile	41	3.689	3.696	(0.573)	566070	500.000	552	
21	Di-isopropyl ether	45	3.825	3.824	(0.594)	1195221	50.0000	47.8	
22	Chloroprene	53	3.946	3.960	(0.613)	584505	50.0000	46.6	
39	Propionitrile	54	6.299	6.298	(0.978)	711297	500.000	601	
40	Methacrylonitrile	41	6.327	6.327	(0.982)	2776259	500.000	581	

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
Report Date: 18-May-2018 13:38

	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	3.982	3.989	(0.618)	688094	50.0000	47.7	
	24 Acrylonitrile	52	4.068	4.067	(0.632)	731320	250.000	286	
	25 Ethyl tertiary-butyl ether	59	4.297	4.303	(0.667)	1076699	50.0000	46.2	
	26 Vinyl Acetate	43	4.325	4.325	(0.586)	905232	50.0000	52.2	
	27 cis-1,2-Dichloroethene	96	4.719	4.732	(0.733)	398604	50.0000	49.5	
	52 Methyl Methacrylate	41	8.637	8.643	(1.171)	386821	50.0000	57.8	
	28 2,2-Dichloropropane	77	4.876	4.890	(0.757)	374368	50.0000	36.9	
	29 Bromochloromethane	128	5.019	5.026	(0.779)	170151	50.0000	47.5	
	31 Chloroform	83	5.155	5.154	(0.800)	695117	50.0000	49.2	
	32 Carbon Tetrachloride	117	5.355	5.347	(0.726)	483138	50.0000	45.2	
	33 Tetrahydrofuran	42	5.412	5.419	(0.840)	645969	250.000	302	
$	34 Dibromofluoromethane	113	5.477	5.469	(0.850)	451528	50.0000	48.6	
	35 1,1,1-Trichloroethane	97	5.484	5.483	(0.851)	607209	50.0000	48.0	
	37 1,1-Dichloropropene	75	5.705	5.698	(0.773)	555287	50.0000	47.8	
	36 2-Butanone	43	5.720	5.741	(0.888)	975018	250.000	311	
	38 Benzene	78	6.192	6.184	(0.839)	1591477	50.0000	49.4	
*	41 Pentafluorobenzene	168	6.442	6.441	(1.000)	938642	50.0000		
	30 Cyclohexane	56	4.990	4.990	(0.775)	656477	50.0000	48.1	
	53 Ethyl Methacrylate	69	10.610	10.617	(1.438)	607961	50.0000	50.9	
$	42 1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	610599	50.0000	49.9	
	43 Tertiary-amyl methyl ether	73	6.470	6.463	(1.004)	984551	50.0000	47.7	
	44 1,2-Dichloroethane	62	6.592	6.591	(0.893)	593651	50.0000	47.1	
	47 Trichloroethene	95	7.278	7.264	(0.986)	387320	50.0000	48.8	
*	48 1,4-Difluorobenzene	114	7.379	7.385	(1.000)	1529437	50.0000		
	49 Dibromomethane	93	7.979	7.979	(1.081)	255983	50.0000	53.3	
	50 1,2-Dichloropropane	63	8.158	8.164	(1.106)	404319	50.0000	49.8	
	51 Bromodichloromethane	83	8.294	8.307	(1.124)	545865	50.0000	49.1	
	57 cis-1,3-dichloropropene	75	9.302	9.301	(1.261)	671796	50.0000	48.3	
	54 1,4-Dioxane	88	8.637	8.664	(1.171)	82965	1000.00	1060	
$	58 Toluene-D8	98	9.574	9.573	(1.297)	1819269	50.0000	50.2	
	59 Toluene	92	9.645	9.652	(1.307)	1007467	50.0000	49.7	
	61 4-methyl-2-pentanone	43	10.274	10.281	(1.392)	2174053	250.000	313	
	60 Tetrachloroethene	164	10.189	10.188	(0.864)	303439	50.0000	46.5	
	62 trans-1,3-Dichloropropene	75	10.310	10.302	(1.397)	615791	50.0000	45.6	
	63 1,1,2-Trichloroethane	83	10.525	10.531	(1.426)	314728	50.0000	50.9	
	64 Dibromochloromethane	129	10.761	10.767	(0.912)	406216	50.0000	49.6	
	65 1,3-Dichloropropane	76	10.896	10.896	(0.924)	751622	50.0000	50.1	
	66 1,2-Dibromoethane	107	11.054	11.053	(1.498)	409417	50.0000	55.4	
	67 2-Hexanone	43	11.490	11.496	(0.974)	1544995	250.000	318	
*	68 Chlorobenzene-D5	117	11.797	11.804	(1.000)	1613599	50.0000		
	69 Chlorobenzene	112	11.826	11.825	(1.002)	1194006	50.0000	49.4	
	70 1-Chlorohexane	91	11.854	11.861	(1.005)	542053	50.0000	45.7	
	71 Ethylbenzene	106	11.897	11.904	(1.008)	642562	50.0000	48.4	
	72 1,1,1,2-Tetrachloroethane	131	11.933	11.940	(1.012)	387296	50.0000	46.3	
	73 m+p-Xylenes	106	12.112	12.111	(1.027)	1622482	100.000	101	
	74 o-Xylene	106	12.677	12.683	(1.075)	780112	50.0000	50.5	
	75 Styrene	104	12.755	12.755	(1.081)	1363133	50.0000	52.1	
	76 Bromoform	173	12.755	12.755	(1.081)	298684	50.0000	51.8	
	77 Isopropylbenzene	105	13.099	13.098	(0.887)	1932476	50.0000	48.3	
$	78 P-Bromofluorobenzene	95	13.428	13.427	(1.820)	814551	50.0000	50.7	
	79 cis-1,4-Dichloro-2-Butene	53	13.549	13.548	(0.917)	190436	50.0000	49.7	
	86 trans-1,4-Dichloro-2-Butene	53	13.935	13.942	(0.943)	159753	50.0000	55.1	
	80 Bromobenzene	156	13.535	13.527	(0.916)	506345	50.0000	48.2	
	81 N-Propylbenzene	91	13.621	13.613	(0.922)	2358245	50.0000	48.8	

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
Report Date: 18-May-2018 13:38

	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	13.728	13.727	(0.929)	562530	50.0000	54.2	
85	1,3,5-Trimethylbenzene	105	13.878	13.877	(0.939)	1666936	50.0000	48.8	
83	2-Chlorotoluene	91	13.778	13.777	(0.933)	1389283	50.0000	47.4	
84	1,2,3-Trichloropropane	75	13.864	13.856	(0.939)	508014	50.0000	53.3	
87	4-Chlorotoluene	91	13.985	13.985	(0.947)	1493341	50.0000	47.8	
88	tert-Butylbenzene	119	14.243	14.242	(0.964)	1593568	50.0000	48.3	
89	Pentachloroethane	165	14.250	14.249	(0.965)	235618	50.0000	49.1	
90	1,2,4-Trimethylbenzene	105	14.328	14.335	(0.970)	1759729	50.0000	49.8	
92	P-Isopropyltoluene	119	14.636	14.635	(0.991)	1651771	50.0000	48.2	
93	1,3-Dichlorobenzene	146	14.679	14.678	(0.994)	926949	50.0000	49.8	
* 94	1,4-Dichlorobenzene-D4	152	14.772	14.771	(1.000)	945636	50.0000		
95	1,4-Dichlorobenzene	146	14.786	14.785	(1.001)	953624	50.0000	48.2	
97	N-Butylbenzene	91	15.122	15.122	(1.024)	1438281	50.0000	46.7	
91	sec-Butylbenzene	105	14.450	14.457	(0.978)	2002412	50.0000	48.0	
99	1,2-Dichlorobenzene	146	15.265	15.265	(1.033)	889692	50.0000	49.2	
100	1,2-Dibromo-3-Chloropropane	157	16.180	16.172	(1.095)	116990	50.0000	54.9	
101	1,3,5-Trichlorobenzene	180	16.209	16.207	(1.097)	619421	50.0000	46.1	
102	Hexachlorobutadiene	225	16.910	16.908	(1.145)	199829	50.0000	41.9	
103	1,2,4-Trichlorobenzene	180	16.924	16.922	(1.146)	566454	50.0000	47.5	
96	1,2,3-Trimethylbenzene	105	14.836	14.835	(1.004)	1835363	50.0000	49.6	
104	Naphthalene	128	17.289	17.288	(1.170)	1445592	50.0000	59.4	
105	1,2,3-Trichlorobenzene	180	17.489	17.488	(1.184)	481529	50.0000	56.9	
17	Methyl Acetate	43	3.303	3.302	(0.513)	339396	50.0000	55.8	
46	Methylcyclohexane	83	7.228	7.228	(1.122)	611878	50.0000	47.6	


Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
Date : 07-MAY-2018 18:51
Client ID:
Sample Info: WG227763-5,SL3808
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\P050718.b\P5562.D
Y (x10^6)
Min
-Chloromethane (1.673)
-Vinyl Chloride (1.723)
-Bromomethane (1.974)
-Chloroethane (2.066)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.724)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.132)
-Acetone (3.182)
-trans-1,2-Dichloroethene (3.282)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.504)
-Acetonitrile (3.690)
-Di-isopropyl ether (3.825)
-Chloroprene (3.954)+
-Acrylonitrile (4.068)
-Ethyl tertiary-butyl ethe (4.304)+
-cis-1,2-Dichloroethene (4.719)
-2,2-Dichloropropane (4.876)
-Bromochloromethane (5.005)+
-Chloroform (5.162)
-Carbon Tetrachloride (5.348)
-Dibromofluoromethane (5.477)+
-1,1-Dichloropropene (5.713)+
-Benzene (6.192)
-Propionitrile (6.328)+
-Pentafluorobenzene (6.464)+
-1,2-Dichloroethane (6.592)
-Isobutyl Alcohol (6.800)
-Trichloroethene (7.229)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.158)
-Bromodichloromethane (8.301)
-Methyl Methacrylate (8.637)+
-cis-1,3-dichloropropene (9.302)
-Toluene-D8 (9.574)
-Toluene (9.646)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-methyl-2-pentanone (10.282)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.754)
-1,3-Dichloropropane (10.897)
-1,2-Dibromoethane (11.054)
-2-Hexanone (11.490)
-Chlorobenzene-D5 (11.805)+
-1-Chlorohexane (11.898)+
m+p-Xylenes (12.112)
-o-Xylene (12.677)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.535)+
-N-Propylbenzene (13.621)
-1,1,2,2-Tetrachloroethane (13.738)
-2-Chlorotoluene (13.778)
-trans-1,4-Dichloro-2-Bute (13.936)
-4-Chlorotoluene (13.986)
1,3,5-Trimethylbenzene (13.871)+
-1,2,4-Trimethylbenzene (14.329)
-sec-Butylbenzene (14.450)
-tert-Butylbenzene (14.243)+
-1,3-Dichlorobenzene (14.672)
-1,2,3-Trimethylbenzene (14.837)
-1,4-Dichlorobenzene-D4 (14.772)+
-N-Butylbenzene (15.123)
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.209)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.924)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227830-4
Analytical Date: 05/08/18 09:48
Lab File ID : P5580.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.39851	0.39851	0.010	-7.59116	20.00000	Averaged	
2	Chloromethane	0.41298	0.40978	0.40978	0.100	-0.77373	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.44565	0.44565	0.010	-1.32341	20.00000	Averaged	
4	Bromomethane	50.00000	63.55057	0.26608	0.010	27.10114	20.00000	Quadratic	*
5	Chloroethane	0.25280	0.24096	0.24096	0.010	-4.68350	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.79857	0.79857	0.010	-0.25657	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.30777	0.30777	0.100	-7.61328	20.00000	Averaged	
9	Freon-113	0.32070	0.31478	0.31478	0.010	-1.84609	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.09754	1.09754	0.010	-2.57635	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.39920	0.39920	0.010	-6.99203	20.00000	Averaged	
15	Acetone	0.10305	0.10362	0.10362	0.010	0.54904	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.37324	0.37324	0.010	-6.86660	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.12529	1.12529	0.010	-4.02445	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.72390	0.72390	0.100	-5.71217	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.43252	0.43252	0.010	0.78221	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.57682	0.57682	0.010	6.66548	20.00000	Averaged	
29	Bromochloromethane	0.19074	0.19332	0.19332	0.010	1.35574	20.00000	Averaged	
31	Chloroform	0.75331	0.72953	0.72953	0.010	-3.15655	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.34156	0.34156	0.010	-2.34196	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.63741	0.63741	0.010	-5.33570	20.00000	Averaged	
36	2-Butanone	0.16702	0.18274	0.18274	0.010	9.41250	20.00000	Averaged	
37	1,1-Dichloropropene	0.37972	0.35989	0.35989	0.010	-5.22012	20.00000	Averaged	
38	Benzene	1.05328	1.03051	1.03051	0.010	-2.16236	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38349	0.38349	0.010	-6.85365	20.00000	Averaged	
47	Trichloroethene	0.25959	0.25007	0.25007	0.010	-3.66955	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16419	0.16419	0.010	4.58588	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26089	0.26089	0.010	-1.64096	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35728	0.35728	0.010	-1.63551	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.46150	0.46150	0.010	1.51033	20.00000	Averaged	
59	Toluene	0.66226	0.66006	0.66006	0.010	-0.33130	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.18547	0.18547	0.010	-8.24898	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.24988	0.24988	0.010	10.19445	20.00000	Averaged	
62	trans-1,3-Dichloropropene	50.00000	48.05794	0.42462	0.010	-3.88413	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	49.85500	0.20129	0.010	-0.28999	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.25214	0.25214	0.010	-0.63867	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.44292	0.44292	0.010	-4.70523	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.25964	0.25964	0.010	7.49534	20.00000	Averaged	
67	2-Hexanone	0.15031	0.16309	0.16309	0.010	8.50357	20.00000	Averaged	
69	Chlorobenzene	0.74849	0.73859	0.73859	0.300	-1.32347	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39271	0.39271	0.010	-4.47803	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	46.24053	0.23971	0.010	-7.51894	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227830-4
Analytical Date: 05/08/18 09:48
Lab File ID : P5580.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.48921	0.48921	0.010	-2.09529	20.00000	Averaged
74 o-Xylene	0.47829	0.48066	0.48066	0.010	0.49428	20.00000	Averaged
75 Styrene	0.81074	0.82684	0.82684	0.010	1.98594	20.00000	Averaged
76 Bromoform	0.17862	0.18481	0.18481	0.100	3.46755	20.00000	Averaged
77 Isopropylbenzene	2.11666	1.98752	1.98752	0.010	-6.10107	20.00000	Averaged
80 Bromobenzene	0.55530	0.51545	0.51545	0.010	-7.17499	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.42727	2.42727	0.010	-4.90148	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.52607	0.52607	0.300	-4.19131	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.43794	1.43794	0.010	-7.17293	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.47531	0.47531	0.010	-5.62993	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.72106	1.72106	0.010	-4.72157	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.52329	1.52329	0.010	-7.74860	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.65699	1.65699	0.010	-4.98824	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.80901	1.80901	0.010	-3.18816	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.07196	2.07196	0.010	-6.02028	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.72172	1.72172	0.010	-4.98957	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.95008	0.95008	0.010	-3.49893	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	0.98758	0.98758	0.010	-5.62686	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.53067	1.53067	0.010	-5.91395	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.90336	0.90336	0.010	-5.45364	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	47.80198	0.10736	0.010	-4.39605	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.22675	0.22675	0.010	-10.09239	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	47.33364	0.59640	0.010	-5.33273	20.00000	Linear
104 Naphthalene	50.00000	51.35745	1.31786	0.010	2.71490	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.49148	0.49148	0.010	9.89984	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.49355	0.49355	0.010	-0.19120	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.62186	0.62186	0.010	-4.63274	20.00000	Averaged
58 Toluene-D8	1.18448	1.19170	1.19170	0.010	0.60940	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.55142	0.55142	0.010	4.99402	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227830-4
Lab File ID : P5580.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/08/18 09:48
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5580.D
Report Date: 18-May-2018 13:42

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5580.D
Lab Smp Id: WG227830-4
Inj Date : 08-MAY-2018 09:48 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227830-4,SL3808
Misc Info : WG227830,WG227568-4,SL3808-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.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	1.515	1.515	(0.235)	377986	50.0000	46.2	
2	Chloromethane	50	1.665	1.665	(0.259)	388676	50.0000	49.6	
3	Vinyl chloride	62	1.722	1.729	(0.268)	422691	50.0000	49.3	
4	Bromomethane	94	1.972	1.987	(0.307)	252375	50.0000	63.6	
5	Chloroethane	64	2.065	2.080	(0.321)	228549	50.0000	47.6	
6	Trichlorofluoromethane	101	2.172	2.180	(0.338)	757438	50.0000	49.9	
7	Diethyl Ether	59	2.416	2.416	(0.375)	268209	50.0000	48.9	
19	Tertiary-butyl alcohol	59	3.510	3.510	(0.545)	121447	250.000	255	
8	1,1-Dichloroethene	96	2.587	2.587	(0.402)	291913	50.0000	46.2	
10	Carbon Disulfide	76	2.623	2.623	(0.408)	1041008	50.0000	48.7	
9	Freon-113	151	2.623	2.637	(0.408)	298562	50.0000	49.1	
11	Iodomethane	142	2.723	2.730	(0.423)	302499	50.0000	65.3	
12	Acrolein	56	2.902	2.902	(0.451)	260708	250.000	243	
14	Methylene Chloride	84	3.131	3.131	(0.487)	378635	50.0000	46.5	
15	Acetone	43	3.181	3.188	(0.494)	491410	250.000	251	
16	trans-1,2-Dichloroethene	96	3.281	3.281	(0.510)	354017	50.0000	46.6	
13	Allyl Chloride	41	3.023	3.016	(0.470)	492069	50.0000	46.5	
18	Methyl tert-butyl ether	73	3.395	3.395	(0.528)	1067329	50.0000	48.0	
20	Acetonitrile	41	3.695	3.696	(0.574)	497505	500.000	480	
21	Di-isopropyl ether	45	3.824	3.824	(0.594)	1171680	50.0000	46.3	
22	Chloroprene	53	3.953	3.960	(0.614)	574325	50.0000	45.3	
39	Propionitrile	54	6.305	6.298	(0.980)	626384	500.000	524	
40	Methacrylonitrile	41	6.327	6.327	(0.983)	2483366	500.000	514	
23	1,1-Dichloroethane	63	3.981	3.989	(0.619)	686616	50.0000	47.1	

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5580.D
Report Date: 18-May-2018 13:42

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	4.067	4.067	(0.632)	666157	250.000	258	
	25 Ethyl tertiary-butyl ether	59	4.296	4.303	(0.668)	1079375	50.0000	45.9	
	26 Vinyl Acetate	43	4.325	4.325	(0.586)	862859	50.0000	49.7	
	27 cis-1,2-Dichloroethene	96	4.718	4.732	(0.733)	410237	50.0000	50.4	
	52 Methyl Methacrylate	41	8.636	8.643	(1.171)	345530	50.0000	51.6	
	28 2,2-Dichloropropane	77	4.875	4.890	(0.758)	547104	50.0000	53.3	
	29 Bromochloromethane	128	5.018	5.026	(0.780)	183364	50.0000	50.7	
	31 Chloroform	83	5.161	5.154	(0.802)	691949	50.0000	48.4	
	32 Carbon Tetrachloride	117	5.347	5.347	(0.725)	522936	50.0000	48.8	
	33 Tetrahydrofuran	42	5.411	5.419	(0.841)	550219	250.000	254	
$	34 Dibromofluoromethane	113	5.469	5.469	(0.850)	468126	50.0000	49.9	
	35 1,1,1-Trichloroethane	97	5.483	5.483	(0.852)	604578	50.0000	47.3	
	37 1,1-Dichloropropene	75	5.705	5.698	(0.773)	551014	50.0000	47.4	
	36 2-Butanone	43	5.726	5.741	(0.890)	866624	250.000	274	
	38 Benzene	78	6.191	6.184	(0.839)	1577749	50.0000	48.9	
*	41 Pentafluorobenzene	168	6.434	6.441	(1.000)	948490	50.0000		
	30 Cyclohexane	56	4.990	4.990	(0.776)	620925	50.0000	45.1	
	53 Ethyl Methacrylate	69	10.610	10.617	(1.438)	593178	50.0000	49.7	
$	42 1,2-Dichloroethane-D4	65	6.463	6.470	(1.004)	589824	50.0000	47.7	
	43 Tertiary-amyl methyl ether	73	6.470	6.463	(1.006)	982327	50.0000	47.1	
	44 1,2-Dichloroethane	62	6.598	6.591	(0.894)	587140	50.0000	46.6	
	47 Trichloroethene	95	7.278	7.264	(0.986)	382864	50.0000	48.2	
*	48 1,4-Difluorobenzene	114	7.378	7.385	(1.000)	1531043	50.0000		
	49 Dibromomethane	93	7.986	7.979	(1.082)	251388	50.0000	52.3	
	50 1,2-Dichloropropane	63	8.157	8.164	(1.106)	399434	50.0000	49.2	
	51 Bromodichloromethane	83	8.300	8.307	(1.125)	547009	50.0000	49.2	
	57 cis-1,3-dichloropropene	75	9.301	9.301	(1.261)	706573	50.0000	50.8	
	54 1,4-Dioxane	88	8.643	8.664	(1.172)	74392	1000.00	887	
$	58 Toluene-D8	98	9.573	9.573	(1.298)	1824544	50.0000	50.3	
	59 Toluene	92	9.644	9.652	(1.307)	1010587	50.0000	49.8	
	61 4-methyl-2-pentanone	43	10.281	10.281	(1.393)	1912876	250.000	275	
	60 Tetrachloroethene	164	10.195	10.188	(0.864)	306261	50.0000	45.9	
	62 trans-1,3-Dichloropropene	75	10.309	10.302	(1.397)	650107	50.0000	48.0	
	63 1,1,2-Trichloroethane	83	10.531	10.531	(1.427)	308177	50.0000	49.8	
	64 Dibromochloromethane	129	10.760	10.767	(0.912)	416362	50.0000	49.7	
	65 1,3-Dichloropropane	76	10.903	10.896	(0.924)	731398	50.0000	47.6	
	66 1,2-Dibromoethane	107	11.053	11.053	(1.498)	397524	50.0000	53.7	
	67 2-Hexanone	43	11.489	11.496	(0.973)	1346558	250.000	271	
*	68 Chlorobenzene-D5	117	11.804	11.804	(1.000)	1651300	50.0000		
	69 Chlorobenzene	112	11.825	11.825	(1.002)	1219626	50.0000	49.3	
	70 1-Chlorohexane	91	11.854	11.861	(1.004)	542211	50.0000	44.7	
	71 Ethylbenzene	106	11.897	11.904	(1.008)	648476	50.0000	47.8	
	72 1,1,1,2-Tetrachloroethane	131	11.940	11.940	(1.012)	395837	50.0000	46.2	
	73 m+p-Xylenes	106	12.111	12.111	(1.026)	1615650	100.000	97.9	
	74 o-Xylene	106	12.683	12.683	(1.075)	793706	50.0000	50.2	
	75 Styrene	104	12.755	12.755	(1.081)	1365354	50.0000	51.0	
	76 Bromoform	173	12.755	12.755	(1.081)	305181	50.0000	51.7	
	77 Isopropylbenzene	105	13.098	13.098	(0.887)	1949066	50.0000	46.9	
$	78 P-Bromofluorobenzene	95	13.427	13.427	(1.820)	844247	50.0000	52.5	
	79 cis-1,4-Dichloro-2-Butene	53	13.548	13.548	(0.917)	196714	50.0000	49.5	
	86 trans-1,4-Dichloro-2-Butene	53	13.934	13.942	(0.943)	160793	50.0000	53.5	
	80 Bromobenzene	156	13.534	13.527	(0.916)	505479	50.0000	46.4	
	81 N-Propylbenzene	91	13.620	13.613	(0.922)	2380303	50.0000	47.5	
	82 1,1,2,2-Tetrachloroethane	83	13.727	13.727	(0.929)	515891	50.0000	47.9	

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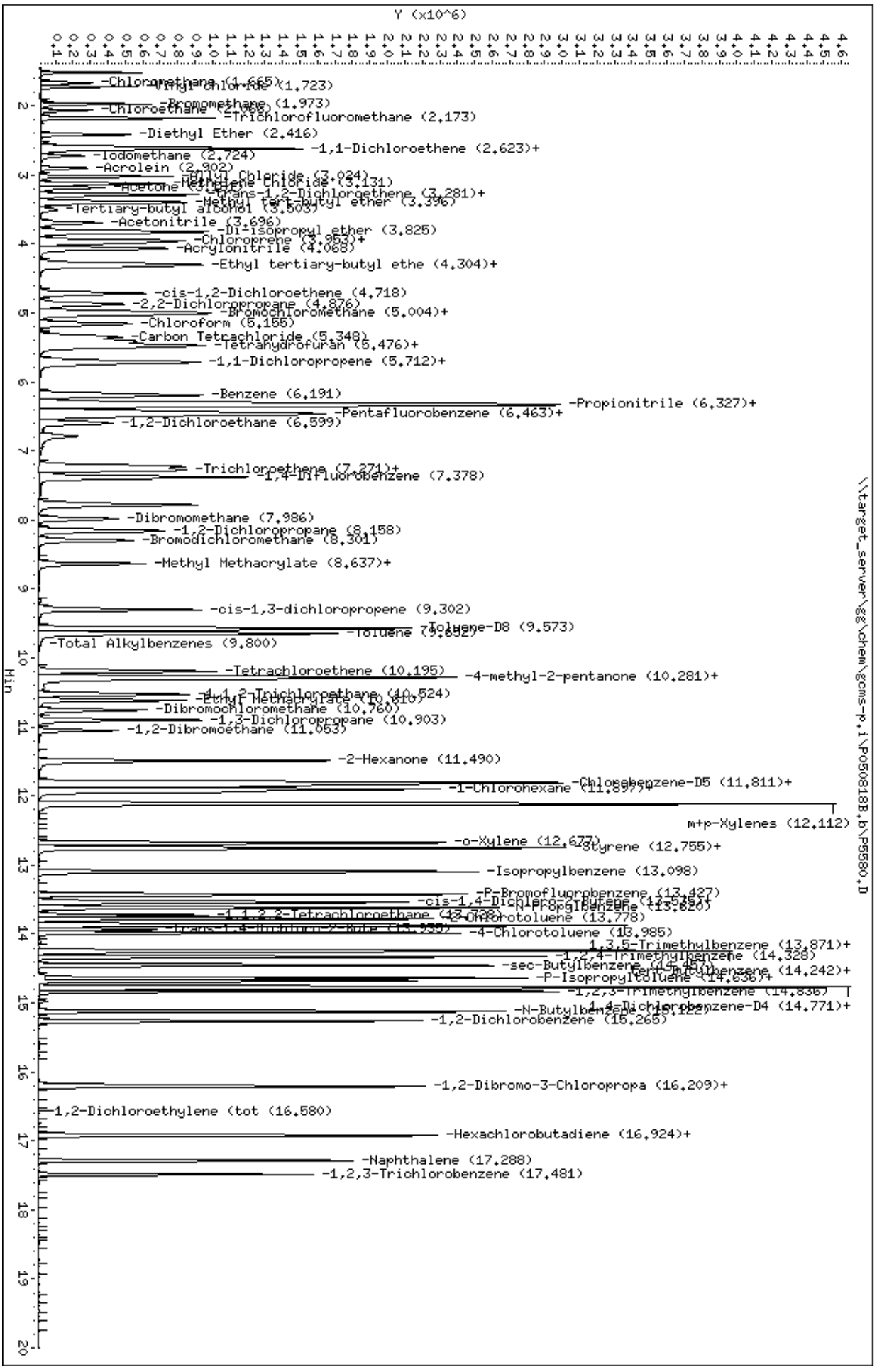
Report Date: 18-May-2018 13:42

	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	13.877	13.877	(0.939)	1687758	50.0000	47.6	
83	2-Chlorotoluene	91	13.777	13.777	(0.933)	1410113	50.0000	46.4	
84	1,2,3-Trichloropropane	75	13.863	13.856	(0.939)	466117	50.0000	47.2	
87	4-Chlorotoluene	91	13.984	13.985	(0.947)	1493817	50.0000	46.1	
88	tert-Butylbenzene	119	14.242	14.242	(0.964)	1624931	50.0000	47.5	
89	Pentachloroethane	165	14.249	14.249	(0.965)	247962	50.0000	49.8	
90	1,2,4-Trimethylbenzene	105	14.328	14.335	(0.970)	1774008	50.0000	48.4	
92	P-Isopropyltoluene	119	14.635	14.635	(0.991)	1688405	50.0000	47.5	
93	1,3-Dichlorobenzene	146	14.678	14.678	(0.994)	931699	50.0000	48.2	
* 94	1,4-Dichlorobenzene-D4	152	14.771	14.771	(1.000)	980650	50.0000		
95	1,4-Dichlorobenzene	146	14.785	14.785	(1.001)	968473	50.0000	47.2	
97	N-Butylbenzene	91	15.121	15.122	(1.024)	1501056	50.0000	47.0	
91	sec-Butylbenzene	105	14.456	14.457	(0.979)	2031865	50.0000	47.0	
99	1,2-Dichlorobenzene	146	15.264	15.265	(1.033)	885883	50.0000	47.3	
100	1,2-Dibromo-3-Chloropropane	157	16.180	16.172	(1.095)	105282	50.0000	47.8	
101	1,3,5-Trichlorobenzene	180	16.208	16.207	(1.097)	660217	50.0000	47.4	
102	Hexachlorobutadiene	225	16.909	16.908	(1.145)	222360	50.0000	45.0	
103	1,2,4-Trichlorobenzene	180	16.930	16.922	(1.146)	584862	50.0000	47.3	
96	1,2,3-Trimethylbenzene	105	14.835	14.835	(1.004)	1849500	50.0000	48.2	
104	Naphthalene	128	17.288	17.288	(1.170)	1292361	50.0000	51.4	
105	1,2,3-Trichlorobenzene	180	17.488	17.488	(1.184)	481967	50.0000	54.9	
17	Methyl Acetate	43	3.302	3.302	(0.513)	305204	50.0000	49.6	
46	Methylcyclohexane	83	7.228	7.228	(1.123)	615186	50.0000	47.3	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Date : 08-MAY-2018 09:48
Client ID:
Sample Info: WG227830-4,SL3808
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\P050818B.b\P5580.D
Y (x10^6)
Min
-Chloromethane (1.665)
-Vinyl Chloride (1.723)
-Bromomethane (1.973)
-Chloroethane (2.068)
-Trichlorofluoromethane (2.173)
-Diethyl Ether (2.416)
-1,1-Dichloroethene (2.623)+
-Iodomethane (2.724)
-Acrolein (2.902)
-Allyl Chloride (3.024)
-Methylene Chloride (3.131)
-Acetone (3.181)
-trans-1,2-Dichloroethene (3.281)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.503)
-Acetonitrile (3.696)
-Di-isopropyl ether (3.825)
-Chloroprene (3.958)+
-Acrylonitrile (4.068)
-Ethyl tertiary-butyl ethe (4.304)+
-cis-1,2-Dichloroethene (4.718)
-2,2-Dichloropropane (4.876)
-Bromochloromethane (5.004)+
-Chloroform (5.155)
-Carbon Tetrachloride (5.348)
-Tetrahydrofuran (5.476)+
-1,1-Dichloropropene (5.712)+
-Benzene (6.191)
-Propionitrile (6.327)+
-Pentafluorobenzene (6.463)+
-1,2-Dichloroethane (6.599)
-Trichloroethene (7.271)+
-1,4-Difluorobenzene (7.378)
-Dibromomethane (7.986)
-1,2-Dichloropropane (8.158)
-Bromodichloromethane (8.301)
-Methyl Methacrylate (8.637)+
-cis-1,3-dichloropropene (9.302)
-Toluene-D8 (9.573)
-Toluene (9.682)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.195)
-4-methyl-2-pentanone (10.281)+
-1,1,2-Trichloroethane (10.524)
-Ethyl Methacrylate (10.610)
-Dibromochloromethane (10.760)
-1,3-Dichloropropane (10.903)
-1,2-Dibromoethane (11.053)
-2-Hexanone (11.490)
-Chlorobenzene-D5 (11.811)+
-1-Chlorohexane (11.897)+
m+p-Xylenes (12.112)
-o-Xylene (12.477)
-Styrene (12.755)+
-Isopropylbenzene (13.098)
-P-Bromofluorobenzene (13.427)
-cis-1,4-Dichloro-2-Butene (13.529)+
-N-Propylbenzene (13.620)
-1,1,2,2-Tetrachloroethane (13.738)
-2-Chlorotoluene (13.778)
-trans-1,4-Dichloro-2-Bute (13.938)
-4-Chlorotoluene (13.985)
-1,3,5-Trimethylbenzene (13.871)+
-1,2,4-Trimethylbenzene (14.328)
-sec-Butylbenzene (14.467)
-tert-Butylbenzene (14.242)+
-P-Isopropyltoluene (14.636)+
-1,2,3-Trimethylbenzene (14.836)
-1,4-Dichlorobenzene-D4 (14.771)+
-N-Butylbenzene (15.122)
-1,2-Dichlorobenzene (15.265)
-1,2-Dibromo-3-Chloropropa (16.209)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.924)+
-Naphthalene (17.288)
-1,2,3-Trichlorobenzene (17.481)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227830-5
Analytical Date: 05/08/18 19:53
Lab File ID : P5597.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.37799	0.37799	0.010	-12.34920	20.00000	Averaged	
2	Chloromethane	0.41298	0.37803	0.37803	0.100	-8.46351	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.43015	0.43015	0.010	-4.75526	20.00000	Averaged	
4	Bromomethane	50.00000	57.98166	0.24035	0.010	15.96332	20.00000	Quadratic	
5	Chloroethane	0.25280	0.24295	0.24295	0.010	-3.89629	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.72705	0.72705	0.010	-9.18958	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.29208	0.29208	0.100	-12.32081	20.00000	Averaged	
9	Freon-113	0.32070	0.29028	0.29028	0.010	-9.48499	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.00622	1.00622	0.010	-10.68276	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.37487	0.37487	0.010	-12.65960	20.00000	Averaged	
15	Acetone	0.10305	0.10198	0.10198	0.010	-1.04217	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.35456	0.35456	0.010	-11.52823	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.06034	1.06034	0.010	-9.56382	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.66450	0.66450	0.100	-13.44983	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.40592	0.40592	0.010	-5.41457	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.32920	0.32920	0.010	-39.12394	20.00000	Averaged	*
29	Bromochloromethane	0.19074	0.18269	0.18269	0.010	-4.21837	20.00000	Averaged	
31	Chloroform	0.75331	0.67987	0.67987	0.010	-9.74842	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.30548	0.30548	0.010	-12.65641	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.58936	0.58936	0.010	-12.47162	20.00000	Averaged	
36	2-Butanone	0.16702	0.17618	0.17618	0.010	5.48846	20.00000	Averaged	
37	1,1-Dichloropropene	0.37972	0.34739	0.34739	0.010	-8.51298	20.00000	Averaged	
38	Benzene	1.05328	1.01461	1.01461	0.010	-3.67185	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.37426	0.37426	0.010	-9.09670	20.00000	Averaged	
47	Trichloroethene	0.25959	0.24559	0.24559	0.010	-5.39499	20.00000	Averaged	
49	Dibromomethane	0.15699	0.15870	0.15870	0.010	1.08416	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26029	0.26029	0.010	-1.86764	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.34330	0.34330	0.010	-5.48467	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.42160	0.42160	0.010	-7.26490	20.00000	Averaged	
59	Toluene	0.66226	0.64157	0.64157	0.010	-3.12372	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.18222	0.18222	0.010	-9.85513	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.25295	0.25295	0.010	11.54766	20.00000	Averaged	
62	trans-1,3-Dichloropropene	50.00000	42.42285	0.37357	0.010	-15.15430	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.13252	0.20243	0.010	0.26505	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.23293	0.23293	0.010	-8.20893	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.44763	0.44763	0.010	-3.69169	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.25475	0.25475	0.010	5.46968	20.00000	Averaged	
67	2-Hexanone	0.15031	0.16777	0.16777	0.010	11.61496	20.00000	Averaged	
69	Chlorobenzene	0.74849	0.71736	0.71736	0.300	-4.15874	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.38475	0.38475	0.010	-6.41245	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	45.16116	0.23400	0.010	-9.67768	20.00000	Linear	

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 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227830-5
Analytical Date: 05/08/18 19:53
Lab File ID : P5597.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.48791	0.48791	0.010	-2.35485	20.00000	Averaged
74 o-Xylene	0.47829	0.46733	0.46733	0.010	-2.29228	20.00000	Averaged
75 Styrene	0.81074	0.80823	0.80823	0.010	-0.30873	20.00000	Averaged
76 Bromoform	0.17862	0.16978	0.16978	0.100	-4.94736	20.00000	Averaged
77 Isopropylbenzene	2.11666	1.89652	1.89652	0.010	-10.40040	20.00000	Averaged
80 Bromobenzene	0.55530	0.50741	0.50741	0.010	-8.62294	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.29439	2.29439	0.010	-10.10748	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.52018	0.52018	0.300	-5.26353	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.37973	1.37973	0.010	-10.93024	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.47590	0.47590	0.010	-5.51343	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.63615	1.63615	0.010	-9.42219	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.47090	1.47090	0.010	-10.92159	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.58816	1.58816	0.010	-8.93505	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.73237	1.73237	0.010	-7.28970	20.00000	Averaged
91 sec-Butylbenzene	2.20469	1.95899	1.95899	0.010	-11.14422	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.63807	1.63807	0.010	-9.60561	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.92766	0.92766	0.010	-5.77606	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	0.96016	0.96016	0.010	-8.24723	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.41110	1.41110	0.010	-13.26370	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.90930	0.90930	0.010	-4.83188	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	47.39591	0.10642	0.010	-5.20818	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.20716	0.20716	0.010	-17.85728	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	45.23421	0.56917	0.010	-9.53157	20.00000	Linear
104 Naphthalene	50.00000	50.50931	1.29569	0.010	1.01862	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.47636	0.47636	0.010	6.52045	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.46918	0.46918	0.010	-5.11997	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.60973	0.60973	0.010	-6.49260	20.00000	Averaged
58 Toluene-D8	1.18448	1.20029	1.20029	0.010	1.33423	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.54782	0.54782	0.010	4.30809	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227830-5
Lab File ID : P5597.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3808
Analytical Date: 05/08/18 19:53
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5597.D
Report Date: 18-May-2018 13:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5597.D
Lab Smp Id: WG227830-5
Inj Date : 08-MAY-2018 19:53 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227830-5,SL3808
Misc Info : WG227830,WG227568-4,SL3808-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.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

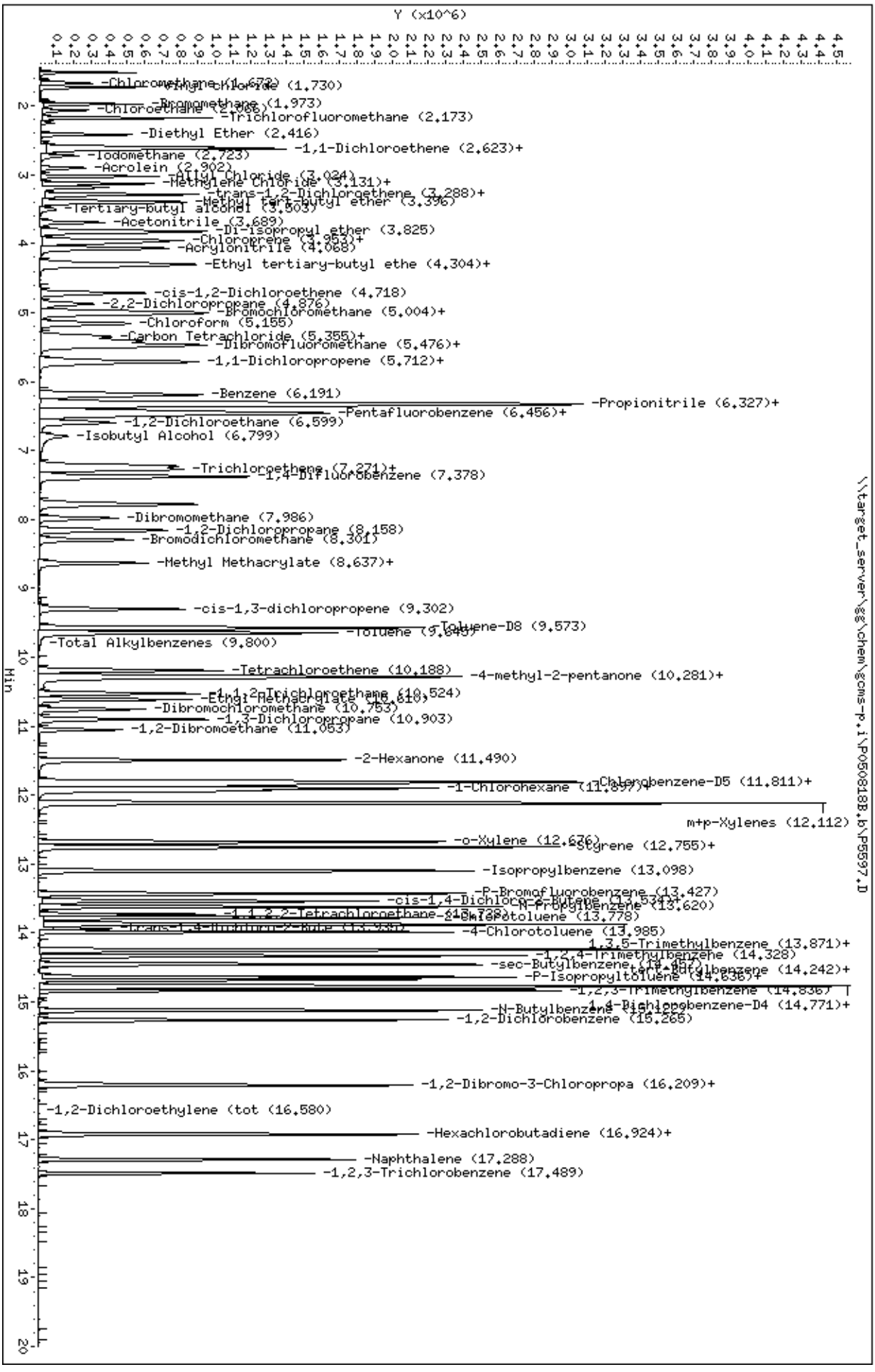
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.515	1.515	(0.235)	372871	50.0000	43.8	
2	Chloromethane	50	1.665	1.665	(0.259)	372903	50.0000	45.8	
3	Vinyl chloride	62	1.722	1.729	(0.267)	424317	50.0000	47.6	
4	Bromomethane	94	1.972	1.987	(0.306)	237095	50.0000	58.0	
5	Chloroethane	64	2.065	2.080	(0.321)	239658	50.0000	48.0	
6	Trichlorofluoromethane	101	2.172	2.180	(0.337)	717198	50.0000	45.4	
7	Diethyl Ether	59	2.416	2.416	(0.375)	270720	50.0000	47.4	
19	Tertiary-butyl alcohol	59	3.509	3.510	(0.545)	111719	250.000	226	
8	1,1-Dichloroethene	96	2.594	2.587	(0.403)	288125	50.0000	43.8	
10	Carbon Disulfide	76	2.623	2.623	(0.407)	992580	50.0000	44.6	
9	Freon-113	151	2.623	2.637	(0.407)	286344	50.0000	45.2	
11	Iodomethane	142	2.723	2.730	(0.423)	282532	50.0000	58.8	
12	Acrolein	56	2.902	2.902	(0.451)	260498	250.000	233	
14	Methylene Chloride	84	3.131	3.131	(0.486)	369791	50.0000	43.7	
15	Acetone	43	3.181	3.188	(0.494)	502987	250.000	247	
45	Isobutyl Alcohol	43	6.799	6.792	(1.055)	187423	1000.00	787	
16	trans-1,2-Dichloroethene	96	3.288	3.281	(0.510)	349755	50.0000	44.2	
13	Allyl Chloride	41	3.023	3.016	(0.469)	435366	50.0000	39.6	
18	Methyl tert-butyl ether	73	3.395	3.395	(0.527)	1045973	50.0000	45.2	
20	Acetonitrile	41	3.695	3.696	(0.574)	512099	500.000	475	
21	Di-isopropyl ether	45	3.824	3.824	(0.594)	1141007	50.0000	43.4	
22	Chloroprene	53	3.953	3.960	(0.614)	566136	50.0000	42.9	
39	Propionitrile	54	6.298	6.298	(0.978)	640552	500.000	515	
40	Methacrylonitrile	41	6.327	6.327	(0.982)	2522087	500.000	502	

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5597.D
Report Date: 18-May-2018 13:43

	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	3.981	3.989	(0.618)	655491	50.0000	43.3	
	24 Acrylonitrile	52	4.067	4.067	(0.631)	671865	250.000	250	
	25 Ethyl tertiary-butyl ether	59	4.296	4.303	(0.667)	1055573	50.0000	43.1	
	26 Vinyl Acetate	43	4.325	4.325	(0.586)	859151	50.0000	49.3	
	27 cis-1,2-Dichloroethene	96	4.718	4.732	(0.732)	400420	50.0000	47.3	
	52 Methyl Methacrylate	41	8.636	8.643	(1.169)	350349	50.0000	52.1	
	28 2,2-Dichloropropane	77	4.875	4.890	(0.757)	324738	50.0000	30.4	
	29 Bromochloromethane	128	5.018	5.026	(0.779)	180214	50.0000	47.9	
	31 Chloroform	83	5.161	5.154	(0.801)	670655	50.0000	45.1	
	32 Carbon Tetrachloride	117	5.354	5.347	(0.725)	469279	50.0000	43.7	
	33 Tetrahydrofuran	42	5.411	5.419	(0.840)	576662	250.000	256	
$	34 Dibromofluoromethane	113	5.469	5.469	(0.849)	462817	50.0000	47.4	
	35 1,1,1-Trichloroethane	97	5.476	5.483	(0.850)	581374	50.0000	43.8	
	37 1,1-Dichloropropene	75	5.705	5.698	(0.772)	533661	50.0000	45.7	
	36 2-Butanone	43	5.719	5.741	(0.888)	868979	250.000	264	
	38 Benzene	78	6.191	6.184	(0.838)	1558636	50.0000	48.2	
*	41 Pentafluorobenzene	168	6.441	6.441	(1.000)	986446	50.0000		
	30 Cyclohexane	56	4.990	4.990	(0.775)	599544	50.0000	41.8	
	53 Ethyl Methacrylate	69	10.610	10.617	(1.437)	585369	50.0000	48.9	
$	42 1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	601464	50.0000	46.8	
	43 Tertiary-amyl methyl ether	73	6.477	6.463	(1.006)	964429	50.0000	44.4	
	44 1,2-Dichloroethane	62	6.598	6.591	(0.894)	574930	50.0000	45.4	
	47 Trichloroethene	95	7.278	7.264	(0.985)	377272	50.0000	47.3	
*	48 1,4-Difluorobenzene	114	7.385	7.385	(1.000)	1536197	50.0000		
	49 Dibromomethane	93	7.985	7.979	(1.081)	243789	50.0000	50.5	
	50 1,2-Dichloropropane	63	8.157	8.164	(1.105)	399855	50.0000	49.1	
	51 Bromodichloromethane	83	8.300	8.307	(1.124)	527373	50.0000	47.2	
	57 cis-1,3-dichloropropene	75	9.301	9.301	(1.259)	647665	50.0000	46.4	
	54 1,4-Dioxane	88	8.636	8.664	(1.169)	67545	1000.00	755	
$	58 Toluene-D8	98	9.573	9.573	(1.296)	1843875	50.0000	50.7	
	59 Toluene	92	9.644	9.652	(1.306)	985580	50.0000	48.4	
	61 4-methyl-2-pentanone	43	10.274	10.281	(1.391)	1942885	250.000	279	
	60 Tetrachloroethene	164	10.188	10.188	(0.863)	299247	50.0000	45.1	
	62 trans-1,3-Dichloropropene	75	10.309	10.302	(1.396)	573880	50.0000	42.4	
	63 1,1,2-Trichloroethane	83	10.524	10.531	(1.425)	310967	50.0000	50.1	
	64 Dibromochloromethane	129	10.753	10.767	(0.911)	382527	50.0000	45.9	
	65 1,3-Dichloropropane	76	10.903	10.896	(0.924)	735117	50.0000	48.2	
	66 1,2-Dibromoethane	107	11.053	11.053	(1.497)	391346	50.0000	52.7	
	67 2-Hexanone	43	11.489	11.496	(0.973)	1377563	250.000	279	
*	68 Chlorobenzene-D5	117	11.804	11.804	(1.000)	1642230	50.0000		
	69 Chlorobenzene	112	11.825	11.825	(1.002)	1178076	50.0000	47.9	
	70 1-Chlorohexane	91	11.854	11.861	(1.004)	525129	50.0000	43.5	
	71 Ethylbenzene	106	11.897	11.904	(1.008)	631854	50.0000	46.8	
	72 1,1,1,2-Tetrachloroethane	131	11.932	11.940	(1.011)	384286	50.0000	45.2	
	73 m+p-Xylenes	106	12.111	12.111	(1.026)	1602516	100.000	97.6	
	74 o-Xylene	106	12.676	12.683	(1.074)	767459	50.0000	48.8	
	75 Styrene	104	12.755	12.755	(1.081)	1327303	50.0000	49.8	
	76 Bromoform	173	12.755	12.755	(1.081)	278821	50.0000	47.5	
	77 Isopropylbenzene	105	13.098	13.098	(0.887)	1887400	50.0000	44.8	
$	78 P-Bromofluorobenzene	95	13.427	13.427	(1.818)	841555	50.0000	52.2	
	79 cis-1,4-Dichloro-2-Butene	53	13.548	13.548	(0.917)	115410	50.0000	28.6	
	86 trans-1,4-Dichloro-2-Butene	53	13.934	13.942	(0.943)	93777	50.0000	30.8	
	80 Bromobenzene	156	13.534	13.527	(0.916)	504972	50.0000	45.7	
	81 N-Propylbenzene	91	13.620	13.613	(0.922)	2283358	50.0000	44.9	

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5597.D
Report Date: 18-May-2018 13:43

	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	13.727	13.727	(0.929)	517681	50.0000	47.4	
85	1,3,5-Trimethylbenzene	105	13.877	13.877	(0.939)	1628281	50.0000	45.3	
83	2-Chlorotoluene	91	13.777	13.777	(0.933)	1373098	50.0000	44.5	
84	1,2,3-Trichloropropane	75	13.863	13.856	(0.939)	473612	50.0000	47.2	
87	4-Chlorotoluene	91	13.984	13.985	(0.947)	1463824	50.0000	44.5	
88	tert-Butylbenzene	119	14.242	14.242	(0.964)	1580523	50.0000	45.5	
89	Pentachloroethane	165	14.249	14.249	(0.965)	232418	50.0000	46.0	
90	1,2,4-Trimethylbenzene	105	14.335	14.335	(0.970)	1724039	50.0000	46.4	
92	P-Isopropyltoluene	119	14.635	14.635	(0.991)	1630192	50.0000	45.2	
93	1,3-Dichlorobenzene	146	14.678	14.678	(0.994)	923202	50.0000	47.1	
* 94	1,4-Dichlorobenzene-D4	152	14.771	14.771	(1.000)	995190	50.0000		
95	1,4-Dichlorobenzene	146	14.785	14.785	(1.001)	955543	50.0000	45.9	
97	N-Butylbenzene	91	15.121	15.122	(1.024)	1404315	50.0000	43.4	
91	sec-Butylbenzene	105	14.456	14.457	(0.979)	1949568	50.0000	44.4	
99	1,2-Dichlorobenzene	146	15.264	15.265	(1.033)	904930	50.0000	47.6	
100	1,2-Dibromo-3-Chloropropane	157	16.180	16.172	(1.095)	105912	50.0000	47.4	
101	1,3,5-Trichlorobenzene	180	16.208	16.207	(1.097)	647173	50.0000	45.8	
102	Hexachlorobutadiene	225	16.909	16.908	(1.145)	206168	50.0000	41.1	
103	1,2,4-Trichlorobenzene	180	16.930	16.922	(1.146)	566434	50.0000	45.2	
96	1,2,3-Trimethylbenzene	105	14.835	14.835	(1.004)	1797821	50.0000	46.2	
104	Naphthalene	128	17.288	17.288	(1.170)	1289456	50.0000	50.5	
105	1,2,3-Trichlorobenzene	180	17.488	17.488	(1.184)	474073	50.0000	53.3	
17	Methyl Acetate	43	3.302	3.302	(0.513)	300868	50.0000	47.1	
46	Methylcyclohexane	83	7.220	7.228	(1.121)	584112	50.0000	43.2	



Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5597.D
Date : 08-MAY-2018 19:53
Client ID:
Sample Info: WG227830-5,SL3808
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\P050818B.b\P5597.D

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\PB018a.D

Date : 03-MAY-2018 12:30

Client ID:

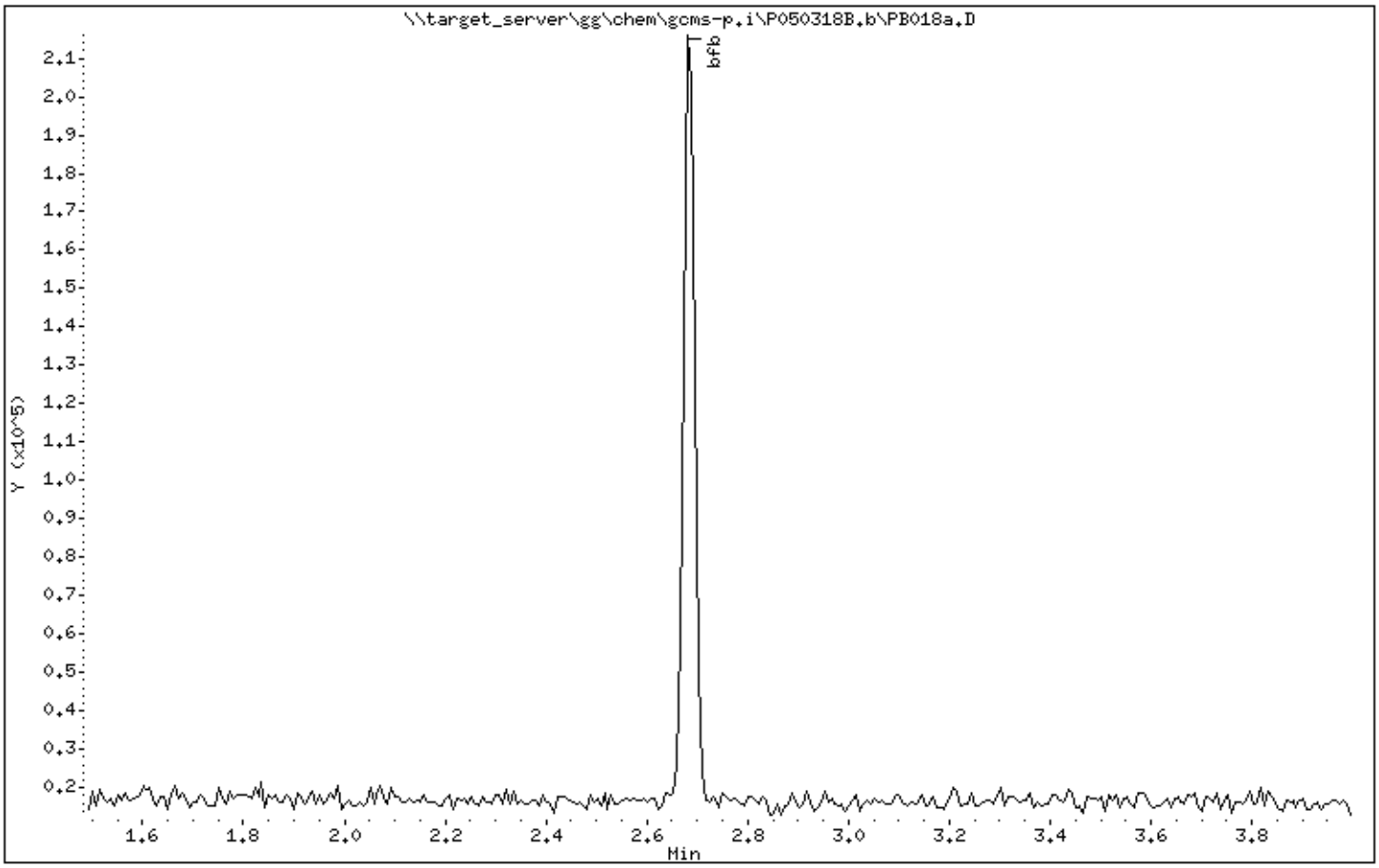
Instrument: gcms-p.i

Sample Info: WG227568-7,SL3808

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\PB018a.D

Date : 03-MAY-2018 12:30

Client ID:

Instrument: gcms-p.i

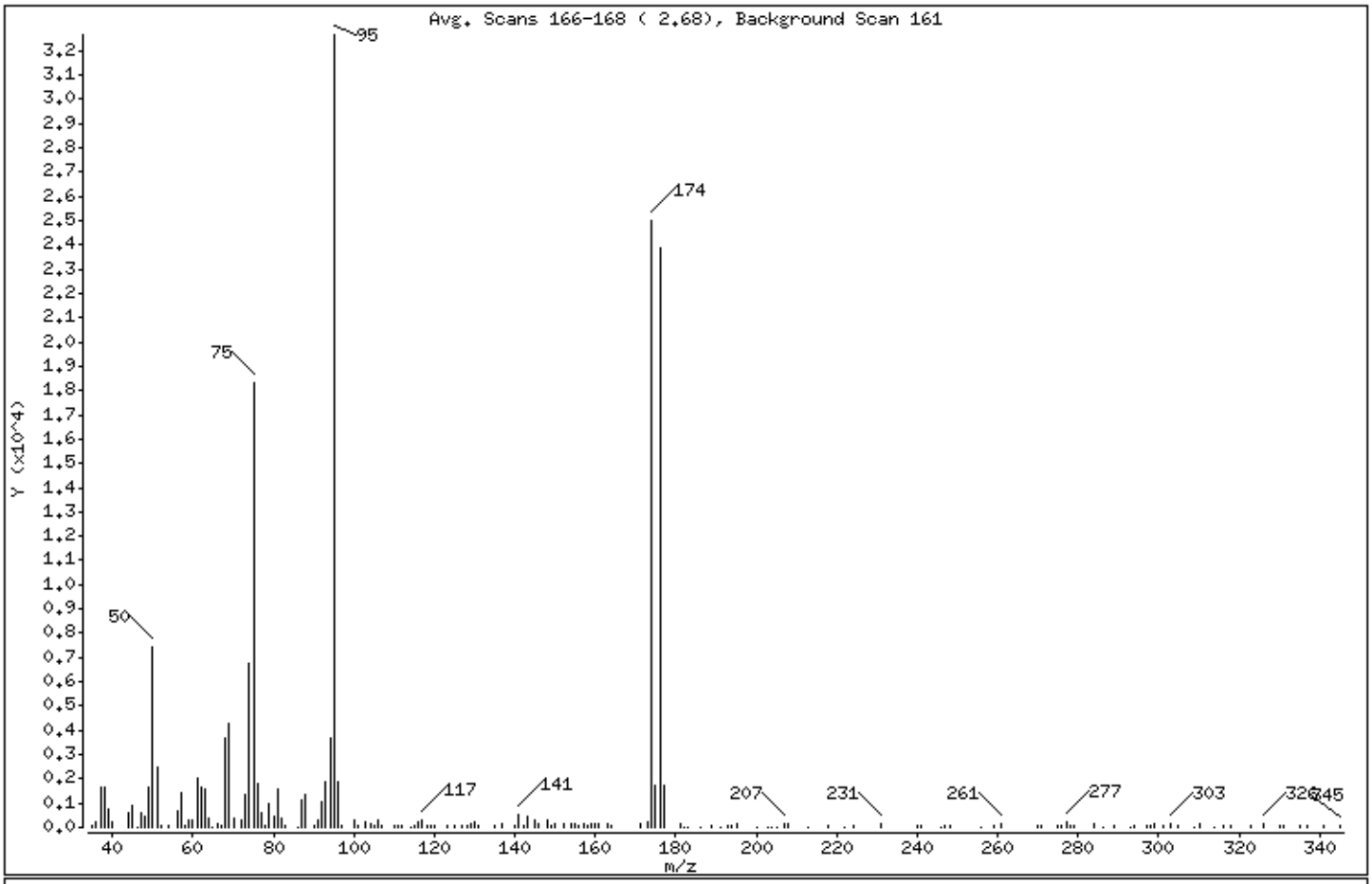
Sample Info: WG227568-7,SL3808

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	22.65
75	30.00 - 60.00% of mass 95	56.00
96	5.00 - 9.00% of mass 95	5.64
173	Less than 2.00% of mass 174	0.78 (1.02)
174	Greater than 50.00% of mass 95	76.60
175	5.00 - 9.00% of mass 174	5.19 (6.78)
176	95.00 - 101.00% of mass 174	73.13 (95.46)
177	5.00 - 9.00% of mass 176	5.33 (7.29)

Date : 03-MAY-2018 12:30

Client ID: Instrument: gcms-p.i

Sample Info: WG227568-7,SL3808

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB018a.D
Spectrum: Avg. Scans 166-168 (2.68), Background Scan 161
Location of Maximum: 95.00
Number of points: 165

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	102	83.00	97	145.00	273	240.00	69
36.00	251	86.00	36	146.00	136	241.00	69
37.00	1619	87.00	1120	148.00	275	246.00	34
38.00	1622	88.00	1349	149.00	100	247.00	44
39.00	741	90.00	38	150.00	168	248.00	51
40.00	217	91.00	328	152.00	120	256.00	33
44.00	582	92.00	1082	154.00	147	259.00	45
45.00	872	93.00	1865	155.00	164	261.00	183
46.00	16	94.00	3658	156.00	83	270.00	67
47.00	601	95.00	32656	157.00	142	271.00	61
48.00	470	96.00	1843	158.00	38	275.00	59
49.00	1619	97.00	102	159.00	134	276.00	58
50.00	7396	100.00	272	160.00	132	277.00	241
51.00	2471	101.00	52	161.00	169	278.00	50
52.00	99	103.00	199	163.00	123	279.00	39
54.00	57	104.00	187	164.00	55	284.00	121
56.00	663	105.00	92	171.00	135	286.00	35
57.00	1449	106.00	318	173.00	255	289.00	39
58.00	48	107.00	107	174.00	25016	293.00	35
59.00	272	110.00	74	175.00	1695	294.00	63
60.00	292	111.00	70	176.00	23880	297.00	39
61.00	2041	112.00	56	177.00	1741	298.00	51
62.00	1630	114.00	36	181.00	129	299.00	140
63.00	1551	115.00	67	182.00	36	301.00	40
64.00	403	116.00	220	183.00	36	303.00	141
65.00	26	117.00	317	186.00	35	305.00	52
66.00	122	118.00	105	189.00	106	309.00	35
67.00	67	119.00	106	191.00	37	310.00	124
68.00	3652	120.00	72	193.00	63	314.00	37
69.00	4307	123.00	60	194.00	51	316.00	46
70.00	339	125.00	47	195.00	159	318.00	59
72.00	277	127.00	106	200.00	34	323.00	39
73.00	1335	128.00	83	203.00	36	326.00	143
74.00	6722	129.00	138	204.00	34	330.00	42
75.00	18288	130.00	242	205.00	36	331.00	100

Date : 03-MAY-2018 12:30

Client ID: Instrument: gcms-p.i

Sample Info: WG227568-7,SL3808

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB018a.D
Spectrum: Avg. Scans 166-168 (2.68), Background Scan 161
Location of Maximum: 95.00
Number of points: 165

m/z	Y	m/z	Y	m/z	Y	m/z	Y
76.00	1766	131.00	55	207.00	183	335.00	80
77.00	612	135.00	99	208.00	118	337.00	64
78.00	61	137.00	170	213.00	35	341.00	39
79.00	953	140.00	89	218.00	99	345.00	44
80.00	426	141.00	519	222.00	34		
81.00	1593	142.00	82	224.00	53		
82.00	383	143.00	484	231.00	125		

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\PB020a.D

Date : 04-MAY-2018 11:13

Client ID:

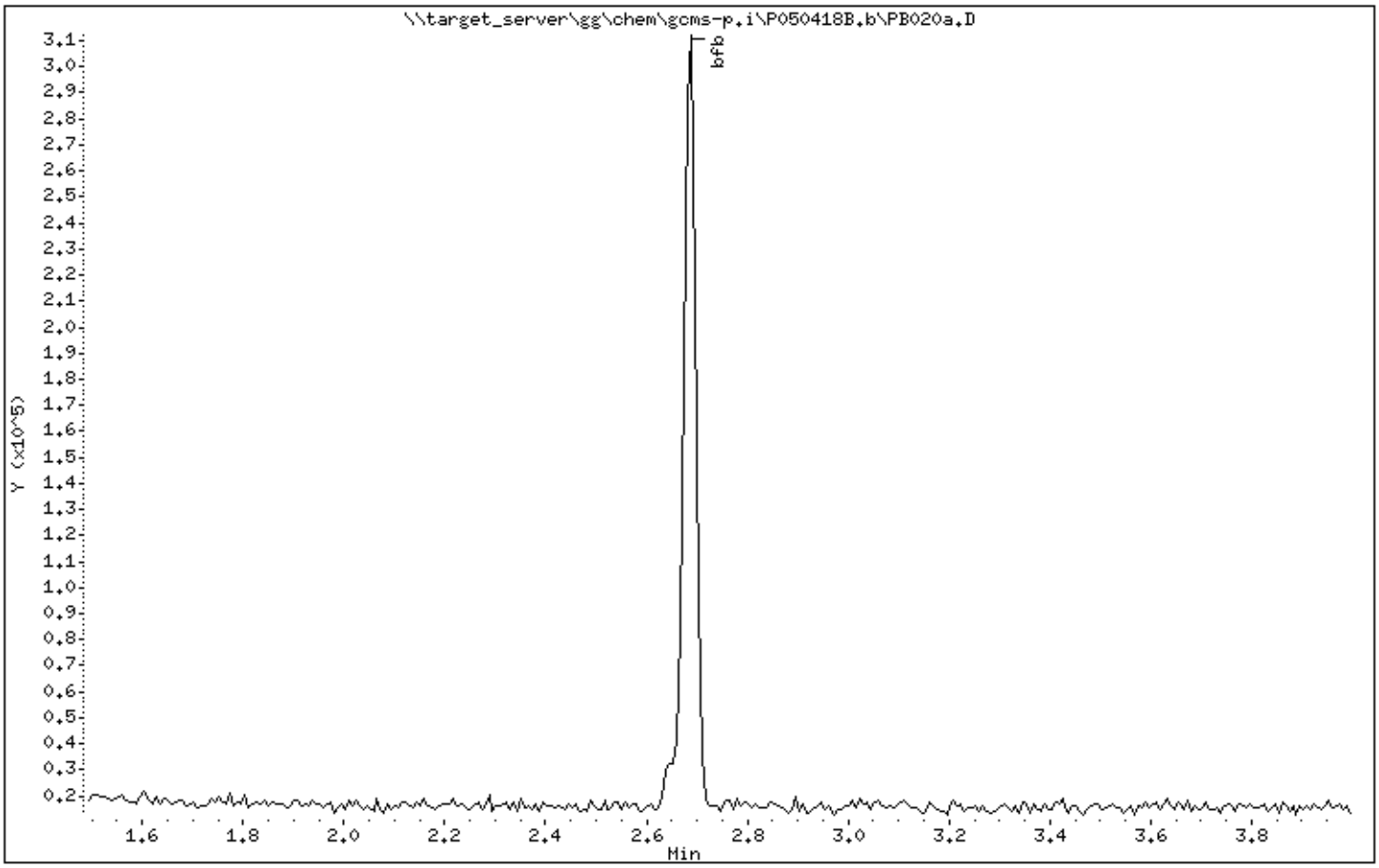
Instrument: gcms-p.i

Sample Info: WG227659-3,SL3808

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\PB020a.D

Date : 04-MAY-2018 11:13

Client ID:

Instrument: gcms-p.i

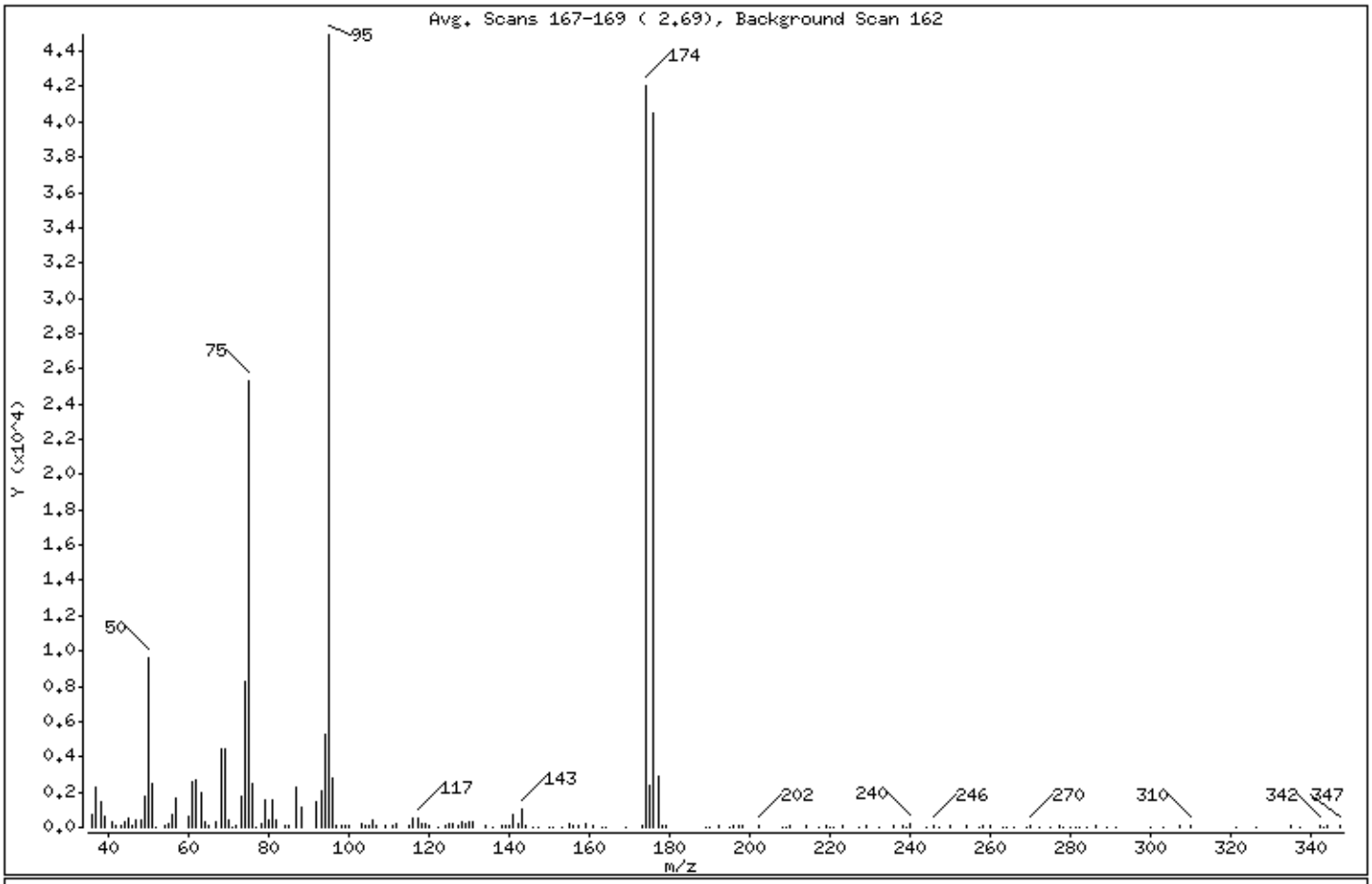
Sample Info: WG227659-3,SL3808

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	21.38
75	30.00 - 60.00% of mass 95	56.43
96	5.00 - 9.00% of mass 95	6.22
173	Less than 2.00% of mass 174	0.30 (0.32)
174	Greater than 50.00% of mass 95	93.65
175	5.00 - 9.00% of mass 174	5.39 (5.75)
176	95.00 - 101.00% of mass 174	90.12 (96.24)
177	5.00 - 9.00% of mass 176	6.53 (7.24)

Date : 04-MAY-2018 11:13

Client ID: Instrument: gcms-p.i

Sample Info: WG227659-3,SL3808

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB020a.D
Spectrum: Avg. Scans 167-169 (2.69), Background Scan 162
Location of Maximum: 95.00
Number of points: 167

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	689	84.00	135	142.00	191	232.00	35
37.00	2233	85.00	129	143.00	1078	236.00	84
38.00	1451	87.00	2237	144.00	150	238.00	75
39.00	595	88.00	1139	146.00	47	239.00	42
41.00	355	92.00	1436	147.00	37	240.00	199
42.00	104	93.00	2038	150.00	35	244.00	34
43.00	55	94.00	5301	151.00	47	246.00	85
44.00	259	95.00	44944	153.00	42	247.00	35
45.00	545	96.00	2797	155.00	165	250.00	64
46.00	137	97.00	113	156.00	131	254.00	62
47.00	391	98.00	143	157.00	132	257.00	34
48.00	438	99.00	53	159.00	184	258.00	77
49.00	1789	100.00	149	161.00	112	260.00	85
50.00	9611	103.00	165	163.00	13	263.00	40
51.00	2474	104.00	82	164.00	33	264.00	37
52.00	49	105.00	150	169.00	46	266.00	50
54.00	57	106.00	417	173.00	133	269.00	48
55.00	195	107.00	68	174.00	42088	270.00	86
56.00	772	109.00	101	175.00	2421	272.00	35
57.00	1692	111.00	97	176.00	40504	275.00	40
60.00	631	112.00	215	177.00	2934	277.00	83
61.00	2625	115.00	92	178.00	77	278.00	42
62.00	2644	116.00	548	179.00	76	280.00	33
63.00	1922	117.00	565	189.00	34	281.00	35
64.00	351	118.00	211	190.00	41	282.00	41
65.00	53	119.00	224	192.00	73	284.00	37
67.00	288	120.00	148	195.00	36	286.00	67
68.00	4465	122.00	8	196.00	71	289.00	35
69.00	4476	124.00	88	197.00	89	291.00	37
70.00	398	125.00	159	198.00	79	300.00	33
71.00	28	126.00	254	202.00	113	303.00	38
72.00	115	127.00	96	208.00	43	307.00	73
73.00	1762	128.00	303	209.00	33	310.00	76
74.00	8237	129.00	194	210.00	82	321.00	33
75.00	25360	130.00	290	214.00	70	326.00	34

Date : 04-MAY-2018 11:13

Client ID: Instrument: gcms-p.i

Sample Info: WG227659-3,SL3808

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB020a.D
Spectrum: Avg. Scans 167-169 (2.69), Background Scan 162
Location of Maximum: 95.00
Number of points: 167

m/z	Y	m/z	Y	m/z	Y	m/z	Y
76.00	2482	131.00	262	217.00	40	335.00	56
77.00	22	134.00	88	219.00	125	337.00	40
78.00	228	136.00	42	220.00	46	342.00	78
79.00	1572	138.00	80	221.00	38	343.00	37
80.00	390	139.00	137	223.00	71	344.00	54
81.00	1570	140.00	102	227.00	43	347.00	80
82.00	407	141.00	724	229.00	105		

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\PB021a.D

Date : 07-MAY-2018 07:45

Client ID:

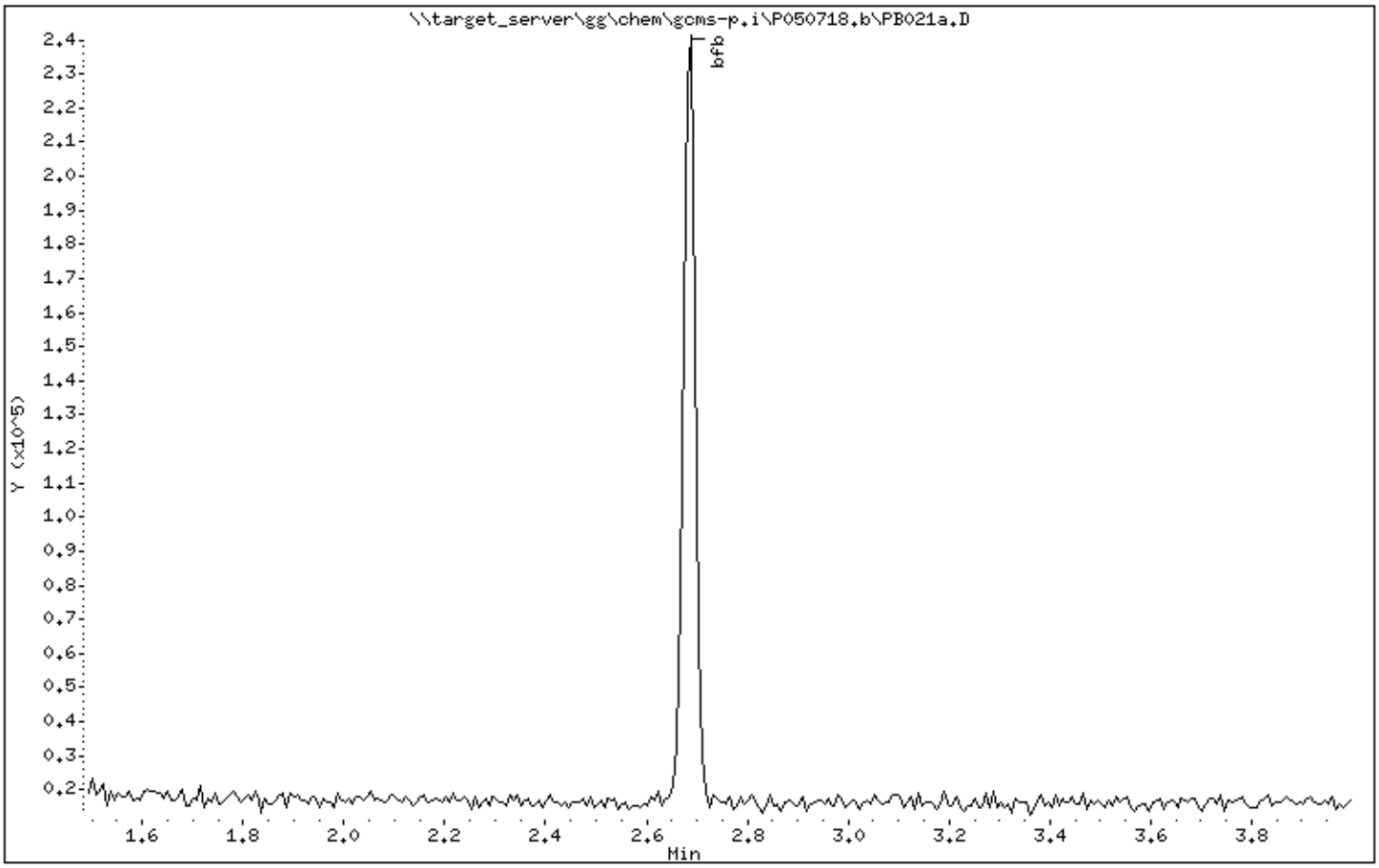
Instrument: gcms-p.i

Sample Info: WG227763-3,SL3808

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\PB021a.D

Date : 07-MAY-2018 07:45

Client ID:

Instrument: gcms-p.i

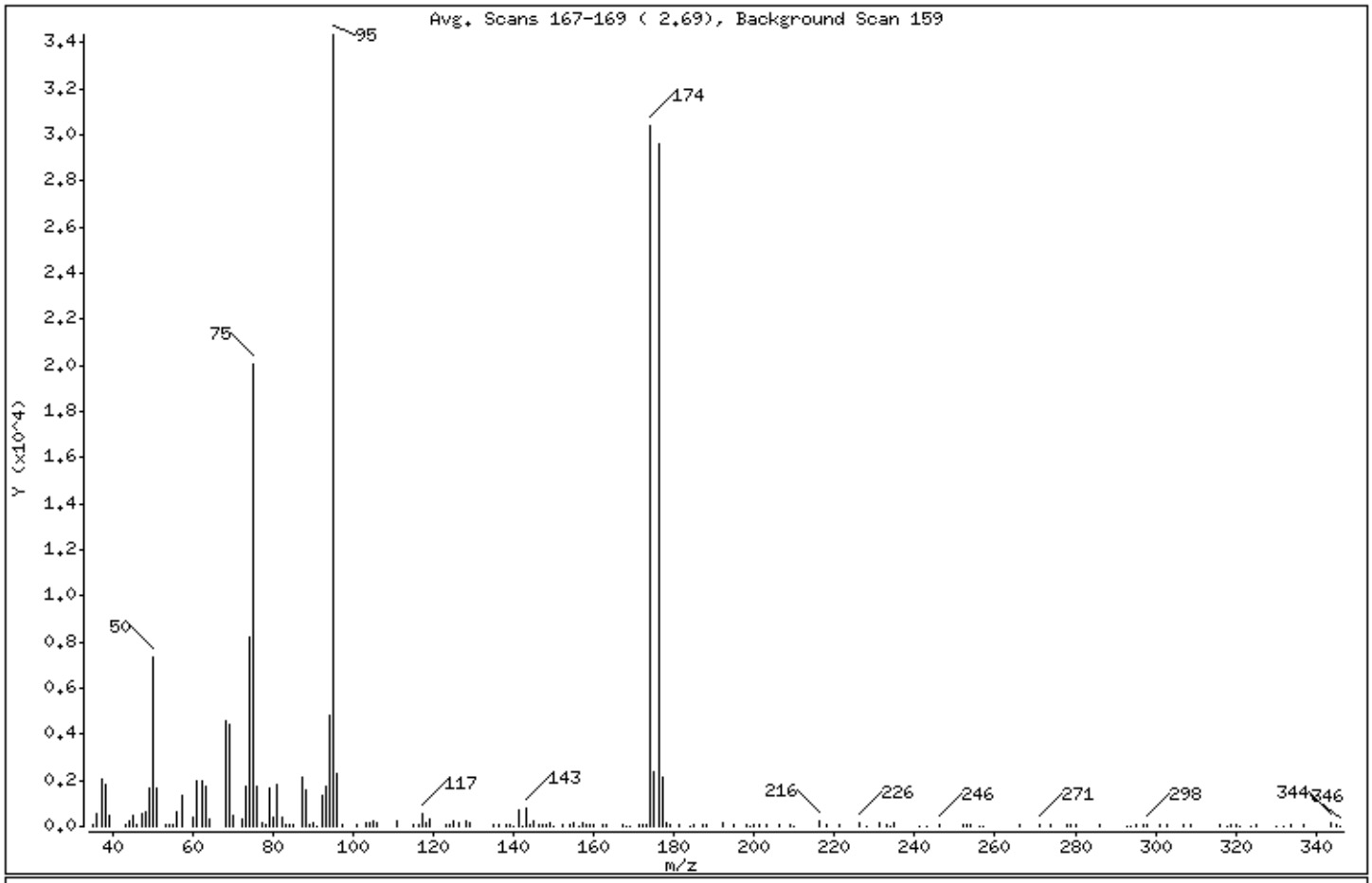
Sample Info: WG227763-3,SL3808

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	21.27
75	30.00 - 60.00% of mass 95	58.44
96	5.00 - 9.00% of mass 95	6.76
173	Less than 2.00% of mass 174	0.17 (0.19)
174	Greater than 50.00% of mass 95	88.47
175	5.00 - 9.00% of mass 174	6.86 (7.75)
176	95.00 - 101.00% of mass 174	86.26 (97.50)
177	5.00 - 9.00% of mass 176	6.22 (7.21)

Date : 07-MAY-2018 07:45

Client ID: Instrument: gcms-p.i

Sample Info: WG227763-3,SL3808

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB021a.D
Spectrum: Avg. Scans 167-169 (2.69), Background Scan 159
Location of Maximum: 95.00
Number of points: 168

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	76	89.00	54	155.00	191	235.00	119
36.00	537	90.00	156	156.00	35	241.00	39
37.00	2072	91.00	34	157.00	179	243.00	36
38.00	1808	92.00	1359	158.00	64	246.00	87
39.00	479	93.00	1739	159.00	87	252.00	77
43.00	55	94.00	4782	160.00	47	253.00	42
44.00	224	95.00	34344	162.00	73	254.00	79
45.00	437	96.00	2320	163.00	76	256.00	36
46.00	82	97.00	68	167.00	57	257.00	38
47.00	549	101.00	72	168.00	14	266.00	48
48.00	600	103.00	121	169.00	36	271.00	77
49.00	1672	104.00	156	171.00	46	274.00	48
50.00	7304	105.00	224	172.00	109	278.00	50
51.00	1660	106.00	148	173.00	57	279.00	45
53.00	91	111.00	212	174.00	30384	280.00	68
54.00	70	115.00	111	175.00	2356	286.00	40
55.00	45	116.00	55	176.00	29624	293.00	38
56.00	655	117.00	531	177.00	2137	294.00	37
57.00	1309	118.00	180	178.00	129	295.00	53
60.00	386	119.00	303	179.00	80	297.00	40
61.00	1997	123.00	83	181.00	54	298.00	81
62.00	1964	124.00	75	184.00	38	301.00	40
63.00	1702	125.00	210	185.00	112	303.00	44
64.00	298	126.00	172	187.00	44	307.00	62
68.00	4599	128.00	268	188.00	72	309.00	53
69.00	4407	129.00	183	192.00	143	316.00	75
70.00	503	135.00	84	195.00	94	318.00	35
72.00	293	136.00	48	198.00	84	319.00	71
73.00	1735	138.00	40	199.00	37	320.00	45
74.00	8242	139.00	109	200.00	47	321.00	39
75.00	20072	140.00	39	201.00	98	324.00	33
76.00	1749	141.00	693	203.00	60	325.00	41
77.00	191	142.00	36	206.00	82	330.00	34
78.00	58	143.00	814	209.00	53	332.00	35
79.00	1680	144.00	58	210.00	35	334.00	97

Date : 07-MAY-2018 07:45

Client ID: Instrument: gcms-p.i

Sample Info: WG227763-3,SL3808

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB021a.D
Spectrum: Avg. Scans 167-169 (2.69), Background Scan 159
Location of Maximum: 95.00
Number of points: 168

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	369	145.00	222	216.00	233	337.00	91
81.00	1829	146.00	118	218.00	40	344.00	128
82.00	380	147.00	88	221.00	74	345.00	46
83.00	66	148.00	78	226.00	147	346.00	36
84.00	48	149.00	126	228.00	11		
85.00	65	150.00	10	231.00	123		
87.00	2138	152.00	65	233.00	55		
88.00	1589	154.00	46	234.00	17		

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\PB023a.D

Date : 08-MAY-2018 09:18

Client ID:

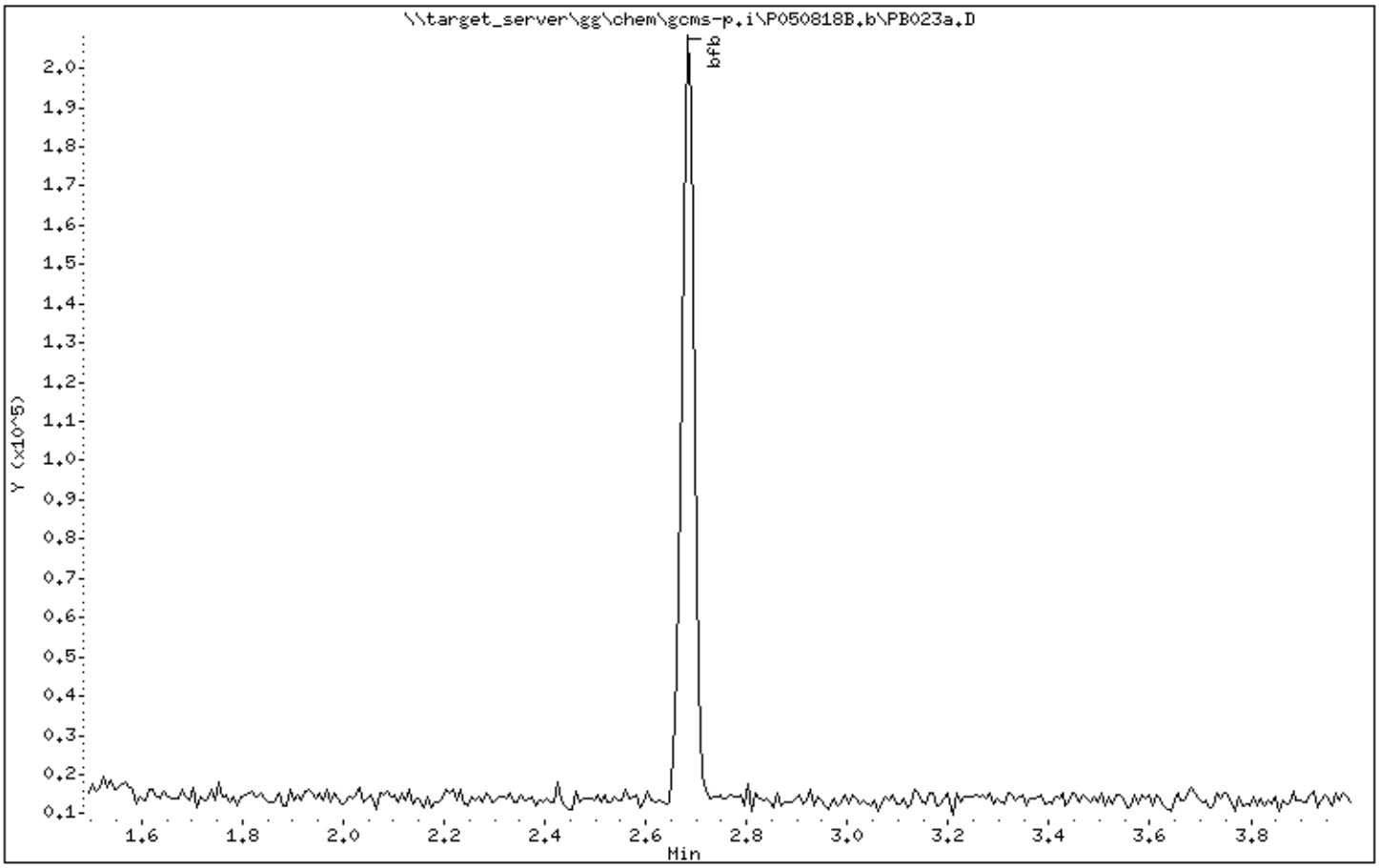
Instrument: gcms-p.i

Sample Info: WG227830-3,SL3808

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\PB023a.D

Date : 08-MAY-2018 09:18

Client ID:

Instrument: gcms-p.i

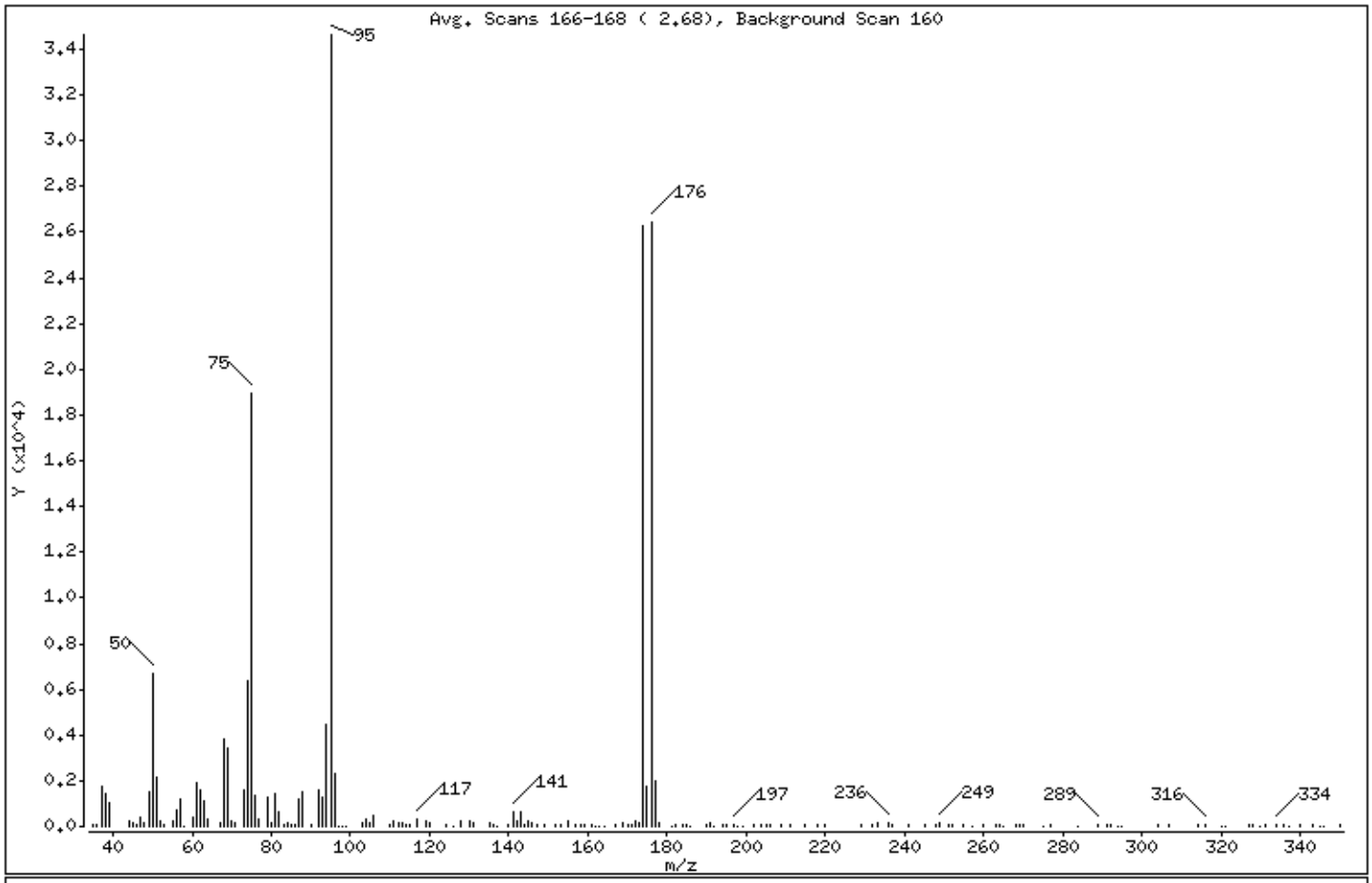
Sample Info: WG227830-3,SL3808

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	19.41
75	30.00 - 60.00% of mass 95	54.65
96	5.00 - 9.00% of mass 95	6.67
173	Less than 2.00% of mass 174	0.36 (0.48)
174	Greater than 50.00% of mass 95	75.98
175	5.00 - 9.00% of mass 174	5.02 (6.61)
176	95.00 - 101.00% of mass 174	76.30 (100.43)
177	5.00 - 9.00% of mass 176	5.67 (7.43)

Date : 08-MAY-2018 09:18

Client ID: Instrument: gcms-p.i

Sample Info: WG227830-3,SL3808

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB023a.D
Spectrum: Avg. Scans 166-168 (2.68), Background Scan 160
Location of Maximum: 95.00
Number of points: 172

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	88	90.00	82	159.00	102	245.00	43
36.00	73	92.00	1598	161.00	46	248.00	56
37.00	1775	93.00	1259	162.00	21	249.00	130
38.00	1424	94.00	4463	163.00	35	251.00	84
39.00	1016	95.00	34632	164.00	36	252.00	40
44.00	257	96.00	2309	167.00	61	255.00	64
45.00	125	97.00	20	169.00	129	257.00	34
46.00	91	98.00	37	170.00	45	260.00	49
47.00	433	99.00	38	171.00	41	263.00	108
48.00	122	103.00	126	172.00	207	264.00	98
49.00	1545	104.00	333	173.00	125	265.00	37
50.00	6723	105.00	131	174.00	26312	268.00	45
51.00	2176	106.00	478	175.00	1739	269.00	81
52.00	221	110.00	47	176.00	26424	270.00	42
53.00	52	111.00	270	177.00	1962	275.00	35
55.00	212	112.00	171	178.00	143	277.00	43
56.00	678	113.00	199	181.00	33	284.00	35
57.00	1180	114.00	67	182.00	92	289.00	55
58.00	38	115.00	63	184.00	91	291.00	48
60.00	360	117.00	330	185.00	42	292.00	47
61.00	1871	119.00	258	186.00	37	294.00	37
62.00	1620	120.00	174	190.00	76	295.00	38
63.00	1103	124.00	59	191.00	146	304.00	46
64.00	330	126.00	33	192.00	34	307.00	74
67.00	141	128.00	248	194.00	82	314.00	40
68.00	3804	130.00	239	195.00	53	316.00	89
69.00	3462	131.00	133	197.00	86	320.00	34
70.00	274	135.00	174	198.00	37	321.00	36
71.00	163	136.00	63	199.00	6	327.00	48
73.00	1565	137.00	33	202.00	73	328.00	46
74.00	6374	140.00	57	204.00	43	330.00	39
75.00	18928	141.00	672	205.00	49	331.00	62
76.00	1344	142.00	232	206.00	77	334.00	118
77.00	297	143.00	670	209.00	54	336.00	44
79.00	1250	144.00	51	211.00	61	337.00	34

Date : 08-MAY-2018 09:18

Client ID: Instrument: gcms-p.i

Sample Info: WG227830-3,SL3808

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB023a.D
Spectrum: Avg. Scans 166-168 (2.68), Background Scan 160
Location of Maximum: 95.00
Number of points: 172

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	192	145.00	219	215.00	53	340.00	84
81.00	1464	146.00	130	218.00	64	343.00	42
82.00	599	147.00	103	220.00	83	345.00	36
83.00	87	149.00	49	229.00	42	346.00	39
84.00	136	152.00	75	232.00	93	350.00	41
85.00	95	153.00	45	233.00	135		
86.00	67	155.00	266	236.00	145		
87.00	1189	157.00	52	237.00	44		
88.00	1547	158.00	82	241.00	45		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227659-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5525.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227659-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5525.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		95.9	%					
1,2-Dichloroethane-d4		94.1	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227659-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5525.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		98.7	%					
P-Bromofluorobenzene		96.1	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5525.D
Report Date: 18-May-2018 13:36

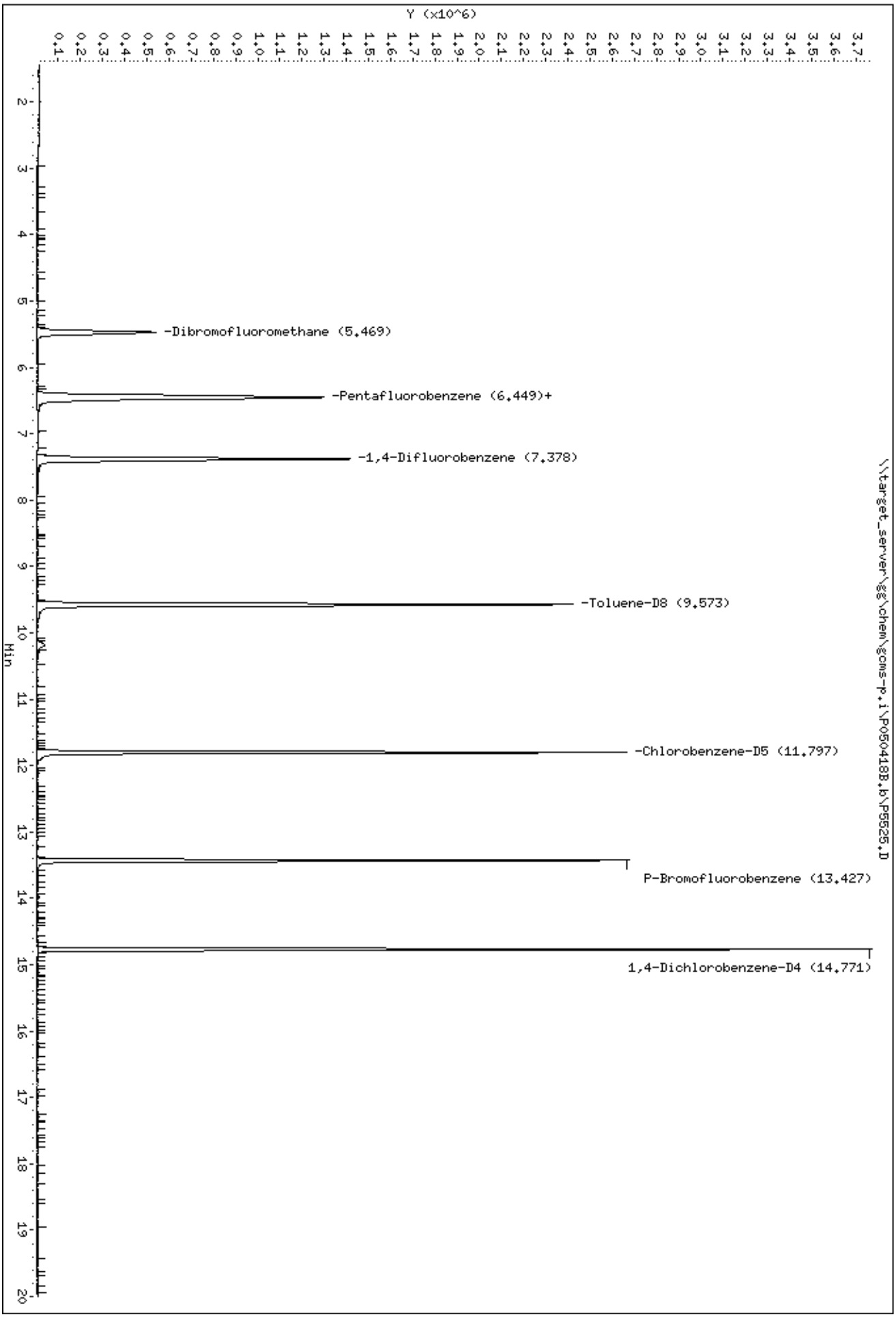
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050418B.b\P5525.D
Lab Smp Id: WG227659-2 Client Smp ID: WG227659-Blank
Inj Date : 04-MAY-2018 14:20 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227659-2,SL3808
Misc Info : WG227659,WG227568-4,SL3808-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050418B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:35 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 5 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	5.469	5.469	(0.849)	562724	47.9706	48.0	
* 41 Pentafluorobenzene	168	6.441	6.441	(1.000)	1186121	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.463	6.470	(1.003)	728041	47.0659	47.1	
* 48 1,4-Difluorobenzene	114	7.378	7.385	(1.000)	1855362	50.0000		
$ 58 Toluene-D8	98	9.573	9.573	(1.298)	2169618	49.3624	49.4	
* 68 Chlorobenzene-D5	117	11.797	11.804	(1.000)	1856395	50.0000		
$ 78 P-Bromofluorobenzene	95	13.427	13.427	(1.820)	936175	48.0375	48.0	
* 94 1,4-Dichlorobenzene-D4	152	14.771	14.771	(1.000)	1042131	50.0000		


Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5525.D
Date : 04-MAY-2018 14:20
Client ID: WG227659-Blank
Sample Info: WG227659-2,SL3808
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P050418B.b\P5525.D
Y (x10^6)
Min
-Dibromofluoromethane (5.469)
-Pentafluorobenzene (6.449)+
-1,4-Difluorobenzene (7.378)
-Toluene-D8 (9.573)
-Chlorobenzene-D5 (11.797)
P-Bromofluorobenzene (13.427)
1,4-Dichlorobenzene-D4 (14.771)

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		98.4	%					
1,2-Dichloroethane-d4		102.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		101.	%					
P-Bromofluorobenzene		96.5	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5548.D
Report Date: 18-May-2018 13:38

Katahdin Analytical Services

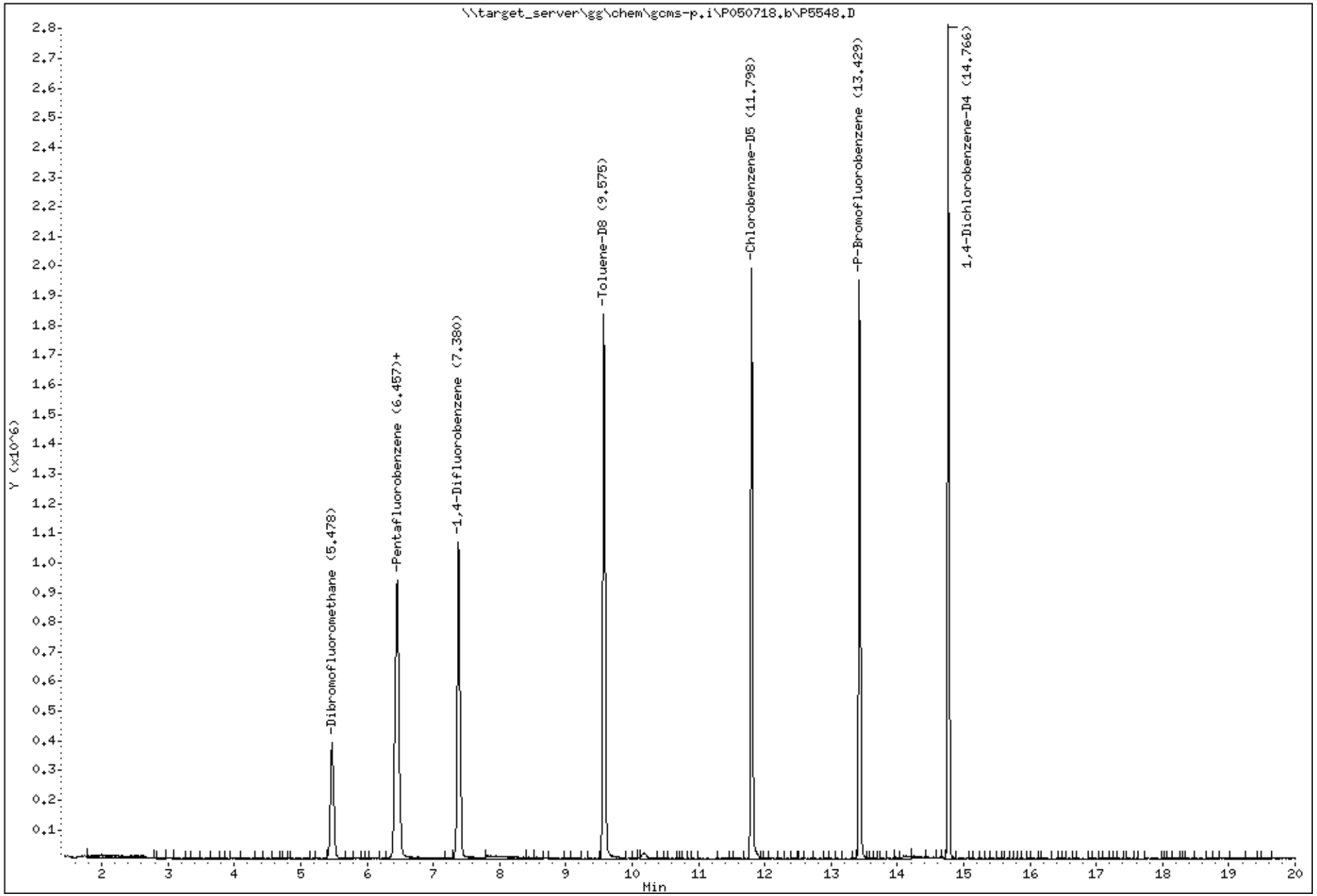
Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5548.D
Lab Smp Id: WG227763-2
Inj Date : 07-MAY-2018 10:51 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227763-2,SL3808
Misc Info : WG227763,WG227568-4,SL3808-1
Comment : SW846 5030,AQ
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:37 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 5 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)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	5.477	5.469	(0.849)	393110	49.1779	49.2	
* 41 Pentafluorobenzene	168	6.450	6.441	(1.000)	808263	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.471	6.470	(1.003)	537643	51.0060	51.0	
* 48 1,4-Difluorobenzene	114	7.379	7.385	(1.000)	1322931	50.0000		
$ 58 Toluene-D8	98	9.574	9.573	(1.297)	1578122	50.3553	50.4	
* 68 Chlorobenzene-D5	117	11.805	11.804	(1.000)	1360309	50.0000		
$ 78 P-Bromofluorobenzene	95	13.428	13.427	(1.820)	670469	48.2496	48.2	
* 94 1,4-Dichlorobenzene-D4	152	14.772	14.771	(1.000)	728553	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5548.D
Date : 07-MAY-2018 10:51
Client ID:
Instrument: gcms-p.i
Sample Info: WG227763-2,SL3808



Katahdin Analytical Services 1000162

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227830-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5583.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227830-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5583.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		98.3	%					
1,2-Dichloroethane-d4		96.2	%					

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Report of Analytical Results

Client:
Lab ID: WG227830-2
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: P5583.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		98.9	%					
P-Bromofluorobenzene		94.8	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5583.D
Report Date: 18-May-2018 13:42

Katahdin Analytical Services

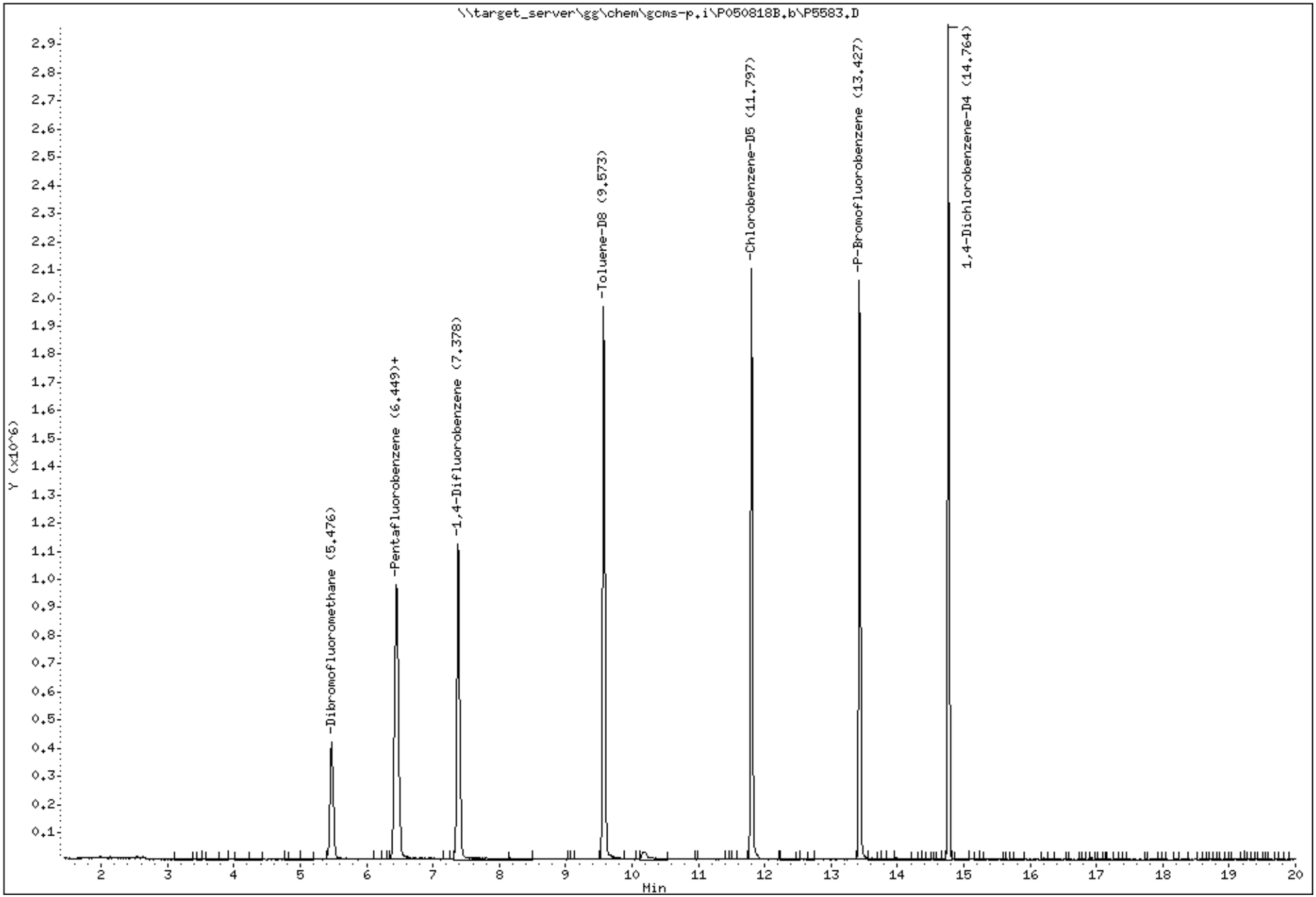
Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5583.D
Lab Smp Id: WG227830-2
Inj Date : 08-MAY-2018 11:51 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227830-2,SL3808
Misc Info : WG227830,WG227568-4,SL3808-1
Comment : SW846 5030,AQ
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.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)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$	34 Dibromofluoromethane	113	5.469	5.469	(0.849)	426862	49.1738	49.2	
*	41 Pentafluorobenzene	168	6.441	6.441	(1.000)	877734	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	550884	48.1257	48.1	
*	48 1,4-Difluorobenzene	114	7.378	7.385	(1.000)	1419587	50.0000		
$	58 Toluene-D8	98	9.573	9.573	(1.298)	1662604	49.4389	49.4	
*	68 Chlorobenzene-D5	117	11.797	11.804	(1.000)	1452884	50.0000		
$	78 P-Bromofluorobenzene	95	13.427	13.427	(1.820)	706979	47.4129	47.4	
*	94 1,4-Dichlorobenzene-D4	152	14.764	14.771	(1.000)	789399	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5583.D
Date : 08-MAY-2018 11:51
Client ID:
Instrument: gcms-p.i
Sample Info: WG227830-2,SL3808



Katahdin Analytical Services 1000167

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227659-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5523.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	98.8	50.0	49.4	ug/L	78-125
1,1,1-Trichloroethane	92.6	50.0	46.3	ug/L	74-131
1,1,2,2-Tetrachloroethane	101.	50.0	50.5	ug/L	71-121
Freon-113	94.4	50.0	47.2	ug/L	70-136
1,1,2-Trichloroethane	98.6	50.0	49.3	ug/L	80-120
1,1-Dichloroethane	95.4	50.0	47.7	ug/L	77-125
1,1-Dichloroethene	82.8	50.0	41.4	ug/L	71-131
1,1-Dichloropropene	98.8	50.0	49.4	ug/L	79-125
1,2,3-Trichlorobenzene	107.	50.0	53.6	ug/L	69-129
1,2,3-Trichloropropane	97.0	50.0	48.5	ug/L	73-122
1,2,4-Trichlorobenzene	97.2	50.0	48.6	ug/L	69-130
1,2,4-Trimethylbenzene	100.	50.0	50.1	ug/L	76-124
1,2-Dibromo-3-Chloropropane	102.	50.0	51.0	ug/L	62-128
1,2-Dichlorobenzene	97.8	50.0	48.9	ug/L	80-120
1,2-Dichloroethane	94.4	50.0	47.2	ug/L	73-128
1,2-Dichloropropane	97.8	50.0	48.9	ug/L	78-122
1,3,5-Trimethylbenzene	100.	50.0	50.2	ug/L	75-124
1,3-Dichlorobenzene	99.8	50.0	49.9	ug/L	80-120
1,3-Dichloropropane	95.8	50.0	47.9	ug/L	80-120
1,4-Dichlorobenzene	96.8	50.0	48.4	ug/L	79-120
2,2-Dichloropropane	102.	50.0	50.9	ug/L	60-139
2-Butanone	99.8	50.0	49.9	ug/L	56-143
2-Chlorotoluene	96.8	50.0	48.4	ug/L	79-122
2-Hexanone	106.	50.0	53.2	ug/L	57-139
4-Chlorotoluene	95.8	50.0	47.9	ug/L	78-122
P-Isopropyltoluene	102.	50.0	50.8	ug/L	77-127
4-Methyl-2-Pentanone	101.	50.0	50.6	ug/L	67-130
Acetone	94.6	50.0	47.3	ug/L	39-160
Benzene	98.8	50.0	49.4	ug/L	79-120
Bromobenzene	100.	50.0	50.1	ug/L	80-120
Bromoform	114.	50.0	56.8	ug/L	66-130
Bromomethane	88.8	50.0	44.4	ug/L	53-141
Carbon Disulfide	81.2	50.0	40.6	ug/L	64-133
Carbon Tetrachloride	103.	50.0	51.4	ug/L	72-136
Chlorobenzene	99.8	50.0	49.9	ug/L	82-120

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LCS Recovery Report

Client:
Lab ID: WG227659-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5523.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227659

Analysis Date: 04-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	96.8	50.0	48.4	ug/L	78-123
Dibromochloromethane	106.	50.0	53.1	ug/L	74-126
Chloroethane	88.6	50.0	44.3	ug/L	60-138
Chloroform	94.6	50.0	47.3	ug/L	79-124
Chloromethane	87.0	50.0	43.5	ug/L	50-139
cis-1,2-Dichloroethene	94.6	50.0	47.3	ug/L	78-123
cis-1,3-Dichloropropene	102.	50.0	51.2	ug/L	75-124
Dibromomethane	106.	50.0	53.1	ug/L	79-123
Bromodichloromethane	103.	50.0	51.6	ug/L	79-125
Dichlorodifluoromethane	89.2	50.0	44.6	ug/L	32-152
Ethylbenzene	101.	50.0	50.3	ug/L	79-121
1,2-Dibromoethane	104.	50.0	52.0	ug/L	77-121
Hexachlorobutadiene	103.	50.0	51.4	ug/L	66-134
Isopropylbenzene	103.	50.0	51.4	ug/L	72-131
Methyl tert-butyl Ether	95.0	50.0	47.5	ug/L	71-124
Methylene Chloride	89.6	50.0	44.8	ug/L	74-124
m+p-Xylenes	102.	100.	102.	ug/L	80-121
Naphthalene	101.	50.0	50.7	ug/L	61-128
N-Butylbenzene	98.8	50.0	49.4	ug/L	75-128
N-Propylbenzene	98.6	50.0	49.3	ug/L	76-126
o-Xylene	100.	50.0	50.2	ug/L	78-122
sec-Butylbenzene	99.8	50.0	49.9	ug/L	77-126
Styrene	105.	50.0	52.6	ug/L	78-123
tert-Butylbenzene	98.8	50.0	49.4	ug/L	78-124
Tetrachloroethene	104.	50.0	51.8	ug/L	74-129
Toluene	99.8	50.0	49.9	ug/L	80-121
trans-1,2-Dichloroethene	92.6	50.0	46.3	ug/L	75-124
trans-1,3-Dichloropropene	98.0	50.0	49.0	ug/L	73-127
Trichloroethene	98.0	50.0	49.0	ug/L	79-123
Trichlorofluoromethane	83.4	50.0	41.7	ug/L	65-141
Vinyl Chloride	86.2	50.0	43.1	ug/L	58-137
Dibromofluoromethane	93.9				80-120
1,2-Dichloroethane-d4	91.7				81-120
Toluene-d8	98.4				89-120
P-Bromofluorobenzene	101.				85-120

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Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523.D
Report Date: 18-May-2018 13:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523.D
Lab Smp Id: WG227659-1
Inj Date : 04-MAY-2018 13:05 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227659-1,SL3808
Misc Info : WG227659,WG227568-4,SL3808-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050418B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:35 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 3 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	1.514	1.515	(0.235)	509398	44.6510	44.6	
2	Chloromethane	50	1.671	1.665	(0.260)	475638	43.5363	43.5	
3	Vinyl chloride	62	1.729	1.729	(0.268)	515355	43.1354	43.1	
4	Bromomethane	94	1.979	1.987	(0.307)	237360	44.3925	44.4	
5	Chloroethane	64	2.072	2.080	(0.322)	296587	44.3483	44.3	
6	Trichlorofluoromethane	101	2.179	2.180	(0.338)	884059	41.7402	41.7	
7	Diethyl Ether	59	2.422	2.416	(0.376)	324559	42.4171	42.4	
19	Tertiary-butyl alcohol	59	3.502	3.510	(0.544)	152399	229.635	230	
8	1,1-Dichloroethene	96	2.594	2.587	(0.403)	365100	41.4290	41.4	
10	Carbon Disulfide	76	2.630	2.623	(0.408)	1210275	40.6098	40.6	
9	Freon-113	151	2.622	2.637	(0.407)	400366	47.1918	47.2	
11	Iodomethane	142	2.730	2.730	(0.424)	388817	60.3159	60.3(R)	
12	Acrolein	56	2.901	2.902	(0.451)	349203	233.409	233	
14	Methylene Chloride	84	3.130	3.131	(0.486)	509038	44.8318	44.8	
15	Acetone	43	3.180	3.188	(0.494)	128993	47.3158	47.3	
45	Isobutyl Alcohol	43	6.784	6.792	(1.053)	264605	827.385	827(M)	M6
16	trans-1,2-Dichloroethene	96	3.287	3.281	(0.510)	491396	46.3499	46.3	
13	Allyl Chloride	41	3.023	3.016	(0.469)	647608	43.9019	43.9	
18	Methyl tert-butyl ether	73	3.395	3.395	(0.527)	1474488	47.5379	47.5	
20	Acetonitrile	41	3.688	3.696	(0.573)	617796	427.496	427	
21	Di-isopropyl ether	45	3.824	3.824	(0.594)	1543523	43.7782	43.8	
22	Chloroprene	53	3.952	3.960	(0.614)	792784	44.8384	44.8	
39	Propionitrile	54	6.298	6.298	(0.978)	781206	468.762	469	
40	Methacrylonitrile	41	6.326	6.327	(0.982)	3099096	460.352	460	

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523.D
Report Date: 18-May-2018 13:36

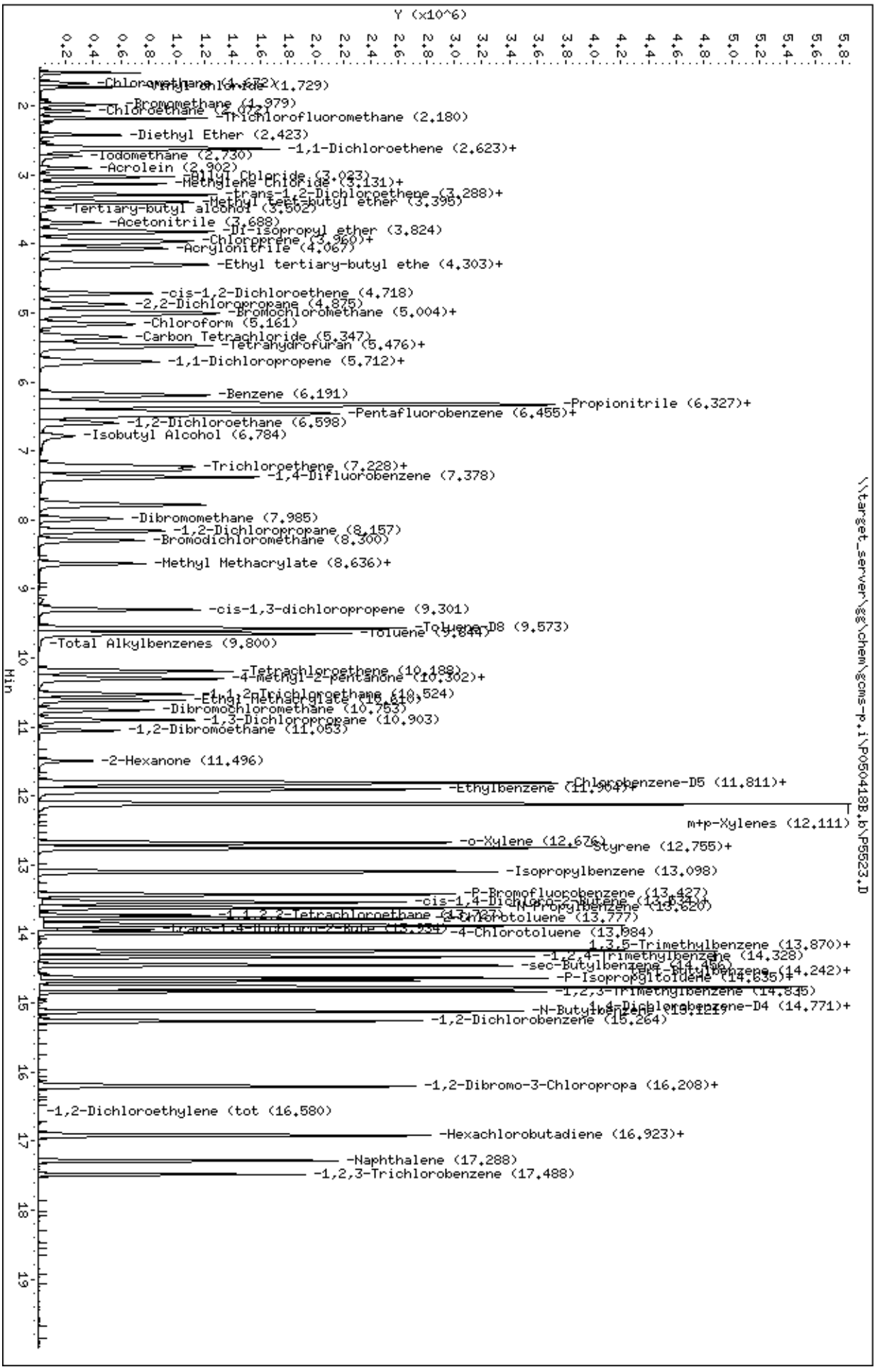
			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	3.988	3.989	(0.619)	968023	47.6610	47.7	
	24	Acrylonitrile	52	4.067	4.067	(0.631)	866096	240.099	240	
	25	Ethyl tertiary-butyl ether	59	4.295	4.303	(0.667)	1480161	45.1227	45.1	
	26	Vinyl Acetate	43	4.324	4.325	(0.586)	1232039	54.2880	54.3	
	27	cis-1,2-Dichloroethene	96	4.717	4.732	(0.732)	536773	47.2798	47.3	
M	98	1,2-Dichloroethylene (total)	96				1028169	93.6298	93.6	
	52	Methyl Methacrylate	41	8.636	8.643	(1.171)	452863	51.6820	51.7	
	28	2,2-Dichloropropane	77	4.875	4.890	(0.757)	728715	50.9387	50.9	
	29	Bromochloromethane	128	5.018	5.026	(0.779)	244391	48.4346	48.4	
	31	Chloroform	83	5.154	5.154	(0.800)	943087	47.3243	47.3	
	32	Carbon Tetrachloride	117	5.347	5.347	(0.725)	719563	51.3838	51.4	
	33	Tetrahydrofuran	42	5.411	5.419	(0.840)	132995	44.0747	44.1	
$	34	Dibromofluoromethane	113	5.475	5.469	(0.850)	614273	46.9574	47.0	
	35	1,1,1-Trichloroethane	97	5.482	5.483	(0.851)	824337	46.2780	46.3	
	37	1,1-Dichloropropene	75	5.704	5.698	(0.773)	751248	49.4123	49.4	
	36	2-Butanone	43	5.733	5.741	(0.890)	220359	49.8739	49.9	
	38	Benzene	78	6.190	6.184	(0.839)	2084523	49.4280	49.4	
*	41	Pentafluorobenzene	168	6.441	6.441	(1.000)	1322716	50.0000		
	30	Cyclohexane	56	4.996	4.990	(0.776)	841361	43.7836	43.8	
	53	Ethyl Methacrylate	69	10.609	10.617	(1.438)	741931	47.5995	47.6	
$	42	1,2-Dichloroethane-D4	65	6.469	6.470	(1.004)	790574	45.8306	45.8	
	43	Tertiary-amyl methyl ether	73	6.469	6.463	(1.004)	1350512	46.4013	46.4	
	44	1,2-Dichloroethane	62	6.591	6.591	(0.893)	778500	47.2259	47.2	
	47	Trichloroethene	95	7.270	7.264	(0.985)	509161	48.9860	49.0	
*	48	1,4-Difluorobenzene	114	7.377	7.385	(1.000)	2001979	50.0000		
	49	Dibromomethane	93	7.978	7.979	(1.081)	333828	53.1067	53.1	
	50	1,2-Dichloropropane	63	8.157	8.164	(1.106)	519701	48.9351	48.9	
	51	Bromodichloromethane	83	8.300	8.307	(1.125)	750215	51.5855	51.6	
	57	cis-1,3-dichloropropene	75	9.301	9.301	(1.261)	932131	51.2068	51.2	
	54	1,4-Dioxane	88	8.636	8.664	(1.171)	79014	638.264	638(R)	
$	58	Toluene-D8	98	9.572	9.573	(1.298)	2334302	49.2197	49.2	
	59	Toluene	92	9.644	9.652	(1.307)	1322364	49.8694	49.9	
	61	4-methyl-2-pentanone	43	10.280	10.281	(1.393)	459640	50.6242	50.6	
	60	Tetrachloroethene	164	10.194	10.188	(0.864)	427238	51.8519	51.8	
	62	trans-1,3-Dichloropropene	75	10.302	10.302	(1.396)	866878	48.9845	49.0	
	63	1,1,2-Trichloroethane	83	10.530	10.531	(1.427)	398449	49.3057	49.3	
	64	Dibromochloromethane	129	10.752	10.767	(0.911)	549620	53.1354	53.1	
	65	1,3-Dichloropropane	76	10.902	10.896	(0.924)	907733	47.9125	47.9	
	66	1,2-Dibromoethane	107	11.052	11.053	(1.498)	503292	52.0408	52.0	
	67	2-Hexanone	43	11.489	11.496	(0.973)	326058	53.2181	53.2	
*	68	Chlorobenzene-D5	117	11.803	11.804	(1.000)	2038077	50.0000		
	69	Chlorobenzene	112	11.825	11.825	(1.002)	1523605	49.9384	49.9	
	71	Ethylbenzene	106	11.896	11.904	(1.008)	842547	50.2781	50.3	
	72	1,1,1,2-Tetrachloroethane	131	11.932	11.940	(1.011)	522222	49.3635	49.4	
M	106	Xylenes (total)	106				3063071	152.540	152	
	73	m+p-Xylenes	106	12.111	12.111	(1.026)	2083491	102.295	102	
	74	o-Xylene	106	12.675	12.683	(1.074)	979580	50.2455	50.2	
	75	Styrene	104	12.754	12.755	(1.081)	1737860	52.5878	52.6	
	76	Bromoform	173	12.754	12.755	(1.081)	413197	56.7517	56.8	
	77	Isopropylbenzene	105	13.097	13.098	(0.887)	2593758	51.4036	51.4	
$	78	P-Bromofluorobenzene	95	13.426	13.427	(1.820)	1057888	50.3075	50.3	
	79	cis-1,4-Dichloro-2-Butene	53	13.548	13.548	(0.917)	234764	48.6084	48.6	
	86	trans-1,4-Dichloro-2-Butene	53	13.934	13.942	(0.943)	193573	53.0002	53.0	
	80	Bromobenzene	156	13.533	13.527	(0.916)	662940	50.0802	50.1	

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523.D
Report Date: 18-May-2018 13:36

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	81	N-Propylbenzene	91	13.619	13.613	(0.922)	3000254	49.3094	49.3	
	82	1,1,2,2-Tetrachloroethane	83	13.727	13.727	(0.929)	660783	50.4819	50.5	
	85	1,3,5-Trimethylbenzene	105	13.877	13.877	(0.939)	2162409	50.2172	50.2	
	83	2-Chlorotoluene	91	13.777	13.777	(0.933)	1787346	48.4016	48.4	
	84	1,2,3-Trichloropropane	75	13.862	13.856	(0.939)	581983	48.4707	48.5	
	87	4-Chlorotoluene	91	13.984	13.985	(0.947)	1887299	47.9453	47.9	
	88	tert-Butylbenzene	119	14.241	14.242	(0.964)	2053094	49.3834	49.4	
	89	Pentachloroethane	165	14.248	14.249	(0.965)	305830	50.5387	50.5	
	90	1,2,4-Trimethylbenzene	105	14.334	14.335	(0.970)	2232484	50.1177	50.1	
	92	P-Isopropyltoluene	119	14.635	14.635	(0.991)	2192543	50.7543	50.8	
	93	1,3-Dichlorobenzene	146	14.677	14.678	(0.994)	1170667	49.8792	49.9	
*	94	1,4-Dichlorobenzene-D4	152	14.770	14.771	(1.000)	1191939	50.0000		
	95	1,4-Dichlorobenzene	146	14.785	14.785	(1.001)	1207733	48.4130	48.4	
	97	N-Butylbenzene	91	15.121	15.122	(1.024)	1915584	49.3923	49.4	
	91	sec-Butylbenzene	105	14.456	14.457	(0.979)	2624413	49.9346	49.9	
	99	1,2-Dichlorobenzene	146	15.264	15.265	(1.033)	1113092	48.8686	48.9	
	100	1,2-Dibromo-3-Chloropropane	157	16.179	16.172	(1.095)	136694	50.9804	51.0	
	101	1,3,5-Trichlorobenzene	180	16.208	16.207	(1.097)	830787	49.0518	49.0	
	102	Hexachlorobutadiene	225	16.908	16.908	(1.145)	309336	51.4518	51.4	
	103	1,2,4-Trichlorobenzene	180	16.930	16.922	(1.146)	730774	48.6207	48.6	
	96	1,2,3-Trimethylbenzene	105	14.835	14.835	(1.004)	2276091	48.8550	48.8	
	104	Naphthalene	128	17.287	17.288	(1.170)	1550842	50.7166	50.7	
	105	1,2,3-Trichlorobenzene	180	17.487	17.488	(1.184)	570923	53.5534	53.6	
	17	Methyl Acetate	43	3.302	3.302	(0.513)	350127	40.8474	40.8	
	46	Methylcyclohexane	83	7.227	7.228	(1.122)	837391	46.1988	46.2	
M	55	Total Alkylbenzenes	100				16180781	349.109	349	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.


Y (x10^6)
Min
Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523.D
Date : 04-MAY-2018 13:05
Client ID:
Sample Info: WG227659-1,SL3808
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\P050418B.b\P5523.D
-Chloromethane (1.672)
-Vinyl chloride (1.729)
-Bromomethane (1.979)
-Chloroethane (2.072)
-Trichlorofluoromethane (2.180)
-Diethyl Ether (2.423)
-1,1-Dichloroethene (2.623)+
-Iodomethane (2.730)
-Acrolein (2.902)
-Allyl Chloride (3.083)
-Methylene Chloride (3.131)+
-trans-1,2-Dichloroethene (3.288)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.502)
-Acetonitrile (3.688)
-Di-isopropyl ether (3.824)
-Chloroprene (3.960)+
-Acrylonitrile (4.067)
-Ethyl tertiary-butyl ethe (4.303)+
-cis-1,2-Dichloroethene (4.718)
-2,2-Dichloropropane (4.875)
-BromoChloromethane (5.004)+
-Chloroform (5.161)
-Carbon Tetrachloride (5.347)
-Tetrahydrofuran (5.476)+
-1,1-Dichloropropene (5.712)+
-Benzene (6.191)
-Propionitrile (6.327)+
-Pentafluorobenzene (6.455)+
-1,2-Dichloroethane (6.598)
-Isobutyl Alcohol (6.784)
-Trichloroethene (7.228)+
-1,4-Difluorobenzene (7.378)
-Dibromomethane (7.985)
-1,2-Dichloropropane (8.157)
-Bromodichloromethane (8.300)
-Methyl Methacrylate (8.636)+
-cis-1,3-dichloropropene (9.301)
-Toluene-D8 (9.573)
-Toluene (9.644)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-methyl-2-pentanone (10.302)+
-1,1,2-Trichloroethane (10.524)
-Ethyl Methacrylate (10.610)
-Dibromochloromethane (10.753)
-1,3-Dichloropropane (10.903)
-1,2-Dibromoethane (11.053)
-2-Hexanone (11.496)
-Chlorobenzene-D5 (11.811)+
-Ethylbenzene (11.904)+
m+p-Xylenes (12.111)
-o-Xylene (12.676)
-Styrene (12.755)+
-Isopropylbenzene (13.098)
-P-Bromofluorobenzene (13.427)
-cis-1,4-Dichloro-2-Butene (13.634)+
-N-Propylbenzene (13.620)
-1,1,2,2-Tetrachloroethane (13.737)
-2-Chlorotoluene (13.777)
-trans-1,4-Dichloro-2-Bute (13.934)
-4-Chlorotoluene (13.984)
-1,3,5-Trimethylbenzene (13.870)+
-1,2,4-Trimethylbenzene (14.328)
-sec-Butylbenzene (14.466)
-tert-Butylbenzene (14.242)+
-P-Isopropyltoluene (14.635)+
-1,2,3-Trimethylbenzene (14.845)
-1,4-Dichlorobenzene-D4 (14.771)+
-N-Butylbenzene (15.121)
-1,2-Dichlorobenzene (15.264)
-1,2-Dibromo-3-Chloropropa (16.208)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.923)+
-Naphthalene (17.288)
-1,2,3-Trichlorobenzene (17.488)

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227763-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5546.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	91.8	50.0	45.9	ug/L	78-125
1,1,1-Trichloroethane	96.6	50.0	48.3	ug/L	74-131
1,1,2,2-Tetrachloroethane	102.	50.0	50.8	ug/L	71-121
Freon-113	95.2	50.0	47.6	ug/L	70-136
1,1,2-Trichloroethane	98.6	50.0	49.3	ug/L	80-120
1,1-Dichloroethane	100.	50.0	50.2	ug/L	77-125
1,1-Dichloroethene	92.2	50.0	46.1	ug/L	71-131
1,1-Dichloropropene	95.2	50.0	47.6	ug/L	79-125
1,2,3-Trichlorobenzene	111.	50.0	55.4	ug/L	69-129
1,2,3-Trichloropropane	96.8	50.0	48.4	ug/L	73-122
1,2,4-Trichlorobenzene	95.6	50.0	47.8	ug/L	69-130
1,2,4-Trimethylbenzene	96.8	50.0	48.4	ug/L	76-124
1,2-Dibromo-3-Chloropropane	102.	50.0	51.2	ug/L	62-128
1,2-Dichlorobenzene	96.0	50.0	48.0	ug/L	80-120
1,2-Dichloroethane	93.8	50.0	46.9	ug/L	73-128
1,2-Dichloropropane	100.	50.0	50.1	ug/L	78-122
1,3,5-Trimethylbenzene	96.2	50.0	48.1	ug/L	75-124
1,3-Dichlorobenzene	96.8	50.0	48.4	ug/L	80-120
1,3-Dichloropropane	95.8	50.0	47.9	ug/L	80-120
1,4-Dichlorobenzene	94.0	50.0	47.0	ug/L	79-120
2,2-Dichloropropane	106.	50.0	52.8	ug/L	60-139
2-Butanone	115.	50.0	57.3	ug/L	56-143
2-Chlorotoluene	93.4	50.0	46.7	ug/L	79-122
2-Hexanone	114.	50.0	56.8	ug/L	57-139
4-Chlorotoluene	92.0	50.0	46.0	ug/L	78-122
P-Isopropyltoluene	98.2	50.0	49.1	ug/L	77-127
4-Methyl-2-Pentanone	112.	50.0	55.9	ug/L	67-130
Acetone	110.	50.0	55.2	ug/L	39-160
Benzene	97.0	50.0	48.5	ug/L	79-120
Bromobenzene	94.0	50.0	47.0	ug/L	80-120
Bromoform	107.	50.0	53.6	ug/L	66-130
Bromomethane	114.	50.0	56.9	ug/L	53-141
Carbon Disulfide	91.4	50.0	45.7	ug/L	64-133
Carbon Tetrachloride	98.4	50.0	49.2	ug/L	72-136
Chlorobenzene	96.0	50.0	48.0	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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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227763-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5546.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	96.0	50.0	48.0	ug/L	78-123
Dibromochloromethane	100.	50.0	50.2	ug/L	74-126
Chloroethane	99.2	50.0	49.6	ug/L	60-138
Chloroform	98.0	50.0	49.0	ug/L	79-124
Chloromethane	105.	50.0	52.3	ug/L	50-139
cis-1,2-Dichloroethene	98.0	50.0	49.0	ug/L	78-123
cis-1,3-Dichloropropene	101.	50.0	50.3	ug/L	75-124
Dibromomethane	106.	50.0	52.8	ug/L	79-123
Bromodichloromethane	103.	50.0	51.4	ug/L	79-125
Dichlorodifluoromethane	92.0	50.0	46.0	ug/L	32-152
Ethylbenzene	96.4	50.0	48.2	ug/L	79-121
1,2-Dibromoethane	108.	50.0	53.8	ug/L	77-121
Hexachlorobutadiene	90.8	50.0	45.4	ug/L	66-134
Isopropylbenzene	98.4	50.0	49.2	ug/L	72-131
Methyl tert-butyl Ether	98.2	50.0	49.1	ug/L	71-124
Methylene Chloride	93.0	50.0	46.5	ug/L	74-124
m+p-Xylenes	97.2	100.	97.2	ug/L	80-121
Naphthalene	107.	50.0	53.5	ug/L	61-128
N-Butylbenzene	99.4	50.0	49.7	ug/L	75-128
N-Propylbenzene	95.4	50.0	47.7	ug/L	76-126
o-Xylene	98.8	50.0	49.4	ug/L	78-122
sec-Butylbenzene	97.4	50.0	48.7	ug/L	77-126
Styrene	102.	50.0	51.2	ug/L	78-123
tert-Butylbenzene	96.0	50.0	48.0	ug/L	78-124
Tetrachloroethene	96.8	50.0	48.4	ug/L	74-129
Toluene	98.8	50.0	49.4	ug/L	80-121
trans-1,2-Dichloroethene	94.4	50.0	47.2	ug/L	75-124
trans-1,3-Dichloropropene	96.8	50.0	48.4	ug/L	73-127
Trichloroethene	96.6	50.0	48.3	ug/L	79-123
Trichlorofluoromethane	94.6	50.0	47.3	ug/L	65-141
Vinyl Chloride	101.	50.0	50.7	ug/L	58-137
Dibromofluoromethane	98.2				80-120
1,2-Dichloroethane-d4	98.4				81-120
Toluene-d8	101.				89-120
P-Bromofluorobenzene	104.				85-120

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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-p.i\P050718.b\P5546.D
Report Date: 18-May-2018 13:38

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5546.D
Lab Smp Id: WG227763-1
Inj Date : 07-MAY-2018 09:38 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227763-1,SL3808
Misc Info : WG227763,WG227568-4,SL3808-1
Comment : SW846 5030,AQ
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:37 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 3 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)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.516	1.515	(0.235)	380296	46.0044	46.0	
2	Chloromethane	50	1.666	1.665	(0.259)	413932	52.2887	52.3	
3	Vinyl chloride	62	1.723	1.729	(0.268)	438876	50.6959	50.7	
4	Bromomethane	94	1.973	1.987	(0.306)	225664	56.9089	56.9	
5	Chloroethane	64	2.066	2.080	(0.321)	240632	49.6572	49.6	
6	Trichlorofluoromethane	101	2.173	2.180	(0.337)	725605	47.2800	47.3	
7	Diethyl Ether	59	2.417	2.416	(0.375)	284525	51.3182	51.3	WAS
19	Tertiary-butyl alcohol	59	3.503	3.510	(0.544)	143086	297.547	298	1:54 pm, May 18, 2018
8	1,1-Dichloroethene	96	2.595	2.587	(0.403)	294374	46.0994	46.1	
10	Carbon Disulfide	76	2.624	2.623	(0.407)	986654	45.6893	45.7	
9	Freon-113	151	2.624	2.637	(0.407)	292487	47.5794	47.6	
11	Iodomethane	142	2.724	2.730	(0.423)	283704	60.7252	60.7	
12	Acrolein	56	2.903	2.902	(0.451)	290499	267.970	268	
14	Methylene Chloride	84	3.132	3.131	(0.486)	382589	46.5020	46.5	
15	Acetone	43	3.182	3.188	(0.494)	109082	55.2200	55.2	
45	Isobutyl Alcohol	43	6.792	6.792	(1.054)	266790	1143.20	1140(M)	M6
16	trans-1,2-Dichloroethene	96	3.282	3.281	(0.509)	362821	47.2295	47.2	
13	Allyl Chloride	41	3.024	3.016	(0.469)	520753	48.7199	48.7	
18	Methyl tert-butyl ether	73	3.396	3.395	(0.527)	1102782	49.0672	49.1	
20	Acetonitrile	41	3.689	3.696	(0.573)	519620	496.223	496	
21	Di-isopropyl ether	45	3.825	3.824	(0.594)	1213076	47.4828	47.5	
22	Chloroprene	53	3.947	3.960	(0.613)	605093	47.2304	47.2	
39	Propionitrile	54	6.299	6.298	(0.978)	681347	564.234	564	
40	Methacrylonitrile	41	6.328	6.327	(0.982)	2682623	549.943	550	

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5546.D
Report Date: 18-May-2018 13:38

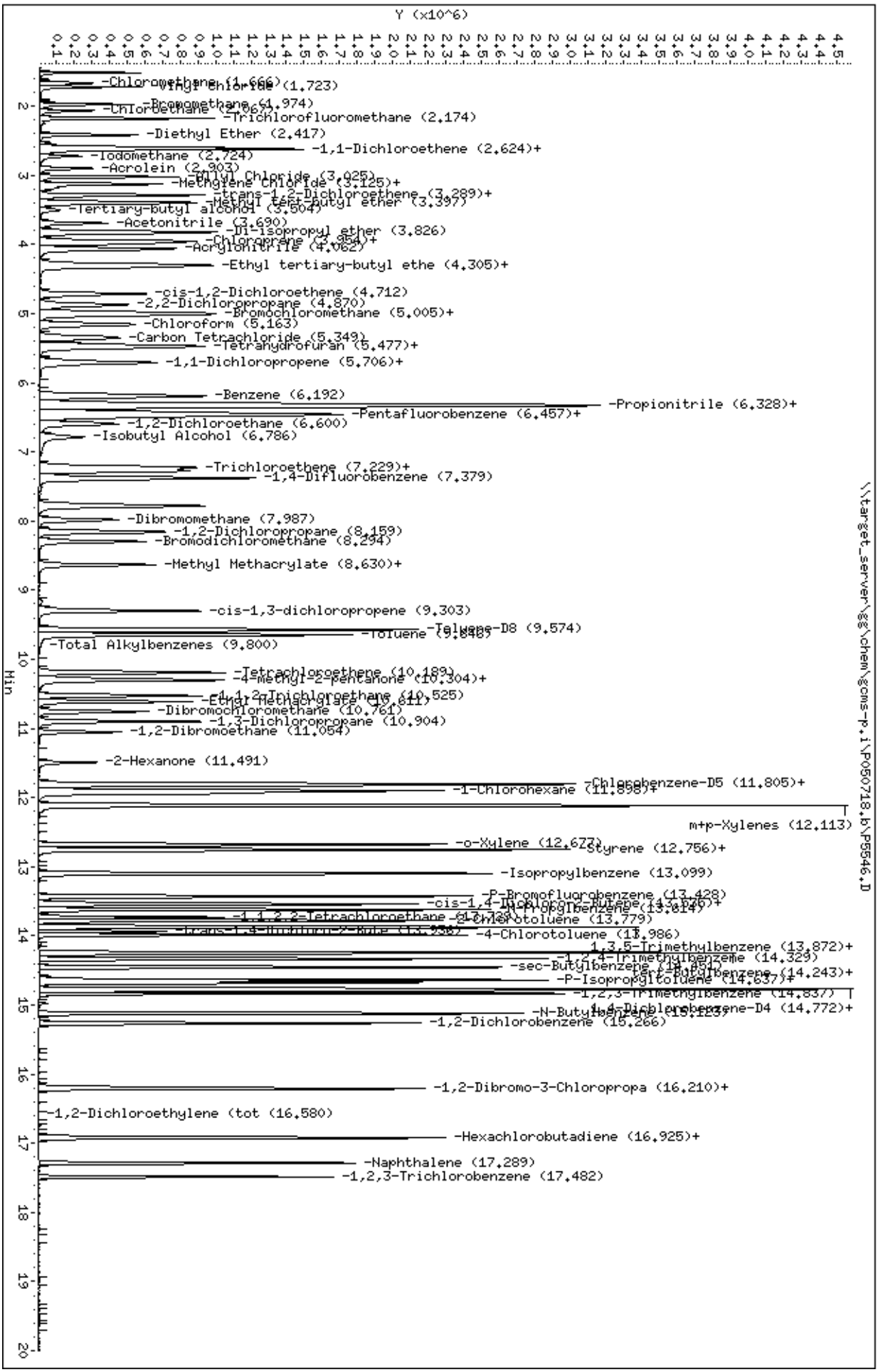
							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.982	3.989	(0.618)	738177	50.1582	50.2	
	24 Acrylonitrile	52	4.068	4.067	(0.632)	703100	268.995	269	
	25 Ethyl tertiary-butyl ether	59	4.290	4.303	(0.666)	1158754	48.7507	48.8	
	26 Vinyl Acetate	43	4.326	4.325	(0.586)	995164	56.5443	56.5	
	27 cis-1,2-Dichloroethene	96	4.712	4.732	(0.731)	402700	48.9520	49.0	
M	98 1,2-Dichloroethylene (total)	96				765521	96.1815	96.2	
	52 Methyl Methacrylate	41	8.630	8.643	(1.170)	377150	55.5011	55.5	
	28 2,2-Dichloropropane	77	4.869	4.890	(0.756)	547123	52.7811	52.8	
	29 Bromochloromethane	128	5.019	5.026	(0.779)	175579	48.0227	48.0	
	31 Chloroform	83	5.155	5.154	(0.800)	708420	49.0599	49.0	
	32 Carbon Tetrachloride	117	5.355	5.347	(0.726)	534507	49.2182	49.2	
	33 Tetrahydrofuran	42	5.420	5.419	(0.841)	116583	53.3203	53.3	
$	34 Dibromofluoromethane	113	5.470	5.469	(0.849)	465672	49.1276	49.1	
	35 1,1,1-Trichloroethane	97	5.484	5.483	(0.851)	623422	48.3009	48.3	
	37 1,1-Dichloropropene	75	5.706	5.698	(0.773)	560802	47.5637	47.6	
	36 2-Butanone	43	5.727	5.741	(0.889)	183414	57.2899	57.3	
	38 Benzene	78	6.192	6.184	(0.839)	1585715	48.4849	48.5	
*	41 Pentafluorobenzene	168	6.442	6.441	(1.000)	958436	50.0000		
	30 Cyclohexane	56	4.998	4.990	(0.776)	636822	45.7352	45.7	
	53 Ethyl Methacrylate	69	10.611	10.617	(1.438)	587221	48.5460	48.5	
$	42 1,2-Dichloroethane-D4	65	6.463	6.470	(1.003)	614781	49.1855	49.2	
	43 Tertiary-amyl methyl ether	73	6.471	6.463	(1.004)	1051333	49.8512	49.8	
	44 1,2-Dichloroethane	62	6.599	6.591	(0.894)	599340	46.8825	46.9	
	47 Trichloroethene	95	7.279	7.264	(0.986)	389628	48.3373	48.3	
*	48 1,4-Difluorobenzene	114	7.379	7.385	(1.000)	1552546	50.0000		
	49 Dibromomethane	93	7.979	7.979	(1.081)	257273	52.7759	52.8	
	50 1,2-Dichloropropane	63	8.158	8.164	(1.106)	412323	50.0633	50.1	
	51 Bromodichloromethane	83	8.301	8.307	(1.125)	579938	51.4207	51.4	
	57 cis-1,3-dichloropropene	75	9.302	9.301	(1.261)	710524	50.3321	50.3	
	54 1,4-Dioxane	88	8.637	8.664	(1.171)	82305	1023.50	1020	
$	58 Toluene-D8	98	9.574	9.573	(1.297)	1854762	50.4296	50.4	
	59 Toluene	92	9.645	9.652	(1.307)	1017046	49.4582	49.4	
	61 4-methyl-2-pentanone	43	10.275	10.281	(1.392)	393377	55.8682	55.9	
	60 Tetrachloroethene	164	10.189	10.188	(0.863)	318045	48.4435	48.4	
	62 trans-1,3-Dichloropropene	75	10.303	10.302	(1.396)	663975	48.3948	48.4	
	63 1,1,2-Trichloroethane	83	10.525	10.531	(1.426)	308806	49.2754	49.3	
	64 Dibromochloromethane	129	10.761	10.767	(0.912)	413732	50.1988	50.2	
	65 1,3-Dichloropropane	76	10.904	10.896	(0.924)	723756	47.9441	47.9	
	66 1,2-Dibromoethane	107	11.054	11.053	(1.498)	403503	53.8005	53.8	
	67 2-Hexanone	43	11.490	11.496	(0.973)	277447	56.8325	56.8	
*	68 Chlorobenzene-D5	117	11.805	11.804	(1.000)	1623933	50.0000		
	69 Chlorobenzene	112	11.826	11.825	(1.002)	1167094	48.0088	48.0	
	70 1-Chlorohexane	91	11.898	11.861	(1.008)	2016580	169.066	169(R)	
	71 Ethylbenzene	106	11.898	11.904	(1.008)	644080	48.2366	48.2	
	72 1,1,1,2-Tetrachloroethane	131	11.933	11.940	(1.011)	386492	45.9164	45.9	
M	106 Xylenes (total)	106				2345632	146.650	147	
	73 m+p-Xylenes	106	12.112	12.111	(1.026)	1577990	97.2341	97.2	
	74 o-Xylene	106	12.677	12.683	(1.074)	767642	49.4161	49.4	
	75 Styrene	104	12.756	12.755	(1.081)	1349400	51.2464	51.2	
	76 Bromoform	173	12.756	12.755	(1.081)	311116	53.6287	53.6	
	77 Isopropylbenzene	105	13.099	13.098	(0.887)	1996408	49.2259	49.2	
$	78 P-Bromofluorobenzene	95	13.428	13.427	(1.820)	845759	51.8626	51.9	
	79 cis-1,4-Dichloro-2-Butene	53	13.549	13.548	(0.917)	203226	52.3528	52.4	
	86 trans-1,4-Dichloro-2-Butene	53	13.935	13.942	(0.943)	167938	57.2087	57.2	

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5546.D
Report Date: 18-May-2018 13:38

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	80	Bromobenzene	156	13.535	13.527	(0.916)	500480	47.0391	47.0	
	81	N-Propylbenzene	91	13.621	13.613	(0.922)	2332962	47.7045	47.7	
	82	1,1,2,2-Tetrachloroethane	83	13.728	13.727	(0.929)	534301	50.7859	50.8	
	85	1,3,5-Trimethylbenzene	105	13.871	13.877	(0.939)	1665374	48.1179	48.1	
	83	2-Chlorotoluene	91	13.778	13.777	(0.933)	1385329	46.6750	46.7	
	84	1,2,3-Trichloropropane	75	13.864	13.856	(0.939)	467303	48.4226	48.4	
	87	4-Chlorotoluene	91	13.985	13.985	(0.947)	1454515	45.9731	46.0	
	88	tert-Butylbenzene	119	14.243	14.242	(0.964)	1602573	47.9591	48.0	
	89	Pentachloroethane	165	14.250	14.249	(0.965)	240840	49.5168	49.5	
	90	1,2,4-Trimethylbenzene	105	14.329	14.335	(0.970)	1733085	48.4064	48.4	
	92	P-Isopropyltoluene	119	14.636	14.635	(0.991)	1704757	49.0984	49.1	
	93	1,3-Dichlorobenzene	146	14.679	14.678	(0.994)	914018	48.4531	48.4	
*	94	1,4-Dichlorobenzene-D4	152	14.772	14.771	(1.000)	958018	50.0000		
	95	1,4-Dichlorobenzene	146	14.786	14.785	(1.001)	942186	46.9903	47.0	
	97	N-Butylbenzene	91	15.122	15.122	(1.024)	1549584	49.7112	49.7	
	91	sec-Butylbenzene	105	14.450	14.457	(0.978)	2056897	48.6925	48.7	
	99	1,2-Dichlorobenzene	146	15.265	15.265	(1.033)	878051	47.9621	48.0	
	100	1,2-Dibromo-3-Chloropropane	157	16.181	16.172	(1.095)	110263	51.1597	51.2	
	101	1,3,5-Trichlorobenzene	180	16.209	16.207	(1.097)	663201	48.7181	48.7	
	102	Hexachlorobutadiene	225	16.910	16.908	(1.145)	219256	45.3734	45.4	
	103	1,2,4-Trichlorobenzene	180	16.924	16.922	(1.146)	576897	47.7789	47.8	
	96	1,2,3-Trimethylbenzene	105	14.836	14.835	(1.004)	1820691	48.6223	48.6	
	104	Naphthalene	128	17.289	17.288	(1.170)	1317181	53.5393	53.5	
	105	1,2,3-Trichlorobenzene	180	17.489	17.488	(1.184)	474664	55.3957	55.4	
	17	Methyl Acetate	43	3.303	3.302	(0.513)	299289	48.1873	48.2	
	46	Methylcyclohexane	83	7.221	7.228	(1.121)	650084	49.4966	49.5	
M	55	Total Alkylbenzenes	100				12645232	339.690	340	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5546.D
Date : 07-MAY-2018 09:38
Client ID:
Sample Info: WG227763-1,SL3808
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\P050718.b\P5546.D
Y (x10^6)
Min
-Chloromethane (1.666)
-Vinyl Chloride (1.723)
-Bromomethane (1.974)
-Chloroethane (2.067)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.724)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.125)+
-trans-1,2-Dichloroethene (3.289)+
-Methyl tert-butyl ether (3.397)
-Tertiary-Butyl alcohol (3.504)
-Acetonitrile (3.690)
-Di-isopropyl ether (3.826)
-Chloroprene (3.954)+
-Acrylonitrile (4.062)
-Ethyl tertiary-butyl ethe (4.305)+
-cis-1,2-Dichloroethene (4.712)
-2,2-Dichloropropane (4.870)
-Bromochloromethane (5.005)+
-Chloroform (5.163)
-Carbon Tetrachloride (5.349)
-Tetrahydrofuran (5.477)+
-1,1-Dichloropropene (5.706)+
-Benzene (6.192)
-Propionitrile (6.328)+
-Pentafluorobenzene (6.457)+
-1,2-Dichloroethane (6.600)
-Isobutyl Alcohol (6.786)
-Trichloroethene (7.229)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.159)
-Bromodichloromethane (8.294)
-Methyl Methacrylate (8.630)+
-cis-1,3-dichloropropene (9.303)
-Toluene-D8 (9.574)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-Methyl-2-pentanone (10.304)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.761)
-1,3-Dichloropropane (10.904)
-1,2-Dibromoethane (11.054)
-2-Hexanone (11.491)
-Chlorobenzene-D5 (11.805)+
-1-Chlorohexane (11.898)+
m+p-Xylenes (12.113)
-o-Xylene (12.672)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.546)+
-n-Propylbenzene (13.614)
-1,1,2,2-Tetrachloroethane (13.734)
-2-Chlorotoluene (13.779)
-trans-1,4-Dichloro-2-Bute (13.936)
-4-Chlorotoluene (13.986)
-1,3,5-Trimethylbenzene (13.872)+
-1,2,4-Trimethylbenzene (14.329)
-sec-Butylbenzene (14.454)
-tert-Butylbenzene (14.243)+
-P-Isopropyltoluene (14.637)+
-1,2,3-Trimethylbenzene (14.837)
-N-Butylbenzene (15.123)
-1,4-Dichlorobenzene-D4 (14.772)+
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.210)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.925)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227830-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5581.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	93.8	50.0	46.9	ug/L	78-125
1,1,1-Trichloroethane	93.2	50.0	46.6	ug/L	74-131
1,1,2,2-Tetrachloroethane	101.	50.0	50.4	ug/L	71-121
Freon-113	97.6	50.0	48.8	ug/L	70-136
1,1,2-Trichloroethane	99.2	50.0	49.6	ug/L	80-120
1,1-Dichloroethane	97.6	50.0	48.8	ug/L	77-125
1,1-Dichloroethene	89.2	50.0	44.6	ug/L	71-131
1,1-Dichloropropene	97.0	50.0	48.5	ug/L	79-125
1,2,3-Trichlorobenzene	113.	50.0	56.3	ug/L	69-129
1,2,3-Trichloropropane	94.8	50.0	47.4	ug/L	73-122
1,2,4-Trichlorobenzene	93.6	50.0	46.8	ug/L	69-130
1,2,4-Trimethylbenzene	95.8	50.0	47.9	ug/L	76-124
1,2-Dibromo-3-Chloropropane	102.	50.0	51.2	ug/L	62-128
1,2-Dichlorobenzene	97.2	50.0	48.6	ug/L	80-120
1,2-Dichloroethane	93.4	50.0	46.7	ug/L	73-128
1,2-Dichloropropane	98.0	50.0	49.0	ug/L	78-122
1,3,5-Trimethylbenzene	96.0	50.0	48.0	ug/L	75-124
1,3-Dichlorobenzene	98.0	50.0	49.0	ug/L	80-120
1,3-Dichloropropane	93.6	50.0	46.8	ug/L	80-120
1,4-Dichlorobenzene	94.0	50.0	47.0	ug/L	79-120
2,2-Dichloropropane	96.8	50.0	48.4	ug/L	60-139
2-Butanone	106.	50.0	53.0	ug/L	56-143
2-Chlorotoluene	92.4	50.0	46.2	ug/L	79-122
2-Hexanone	108.	50.0	53.8	ug/L	57-139
4-Chlorotoluene	91.6	50.0	45.8	ug/L	78-122
P-Isopropyltoluene	96.0	50.0	48.0	ug/L	77-127
4-Methyl-2-Pentanone	106.	50.0	53.1	ug/L	67-130
Acetone	106.	50.0	52.8	ug/L	39-160
Benzene	98.2	50.0	49.1	ug/L	79-120
Bromobenzene	94.6	50.0	47.3	ug/L	80-120
Bromoform	109.	50.0	54.6	ug/L	66-130
Bromomethane	116.	50.0	58.2	ug/L	53-141
Carbon Disulfide	86.6	50.0	43.3	ug/L	64-133
Carbon Tetrachloride	98.0	50.0	49.0	ug/L	72-136
Chlorobenzene	97.6	50.0	48.8	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

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227830-1
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: P5581.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	96.8	50.0	48.4	ug/L	78-123
Dibromochloromethane	102.	50.0	51.1	ug/L	74-126
Chloroethane	95.0	50.0	47.5	ug/L	60-138
Chloroform	97.2	50.0	48.6	ug/L	79-124
Chloromethane	98.0	50.0	49.0	ug/L	50-139
cis-1,2-Dichloroethene	96.8	50.0	48.4	ug/L	78-123
cis-1,3-Dichloropropene	99.4	50.0	49.7	ug/L	75-124
Dibromomethane	107.	50.0	53.5	ug/L	79-123
Bromodichloromethane	101.	50.0	50.5	ug/L	79-125
Dichlorodifluoromethane	82.2	50.0	41.1	ug/L	32-152
Ethylbenzene	96.8	50.0	48.4	ug/L	79-121
1,2-Dibromoethane	108.	50.0	53.8	ug/L	77-121
Hexachlorobutadiene	91.8	50.0	45.9	ug/L	66-134
Isopropylbenzene	98.4	50.0	49.2	ug/L	72-131
Methyl tert-butyl Ether	94.8	50.0	47.4	ug/L	71-124
Methylene Chloride	91.0	50.0	45.5	ug/L	74-124
m+p-Xylenes	101.	100.	101.	ug/L	80-121
Naphthalene	107.	50.0	53.6	ug/L	61-128
N-Butylbenzene	94.2	50.0	47.1	ug/L	75-128
N-Propylbenzene	95.0	50.0	47.5	ug/L	76-126
o-Xylene	97.6	50.0	48.8	ug/L	78-122
sec-Butylbenzene	94.6	50.0	47.3	ug/L	77-126
Styrene	103.	50.0	51.5	ug/L	78-123
tert-Butylbenzene	94.6	50.0	47.3	ug/L	78-124
Tetrachloroethene	97.4	50.0	48.7	ug/L	74-129
Toluene	98.0	50.0	49.0	ug/L	80-121
trans-1,2-Dichloroethene	94.2	50.0	47.1	ug/L	75-124
trans-1,3-Dichloropropene	94.8	50.0	47.4	ug/L	73-127
Trichloroethene	97.6	50.0	48.8	ug/L	79-123
Trichlorofluoromethane	89.4	50.0	44.7	ug/L	65-141
Vinyl Chloride	94.4	50.0	47.2	ug/L	58-137
Dibromofluoromethane	96.6				80-120
1,2-Dichloroethane-d4	95.4				81-120
Toluene-d8	99.6				89-120
P-Bromofluorobenzene	103.				85-120

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-p.i\P050818B.b\P5581.D
Report Date: 18-May-2018 13:42

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5581.D
Lab Smp Id: WG227830-1
Inj Date : 08-MAY-2018 10:35 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227830-1,SL3808
Misc Info : WG227830,WG227568-4,SL3808-1
Comment : SW846 5030,AQ
Method : \\target_server\gg\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.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	1.514	1.515	(0.235)	363901	41.0608	41.1	
2	Chloromethane	50	1.671	1.665	(0.259)	415759	48.9877	49.0	
3	Vinyl chloride	62	1.728	1.729	(0.268)	438243	47.2186	47.2	
4	Bromomethane	94	1.979	1.987	(0.307)	247934	58.1864	58.2	
5	Chloroethane	64	2.072	2.080	(0.321)	246645	47.4753	47.5	
6	Trichlorofluoromethane	101	2.179	2.180	(0.338)	736119	44.7396	44.7	
7	Diethyl Ether	59	2.422	2.416	(0.376)	281557	47.3679	47.4	
19	Tertiary-butyl alcohol	59	3.509	3.510	(0.544)	134784	261.435	261	
8	1,1-Dichloroethene	96	2.594	2.587	(0.402)	305103	44.5666	44.6	
10	Carbon Disulfide	76	2.629	2.623	(0.408)	1002890	43.3182	43.3	
9	Freon-113	151	2.622	2.637	(0.407)	321375	48.7631	48.8	
11	Iodomethane	142	2.729	2.730	(0.423)	319338	63.6693	63.7	
12	Acrolein	56	2.901	2.902	(0.450)	292209	251.422	251	
14	Methylene Chloride	84	3.130	3.131	(0.485)	401639	45.5346	45.5	
15	Acetone	43	3.187	3.188	(0.494)	111771	52.7764	52.8	
45	Isobutyl Alcohol	43	6.791	6.792	(1.053)	245429	983.878	984	
16	trans-1,2-Dichloroethene	96	3.287	3.281	(0.510)	388066	47.1187	47.1	
13	Allyl Chloride	41	3.023	3.016	(0.469)	512550	44.7278	44.7	
18	Methyl tert-butyl ether	73	3.394	3.395	(0.527)	1143330	47.4505	47.4	
20	Acetonitrile	41	3.695	3.696	(0.573)	536211	477.632	478	
21	Di-isopropyl ether	45	3.823	3.824	(0.593)	1233356	45.0301	45.0	
22	Chloroprene	53	3.952	3.960	(0.613)	615706	44.8270	44.8	
39	Propionitrile	54	6.297	6.298	(0.977)	695504	537.226	537	
40	Methacrylonitrile	41	6.326	6.327	(0.981)	2665663	509.719	510	

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5581.D
Report Date: 18-May-2018 13:42

							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	3.981	3.989	(0.617)	770151	48.8117	48.8	
	24 Acrylonitrile	52	4.067	4.067	(0.631)	716921	255.838	256	
	25 Ethyl tertiary-butyl ether	59	4.295	4.303	(0.666)	1165976	45.7558	45.8	
	26 Vinyl Acetate	43	4.324	4.325	(0.586)	1004194	54.5012	54.5	
	27 cis-1,2-Dichloroethene	96	4.717	4.732	(0.732)	426991	48.4144	48.4	
M	98 1,2-Dichloroethylene (total)	96				815057	95.5331	95.5	
	52 Methyl Methacrylate	41	8.628	8.643	(1.168)	381538	53.6314	53.6	
	28 2,2-Dichloropropane	77	4.875	4.890	(0.756)	537574	48.3725	48.4	
	29 Bromochloromethane	128	5.025	5.026	(0.779)	189624	48.3765	48.4	
	31 Chloroform	83	5.161	5.154	(0.800)	751879	48.5681	48.6	
	32 Carbon Tetrachloride	117	5.346	5.347	(0.724)	556751	48.9697	49.0	
	33 Tetrahydrofuran	42	5.425	5.419	(0.841)	123001	52.4726	52.5	
$	34 Dibromofluoromethane	113	5.475	5.469	(0.849)	490637	48.2806	48.3	
	35 1,1,1-Trichloroethane	97	5.482	5.483	(0.850)	644529	46.5782	46.6	
	37 1,1-Dichloropropene	75	5.704	5.698	(0.772)	598249	48.4666	48.5	
	36 2-Butanone	43	5.733	5.741	(0.889)	181766	52.9573	53.0	
	38 Benzene	78	6.197	6.184	(0.839)	1681906	49.1221	49.1	
*	41 Pentafluorobenzene	168	6.448	6.441	(1.000)	1027534	50.0000		
	30 Cyclohexane	56	4.996	4.990	(0.775)	644868	43.1987	43.2	
	53 Ethyl Methacrylate	69	10.609	10.617	(1.437)	610516	48.2220	48.2	
$	42 1,2-Dichloroethane-D4	65	6.462	6.470	(1.002)	638956	47.6820	47.7	
	43 Tertiary-amyl methyl ether	73	6.476	6.463	(1.004)	1055364	46.6772	46.7	
	44 1,2-Dichloroethane	62	6.591	6.591	(0.893)	625373	46.7273	46.7	
	47 Trichloroethene	95	7.277	7.264	(0.985)	411835	48.8033	48.8	
*	48 1,4-Difluorobenzene	114	7.384	7.385	(1.000)	1625363	50.0000		
	49 Dibromomethane	93	7.985	7.979	(1.081)	272924	53.4783	53.5	
	50 1,2-Dichloropropane	63	8.156	8.164	(1.105)	422812	49.0370	49.0	
	51 Bromodichloromethane	83	8.299	8.307	(1.124)	596285	50.5016	50.5	
	57 cis-1,3-dichloropropene	75	9.300	9.301	(1.259)	734055	49.6694	49.7	
	54 1,4-Dioxane	88	8.635	8.664	(1.169)	77452	859.276	859	
$	58 Toluene-D8	98	9.572	9.573	(1.296)	1918296	49.8204	49.8	
	59 Toluene	92	9.644	9.652	(1.306)	1054467	48.9807	49.0	
	61 4-methyl-2-pentanone	43	10.280	10.281	(1.392)	391625	53.1276	53.1	
	60 Tetrachloroethene	164	10.194	10.188	(0.864)	337578	48.7292	48.7	
	62 trans-1,3-Dichloropropene	75	10.309	10.302	(1.396)	680578	47.4073	47.4	
	63 1,1,2-Trichloroethane	83	10.530	10.531	(1.426)	325193	49.5603	49.6	
	64 Dibromochloromethane	129	10.759	10.767	(0.912)	444272	51.0848	51.1	
	65 1,3-Dichloropropane	76	10.902	10.896	(0.924)	744897	46.7636	46.8	
	66 1,2-Dibromoethane	107	11.052	11.053	(1.497)	422154	53.7656	53.8	
	67 2-Hexanone	43	11.496	11.496	(0.974)	277069	53.7865	53.8	
*	68 Chlorobenzene-D5	117	11.803	11.804	(1.000)	1713562	50.0000		
	69 Chlorobenzene	112	11.824	11.825	(1.002)	1252101	48.8116	48.8	
	71 Ethylbenzene	106	11.896	11.904	(1.008)	682528	48.4424	48.4	
	72 1,1,1,2-Tetrachloroethane	131	11.939	11.940	(1.012)	416869	46.9142	46.9	
M	106 Xylenes (total)	106				2523765	149.468	149	
	73 m+p-Xylenes	106	12.110	12.111	(1.026)	1723030	100.618	101	
	74 o-Xylene	106	12.675	12.683	(1.074)	800735	48.8502	48.8	
	75 Styrene	104	12.754	12.755	(1.081)	1432307	51.5498	51.5	
	76 Bromoform	173	12.754	12.755	(1.081)	334067	54.5728	54.6	
	77 Isopropylbenzene	105	13.097	13.098	(0.887)	2125830	49.2573	49.2	
$	78 P-Bromofluorobenzene	95	13.426	13.427	(1.818)	879383	51.5086	51.5	
	79 cis-1,4-Dichloro-2-Butene	53	13.548	13.548	(0.917)	196482	47.5643	47.6	
	86 trans-1,4-Dichloro-2-Butene	53	13.934	13.942	(0.943)	170816	54.6814	54.7	
	80 Bromobenzene	156	13.533	13.527	(0.916)	536068	47.3467	47.3	

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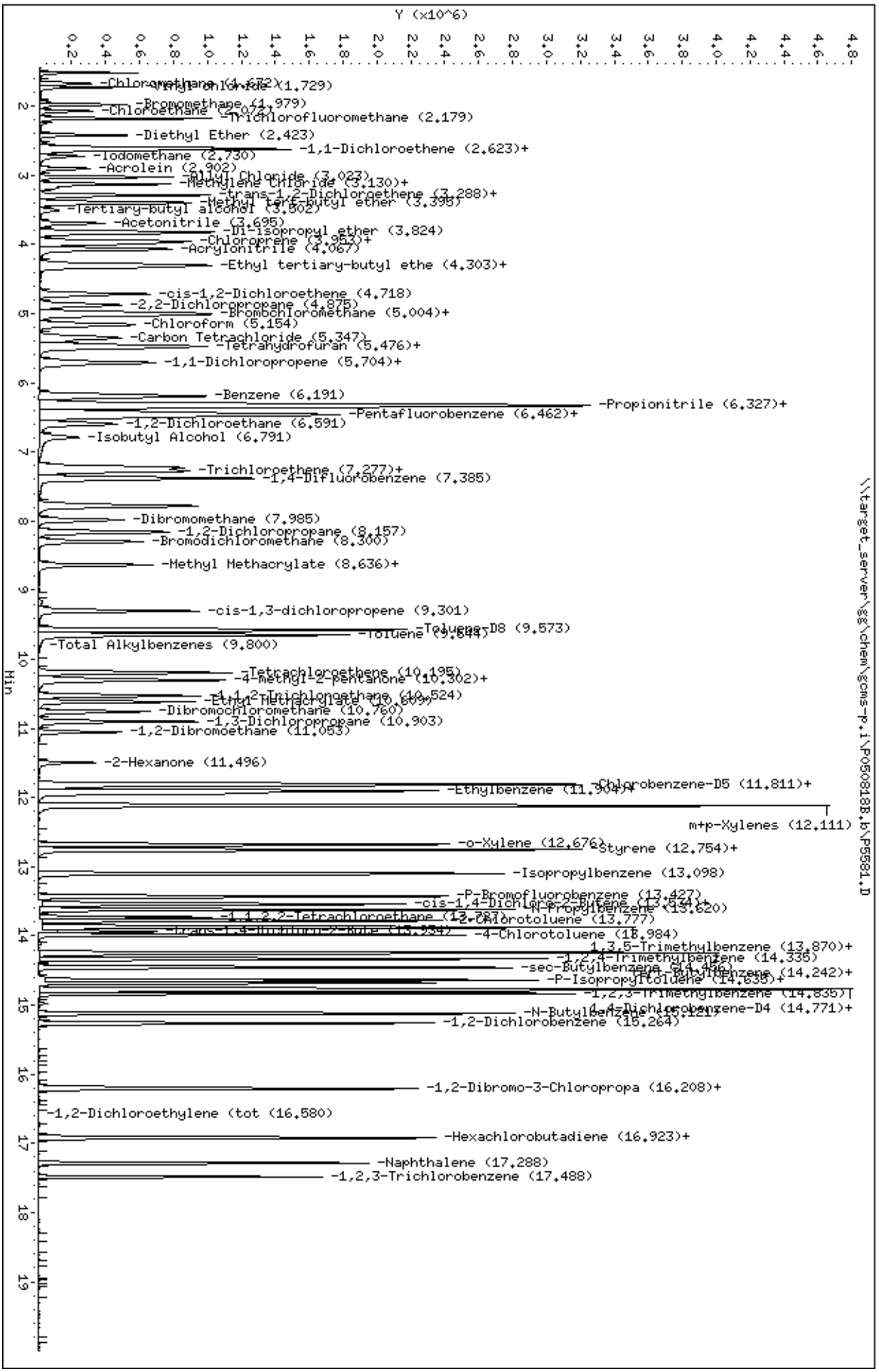
Report Date: 18-May-2018 13:42

		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	13.619	13.613	(0.922)	2471995	47.5004	47.5	
	82	1,1,2,2-Tetrachloroethane	83	13.726	13.727	(0.929)	564442	50.4167	50.4	
	85	1,3,5-Trimethylbenzene	105	13.877	13.877	(0.939)	1767179	47.9814	48.0	
	83	2-Chlorotoluene	91	13.776	13.777	(0.933)	1459622	46.2136	46.2	
	84	1,2,3-Trichloropropane	75	13.862	13.856	(0.939)	487310	47.4518	47.4	
	87	4-Chlorotoluene	91	13.984	13.985	(0.947)	1542427	45.8130	45.8	
	88	tert-Butylbenzene	119	14.241	14.242	(0.964)	1681044	47.2748	47.3	
	89	Pentachloroethane	165	14.248	14.249	(0.965)	252337	48.7532	48.8	
	90	1,2,4-Trimethylbenzene	105	14.334	14.335	(0.970)	1825035	47.9019	47.9	
	92	P-Isopropyltoluene	119	14.634	14.635	(0.991)	1775687	48.0584	48.0	
	93	1,3-Dichlorobenzene	146	14.677	14.678	(0.994)	982981	48.9677	49.0	
*	94	1,4-Dichlorobenzene-D4	152	14.770	14.771	(1.000)	1019473	50.0000		
	95	1,4-Dichlorobenzene	146	14.785	14.785	(1.001)	1003281	47.0210	47.0	
	97	N-Butylbenzene	91	15.121	15.122	(1.024)	1563103	47.1221	47.1	
	91	sec-Butylbenzene	105	14.456	14.457	(0.979)	2128130	47.3419	47.3	
	99	1,2-Dichlorobenzene	146	15.264	15.265	(1.033)	945979	48.5577	48.6	
	100	1,2-Dibromo-3-Chloropropane	157	16.179	16.172	(1.095)	117568	51.2584	51.2	
	101	1,3,5-Trichlorobenzene	180	16.207	16.207	(1.097)	698613	48.2259	48.2	
	102	Hexachlorobutadiene	225	16.908	16.908	(1.145)	236169	45.9273	45.9	
	103	1,2,4-Trichlorobenzene	180	16.930	16.922	(1.146)	601523	46.8426	46.8	
	96	1,2,3-Trimethylbenzene	105	14.835	14.835	(1.004)	1910646	47.9488	47.9	
	104	Naphthalene	128	17.287	17.288	(1.170)	1402620	53.5747	53.6	
	105	1,2,3-Trichlorobenzene	180	17.487	17.488	(1.184)	513553	56.3214	56.3	
	17	Methyl Acetate	43	3.301	3.302	(0.512)	300275	45.0950	45.1	
	46	Methylcyclohexane	83	7.227	7.228	(1.121)	628775	44.6548	44.6	
M	55	Total Alkylbenzenes	100				13212173	333.181	333	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Date : 08-MAY-2018 10:35
Client ID:
Sample Info: WG227830-1,SL3808
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\P050818B.b\P5581.D
Y (x10^6)
Min
-Chloromethane (1.672)
-Vinyl Chloride (1.729)
-Bromomethane (1.979)
-Chloroethane (2.072)
-Trichlorofluoromethane (2.179)
-Diethyl Ether (2.423)
-1,1-Dichloroethene (2.623)+
-Iodomethane (2.730)
-Acrolein (2.902)
-Allyl Chloride (3.027)
-Methylene Chloride (3.130)+
-trans-1,2-Dichloroethene (3.288)+
-Methyl tert-butyl ether (3.395)
-Tertiary-butyl alcohol (3.502)
-Acetonitrile (3.695)
-Di-isopropyl ether (3.824)
-Chloroprene (3.952)+
-Acrylonitrile (4.067)
-Ethyl tertiary-butyl ethe (4.303)+
-cis-1,2-Dichloroethene (4.718)
-2,2-Dichloropropane (4.875)
-Bromochloromethane (5.004)+
-Chloroform (5.154)
-Carbon Tetrachloride (5.347)
-Tetrahydrofuran (5.476)+
-1,1-Dichloropropene (5.704)+
-Benzene (6.191)
-Propionitrile (6.327)+
-Pentafluorobenzene (6.462)+
-1,2-Dichloroethane (6.591)
-Isobutyl Alcohol (6.791)
-Trichloroethene (7.277)+
-1,4-Difluorobenzene (7.385)
-Dibromomethane (7.985)
-1,2-Dichloropropane (8.157)
-Bromodichloromethane (8.300)
-Methyl Methacrylate (8.636)+
-cis-1,3-dichloropropene (9.301)
-Toluene-D8 (9.573)
-Toluene (9.644)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.195)
-4-methyl-2-pentanone (10.302)+
-1,1,2-Trichloroethane (10.524)
-Ethyl Methacrylate (10.609)
-Dibromochloromethane (10.760)
-1,3-Dichloropropane (10.903)
-1,2-Dibromoethane (11.053)
-2-Hexanone (11.496)
-Chlorobenzene-D5 (11.811)+
-Ethylbenzene (11.904)+
m+p-Xylenes (12.111)
-o-Xylene (12.676)
-Styrene (12.754)+
-Isopropylbenzene (13.098)
-P-Bromofluorobenzene (13.427)
-cis-1,4-Dichloro-2-Butene (13.544)+
-N-Propylbenzene (13.620)
-1,1,2,2-Tetrachloroethane (13.787)
-2-Chlorotoluene (13.777)
-trans-1,4-Dichloro-2-Bute (13.934)
-4-Chlorotoluene (13.984)
-1,3,5-Trimethylbenzene (13.870)+
-1,2,4-Trimethylbenzene (14.335)
-sec-Butylbenzene (14.496)
-Tert-Butylbenzene (14.242)+
-P-Isopropyltoluene (14.635)+
-1,2,3-Trimethylbenzene (14.835)
-4,4-Dichlorobenzene-D4 (14.771)+
-N-Butylbenzene (15.121)
-1,2-Dichlorobenzene (15.264)
-1,2-Dibromo-3-Chloropropa (16.208)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.923)+
-Naphthalene (17.288)
-1,2,3-Trichlorobenzene (17.488)

Katahdin
ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG227830-7
MSD ID: WG227830-8
Sample ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project:
SDG: SL3808
MS File ID: P5595.D

Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830
Report Date: 18-MAY-18
MSD File ID: P5596.D

Analysis Date: 08-MAY-18
Analyst: hg
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	46.6	43.3	93.2	86.6	7	20	78-125
1,1,1-Trichloroethane	50.0	50.0	ug/L	U0.50	49.1	45.4	98.2	90.8	8	20	74-131
1,1,2,2-Tetrachloroethane	50.0	50.0	ug/L	U0.50	51.2	46.9	102.	93.8	9	20	71-121
Freon-113	50.0	50.0	ug/L	U0.50	48.5	48.8	97.0	97.6	1	20	70-136
1,1,2-Trichloroethane	50.0	50.0	ug/L	U0.50	51.8	47.0	104.	94.0	10	20	80-120
1,1-Dichloroethane	50.0	50.0	ug/L	U0.50	51.3	47.2	103.	94.4	8	20	77-125
1,1-Dichloroethene	50.0	50.0	ug/L	U0.50	50.9	47.0	102.	94.0	8	20	71-131
1,1-Dichloropropene	50.0	50.0	ug/L	U0.50	50.3	46.2	101.	92.4	8	20	79-125
1,2,3-Trichlorobenzene	50.0	50.0	ug/L	U0.50	54.3	51.5	109.	103.	5	20	69-129
1,2,3-Trichloropropane	50.0	50.0	ug/L	U0.50	48.2	44.7	96.4	89.4	8	20	73-122
1,2,4-Trichlorobenzene	50.0	50.0	ug/L	U0.50	46.4	42.6	92.8	85.2	8	20	69-130
1,2,4-Trimethylbenzene	50.0	50.0	ug/L	U0.50	48.1	45.2	96.2	90.4	6	20	76-124
1,2-Dibromo-3-Chloropropane	50.0	50.0	ug/L	U0.50	47.7	46.2	95.4	92.4	3	20	62-128
1,2-Dichlorobenzene	50.0	50.0	ug/L	U0.50	48.1	45.0	96.2	90.0	7	20	80-120
1,2-Dichloroethane	50.0	50.0	ug/L	U0.50	48.6	45.0	97.2	90.0	8	20	73-128
1,2-Dichloropropane	50.0	50.0	ug/L	U0.50	50.4	46.5	101.	93.0	8	20	78-122
1,3,5-Trimethylbenzene	50.0	50.0	ug/L	U0.50	48.6	44.9	97.2	89.8	8	20	75-124
1,3-Dichlorobenzene	50.0	50.0	ug/L	U0.50	49.0	46.3	98.0	92.6	6	20	80-120
1,3-Dichloropropane	50.0	50.0	ug/L	U0.50	48.4	44.3	96.8	88.6	9	20	80-120
1,4-Dichlorobenzene	50.0	50.0	ug/L	U0.50	47.1	43.8	94.2	87.6	7	20	79-120
2,2-Dichloropropane	50.0	50.0	ug/L	U0.50	38.5	34.8	77.0	69.6	10	20	60-139
2-Butanone	50.0	50.0	ug/L	U2.5	59.3	51.4	119.	103.	14	20	56-143
2-Chlorotoluene	50.0	50.0	ug/L	U0.50	47.4	43.8	94.8	87.6	8	20	79-122
2-Hexanone	50.0	50.0	ug/L	U2.5	54.3	50.7	109.	101.	7	20	57-139
4-Chlorotoluene	50.0	50.0	ug/L	U0.50	47.0	43.6	94.0	87.2	8	20	78-122
P-Isopropyltoluene	50.0	50.0	ug/L	U0.50	48.4	45.4	96.8	90.8	6	20	77-127
4-Methyl-2-Pentanone	50.0	50.0	ug/L	U2.5	56.6	51.2	113.	102.	10	20	67-130
Acetone	50.0	50.0	ug/L	U2.5	59.8	54.5	120.	109.	9	20	39-160
Benzene	50.0	50.0	ug/L	U0.50	50.5	47.2	101.	94.4	7	20	79-120
Bromobenzene	50.0	50.0	ug/L	U0.50	46.8	44.1	93.6	88.2	6	20	80-120
Bromoform	50.0	50.0	ug/L	U0.50	48.9	45.4	97.8	90.8	7	20	66-130
Bromomethane	50.0	50.0	ug/L	U1.0	56.0	56.5	112.	113.	1	20	53-141
Carbon Disulfide	50.0	50.0	ug/L	U0.50	50.0	44.6	100.	89.2	11	20	64-133

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG227830-7
MSD ID: WG227830-8
Sample ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project:
SDG: SL3808
MS File ID: P5595.D

Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830
Report Date: 18-MAY-18
MSD File ID: P5596.D

Analysis Date: 08-MAY-18
Analyst: hg
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	47.1	44.7	94.2	89.4	5	20	72-136
Chlorobenzene	50.0	50.0	ug/L	U0.50	50.3	46.2	101.	92.4	8	20	82-120
Bromochloromethane	50.0	50.0	ug/L	U0.50	48.3	45.4	96.6	90.8	6	20	78-123
Dibromochloromethane	50.0	50.0	ug/L	U0.50	47.9	44.9	95.8	89.8	6	20	74-126
Chloroethane	50.0	50.0	ug/L	U1.0	59.9	51.6	120.	103.	15	20	60-138
Chloroform	50.0	50.0	ug/L	U0.50	51.0	46.2	102.	92.4	10	20	79-124
Chloromethane	50.0	50.0	ug/L	U1.0	57.6	50.9	115.	102.	12	20	50-139
cis-1,2-Dichloroethene	50.0	50.0	ug/L	U0.50	49.8	46.8	99.6	93.6	6	20	78-123
cis-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	46.6	43.8	93.2	87.6	6	20	75-124
Dibromomethane	50.0	50.0	ug/L	U0.50	54.3	50.2	109.	100.	8	20	79-123
Bromodichloromethane	50.0	50.0	ug/L	U0.50	50.7	47.5	101.	95.0	6	20	79-125
Dichlorodifluoromethane	50.0	50.0	ug/L	U1.0	44.6	42.2	89.2	84.4	6	20	32-152
Ethylbenzene	50.0	50.0	ug/L	U0.50	49.8	45.7	99.6	91.4	8	20	79-121
1,2-Dibromoethane	50.0	50.0	ug/L	U0.50	55.8	49.5	112.	99.0	12	20	77-121
Hexachlorobutadiene	50.0	50.0	ug/L	U0.75	42.7	39.5	85.4	79.0	8	20	66-134
Isopropylbenzene	50.0	50.0	ug/L	U0.50	50.0	46.8	100.	93.6	7	20	72-131
Methyl tert-butyl Ether	50.0	50.0	ug/L	U0.50	46.0	42.2	92.0	84.4	9	20	71-124
Methylene Chloride	50.0	50.0	ug/L	U2.5	47.4	42.8	94.8	85.6	10	20	74-124
m+p-Xylenes	100.	100.	ug/L	U1.0	102.	95.8	102.	95.8	6	20	80-121
Naphthalene	50.0	50.0	ug/L	U0.50	51.8	49.2	104.	98.4	5	20	61-128
N-Butylbenzene	50.0	50.0	ug/L	U0.50	47.9	44.3	95.8	88.6	8	20	75-128
N-Propylbenzene	50.0	50.0	ug/L	U0.50	48.7	45.3	97.4	90.6	7	20	76-126
o-Xylene	50.0	50.0	ug/L	U0.50	50.9	47.1	102.	94.2	8	20	78-122
sec-Butylbenzene	50.0	50.0	ug/L	U0.50	48.2	45.1	96.4	90.2	7	20	77-126
Styrene	50.0	50.0	ug/L	U0.50	53.8	48.8	108.	97.6	10	20	78-123
tert-Butylbenzene	50.0	50.0	ug/L	U0.50	47.0	44.2	94.0	88.4	6	20	78-124
Tetrachloroethene	50.0	50.0	ug/L	U0.50	48.8	46.0	97.6	92.0	6	20	74-129
Toluene	50.0	50.0	ug/L	U0.50	51.6	48.0	103.	96.0	7	20	80-121
trans-1,2-Dichloroethene	50.0	50.0	ug/L	U0.50	47.6	45.2	95.2	90.4	5	20	75-124
trans-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	45.3	42.3	90.6	84.6	7	20	73-127
Trichloroethene	50.0	50.0	ug/L	U0.50	51.7	48.5	103.	97.0	6	20	79-123
Trichlorofluoromethane	50.0	50.0	ug/L	U1.0	51.7	46.8	103.	93.6	10	20	65-141
Vinyl Chloride	50.0	50.0	ug/L	U1.0	55.1	50.7	110.	101.	8	20	58-137

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG227830-7
MSD ID: WG227830-8
Sample ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project:
SDG: SL3808
MS File ID: P5595.D

Received Date:
Extract Date: 08-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227830
Report Date: 18-MAY-18
MSD File ID: P5596.D

Analysis Date: 08-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Dibromofluoromethane		94.8	95.8	80-120
1,2-Dichloroethane-d4		96.7	96.1	81-120
Toluene-d8		100.	101.	89-120
P-Bromofluorobenzene		102.	102.	85-120

600 Technology Way
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Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5595.D
Report Date: 18-May-2018 13:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5595.D
Lab Smp Id: WG227830-7
Inj Date : 08-MAY-2018 18:44 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227830-7,SL3808
Misc Info : WG227830,WG227568-4,SL3808-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 16 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	1.517	1.515	(0.236)	332147	44.5749	44.6	
2	Chloromethane	50	1.667	1.665	(0.259)	411208	57.6266	57.6	
3	Vinyl chloride	62	1.725	1.729	(0.268)	429871	55.0874	55.1	
4	Bromomethane	94	1.975	1.987	(0.307)	199889	56.0135	56.0	
5	Chloroethane	64	2.068	2.080	(0.321)	261629	59.8959	59.9	
6	Trichlorofluoromethane	101	2.175	2.180	(0.338)	714774	51.6688	51.7	
7	Diethyl Ether	59	2.418	2.416	(0.375)	258600	51.7443	51.7	
19	Tertiary-butyl alcohol	59	3.505	3.510	(0.544)	89222	205.832	206	
8	1,1-Dichloroethene	96	2.590	2.587	(0.402)	293258	50.9482	50.9	
10	Carbon Disulfide	76	2.625	2.623	(0.407)	972345	49.9521	50.0	
9	Freon-113	151	2.618	2.637	(0.406)	268947	48.5358	48.5	
11	Iodomethane	142	2.726	2.730	(0.423)	262683	62.3289	62.3	
12	Acrolein	56	2.904	2.902	(0.451)	217219	222.292	222	
14	Methylene Chloride	84	3.133	3.131	(0.486)	351961	47.4588	47.4	
15	Acetone	43	3.183	3.188	(0.494)	106509	59.8154	59.8	
45	Isobutyl Alcohol	43	6.794	6.792	(1.054)	150560	723.445	723	
16	trans-1,2-Dichloroethene	96	3.283	3.281	(0.510)	329977	47.6527	47.6	
13	Allyl Chloride	41	3.026	3.016	(0.470)	399119	41.4247	41.4	
18	Methyl tert-butyl ether	73	3.398	3.395	(0.527)	931340	45.9720	46.0	
20	Acetonitrile	41	3.691	3.696	(0.573)	443129	469.466	469	
21	Di-isopropyl ether	45	3.827	3.824	(0.594)	1006337	43.6993	43.7	
22	Chloroprene	53	3.948	3.960	(0.613)	528582	45.7714	45.8	
39	Propionitrile	54	6.301	6.298	(0.978)	557956	512.594	512	
40	Methacrylonitrile	41	6.329	6.327	(0.982)	2273697	517.099	517	

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5595.D
Report Date: 18-May-2018 13:43

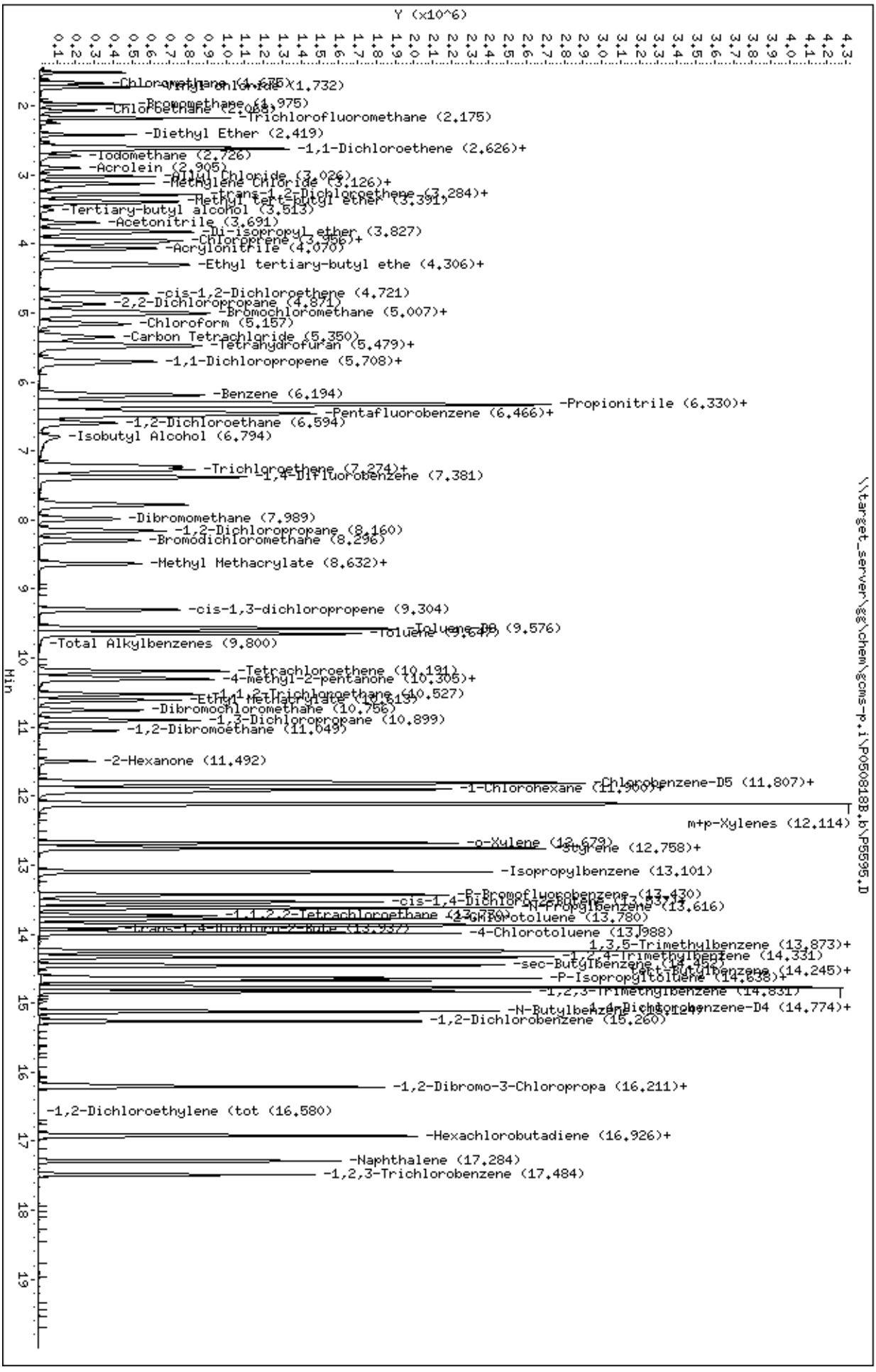
							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.984	3.989	(0.618)	680336	51.2847	51.3	
	24 Acrylonitrile	52	4.070	4.067	(0.632)	593780	252.021	252	
	25 Ethyl tertiary-butyl ether	59	4.291	4.303	(0.666)	900118	42.0119	42.0	
	26 Vinyl Acetate	43	4.320	4.325	(0.585)	843122	53.4485	53.4	
	27 cis-1,2-Dichloroethene	96	4.720	4.732	(0.733)	368964	49.7572	49.8	
M	98 1,2-Dichloroethylene (total)	96				698941	97.4099	97.4	
	52 Methyl Methacrylate	41	8.632	8.643	(1.170)	307726	50.5245	50.5	
	28 2,2-Dichloropropane	77	4.871	4.890	(0.756)	360013	38.5296	38.5	
	29 Bromochloromethane	128	5.021	5.026	(0.779)	159337	48.3475	48.3	
	31 Chloroform	83	5.157	5.154	(0.800)	663883	51.0047	51.0	
	32 Carbon Tetrachloride	117	5.350	5.347	(0.725)	458342	47.0883	47.1	
	33 Tetrahydrofuran	42	5.414	5.419	(0.840)	106642	54.1089	54.1	
$	34 Dibromofluoromethane	113	5.478	5.469	(0.850)	404912	47.3903	47.4	
	35 1,1,1-Trichloroethane	97	5.478	5.483	(0.850)	571338	49.1077	49.1	
	37 1,1-Dichloropropene	75	5.714	5.698	(0.774)	531946	50.3367	50.3	
	36 2-Butanone	43	5.729	5.741	(0.889)	171056	59.2744	59.3	
	38 Benzene	78	6.193	6.184	(0.839)	1480720	50.5132	50.5	
*	41 Pentafluorobenzene	168	6.444	6.441	(1.000)	863933	50.0000		
	30 Cyclohexane	56	4.992	4.990	(0.775)	594370	47.3557	47.4	
	53 Ethyl Methacrylate	69	10.612	10.617	(1.438)	504149	46.5701	46.6	
$	42 1,2-Dichloroethane-D4	65	6.465	6.470	(1.003)	544539	48.3313	48.3	
	43 Tertiary-amyl methyl ether	73	6.472	6.463	(1.004)	826702	43.4878	43.5	
	44 1,2-Dichloroethane	62	6.594	6.591	(0.893)	557424	48.6490	48.6	
	47 Trichloroethene	95	7.273	7.264	(0.985)	373364	51.6792	51.7	
*	48 1,4-Difluorobenzene	114	7.380	7.385	(1.000)	1391533	50.0000		
	49 Dibromomethane	93	7.981	7.979	(1.081)	237104	54.2664	54.3	
	50 1,2-Dichloropropane	63	8.160	8.164	(1.106)	372319	50.4369	50.4	
	51 Bromodichloromethane	83	8.295	8.307	(1.124)	512816	50.7305	50.7	
	57 cis-1,3-dichloropropene	75	9.304	9.301	(1.261)	589619	46.6003	46.6	
	54 1,4-Dioxane	88	8.639	8.664	(1.171)	58173	697.714	698	
$	58 Toluene-D8	98	9.575	9.573	(1.297)	1650997	50.0835	50.1	
	59 Toluene	92	9.647	9.652	(1.307)	951932	51.6482	51.6	
	61 4-methyl-2-pentanone	43	10.276	10.281	(1.392)	356954	56.5613	56.6	
	60 Tetrachloroethene	164	10.190	10.188	(0.864)	292492	48.7700	48.8	
	62 trans-1,3-Dichloropropene	75	10.305	10.302	(1.396)	555745	45.2715	45.3	
	63 1,1,2-Trichloroethane	83	10.526	10.531	(1.426)	291086	51.7763	51.8	
	64 Dibromochloromethane	129	10.755	10.767	(0.912)	360897	47.9346	47.9	
	65 1,3-Dichloropropane	76	10.898	10.896	(0.924)	667741	48.4221	48.4	
	66 1,2-Dibromoethane	107	11.048	11.053	(1.497)	374823	55.7592	55.8	
	67 2-Hexanone	43	11.492	11.496	(0.974)	242217	54.3142	54.3	
*	68 Chlorobenzene-D5	117	11.799	11.804	(1.000)	1483461	50.0000		
	69 Chlorobenzene	112	11.821	11.825	(1.002)	1117866	50.3381	50.3	
	70 1-Chlorohexane	91	11.899	11.861	(1.008)	1917347	175.968	176(R)	
	71 Ethylbenzene	106	11.899	11.904	(1.008)	607273	49.7867	49.8	
	72 1,1,1,2-Tetrachloroethane	131	11.935	11.940	(1.012)	358726	46.6384	46.6	
M	106 Xylenes (total)	106				2235555	152.974	153	
	73 m+p-Xylenes	106	12.114	12.111	(1.027)	1513632	102.100	102	
	74 o-Xylene	106	12.679	12.683	(1.075)	721923	50.8736	50.9	
	75 Styrene	104	12.757	12.755	(1.081)	1293602	53.7794	53.8	
	76 Bromoform	173	12.757	12.755	(1.081)	258995	48.8718	48.9	
	77 Isopropylbenzene	105	13.100	13.098	(0.887)	1910405	50.0058	50.0	
$	78 P-Bromofluorobenzene	95	13.429	13.427	(1.820)	744488	50.9350	50.9	
	79 cis-1,4-Dichloro-2-Butene	53	13.544	13.548	(0.917)	109893	30.0525	30.0	
	86 trans-1,4-Dichloro-2-Butene	53	13.937	13.942	(0.944)	103458	37.4135	37.4	

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5595.D
Report Date: 18-May-2018 13:43

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	80	Bromobenzene	156	13.537	13.527	(0.917)	469426	46.8371	46.8	
	81	N-Propylbenzene	91	13.615	13.613	(0.922)	2244949	48.7314	48.7	
	82	1,1,2,2-Tetrachloroethane	83	13.730	13.727	(0.930)	507341	51.1927	51.2	
	85	1,3,5-Trimethylbenzene	105	13.873	13.877	(0.939)	1584798	48.6093	48.6	
	83	2-Chlorotoluene	91	13.780	13.777	(0.933)	1324550	47.3751	47.4	
	84	1,2,3-Trichloropropane	75	13.865	13.856	(0.939)	438488	48.2345	48.2	
	87	4-Chlorotoluene	91	13.987	13.985	(0.947)	1400775	47.0008	47.0	
	88	tert-Butylbenzene	119	14.244	14.242	(0.965)	1478334	46.9652	47.0	
	89	Pentachloroethane	165	14.252	14.249	(0.965)	196729	42.9381	42.9	
	90	1,2,4-Trimethylbenzene	105	14.330	14.335	(0.970)	1623387	48.1344	48.1	
	92	P-Isopropyltoluene	119	14.638	14.635	(0.991)	1581680	48.3587	48.4	
	93	1,3-Dichlorobenzene	146	14.673	14.678	(0.994)	870420	48.9831	49.0	
*	94	1,4-Dichlorobenzene-D4	152	14.766	14.771	(1.000)	902450	50.0000		
	95	1,4-Dichlorobenzene	146	14.788	14.785	(1.001)	890040	47.1228	47.1	
	97	N-Butylbenzene	91	15.124	15.122	(1.024)	1407378	47.9292	47.9	
	91	sec-Butylbenzene	105	14.452	14.457	(0.979)	1920199	48.2555	48.2	
	99	1,2-Dichlorobenzene	146	15.267	15.265	(1.034)	830224	48.1421	48.1	
	100	1,2-Dibromo-3-Chloropropane	157	16.182	16.172	(1.096)	96730	47.7267	47.7	
	101	1,3,5-Trichlorobenzene	180	16.211	16.207	(1.098)	557150	43.4478	43.4	
	102	Hexachlorobutadiene	225	16.904	16.908	(1.145)	194578	42.7459	42.7	
	103	1,2,4-Trichlorobenzene	180	16.926	16.922	(1.146)	527416	46.4103	46.4	
	96	1,2,3-Trimethylbenzene	105	14.831	14.835	(1.004)	1617060	45.8433	45.8	
	104	Naphthalene	128	17.283	17.288	(1.170)	1200085	51.8144	51.8	
	105	1,2,3-Trichlorobenzene	180	17.483	17.488	(1.184)	438168	54.2852	54.3	
	17	Methyl Acetate	43	3.305	3.302	(0.513)	232552	41.5379	41.5	
	46	Methylcyclohexane	83	7.230	7.228	(1.122)	547413	46.2386	46.2	
M	55	Total Alkylbenzenes	100				11840725	336.984	337	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5595.D
Date : 08-MAY-2018 18:44
Client ID:
Sample Info: WG227830-7,SL3808
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\P050818B.b\P5595.D
Y (x10^6)
Min
Chloromethane (1.732)
Vinyl Chloride
Bromomethane (1.975)
Chloroethane (2.068)
Trichlorofluoromethane (2.175)
Diethyl Ether (2.419)
1,1-Dichloroethene (2.626)+
Iodomethane (2.726)
Acrolein (2.905)
Allyl Chloride (3.026)
Methylene Chloride (3.126)+
trans-1,2-Dichloroethene (3.284)+
Methyl tert-butyl ether (3.391)
Tertiary-butyl alcohol (3.513)
Acetonitrile (3.691)
Di-isopropyl ether (3.827)
Chloroprene (3.956)+
Acrylonitrile (4.070)
Ethyl tertiary-butyl ethe (4.306)+
cis-1,2-Dichloroethene (4.721)
2,2-Dichloropropane (4.871)
Bromochloromethane (5.007)+
Chloroform (5.157)
Carbon Tetrachloride (5.350)
Tetrahydrofuran (5.479)+
1,1-Dichloropropene (5.708)+
Benzene (6.194)
Propionitrile (6.330)+
Pentafluorobenzene (6.466)+
1,2-Dichloroethane (6.594)
Isobutyl Alcohol (6.794)
Trichloroethene (7.274)+
1,4-Difluorobenzene (7.381)
Dibromomethane (7.989)
1,2-Dichloropropane (8.160)
Bromodichloromethane (8.296)
Methyl Methacrylate (8.632)+
cis-1,3-dichloropropene (9.304)
Toluene-D8 (9.576)
Toluene (9.647)
Total Alkylbenzenes (9.800)
Tetrachloroethene (10.191)
4-methyl-2-pentanone (10.305)+
1,1,2-Trichloroethane (10.527)
Ethyl Methacrylate (10.613)
Dibromochloromethane (10.756)
1,3-Dichloropropane (10.899)
1,2-Dibromoethane (11.049)
2-Hexanone (11.492)
Chlorobenzene-D5 (11.807)+
1-Chlorohexane (11.960)+
m+p-Xylenes (12.114)
o-Xylene (12.679)
Styrene (12.758)+
Isopropylbenzene (13.101)
P-Bromofluorobenzene (13.430)
cis-1,4-Dichloro-2-Butene (13.537)+
N-Propylbenzene (13.616)
1,1,2,2-Tetrachloroethane (13.780)
2-Chlorotoluene (13.780)
trans-1,4-Dichloro-2-Bute (13.937)
4-Chlorotoluene (13.988)
1,3,5-Trimethylbenzene (13.873)+
1,2,4-Trimethylbenzene (14.331)
sec-Butylbenzene (14.452)
tert-Butylbenzene (14.245)+
P-Isopropyltoluene (14.638)+
1,2,3-Trimethylbenzene (14.831)
1,4-Dichlorobenzene-D4 (14.774)+
N-Butylbenzene (14.929)
1,2-Dichlorobenzene (15.260)
1,2-Dibromo-3-Chloropropa (16.211)+
1,2-Dichloroethylene (tot (16.580)
Hexachlorobutadiene (16.926)+
Naphthalene (17.284)
1,2,3-Trichlorobenzene (17.484)

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5596.D
Report Date: 18-May-2018 13:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050818B.b\P5596.D
Lab Smp Id: WG227830-8
Inj Date : 08-MAY-2018 19:18 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227830-8,SL3808
Misc Info : WG227830,WG227568-4,SL3808-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050818B.b\P8A05(68)D.m
Meth Date : 18-May-2018 13:40 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 17 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	1.515	1.515	(0.235)	338267	42.1662	42.2	
2	Chloromethane	50	1.673	1.665	(0.260)	390959	50.8906	50.9	
3	Vinyl chloride	62	1.723	1.729	(0.267)	426116	50.7208	50.7	
4	Bromomethane	94	1.973	1.987	(0.306)	217355	56.5221	56.5	
5	Chloroethane	64	2.073	2.080	(0.322)	242719	51.6131	51.6	
6	Trichlorofluoromethane	101	2.173	2.180	(0.337)	697535	46.8350	46.8	
7	Diethyl Ether	59	2.416	2.416	(0.375)	264778	49.2108	49.2	
19	Tertiary-butyl alcohol	59	3.503	3.510	(0.544)	95529	204.702	205	
8	1,1-Dichloroethene	96	2.595	2.587	(0.403)	291427	47.0276	47.0	
10	Carbon Disulfide	76	2.624	2.623	(0.407)	934304	44.5826	44.6	
9	Freon-113	151	2.624	2.637	(0.407)	291115	48.7983	48.8	
11	Iodomethane	142	2.731	2.730	(0.424)	275708	60.8082	60.8	
12	Acrolein	56	2.903	2.902	(0.451)	231675	220.216	220	
14	Methylene Chloride	84	3.131	3.131	(0.486)	341596	42.7838	42.8	
15	Acetone	43	3.181	3.188	(0.494)	104499	54.5109	54.5	
45	Isobutyl Alcohol	43	6.792	6.792	(1.054)	176110	784.218	784	
16	trans-1,2-Dichloroethene	96	3.281	3.281	(0.509)	336716	45.1661	45.2	
13	Allyl Chloride	41	3.024	3.016	(0.469)	423438	40.8217	40.8	
18	Methyl tert-butyl ether	73	3.396	3.395	(0.527)	921283	42.2399	42.2	
20	Acetonitrile	41	3.689	3.696	(0.573)	455588	448.322	448	
21	Di-isopropyl ether	45	3.825	3.824	(0.594)	1070255	43.1681	43.2	
22	Chloroprene	53	3.954	3.960	(0.614)	556118	44.7294	44.7	
39	Propionitrile	54	6.299	6.298	(0.978)	588799	502.441	502	
40	Methacrylonitrile	41	6.335	6.327	(0.983)	2346992	495.790	496	

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5596.D
Report Date: 18-May-2018 13:43

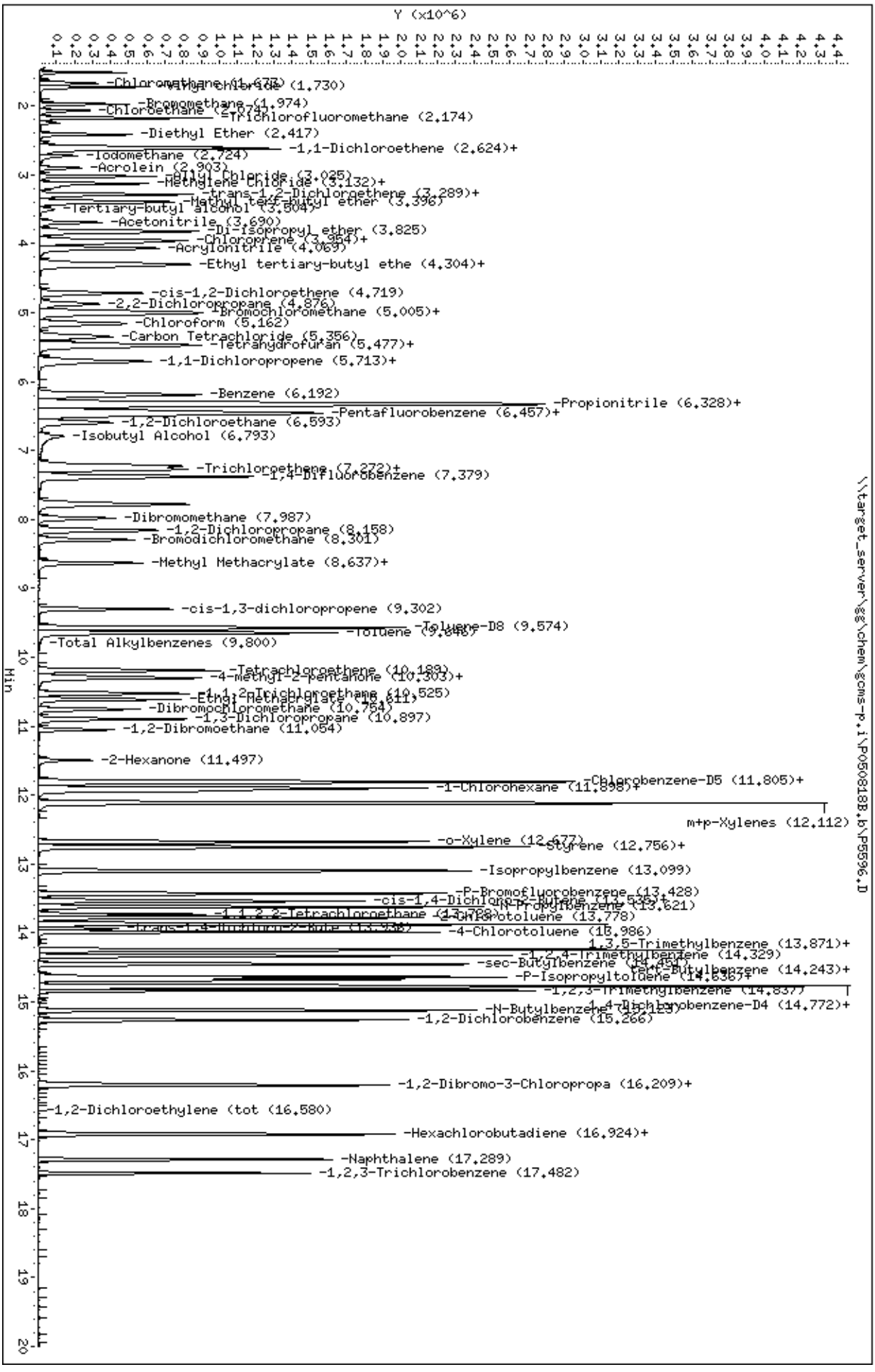
							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.982	3.989	(0.618)	674940	47.2578	47.2	
	24 Acrylonitrile	52	4.068	4.067	(0.632)	628986	247.968	248	
	25 Ethyl tertiary-butyl ether	59	4.297	4.303	(0.667)	970951	42.0934	42.1	
	26 Vinyl Acetate	43	4.325	4.325	(0.586)	828713	49.5229	49.5	
	27 cis-1,2-Dichloroethene	96	4.719	4.732	(0.733)	373517	46.7871	46.8	
M	98 1,2-Dichloroethylene (total)	96				710233	91.9532	92.0	
	52 Methyl Methacrylate	41	8.630	8.643	(1.170)	330528	51.1568	51.2	
	28 2,2-Dichloropropane	77	4.876	4.890	(0.757)	350539	34.8464	34.8	
	29 Bromochloromethane	128	5.019	5.026	(0.779)	161287	45.4570	45.4	
	31 Chloroform	83	5.162	5.154	(0.801)	647914	46.2360	46.2	
	32 Carbon Tetrachloride	117	5.355	5.347	(0.726)	461871	44.7302	44.7	
	33 Tetrahydrofuran	42	5.419	5.419	(0.841)	103323	48.6947	48.7	
$	34 Dibromofluoromethane	113	5.469	5.469	(0.849)	440597	47.8977	47.9	
	35 1,1,1-Trichloroethane	97	5.484	5.483	(0.851)	568805	45.4113	45.4	
	37 1,1-Dichloropropene	75	5.705	5.698	(0.773)	518296	46.2330	46.2	
	36 2-Butanone	43	5.720	5.741	(0.888)	159856	51.4520	51.4	
	38 Benzene	78	6.192	6.184	(0.839)	1467485	47.1914	47.2	
*	41 Pentafluorobenzene	168	6.442	6.441	(1.000)	930113	50.0000		
	30 Cyclohexane	56	4.998	4.990	(0.776)	592240	43.8286	43.8	
	53 Ethyl Methacrylate	69	10.610	10.617	(1.438)	535379	46.6176	46.6	
$	42 1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	582769	48.0441	48.0	
	43 Tertiary-amyl methyl ether	73	6.470	6.463	(1.004)	880792	43.0364	43.0	
	44 1,2-Dichloroethane	62	6.592	6.591	(0.893)	546838	44.9887	45.0	
	47 Trichloroethene	95	7.271	7.264	(0.985)	371498	48.4726	48.5	
*	48 1,4-Difluorobenzene	114	7.379	7.385	(1.000)	1476171	50.0000		
	49 Dibromomethane	93	7.986	7.979	(1.082)	232481	50.1576	50.2	
	50 1,2-Dichloropropane	63	8.158	8.164	(1.106)	364245	46.5140	46.5	
	51 Bromodichloromethane	83	8.294	8.307	(1.124)	509196	47.4843	47.5	
	57 cis-1,3-dichloropropene	75	9.302	9.301	(1.261)	587275	43.7538	43.8	
	54 1,4-Dioxane	88	8.637	8.664	(1.171)	64032	739.352	739	
$	58 Toluene-D8	98	9.574	9.573	(1.297)	1761002	50.3576	50.4	
	59 Toluene	92	9.645	9.652	(1.307)	937622	47.9550	48.0	
	61 4-methyl-2-pentanone	43	10.281	10.281	(1.393)	342967	51.2290	51.2	
	60 Tetrachloroethene	164	10.189	10.188	(0.863)	291483	45.9661	46.0	
	62 trans-1,3-Dichloropropene	75	10.310	10.302	(1.397)	550155	42.3256	42.3	
	63 1,1,2-Trichloroethane	83	10.525	10.531	(1.426)	279683	46.9796	47.0	
	64 Dibromochloromethane	129	10.753	10.767	(0.911)	357352	44.8898	44.9	
	65 1,3-Dichloropropane	76	10.896	10.896	(0.923)	646223	44.3203	44.3	
	66 1,2-Dibromoethane	107	11.054	11.053	(1.498)	353155	49.5236	49.5	
	67 2-Hexanone	43	11.497	11.496	(0.974)	239082	50.7039	50.7	
*	68 Chlorobenzene-D5	117	11.804	11.804	(1.000)	1568522	50.0000		
	69 Chlorobenzene	112	11.819	11.825	(1.001)	1084794	46.1998	46.2	
	70 1-Chlorohexane	91	11.897	11.861	(1.008)	1846135	160.244	160(R)	
	71 Ethylbenzene	106	11.897	11.904	(1.008)	589326	45.6952	45.7	
	72 1,1,1,2-Tetrachloroethane	131	11.933	11.940	(1.011)	351550	43.2945	43.3	
M	106 Xylenes (total)	106				2208165	142.888	143	
	73 m+p-Xylenes	106	12.112	12.111	(1.026)	1501207	95.7706	95.8	
	74 o-Xylene	106	12.677	12.683	(1.074)	706958	47.1173	47.1	
	75 Styrene	104	12.755	12.755	(1.081)	1242660	48.8599	48.8	
	76 Bromoform	173	12.755	12.755	(1.081)	254274	45.3789	45.4	
	77 Isopropylbenzene	105	13.099	13.098	(0.887)	1861668	46.8326	46.8	
$	78 P-Bromofluorobenzene	95	13.428	13.427	(1.820)	792867	51.1347	51.1	
	79 cis-1,4-Dichloro-2-Butene	53	13.549	13.548	(0.917)	112342	29.5259	29.5	
	86 trans-1,4-Dichloro-2-Butene	53	13.935	13.942	(0.943)	105095	36.5255	36.5	

Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5596.D
Report Date: 18-May-2018 13:43

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	80	Bromobenzene	156	13.535	13.527	(0.916)	460203	44.1289	44.1	
	81	N-Propylbenzene	91	13.621	13.613	(0.922)	2173434	45.3419	45.3	
	82	1,1,2,2-Tetrachloroethane	83	13.728	13.727	(0.929)	483942	46.9301	46.9	
	85	1,3,5-Trimethylbenzene	105	13.878	13.877	(0.939)	1523532	44.9105	44.9	
	83	2-Chlorotoluene	91	13.778	13.777	(0.933)	1274570	43.8123	43.8	
	84	1,2,3-Trichloropropane	75	13.864	13.856	(0.939)	422924	44.7109	44.7	
	87	4-Chlorotoluene	91	13.985	13.985	(0.947)	1350703	43.5559	43.6	
	88	tert-Butylbenzene	119	14.243	14.242	(0.964)	1449441	44.2542	44.2	
	89	Pentachloroethane	165	14.250	14.249	(0.965)	209645	43.9754	44.0	
	90	1,2,4-Trimethylbenzene	105	14.328	14.335	(0.970)	1588070	45.2537	45.2	
	92	P-Isopropyltoluene	119	14.636	14.635	(0.991)	1543728	45.3604	45.4	
	93	1,3-Dichlorobenzene	146	14.679	14.678	(0.994)	856165	46.3047	46.3	
*	94	1,4-Dichlorobenzene-D4	152	14.772	14.771	(1.000)	939015	50.0000		
	95	1,4-Dichlorobenzene	146	14.786	14.785	(1.001)	860924	43.8064	43.8	
	97	N-Butylbenzene	91	15.122	15.122	(1.024)	1353707	44.3062	44.3	
	91	sec-Butylbenzene	105	14.450	14.457	(0.978)	1866818	45.0871	45.1	
	99	1,2-Dichlorobenzene	146	15.265	15.265	(1.033)	807881	45.0223	45.0	
	100	1,2-Dibromo-3-Chloropropane	157	16.180	16.172	(1.095)	97272	46.1656	46.2	
	101	1,3,5-Trichlorobenzene	180	16.209	16.207	(1.097)	583847	43.7568	43.8	
	102	Hexachlorobutadiene	225	16.910	16.908	(1.145)	186941	39.4690	39.5	
	103	1,2,4-Trichlorobenzene	180	16.924	16.922	(1.146)	502223	42.5873	42.6	
	96	1,2,3-Trimethylbenzene	105	14.836	14.835	(1.004)	1673447	45.5945	45.6	
	104	Naphthalene	128	17.289	17.288	(1.170)	1185720	49.2485	49.2	
	105	1,2,3-Trichlorobenzene	180	17.482	17.488	(1.183)	432481	51.4942	51.5	
	17	Methyl Acetate	43	3.303	3.302	(0.513)	256642	42.5792	42.6	
	46	Methylcyclohexane	83	7.221	7.228	(1.121)	570535	44.7626	44.8	
M	55	Total Alkylbenzenes	100				11498730	314.514	314	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-p.i\P050818B.b\P5596.D
Date : 08-MAY-2018 19:18
Client ID:
Sample Info: WG227830-8,SL3808
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\P050818B.b\P5596.D
Y (x10^6)
Min
-Chloromethane (1.677)
-Vinyl Chloride (1.730)
-Bromomethane (1.974)
-Chloroethane (2.074)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.724)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.132)+
-trans-1,2-Dichloroethene (3.289)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.504)
-Acetonitrile (3.690)
-Di-isopropyl ether (3.825)
-Chloroprene (3.964)+
-Acrylonitrile (4.069)
-Ethyl tertiary-butyl ethe (4.304)+
-cis-1,2-Dichloroethene (4.719)
-2,2-Dichloropropane (4.876)
-Bromochloromethane (5.005)+
-Chloroform (5.162)
-Carbon Tetrachloride (5.356)
-Tetrahydrofuran (5.477)+
-1,1-Dichloropropene (5.713)+
-Benzene (6.192)
-Propionitrile (6.328)+
-Pentafluorobenzene (6.457)+
-1,2-Dichloroethane (6.593)
-Isobutyl Alcohol (6.793)
-Trichloroethene (7.272)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.158)
-Bromodichloromethane (8.301)
-Methyl Methacrylate (8.637)+
-cis-1,3-dichloropropene (9.302)
-Toluene-D8 (9.574)
-Toluene (9.648)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-Methyl-2-pentanone (10.303)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.754)
-1,3-Dichloropropane (10.897)
-1,2-Dibromoethane (11.054)
-2-Hexanone (11.497)
-Chlorobenzene-D5 (11.805)+
-1-Chlorohexane (11.898)+
m+p-Xylenes (12.112)
-o-Xylene (12.477)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.535)+
-N-Propylbenzene (13.621)
-2-Chlorotoluene (13.778)
-1,1,2,2-Tetrachloroethane (13.798)
-trans-1,4-Dichloro-2-Bute (13.938)
-4-Chlorotoluene (13.986)
-1,3,5-Trimethylbenzene (13.871)+
-1,2,4-Trimethylbenzene (14.329)
-sec-Butylbenzene (14.454)
-tert-Butylbenzene (14.243)+
-P-Isopropyltoluene (14.6367)+
-1,2,3-Trimethylbenzene (14.837)
-1,4-Dichlorobenzene-D4 (14.772)+
-N-Butylbenzene (14.913)
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.209)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.924)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-P INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 050318B

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
WG227568-10	PB016	1	-1	V0ABFBAB	✓						Y	[illegible]			
-4	P5508	1	1	P8A05(68)							Y				
-3	09	1	2								Y				Curve ok
-2	10	1	3								Y				[illegible] 050318
-1	11	1	4								Y				
-6	12	1	5								Y				
-5	13	1	6								Y				
-7	14	1	7								N				
VBLK	15	1	8								N				
WG227568-9	16	1	9								N				

5-4-18

STANDARD	CODE
BFB	V1052
CAL. STD.	V1088/V1089B
LCS/MS MIX	V1075
EXTRAS MIX	V1087

STANDARD	CODE
IS MIX	V1074
SS MIX	↓

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: 5-4-18 1113

					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
WG227167-3	P5520	1	→	[illegible]	✓						Y	[illegible]			
VSTD50	P5521		1	[illegible]							N				
↓	22		2								Y				
LCS	23		3								Y				Ind Check 'A' File
VBlankA	24		4								N				Target hits
B	25		5								Y		↓		
TCLPblank	26		6								Y		—		PBT1451A
SL3585-1 A	27		7						5.0		Y		<2		
-1+A	28	↓	8						↓		Y		<2		
SL3707-20L A	29	20	9				✓		5.1		Y		—		
SL3670-10L A+3+C	30	20	10				✓		4.2		Y		—		
SL3635-150L A	31	50	11						4.2		Y		<2		
-260L A	32	10	12						↓		Y		<2		
-300L A	33	5	13								N		<2		over-dil
-26 A	34	1	14								Y		<2		
-30 A	35	↓	15								N		<2		C.O.
-150L2 A	36	5	16								Y		<2		
-3	37	1	17						↓		Y		↓		
CCV	38	↓	18								Y				2146✓
J 2	39		19								N				Not needed
3	40		20								N				↓
Rmx	41		21								—				
↓	42	↓	22	↓	↓						—	↓	↓		
															TC 5/7/18

STANDARD	CODE
BFB	V1052
CAL. STD.	V1058
LCS/MS MIX	V1075
EXTRAS MIX	V1057

STANDARD	CODE
IS MIX	V1054
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-P INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 5-7-18 7:45

					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
WS227763-3	PB021	1	—	V1A3030A	✓						Y	TB	NA	NA	
VSt250	P5544		1	P8A05(68)						5-7-18	X N				
✓ -4	45		2								Y				
LCS -1	46		3								Y				
VBlankA	47		4								N				
B -2	48		5								Y				
MeoHblank -6	49		6								Y		↓		800ml MeoH + 40 ml DI
SL36604-1A	50		7					✓			Y		<2		
-2B	51		8					✓			Y		7		
SL3841-1A	52		9						5.0		Y		<2		
-20A	53		10						5.0		Y		<2		
SL3638-30	54		11						4.0		Y		<2		
SL3781-1DL A	55		12					✓			Y		NA		800ml MeoH + 40ml DI
-3DL A	56		13					✓			Y				✓
-2DL A	57		14					✓			Y		↓		400ml MeoH + 40 ml DI
SL3868-2A	58		15						5.0		Y		<2		
-6A	59		16						5.0		Y		<2		
-8A	60		17						5.0		Y		<2		
SL3781-2DL2	61		18					✓			Y		NA		800ml MeoH + 40ml DI
CCV1 -5	62		19								Y				18:51
2	63		20								N				not needed
✓ 3	64		21								N				
Price	65		22								N				

STANDARD	CODE
BFB	V1052
CAL. STD.	V1088/V1089A
LCS/MS MIX	V1091
EXTRAS MIX	V1087

STANDARD	CODE
IS MIX	V1074
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

VOA-024 - Revision 3 - 02/26/2018

0000067

KATAHDIN ANALYTICAL SERVICES

GCMS-P INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 050818 B 9:18

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	TRC	KI Paper Lot # COMMENTS
WG227830 -3	PB023	1	-1	VOA BFB AQ	✓						Y	[illegible]			
-4	P5580	1	1	P8A05(68)							Y				
-1	81	1	2								Y				
VBLK	82	1	3								N				
WG227830 -2	83	1	4								Y				
Meoh Blank	84	1	5								Y				
SL3573 -1DL	85	1	6				5-9-18	✓			Y				800µl ✓
-2DL	86	1	7					✓			Y				✓
SL 3900 -1 DL	87	1	8					5.1	5.1		Y				1000µl ✓ not needed
SL 3707 -1 DL	88	1	9					5.1	5.1		Y				1000µl ✓ ✓
SL 3861 -1 DL	89	1	10					✓			Y				800µl ✓
SL 3808 -10 A	90	1	11					5.0	5.0		Y		2		✓
-12 A	91	1	12				5-9-18				Y				✓
-15 A	92	1	13								Y				✓
-17 A	93	1	14								Y				✓
-4 A	94	1	15								Y				✗
-4MS C	95	1	16								Y				
-4MSD B	96	1	17								Y				
CCV 1	97	1	18								Y				19:53 ✓
2	98	1	19								N				
3	99	1	20								N				
Rinse	P5600	1	21								N				
Rinse	01	1	22								N				
Rinse	02	1	1								N				

STANDARD	CODE
BFB	V1052
CAL. STD.	V1088/V1089A
LCS/MS MIX	V1091
EXTRAS MIX	V1087

STANDARD	CODE
IS MIX	V1074
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

Cont'd

VOA-024 - Revision 3 - 02/26/2018

QAMS651

0000070

Katahdin Analytical Services 1000201

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:** AQ
Lab Code: KAS **SDG:** SL3808

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-19C-LGIA-DPT11	SL3808-10		78.5		82.4		94.4	
CHAAP-19C-UGIA-DPT02	SL3808-12		78.4		79.3		83.2	
CHAAP-EB-050218-DPT	SL3808-14		79.0		80.8		91.8	
CHAAP-19C-LGIA-DPT22	SL3808-15		83.9		88.0		97.0	
CHAAP-19C-UGIA-DPT21	SL3808-17		80.5		87.2		94.1	
CHAAP-19C-UGIA-DPT17	SL3808-2		81.6		85.1		89.6	
CHAAP-19C-LGIA-DPT18	SL3808-4		83.0		87.4		96.2	
CHAAP-19C-UGIA-DPT13	SL3808-6		76.2		77.1		88.8	
CHAAP-19C-LGIA-DPT14	SL3808-8		83.4		84.6		90.7	
Method Blank Sample	WG227671-1RA		84.9		85.1		102.	
Laboratory Control S	WG227671-2		87.8		82.8		94.9	
Matrix Spike	WG227671-3		85.4		83.1		85.3	
Matrix Spike Duplica	WG227671-4		76.4		76.3		82.0	

		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.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : U0724.D
Instrument ID : GCMS-U
Matrix : AQ

SDG : SL3808
Lab Sample ID : WG227671-1RA
Date Extracted : 04-MAY-18
Date Analyzed : 08-MAY-18
Time Analyzed : 11:38

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	WG227671-2	U0708.D	05/07/18	15:08
CHAAP-19C-UGIA-DPT17	SL3808-2	U0712.D	05/07/18	17:11
CHAAP-19C-LGIA-DPT18	SL3808-4	U0713.D	05/07/18	17:41
Matrix Spike	WG227671-3	U0714.D	05/07/18	18:11
Matrix Spike Duplica	WG227671-4	U0715.D	05/07/18	18:42
CHAAP-19C-UGIA-DPT13	SL3808-6	U0716.D	05/07/18	19:13
CHAAP-19C-LGIA-DPT14	SL3808-8	U0717.D	05/07/18	19:44
CHAAP-19C-LGIA-DPT114	SL3808-10	U0718.D	05/07/18	20:15
CHAAP-19C-UGIA-DPT02	SL3808-12	U0719.D	05/07/18	20:47
CHAAP-EB-050218-DPT	SL3808-14	U0720.D	05/07/18	21:18
CHAAP-19C-LGIA-DPT22	SL3808-15	U0729.D	05/08/18	14:11
CHAAP-19C-UGIA-DPT21	SL3808-17	U0730.D	05/08/18	14:42

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : UD891.D
Instrument ID : GCMS-U

SDG : SL3808
Date Analyzed : 07-MAY-18
Time Analyzed : 10:33

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	34.1		
68	Less than 2.0% of mass 69	0.6	1.56	1
69	Less than 100.0% of mass 198	37.1		
70	Less than 2.0% of mass 69	0.0	0.0	1
127	40.0 - 60.0% of mass 198	43.3		
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	6.8		
275	10.0 - 30.0% of mass 198	18.6		
365	1.0 - 100.0% of mass 198	2.4		
441	0.0 - 100.0% of mass 443	10.0	87.90	2
442	40.0 - 100.0% of mass 198	61.4		
443	17.0 - 23.0% of mass 442	11.4	18.52	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	WG227762-4	U0700.D	05/07/18	10:52
Initial Calibration	WG227762-2	U0701.D	05/07/18	11:25
Initial Calibration	WG227762-3	U0702.D	05/07/18	11:56
Initial Calibration	WG227762-5	U0703.D	05/07/18	12:27
Initial Calibration	WG227762-6	U0704.D	05/07/18	12:59
Initial Calibration	WG227762-7	U0705.D	05/07/18	13:29
Independent Source	WG227762-8	U0706.D	05/07/18	14:00
Laboratory Control S	WG227671-2	U0708.D	05/07/18	15:08
CHAAP-19C-UGIA-DPT17	SL3808-2	U0712.D	05/07/18	17:11
CHAAP-19C-LGIA-DPT18	SL3808-4	U0713.D	05/07/18	17:41
Matrix Spike	WG227671-3	U0714.D	05/07/18	18:11
Matrix Spike Duplica	WG227671-4	U0715.D	05/07/18	18:42
CHAAP-19C-UGIA-DPT13	SL3808-6	U0716.D	05/07/18	19:13
CHAAP-19C-LGIA-DPT14	SL3808-8	U0717.D	05/07/18	19:44
CHAAP-19C-LGIA-DPT114	SL3808-10	U0718.D	05/07/18	20:15
CHAAP-19C-UGIA-DPT02	SL3808-12	U0719.D	05/07/18	20:47
CHAAP-EB-050218-DPT	SL3808-14	U0720.D	05/07/18	21:18
Continuing Calibrati	WG227762-9	U0721.D	05/07/18	21:50

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : UD892.D
Instrument ID : GCMS-U

SDG : SL3808
Date Analyzed : 08-MAY-18
Time Analyzed : 10:39

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	32.2		
68	Less than 2.0% of mass 69	0.6	1.57	1
69	Less than 100.0% of mass 198	35.0		
70	Less than 2.0% of mass 69	0.2	0.59	1
127	40.0 - 60.0% of mass 198	44.0		
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	7.1		
275	10.0 - 30.0% of mass 198	20.5		
365	1.0 - 100.0% of mass 198	2.8		
441	0.0 - 100.0% of mass 443	12.0	84.05	2
442	40.0 - 100.0% of mass 198	72.2		
443	17.0 - 23.0% of mass 442	14.2	19.74	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	WG227838-2	U0723.D	05/08/18	10:57
Method Blank Sample	WG227671-1RA	U0724.D	05/08/18	11:38
CHAAP-19C-LGIA-DPT22	SL3808-15	U0729.D	05/08/18	14:11
CHAAP-19C-UGIA-DPT21	SL3808-17	U0730.D	05/08/18	14:42
Continuing Calibrati	WG227838-3	U0745.D	05/08/18	22:26

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227762-4
Lab File ID : U0700.D

SDG: SL3808
Analytical Date: 05/07/18 10:52
Instrument ID: GCMS-U

		1,4-DICHLOROBENZENE-D4				NAPHTHALENE-D8				ACENAPHTHENE-D10			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	51585		6.02		137647		7.65		60128		9.97	
	Upper Limit	103170		6.19		275294		7.81		120256		10.13	
	Lower Limit	25792.5		5.86		68823.5		7.48		30064		9.80	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG227671-2	41647		6.02		109374		7.66		48195		9.97	
CHAAP-19C-UGIA-DI	SL3808-2	48001		6.04		120169		7.67		56310		9.98	
CHAAP-19C-LGIA-DI	SL3808-4	44420		6.05		126057		7.68		58045		9.98	
Matrix Spike	WG227671-3	50862		6.03		122350		7.65		55169		9.97	
Matrix Spike Duplica	WG227671-4	45558		6.03		111166		7.66		49915		9.97	
CHAAP-19C-UGIA-DI	SL3808-6	45946		6.04		126868		7.67		57601		9.98	
CHAAP-19C-LGIA-DI	SL3808-8	41664		6.05		118044		7.68		52303		9.98	
CHAAP-19C-LGIA-DI	SL3808-10	41532		6.04		121251		7.68		55694		9.98	
CHAAP-19C-UGIA-DI	SL3808-12	51291		6.04		159766		7.67		60352		9.98	
CHAAP-EB-050218-D	SL3808-14	45406		6.04		128715		7.66		57348		9.98	
Continuing Calibrati	WG227762-9	39728		6.03		108449		7.65		46780		9.97	
Continuing Calibrati	WG227838-2	46490		6.03		127174		7.65		57389		9.97	
Method Blank Sample	WG227671-1RA	46496		6.03		149142		7.67		54416		9.98	
CHAAP-19C-LGIA-DI	SL3808-15	49850		6.04		135701		7.66		63054		9.97	
CHAAP-19C-UGIA-DI	SL3808-17	49361		6.03		154270		7.67		61929		9.97	
Continuing Calibrati	WG227838-3	43462		6.03		115995		7.65		53995		9.97	

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 : WG227762-4
Lab File ID : U0700.D

SDG: SL3808
Analytical Date: 05/07/18 10:52
Instrument ID: GCMS-U

		PHENANTHRENE-D10				CHRYSENE-D12				PERYLENE-D12			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	97557		11.97		75196		15.74		54533		18.77	
	Upper Limit	195114		12.13		150392		15.91		109066		18.93	
	Lower Limit	48778.5		11.80		37598		15.58		27266.5		18.60	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG227671-2	77243		11.97		48072		15.74		33004		18.78	
CHAAP-19C-UGIA-DI	SL3808-2	93228		11.98		57194		15.77		41317		18.78	
CHAAP-19C-LGIA-DI	SL3808-4	95389		11.98		58600		15.76		41611		18.78	
Matrix Spike	WG227671-3	97139		11.97		64969		15.75		48504		18.76	
Matrix Spike Duplica	WG227671-4	79958		11.97		54075		15.74		40762		18.77	
CHAAP-19C-UGIA-DI	SL3808-6	96860		11.98		60614		15.77		41203		18.78	
CHAAP-19C-LGIA-DI	SL3808-8	86885		11.99		56061		15.77		37971		18.78	
CHAAP-19C-LGIA-DI	SL3808-10	94740		11.99		58572		15.77		36971		18.78	
CHAAP-19C-UGIA-DI	SL3808-12	101640		11.98		66585		15.77		45311		18.78	
CHAAP-EB-050218-D	SL3808-14	95754		11.98		56410		15.77		37311		18.79	
Continuing Calibrati	WG227762-9	80735		11.97		55109		15.75		38018		18.78	
Continuing Calibrati	WG227838-2	88946		11.95		61397		15.74		43342		18.77	
Method Blank Sample	WG227671-1RA	87677		11.98		47484		15.77		30742		18.80	
CHAAP-19C-LGIA-DI	SL3808-15	111470		11.97		74247		15.74		55595		18.74	
CHAAP-19C-UGIA-DI	SL3808-17	106098		11.97		66300		15.75		51497		18.74	
Continuing Calibrati	WG227838-3	90389		11.96		58723		15.73		40250		18.75	

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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Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

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.

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-2
Client ID: CHAAP-19C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0712.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	JB	0.12	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		81.6	%					
Fluorene-D10		85.1	%					
Pyrene-D10		89.6	%					

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-u.i\U050718.b\U0712.D
Report Date: 14-May-2018 11:15

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0712.D
Lab Smp Id: SL3808-2 Client Smp ID: HAAP-19C-UGIA-DPT17
Inj Date : 07-MAY-2018 17:11 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3808-2
Misc Info : WG227762,WG227671,WG227762-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

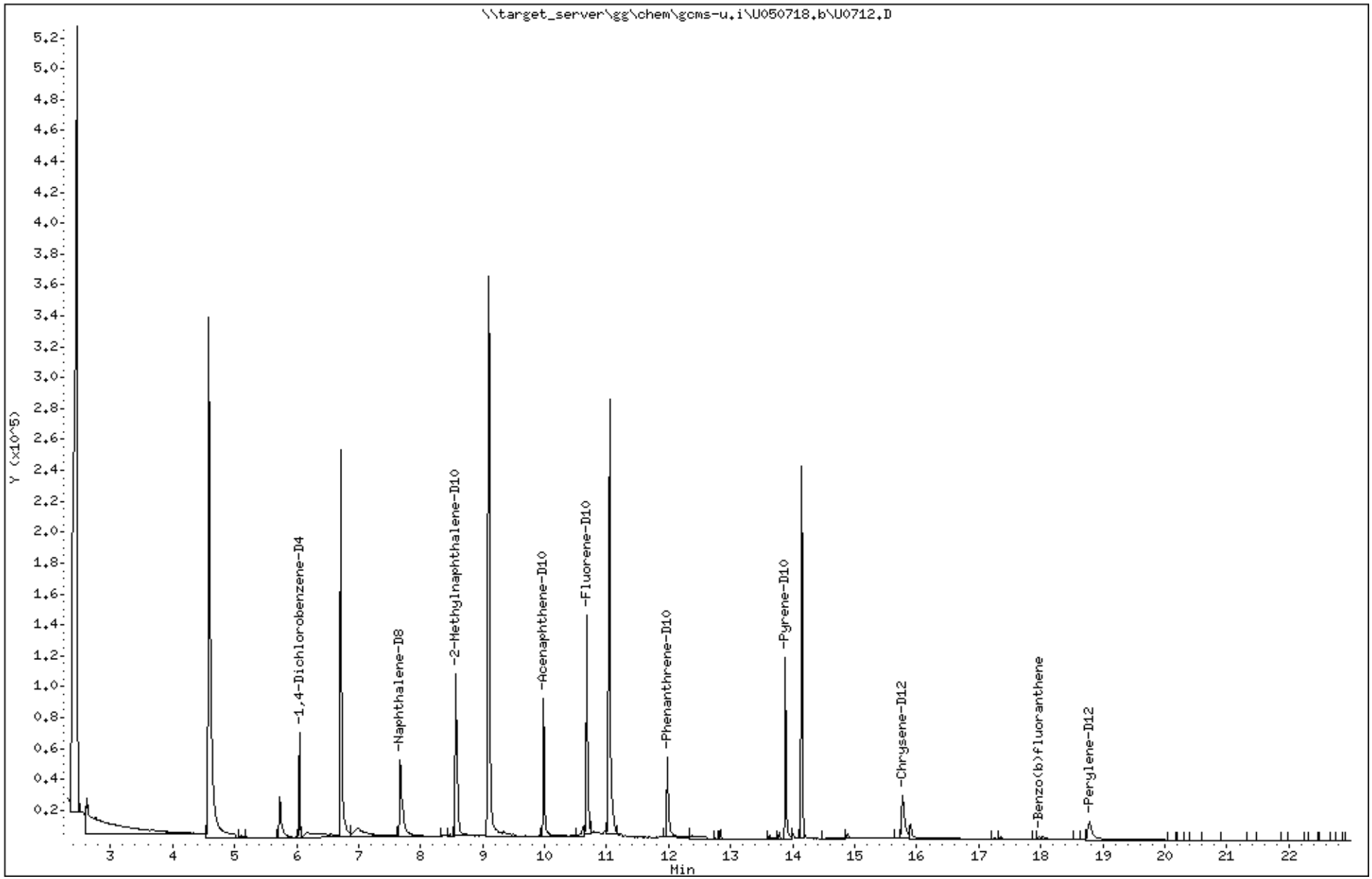
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	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	6.044	6.025	(1.000)	48001	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.670	7.647	(1.000)	120169	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	8.575	8.551	(0.859)	110836	1.63245	1.55	
*	47 Acenaphthene-D10	164	9.980	9.968	(1.000)	56310	0.80000	(a)	
$	55 Fluorene-D10	174	10.674	10.673	(1.070)	97601	1.70211	1.62	
*	65 Phenanthrene-D10	188	11.977	11.955	(1.000)	93228	0.80000	(a)	
$	71 Pyrene-D10	212	13.884	13.875	(0.880)	121742	1.79220	1.71	
*	76 Chrysene-D12	240	15.773	15.726	(1.000)	57194	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	17.968	17.887	(0.957)	3314	0.12189	0.116(a)	
*	83 Perylene-D12	264	18.777	18.753	(1.000)	41317	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-u.i\U050718.b\U0712.D
Date : 07-MAY-2018 17:11
Client ID: HAAP-19C-UGIA-DPT17
Instrument: gcms-u.i
Sample Info: SL3808-2
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000014

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0712.D

Date : 07-MAY-2018 17:11

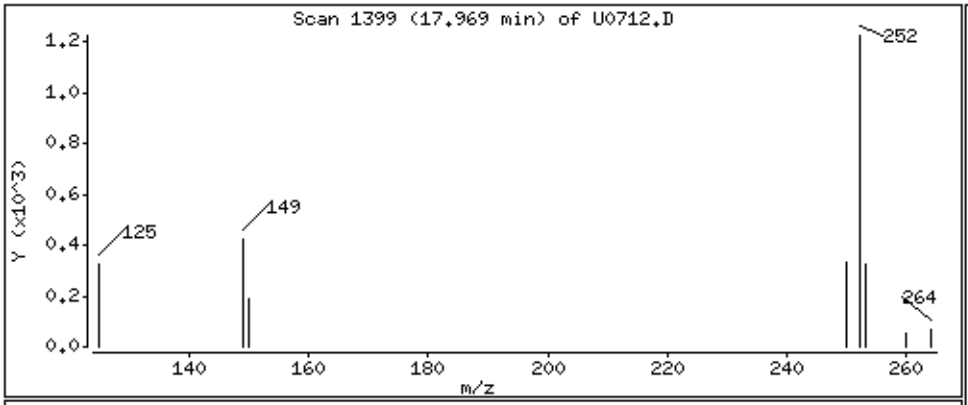
Client ID: HAAP-19C-UGIA-DPT17 Instrument: gcms-u.i

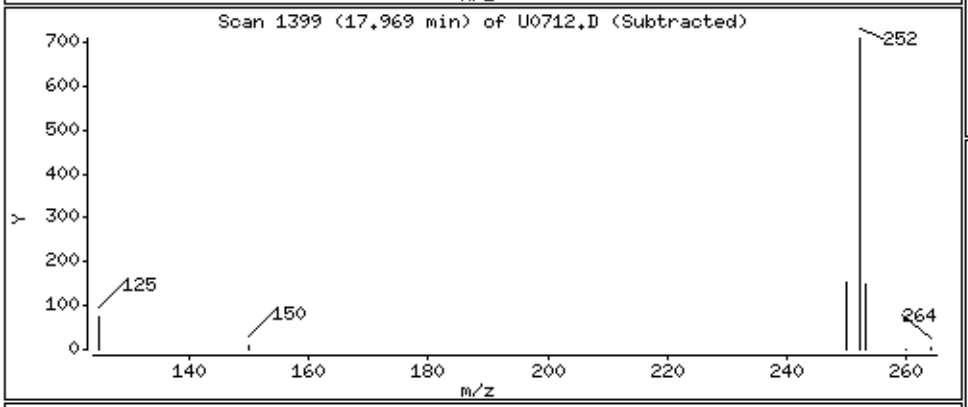
Sample Info: SL3808-2

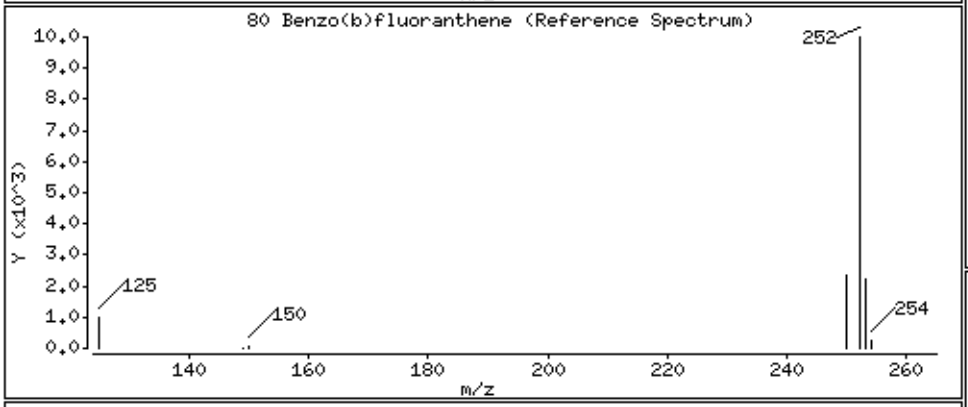
Volume Injected (uL): 1.0 Operator: JCG

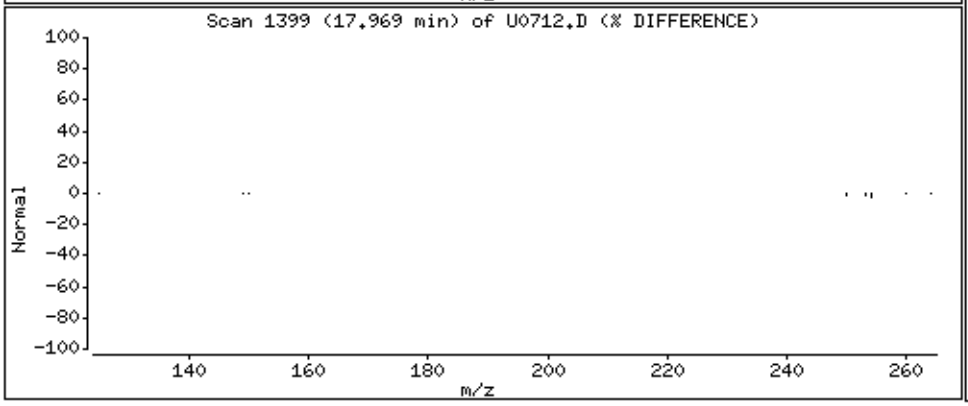
Column phase: ZB5-MS Column diameter: 0.25

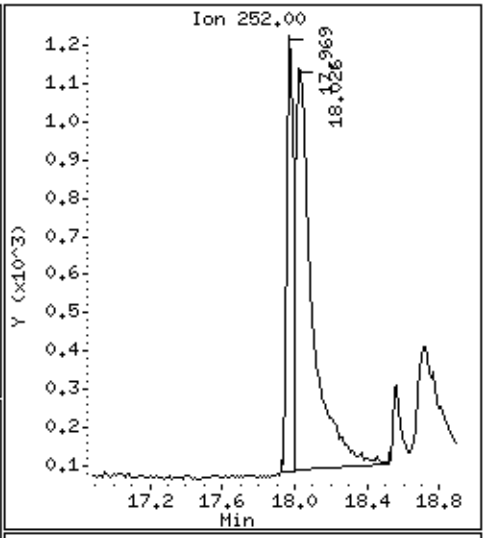
80 Benzo(b)fluoranthene Concentration: 0.116 ug/L

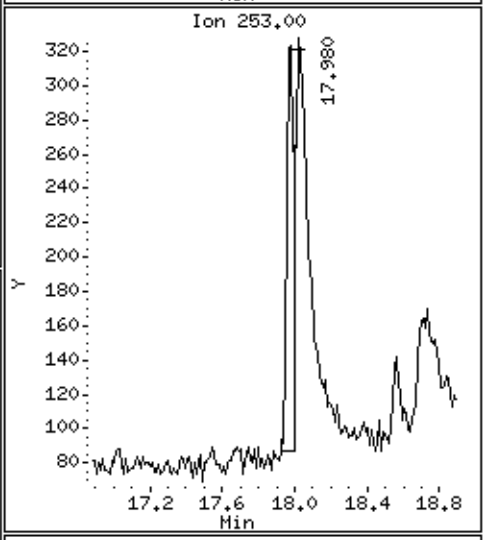


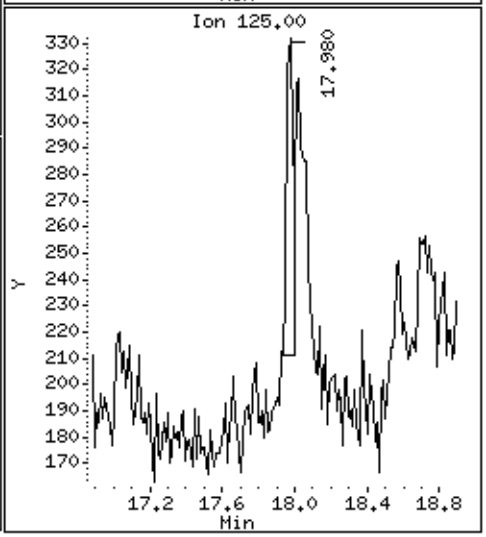












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0713.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.096	ug/L	1	.2	0.19	0.062	0.096
2-Methylnaphthalene	U	0.096	ug/L	1	.2	0.19	0.074	0.096
Acenaphthylene	U	0.096	ug/L	1	.2	0.19	0.052	0.096
Acenaphthene	U	0.096	ug/L	1	.2	0.19	0.062	0.096
Fluorene	U	0.096	ug/L	1	.2	0.19	0.059	0.096
Phenanthrene	U	0.096	ug/L	1	.2	0.19	0.049	0.096
Anthracene	U	0.096	ug/L	1	.2	0.19	0.042	0.096
Fluoranthene	U	0.096	ug/L	1	.2	0.19	0.070	0.096
Pyrene	U	0.096	ug/L	1	.2	0.19	0.057	0.096
Benzo(a)anthracene	U	0.096	ug/L	1	.2	0.19	0.044	0.096
Chrysene	U	0.096	ug/L	1	.2	0.19	0.035	0.096
Benzo(b)Fluoranthene	JB	0.11	ug/L	1	.2	0.19	0.086	0.096
Benzo(k)fluoranthene	U	0.096	ug/L	1	.2	0.19	0.047	0.096
Benzo(a)pyrene	U	0.096	ug/L	1	.2	0.19	0.063	0.096
Indeno(1,2,3-cd)pyrene	U	0.096	ug/L	1	.2	0.19	0.050	0.096
Dibenzo(a,h)anthracene	U	0.096	ug/L	1	.2	0.19	0.067	0.096
Benzo(g,h,i)perylene	U	0.096	ug/L	1	.2	0.19	0.062	0.096
2-Methylnaphthalene-D10		83.0	%					
Fluorene-D10		87.4	%					
Pyrene-D10		96.2	%					

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-u.i\U050718.b\U0713.D
Report Date: 14-May-2018 11:15

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0713.D
Lab Smp Id: SL3808-4 Client Smp ID: HAAP-19C-LGIA-DPT18
Inj Date : 07-MAY-2018 17:41 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3808-4
Misc Info : WG227762,WG227671,WG227762-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

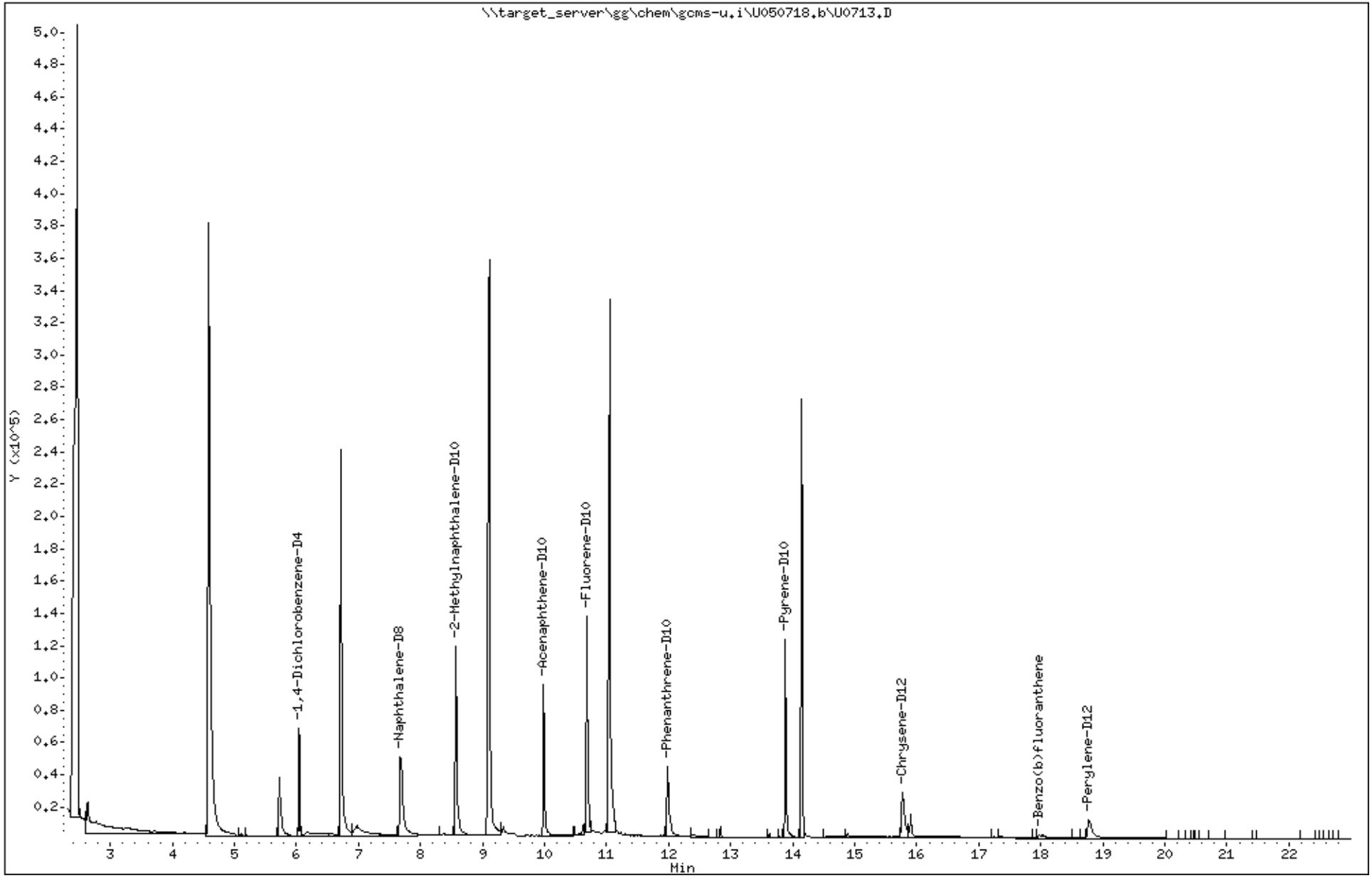
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.040	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	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	6.045	6.025	(1.000)	44420	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.684	7.647	(1.000)	126057	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	8.574	8.551	(0.859)	116120	1.65915	1.60	
*	47 Acenaphthene-D10	164	9.979	9.968	(1.000)	58045	0.80000	(a)	
$	55 Fluorene-D10	174	10.673	10.673	(1.070)	103277	1.74726	1.68	
*	65 Phenanthrene-D10	188	11.978	11.955	(1.000)	95389	0.80000	(a)	
$	71 Pyrene-D10	212	13.885	13.875	(0.881)	133932	1.92435	1.85	
*	76 Chrysene-D12	240	15.764	15.726	(1.000)	58600	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	17.979	17.887	(0.958)	3168	0.11876	0.114(aQ)	
*	83 Perylene-D12	264	18.776	18.753	(1.000)	41611	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-u.i\U050718.b\U0713.D
Date : 07-MAY-2018 17:41
Client ID: HAAP-19C-LGIA-DPT18
Instrument: gcms-u.i
Sample Info: SL3808-4
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000018

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0713.D

Date : 07-MAY-2018 17:41

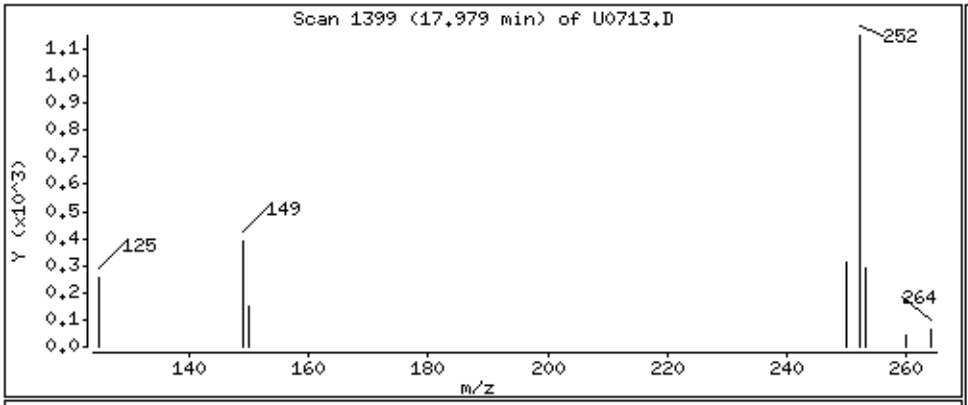
Client ID: HAAP-19C-LGIA-DPT18 Instrument: gcms-u.i

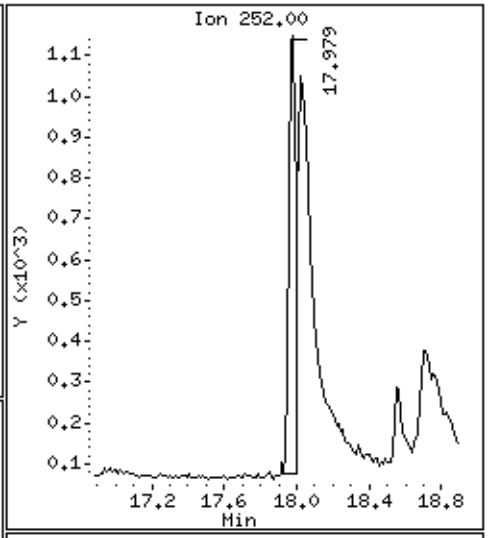
Sample Info: SL3808-4

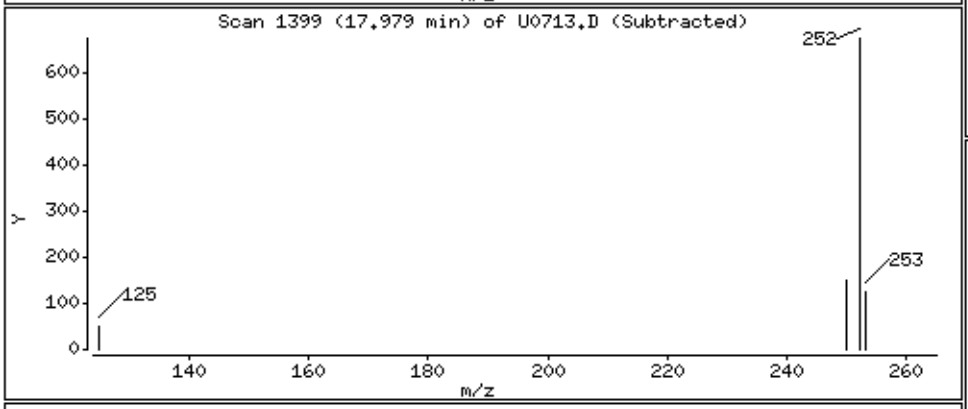
Volume Injected (uL): 1.0 Operator: JCG

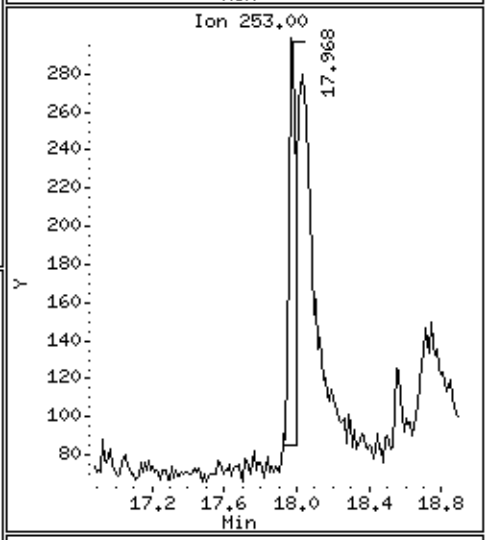
Column phase: ZB5-MS Column diameter: 0.25

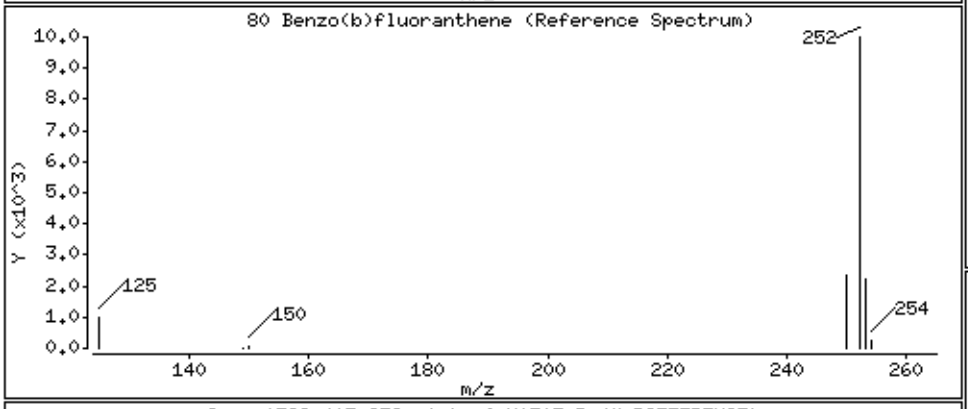
80 Benzo(b)fluoranthene Concentration: 0.114 ug/L

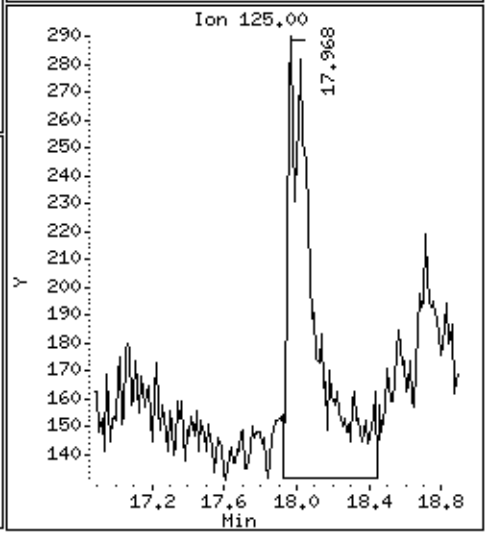


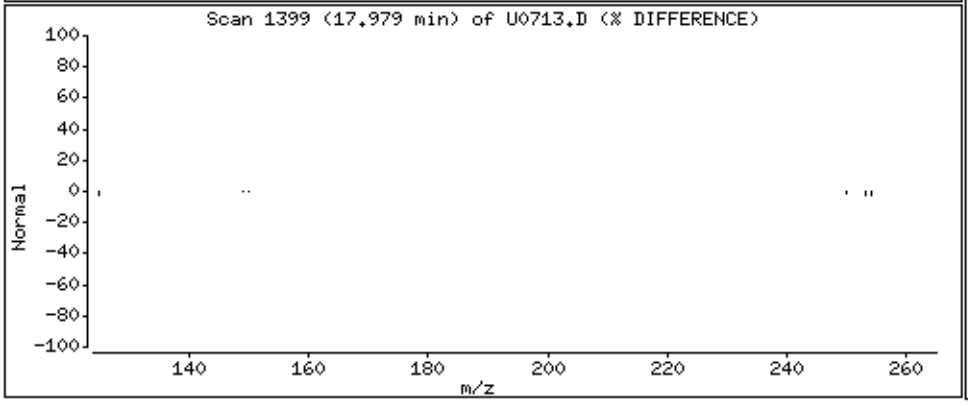












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-6
Client ID: CHAAP-19C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0716.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.078	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.055	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.062	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.045	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.074	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.060	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.047	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.037	0.10
Benzo(b)Fluoranthene	JB	0.12	ug/L	1	.2	0.20	0.091	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.050	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.067	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.053	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.071	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
2-Methylnaphthalene-D10		76.2	%					
Fluorene-D10		77.1	%					
Pyrene-D10		88.8	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0716.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0716.D
Lab Smp Id: SL3808-6 Client Smp ID: HAAP-19C-UGIA-DPT13
Inj Date : 07-MAY-2018 19:13 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3808-6
Misc Info : WG227762,WG227671,WG227762-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

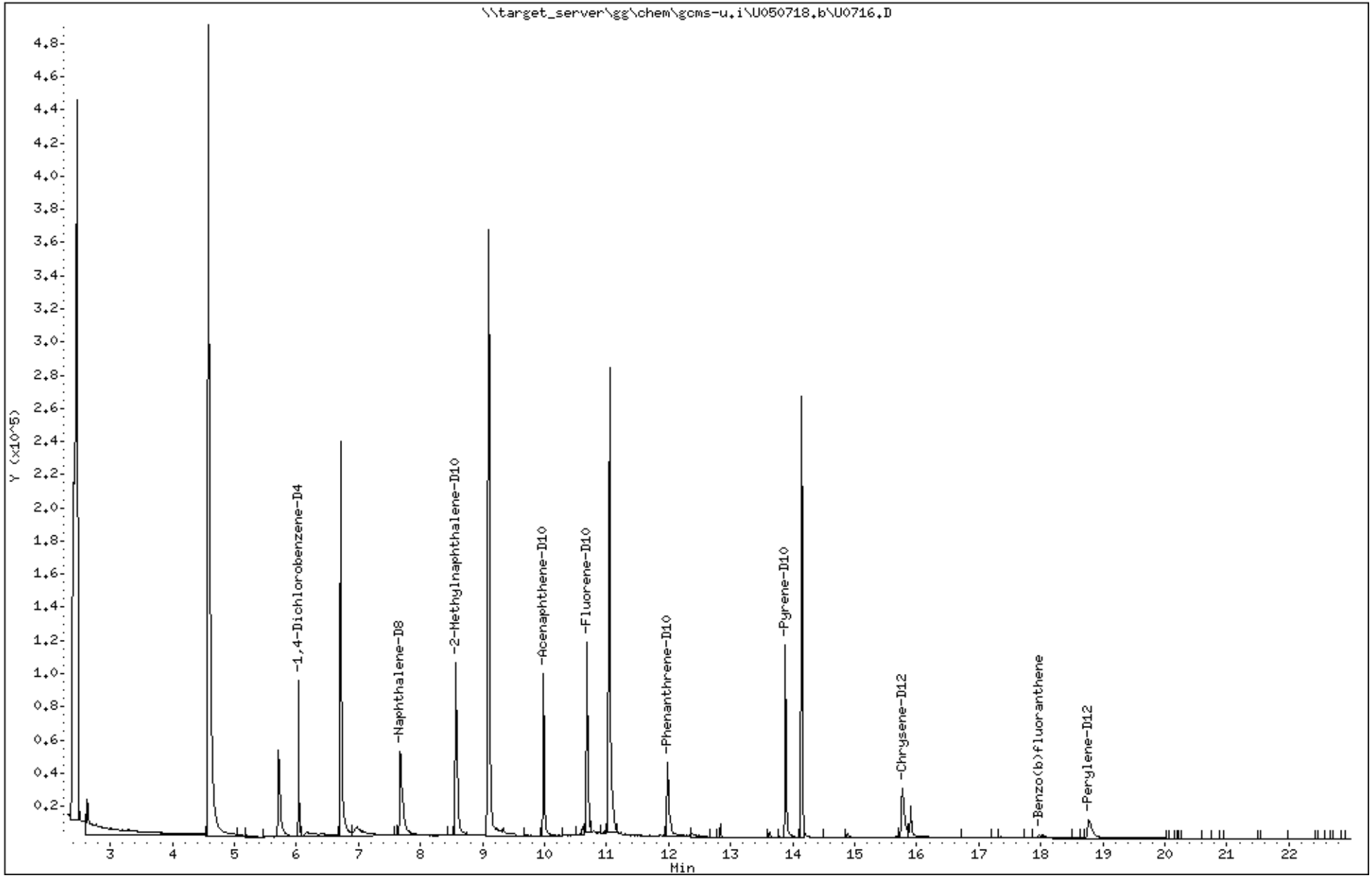
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.98000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

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	6.035	6.025	(1.000)	45946	0.80000	(aQ)	
* 26 Naphthalene-D8	136	7.671	7.647	(1.000)	126868	0.80000	(a)	
$ 32 2-Methylnaphthalene-D10	152	8.576	8.551	(0.859)	105843	1.52397	1.56	
* 47 Acenaphthene-D10	164	9.980	9.968	(1.000)	57601	0.80000	(a)	
$ 55 Fluorene-D10	174	10.687	10.673	(1.071)	90447	1.54200	1.57	
* 65 Phenanthrene-D10	188	11.978	11.955	(1.000)	96860	0.80000	(a)	
$ 71 Pyrene-D10	212	13.885	13.875	(0.881)	127879	1.77633	1.81	
* 76 Chrysene-D12	240	15.765	15.726	(1.000)	60614	0.80000	(a)	
80 Benzo(b)fluoranthene	252	17.967	17.887	(0.957)	3294	0.12169	0.124(a)	
* 83 Perylene-D12	264	18.776	18.753	(1.000)	41203	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-u.i\U050718.b\U0716.D
Date : 07-MAY-2018 19:13
Client ID: HAAP-19C-UGIA-DPT13
Instrument: gcms-u.i
Sample Info: SL3808-6
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000022

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0716.D

Date : 07-MAY-2018 19:13

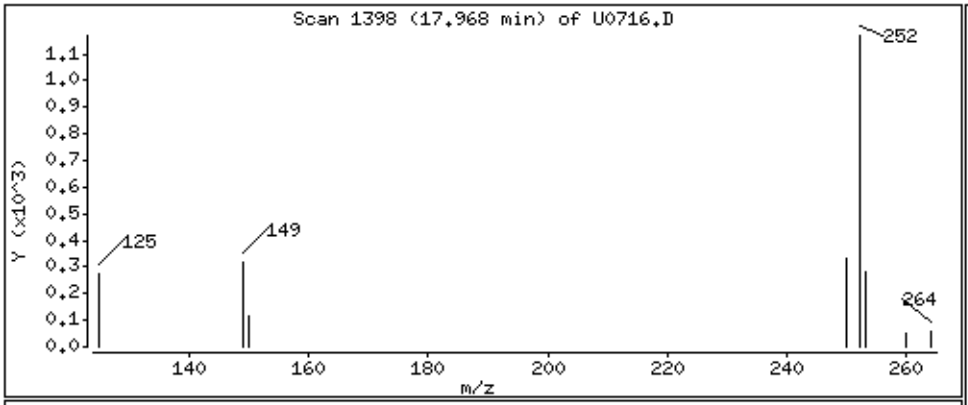
Client ID: HAAP-19C-UGIA-DPT13 Instrument: gcms-u.i

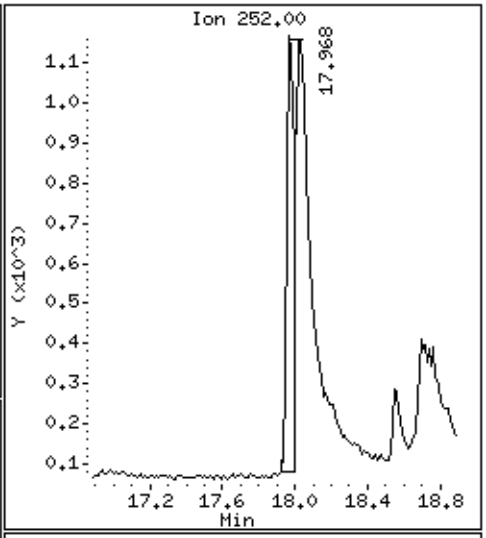
Sample Info: SL3808-6

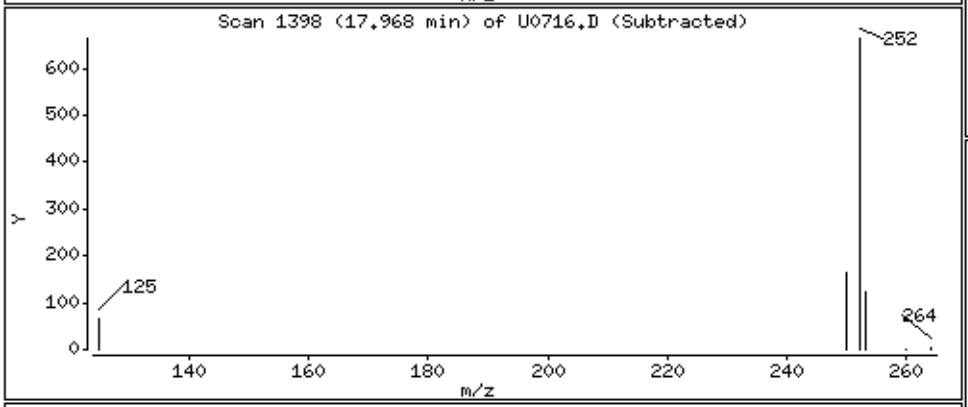
Volume Injected (uL): 1.0 Operator: JCG

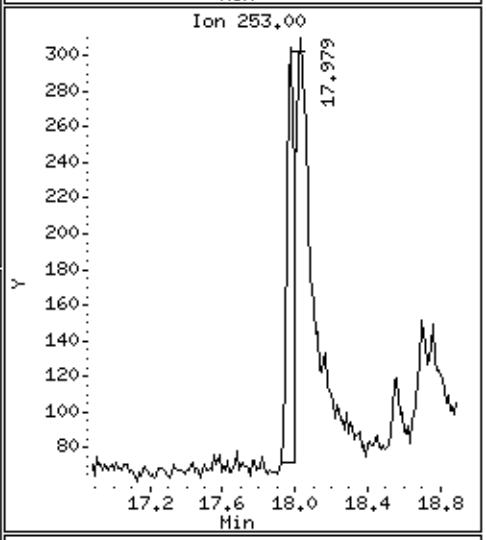
Column phase: ZB5-MS Column diameter: 0.25

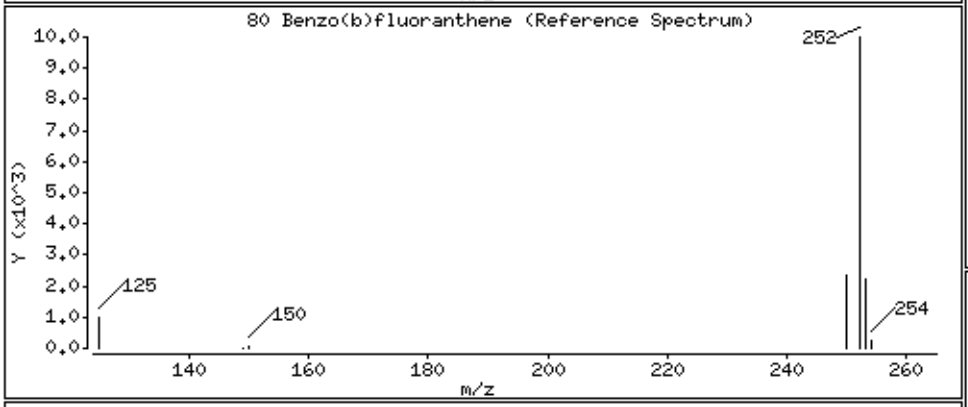
80 Benzo(b)fluoranthene Concentration: 0.124 ug/L

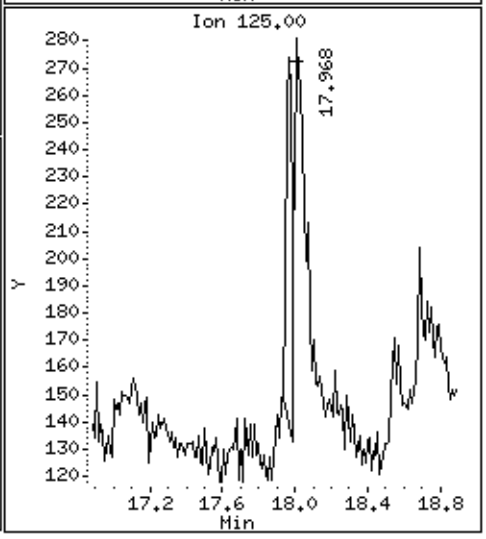


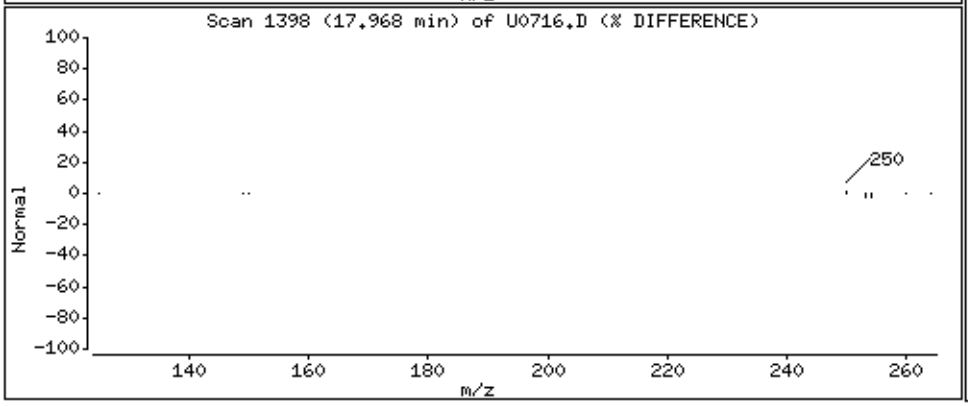












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-8
Client ID: CHAAP-19C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0717.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Acenaphthylene	U	0.094	ug/L	1	.2	0.19	0.051	0.094
Acenaphthene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Fluorene	U	0.094	ug/L	1	.2	0.19	0.058	0.094
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Anthracene	U	0.094	ug/L	1	.2	0.19	0.042	0.094
Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.069	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	J	0.046	ug/L	1	.2	0.19	0.043	0.094
Chrysene	U	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)Fluoranthene	JB	0.14	ug/L	1	.2	0.19	0.084	0.094
Benzo(k)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.046	0.094
Benzo(a)pyrene	J	0.067	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
Benzo(g,h,i)perylene	U	0.094	ug/L	1	.2	0.19	0.061	0.094
2-Methylnaphthalene-D10		83.4	%					
Fluorene-D10		84.6	%					
Pyrene-D10		90.7	%					

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Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0717.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0717.D
Lab Smp Id: SL3808-8 Client Smp ID: HAAP-19C-LGIA-DPT14
Inj Date : 07-MAY-2018 19:44 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3808-8
Misc Info : WG227762,WG227671,WG227762-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

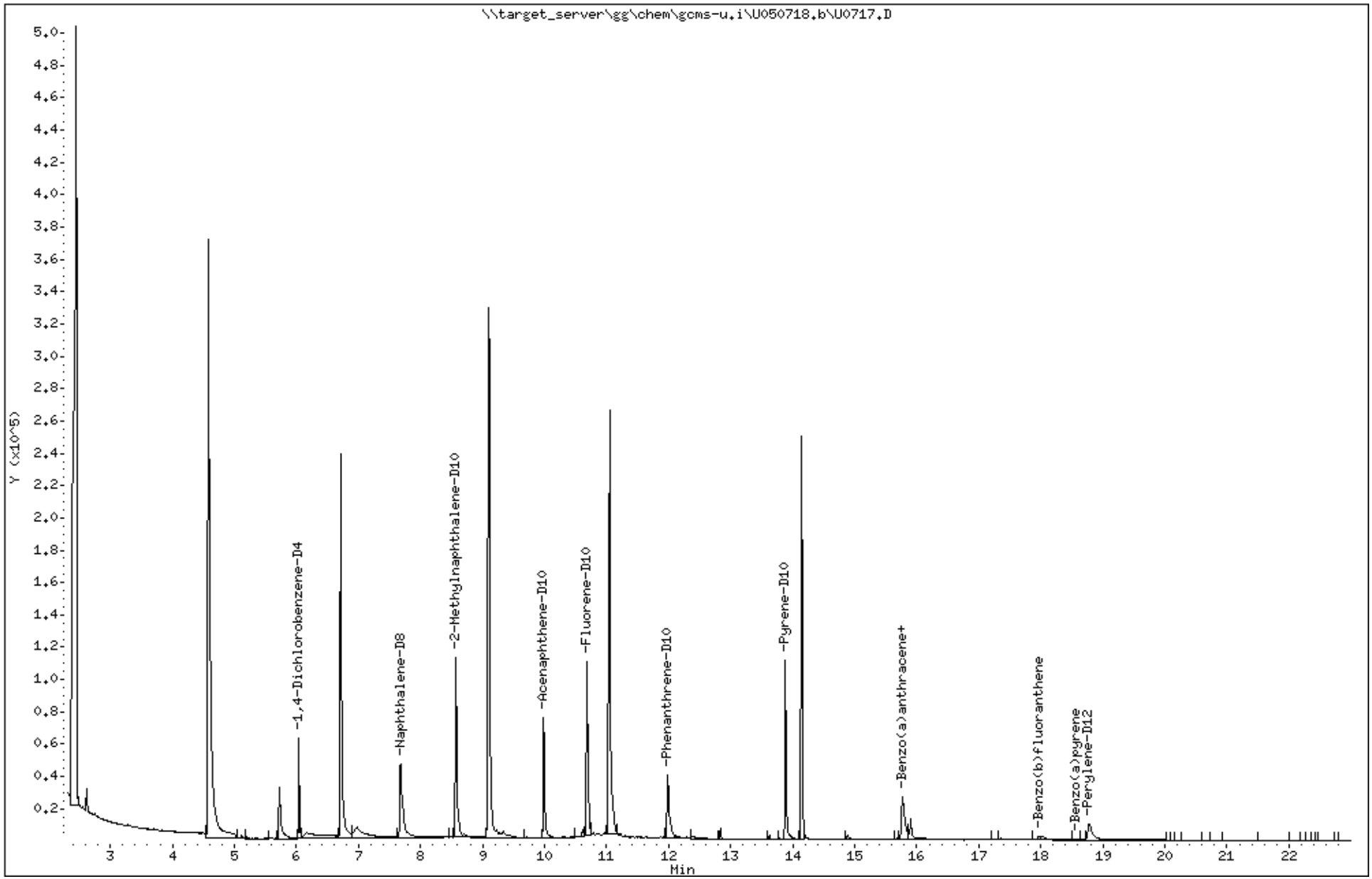
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	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	6.045	6.025	(1.000)	41664	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.684	7.647	(1.000)	118044	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	8.575	8.551	(0.859)	105257	1.66905	1.57	
*	47 Acenaphthene-D10	164	9.979	9.968	(1.000)	52303	0.80000	(a)	
$	55 Fluorene-D10	174	10.687	10.673	(1.071)	90157	1.69275	1.60	
*	65 Phenanthrene-D10	188	11.990	11.955	(1.000)	86885	0.80000	(a)	
$	71 Pyrene-D10	212	13.885	13.875	(0.881)	120800	1.81428	1.71	
	74 Benzo(a)anthracene	228	15.765	15.706	(1.000)	3106	0.04916	0.0464(a)	
*	76 Chrysene-D12	240	15.765	15.726	(1.000)	56061	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	17.968	17.887	(0.957)	4124	0.14373	0.136(aQ)	
	82 Benzo(a)pyrene	252	18.719	18.616	(0.997)	3643	0.07084	0.0668(a)	
*	83 Perylene-D12	264	18.776	18.753	(1.000)	37971	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-u.i\U050718.b\U0717.D
Date : 07-MAY-2018 19:44
Client ID: HAAP-19C-LGIA-DPT14
Instrument: gcms-u.i
Sample Info: SL3808-8
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000026

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0717.D

Date : 07-MAY-2018 19:44

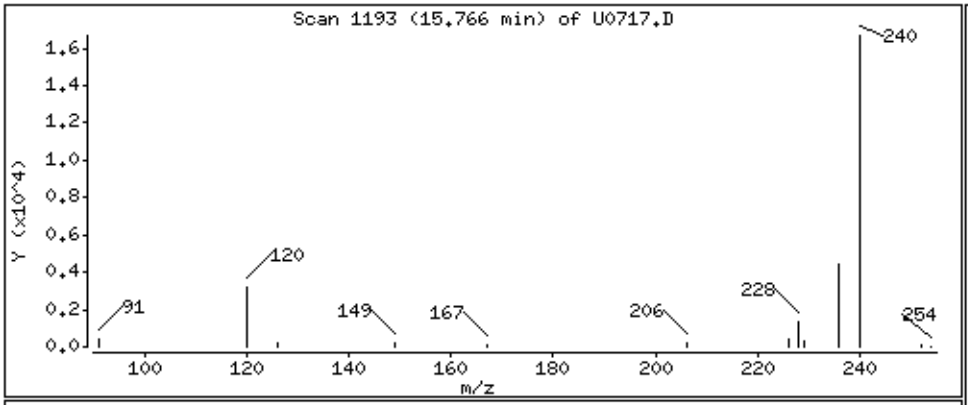
Client ID: HAAP-19C-LGIA-DPT14 Instrument: gcms-u.i

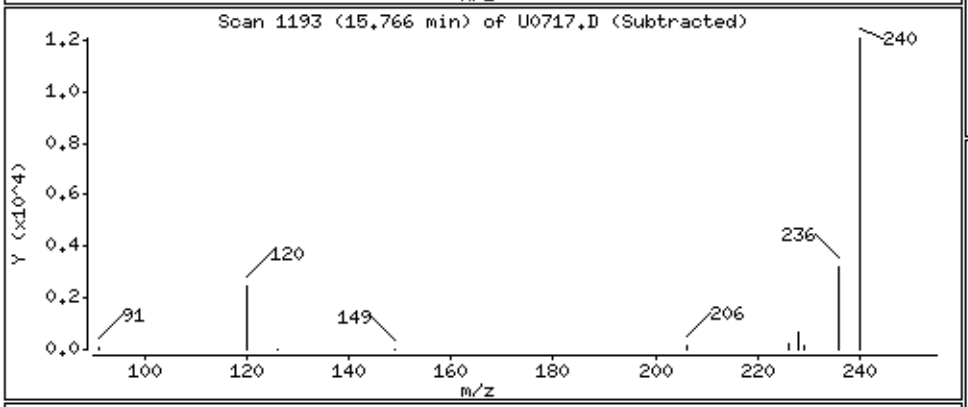
Sample Info: SL3808-8

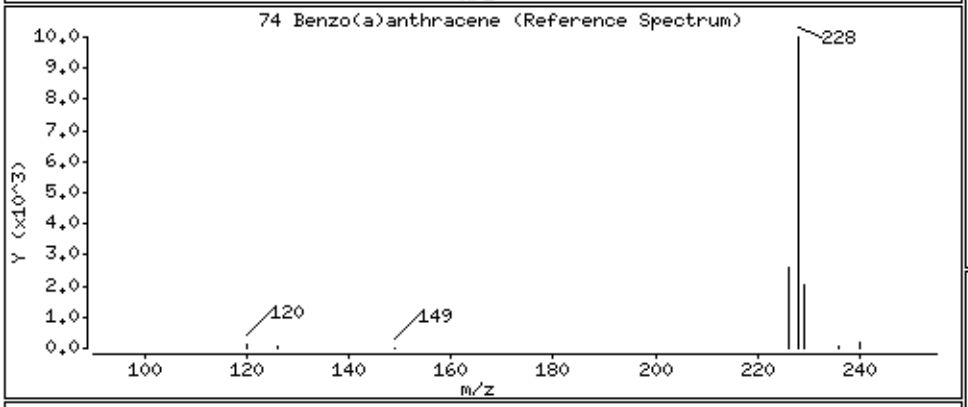
Volume Injected (uL): 1.0 Operator: JCG

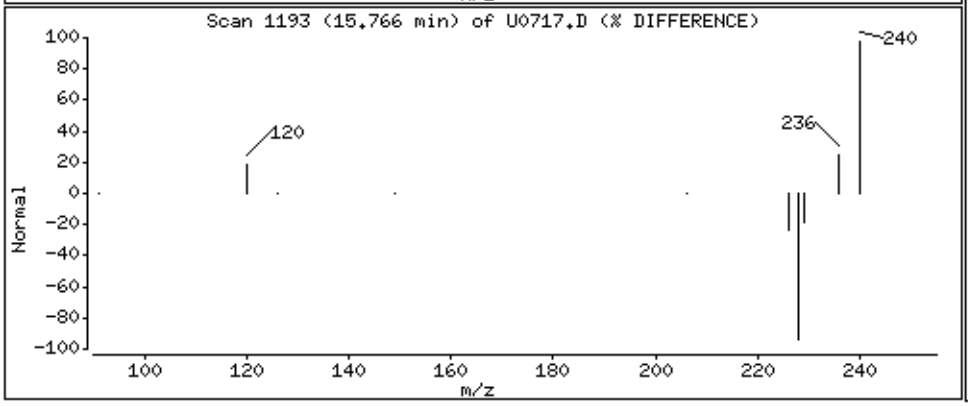
Column phase: ZB5-MS Column diameter: 0.25

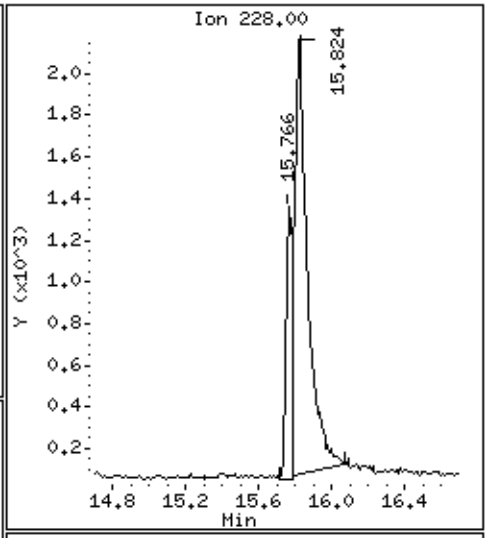
74 Benzo(a)anthracene Concentration: 0.0464 ug/L

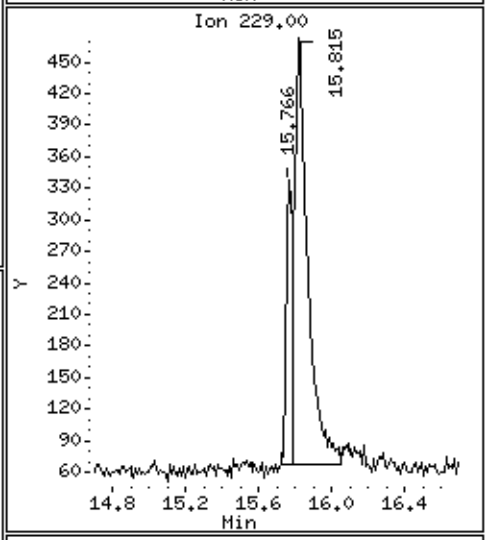


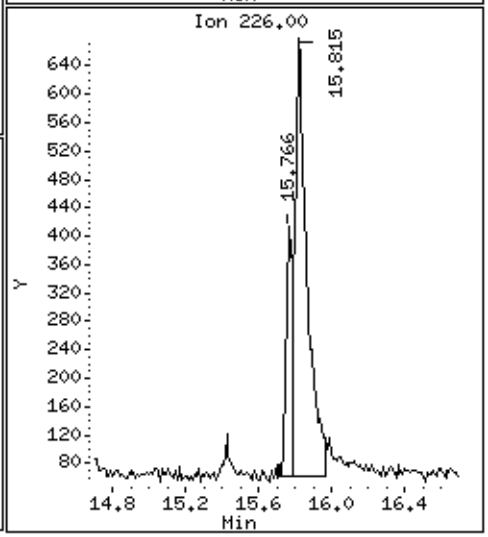












Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0717.D

Date : 07-MAY-2018 19:44

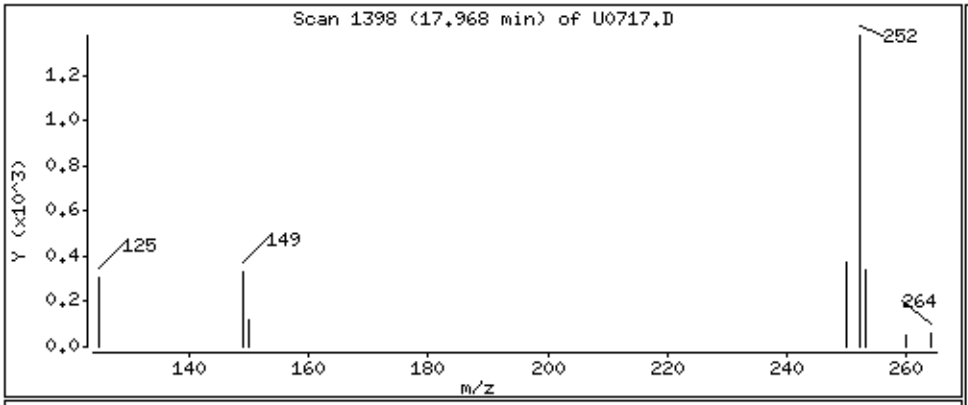
Client ID: HAAP-19C-LGIA-DPT14 Instrument: gcms-u.i

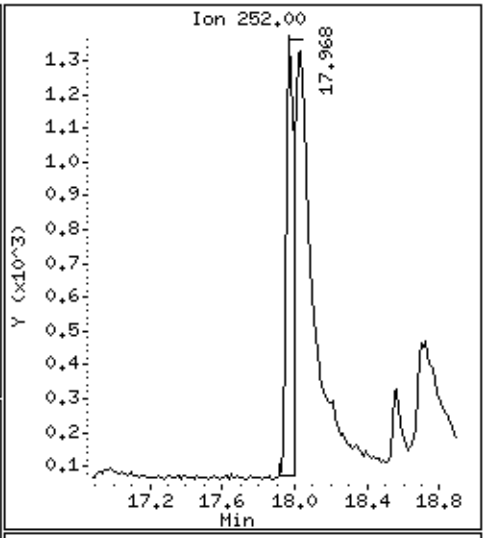
Sample Info: SL3808-8

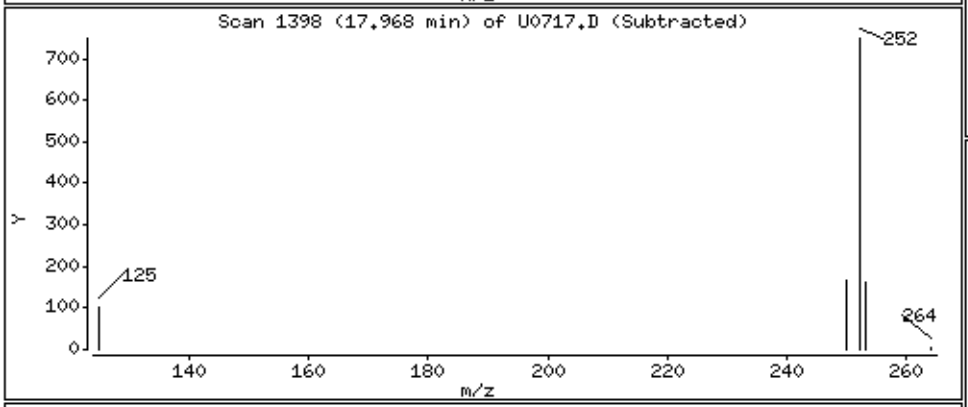
Volume Injected (uL): 1.0 Operator: JCG

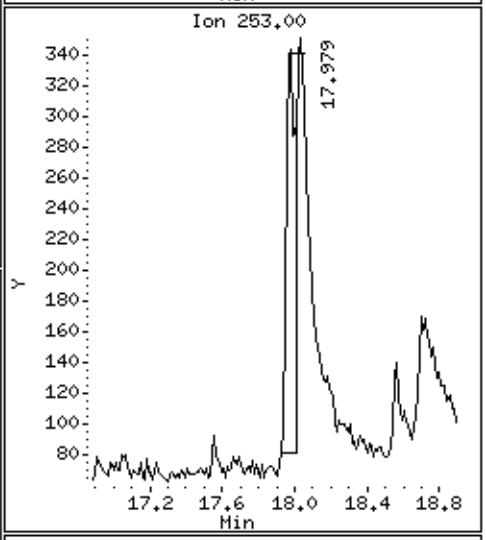
Column phase: ZB5-MS Column diameter: 0.25

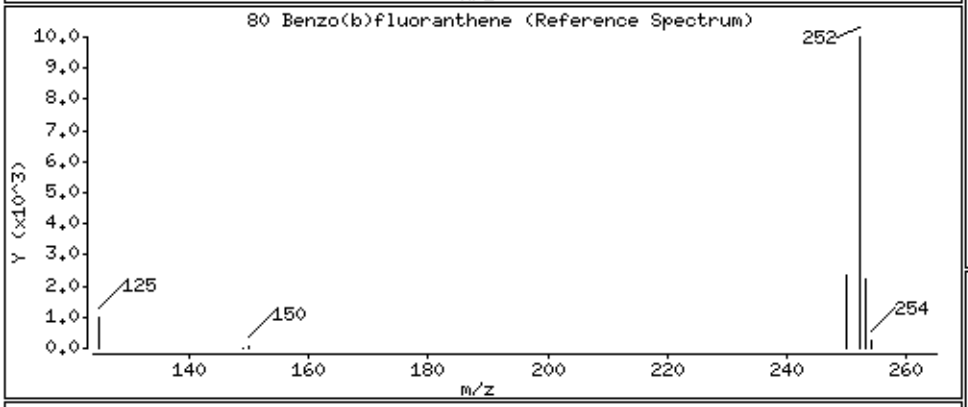
80 Benzo(b)fluoranthene Concentration: 0.136 ug/L

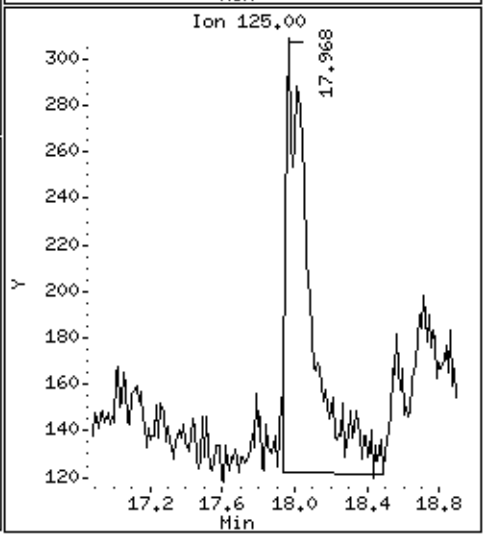


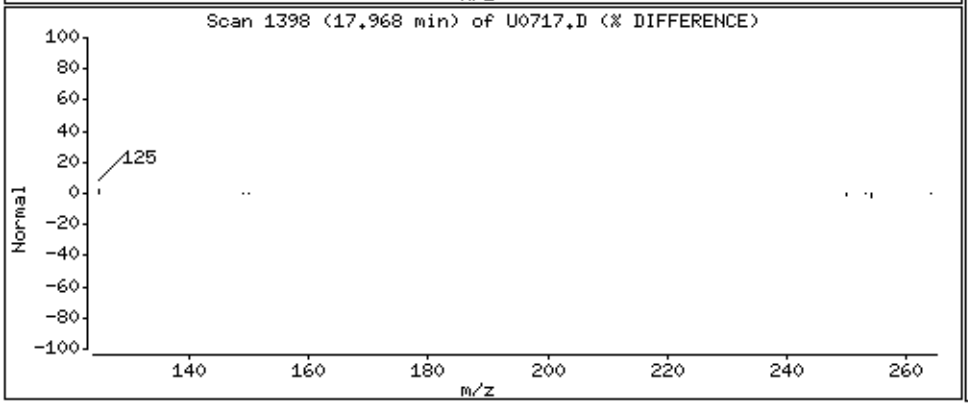












Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0717.D

Date : 07-MAY-2018 19:44

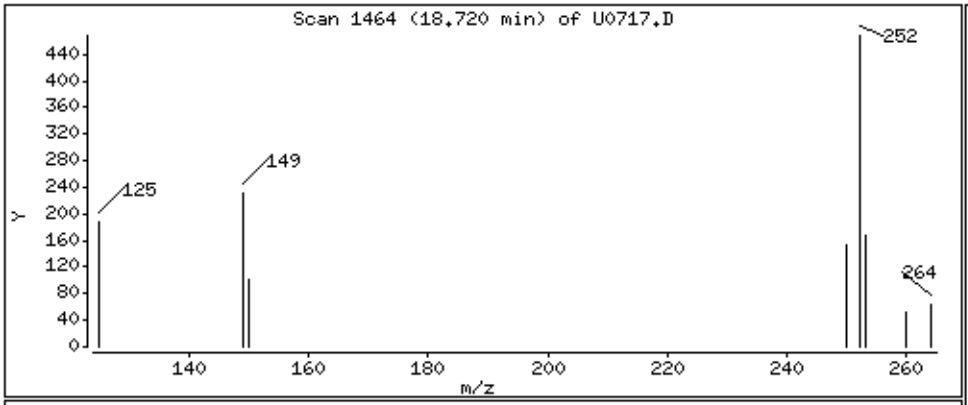
Client ID: HAAP-19C-LGIA-DPT14 Instrument: gcms-u.i

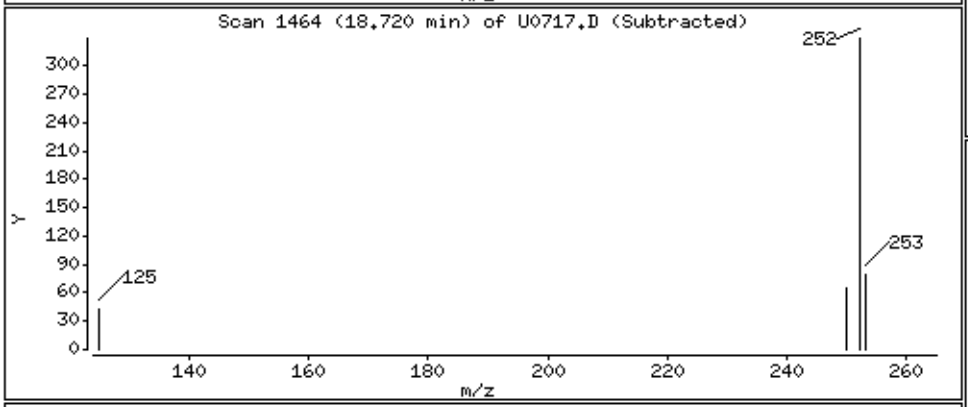
Sample Info: SL3808-8

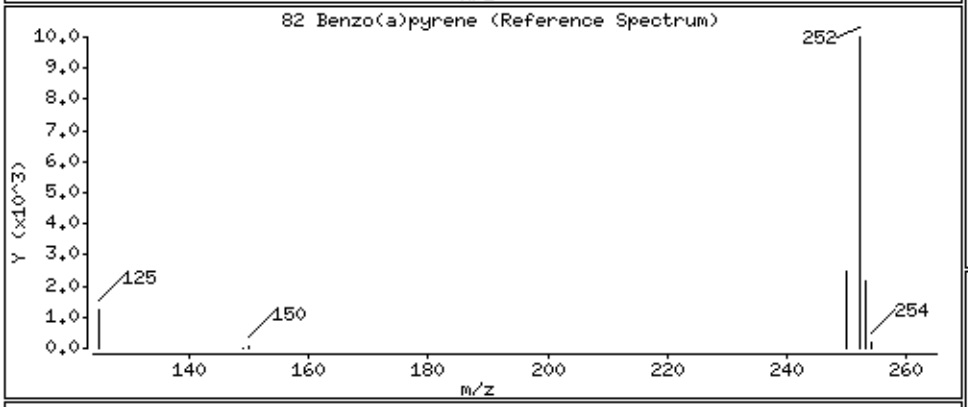
Volume Injected (uL): 1.0 Operator: JCG

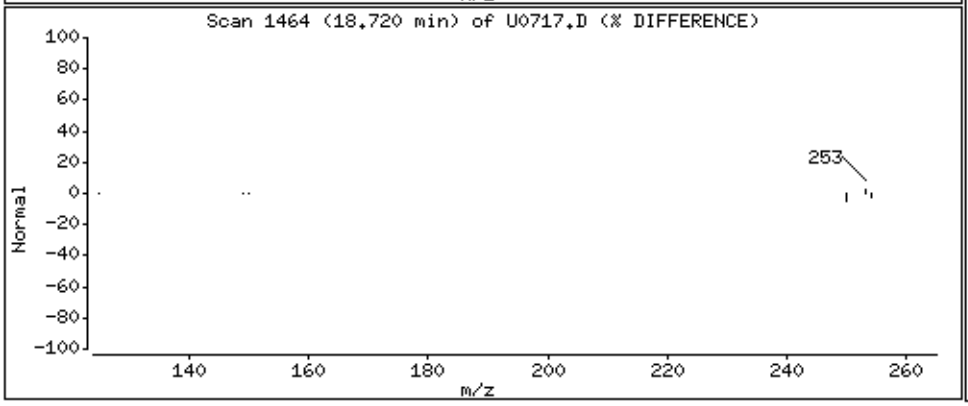
Column phase: ZB5-MS Column diameter: 0.25

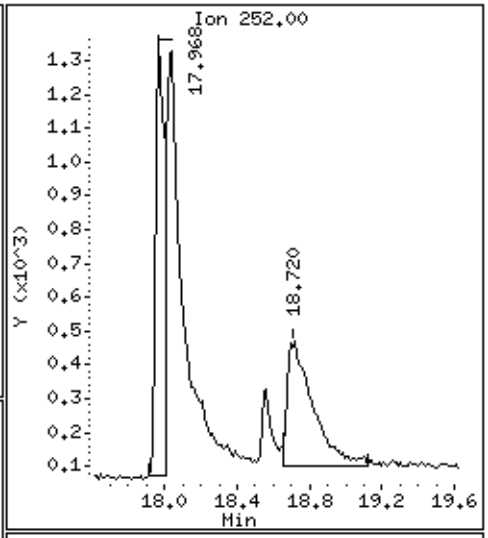
82 Benzo(a)pyrene Concentration: 0.0668 ug/L

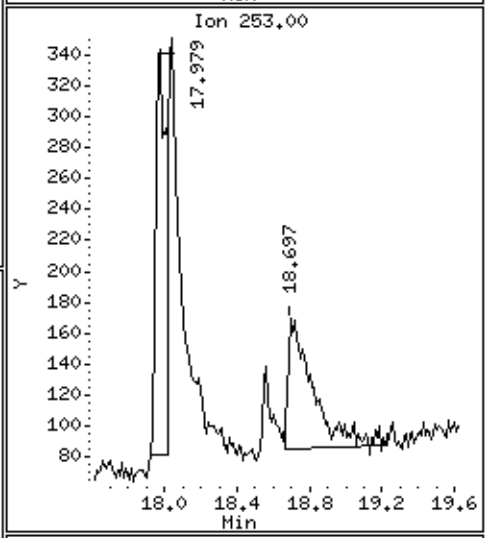


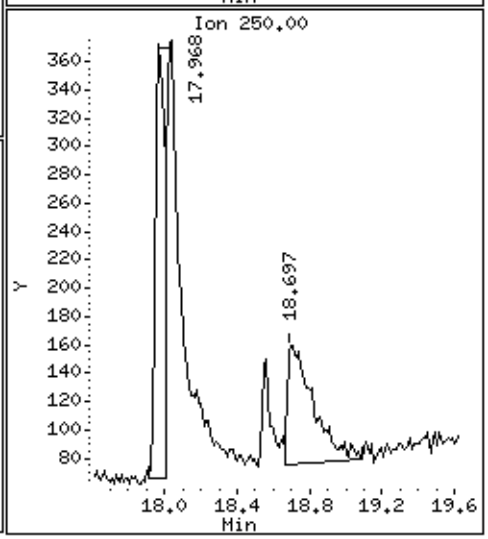












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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-10
Client ID: CHAAP-19C-LGIA-DPT114
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0718.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
2-Methylnaphthalene	U	0.098	ug/L	1	.2	0.20	0.075	0.098
Acenaphthylene	U	0.098	ug/L	1	.2	0.20	0.053	0.098
Acenaphthene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
Fluorene	U	0.098	ug/L	1	.2	0.20	0.060	0.098
Phenanthrene	U	0.098	ug/L	1	.2	0.20	0.050	0.098
Anthracene	U	0.098	ug/L	1	.2	0.20	0.043	0.098
Fluoranthene	U	0.098	ug/L	1	.2	0.20	0.072	0.098
Pyrene	U	0.098	ug/L	1	.2	0.20	0.058	0.098
Benzo(a)anthracene	J	0.050	ug/L	1	.2	0.20	0.045	0.098
Chrysene	U	0.098	ug/L	1	.2	0.20	0.035	0.098
Benzo(b)Fluoranthene	U	0.098	ug/L	1	.2	0.20	0.087	0.098
Benzo(k)fluoranthene	U	0.098	ug/L	1	.2	0.20	0.048	0.098
Benzo(a)pyrene	J	0.094	ug/L	1	.2	0.20	0.065	0.098
Indeno(1,2,3-cd)pyrene	U	0.098	ug/L	1	.2	0.20	0.051	0.098
Dibenzo(a,h)anthracene	U	0.098	ug/L	1	.2	0.20	0.069	0.098
Benzo(g,h,i)perylene	U	0.098	ug/L	1	.2	0.20	0.064	0.098
2-Methylnaphthalene-D10		78.5	%					
Fluorene-D10		82.4	%					
Pyrene-D10		94.4	%					

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Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0718.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0718.D
Lab Smp Id: SL3808-10 Client Smp ID: HAAP-19C-LGIA-DPT11
Inj Date : 07-MAY-2018 20:15 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3808-10
Misc Info : WG227762,WG227671,WG227762-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

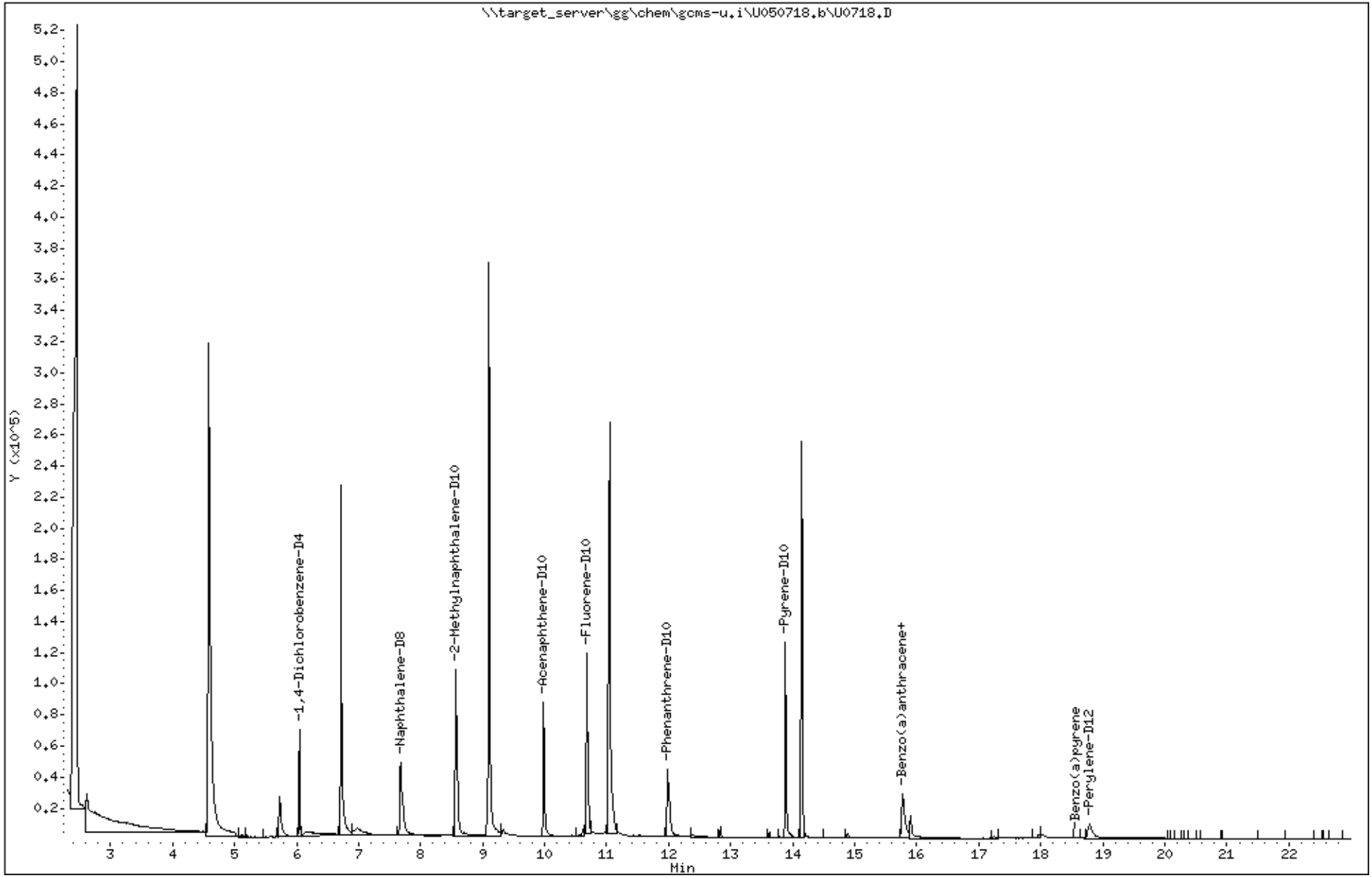
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.020	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	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	6.044	6.025	(1.000)	41532	0.80000	(aQ)	
* 26	Naphthalene-D8	136	7.683	7.647	(1.000)	121251	0.80000	(a)	
$ 32	2-Methylnaphthalene-D10	152	8.575	8.551	(0.859)	105489	1.57088	1.54	
* 47	Acenaphthene-D10	164	9.979	9.968	(1.000)	55694	0.80000	(a)	
$ 55	Fluorene-D10	174	10.673	10.673	(1.070)	93465	1.64801	1.62	
* 65	Phenanthrene-D10	188	11.990	11.955	(1.000)	94740	0.80000	(a)	
$ 71	Pyrene-D10	212	13.884	13.875	(0.880)	131293	1.88733	1.85	
74	Benzo(a)anthracene	228	15.763	15.706	(0.999)	3354	0.05081	0.0498(a)	
* 76	Chrysene-D12	240	15.773	15.726	(1.000)	58572	0.80000	(a)	
82	Benzo(a)pyrene	252	18.708	18.616	(0.996)	4807	0.09601	0.0941(a)	
* 83	Perylene-D12	264	18.776	18.753	(1.000)	36971	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-u.i\U050718.b\U0718.D
Date : 07-MAY-2018 20:15
Client ID: HAAP-19C-LGIA-DPT11
Instrument: gcms-u.i
Sample Info: SL3808-10
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000032

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0718.D

Date : 07-MAY-2018 20:15

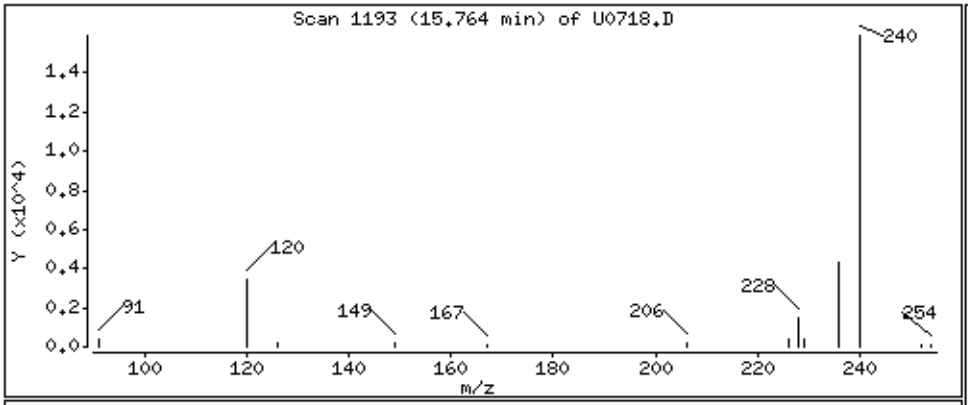
Client ID: HAAP-19C-LGIA-DPT11 Instrument: gcms-u.i

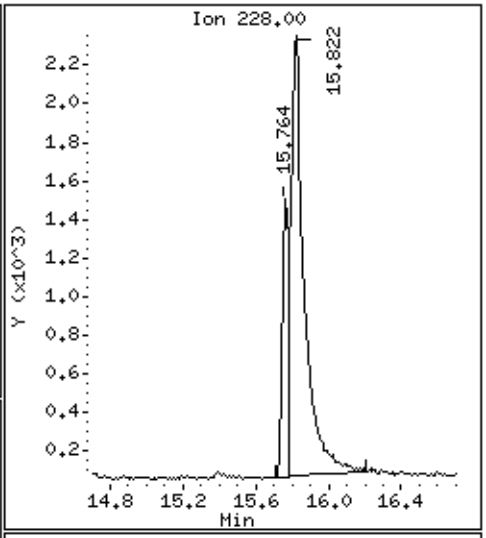
Sample Info: SL3808-10

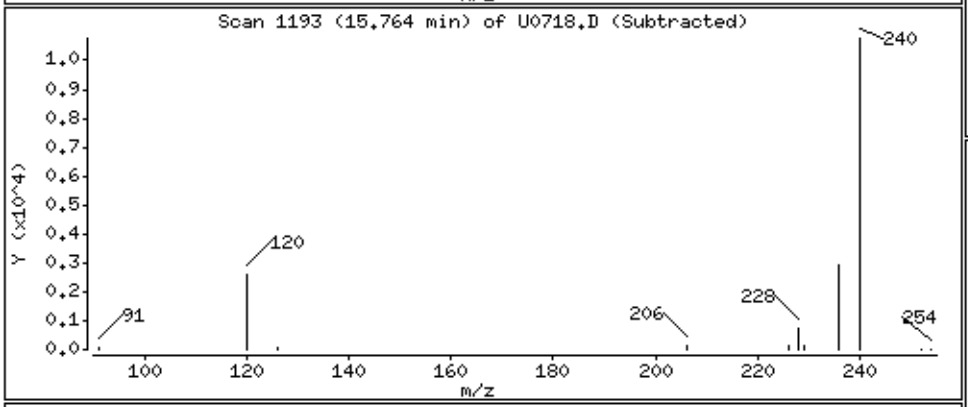
Volume Injected (uL): 1.0 Operator: JCG

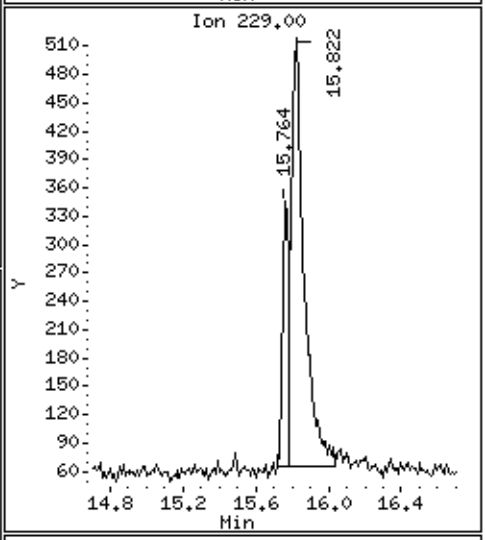
Column phase: ZB5-MS Column diameter: 0.25

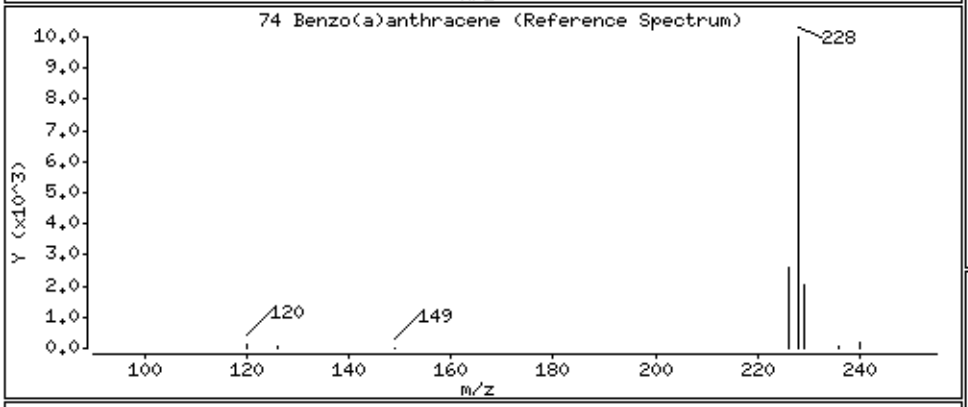
74 Benzo(a)anthracene Concentration: 0.0498 ug/L

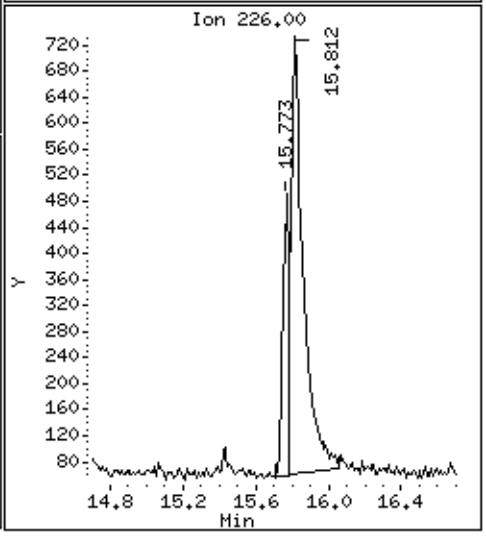


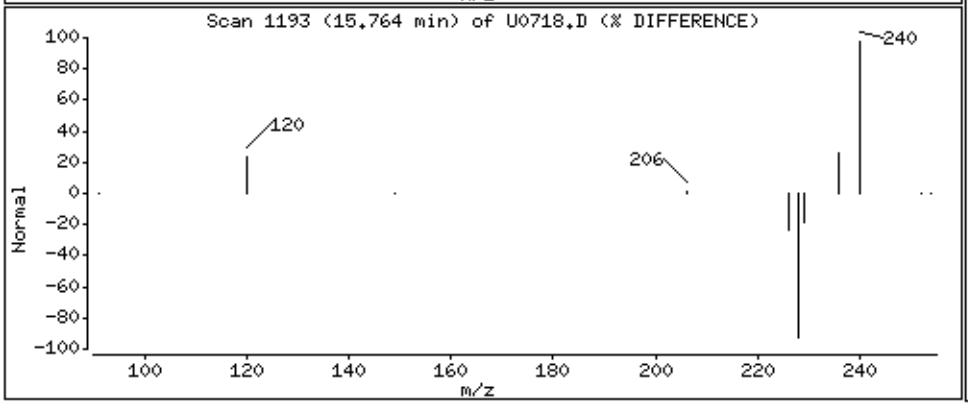












Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0718.D

Date : 07-MAY-2018 20:15

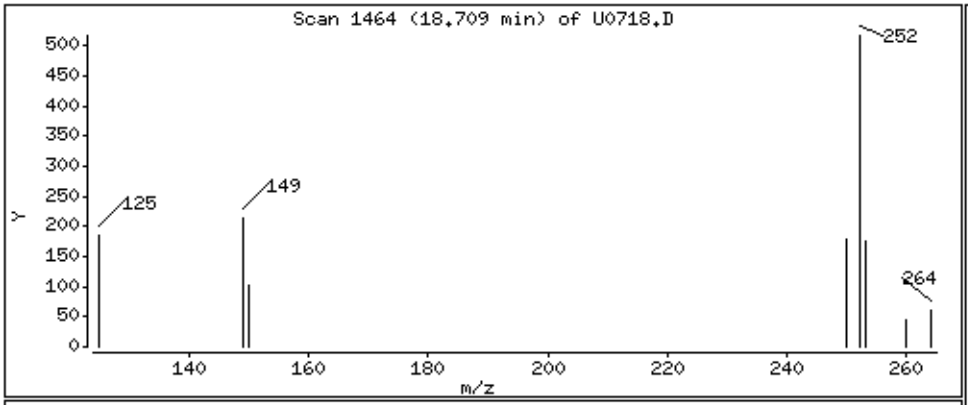
Client ID: HAAP-19C-LGIA-DPT11 Instrument: gcms-u.i

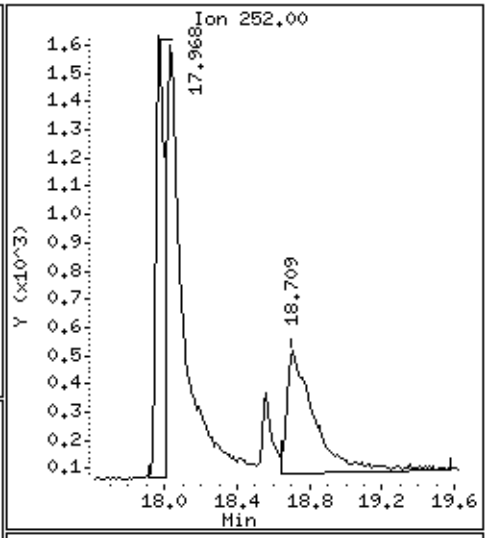
Sample Info: SL3808-10

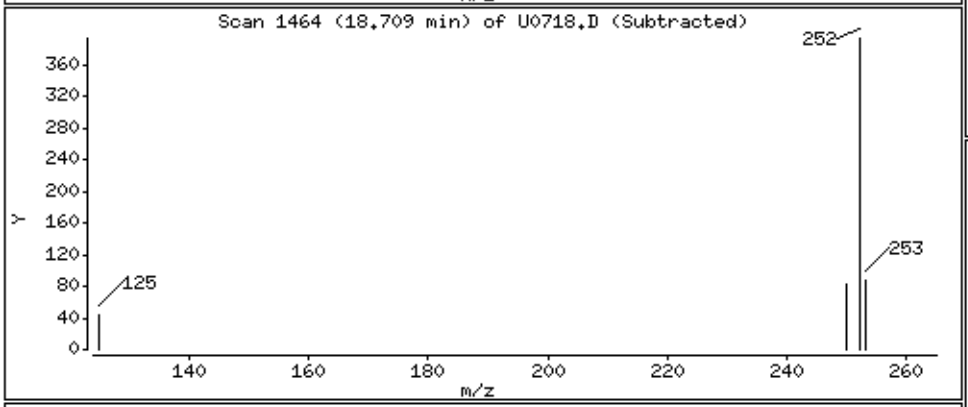
Volume Injected (uL): 1.0 Operator: JCG

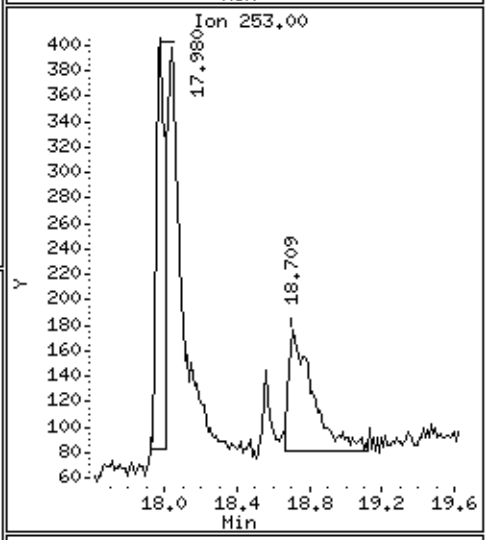
Column phase: ZB5-MS Column diameter: 0.25

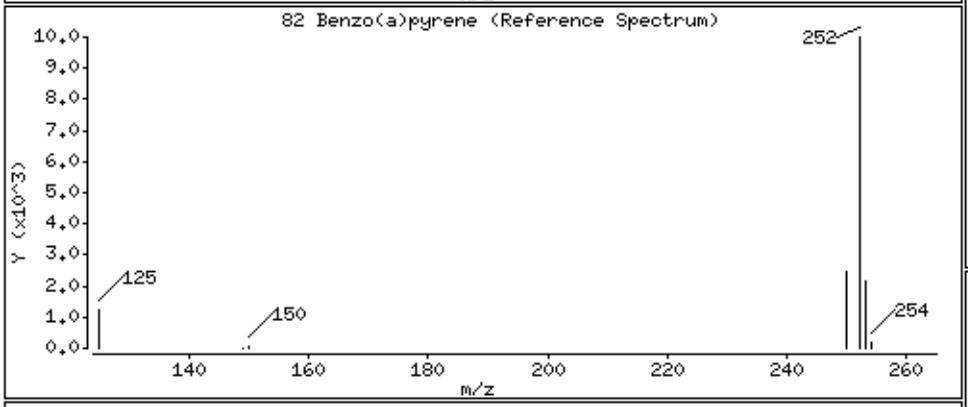
82 Benzo(a)pyrene Concentration: 0.0941 ug/L

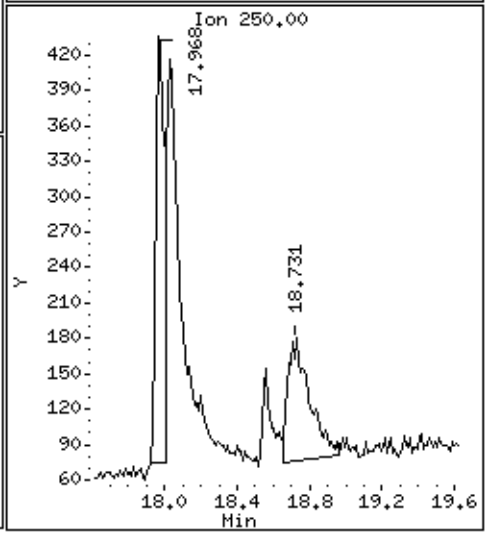


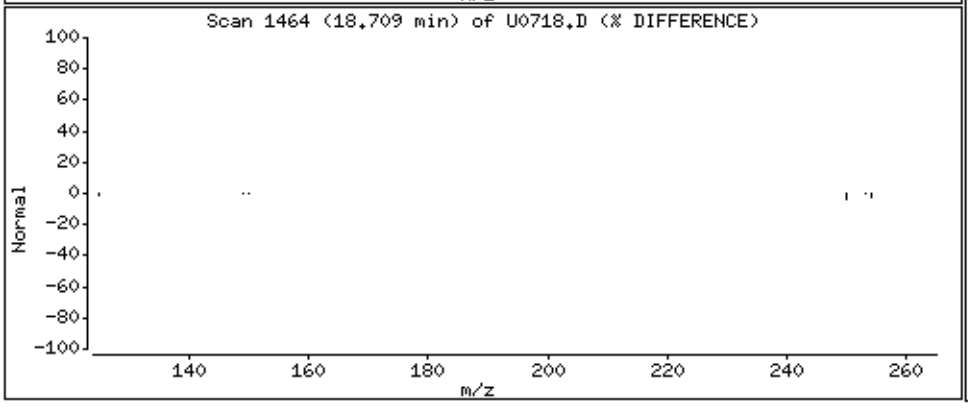












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-12
Client ID: CHAAP-19C-UGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0719.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	JB	0.12	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	J	0.065	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		78.4	%					
Fluorene-D10		79.3	%					
Pyrene-D10		83.2	%					

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Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0719.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0719.D
Lab Smp Id: SL3808-12 Client Smp ID: HAAP-19C-UGIA-DPT02
Inj Date : 07-MAY-2018 20:47 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3808-12
Misc Info : WG227762,WG227671,WG227762-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

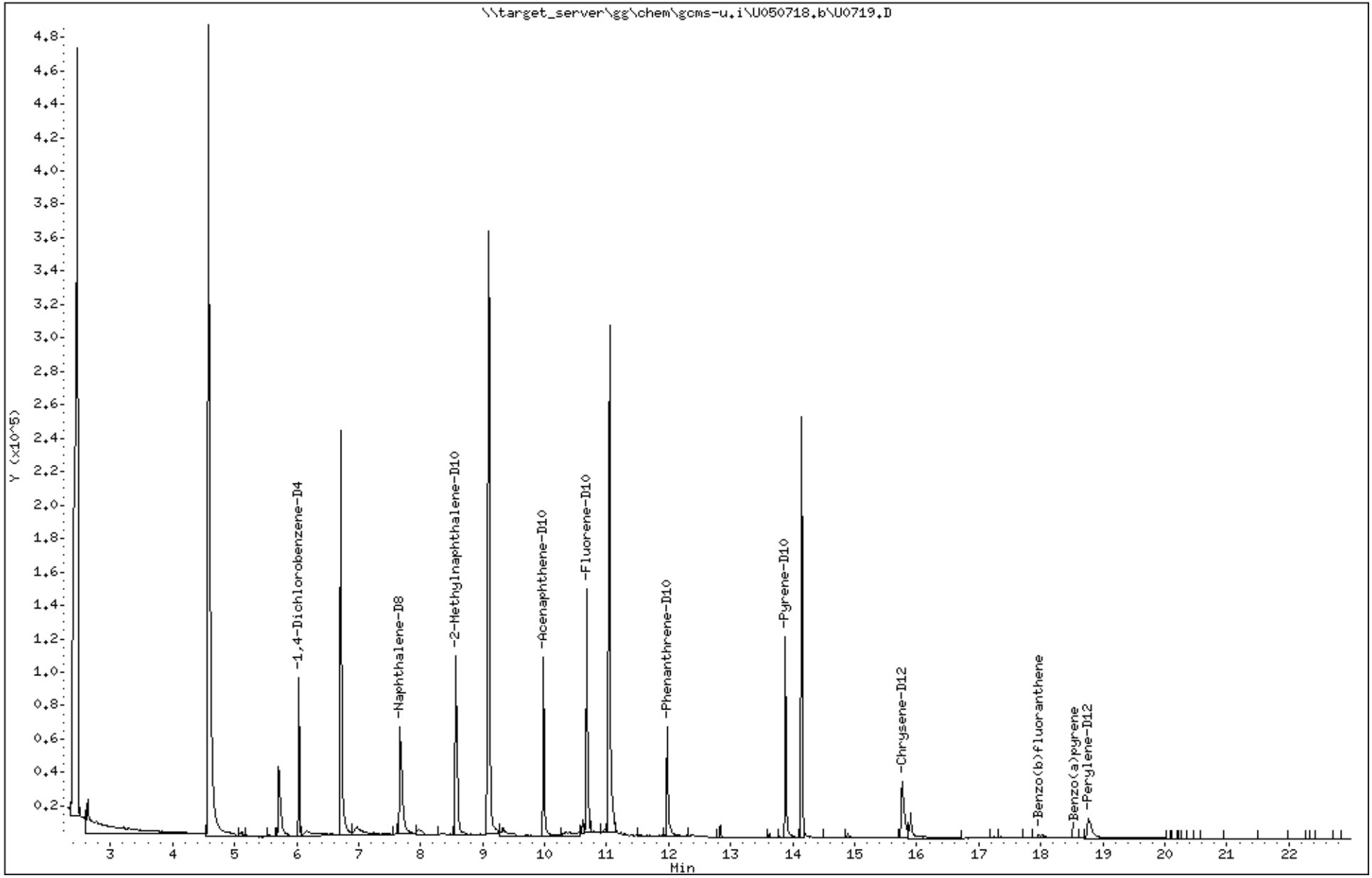
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

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	6.035	6.025	(1.000)	51291	0.80000	(aQ)	
* 26 Naphthalene-D8	136	7.671	7.647	(1.000)	159766	0.80000	(a)	
$ 32 2-Methylnaphthalene-D10	152	8.575	8.551	(0.859)	114158	1.56877	1.49	
* 47 Acenaphthene-D10	164	9.979	9.968	(1.000)	60352	0.80000	(a)	
$ 55 Fluorene-D10	174	10.673	10.673	(1.070)	97460	1.58582	1.51	
* 65 Phenanthrene-D10	188	11.978	11.955	(1.000)	101640	0.80000	(a)	
$ 71 Pyrene-D10	212	13.885	13.875	(0.881)	131628	1.66444	1.58	
* 76 Chrysene-D12	240	15.765	15.726	(1.000)	66585	0.80000	(a)	
80 Benzo(b)fluoranthene	252	17.967	17.887	(0.957)	4070	0.12929	0.123(a)	
82 Benzo(a)pyrene	252	18.708	18.616	(0.996)	4206	0.06854	0.0653(a)	
* 83 Perylene-D12	264	18.776	18.753	(1.000)	45311	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-u.i\U050718.b\U0719.D
Date : 07-MAY-2018 20:47
Client ID: HAAP-19C-UGIA-DPT02
Instrument: gcms-u.i
Sample Info: SL3808-12
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000037

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0719.D

Date : 07-MAY-2018 20:47

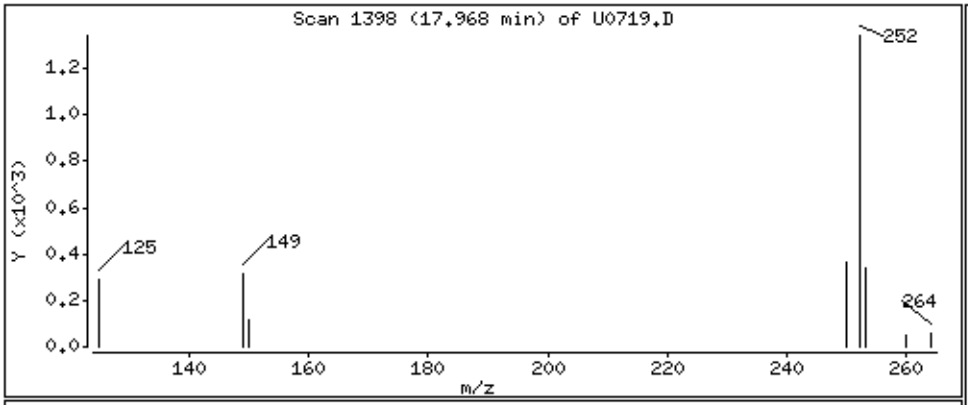
Client ID: HAAP-19C-UGIA-DPT02 Instrument: gcms-u.i

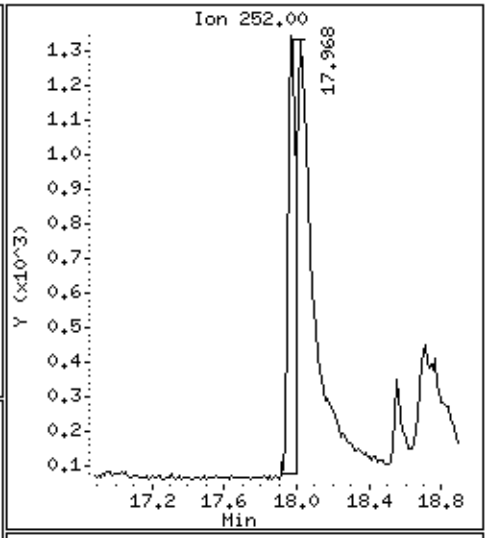
Sample Info: SL3808-12

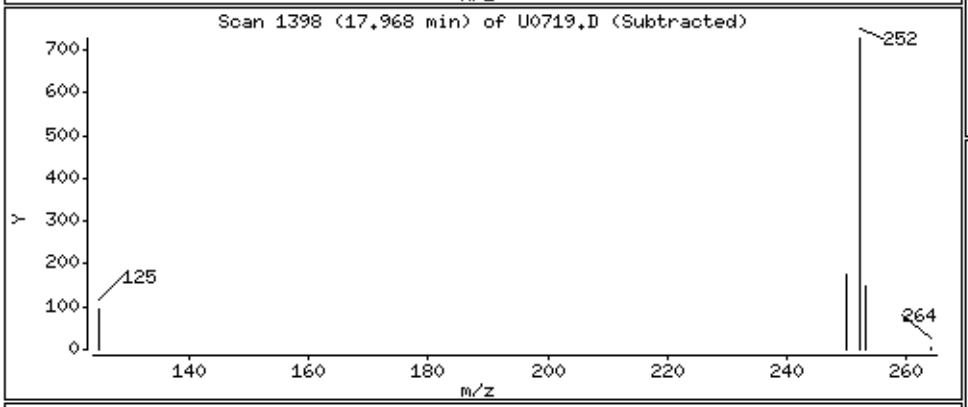
Volume Injected (uL): 1.0 Operator: JCG

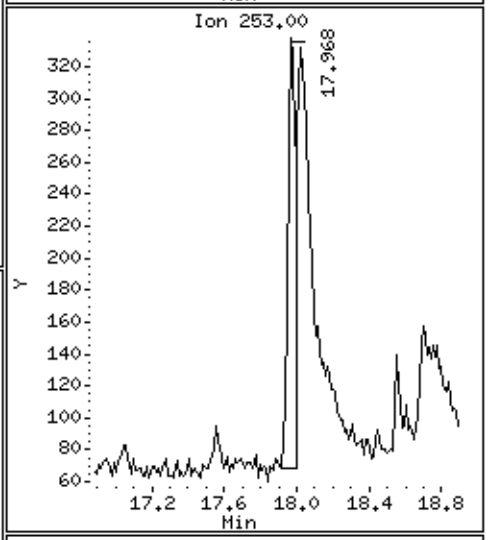
Column phase: ZB5-MS Column diameter: 0.25

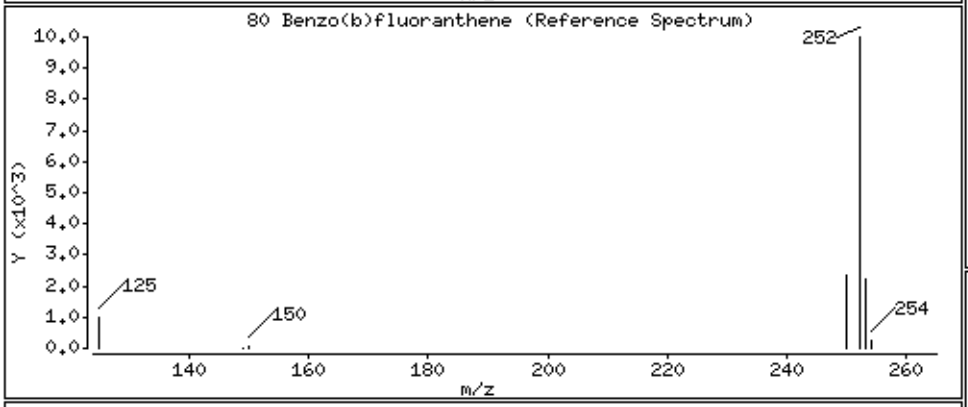
80 Benzo(b)fluoranthene Concentration: 0.123 ug/L

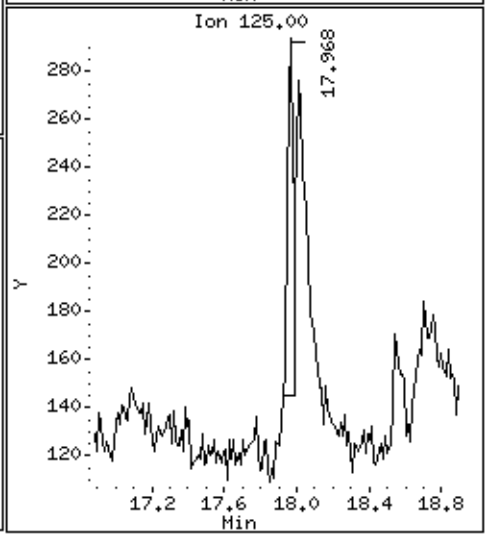


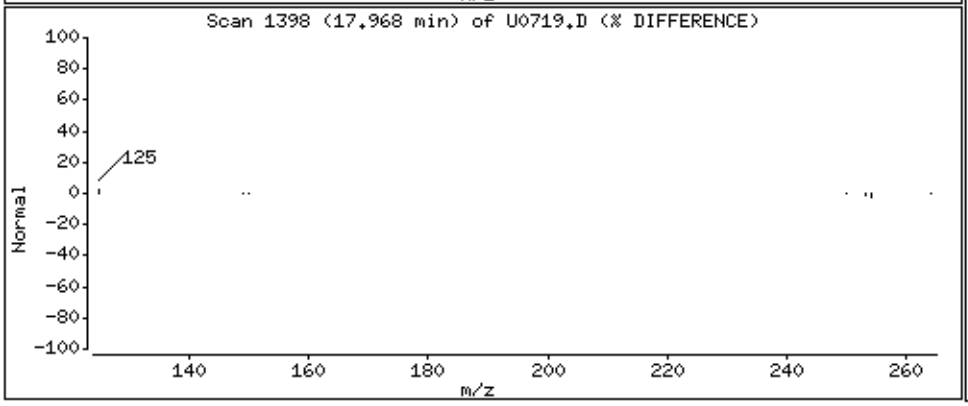












Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0719.D

Date : 07-MAY-2018 20:47

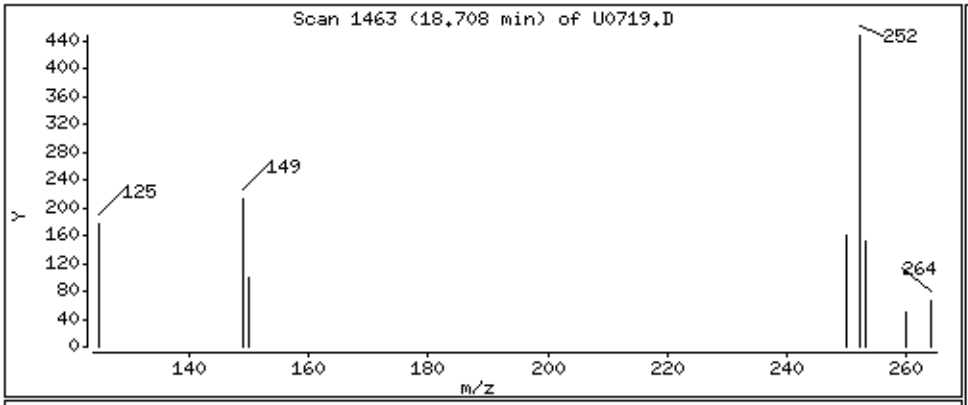
Client ID: HAAP-19C-UGIA-DPT02 Instrument: gcms-u.i

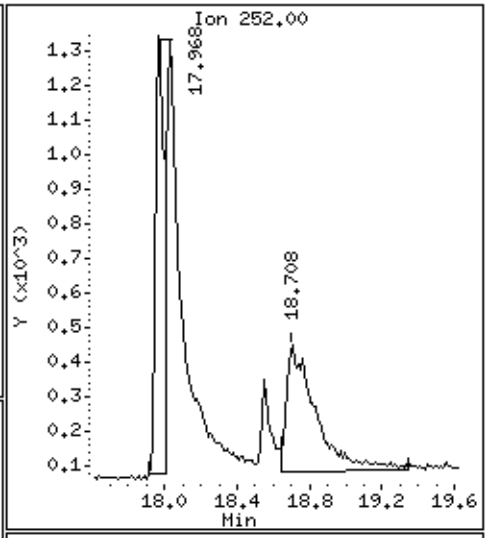
Sample Info: SL3808-12

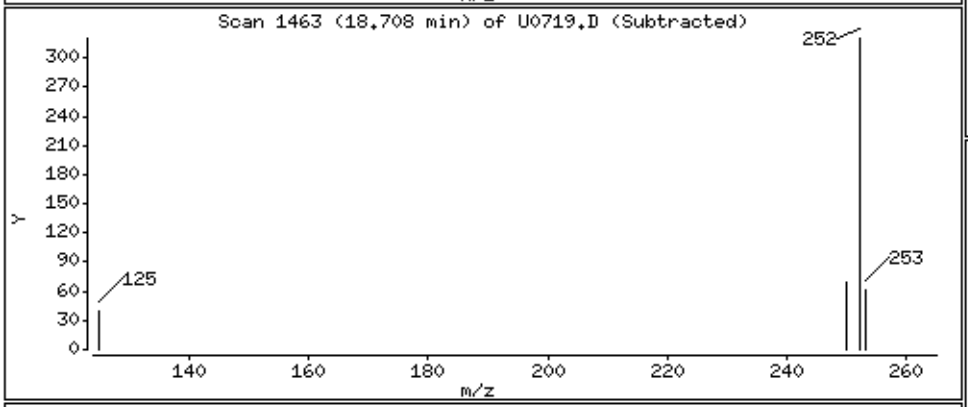
Volume Injected (uL): 1.0 Operator: JCG

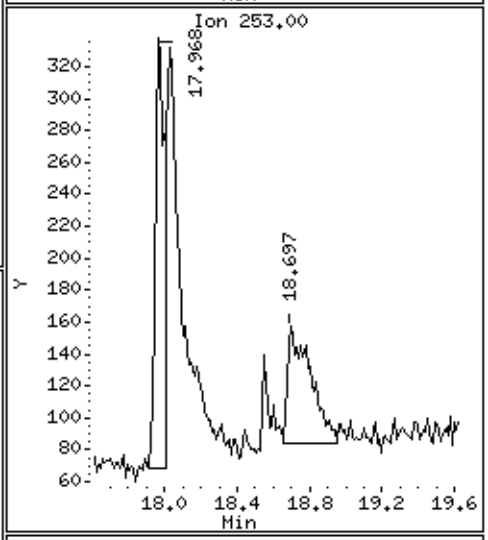
Column phase: ZB5-MS Column diameter: 0.25

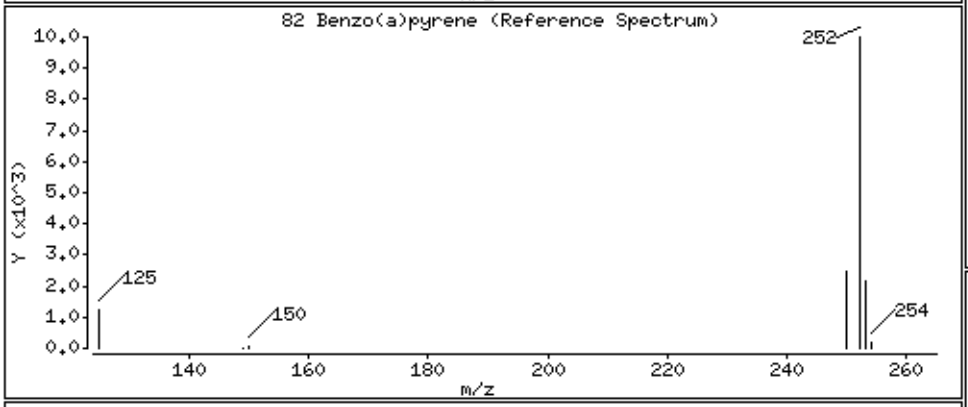
82 Benzo(a)pyrene Concentration: 0.0653 ug/L

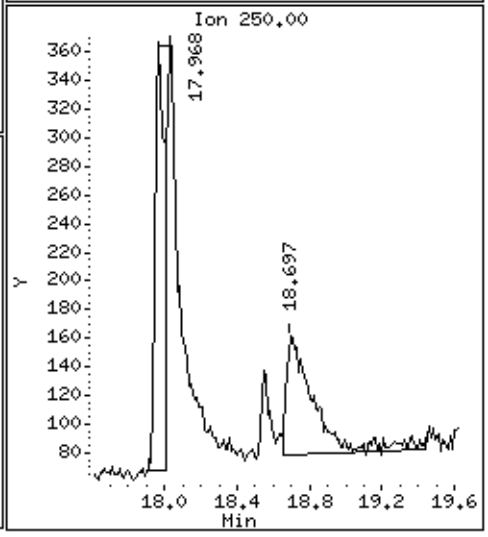


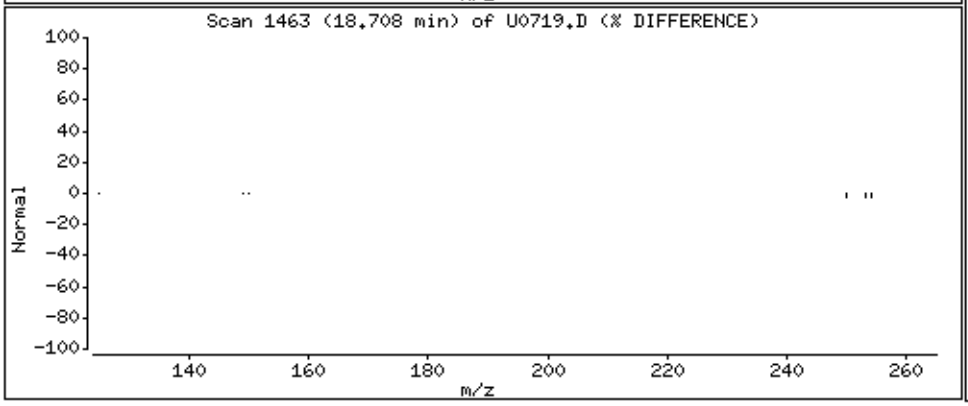












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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-14
Client ID: CHAAP-EB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0720.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	JB	0.13	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	J	0.067	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		79.0	%					
Fluorene-D10		80.8	%					
Pyrene-D10		91.8	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0720.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0720.D
Lab Smp Id: SL3808-14 Client Smp ID: CHAAP-EB-050218-DPT
Inj Date : 07-MAY-2018 21:18 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3808-14
Misc Info : WG227762,WG227671,WG227762-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 22
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

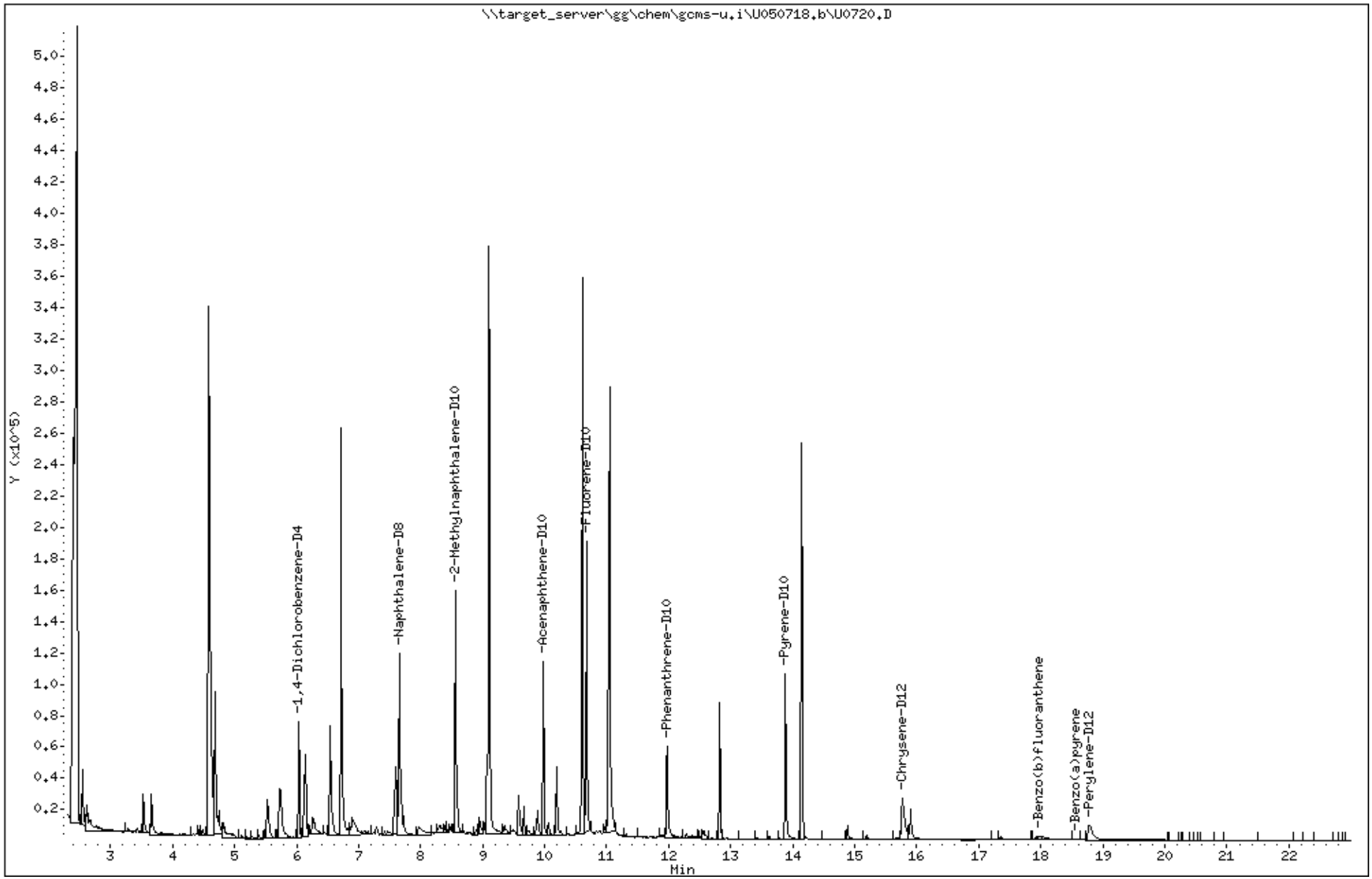
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	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	6.035	6.025	(1.000)	45406	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.659	7.647	(1.000)	128715	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	8.563	8.551	(0.858)	109273	1.58030	1.50	
*	47 Acenaphthene-D10	164	9.980	9.968	(1.000)	57348	0.80000	(a)	
$	55 Fluorene-D10	174	10.673	10.673	(1.069)	94338	1.61543	1.54	
*	65 Phenanthrene-D10	188	11.978	11.955	(1.000)	95754	0.80000	(a)	
$	71 Pyrene-D10	212	13.885	13.875	(0.881)	122962	1.83532	1.75	
*	76 Chrysene-D12	240	15.765	15.726	(1.000)	56410	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	17.978	17.887	(0.957)	3891	0.14040	0.134(aQ)	
	82 Benzo(a)pyrene	252	18.730	18.616	(0.997)	3531	0.06988	0.0666(a)	
*	83 Perylene-D12	264	18.787	18.753	(1.000)	37311	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-u.i\U050718.b\U0720.D
Date : 07-MAY-2018 21:18
Client ID: CHAAP-EB-050218-DPT
Instrument: gcms-u.i
Sample Info: SL3808-14
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000042

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0720.D

Date : 07-MAY-2018 21:18

Client ID: CHAAP-EB-050218-DPT

Instrument: gcms-u.i

Sample Info: SL3808-14

Volume Injected (uL): 1.0

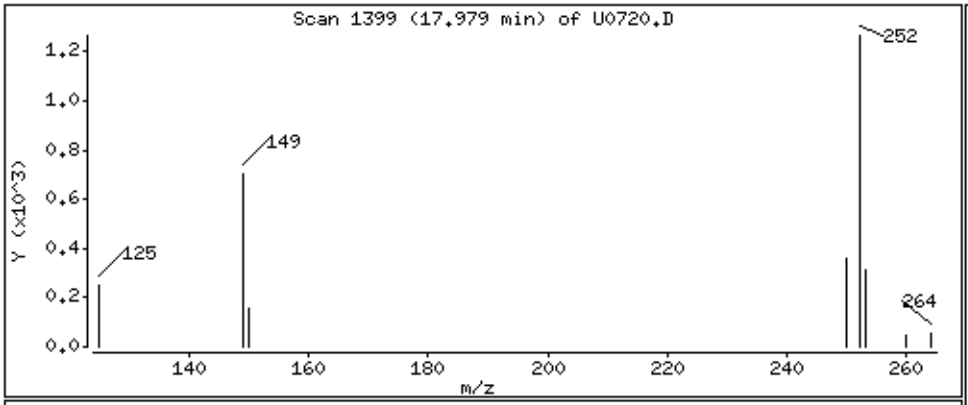
Operator: JCG

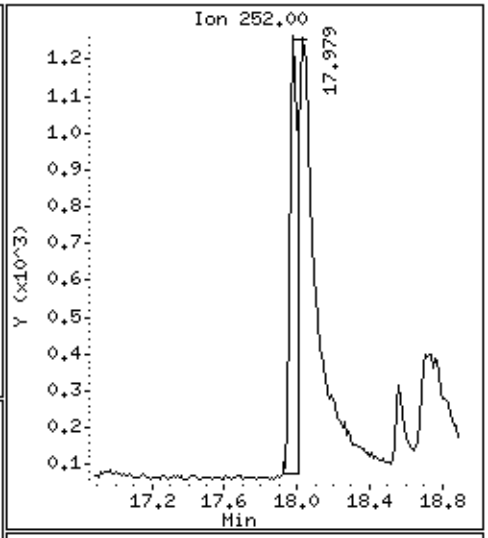
Column phase: ZB5-MS

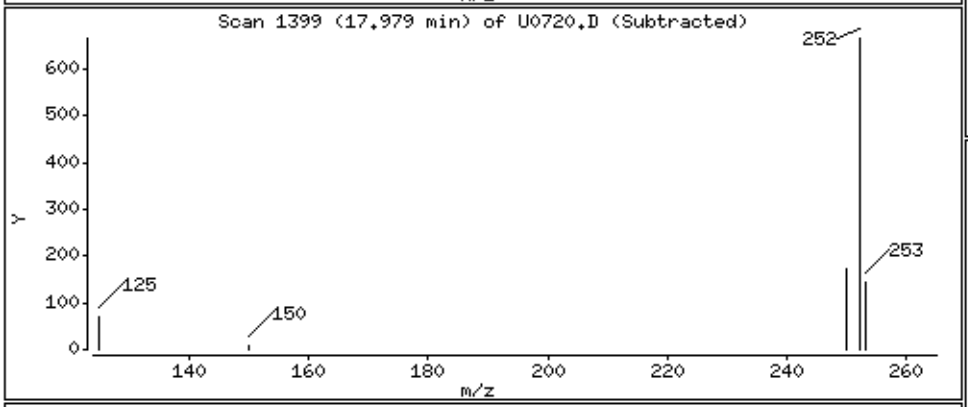
Column diameter: 0.25

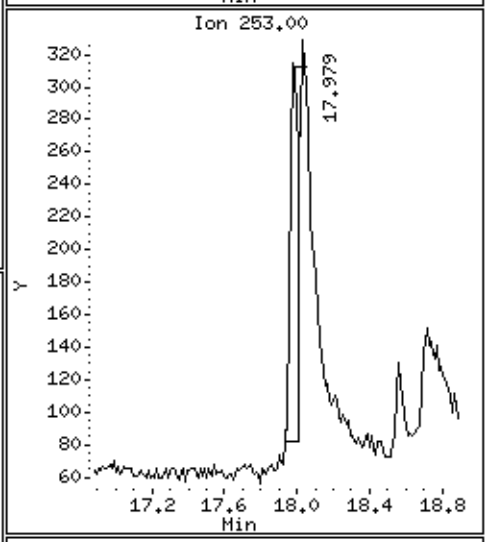
80 Benzo(b)fluoranthene

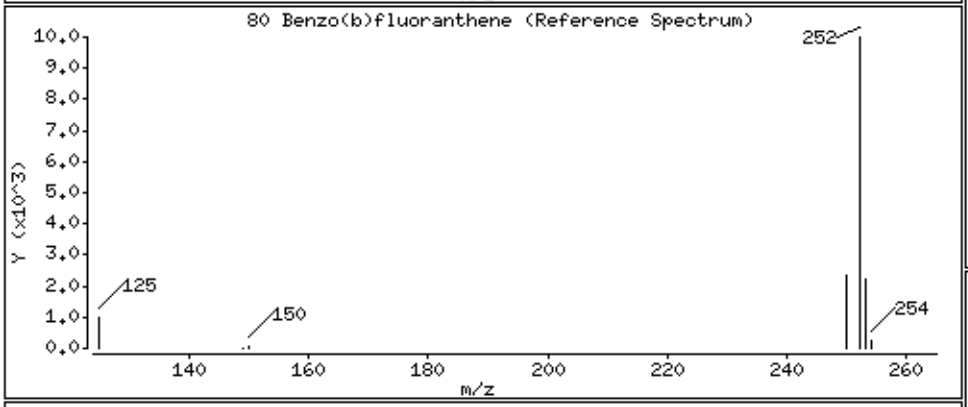
Concentration: 0.134 ug/L

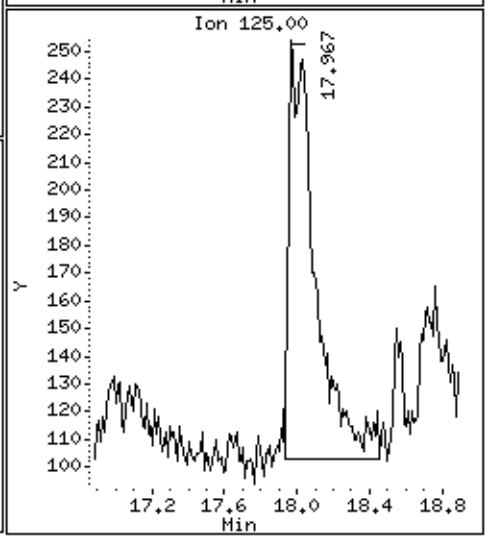


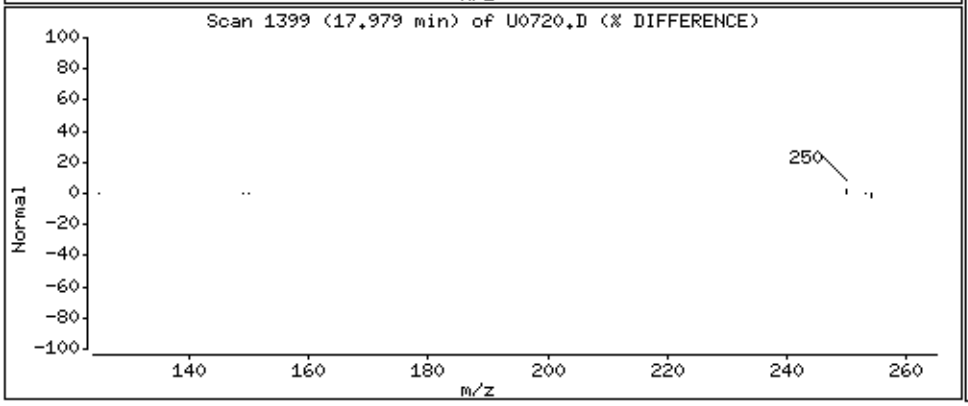












Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0720.D

Date : 07-MAY-2018 21:18

Client ID: CHAAP-EB-050218-DPT

Instrument: gcms-u.i

Sample Info: SL3808-14

Volume Injected (uL): 1.0

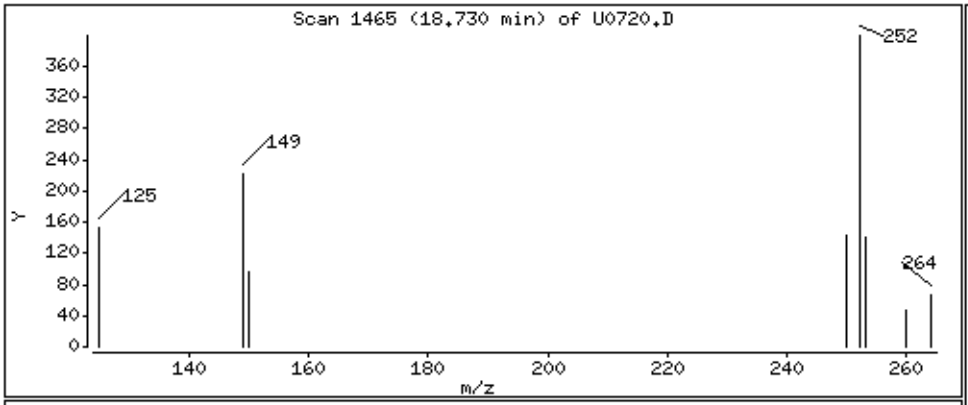
Operator: JCG

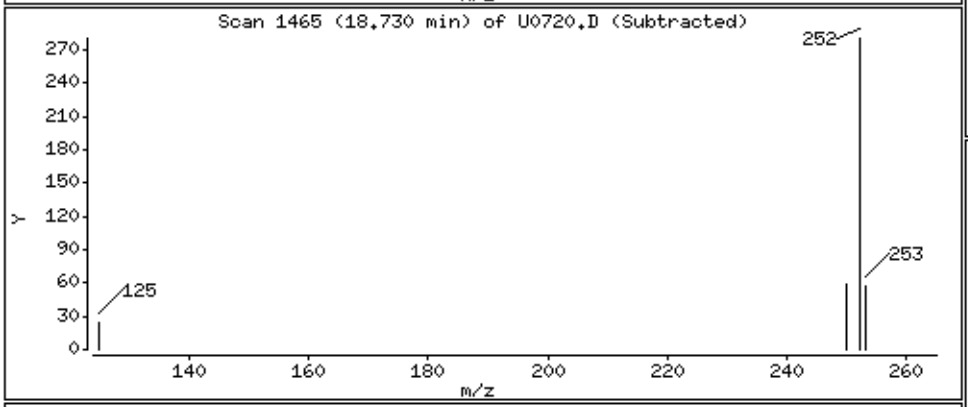
Column phase: ZB5-MS

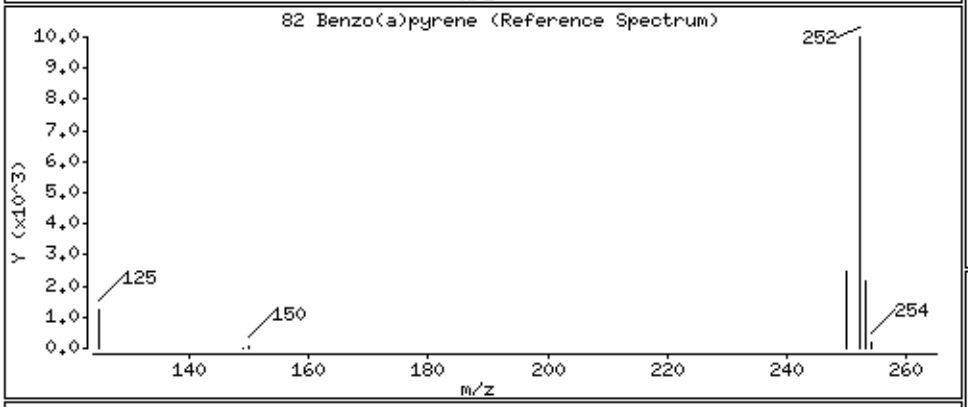
Column diameter: 0.25

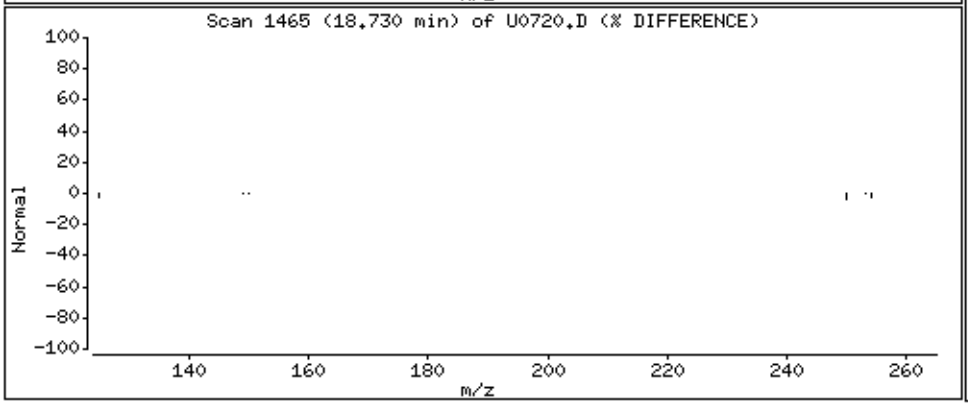
82 Benzo(a)pyrene

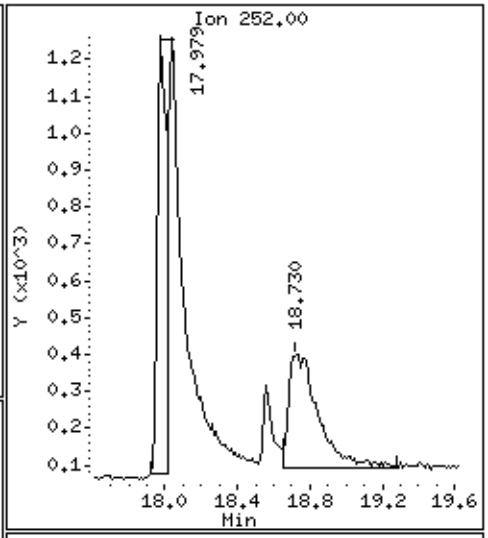
Concentration: 0.0666 ug/L

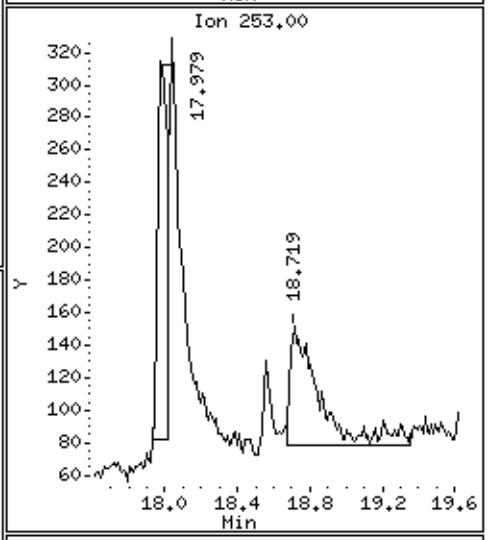


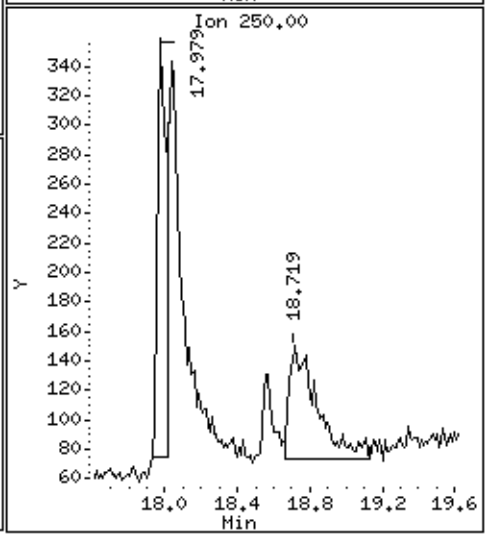












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-15
Client ID: CHAAP-19C-LGIA-DPT22
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0729.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 08-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	J	0.12	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	J	0.048	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		83.9	%					
Fluorene-D10		88.0	%					
Pyrene-D10		97.0	%					

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-u.i\U050818.b\U0729.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050818.b\U0729.D
Lab Smp Id: SL3808-15 Client Smp ID: HAAP-19C-LGIA-DPT22
Inj Date : 08-MAY-2018 14:11 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3808-15
Misc Info : WG227838,WG227671,WG227762-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050818.b\USPSIM36.m
Meth Date : 09-May-2018 09:27 gcms-u.i Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

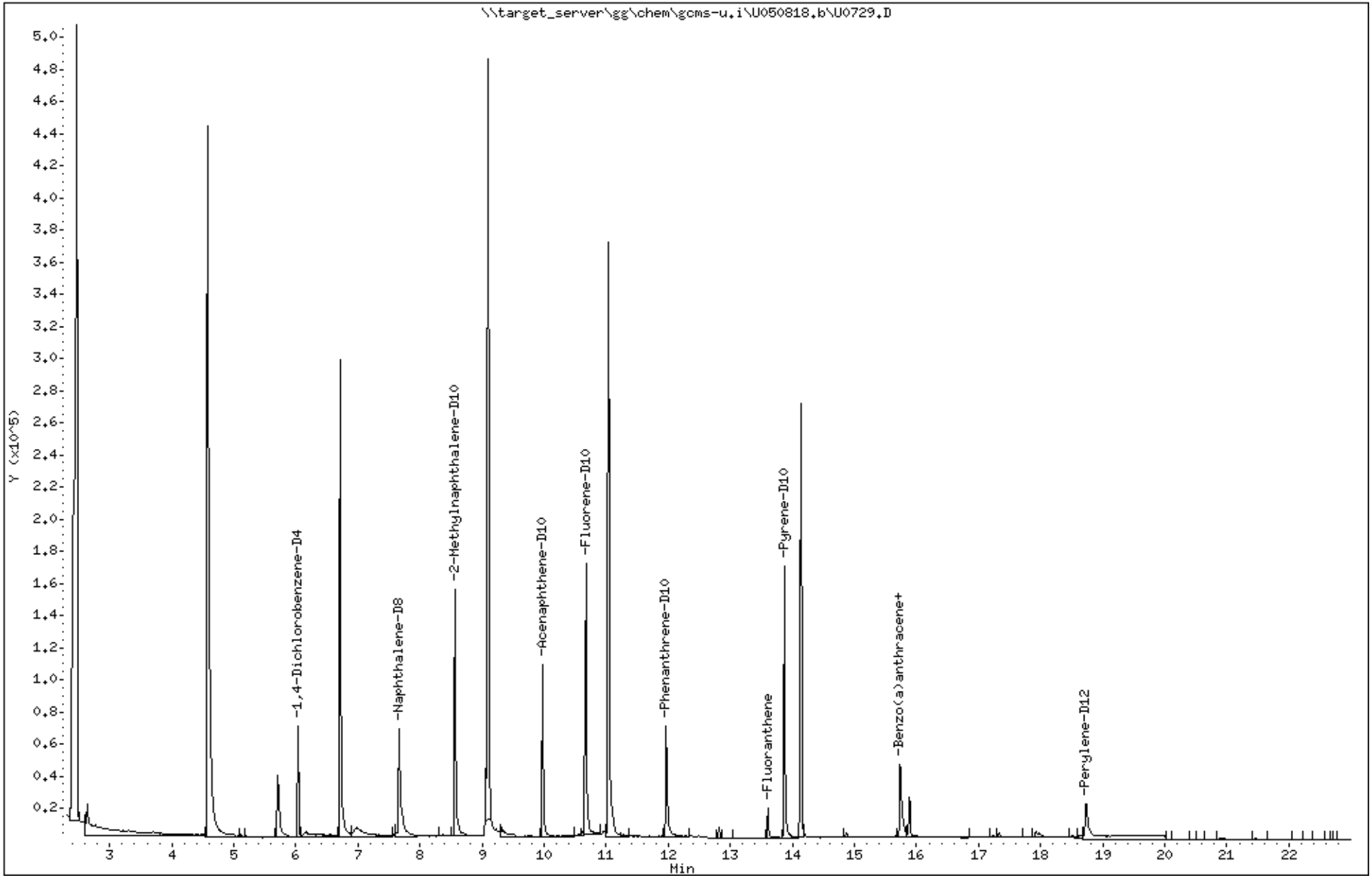
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	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	6.035	6.025	(1.000)	49850	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.659	7.647	(1.000)	135701	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	8.562	8.551	(0.859)	127561	1.67783	1.60	
*	47 Acenaphthene-D10	164	9.968	9.968	(1.000)	63054	0.80000	(a)	
$	55 Fluorene-D10	174	10.673	10.673	(1.071)	113075	1.76106	1.68	
*	65 Phenanthrene-D10	188	11.967	11.955	(1.000)	111470	0.80000	(a)	
	70 Fluoranthene	202	13.605	13.594	(1.137)	17456	0.12618	0.120(a)	
$	71 Pyrene-D10	212	13.865	13.875	(0.881)	171128	1.94062	1.85	
	74 Benzo(a)anthracene	228	15.726	15.706	(0.999)	4205	0.05025	0.0479(a)	
*	76 Chrysene-D12	240	15.736	15.726	(1.000)	74247	0.80000	(a)	
*	83 Perylene-D12	264	18.742	18.753	(1.000)	55595	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-u.i\U050818.b\U0729.D
Date : 08-MAY-2018 14:11
Client ID: HAAP-19C-LGIA-DPT22
Instrument: gcms-u.i
Sample Info: SL3808-15
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000047

Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0729.D

Date : 08-MAY-2018 14:11

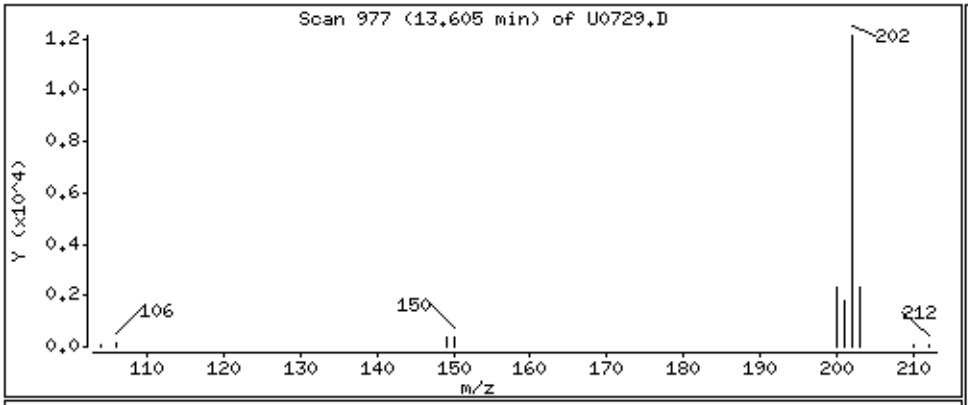
Client ID: HAAP-19C-LGIA-DPT22 Instrument: gcms-u.i

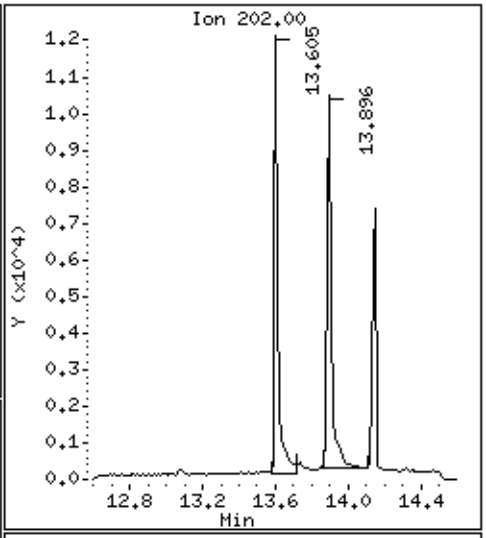
Sample Info: SL3808-15

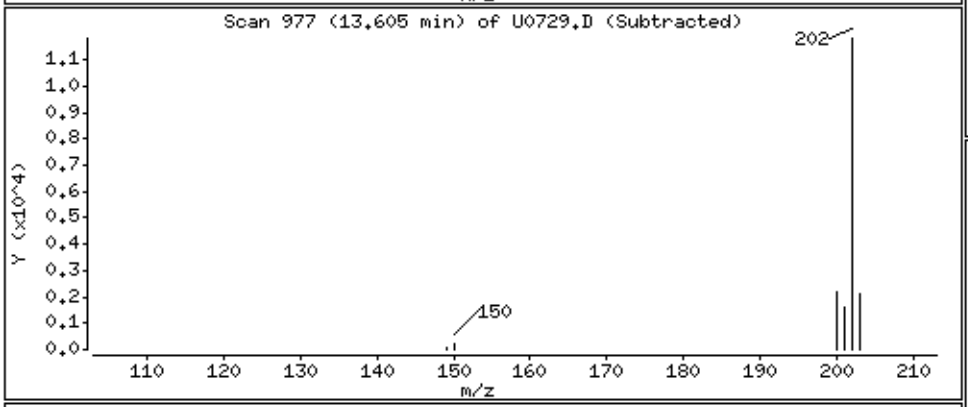
Volume Injected (uL): 1.0 Operator: JCG

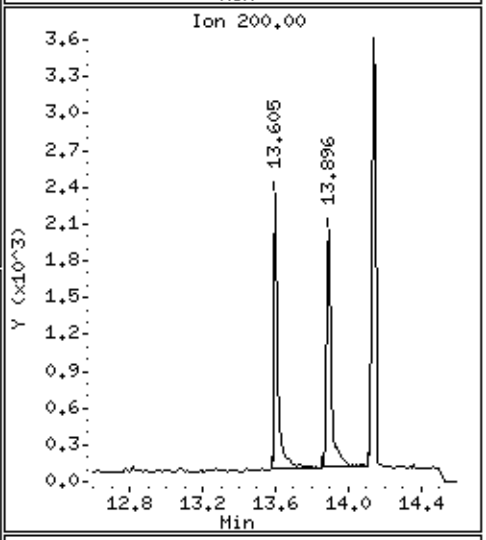
Column phase: ZB5-MS Column diameter: 0.25

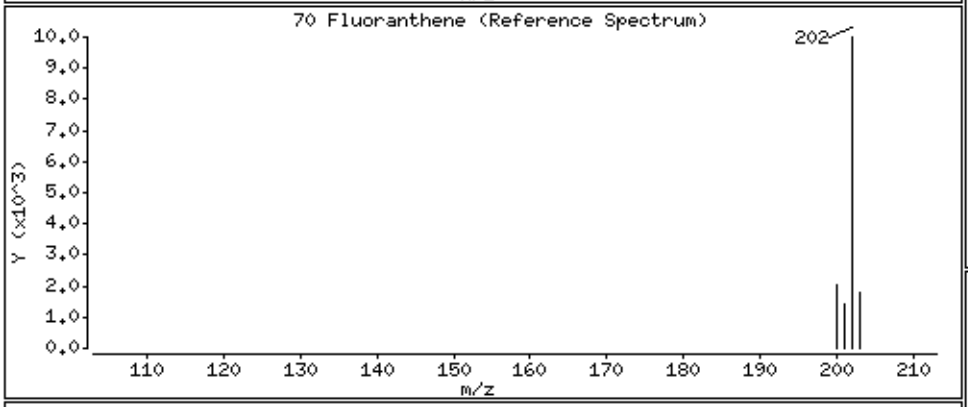
70 Fluoranthene Concentration: 0.120 ug/L

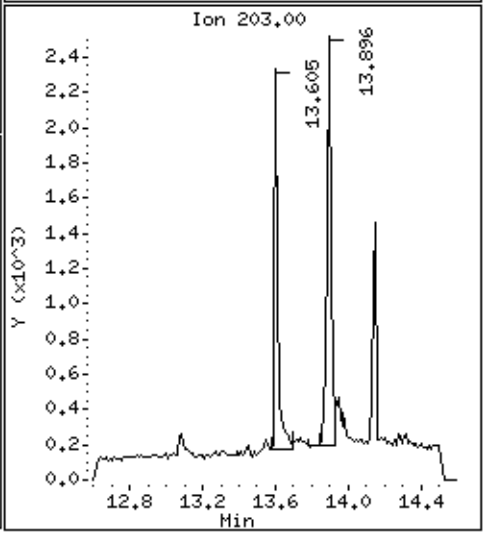


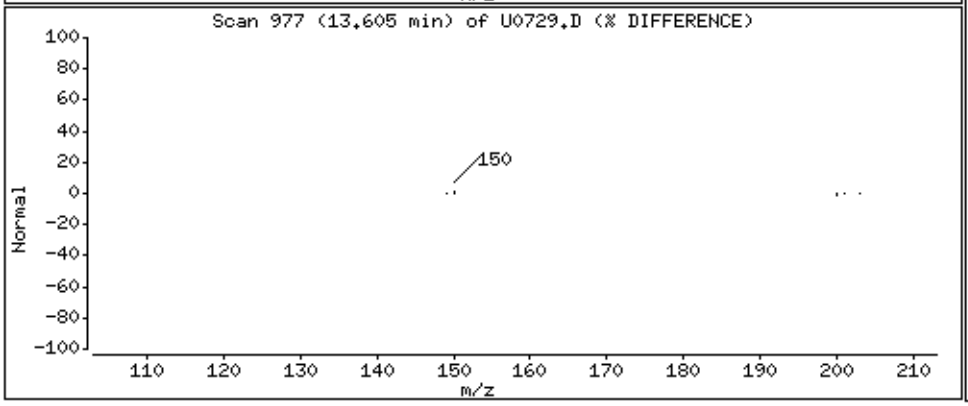












Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0729.D

Date : 08-MAY-2018 14:11

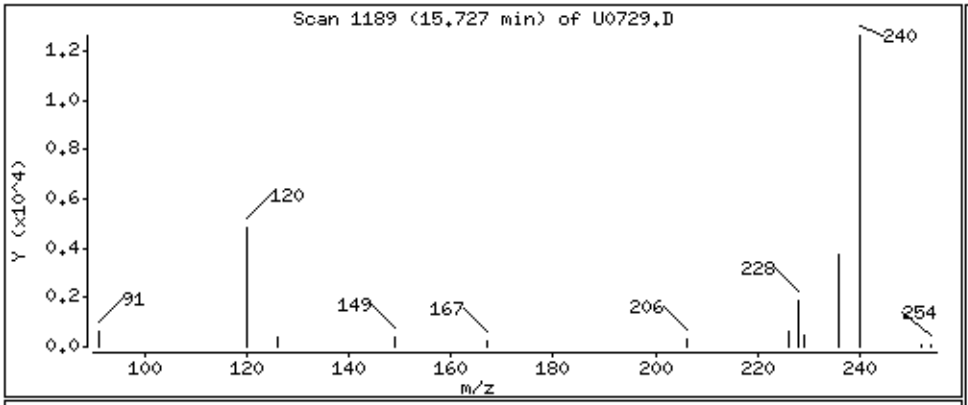
Client ID: HAAP-19C-LGIA-DPT22 Instrument: gcms-u.i

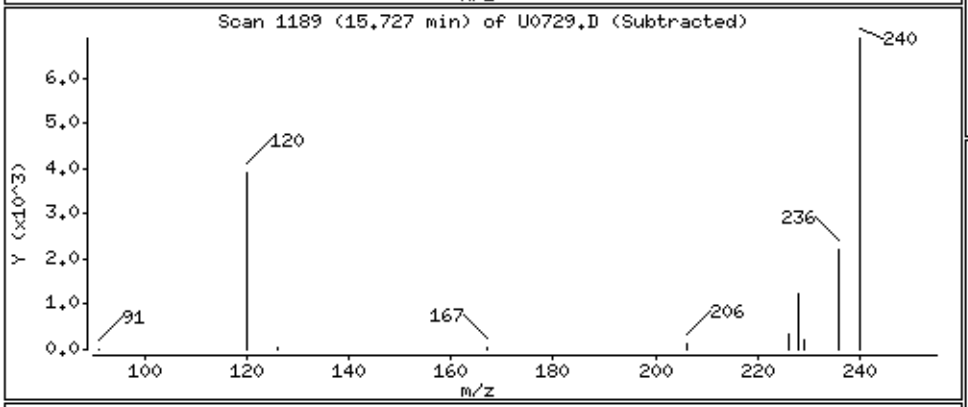
Sample Info: SL3808-15

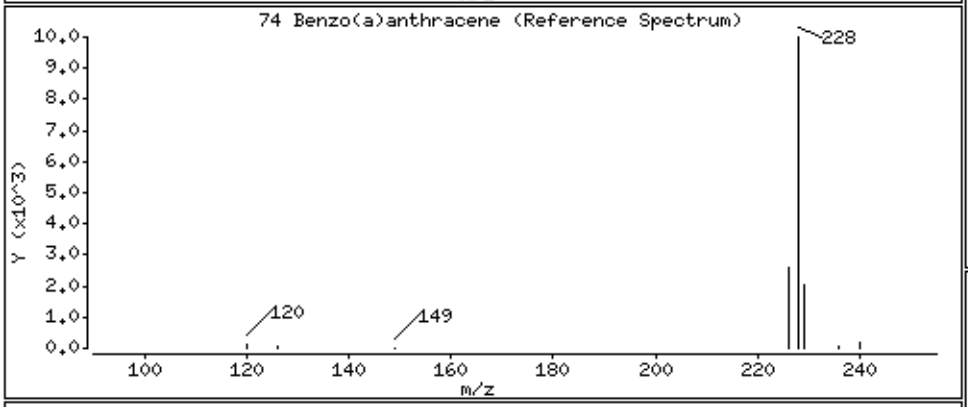
Volume Injected (uL): 1.0 Operator: JCG

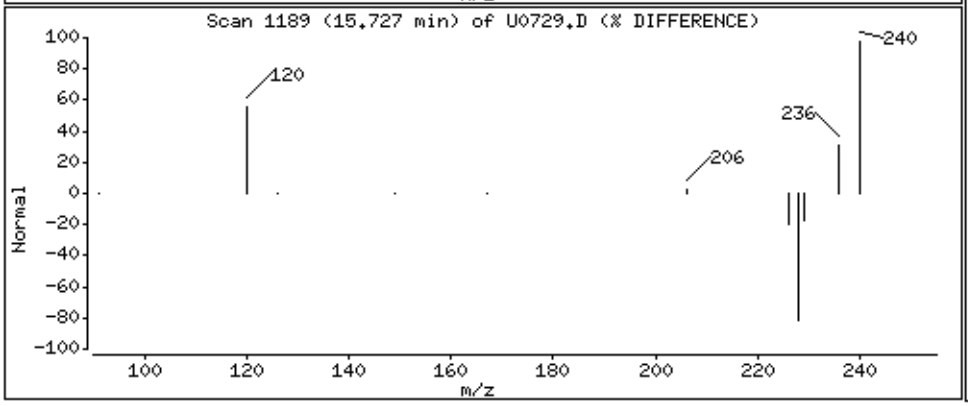
Column phase: ZB5-MS Column diameter: 0.25

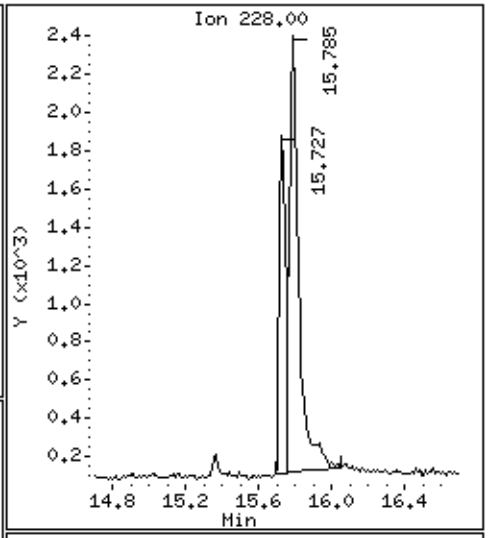
74 Benzo(a)anthracene Concentration: 0.0479 ug/L

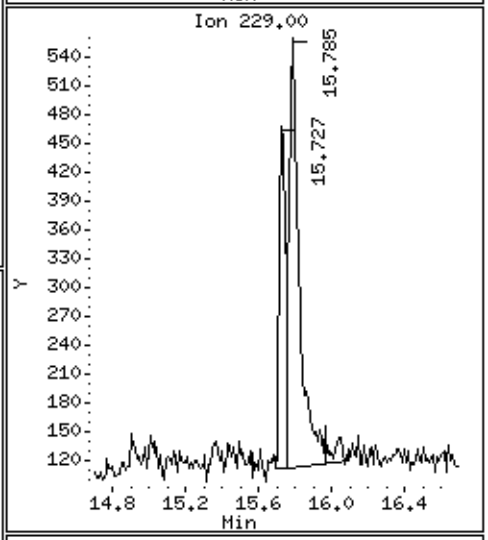


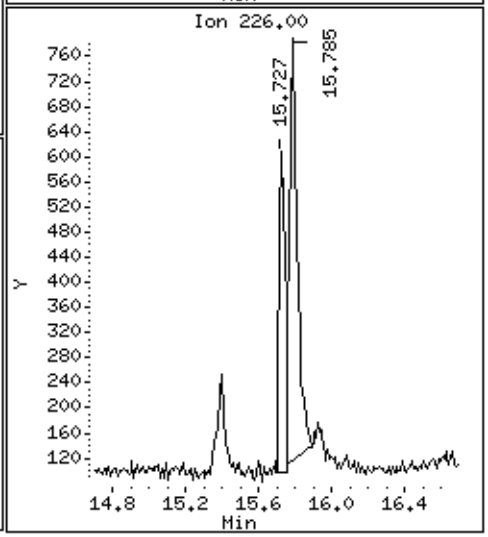












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-17
Client ID: CHAAP-19C-UGIA-DPT21
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: U0730.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 08-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.099	ug/L	1	.2	0.20	0.063	0.099
2-Methylnaphthalene	U	0.099	ug/L	1	.2	0.20	0.076	0.099
Acenaphthylene	U	0.099	ug/L	1	.2	0.20	0.053	0.099
Acenaphthene	U	0.099	ug/L	1	.2	0.20	0.063	0.099
Fluorene	U	0.099	ug/L	1	.2	0.20	0.060	0.099
Phenanthrene	U	0.099	ug/L	1	.2	0.20	0.050	0.099
Anthracene	U	0.099	ug/L	1	.2	0.20	0.044	0.099
Fluoranthene	J	0.082	ug/L	1	.2	0.20	0.072	0.099
Pyrene	U	0.099	ug/L	1	.2	0.20	0.058	0.099
Benzo(a)anthracene	J	0.048	ug/L	1	.2	0.20	0.046	0.099
Chrysene	U	0.099	ug/L	1	.2	0.20	0.036	0.099
Benzo(b)Fluoranthene	JB	0.12	ug/L	1	.2	0.20	0.088	0.099
Benzo(k)fluoranthene	U	0.099	ug/L	1	.2	0.20	0.048	0.099
Benzo(a)pyrene	U	0.099	ug/L	1	.2	0.20	0.065	0.099
Indeno(1,2,3-cd)pyrene	U	0.099	ug/L	1	.2	0.20	0.051	0.099
Dibenzo(a,h)anthracene	U	0.099	ug/L	1	.2	0.20	0.069	0.099
Benzo(g,h,i)perylene	U	0.099	ug/L	1	.2	0.20	0.064	0.099
2-Methylnaphthalene-D10		80.5	%					
Fluorene-D10		87.2	%					
Pyrene-D10		94.1	%					

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-u.i\U050818.b\U0730.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050818.b\U0730.D
Lab Smp Id: SL3808-17 Client Smp ID: HAAP-19C-UGIA-DPT21
Inj Date : 08-MAY-2018 14:42 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : SL3808-17
Misc Info : WG227838,WG227671,WG227762-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050818.b\USPSIM36.m
Meth Date : 09-May-2018 09:27 gcms-u.i Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

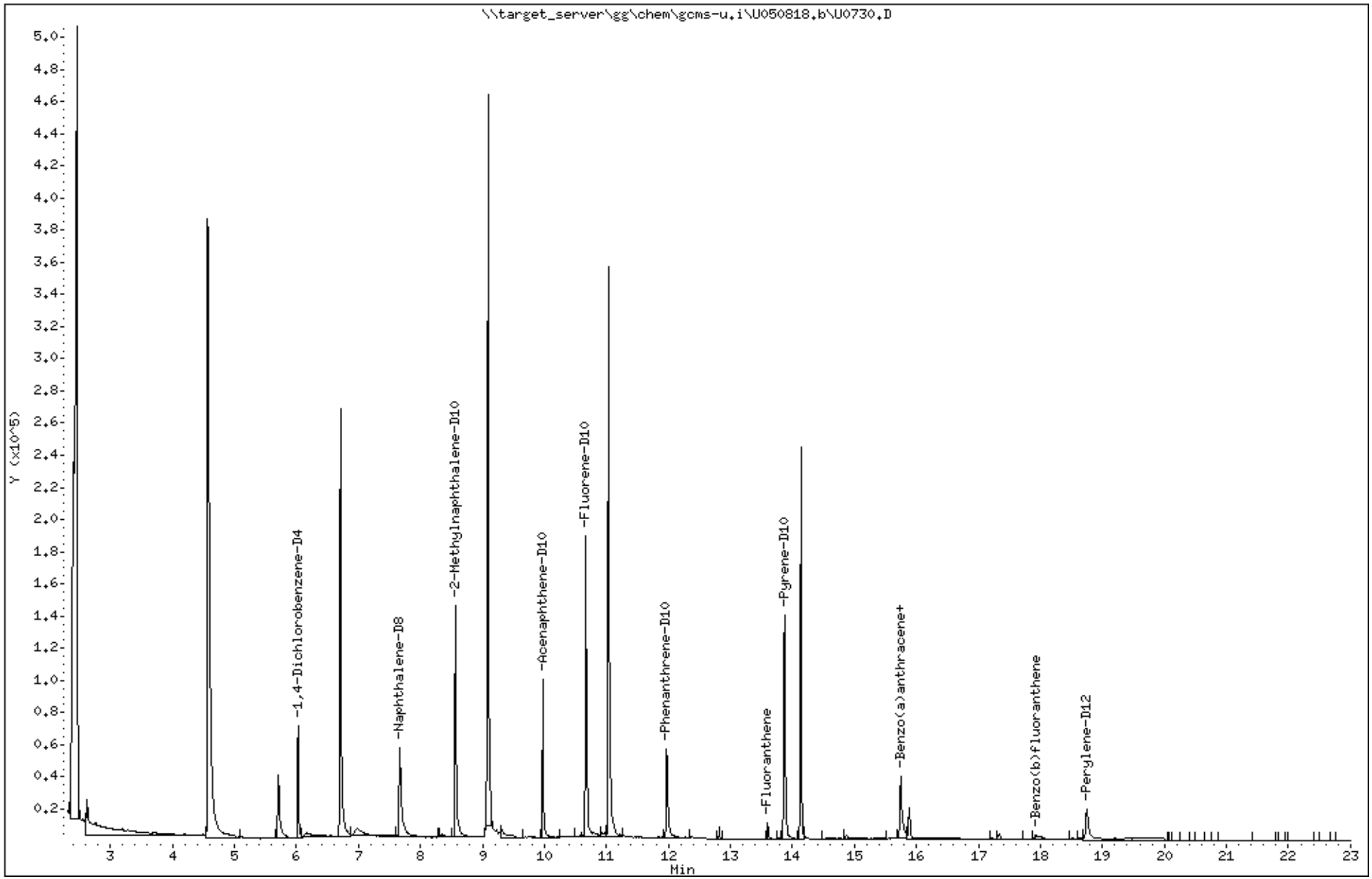
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.010	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	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	6.034	6.025	(1.000)	49361	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.671	7.647	(1.000)	154270	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	8.563	8.551	(0.859)	120180	1.60947	1.59	
*	47 Acenaphthene-D10	164	9.969	9.968	(1.000)	61929	0.80000	(a)	
$	55 Fluorene-D10	174	10.672	10.673	(1.071)	109996	1.74422	1.73	
*	65 Phenanthrene-D10	188	11.966	11.955	(1.000)	106098	0.80000	(a)	
	70 Fluoranthene	202	13.604	13.594	(1.137)	10910	0.08286	0.0820(a)	
$	71 Pyrene-D10	212	13.875	13.875	(0.881)	148253	1.88273	1.86	
	74 Benzo(a)anthracene	228	15.735	15.706	(0.999)	3613	0.04835	0.0479(a)	
*	76 Chrysene-D12	240	15.745	15.726	(1.000)	66300	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	17.933	17.887	(0.957)	4303	0.12447	0.123(a)	
*	83 Perylene-D12	264	18.741	18.753	(1.000)	51497	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-u.i\U050818.b\U0730.D
Date : 08-MAY-2018 14:42
Client ID: HAAP-19C-UGIA-DPT21
Instrument: gcms-u.i
Sample Info: SL3808-17
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000052

Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0730.D

Date : 08-MAY-2018 14:42

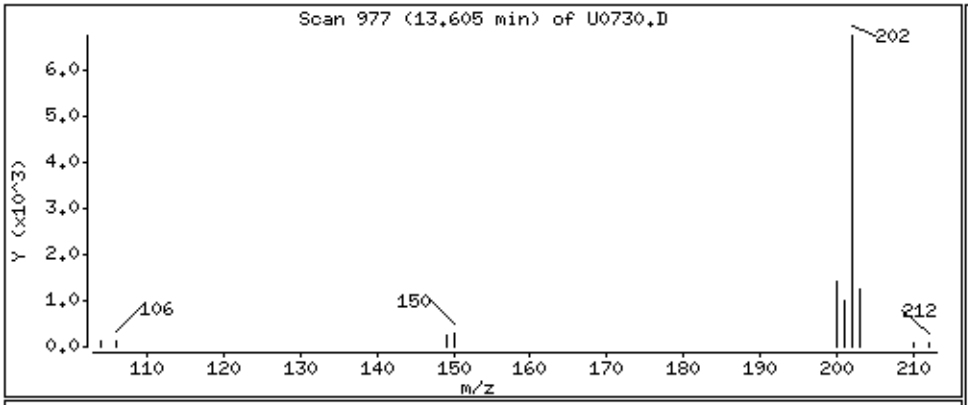
Client ID: HAAP-19C-UGIA-DPT21 Instrument: gcms-u.i

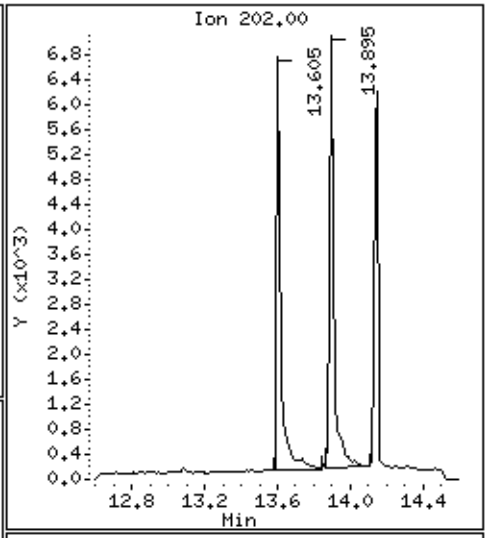
Sample Info: SL3808-17

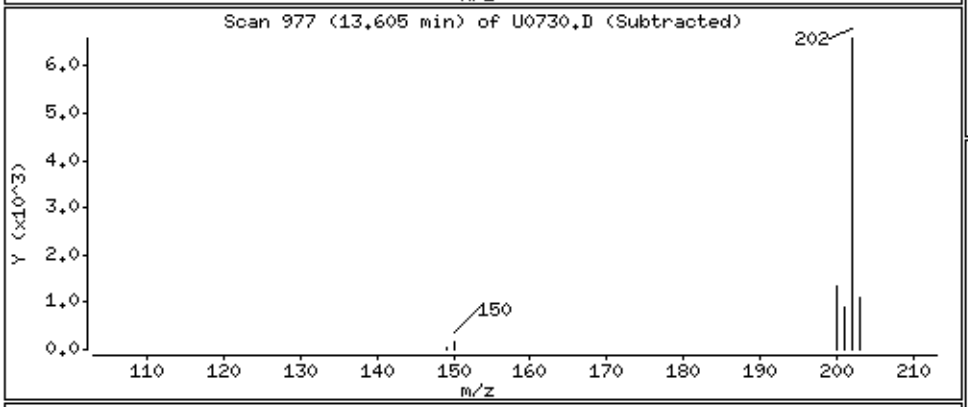
Volume Injected (uL): 1.0 Operator: JCG

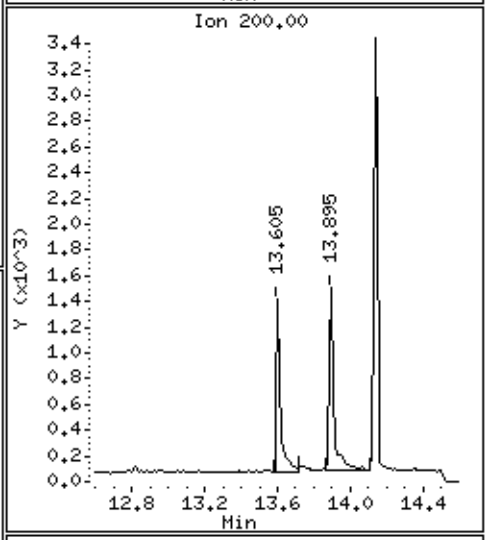
Column phase: ZB5-MS Column diameter: 0.25

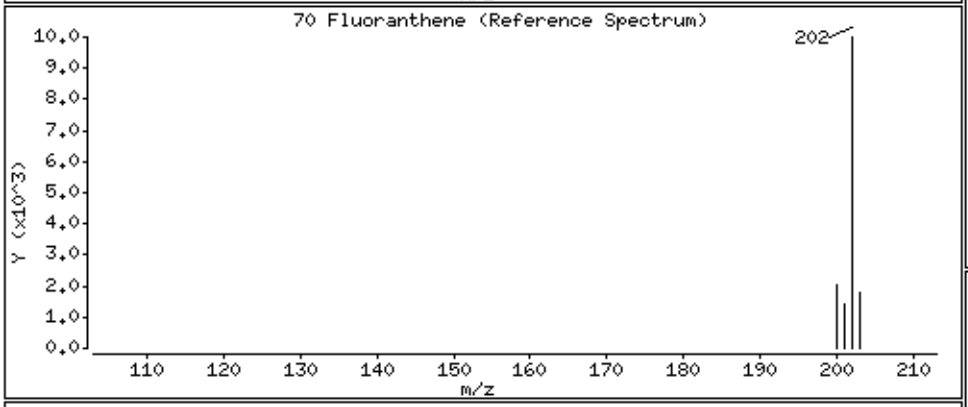
70 Fluoranthene Concentration: 0.0820 ug/L

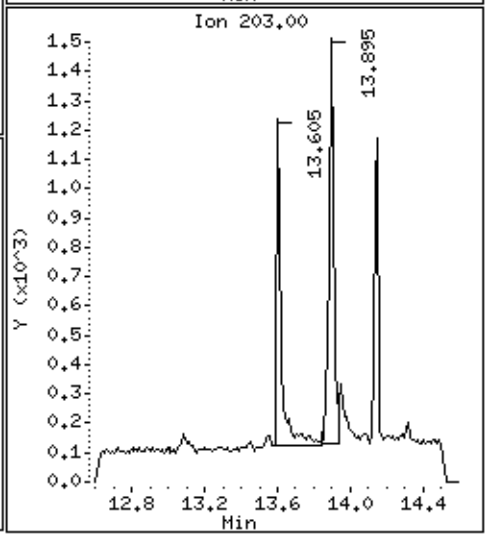


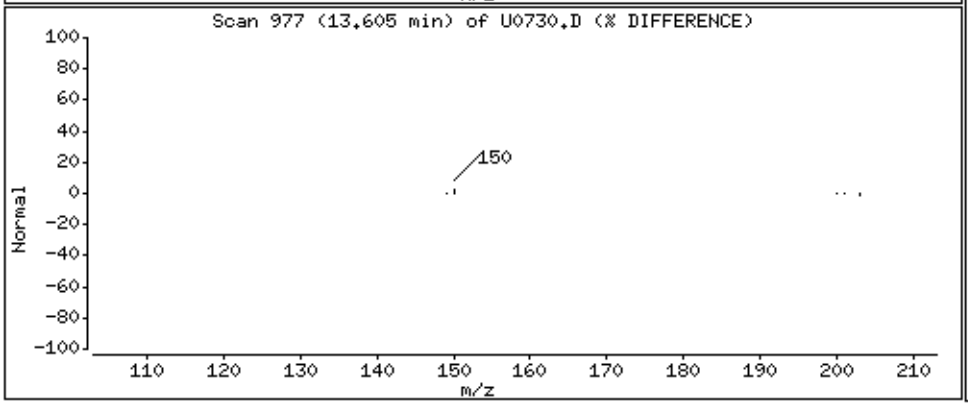












Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0730.D

Date : 08-MAY-2018 14:42

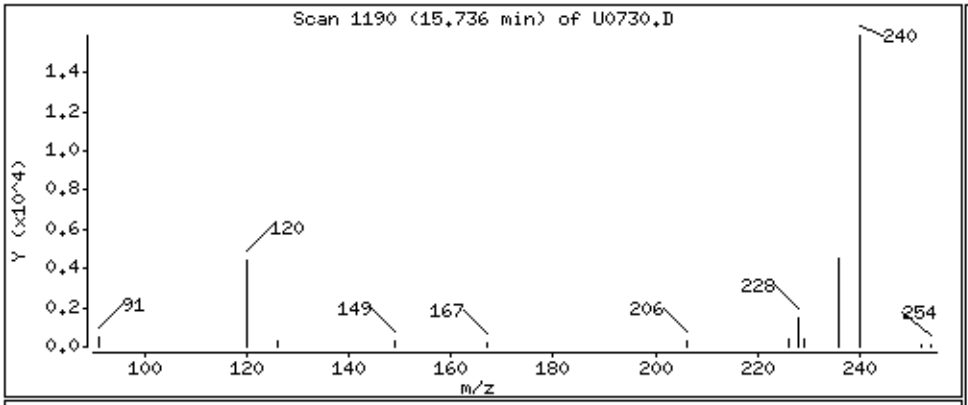
Client ID: HAAP-19C-UGIA-DPT21 Instrument: gcms-u.i

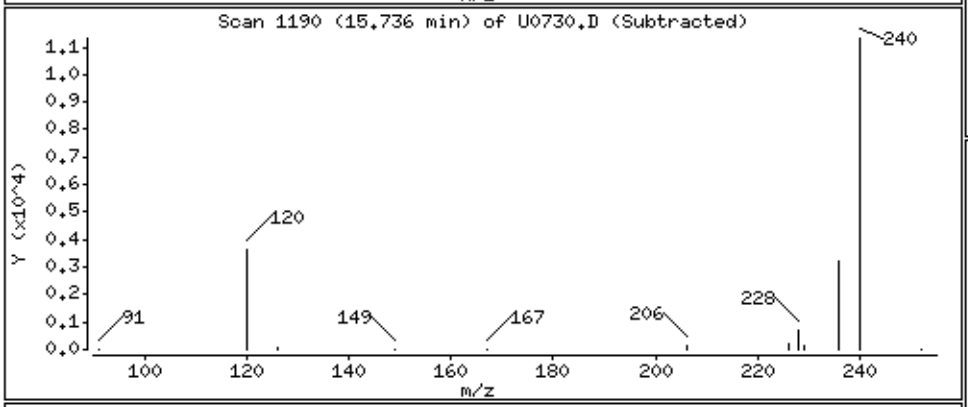
Sample Info: SL3808-17

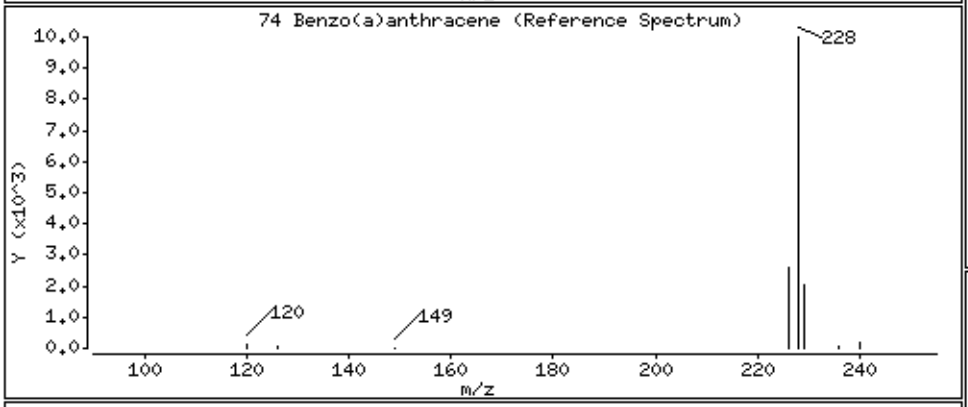
Volume Injected (uL): 1.0 Operator: JCG

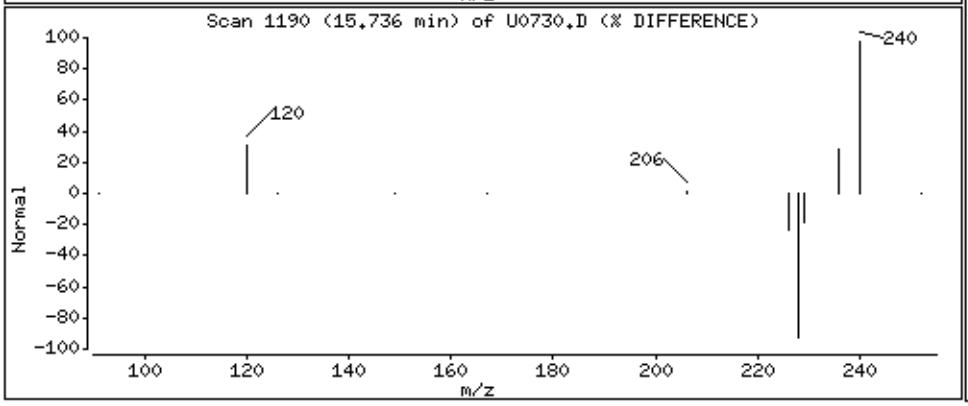
Column phase: ZB5-MS Column diameter: 0.25

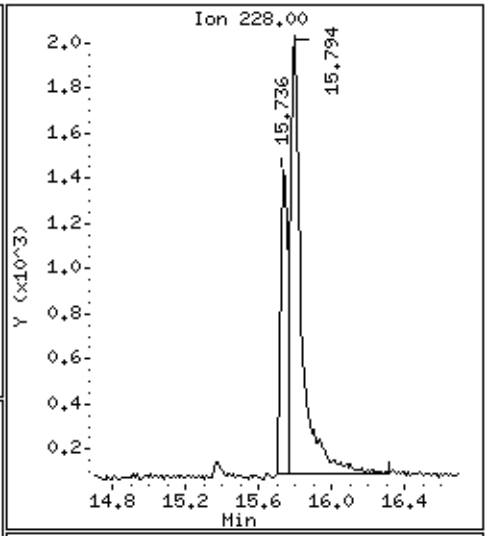
74 Benzo(a)anthracene Concentration: 0.0479 ug/L

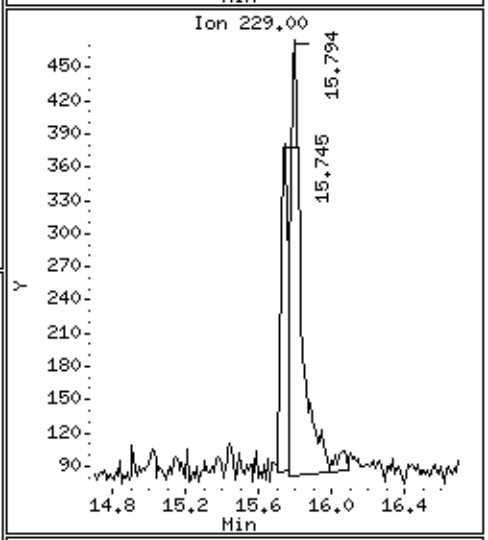


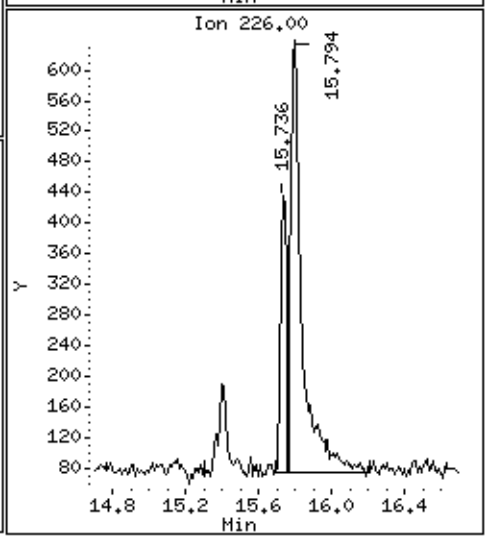












Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0730.D

Date : 08-MAY-2018 14:42

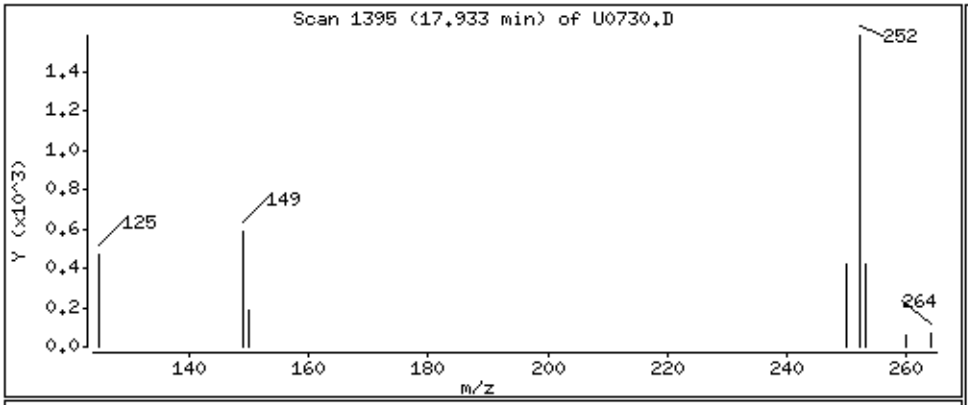
Client ID: HAAP-19C-UGIA-DPT21 Instrument: gcms-u.i

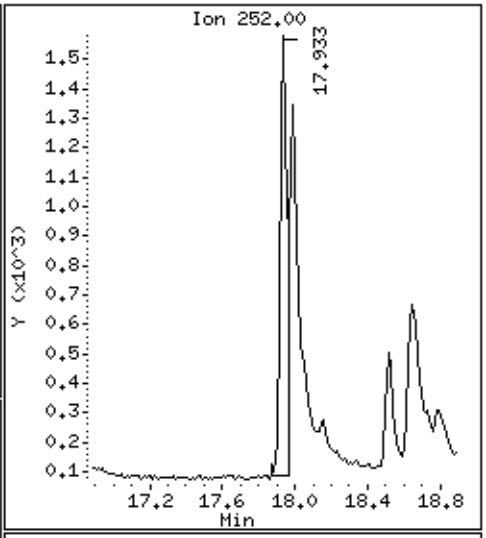
Sample Info: SL3808-17

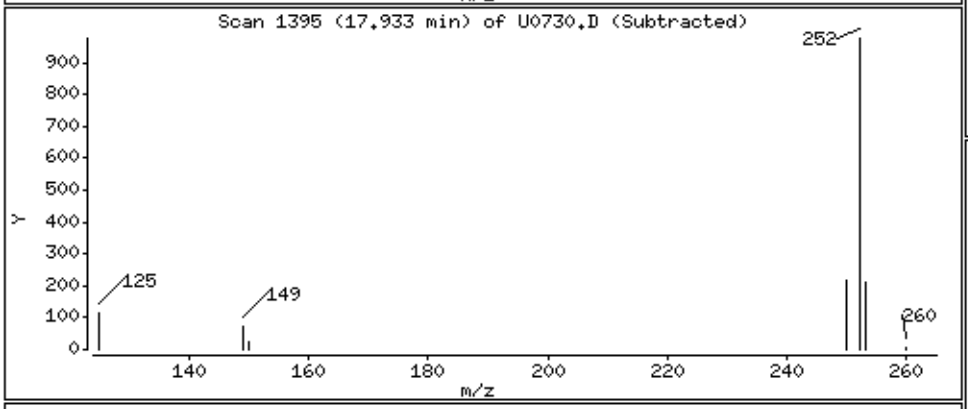
Volume Injected (uL): 1.0 Operator: JCG

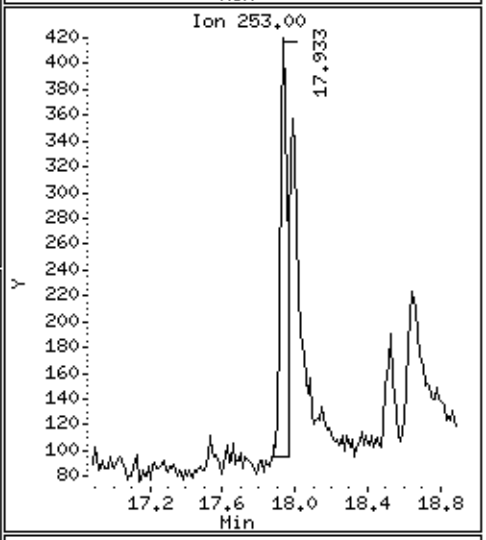
Column phase: ZB5-MS Column diameter: 0.25

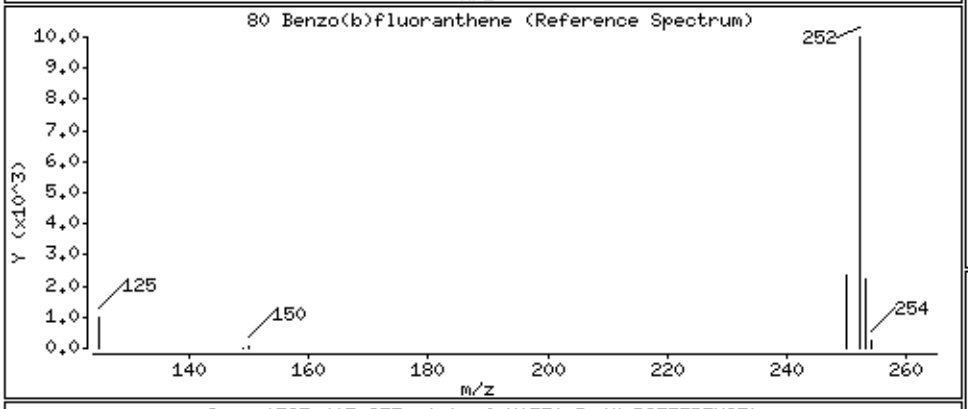
80 Benzo(b)fluoranthene Concentration: 0.123 ug/L

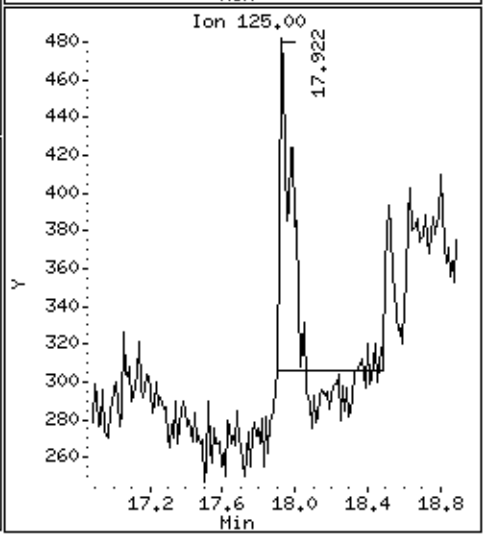


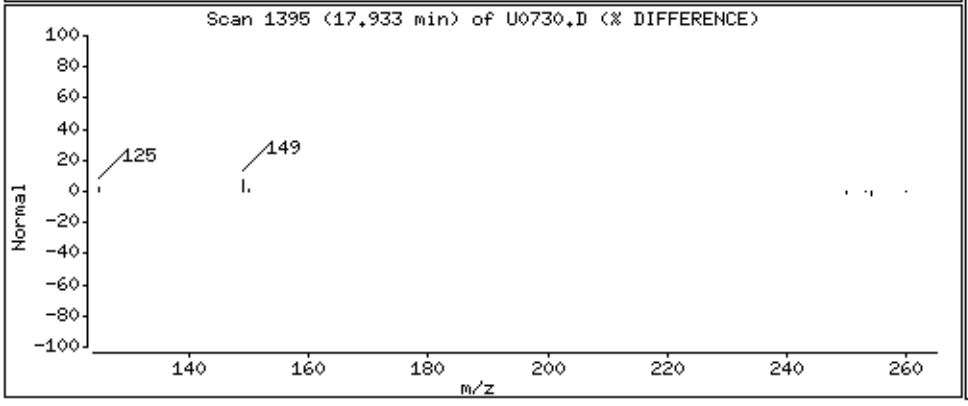












Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-U
Lab File IDs : U0701.D U0702.D U0700.D U0703.D U0704.D U0705.D
Column ID:
Calibration Date(s): 07-MAY-18 10:52, 07-MAY-18 13:29

	0.200000(Level 1	0.500000(Level 2	2.0000 Level 3	7.0000 Level 4	10.0000 Level 5	15.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.88542	0.88307	0.81957	0.70383	0.67196	0.61045	AVG		0.76238		15.2585(	15.00000	W(
2-Methylnaphthalene	0.17778	0.21097	0.19125	0.17867	0.17919	0.16932	AVG		0.18453		7.97858	15.00000	O
Acenaphthylene	1.64042	1.70167	1.64788	1.46001	1.38995	1.29267	AVG		1.52210		10.8362(	15.00000	O
Acenaphthene	1.09966	1.09741	1.01833	0.93865	0.89247	0.83236	AVG		0.97981		11.2490(	15.00000	O
Fluorene	1.23599	1.31261	1.16973	1.05581	0.99735	0.90728	AVG		1.11313		13.7516(	15.00000	O
Phenanthrene	1.05654	1.04300	0.99667	0.91392	0.84873	0.77937	AVG		0.93970		11.8705(	15.00000	O
Anthracene	1.08763	1.08203	1.01890	0.94217	0.94158	0.82651	AVG		0.98314		10.1628(	15.00000	O
Fluoranthene	1.19570	1.10964	1.01521	0.93477	0.87679	0.82487	AVG		0.99283		14.2690(	15.00000	O
Pyrene	27616	90269	261257	755561	919972	1284872	LNR	-0.16850	1.23824		0.99979	0.99000	O
Benzo(a)anthracene	0.98312	0.87280	0.89511	0.90161	0.85086	0.90605	AVG		0.90159		4.98781	15.00000	O
Chrysene	36038	79088	206631	588656	706566	1033815	LNR	-0.19558	0.97882		0.99875	0.99000	O
Benzo(b)fluoranthene	18185	36278	128778	423517	460999	703705	LNR	0.07529	1.04066		0.99709	0.99000	O
Benzo(k)fluoranthene	29202	61059	193349	536586	642404	866364	LNR	-0.19538	1.30334		0.99944	0.99000	O
Benzo(a)pyrene	1.38616	1.10129	0.94532	1.01574	1.00508	1.04683	AVG		1.08340		14.4829(	15.00000	O
Indeno(1,2,3-cd)pyrene	15884	26975	108952	359406	401525	587525	LNR	0.04652	0.87729		0.99898	0.99000	O
Dibenzo(a,h)anthracene	11177	18271	79578	267575	284670	445530	LNR	0.14279	0.65822		0.99560	0.99000	O
Benzo(g,h,i)perylene	17824	27930	109342	334725	369252	526704	LNR	-0.10470	0.78765		0.99949	0.99000	O
2-Methylnaphthalene-D10	1.09357	1.06667	1.02885	0.92391	0.87558	0.79900	AVG		0.96460		12.1062(	15.00000	
Fluorene-D10	0.83330	0.92878	0.85036	0.78662	0.75145	0.73738	AVG		0.81465		8.74877	15.00000	
Pyrene-D10	0.99669	1.08789	0.92373	0.89217	0.89170	0.90873	AVG		0.95015		8.19714	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0706.D
Report Date: 09-May-2018 10:29

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: 021497
Sample Matrix: SOLID Fraction: SV
Lab Smp Id: WG227762-8
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-u.i\U050718.b\USPSIM36.m
Misc Info: WG227762,WG227762,WG227762-4

SPIKE	COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
2	1,4-Dioxane	167	149	89.19	80-120
3	N-Nitrosodimethyla	167	174	104.43	80-120
4	Pyridine	167	155	92.97	80-120
5	Benzaldehyde	167	126	75.94*	80-120
7	Bis(2-Chloroethyl)	167	179	107.24	80-120
6	Phenol	167	166	99.86	80-120
8	2-Chlorophenol	167	165	98.78	80-120
9	1,3-Dichlorobenzen	167	161	96.68	80-120
11	1,4-Dichlorobenzen	167	152	91.30	80-120
12	1,2-Dichlorobenzen	167	154	92.18	80-120
14	2,2'-Oxybis(1-chlo	167	115	69.29*	80-120
13	2-Methylphenol	167	158	94.52	80-120
15	Acetophenone	167	176	105.30	80-120
16	N-Nitroso-di-n-pro	167	164	98.53	80-120
18	Hexachloroethane	167	154	92.34	80-120
17	3&4-Methylphenol	167	134	80.20	80-120
19	Nitrobenzene	167	192	115.10	80-120
20	Isophorone	167	158	94.77	80-120
21	2-Nitrophenol	167	171	102.42	80-120
22	2,4-Dimethylphenol	167	160	95.85	80-120
23	bis(2-Chloroethoxy	167	184	110.14	80-120
24	2,4-Dichlorophenol	167	170	101.76	80-120
25	1,2,4-Trichloroben	167	176	105.38	80-120
27	Naphthalene	167	170	101.91	80-120
28	4-Chloroaniline	167	164	98.38	80-120
29	Hexachlorobutadien	167	189	113.36	80-120
30	Caprolactam	167	171	102.83	80-120
33	2-Methylnaphthalen	167	175	105.24	80-120
31	4-Chloro-3-Methylp	167	167	100.41	80-120
34	1-Methylnaphthalen	167	180	108.07	80-120
36	1,2,4,5-Tetrachlor	167	154	92.30	80-120
35	Hexachlorocyclopen	167	119	71.49*	80-120
38	2,4,6-Trichlorophe	167	172	103.12	80-120
39	2,4,5-Trichlorophe	167	160	96.25	80-120
41	2-Chloronaphthalen	167	196	117.83	80-120
40	1,1'-Biphenyl	167	174	104.53	80-120
42	2-Nitroaniline	167	161	96.55	80-120
43	Dimethyl Phthalate	167	172	103.18	80-120
45	Acenaphthylene	167	165	99.03	80-120
44	2,6-Dinitrotoluene	167	170	102.11	80-120

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0706.D
Report Date: 09-May-2018 10:29

SPIKE COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
48 Acenaphthene	167	168	100.95	80-120
46 3-Nitroaniline	167	149	89.55	80-120
49 2,4-Dinitrophenol	167	164	98.46	80-120
51 Dibenzofuran	167	177	106.26	80-120
52 2,4-Dinitrotoluene	167	162	97.41	80-120
53 2,3,4,6-Tetrachlor	167	134	80.33	80-120
50 4-Nitrophenol	167	98.6	59.15*	80-120
54 Diethylphthalate	167	174	104.47	80-120
56 Fluorene	167	168	100.59	80-120
59 4,6-Dinitro-2-Meth	167	148	89.11	80-120
58 4-Nitroaniline	167	130	77.89*	80-120
60 N-Nitrosodiphenyla	167	154	92.76	80-120
61 4-Bromophenyl-phen	167	172	102.96	80-120
62 Hexachlorobenzene	167	164	98.25	80-120
63 Atrazine	167	53.5	32.10*	80-120
64 Pentachlorophenol	167	145	87.29	80-120
66 Phenanthrene	167	166	99.69	80-120
67 Anthracene	167	162	97.21	80-120
68 Carbazole	167	153	91.64	80-120
69 Di-n-butylphthalat	167	169	101.50	80-120
70 Fluoranthene	167	155	92.94	80-120
72 Pyrene	167	180	108.00	80-120
73 Butylbenzylphthala	167	159	95.55	80-120
74 Benzo(a)anthracene	167	162	97.01	80-120
77 Chrysene	167	179	107.62	80-120
75 3,3'-Dichlorobenzi	167	167	100.46	80-120
78 bis(2-Ethylhexyl)p	167	166	99.52	80-120
79 Di-n-octylphthalat	167	160	95.73	80-120
80 Benzo(b)fluoranthe	167	153	91.78	80-120
81 Benzo(k)fluoranthe	167	190	114.03	80-120
82 Benzo(a)pyrene	167	146	87.73	80-120
84 Indeno(1,2,3-cd)py	167	156	93.78	80-120
85 Dibenzo(a,h)anthra	167	152	91.36	80-120
86 Benzo(g,h,i)peryle	167	155	92.81	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-u.i\U050718.b\U0700.D
Report Date: 09-May-2018 09:21

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0700.D
Lab Smp Id: WG227762-4 Client Smp ID: Initial Calibration
Inj Date : 07-MAY-2018 10:52 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227762-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : Cal File:
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	2.606	2.596	(0.433)	44539	2.00000	1.72	
	2 1,4-Dioxane	88	2.628	2.629	(0.436)	51392	2.00000	1.82	
	3 N-Nitrosodimethylamine	74	2.981	2.960	(0.495)	73823	2.00000	1.97	
	4 Pyridine	79	3.036	2.993	(0.504)	123967	2.00000	2.01	
	5 Benzaldehyde	77	5.508	5.490	(0.914)	40706	2.00000	2.05	
	6 Phenol	94	5.756	5.728	(0.956)	347293	4.50000	4.52	
	7 Bis(2-Chloroethyl)ether	93	5.717	5.708	(0.949)	123100	2.00000	2.34	
	8 2-Chlorophenol	128	5.836	5.817	(0.969)	293214	4.50000	4.59	
	9 1,3-Dichlorobenzene	146	5.955	5.956	(0.988)	130160	2.00000	2.00(H)	
*	10 1,4-Dichlorobenzene-D4	152	6.024	6.025	(1.000)	51585	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	6.044	6.045	(1.003)	191214	2.00000	1.66(H)	
	12 1,2-Dichlorobenzene	146	6.237	6.228	(1.035)	125648	2.00000	1.93	
	13 2-Methylphenol	108	6.456	6.436	(1.072)	244690	4.50000	4.17(H)	
	14 2,2'-Oxybis(1-chloropropane)	45	6.386	6.377	(1.060)	148655	2.00000	1.95	
	15 Acetophenone	105	6.545	6.536	(0.856)	157088	2.00000	2.20	
	16 N-Nitroso-di-n-propylamine	70	6.555	6.546	(1.088)	97531	2.00000	2.70	
	17 3&4-Methylphenol	108	6.664	6.655	(1.106)	233786	4.50000	3.74(Q)	
	18 Hexachloroethane	117	6.645	6.645	(1.103)	51702	2.00000	1.90	
	19 Nitrobenzene	77	6.754	6.735	(0.883)	170354	2.00000	2.19	
	20 Isophorone	82	7.075	7.077	(0.925)	196398	2.00000	2.12	
	21 2-Nitrophenol	139	7.175	7.163	(0.938)	134629	4.50000	4.97	

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0700.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	7.311	7.300	(0.956)	242371	4.50000	4.78	
	23 bis(2-Chloroethoxy)methane	93	7.385	7.362	(0.966)	124750	2.00000	2.27	
	24 2,4-Dichlorophenol	162	7.608	7.560	(0.995)	202126	4.50000	4.82(H)	
	25 1,2,4-Trichlorobenzene	180	7.596	7.585	(0.994)	108016	2.00000	2.16	
*	26 Naphthalene-D8	136	7.646	7.647	(1.000)	137647	0.80000	(a)	
	27 Naphthalene	128	7.670	7.672	(1.003)	282027	2.00000	2.15(H)	
	28 4-Chloroaniline	127	7.807	7.783	(1.021)	111492	2.00000	1.87	
	29 Hexachlorobutadiene	225	7.869	7.870	(1.029)	61470	2.00000	2.16(Q)	
	30 Caprolactam	113	8.265	8.242	(1.081)	26808	2.00000	2.09	
	31 4-Chloro-3-Methylphenol	107	8.550	8.527	(1.118)	185889	4.50000	4.80	
$	32 2-Methylnaphthalene-D10	152	8.563	8.551	(0.859)	154657	2.00000	2.13	
	33 2-Methylnaphthalene	115	8.600	8.589	(1.125)	65814	2.00000	2.07(H)	
	34 1-Methylnaphthalene	142	8.724	8.725	(1.141)	189352	2.00000	2.27	
	35 Hexachlorocyclopentadiene	237	8.823	8.824	(0.885)	27336	2.00000	1.65	
	36 1,2,4,5-Tetrachlorobenzene	216	8.848	8.836	(1.469)	102484	2.00000	1.91	
$	37 2,4-Dibromophenol	252	9.058	9.022	(0.909)	54332	2.00000	2.08	
	38 2,4,6-Trichlorophenol	196	9.034	9.022	(0.906)	129661	4.50000	4.84(H)	
	39 2,4,5-Trichlorophenol	196	9.170	9.134	(0.920)	129713	4.50000	4.60	
	40 1,1'-Biphenyl	154	9.232	9.233	(0.926)	230491	2.00000	1.87	
	41 2-Chloronaphthalene	164	9.257	9.245	(0.929)	60104	2.00000	2.07	
	42 2-Nitroaniline	65	9.430	9.407	(0.946)	62663	2.00000	1.93	
	43 Dimethyl Phthalate	163	9.662	9.662	(0.969)	414492	4.50000	4.50	
	44 2,6-Dinitrotoluene	165	9.728	9.727	(0.976)	44590	2.00000	2.09	
	45 Acenaphthylene	152	9.783	9.771	(0.981)	247709	2.00000	2.16	
	46 3-Nitroaniline	138	9.430	9.407	(0.946)	68933	2.00000	1.96	
*	47 Acenaphthene-D10	164	9.968	9.968	(1.000)	60128	0.80000	(a)	
	48 Acenaphthene	153	10.012	10.012	(1.004)	153075	2.00000	2.08	
	49 2,4-Dinitrophenol	184	10.176	10.121	(1.021)	23878	4.50000	4.26	
	50 4-Nitrophenol	65	10.482	10.416	(1.052)	54250	4.50000	3.28	
	51 Dibenzofuran	168	10.253	10.252	(1.029)	232215	2.00000	2.13(H)	
	52 2,4-Dinitrotoluene	165	10.296	10.274	(1.033)	53197	2.00000	2.01	
	53 2,3,4,6-Tetrachlorophenol	232	10.482	10.471	(1.052)	127991	4.50000	4.20	
	54 Diethylphthalate	149	10.604	10.603	(1.064)	400703	4.50000	4.47	
$	55 Fluorene-D10	174	10.674	10.673	(1.071)	127826	2.00000	2.09	
	56 Fluorene	166	10.701	10.701	(1.074)	175834	2.00000	2.10	
	57 4-Chlorophenyl-Phenylether	204	10.729	10.728	(1.076)	97925	2.00000	2.06	
	58 4-Nitroaniline	138	10.854	10.798	(1.089)	35314	2.00000	1.32(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	10.868	10.839	(0.908)	54809	4.50000	4.42	
	60 N-Nitrosodiphenylamine	169	10.896	10.895	(0.910)	180608	2.00000	2.34	
	61 4-Bromophenyl-phenylether	248	11.385	11.384	(0.951)	53538	2.00000	2.04	
	62 Hexachlorobenzene	284	11.466	11.465	(0.958)	57342	2.00000	2.04	
	63 Atrazine	200	11.653	11.652	(0.974)	36271	2.00000	2.05(H)	
	64 Pentachlorophenol	266	11.792	11.768	(0.985)	47823	4.50000	4.90	
*	65 Phenanthrene-D10	188	11.967	11.955	(1.000)	97557	0.80000	(a)	
	66 Phenanthrene	178	12.002	11.990	(1.003)	243080	2.00000	2.12(H)	
	67 Anthracene	178	12.072	12.059	(1.009)	248502	2.00000	2.07	
	68 Carbazole	167	12.328	12.304	(1.030)	211465	2.00000	1.98	
	69 Di-n-butylphthalate	149	12.822	12.822	(1.071)	600877	4.50000	4.50	
	70 Fluoranthene	202	13.604	13.594	(1.137)	247601	2.00000	2.04	
$	71 Pyrene-D10	212	13.884	13.875	(0.882)	173652	2.00000	1.94	
	72 Pyrene	202	13.904	13.895	(0.883)	261257	2.00000	2.11	
	73 Butylbenzylphthalate	149	14.866	14.867	(0.944)	260153	4.50000	4.32	
	74 Benzo(a)anthracene	228	15.725	15.706	(0.999)	168272	2.00000	1.98(H)	
	75 3,3'-Dichlorobenzidine	252	15.754	15.735	(1.001)	42911	2.00000	2.46	

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0700.D
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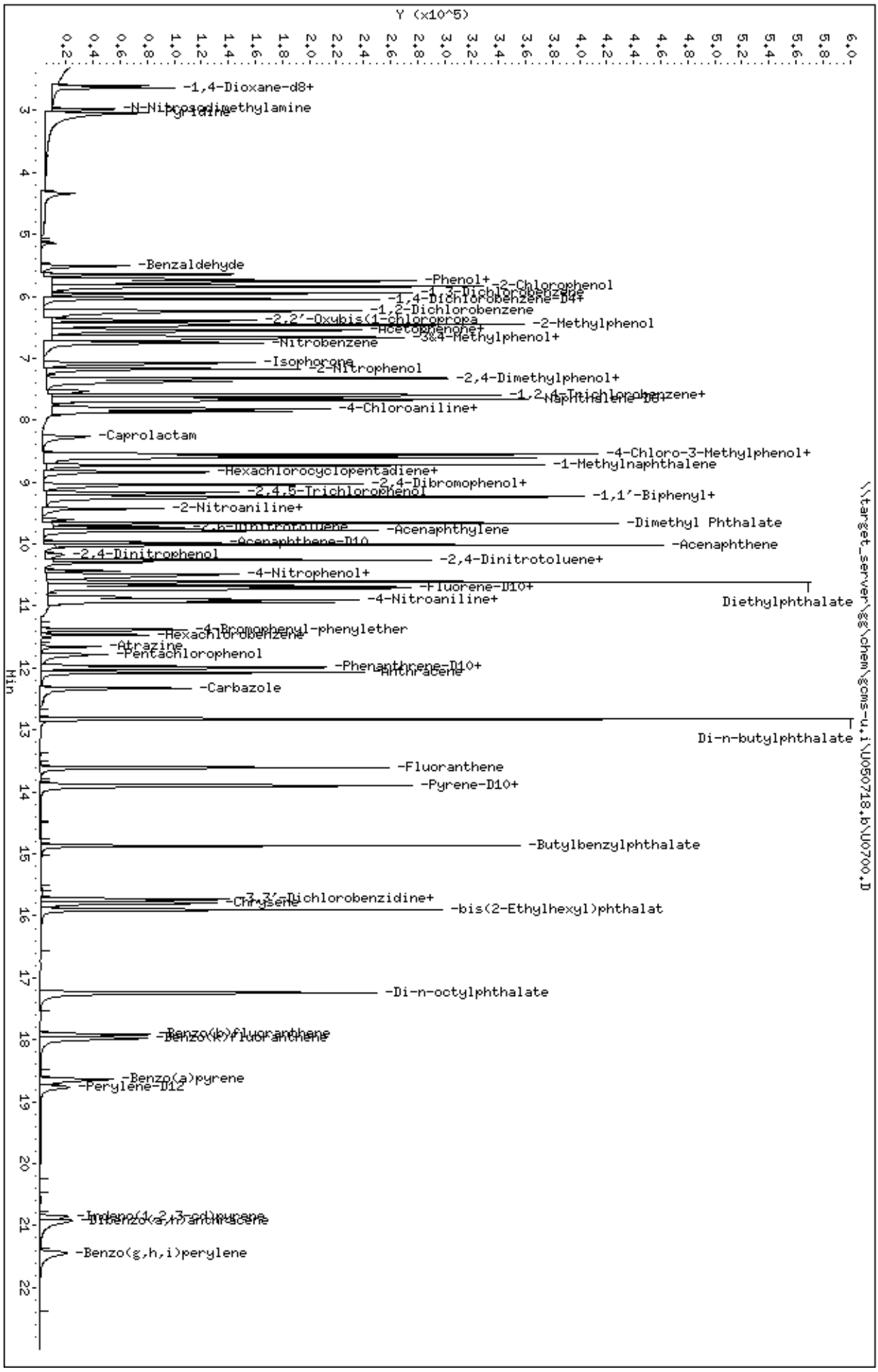
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	15.744	15.726	(1.000)	75196	0.80000	(a)	
	77 Chrysene	228	15.793	15.774	(1.003)	206631	2.00000	2.09	
	78 bis(2-Ethylhexyl)phthalate	149	15.900	15.901	(1.010)	353242	4.50000	4.37	
	79 Di-n-octylphthalate	149	17.239	17.238	(0.919)	534001	4.50000	4.26	
	80 Benzo(b)fluoranthene	252	17.911	17.887	(0.954)	128778	2.00000	1.88	
	81 Benzo(k)fluoranthene	252	17.980	17.956	(0.958)	193349	2.00000	2.02(H)	
	82 Benzo(a)pyrene	252	18.640	18.616	(0.993)	128878	2.00000	1.74	
*	83 Perylene-D12	264	18.765	18.753	(1.000)	54533	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.856	20.817	(1.111)	108952	2.00000	1.86	
	85 Dibenzo(a,h)anthracene	278	20.923	20.874	(1.115)	79578	2.00000	1.89	
	86 Benzo(g,h,i)perylene	276	21.438	21.399	(1.142)	109342	2.00000	1.95	
M	87 Total PAHs	100				729773	2.00000	(a)	
M	321 Total Low PAHs	100				1416041	2.00000	(a)	
M	322 Total High PAHs	100				1092217	2.00000	(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-u.i\U050718.b\U0700.D
Date : 07-MAY-2018 10:52
Client ID: Initial Calibration
Sample Info: WG227762-4
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-u.i
Operator: JCG
Column diameter: 0.25
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine
-Pyridine
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,2-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+
-1,2,4-Trichlorobenzene+
-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
-Acenaphthylene
-Acenaphthene-D10
-Acenaphthene
-2,4-Dinitrophenol
-2,4-Dinitrotoluene+
-4-Nitrophenol+
-Fluorene-D10+
-4-Nitroaniline+
Diethylphthalate
-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
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene
\\target_server\gg\chem\gcms-u.i\U050718.b\U0700.D

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0701.D
Report Date: 09-May-2018 09:21

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0701.D
Lab Smp Id: WG227762-2 Client Smp ID: Initial Calibration
Inj Date : 07-MAY-2018 11:25 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227762-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 11:25 Cal File: U0701.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	2.618	2.596	(0.433)	4491	0.20000	0.236(a)	
	2 1,4-Dioxane	88	2.640	2.629	(0.437)	5281	0.20000	0.253(a)	
	3 N-Nitrosodimethylamine	74	3.070	2.960	(0.508)	6221	0.20000	0.225(M)	M9
	4 Pyridine	79	3.224	2.993	(0.533)	9326	0.20000	0.205(QM)	M6
	5 Benzaldehyde	77	5.589	5.490	(0.925)	4241	0.20000	0.244(M)	M9
	6 Phenol	94	5.837	5.728	(0.966)	67270	1.00000	1.18	
	7 Bis(2-Chloroethyl)ether	93	5.787	5.708	(0.957)	16829	0.20000	0.214(QM)	M9
	8 2-Chlorophenol	128	5.896	5.817	(0.975)	57232	1.00000	1.21	
	9 1,3-Dichlorobenzene	146	5.986	5.956	(0.990)	10524	0.20000	0.219	
*	10 1,4-Dichlorobenzene-D4	152	6.045	6.025	(1.000)	38061	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.065	6.045	(1.003)	17158	0.20000	0.300	
	12 1,2-Dichlorobenzene	146	6.256	6.228	(1.035)	12283	0.20000	0.255	
	13 2-Methylphenol	108	6.515	6.436	(1.078)	49877	1.00000	1.15	
	14 2,2'-Oxybis(1-chloropropane)	45	6.415	6.377	(1.061)	12991	0.20000	0.231	
	15 Acetophenone	105	6.624	6.536	(0.865)	13530	0.20000	0.198(a)	
	16 N-Nitroso-di-n-propylamine	70	6.624	6.546	(1.096)	10061	0.20000	0.152(a)	
	17 3&4-Methylphenol	108	6.753	6.655	(1.117)	63759	1.00000	1.38(Q)	
	18 Hexachloroethane	117	6.654	6.645	(1.101)	4858	0.20000	0.242	
	19 Nitrobenzene	77	6.813	6.735	(0.890)	22980	0.20000	0.0624(aQ)	
	20 Isophorone	82	7.126	7.077	(0.930)	18042	0.20000	0.203	
	21 2-Nitrophenol	139	7.238	7.163	(0.945)	22525	1.00000	0.869(a)	

JCG

11:30 am, May 14, 2018

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0701.D
Report Date: 09-May-2018 09:21

	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	7.386	7.300	(0.964)	47345	1.00000	0.974	
	23 bis(2-Chloroethoxy)methane	93	7.473	7.362	(0.976)	8614	0.20000	0.164(aQH)	
	24 2,4-Dichlorophenol	162	7.709	7.560	(1.006)	34658	1.00000	0.864	
	25 1,2,4-Trichlorobenzene	180	7.622	7.585	(0.995)	10161	0.20000	0.212	
*	26 Naphthalene-D8	136	7.659	7.647	(1.000)	131829	0.80000	(a)	
	27 Naphthalene	128	7.696	7.672	(1.005)	29181	0.20000	0.232	
	28 4-Chloroaniline	127	7.895	7.783	(1.031)	10201	0.20000	0.178(a)	
	29 Hexachlorobutadiene	225	7.870	7.870	(1.028)	5523	0.20000	(aQ)	
	30 Caprolactam	113	8.376	8.242	(1.094)	1794	0.20000	0.146(aQM)	M9
	31 4-Chloro-3-Methylphenol	107	8.612	8.527	(1.124)	34599	1.00000	0.933(aQ)	
$	32 2-Methylnaphthalene-D10	152	8.599	8.551	(0.861)	15080	0.20000	0.227(a)	
	33 2-Methylnaphthalene	115	8.636	8.589	(1.128)	5859	0.20000	0.193(aQ)	
	34 1-Methylnaphthalene	142	8.748	8.725	(1.142)	22383	0.20000	0.0360(a)	
	35 Hexachlorocyclopentadiene	237	8.847	8.824	(0.886)	208	0.20000	0.341(Q)	
	36 1,2,4,5-Tetrachlorobenzene	216	8.884	8.836	(1.470)	9921	0.20000	0.251	
$	37 2,4-Dibromophenol	252	9.157	9.022	(0.917)	4336	0.20000	0.181(a)	
	38 2,4,6-Trichlorophenol	196	9.083	9.022	(0.909)	22082	1.00000	0.898(a)	
	39 2,4,5-Trichlorophenol	196	9.244	9.134	(0.925)	22764	1.00000	0.881(a)	
	40 1,1'-Biphenyl	154	9.269	9.233	(0.928)	26472	0.20000	0.250	
	41 2-Chloronaphthalene	164	9.293	9.245	(0.930)	6214	0.20000	0.233	
	42 2-Nitroaniline	65	9.504	9.407	(0.951)	2549	0.20000	0.115(a)	
	43 Dimethyl Phthalate	163	9.684	9.662	(0.969)	94577	1.00000	1.12	
	44 2,6-Dinitrotoluene	165	9.782	9.727	(0.979)	3581	0.20000	0.183(aQ)	
	45 Acenaphthylene	152	9.793	9.771	(0.980)	22621	0.20000	0.216	
	46 3-Nitroaniline	138	9.504	9.407	(0.951)	2318	0.20000	0.104(a)	
*	47 Acenaphthene-D10	164	9.990	9.968	(1.000)	55159	0.80000	(a)	
	48 Acenaphthene	153	10.023	10.012	(1.003)	15164	0.20000	0.224	
	49 2,4-Dinitrophenol	184	10.296	10.121	(1.031)	1498	1.00000	0.291(a)	
	50 4-Nitrophenol	65	10.618	10.416	(1.063)	13845	1.00000	0.912(aQM)	M9
	51 Dibenzofuran	168	10.296	10.252	(1.031)	21819	0.20000	0.218	
	52 2,4-Dinitrotoluene	165	10.383	10.274	(1.039)	4922	0.20000	0.203(Q)	
	53 2,3,4,6-Tetrachlorophenol	232	10.562	10.471	(1.057)	6640	1.00000	0.999(aMH)	M9
	54 Diethylphthalate	149	10.631	10.603	(1.064)	89542	1.00000	1.09	
$	55 Fluorene-D10	174	10.701	10.673	(1.071)	11491	0.20000	0.204(aM)	M6
	56 Fluorene	166	10.743	10.701	(1.075)	17044	0.20000	0.222	
	57 4-Chlorophenyl-Phenylether	204	10.756	10.728	(1.077)	9246	0.20000	0.213	
	58 4-Nitroaniline	138	10.951	10.798	(1.096)	4423	0.20000	0.356(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	10.937	10.839	(0.912)	6021	1.00000	0.883(a)	
	60 N-Nitrosodiphenylamine	169	10.937	10.895	(0.912)	16445	0.20000	0.249	
	61 4-Bromophenyl-phenylether	248	11.407	11.384	(0.951)	5255	0.20000	0.234	
	62 Hexachlorobenzene	284	11.477	11.465	(0.957)	5645	0.20000	0.236	
	63 Atrazine	200	11.687	11.652	(0.975)	2987	0.20000	0.198(a)	
	64 Pentachlorophenol	266	11.838	11.768	(0.987)	6398	1.00000	0.766(a)	
*	65 Phenanthrene-D10	188	11.990	11.955	(1.000)	83389	0.80000	(a)	
	66 Phenanthrene	178	12.025	11.990	(1.003)	22026	0.20000	0.225	
	67 Anthracene	178	12.106	12.059	(1.010)	22674	0.20000	0.221	
	68 Carbazole	167	12.386	12.304	(1.033)	21670	0.20000	0.237	
	69 Di-n-butylphthalate	149	12.833	12.822	(1.070)	134830	1.00000	1.18	
	70 Fluoranthene	202	13.635	13.594	(1.137)	24927	0.20000	0.241	
$	71 Pyrene-D10	212	13.906	13.875	(0.882)	15204	0.20000	0.210(a)	
	72 Pyrene	202	13.936	13.895	(0.884)	27616	0.20000	0.158(a)	
	73 Butylbenzylphthalate	149	14.877	14.867	(0.944)	52580	1.00000	1.08	
	74 Benzo(a)anthracene	228	15.765	15.706	(1.000)	14997	0.20000	0.218	
	75 3,3'-Dichlorobenzidine	252	15.804	15.735	(1.002)	2467	0.20000	0.174(a)	



11:30 am, May 14, 2018

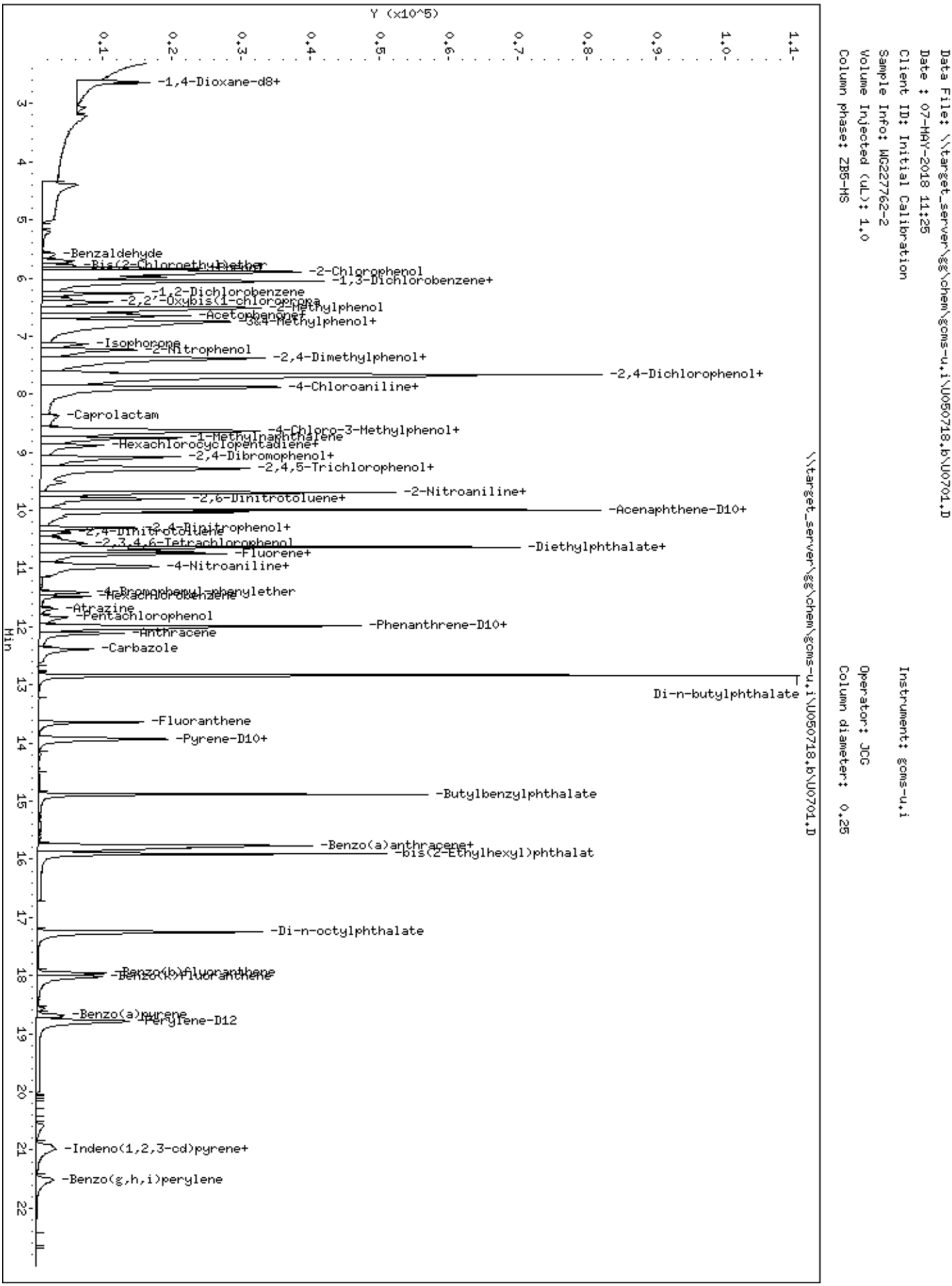
Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0701.D
Report Date: 09-May-2018 09:21

	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	15.765	15.726	(1.000)	61018	0.80000	(a)	
	77 Chrysene	228	15.814	15.774	(1.003)	36038	0.20000	0.326	
	78 bis(2-Ethylhexyl)phthalate	149	15.901	15.901	(1.009)	70325	1.00000	1.07	
	79 Di-n-octylphthalate	149	17.250	17.238	(0.918)	89991	1.00000	0.930(a)	
	80 Benzo(b)fluoranthene	252	17.956	17.887	(0.956)	18185	0.20000	0.392	
	81 Benzo(k)fluoranthene	252	18.024	17.956	(0.959)	29202	0.20000	0.269(M)	M6
	82 Benzo(a)pyrene	252	18.685	18.616	(0.995)	14597	0.20000	0.256	
*	83 Perylene-D12	264	18.787	18.753	(1.000)	42122	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.912	20.817	(1.113)	15884	0.20000	0.381	
	85 Dibenzo(a,h)anthracene	278	20.979	20.874	(1.117)	11177	0.20000	0.437	
	86 Benzo(g,h,i)perylene	276	21.514	21.399	(1.145)	17824	0.20000	0.346	
M	87 Total PAHs	100				103478	0.20000	(a)	
M	321 Total Low PAHs	100				134569	0.20000	(a)	
M	322 Total High PAHs	100				129352	0.20000	(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.

11:30 am, May 14, 2018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Date : 07-MAY-2018 11:25
Client ID: Initial Calibration
Sample Info: WG227762-2
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-u,i\U050718,b\U0701.D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-Benzaldehyde
-Bis(2-Chloroethyl)ether
-2-Chlorophenol
-1,3-Dichlorobenzene+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropa
-2-Methylphenol
-Acetophenone+
-3&4-Methylphenol+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol+
-2,4-Dichlorophenol+
-4-Chloroaniline+
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol+
-2-Nitroaniline+
-2,6-Dinitrotoluene+
-Acenaphthene-D10+
-2,4-Dinitrophenol+
-2,4-Dinitrotoluene
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate+
-Fluorene+
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-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-u.i\U050718.b\U0702.D
Report Date: 09-May-2018 09:21

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0702.D
Lab Smp Id: WG227762-3 Client Smp ID: Initial Calibration
Inj Date : 07-MAY-2018 11:56 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227762-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 11:56 Cal File: U0702.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	2.607	2.596	(0.432)	12845	0.50000	0.488(a)	
	2 1,4-Dioxane	88	2.640	2.629	(0.438)	14635	0.50000	0.507(a)	
	3 N-Nitrosodimethylamine	74	3.015	2.960	(0.500)	16455	0.50000	0.431	
	4 Pyridine	79	3.114	2.993	(0.516)	24833	0.50000	0.395	
	5 Benzaldehyde	77	5.538	5.490	(0.918)	9195	0.50000	0.417	
	6 Phenol	94	5.786	5.728	(0.959)	158276	2.00000	2.02	
	7 Bis(2-Chloroethyl)ether	93	5.747	5.708	(0.952)	37376	0.50000	0.513(M)	M9
	8 2-Chlorophenol	128	5.856	5.817	(0.970)	115111	2.00000	1.76	
	9 1,3-Dichlorobenzene	146	5.965	5.956	(0.988)	33188	0.50000	0.500	
*	10 1,4-Dichlorobenzene-D4	152	6.034	6.025	(1.000)	52642	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	6.054	6.045	(1.003)	50499	0.50000	0.487	
	12 1,2-Dichlorobenzene	146	6.247	6.228	(1.035)	33811	0.50000	0.508	
	13 2-Methylphenol	108	6.476	6.436	(1.073)	112317	2.00000	1.88	
	14 2,2'-Oxybis(1-chloropropane)	45	6.397	6.377	(1.060)	38648	0.50000	0.497	
	15 Acetophenone	105	6.576	6.536	(0.859)	38285	0.50000	0.511	
	16 N-Nitroso-di-n-propylamine	70	6.586	6.546	(1.091)	20026	0.50000	0.340	
	17 3&4-Methylphenol	108	6.695	6.655	(1.109)	105392	2.00000	1.65(Q)	
	18 Hexachloroethane	117	6.645	6.645	(1.101)	13353	0.50000	0.480	
	19 Nitrobenzene	77	6.775	6.735	(0.885)	52234	0.50000	0.439	
	20 Isophorone	82	7.101	7.077	(0.927)	51654	0.50000	0.532	
	21 2-Nitrophenol	139	7.200	7.163	(0.940)	58141	2.00000	2.05	

JCG
11:30 am, May 14, 2018

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0702.D
Report Date: 09-May-2018 09:21

							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	7.337	7.300	(0.958)	111840	2.00000	2.10	
	23 bis(2-Chloroethoxy)methane	93	7.411	7.362	(0.968)	29322	0.50000	0.510(Q)	
	24 2,4-Dichlorophenol	162	7.647	7.560	(0.998)	90207	2.00000	2.06	
	25 1,2,4-Trichlorobenzene	180	7.597	7.585	(0.992)	30682	0.50000	0.586	
*	26 Naphthalene-D8	136	7.659	7.647	(1.000)	144219	0.80000	(a)	
	27 Naphthalene	128	7.684	7.672	(1.003)	79597	0.50000	0.579	
	28 4-Chloroaniline	127	7.845	7.783	(1.024)	34808	0.50000	0.556	
	29 Hexachlorobutadiene	225	7.870	7.870	(1.028)	23613	0.50000	0.630(Q)	
	30 Caprolactam	113	8.315	8.242	(1.086)	6631	0.50000	0.493(Q)	
	31 4-Chloro-3-Methylphenol	107	8.563	8.527	(1.118)	87519	2.00000	2.16(Q)	
$	32 2-Methylnaphthalene-D10	152	8.576	8.551	(0.859)	43341	0.50000	0.553(a)	
	33 2-Methylnaphthalene	115	8.613	8.589	(1.125)	19016	0.50000	0.572(Q)	
	34 1-Methylnaphthalene	142	8.737	8.725	(1.141)	54737	0.50000	0.425	
	35 Hexachlorocyclopentadiene	237	8.836	8.824	(0.885)	2441	0.50000	0.439	
	36 1,2,4,5-Tetrachlorobenzene	216	8.861	8.836	(1.468)	28194	0.50000	0.515	
$	37 2,4-Dibromophenol	252	9.096	9.022	(0.912)	13687	0.50000	0.485(a)	
	38 2,4,6-Trichlorophenol	196	9.059	9.022	(0.908)	61949	2.00000	2.14	
	39 2,4,5-Trichlorophenol	196	9.195	9.134	(0.922)	73830	2.00000	2.42(Q)	
	40 1,1'-Biphenyl	154	9.245	9.233	(0.926)	68435	0.50000	0.510	
	41 2-Chloronaphthalene	164	9.270	9.245	(0.929)	15555	0.50000	0.496	
	42 2-Nitroaniline	65	9.456	9.407	(0.948)	13622	0.50000	0.413	
	43 Dimethyl Phthalate	163	9.673	9.662	(0.969)	217693	2.00000	2.18	
	44 2,6-Dinitrotoluene	165	9.749	9.727	(0.977)	11615	0.50000	0.504(Q)	
	45 Acenaphthylene	152	9.782	9.771	(0.980)	69142	0.50000	0.559	
	46 3-Nitroaniline	138	9.456	9.407	(0.948)	15693	0.50000	0.439	
*	47 Acenaphthene-D10	164	9.979	9.968	(1.000)	65011	0.80000	(a)	
	48 Acenaphthene	153	10.022	10.012	(1.004)	44590	0.50000	0.560	
	49 2,4-Dinitrophenol	184	10.219	10.121	(1.024)	10320	2.00000	1.70	
	50 4-Nitrophenol	65	10.604	10.416	(1.063)	36687	2.00000	2.05	
	51 Dibenzofuran	168	10.274	10.252	(1.030)	65954	0.50000	0.560	
	52 2,4-Dinitrotoluene	165	10.329	10.274	(1.035)	13255	0.50000	0.464(Q)	
	53 2,3,4,6-Tetrachlorophenol	232	10.492	10.471	(1.051)	17543	2.00000	1.24(M)	M9
	54 Diethylphthalate	149	10.618	10.603	(1.064)	231659	2.00000	2.39	
$	55 Fluorene-D10	174	10.687	10.673	(1.071)	37738	0.50000	0.570(a)	
	56 Fluorene	166	10.715	10.701	(1.074)	53334	0.50000	0.590	
	57 4-Chlorophenyl-Phenylether	204	10.742	10.728	(1.077)	27980	0.50000	0.546	
	58 4-Nitroaniline	138	10.895	10.798	(1.092)	12208	0.50000	0.517	
	59 4,6-Dinitro-2-Methylphenol	198	10.881	10.839	(0.908)	22511	2.00000	1.82	
	60 N-Nitrosodiphenylamine	169	10.923	10.895	(0.912)	40483	0.50000	0.460	
	61 4-Bromophenyl-phenylether	248	11.395	11.384	(0.951)	15212	0.50000	0.508	
	62 Hexachlorobenzene	284	11.465	11.465	(0.957)	17593	0.50000	0.551	
	63 Atrazine	200	11.663	11.652	(0.974)	9705	0.50000	0.482	
	64 Pentachlorophenol	266	11.803	11.768	(0.985)	21239	2.00000	1.91	
*	65 Phenanthrene-D10	188	11.978	11.955	(1.000)	111121	0.80000	(a)	
	66 Phenanthrene	178	12.013	11.990	(1.003)	72437	0.50000	0.555	
	67 Anthracene	178	12.083	12.059	(1.009)	75148	0.50000	0.550	
	68 Carbazole	167	12.351	12.304	(1.031)	65146	0.50000	0.534	
	69 Di-n-butylphthalate	149	12.822	12.822	(1.071)	333504	2.00000	2.19	
	70 Fluoranthene	202	13.624	13.594	(1.137)	77065	0.50000	0.559	
$	71 Pyrene-D10	212	13.895	13.875	(0.882)	53582	0.50000	0.572(a)	
	72 Pyrene	202	13.915	13.895	(0.883)	90269	0.50000	0.605	
	73 Butylbenzylphthalate	149	14.877	14.867	(0.944)	140848	2.00000	2.23	
	74 Benzo(a)anthracene	228	15.745	15.706	(0.999)	42988	0.50000	0.484	
	75 3,3'-Dichlorobenzidine	252	15.784	15.735	(1.002)	8724	0.50000	0.478	



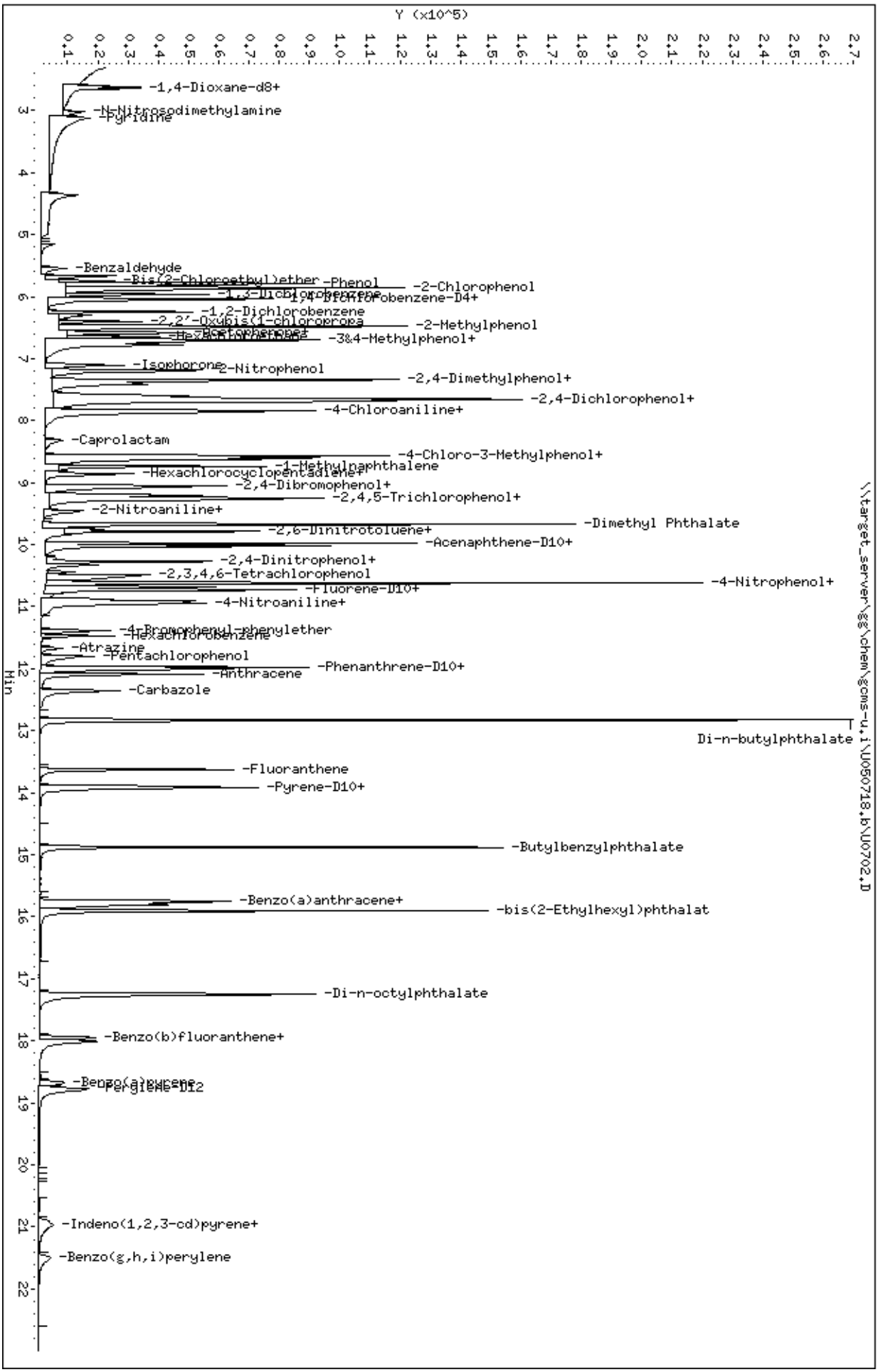
11:30 am, May 14, 2018

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0702.D
Report Date: 09-May-2018 09:21

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	15.755	15.726	(1.000)	78805	0.80000	(a)	
	77 Chrysene	228	15.804	15.774	(1.003)	79088	0.50000	0.664	
	78 bis(2-Ethylhexyl)phthalate	149	15.901	15.901	(1.009)	188385	2.00000	2.22	
	79 Di-n-octylphthalate	149	17.250	17.238	(0.918)	250049	2.00000	2.16	
	80 Benzo(b)fluoranthene	252	17.944	17.887	(0.955)	36278	0.50000	0.615	
	81 Benzo(k)fluoranthene	252	18.013	17.956	(0.959)	61059	0.50000	0.589(H)	
	82 Benzo(a)pyrene	252	18.673	18.616	(0.994)	34613	0.50000	0.508	
*	83 Perylene-D12	264	18.787	18.753	(1.000)	50287	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.902	20.817	(1.113)	26975	0.50000	0.526	
	85 Dibenzo(a,h)anthracene	278	20.969	20.874	(1.116)	18271	0.50000	0.556	
	86 Benzo(g,h,i)perylene	276	21.495	21.399	(1.144)	27930	0.50000	0.480	
M	87 Total PAHs	100				206979	0.50000	(a)	
M	321 Total Low PAHs	100				413264	0.50000	(a)	
M	322 Total High PAHs	100				342294	0.50000	(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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Date : 07-MAY-2018 11:56
Client ID: Initial Calibration
Sample Info: WG227762-3
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-u,i\U050718,b\U0702.D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine
-Pyridine
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol
-3&4-Methylphenol+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol+
-2,4-Dichlorophenol+
-4-Chloroaniline+
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol+
-2-Nitroaniline+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-Acenaphthene-D10+
-2,4-Dinitrophenol+
-2,3,4,6-Tetrachlorophenol
-4-Nitrophenol+
-Fluorene-D10+
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-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-u.i\U050718.b\U0703.D
Report Date: 09-May-2018 09:21

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0703.D
Lab Smp Id: WG227762-5 Client Smp ID: Initial Calibration
Inj Date : 07-MAY-2018 12:27 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227762-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 12:27 Cal File: U0703.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	2.596	2.596	(0.431)	158442	7.00000	6.84	
	2 1,4-Dioxane	88	2.629	2.629	(0.436)	163842	7.00000	6.45	
	3 N-Nitrosodimethylamine	74	2.960	2.960	(0.491)	230354	7.00000	6.86	
	4 Pyridine	79	3.004	2.993	(0.499)	366647	7.00000	6.63	
	5 Benzaldehyde	77	5.500	5.490	(0.913)	141307	7.00000	7.38	
	6 Phenol	94	5.748	5.728	(0.954)	427375	7.00000	6.19	
	7 Bis(2-Chloroethyl)ether	93	5.718	5.708	(0.949)	342281	7.00000	7.23(Q)	
	8 2-Chlorophenol	128	5.827	5.817	(0.967)	353182	7.00000	6.15	
	9 1,3-Dichlorobenzene	146	5.956	5.956	(0.988)	386576	7.00000	6.61	
*	10 1,4-Dichlorobenzene-D4	152	6.025	6.025	(1.000)	46317	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.045	6.045	(1.003)	551393	7.00000	6.86	
	12 1,2-Dichlorobenzene	146	6.226	6.228	(1.033)	371848	7.00000	6.35	
	13 2-Methylphenol	108	6.445	6.436	(1.070)	350200	7.00000	6.65	
	14 2,2'-Oxybis(1-chloropropane)	45	6.385	6.377	(1.060)	446137	7.00000	6.52	
	15 Acetophenone	105	6.534	6.536	(0.855)	474654	7.00000	6.96	
	16 N-Nitroso-di-n-propylamine	70	6.544	6.546	(1.086)	238039	7.00000	7.22	
	17 3&4-Methylphenol	108	6.664	6.655	(1.106)	332443	7.00000	5.92	
	18 Hexachloroethane	117	6.644	6.645	(1.103)	159546	7.00000	6.52	
	19 Nitrobenzene	77	6.743	6.735	(0.882)	505943	7.00000	7.43	
	20 Isophorone	82	7.064	7.077	(0.924)	611024	7.00000	6.91	
	21 2-Nitrophenol	139	7.176	7.163	(0.938)	184658	7.00000	7.15	

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0703.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	7.312	7.300	(0.956)	332490	7.00000	6.87	
	23 bis(2-Chloroethoxy)methane	93	7.361	7.362	(0.963)	386350	7.00000	7.38	
	24 2,4-Dichlorophenol	162	7.585	7.560	(0.992)	282972	7.00000	7.08	
	25 1,2,4-Trichlorobenzene	180	7.585	7.585	(0.992)	312120	7.00000	6.55	
*	26 Naphthalene-D8	136	7.647	7.647	(1.000)	131264	0.80000	(a)	
	27 Naphthalene	128	7.671	7.672	(1.003)	808395	7.00000	6.46	
	28 4-Chloroaniline	127	7.783	7.783	(1.018)	363521	7.00000	6.38	
	29 Hexachlorobutadiene	225	7.870	7.870	(1.029)	181435	7.00000	7.20	
	30 Caprolactam	113	8.240	8.242	(1.078)	91122	7.00000	7.44	
	31 4-Chloro-3-Methylphenol	107	8.537	8.527	(1.116)	249482	7.00000	6.75(Q)	
$	32 2-Methylnaphthalene-D10	152	8.550	8.551	(0.858)	448173	7.00000	6.70	
	33 2-Methylnaphthalene	115	8.587	8.589	(1.123)	205213	7.00000	6.78(Q)	
	34 1-Methylnaphthalene	142	8.723	8.725	(1.141)	540438	7.00000	7.35	
	35 Hexachlorocyclopentadiene	237	8.822	8.824	(0.885)	121794	7.00000	6.71	
	36 1,2,4,5-Tetrachlorobenzene	216	8.835	8.836	(1.466)	308964	7.00000	6.42	
$	37 2,4-Dibromophenol	252	9.033	9.022	(0.906)	175383	7.00000	7.28	
	38 2,4,6-Trichlorophenol	196	9.033	9.022	(0.906)	174666	7.00000	7.07	
	39 2,4,5-Trichlorophenol	196	9.157	9.134	(0.919)	173922	7.00000	6.70	
	40 1,1'-Biphenyl	154	9.231	9.233	(0.926)	670897	7.00000	6.89	
	41 2-Chloronaphthalene	164	9.244	9.245	(0.927)	183203	7.00000	6.84(Q)	
	42 2-Nitroaniline	65	9.417	9.407	(0.945)	220676	7.00000	7.30	
	43 Dimethyl Phthalate	163	9.662	9.662	(0.969)	581233	7.00000	6.84	
	44 2,6-Dinitrotoluene	165	9.728	9.727	(0.976)	140575	7.00000	7.16	
	45 Acenaphthylene	152	9.771	9.771	(0.980)	708223	7.00000	6.71	
	46 3-Nitroaniline	138	9.417	9.407	(0.945)	237280	7.00000	7.21	
*	47 Acenaphthene-D10	164	9.968	9.968	(1.000)	55438	0.80000	(a)	
	48 Acenaphthene	153	10.012	10.012	(1.004)	455324	7.00000	6.70	
	49 2,4-Dinitrophenol	184	10.154	10.121	(1.019)	39944	7.00000	7.72	
	50 4-Nitrophenol	65	10.471	10.416	(1.050)	113356	7.00000	7.43(H)	
	51 Dibenzofuran	168	10.252	10.252	(1.029)	683247	7.00000	6.80	
	52 2,4-Dinitrotoluene	165	10.285	10.274	(1.032)	177442	7.00000	7.28	
	53 2,3,4,6-Tetrachlorophenol	232	10.482	10.471	(1.052)	225193	7.00000	7.25	
	54 Diethylphthalate	149	10.604	10.603	(1.064)	556736	7.00000	6.73	
$	55 Fluorene-D10	174	10.673	10.673	(1.071)	381578	7.00000	6.76	
	56 Fluorene	166	10.701	10.701	(1.074)	512154	7.00000	6.64	
	57 4-Chlorophenyl-Phenylether	204	10.729	10.728	(1.076)	298268	7.00000	6.82	
	58 4-Nitroaniline	138	10.826	10.798	(1.086)	116245	7.00000	7.25(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	10.854	10.839	(0.908)	83064	7.00000	7.06	
	60 N-Nitrosodiphenylamine	169	10.895	10.895	(0.911)	537369	7.00000	7.58	
	61 4-Bromophenyl-phenylether	248	11.384	11.384	(0.952)	165824	7.00000	6.87	
	62 Hexachlorobenzene	284	11.466	11.465	(0.959)	170960	7.00000	6.65	
	63 Atrazine	200	11.652	11.652	(0.975)	118616	7.00000	7.31	
	64 Pentachlorophenol	266	11.780	11.768	(0.985)	62008	7.00000	6.92	
*	65 Phenanthrene-D10	188	11.955	11.955	(1.000)	89517	0.80000	(a)	
	66 Phenanthrene	178	11.990	11.990	(1.003)	715847	7.00000	6.81	
	67 Anthracene	178	12.060	12.059	(1.009)	737976	7.00000	6.71	
	68 Carbazole	167	12.316	12.304	(1.030)	661901	7.00000	6.74	
	69 Di-n-butylphthalate	149	12.823	12.822	(1.073)	829731	7.00000	6.78	
	70 Fluoranthene	202	13.595	13.594	(1.137)	732177	7.00000	6.59	
$	71 Pyrene-D10	212	13.875	13.875	(0.882)	536359	7.00000	6.57	
	72 Pyrene	202	13.895	13.895	(0.883)	755561	7.00000	6.97	
	73 Butylbenzylphthalate	149	14.867	14.867	(0.945)	358144	7.00000	6.50	
	74 Benzo(a)anthracene	228	15.716	15.706	(0.999)	542033	7.00000	7.00	
	75 3,3'-Dichlorobenzidine	252	15.735	15.735	(1.000)	136175	7.00000	8.55	

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0703.D
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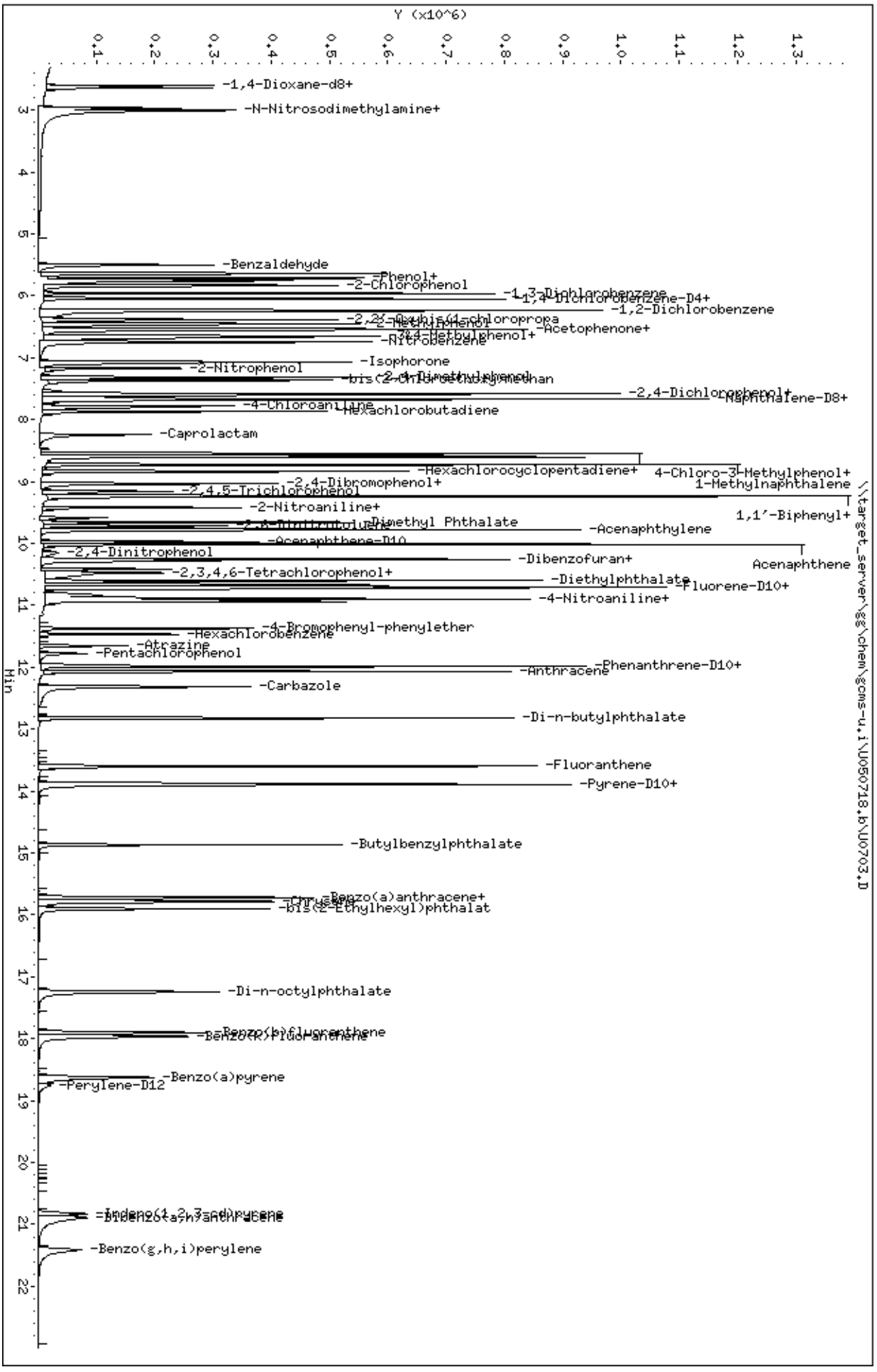
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	15.735	15.726	(1.000)	68707	0.80000	(a)	
	77 Chrysene	228	15.784	15.774	(1.003)	588656	7.00000	6.84	
	78 bis(2-Ethylhexyl)phthalate	149	15.901	15.901	(1.011)	480689	7.00000	6.51	
	79 Di-n-octylphthalate	149	17.239	17.238	(0.919)	717195	7.00000	6.64	
	80 Benzo(b)fluoranthene	252	17.899	17.887	(0.954)	423517	7.00000	6.98	
	81 Benzo(k)fluoranthene	252	17.967	17.956	(0.958)	536586	7.00000	6.85(H)	
	82 Benzo(a)pyrene	252	18.628	18.616	(0.993)	417819	7.00000	6.56	
*	83 Perylene-D12	264	18.765	18.753	(1.000)	47011	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.827	20.817	(1.110)	359406	7.00000	7.01	
	85 Dibenzo(a,h)anthracene	278	20.894	20.874	(1.113)	267575	7.00000	7.03	
	86 Benzo(g,h,i)perylene	276	21.409	21.399	(1.141)	334725	7.00000	7.15	
M	87 Total PAHs	100				2194672	7.00000	(a)	
M	321 Total Low PAHs	100				4143132	7.00000	(a)	
M	322 Total High PAHs	100				3303821	7.00000	(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-u,i\U050718,b\U0703.D
Date : 07-MAY-2018 12:27
Client ID: Initial Calibration
Sample Info: WG227762-5
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-u,i\U050718,b\U0703.D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Acetophenone+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dichlorophenol+
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-Hexachlorocyclopentadiene+
4-Chloro-3-Methylphenol+
1-Methylnaphthalene
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol
-2-Nitroaniline+
1,1'-Biphenyl+
-Dimethyl Phthalate
-Acenaphthylene
-Acenaphthene-D10
Acenaphthene
-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
-Benzo(a)anthracene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0704.D
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Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0704.D
Lab Smp Id: WG227762-6 Client Smp ID: Initial Calibration
Inj Date : 07-MAY-2018 12:59 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227762-6
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 12:59 Cal File: U0704.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	2.596	2.596	(0.431)	192718	10.0000	8.93	
	2 1,4-Dioxane	88	2.629	2.629	(0.436)	195539	10.0000	8.27	
	3 N-Nitrosodimethylamine	74	2.960	2.960	(0.491)	286126	10.0000	9.15	
	4 Pyridine	79	2.993	2.993	(0.497)	524632	10.0000	10.2	
	5 Benzaldehyde	77	5.490	5.490	(0.911)	179563	10.0000	9.62	
	6 Phenol	94	5.738	5.728	(0.952)	543869	10.0000	8.46	
	7 Bis(2-Chloroethyl)ether	93	5.708	5.708	(0.947)	439334	10.0000	9.61	
	8 2-Chlorophenol	128	5.827	5.817	(0.967)	515986	10.0000	9.65	
	9 1,3-Dichlorobenzene	146	5.956	5.956	(0.988)	484742	10.0000	8.91	
*	10 1,4-Dichlorobenzene-D4	152	6.025	6.025	(1.000)	43135	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.045	6.045	(1.003)	695797	10.0000	10.5	
	12 1,2-Dichlorobenzene	146	6.226	6.228	(1.033)	461742	10.0000	8.47	
	13 2-Methylphenol	108	6.445	6.436	(1.070)	443631	10.0000	9.04	
	14 2,2'-Oxybis(1-chloropropane)	45	6.385	6.377	(1.060)	557053	10.0000	8.74	
	15 Acetophenone	105	6.534	6.536	(0.855)	598313	10.0000	9.82	
	16 N-Nitroso-di-n-propylamine	70	6.544	6.546	(1.086)	302162	10.0000	9.47	
	17 3&4-Methylphenol	108	6.654	6.655	(1.104)	572043	10.0000	10.9(Q)	
	18 Hexachloroethane	117	6.644	6.645	(1.103)	201559	10.0000	8.85	
	19 Nitrobenzene	77	6.743	6.735	(0.882)	626348	10.0000	10.4	
	20 Isophorone	82	7.064	7.077	(0.924)	763200	10.0000	9.67	
	21 2-Nitrophenol	139	7.175	7.163	(0.938)	236696	10.0000	10.3	

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0704.D
Report Date: 09-May-2018 09:21

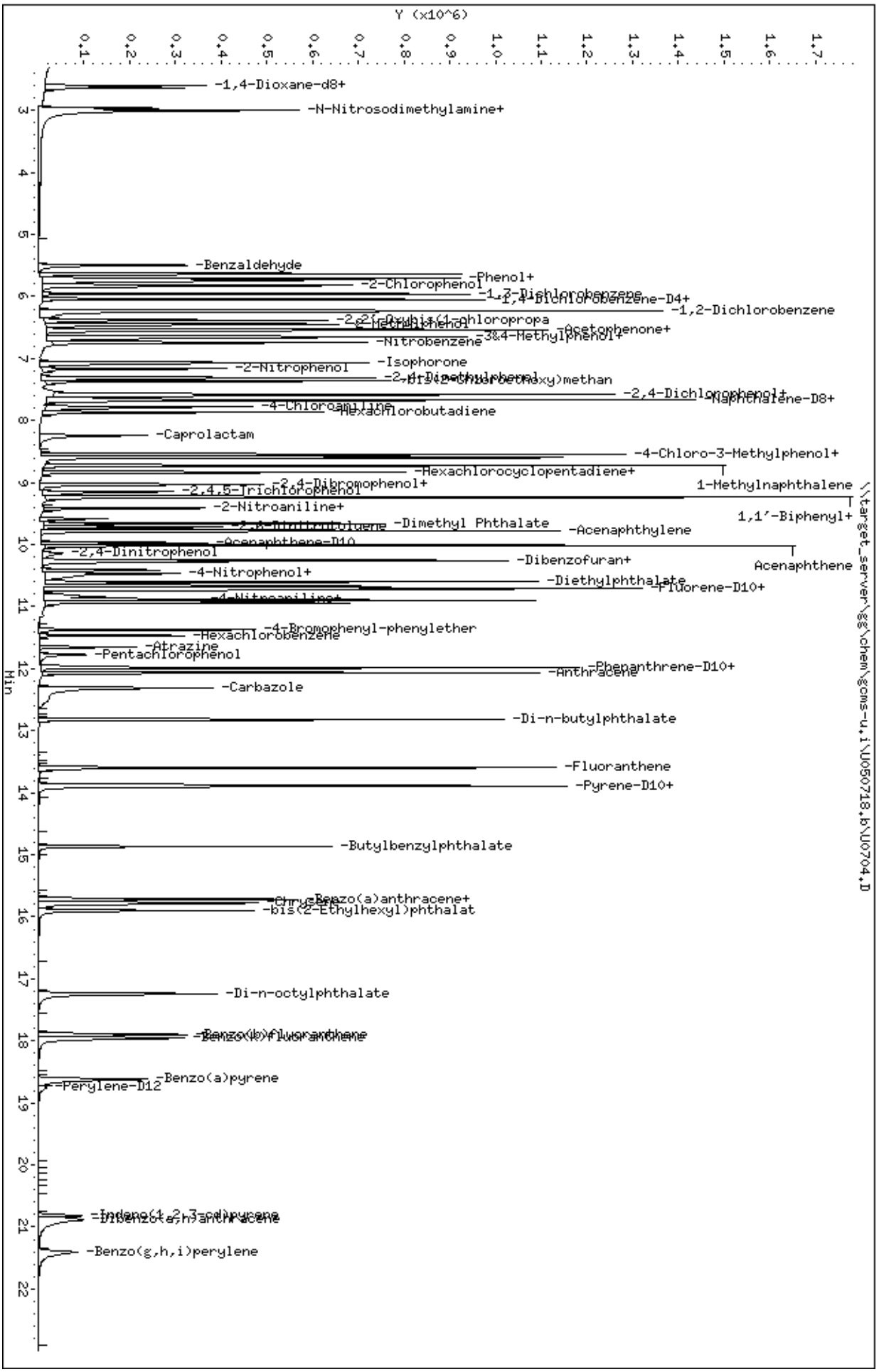
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	7.299	7.300	(0.955)	433398	10.0000	10.0	
	23 bis(2-Chloroethoxy)methane	93	7.361	7.362	(0.963)	487960	10.0000	10.4	
	24 2,4-Dichlorophenol	162	7.572	7.560	(0.990)	363863	10.0000	10.2	
	25 1,2,4-Trichlorobenzene	180	7.584	7.585	(0.992)	386103	10.0000	9.07	
*	26 Naphthalene-D8	136	7.646	7.647	(1.000)	117232	0.80000	(a)	
	27 Naphthalene	128	7.671	7.672	(1.003)	984687	10.0000	8.81	
	28 4-Chloroaniline	127	7.783	7.783	(1.018)	562449	10.0000	11.0	
	29 Hexachlorobutadiene	225	7.870	7.870	(1.029)	232614	10.0000	10.4	
	30 Caprolactam	113	8.240	8.242	(1.078)	117971	10.0000	10.8	
	31 4-Chloro-3-Methylphenol	107	8.525	8.527	(1.115)	331480	10.0000	10.0	
$	32 2-Methylnaphthalene-D10	152	8.550	8.551	(0.858)	552819	10.0000	9.08	
	33 2-Methylnaphthalene	115	8.587	8.589	(1.123)	262591	10.0000	9.71(Q)	
	34 1-Methylnaphthalene	142	8.723	8.725	(1.141)	678039	10.0000	10.4	
	35 Hexachlorocyclopentadiene	237	8.822	8.824	(0.885)	172372	10.0000	10.2	
	36 1,2,4,5-Tetrachlorobenzene	216	8.835	8.836	(1.466)	379355	10.0000	8.46	
$	37 2,4-Dibromophenol	252	9.021	9.022	(0.905)	227053	10.0000	10.4	
	38 2,4,6-Trichlorophenol	196	9.021	9.022	(0.905)	222103	10.0000	9.87	
	39 2,4,5-Trichlorophenol	196	9.145	9.134	(0.917)	228062	10.0000	9.64	
	40 1,1'-Biphenyl	154	9.231	9.233	(0.926)	839123	10.0000	10.2	
	41 2-Chloronaphthalene	164	9.244	9.245	(0.927)	232468	10.0000	9.53	
	42 2-Nitroaniline	65	9.405	9.407	(0.944)	279448	10.0000	10.1	
	43 Dimethyl Phthalate	163	9.662	9.662	(0.969)	716617	10.0000	9.25	
	44 2,6-Dinitrotoluene	165	9.727	9.727	(0.976)	182970	10.0000	10.2	
	45 Acenaphthylene	152	9.771	9.771	(0.980)	877578	10.0000	9.13	
	46 3-Nitroaniline	138	9.417	9.407	(0.945)	304992	10.0000	10.2	
*	47 Acenaphthene-D10	164	9.968	9.968	(1.000)	50510	0.80000	(a)	
	48 Acenaphthene	153	10.011	10.012	(1.004)	563484	10.0000	9.11	
	49 2,4-Dinitrophenol	184	10.143	10.121	(1.018)	67396	10.0000	14.3	
	50 4-Nitrophenol	65	10.460	10.416	(1.049)	166991	10.0000	12.0	
	51 Dibenzofuran	168	10.252	10.252	(1.029)	821799	10.0000	8.98	
	52 2,4-Dinitrotoluene	165	10.274	10.274	(1.031)	223016	10.0000	10.0	
	53 2,3,4,6-Tetrachlorophenol	232	10.470	10.471	(1.050)	296255	10.0000	10.0	
	54 Diethylphthalate	149	10.603	10.603	(1.064)	689360	10.0000	9.15	
$	55 Fluorene-D10	174	10.673	10.673	(1.071)	474445	10.0000	9.22	
	56 Fluorene	166	10.701	10.701	(1.074)	629704	10.0000	8.96	
	57 4-Chlorophenyl-Phenylether	204	10.728	10.728	(1.076)	374562	10.0000	9.40	
	58 4-Nitroaniline	138	10.812	10.798	(1.085)	131285	10.0000	10.2	
	59 4,6-Dinitro-2-Methylphenol	198	10.840	10.839	(0.907)	109585	10.0000	9.82	
	60 N-Nitrosodiphenylamine	169	10.895	10.895	(0.911)	539084	10.0000	8.15	
	61 4-Bromophenyl-phenylether	248	11.384	11.384	(0.952)	210304	10.0000	9.33	
	62 Hexachlorobenzene	284	11.465	11.465	(0.959)	217182	10.0000	9.04	
	63 Atrazine	200	11.652	11.652	(0.975)	153659	10.0000	10.1	
	64 Pentachlorophenol	266	11.780	11.768	(0.985)	89295	10.0000	10.7	
*	65 Phenanthrene-D10	188	11.955	11.955	(1.000)	83608	0.80000	(a)	
	66 Phenanthrene	178	11.990	11.990	(1.003)	887005	10.0000	9.03	
	67 Anthracene	178	12.060	12.059	(1.009)	984046	10.0000	9.58	
	68 Carbazole	167	12.304	12.304	(1.029)	837838	10.0000	9.14	
	69 Di-n-butylphthalate	149	12.822	12.822	(1.073)	1031903	10.0000	9.02	
	70 Fluoranthene	202	13.594	13.594	(1.137)	916336	10.0000	8.83	
$	71 Pyrene-D10	212	13.875	13.875	(0.882)	653972	10.0000	9.38	
	72 Pyrene	202	13.895	13.895	(0.883)	919972	10.0000	10.0	
	73 Butylbenzylphthalate	149	14.867	14.867	(0.945)	441322	10.0000	9.38	
	74 Benzo(a)anthracene	228	15.716	15.706	(0.999)	624022	10.0000	9.44	
	75 3,3'-Dichlorobenzidine	252	15.745	15.735	(1.001)	119830	10.0000	8.81	

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0704.D
Report Date: 09-May-2018 09:21

	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	15.735	15.726	(1.000)	58672	0.80000	(a)	
	77 Chrysene	228	15.774	15.774	(1.002)	706566	10.0000	9.69	
	78 bis(2-Ethylhexyl)phthalate	149	15.901	15.901	(1.011)	584029	10.0000	9.27	
	79 Di-n-octylphthalate	149	17.238	17.238	(0.919)	859260	10.0000	9.84	
	80 Benzo(b)fluoranthene	252	17.899	17.887	(0.954)	460999	10.0000	9.38	
	81 Benzo(k)fluoranthene	252	17.956	17.956	(0.957)	642404	10.0000	10.2(H)	
	82 Benzo(a)pyrene	252	18.616	18.616	(0.992)	477538	10.0000	9.28	
*	83 Perylene-D12	264	18.764	18.753	(1.000)	38010	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.817	20.817	(1.109)	401525	10.0000	9.67	
	85 Dibenzo(a,h)anthracene	278	20.884	20.874	(1.113)	284670	10.0000	9.22	
	86 Benzo(g,h,i)perylene	276	21.409	21.399	(1.141)	369252	10.0000	9.78	
M	87 Total PAHs	100				2552219	10.0000	(a)	
M	321 Total Low PAHs	100				5189095	10.0000	(a)	
M	322 Total High PAHs	100				3929104	10.0000	(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 : 07-MAY-2018 12:59
Client ID: Initial Calibration
Sample Info: WG227762-6
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-u,i\U050718,b\U0704.D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dichlorophenol+
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
1-Methylnaphthalene
-2,4,5-Trichlorophenol
-2-Nitroaniline+
1,1'-Biphenyl+
-Dimethyl Phthalate
-Acenaphthylene
-Acenaphthene-D10
-2,4-Dinitrophenol
-Dibenzofuran+
Acenaphthene
-4-Nitrophenol+
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline+
-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
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0705.D
Report Date: 09-May-2018 09:21

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0705.D
Lab Smp Id: WG227762-7 Client Smp ID: Initial Calibration
Inj Date : 07-MAY-2018 13:29 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227762-7
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.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	2.596	2.596	(0.431)	262102	15.0000	16.7(A)	
	2 1,4-Dioxane	88	2.629	2.629	(0.436)	274672	15.0000	16.0(A)	
	3 N-Nitrosodimethylamine	74	2.960	2.960	(0.491)	385687	15.0000	16.9(A)	
	4 Pyridine	79	2.993	2.993	(0.497)	679873	15.0000	18.1(A)	
	5 Benzaldehyde	77	5.490	5.490	(0.911)	242483	15.0000	15.0(A)	
	6 Phenol	94	5.728	5.728	(0.951)	753801	15.0000	16.1(A)	
	7 Bis(2-Chloroethyl)ether	93	5.708	5.708	(0.947)	574045	15.0000	15.1(A)	
	8 2-Chlorophenol	128	5.817	5.817	(0.965)	607994	15.0000	15.6(A)	
	9 1,3-Dichlorobenzene	146	5.956	5.956	(0.988)	635830	15.0000	16.0(A)	
*	10 1,4-Dichlorobenzene-D4	152	6.025	6.025	(1.000)	31410	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.045	6.045	(1.003)	636526	15.0000	14.7	
	12 1,2-Dichlorobenzene	146	6.228	6.228	(1.034)	589518	15.0000	14.8	
	13 2-Methylphenol	108	6.436	6.436	(1.068)	604287	15.0000	16.9(A)	
	14 2,2'-Oxybis(1-chloropropane)	45	6.377	6.377	(1.058)	746245	15.0000	16.1(A)	
	15 Acetophenone	105	6.536	6.536	(0.855)	793097	15.0000	13.7	
	16 N-Nitroso-di-n-propylamine	70	6.546	6.546	(1.086)	413386	15.0000	15.1(A)	
	17 3&4-Methylphenol	108	6.655	6.655	(1.105)	582872	15.0000	15.3(A)	
	18 Hexachloroethane	117	6.645	6.645	(1.103)	265416	15.0000	16.0(A)	
	19 Nitrobenzene	77	6.735	6.735	(0.881)	818870	15.0000	14.4	
	20 Isophorone	82	7.077	7.077	(0.925)	1017497	15.0000	13.6	
	21 2-Nitrophenol	139	7.163	7.163	(0.937)	313124	15.0000	14.3	

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0705.D
Report Date: 09-May-2018 09:21

	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	7.300	7.300	(0.955)	570980	15.0000	13.9	
	23 bis(2-Chloroethoxy)methane	93	7.362	7.362	(0.963)	618264	15.0000	13.9	
	24 2,4-Dichlorophenol	162	7.560	7.560	(0.989)	510049	15.0000	15.0(A)	
	25 1,2,4-Trichlorobenzene	180	7.585	7.585	(0.992)	511715	15.0000	12.6	
*	26 Naphthalene-D8	136	7.647	7.647	(1.000)	111322	0.80000	(a)	
	27 Naphthalene	128	7.672	7.672	(1.003)	1274185	15.0000	12.0	
	28 4-Chloroaniline	127	7.783	7.783	(1.018)	756598	15.0000	15.7(A)	
	29 Hexachlorobutadiene	225	7.870	7.870	(1.029)	305514	15.0000	14.5	
	30 Caprolactam	113	8.242	8.242	(1.078)	171395	15.0000	16.5(A)	
	31 4-Chloro-3-Methylphenol	107	8.527	8.527	(1.115)	447902	15.0000	14.3	
$	32 2-Methylnaphthalene-D10	152	8.551	8.551	(0.858)	716269	15.0000	12.4	
	33 2-Methylnaphthalene	115	8.589	8.589	(1.123)	353429	15.0000	13.8	
	34 1-Methylnaphthalene	142	8.725	8.725	(1.141)	885826	15.0000	14.5	
	35 Hexachlorocyclopentadiene	237	8.824	8.824	(0.885)	241689	15.0000	15.0(A)	
	36 1,2,4,5-Tetrachlorobenzene	216	8.836	8.836	(1.467)	487446	15.0000	14.9	
$	37 2,4-Dibromophenol	252	9.022	9.022	(0.905)	314400	15.0000	15.1(A)	
	38 2,4,6-Trichlorophenol	196	9.022	9.022	(0.905)	307074	15.0000	14.4	
	39 2,4,5-Trichlorophenol	196	9.134	9.134	(0.916)	323967	15.0000	14.5	
	40 1,1'-Biphenyl	154	9.233	9.233	(0.926)	1058161	15.0000	14.9	
	41 2-Chloronaphthalene	164	9.245	9.245	(0.928)	303423	15.0000	13.1(Q)	
	42 2-Nitroaniline	65	9.407	9.407	(0.944)	385736	15.0000	14.8	
	43 Dimethyl Phthalate	163	9.662	9.662	(0.969)	975961	15.0000	13.3	
	44 2,6-Dinitrotoluene	165	9.727	9.727	(0.976)	249678	15.0000	14.7	
	45 Acenaphthylene	152	9.771	9.771	(0.980)	1158820	15.0000	12.7	
	46 3-Nitroaniline	138	9.407	9.407	(0.944)	420900	15.0000	14.8	
*	47 Acenaphthene-D10	164	9.968	9.968	(1.000)	47811	0.80000	(a)	
	48 Acenaphthene	153	10.012	10.012	(1.004)	746171	15.0000	12.7	
	49 2,4-Dinitrophenol	184	10.121	10.121	(1.015)	92124	15.0000	20.6(A)	
	50 4-Nitrophenol	65	10.416	10.416	(1.045)	211304	15.0000	16.1(AQM)	M9
	51 Dibenzofuran	168	10.252	10.252	(1.029)	1108094	15.0000	12.8	
	52 2,4-Dinitrotoluene	165	10.274	10.274	(1.031)	316113	15.0000	15.0(A)	
	53 2,3,4,6-Tetrachlorophenol	232	10.471	10.471	(1.050)	433011	15.0000	14.9	
	54 Diethylphthalate	149	10.603	10.603	(1.064)	905400	15.0000	12.7	
$	55 Fluorene-D10	174	10.673	10.673	(1.071)	661032	15.0000	13.6	
	56 Fluorene	166	10.701	10.701	(1.074)	813334	15.0000	12.2	
	57 4-Chlorophenyl-Phenylether	204	10.728	10.728	(1.076)	507116	15.0000	13.4	
	58 4-Nitroaniline	138	10.798	10.798	(1.083)	154579	15.0000	14.8(QM)	M9
	59 4,6-Dinitro-2-Methylphenol	198	10.839	10.839	(0.907)	166056	15.0000	15.1(A)	
	60 N-Nitrosodiphenylamine	169	10.895	10.895	(0.911)	738419	15.0000	11.5	
	61 4-Bromophenyl-phenylether	248	11.384	11.384	(0.952)	290053	15.0000	13.2	
	62 Hexachlorobenzene	284	11.465	11.465	(0.959)	295220	15.0000	12.6	
	63 Atrazine	200	11.652	11.652	(0.975)	212962	15.0000	14.5	
	64 Pentachlorophenol	266	11.768	11.768	(0.984)	138392	15.0000	17.0(A)	
*	65 Phenanthrene-D10	188	11.955	11.955	(1.000)	81175	0.80000	(a)	
	66 Phenanthrene	178	11.990	11.990	(1.003)	1186226	15.0000	12.4	
	67 Anthracene	178	12.059	12.059	(1.009)	1257976	15.0000	12.6	
	68 Carbazole	167	12.304	12.304	(1.029)	1177063	15.0000	13.2	
	69 Di-n-butylphthalate	149	12.822	12.822	(1.073)	1412235	15.0000	12.7	
	70 Fluoranthene	202	13.594	13.594	(1.137)	1255471	15.0000	12.5	
$	71 Pyrene-D10	212	13.875	13.875	(0.882)	934775	15.0000	14.3	
	72 Pyrene	202	13.895	13.895	(0.884)	1284872	15.0000	15.0	
	73 Butylbenzylphthalate	149	14.867	14.867	(0.945)	648115	15.0000	14.7	
	74 Benzo(a)anthracene	228	15.706	15.706	(0.999)	932024	15.0000	15.1(A	
	75 3,3'-Dichlorobenzidine	252	15.735	15.735	(1.001)	159906	15.0000	12.6	



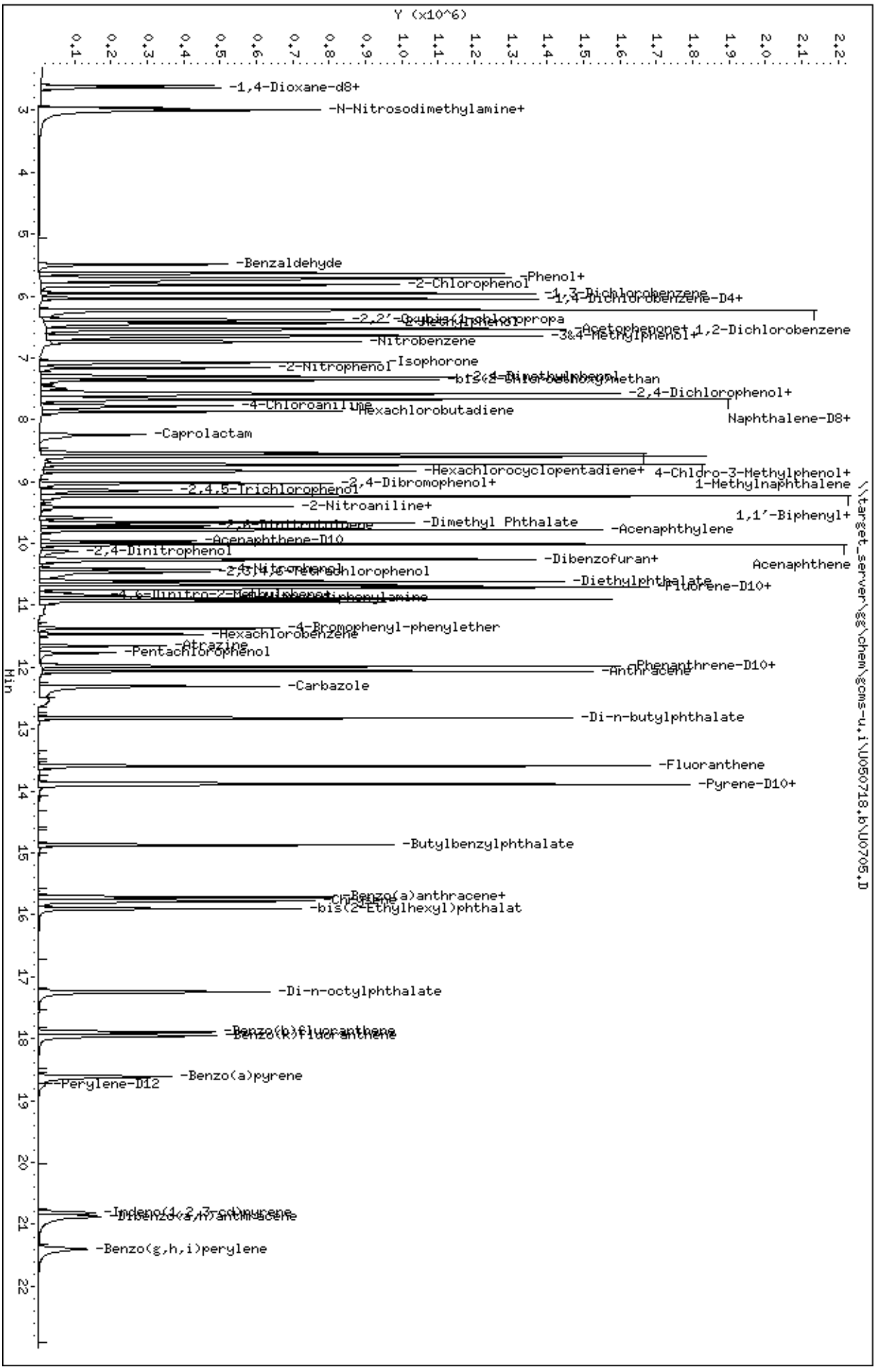
11:30 am, May 14, 2018

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0705.D
Report Date: 09-May-2018 09:21

	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	15.726	15.726	(1.000)	54862	0.80000	(a)	
	77 Chrysene	228	15.774	15.774	(1.003)	1033815	15.0000	15.2(A)	
	78 bis(2-Ethylhexyl)phthalate	149	15.901	15.901	(1.011)	871115	15.0000	14.8	
	79 Di-n-octylphthalate	149	17.238	17.238	(0.919)	1348876	15.0000	16.6(A)	
	80 Benzo(b)fluoranthene	252	17.887	17.887	(0.954)	703705	15.0000	15.4(A)	
	81 Benzo(k)fluoranthene	252	17.956	17.956	(0.957)	866364	15.0000	14.9(H)	
	82 Benzo(a)pyrene	252	18.616	18.616	(0.993)	692756	15.0000	14.5	
*	83 Perylene-D12	264	18.753	18.753	(1.000)	35294	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.817	20.817	(1.110)	587525	15.0000	15.2(A)	
	85 Dibenzo(a,h)anthracene	278	20.874	20.874	(1.113)	445530	15.0000	15.4(A)	
	86 Benzo(g,h,i)perylene	276	21.399	21.399	(1.141)	526704	15.0000	15.1(A)	
M	87 Total PAHs	100				3570124	15.0000	(a)	
M	321 Total Low PAHs	100				6790141	15.0000	(a)	
M	322 Total High PAHs	100				5644468	15.0000	(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.


Data File: \\target_server\gg\chem\gcms-u,i\U050718,b\U0705.D
Date : 07-MAY-2018 13:29
Client ID: Initial Calibration
Sample Info: WG227762-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-u,i\U050718,b\U0705.D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-Acetophenone
-1,2-Dichlorobenzene
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dichlorophenol+
-4-Chloroaniline
-Hexachlorobutadiene
Naphthalene-D8+
-Caprolactam
-Hexachlorocyclopentadiene+
4-Chldro-3-Methylphenol+
-2,4-Dibromophenol+
1-Methylnaphthalene
-2,4,5-Trichlorophenol
-2-Nitroaniline+
1,1'-Biphenyl+
-Dimethyl Phthalate
-Acenaphthylene
-Acenaphthene-D10
-2,4-Dinitrophenol
-Dibenzofuran+
Acenaphthene
-Diethylphthalate
Fluorene-D10+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0706.D
Report Date: 09-May-2018 10:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0706.D
Lab Smp Id: WG227762-8
Inj Date : 07-MAY-2018 14:00 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227762-8
Misc Info : WG227762,WG227762,WG227762-4
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.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 * (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	2.641	2.629	(0.438)	91495	4.45937	149	
3	N-Nitrosodimethylamine	74	2.971	2.960	(0.493)	141676	5.22134	174	
4	Pyridine	79	3.016	2.993	(0.501)	207607	4.64861	155	
5	Benzaldehyde	77	5.500	5.490	(0.913)	55488	3.79702	126(R)	
6	Phenol	94	5.758	5.728	(0.956)	278589	4.99296	166	
7	Bis(2-Chloroethyl)ether	93	5.718	5.708	(0.949)	201270	5.36206	179	
8	2-Chlorophenol	128	5.837	5.817	(0.969)	229073	4.93899	165	
9	1,3-Dichlorobenzene	146	5.956	5.956	(0.988)	228261	4.83405	161	
* 10	1,4-Dichlorobenzene-D4	152	6.025	6.025	(1.000)	37423	0.80000	(Q)	
11	1,4-Dichlorobenzene	146	6.045	6.045	(1.003)	327639	4.56476	152	
12	1,2-Dichlorobenzene	146	6.236	6.228	(1.035)	218031	4.60889	154	
13	2-Methylphenol	108	6.455	6.436	(1.071)	201108	4.72603	158	
14	2,2'-Oxybis(1-chloropropane)	45	6.385	6.377	(1.060)	191615	3.46464	115(R)	
15	Acetophenone	105	6.535	6.536	(0.855)	269352	5.26514	176	
16	N-Nitroso-di-n-propylamine	70	6.554	6.546	(1.088)	128106	4.92654	164	
17	3&4-Methylphenol	108	6.664	6.655	(1.106)	181875	4.00989	134(Q)	
18	Hexachloroethane	117	6.644	6.645	(1.103)	91265	4.61688	154	
19	Nitrobenzene	77	6.743	6.735	(0.882)	297081	5.75484	192	
20	Isophorone	82	7.064	7.077	(0.924)	314170	4.73829	158	
21	2-Nitrophenol	139	7.176	7.163	(0.938)	99201	5.12084	171	
22	2,4-Dimethylphenol	107	7.312	7.300	(0.956)	173982	4.79245	160	

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0706.D
Report Date: 09-May-2018 10:29

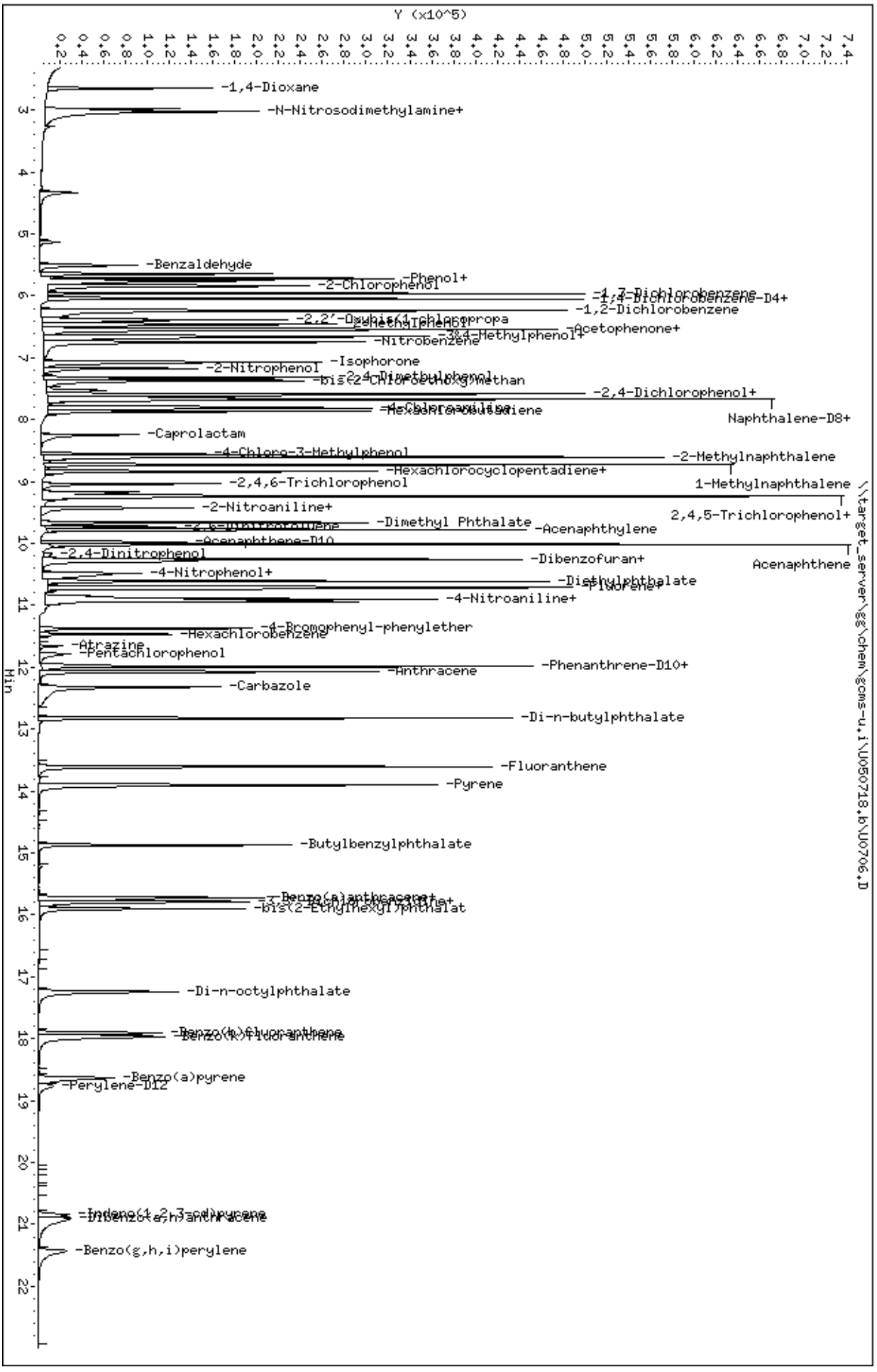
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW COD
	23 bis(2-Chloroethoxy)methane	93	7.374	7.362	(0.964)	216362	5.50716	184	
	24 2,4-Dichlorophenol	162	7.597	7.560	(0.994)	152488	5.08821	170	
	25 1,2,4-Trichlorobenzene	180	7.585	7.585	(0.992)	188440	5.26918	176	
*	26 Naphthalene-D8	136	7.647	7.647	(1.000)	98487	0.80000		
	27 Naphthalene	128	7.672	7.672	(1.003)	478222	5.09528	170	
	28 4-Chloroaniline	127	7.796	7.783	(1.019)	210192	4.91923	164	
	29 Hexachlorobutadiene	225	7.870	7.870	(1.029)	108140	5.66819	189	
	30 Caprolactam	113	8.240	8.242	(1.078)	47247	5.14158	171	
	31 4-Chloro-3-Methylphenol	107	8.550	8.527	(1.118)	139153	5.02073	167	
	33 2-Methylnaphthalene	115	8.600	8.589	(1.125)	119543	5.26218	175(Q)	
	34 1-Methylnaphthalene	142	8.724	8.725	(1.141)	302058	5.40326	180	
	35 Hexachlorocyclopentadiene	237	8.823	8.824	(0.885)	46186	3.57471	119(R)	
	36 1,2,4,5-Tetrachlorobenzene	216	8.835	8.836	(1.466)	179468	4.61505	154	
	38 2,4,6-Trichlorophenol	196	9.033	9.022	(0.906)	94922	5.15603	172	
	39 2,4,5-Trichlorophenol	196	9.170	9.134	(0.920)	93150	4.81254	160	
	40 1,1'-Biphenyl	154	9.232	9.233	(0.926)	396933	5.22660	174	
	41 2-Chloronaphthalene	164	9.244	9.245	(0.927)	117513	5.89167	196	
	42 2-Nitroaniline	65	9.418	9.407	(0.945)	108478	4.82748	161	
	43 Dimethyl Phthalate	163	9.662	9.662	(0.969)	326712	5.15905	172	
	44 2,6-Dinitrotoluene	165	9.728	9.727	(0.976)	74707	5.10547	170	
	45 Acenaphthylene	152	9.771	9.771	(0.980)	389166	4.95151	165	
	46 3-Nitroaniline	138	9.430	9.407	(0.946)	109468	4.47762	149	
*	47 Acenaphthene-D10	164	9.968	9.968	(1.000)	41309	0.80000		
	48 Acenaphthene	153	10.012	10.012	(1.004)	255361	5.04727	168	
	49 2,4-Dinitrophenol	184	10.176	10.121	(1.021)	18967	4.92301	164	
	50 4-Nitrophenol	65	10.482	10.416	(1.052)	33620	2.95770	98.6(aQR)	
	51 Dibenzofuran	168	10.252	10.252	(1.029)	397643	5.31308	177	
	52 2,4-Dinitrotoluene	165	10.285	10.274	(1.032)	88385	4.87037	162	
	53 2,3,4,6-Tetrachlorophenol	232	10.482	10.471	(1.052)	83037	4.01650	134	
	54 Diethylphthalate	149	10.604	10.603	(1.064)	321792	5.22350	174	
	56 Fluorene	166	10.701	10.701	(1.074)	289096	5.02970	168	
	57 4-Chlorophenyl-Phenylether	204	10.729	10.728	(1.076)	166839	5.12270	171	
	58 4-Nitroaniline	138	10.854	10.798	(1.089)	57356	3.89450	130(QR)	
	59 4,6-Dinitro-2-Methylphenol	198	10.868	10.839	(0.908)	37554	4.45546	148	
	60 N-Nitrosodiphenylamine	169	10.896	10.895	(0.910)	243110	4.63795	154	
	61 4-Bromophenyl-phenylether	248	11.384	11.384	(0.951)	91916	5.14803	172	
	62 Hexachlorobenzene	284	11.466	11.465	(0.958)	93484	4.91272	164	
	63 Atrazine	200	11.652	11.652	(0.974)	19269	1.60511	53.5(R)	
	64 Pentachlorophenol	266	11.792	11.768	(0.985)	28936	4.36474	145	
*	65 Phenanthrene-D10	188	11.967	11.955	(1.000)	66224	0.80000		
	66 Phenanthrene	178	11.990	11.990	(1.002)	387756	4.98473	166	
	67 Anthracene	178	12.072	12.059	(1.009)	395553	4.86032	162	
	68 Carbazole	167	12.316	12.304	(1.029)	332794	4.58180	153	
	69 Di-n-butylphthalate	149	12.822	12.822	(1.071)	459580	5.07515	169	
	70 Fluoranthene	202	13.604	13.594	(1.137)	381905	4.64682	155	
	72 Pyrene	202	13.905	13.895	(0.884)	386819	5.40005	180	
	73 Butylbenzylphthalate	149	14.868	14.867	(0.945)	172879	4.77737	159	
	74 Benzo(a)anthracene	228	15.716	15.706	(0.999)	246823	4.85042	162	
	75 3,3'-Dichlorobenzidine	252	15.755	15.735	(1.001)	52563	5.02285	167	
*	76 Chrysene-D12	240	15.736	15.726	(1.000)	45153	0.80000		
	77 Chrysene	228	15.785	15.774	(1.003)	305912	5.38083	179	
	78 bis(2-Ethylhexyl)phthalate	149	15.902	15.901	(1.011)	241360	4.97620	166	
	79 Di-n-octylphthalate	149	17.239	17.238	(0.918)	333394	4.78639	160	
	80 Benzo(b)fluoranthene	252	17.911	17.887	(0.954)	178591	4.58917	153	

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0706.D
Report Date: 09-May-2018 10:29

	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	17.968	17.956	(0.957)	289308	5.70168	190(H)	
	82 Benzo(a)pyrene	252	18.640	18.616	(0.993)	180073	4.38636	146	
*	83 Perylene-D12	264	18.776	18.753	(1.000)	30314	0.80000		
	84 Indeno(1,2,3-cd)pyrene	276	20.846	20.817	(1.110)	154633	4.68884	156	
	85 Dibenzo(a,h)anthracene	278	20.922	20.874	(1.114)	111079	4.56779	152	
	86 Benzo(g,h,i)perylene	276	21.428	21.399	(1.141)	141002	4.64054	155	
M	87 Total PAHs	100				1065592	25.0235	834	
M	321 Total Low PAHs	100				2314697	35.2310	1170	
M	322 Total High PAHs	100				1612611	29.2323	974	

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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Date : 07-MAY-2018 14:00
Client ID:
Sample Info: WG227762-8
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-u,i\U050718,b\U0706.D
Y (x10^5)
Min
-1,4-Dioxane
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,2-Dichlorobenzene
-Acetophenone+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dichlorophenol+
Naphthalene-D8+
-Caprolactam
-2-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4,6-Trichlorophenol
1-Methylnaphthalene
2,4,5-Trichlorophenol+
-2-Nitroaniline+
-Dimethyl Phthalate
-Acenaphthylene
-Acenaphthene-D10
Acenaphthene
-Dibenzofuran+
-4-Nitrophenol+
-Diethylphthalate
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene
-Butylbenzylphthalate
-Di-n-octylphthalate
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Benzo(g,h,i)perylene

BEFORE MANUAL INTEGRATION

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0701.D
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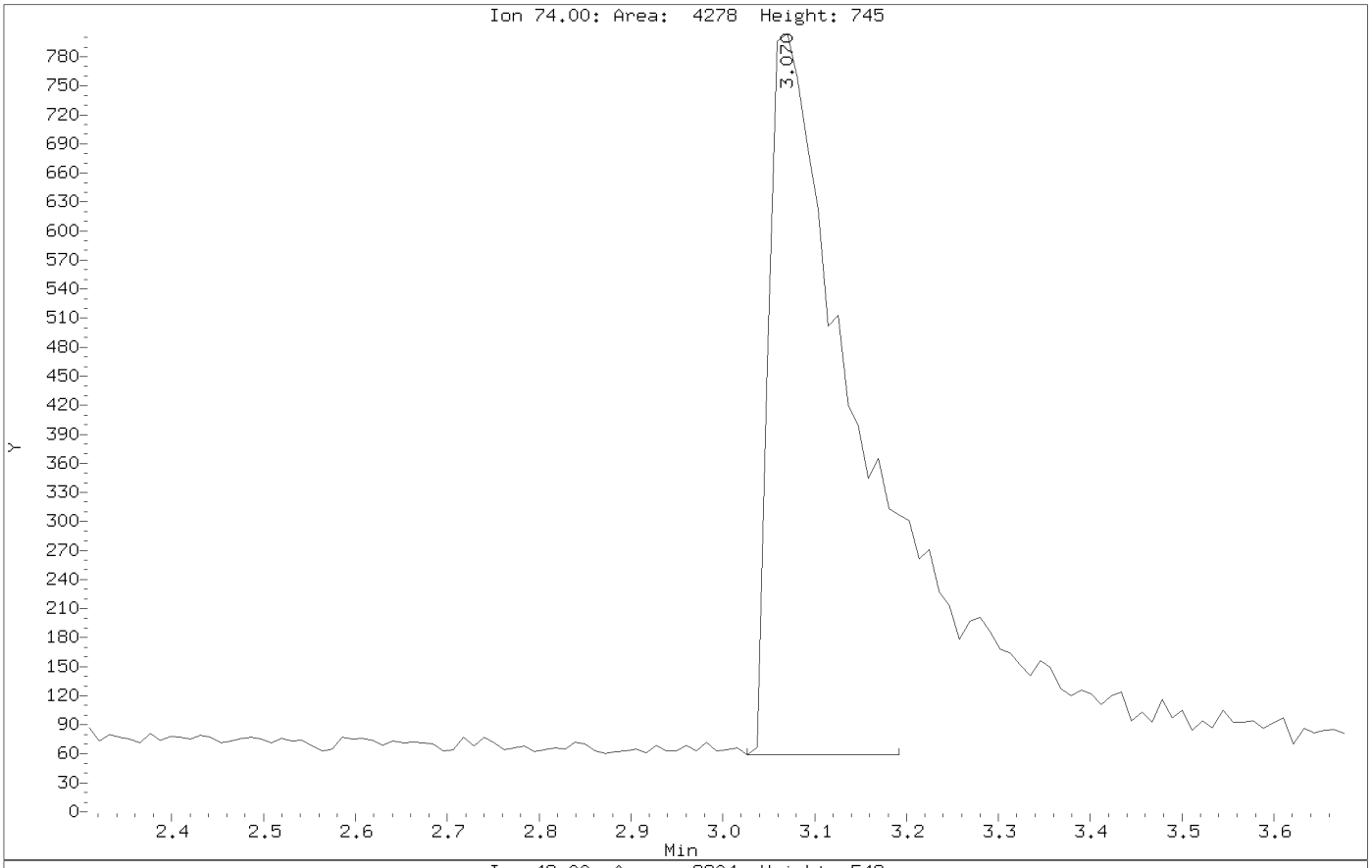
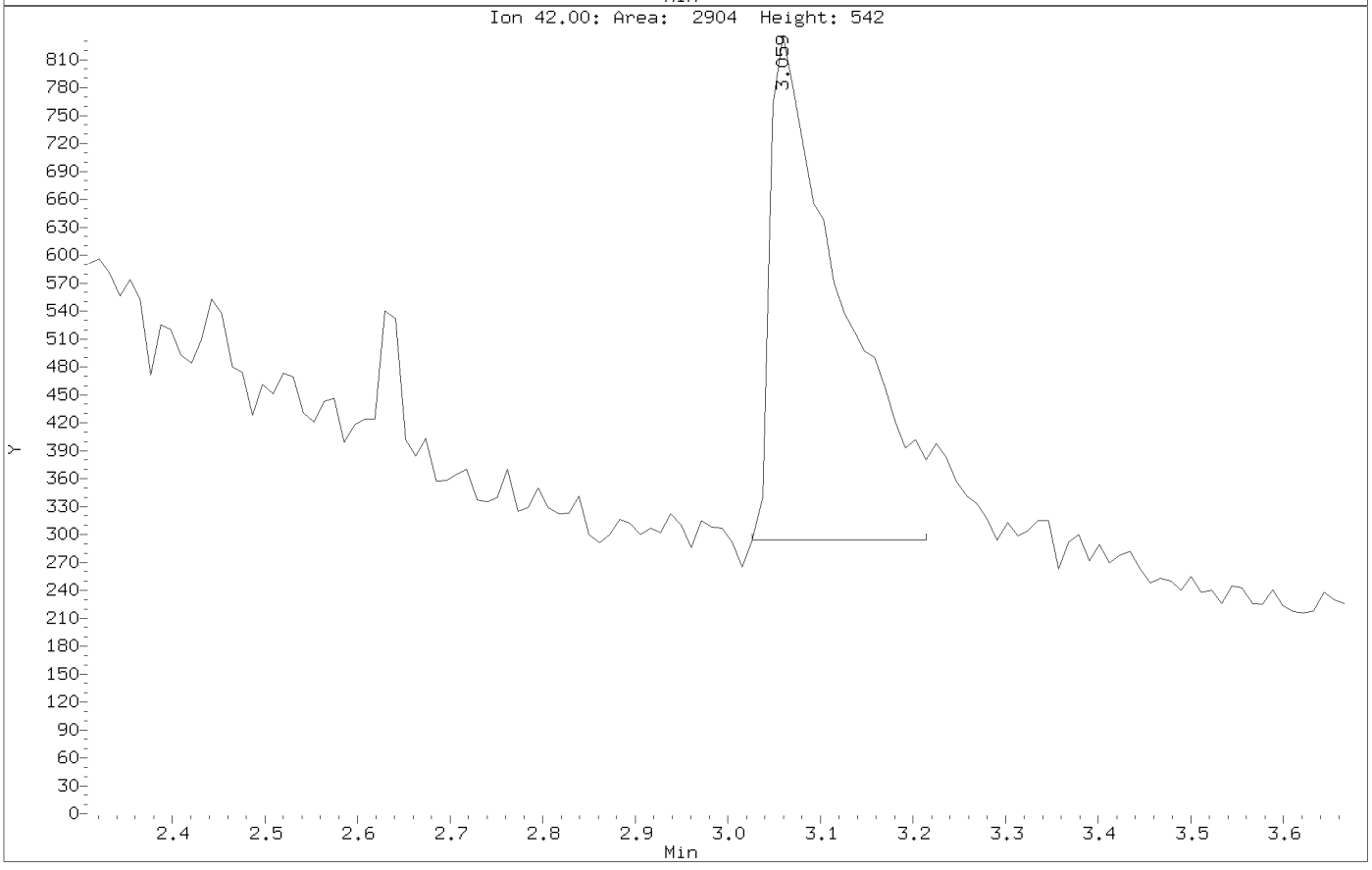
Instrument: gcms-u.i
Client Sample ID:

Compound: N-Nitrosodimethylamine
CAS Number: 62-75-9





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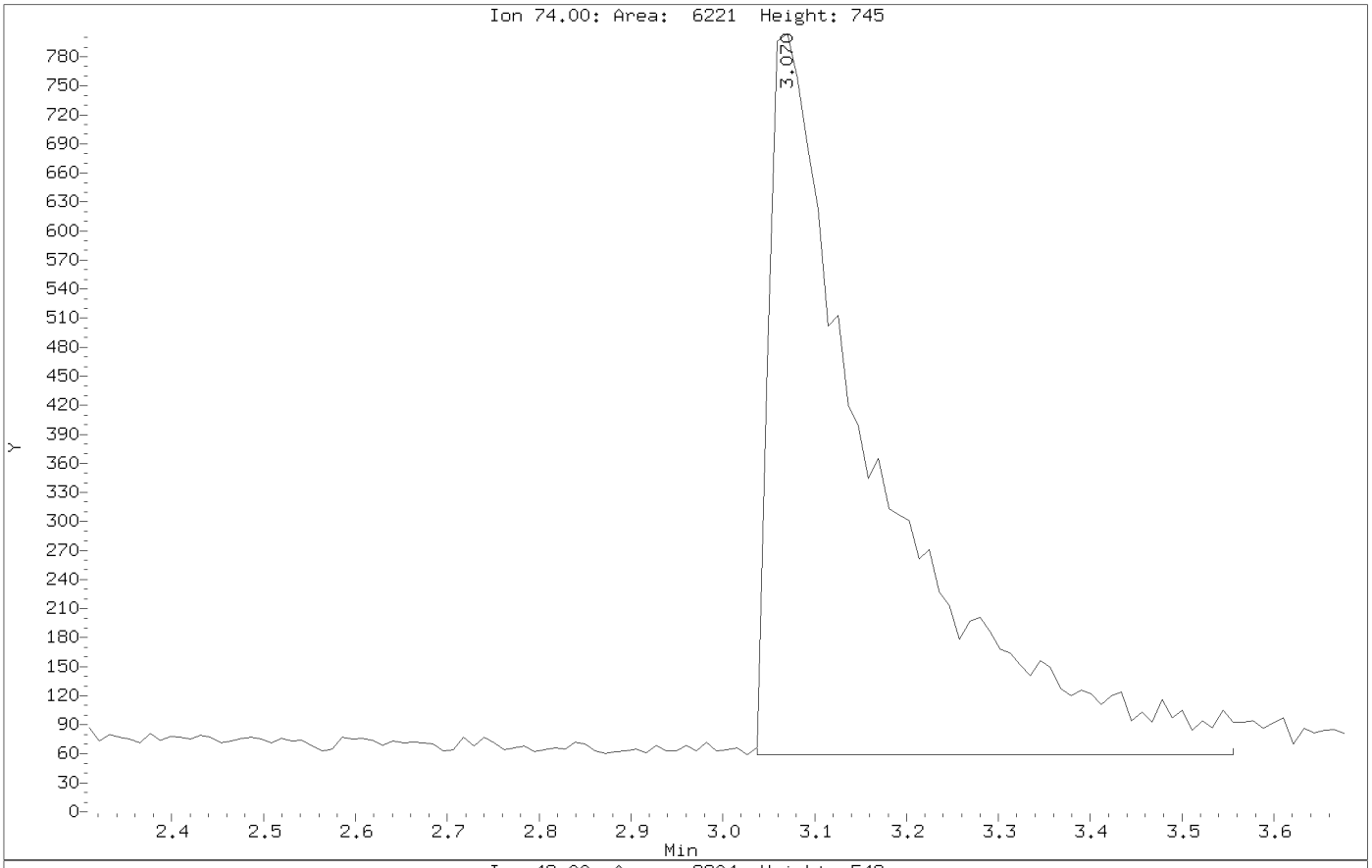
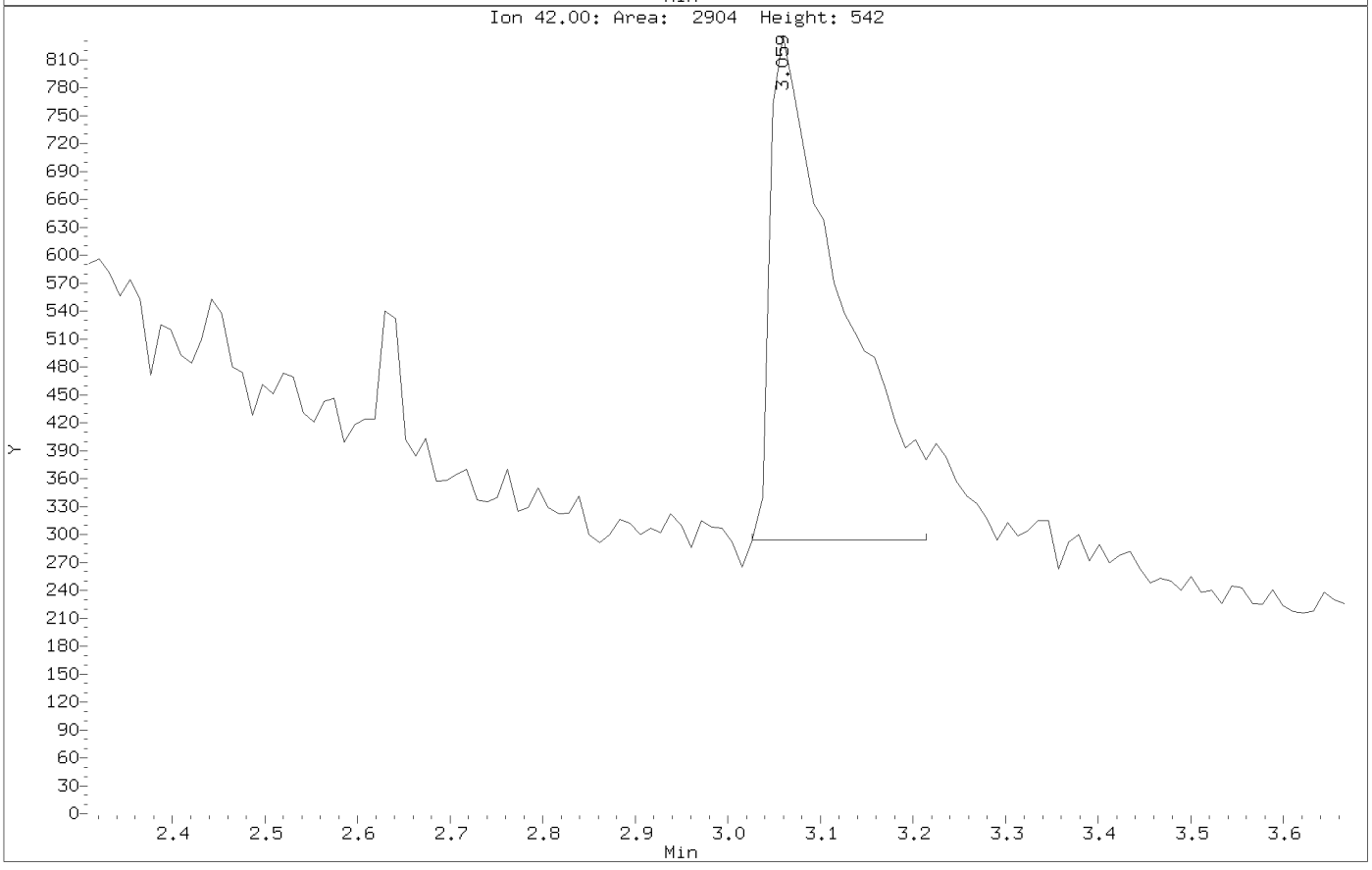
Client Sample ID:

Compound: N-Nitrosodimethylamine
CAS Number: 62-75-9

AFTER MANUAL INTEGRATION





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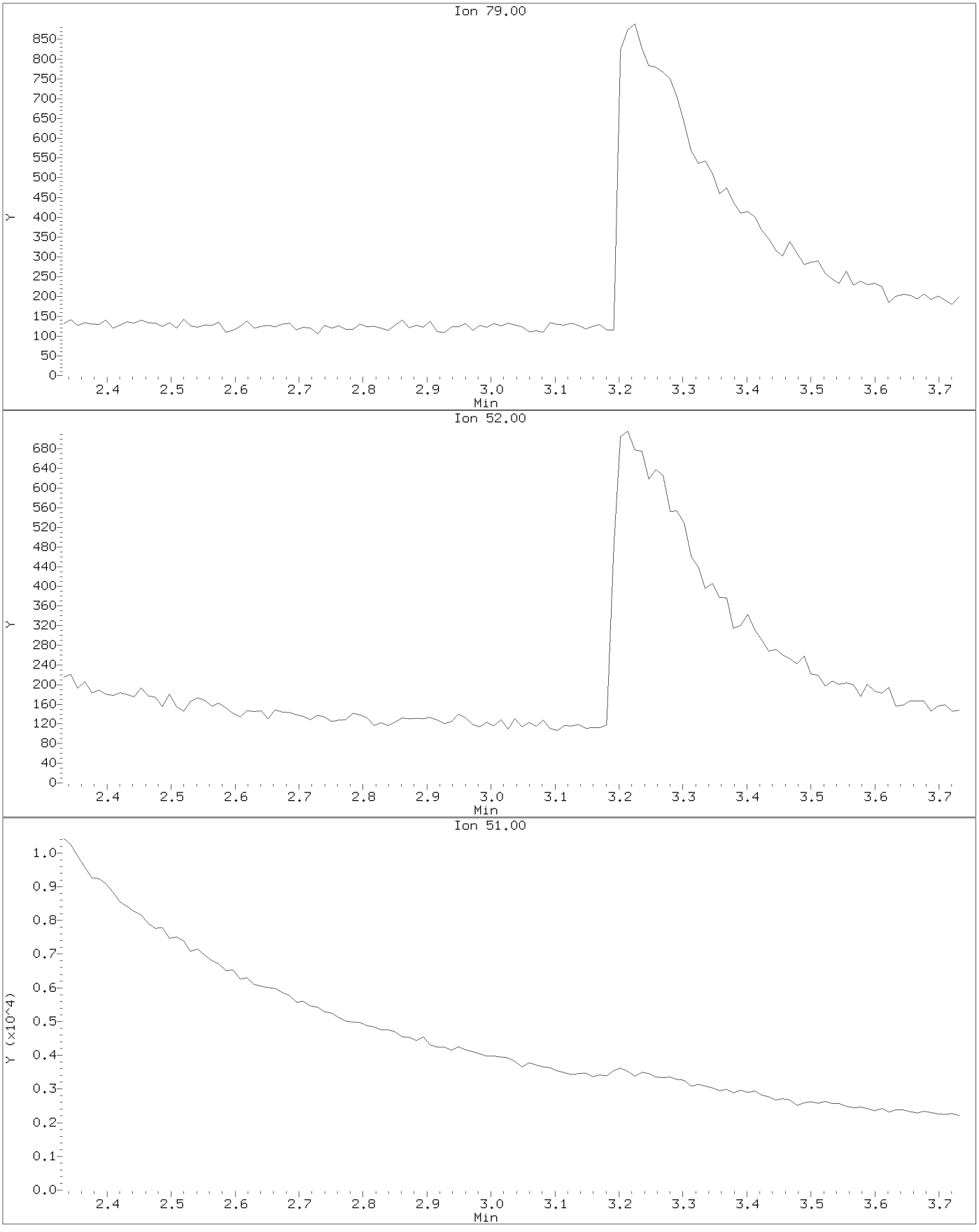
Instrument: gcms-u.i
Client Sample ID:

Compound: Pyridine
CAS Number: 110-86-1

BEFORE MANUAL INTEGRATION



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Compound: Pyridine
CAS Number: 110-86-1

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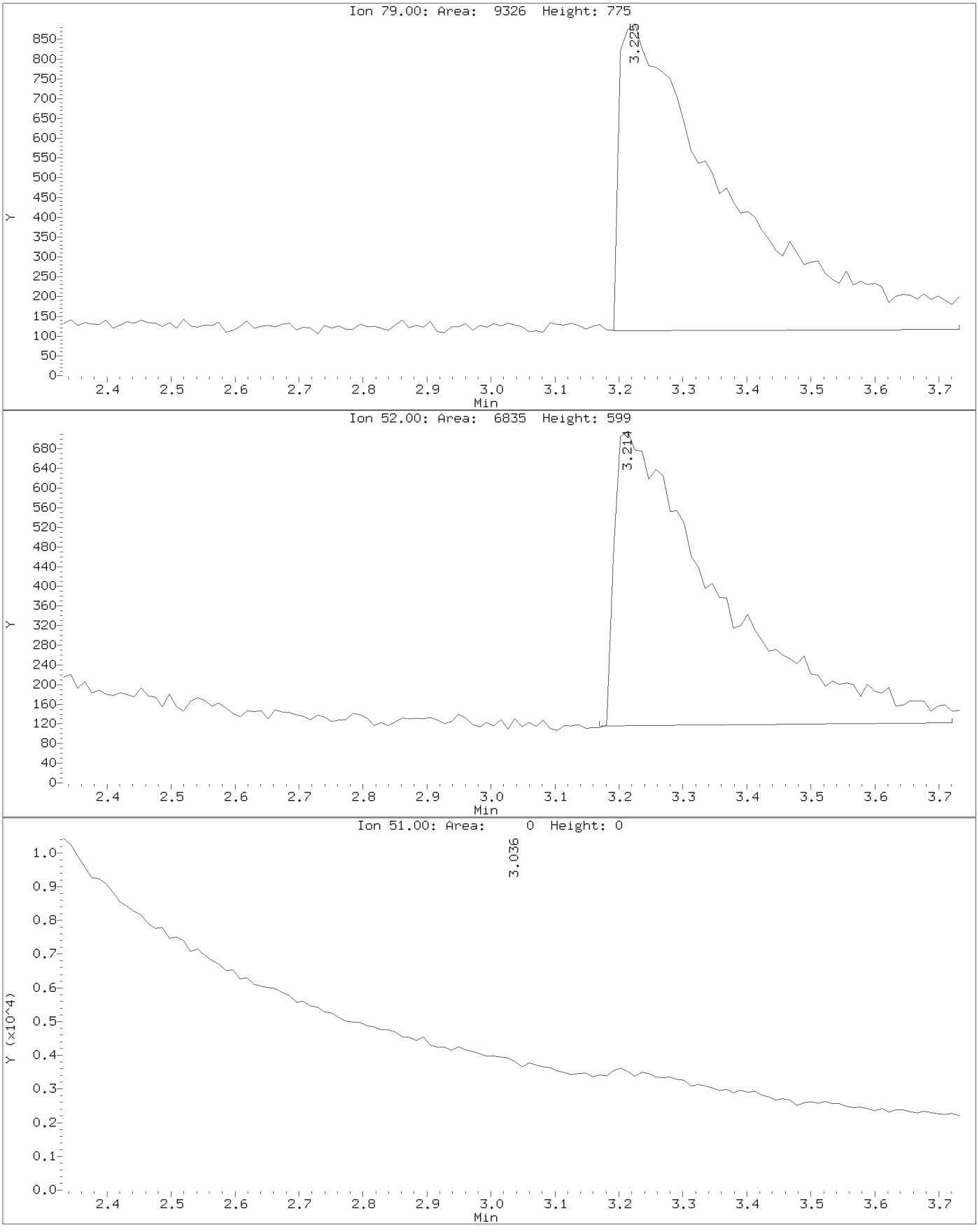

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Injection Date: 07-MAY-2018 11:25
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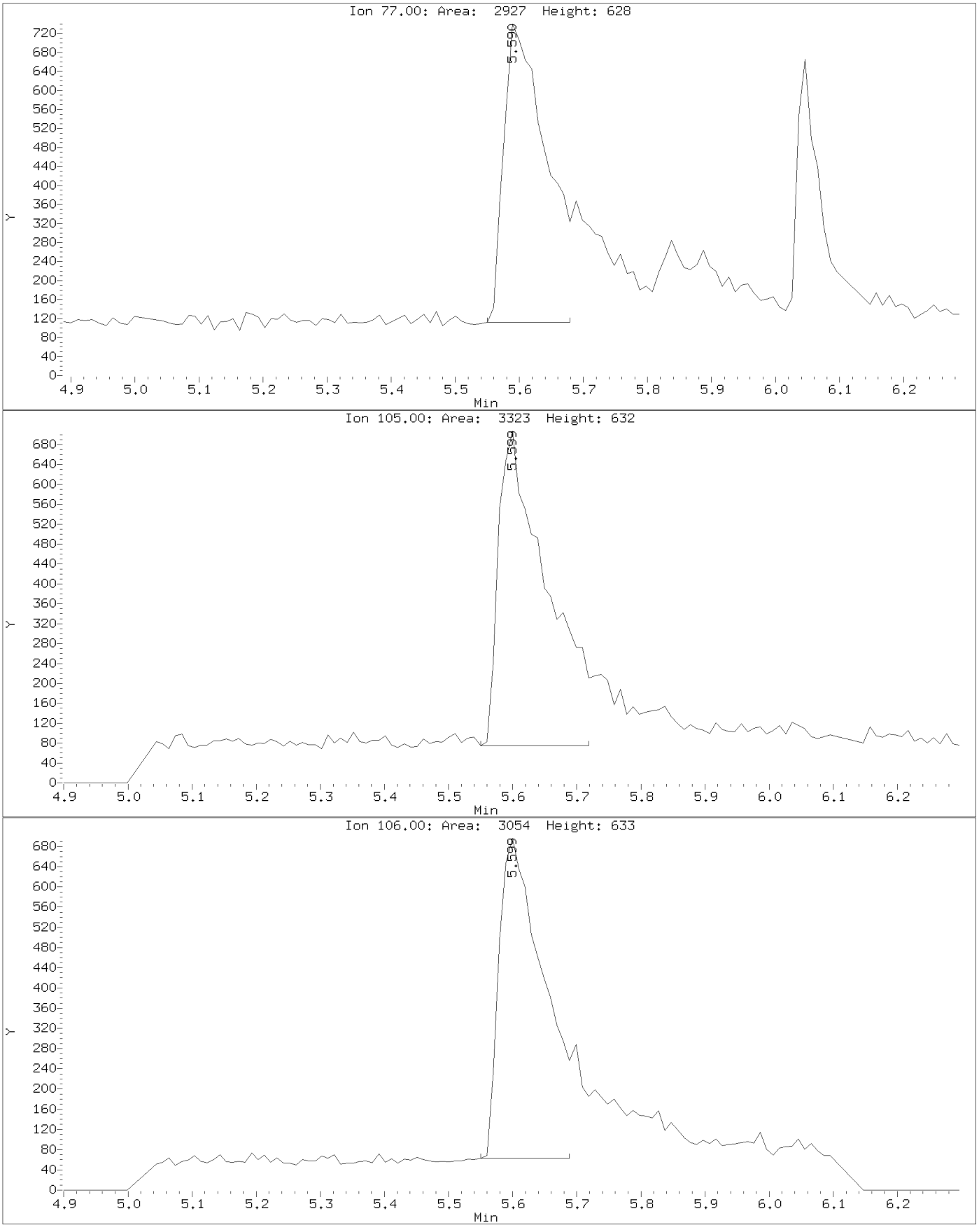
Client Sample ID:

Compound: Benzaldehyde
CAS Number: 100-52-7



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Instrument: gcms-u.i
Client Sample ID:

Compound: Benzaldehyde
CAS Number: 100-52-7

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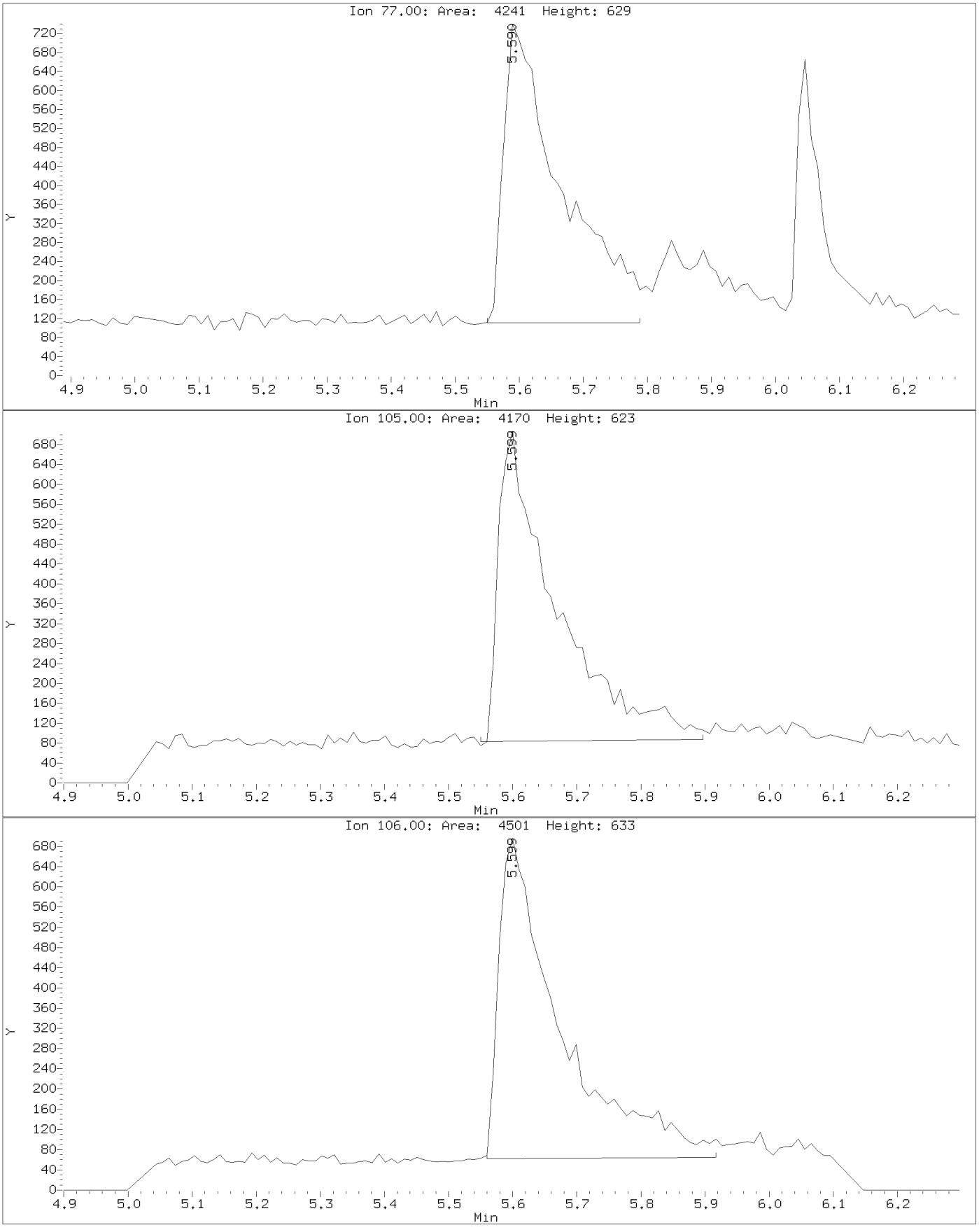

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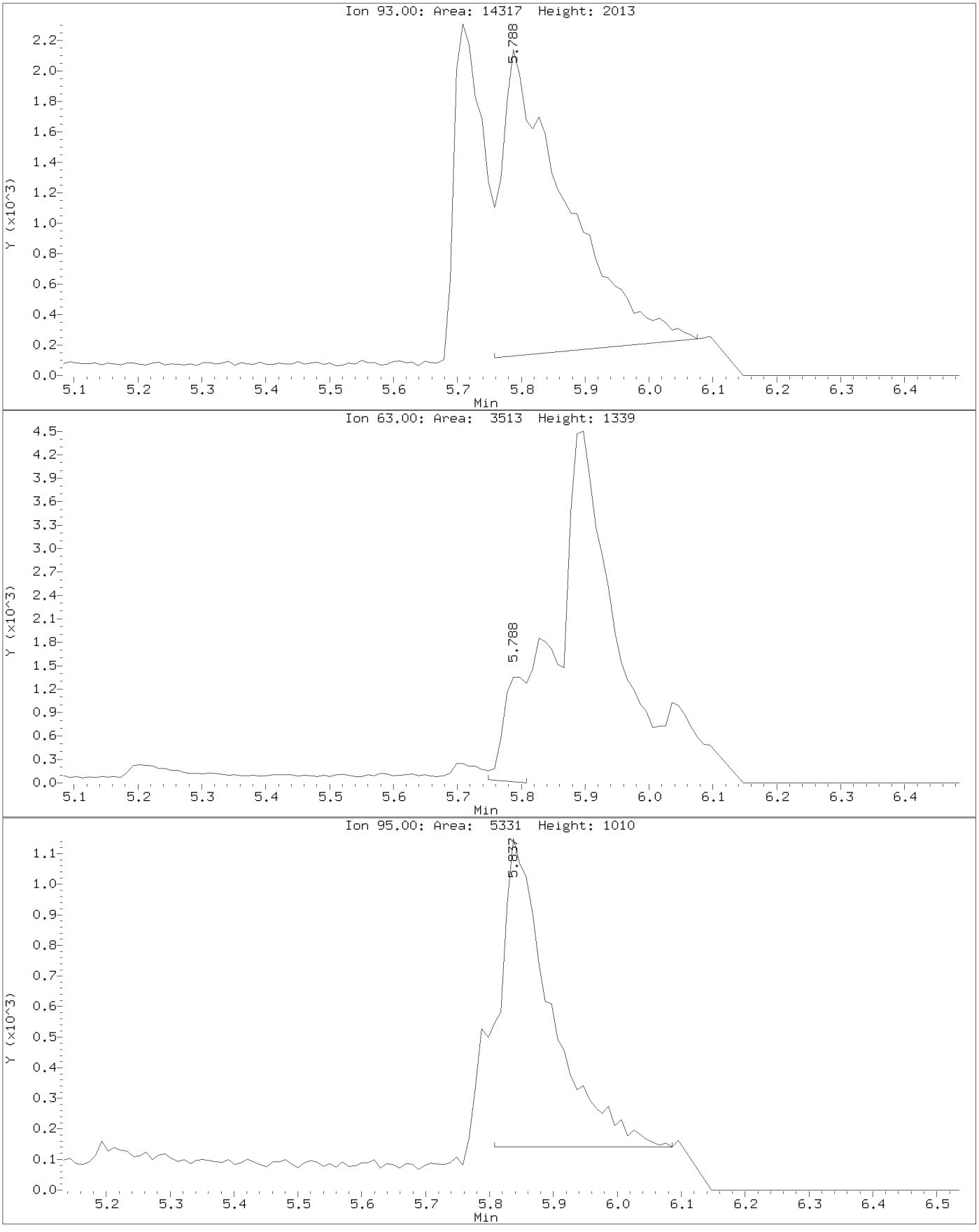
Injection Date: 07-MAY-2018 11:25
Instrument: gcms-u.i
Client Sample ID:

Compound: Bis(2-Chloroethyl)ether
CAS Number: 111-44-4

BEFORE MANUAL INTEGRATION



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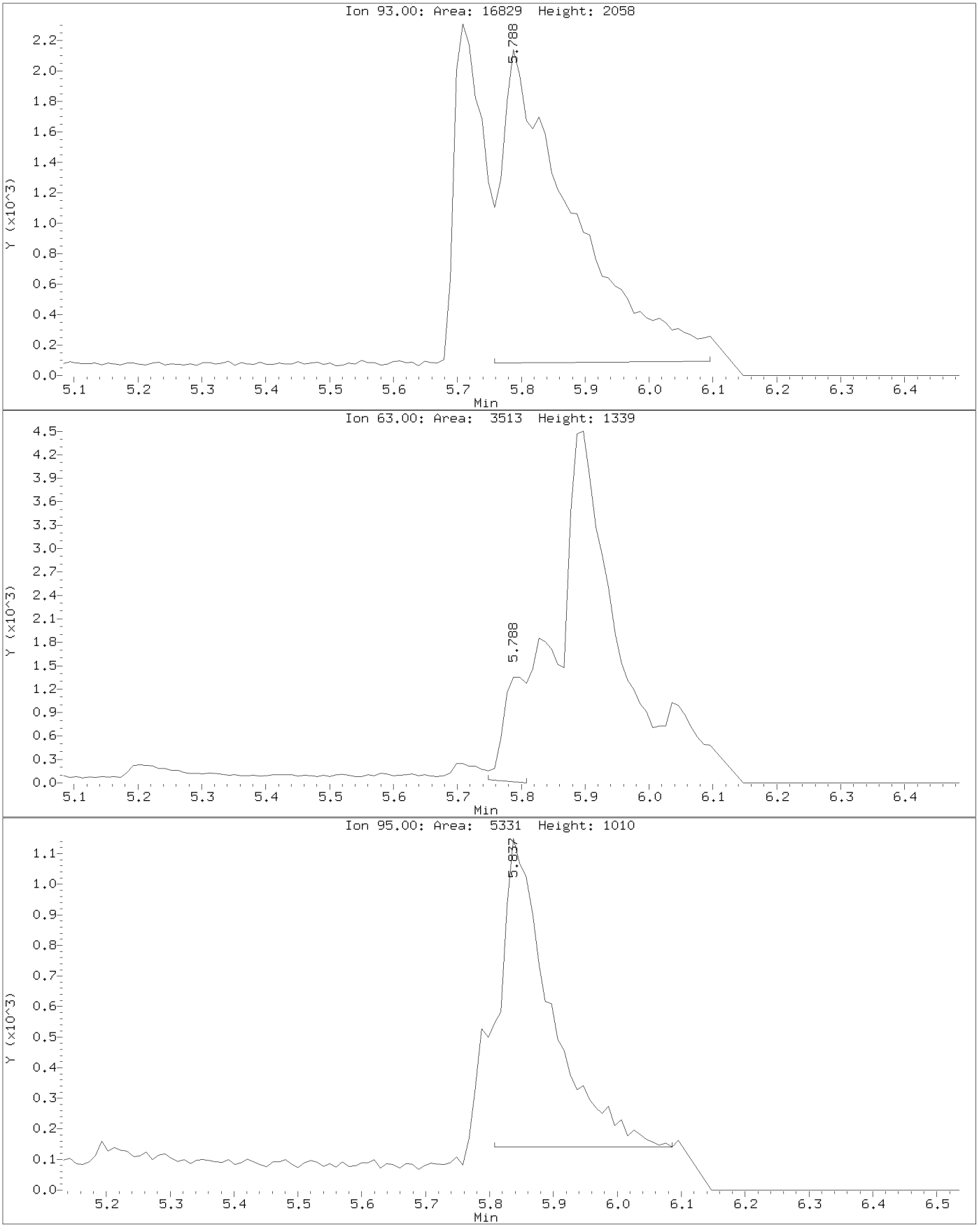
Client Sample ID:

Compound: Bis(2-Chloroethyl)ether
CAS Number: 111-44-4

AFTER MANUAL INTEGRATION



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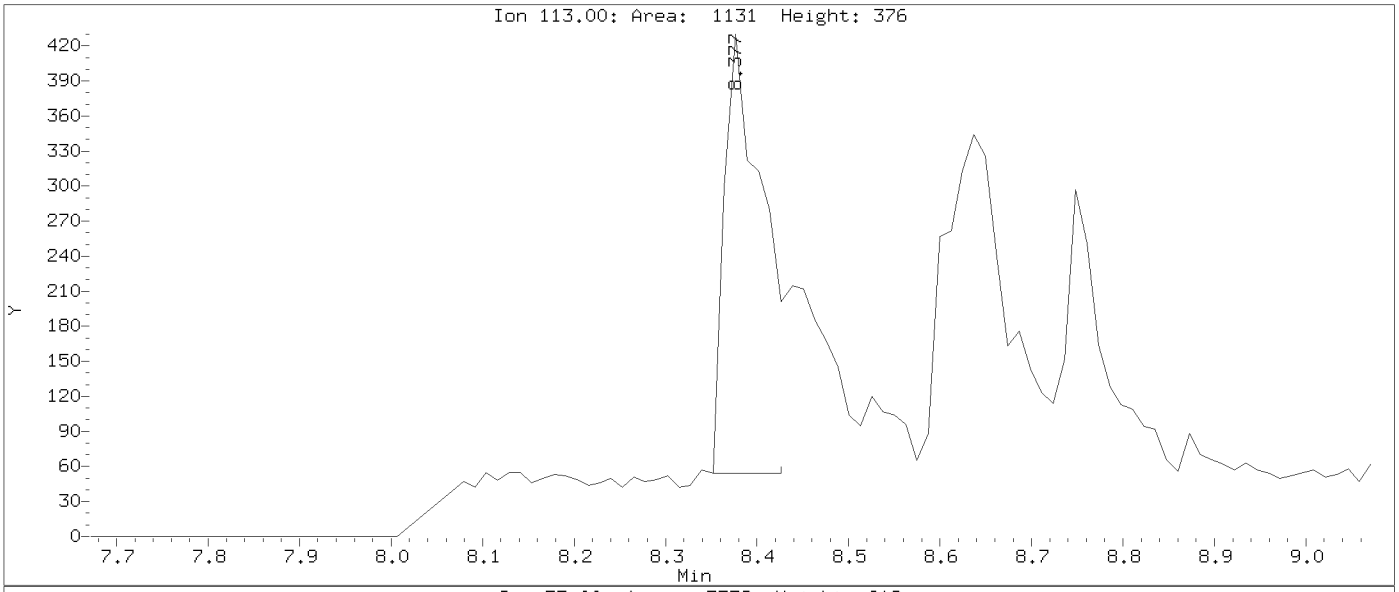
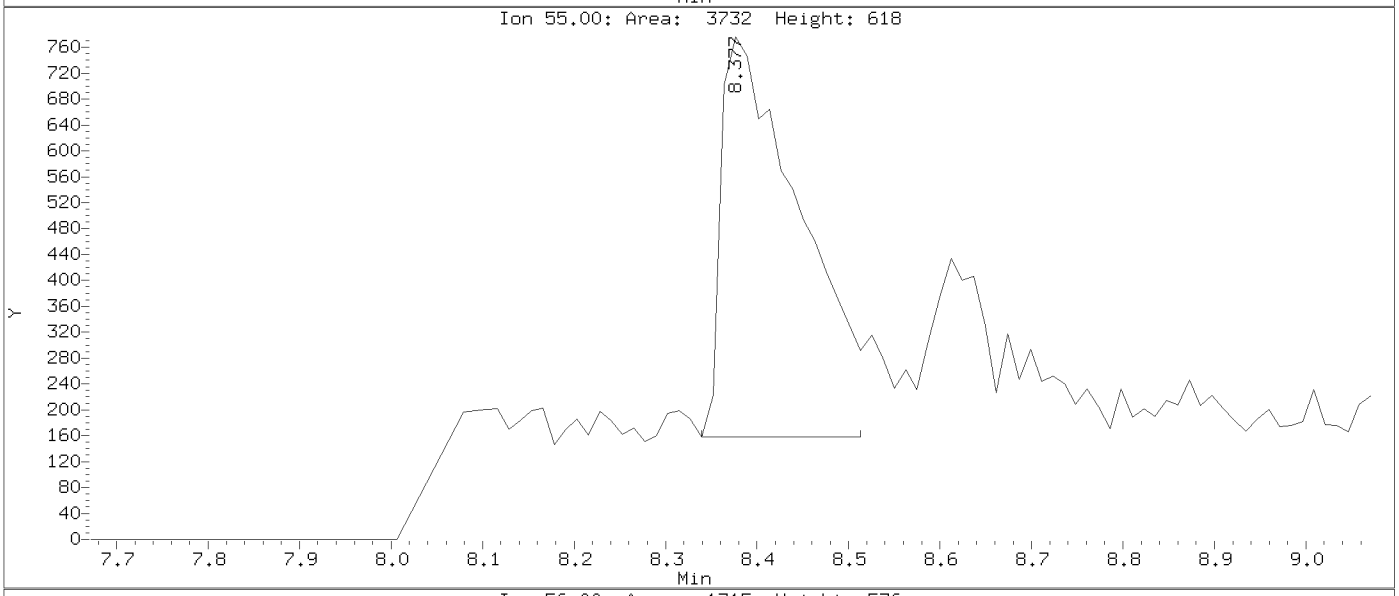
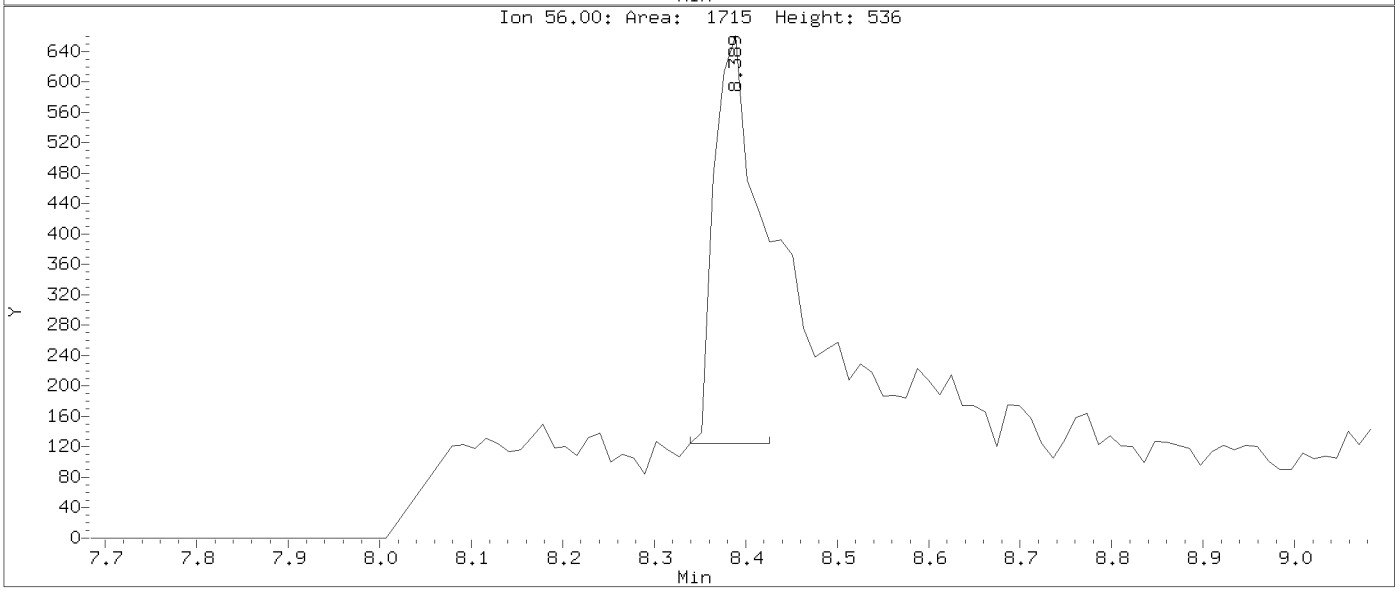
Instrument: gcms-u.i
Client Sample ID:

Compound: Caprolactam
CAS Number: 105-60-2

BEFORE MANUAL INTEGRATION







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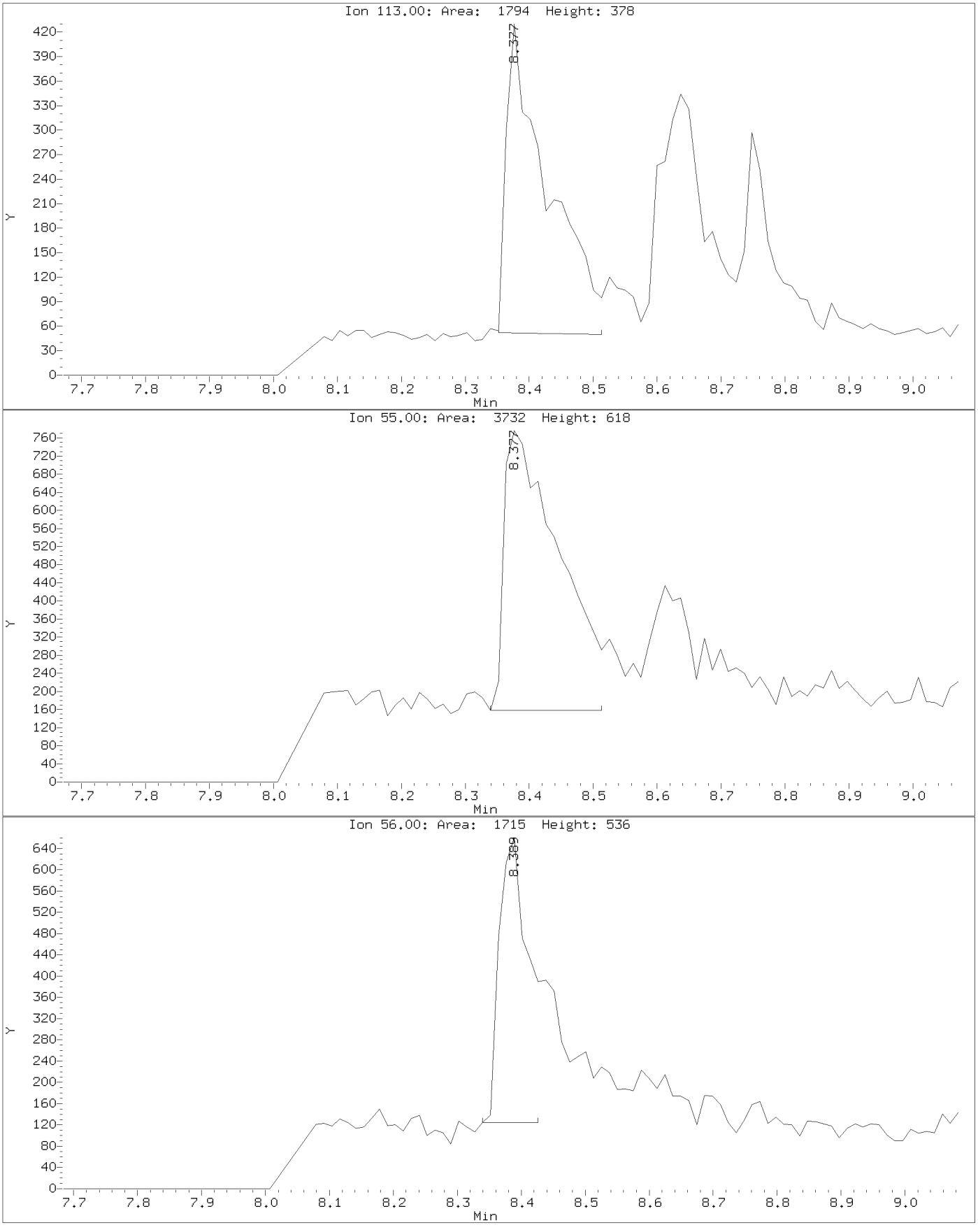
Instrument: gcms-u.i
Client Sample ID:

Compound: Caprolactam
CAS Number: 105-60-2

AFTER MANUAL INTEGRATION



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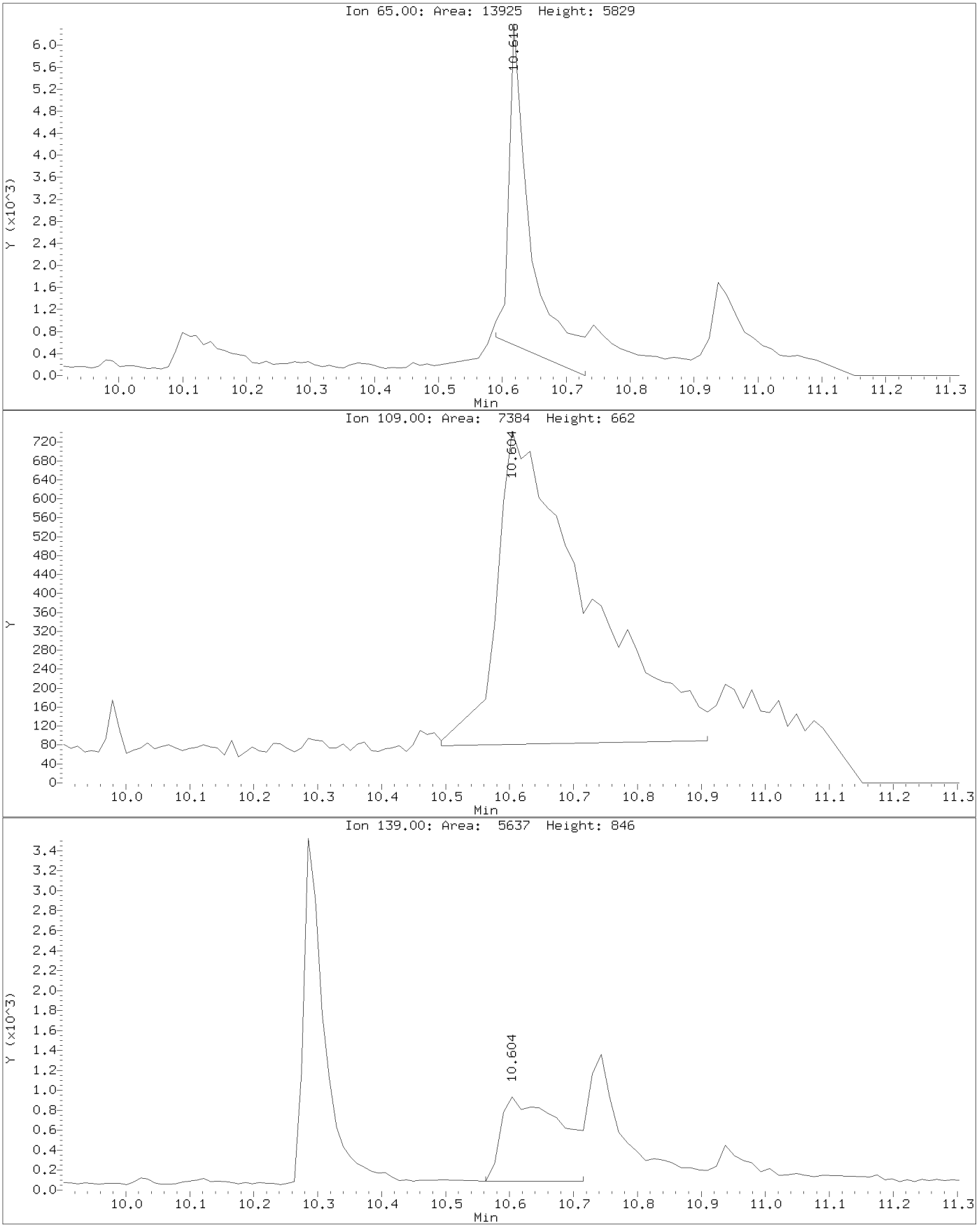
Injection Date: 07-MAY-2018 11:25
Instrument: gcms-u.i
Client Sample ID:

Compound: 4-Nitrophenol
CAS Number: 100-02-7

BEFORE MANUAL INTEGRATION



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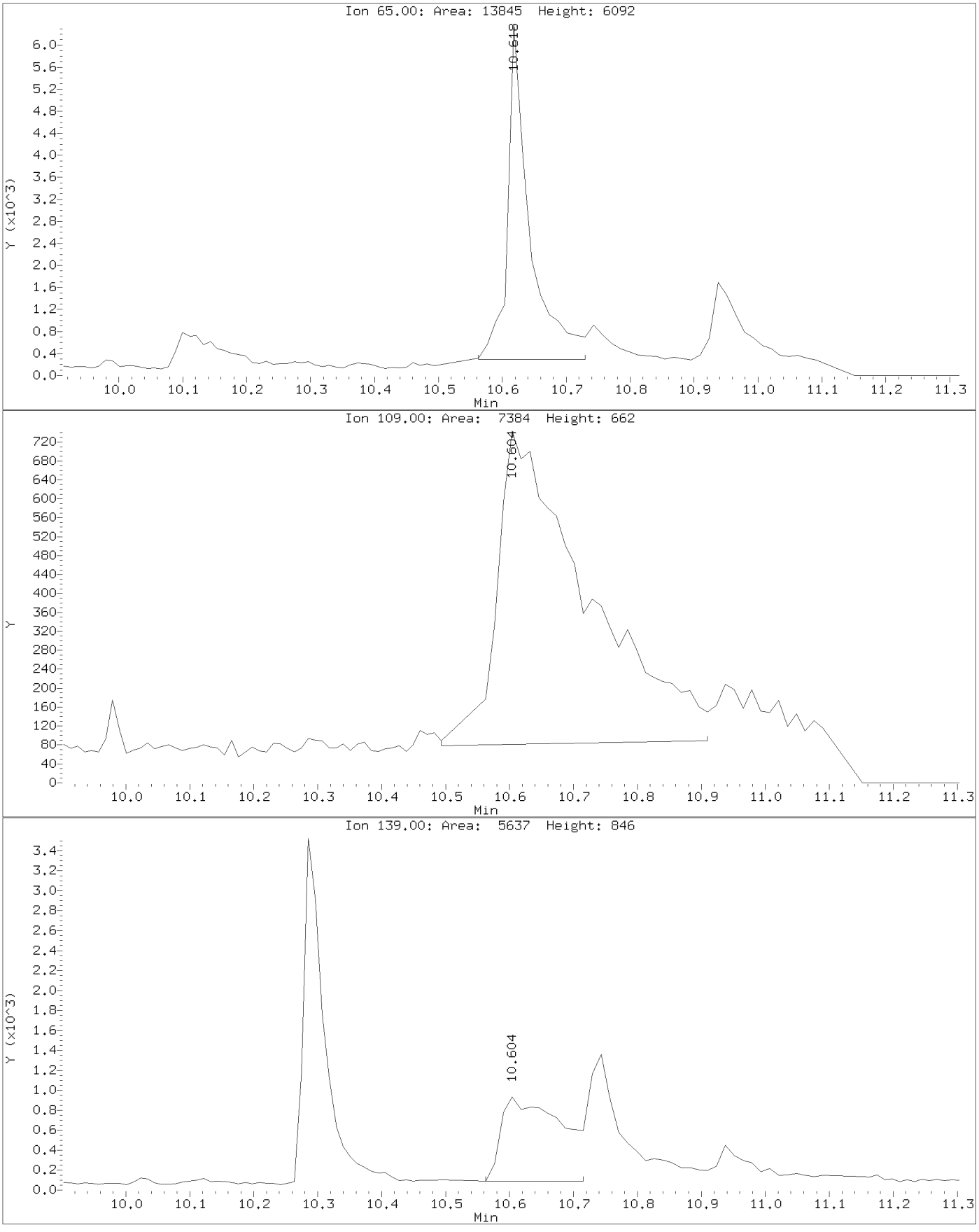
Instrument: gcms-u.i
Client Sample ID:

Compound: 4-Nitrophenol
CAS Number: 100-02-7



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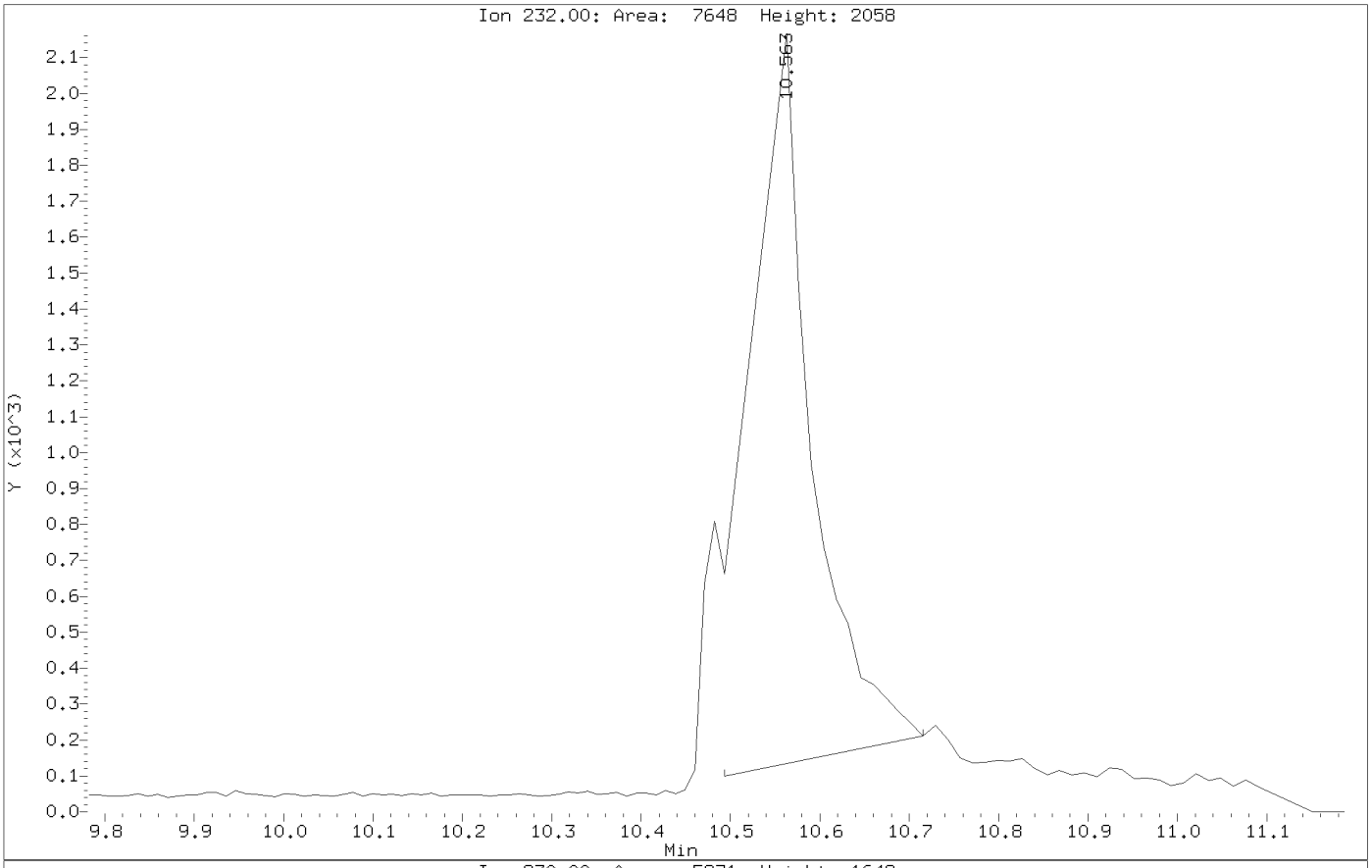
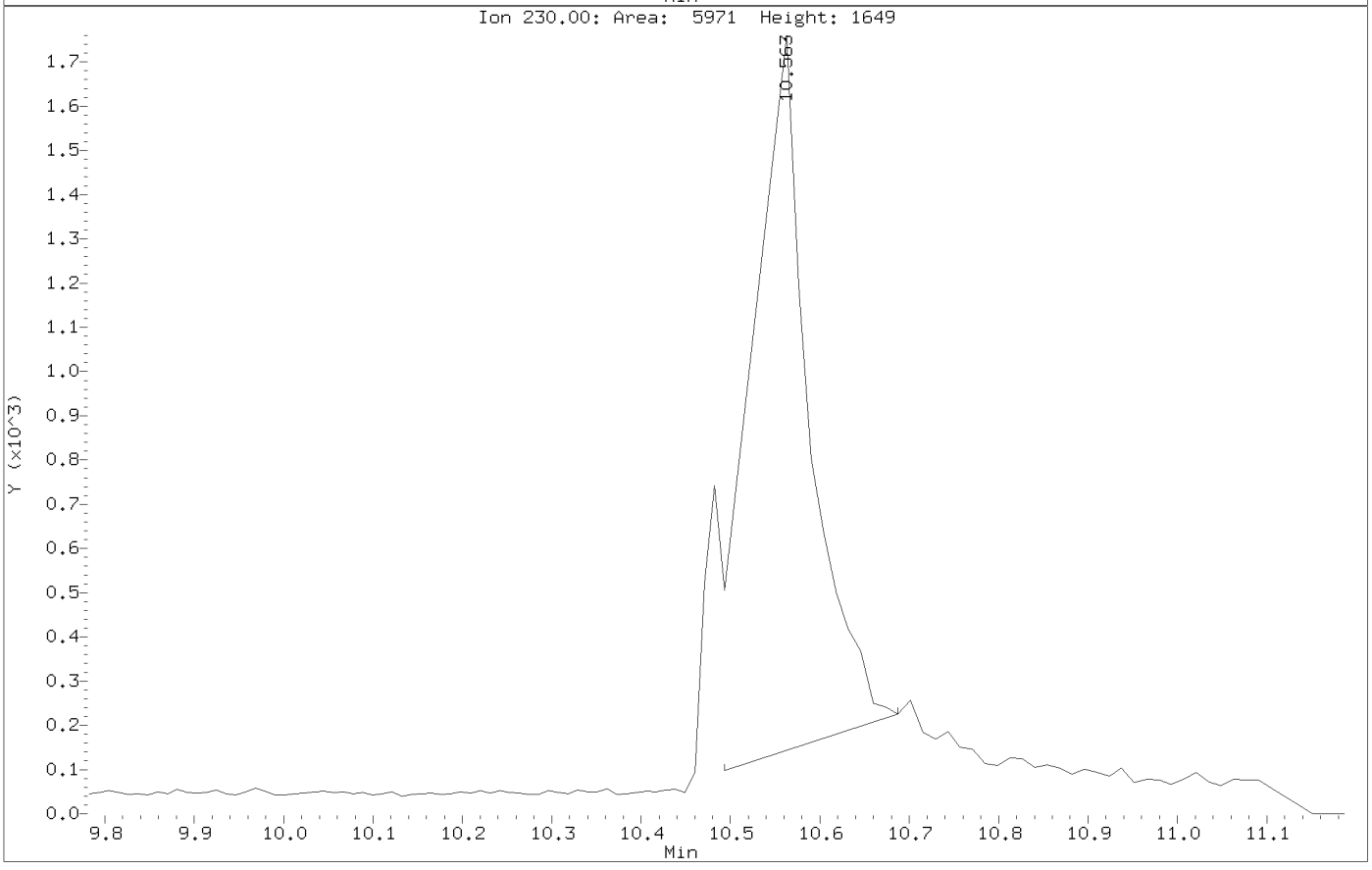
Injection Date: 07-MAY-2018 11:25
Instrument: gcms-u.i
Client Sample ID:

Compound: 2,3,4,6-Tetrachlorophenol
CAS Number: 58-90-2

BEFORE MANUAL INTEGRATION





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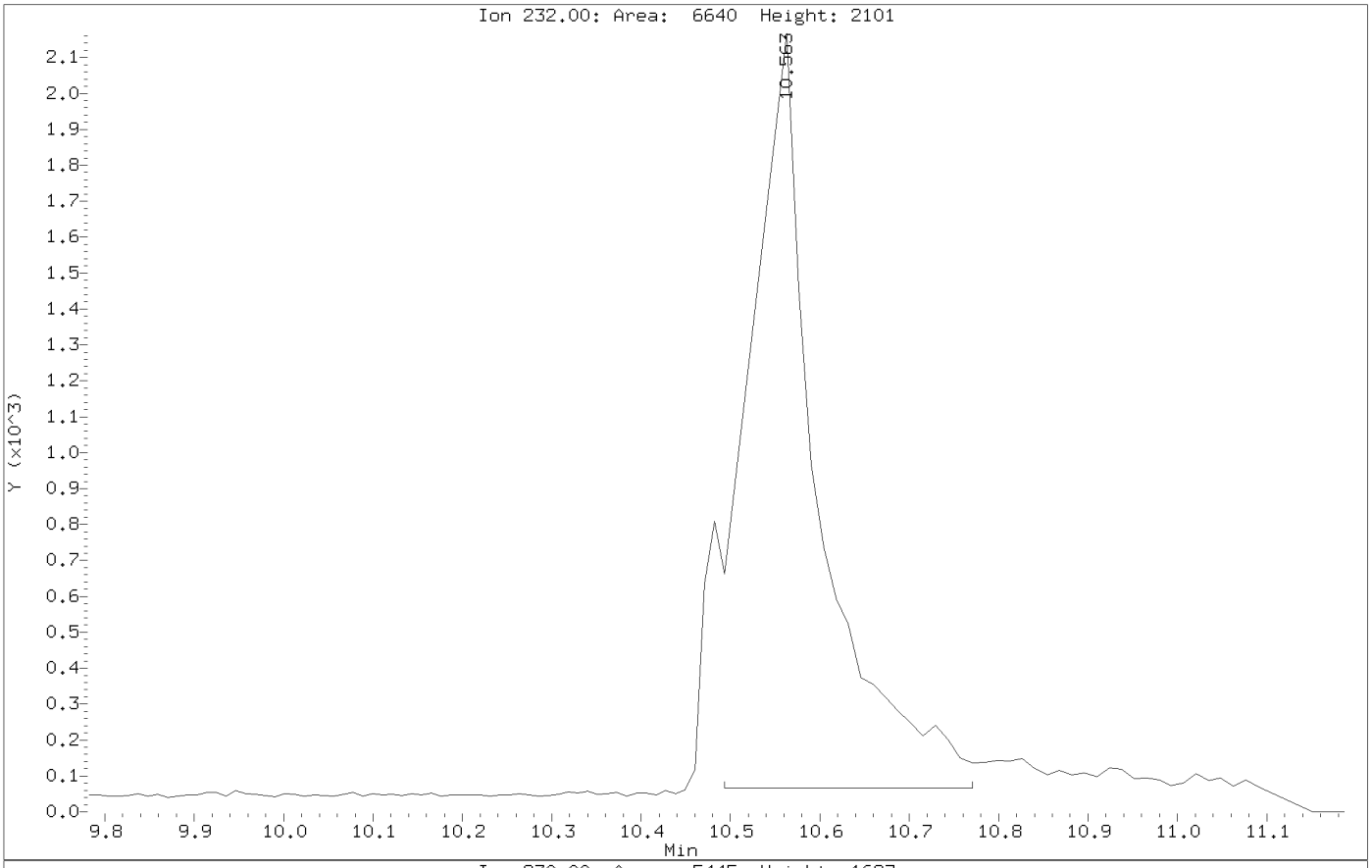
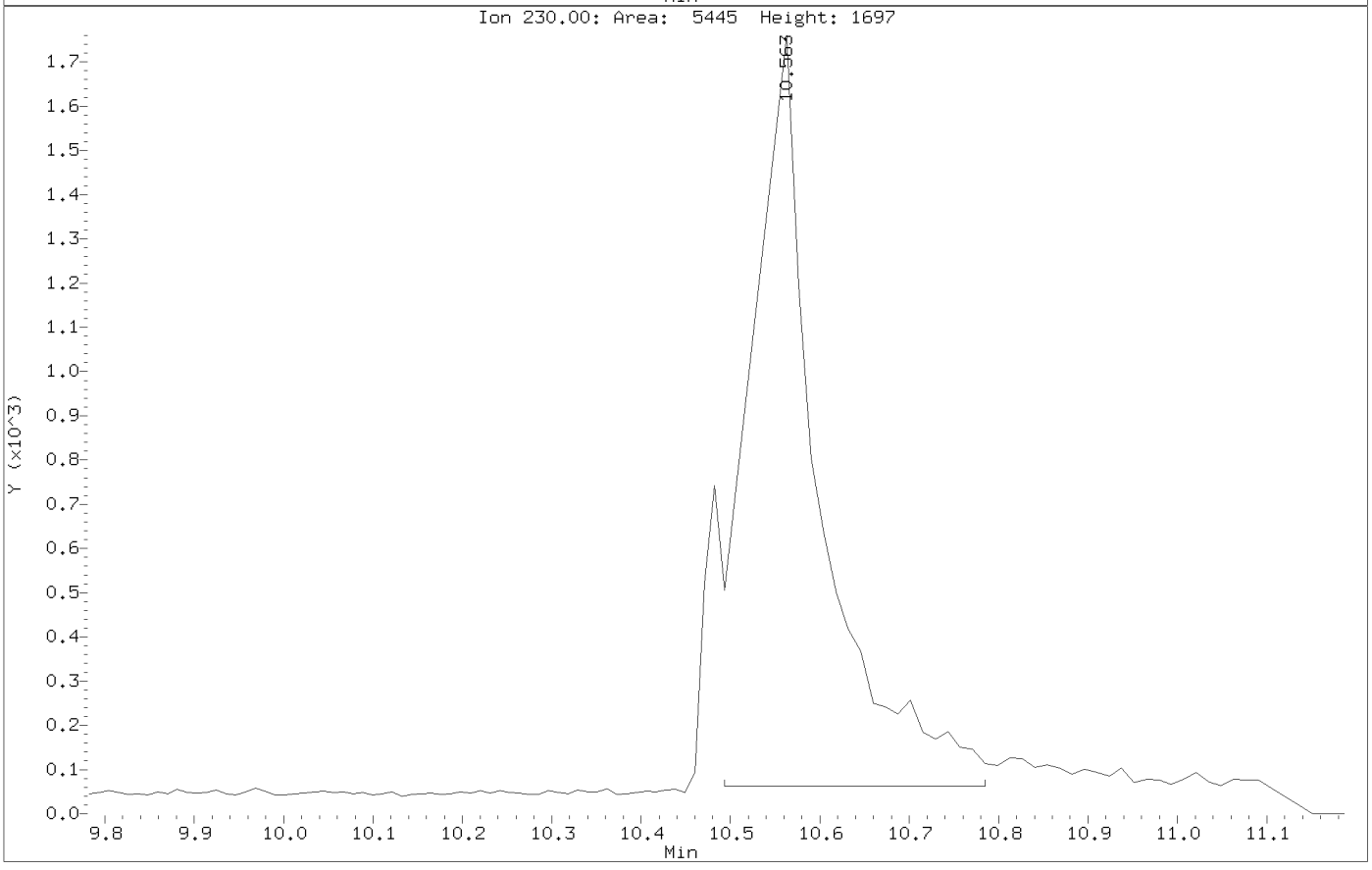
Injection Date: 07-MAY-2018 11:25
Instrument: gcms-u.i
Client Sample ID:

Compound: 2,3,4,6-Tetrachlorophenol
CAS Number: 58-90-2

AFTER MANUAL INTEGRATION





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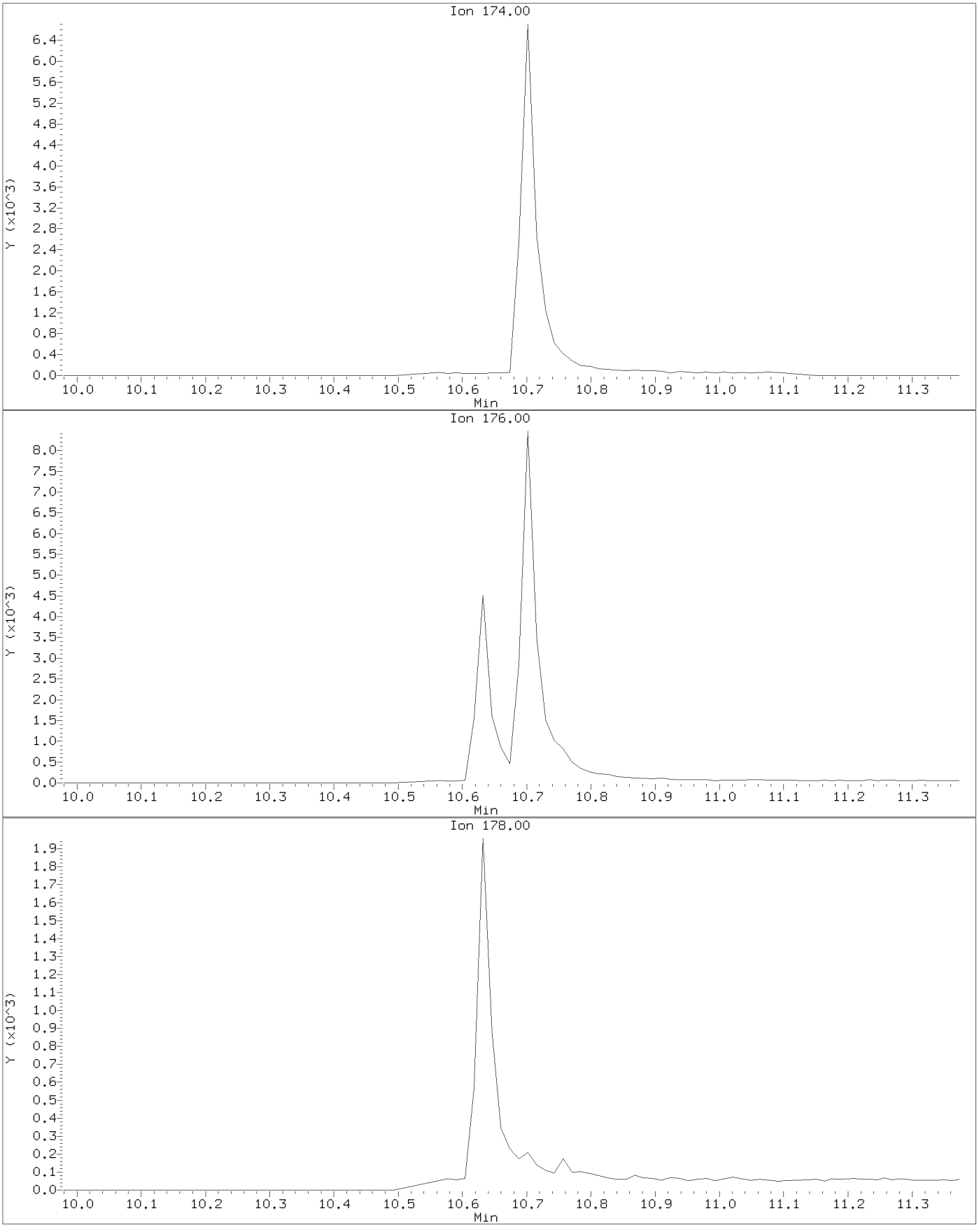
Injection Date: 07-MAY-2018 11:25
Instrument: gcms-u.i
Client Sample ID:

Compound: Fluorene-D10
CAS Number: 118-79-6

BEFORE MANUAL INTEGRATION



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Instrument: gcms-u.i
Client Sample ID:

Compound: Fluorene-D10
CAS Number: 118-79-6

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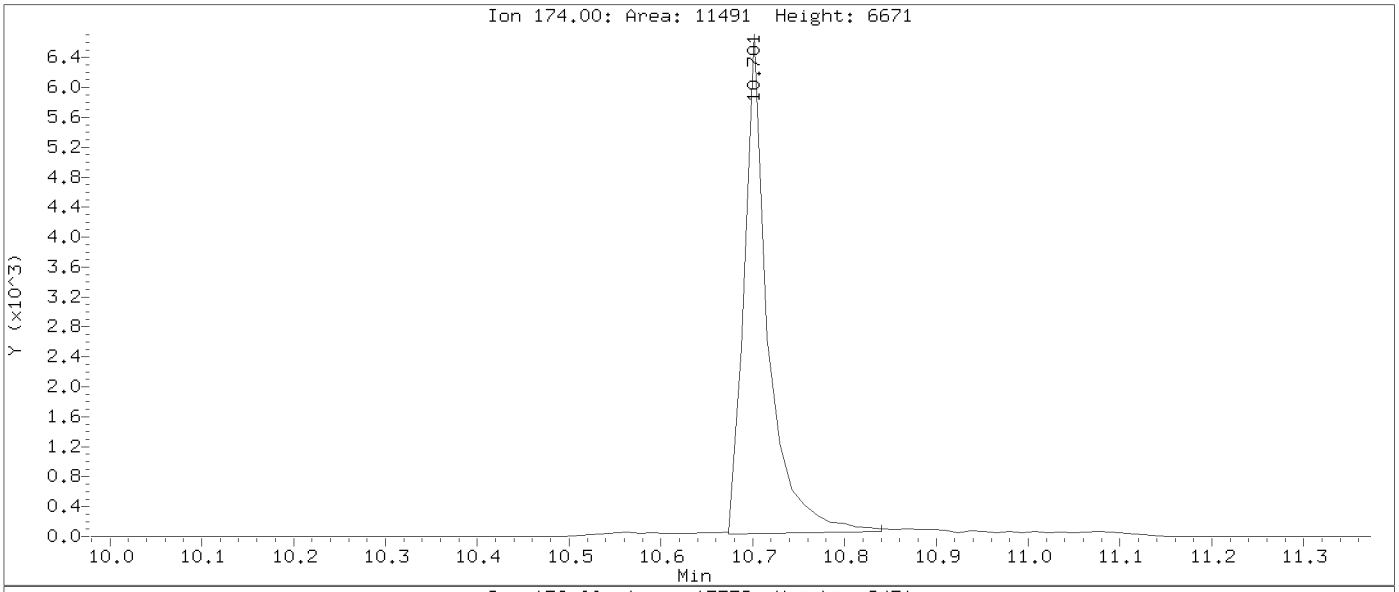

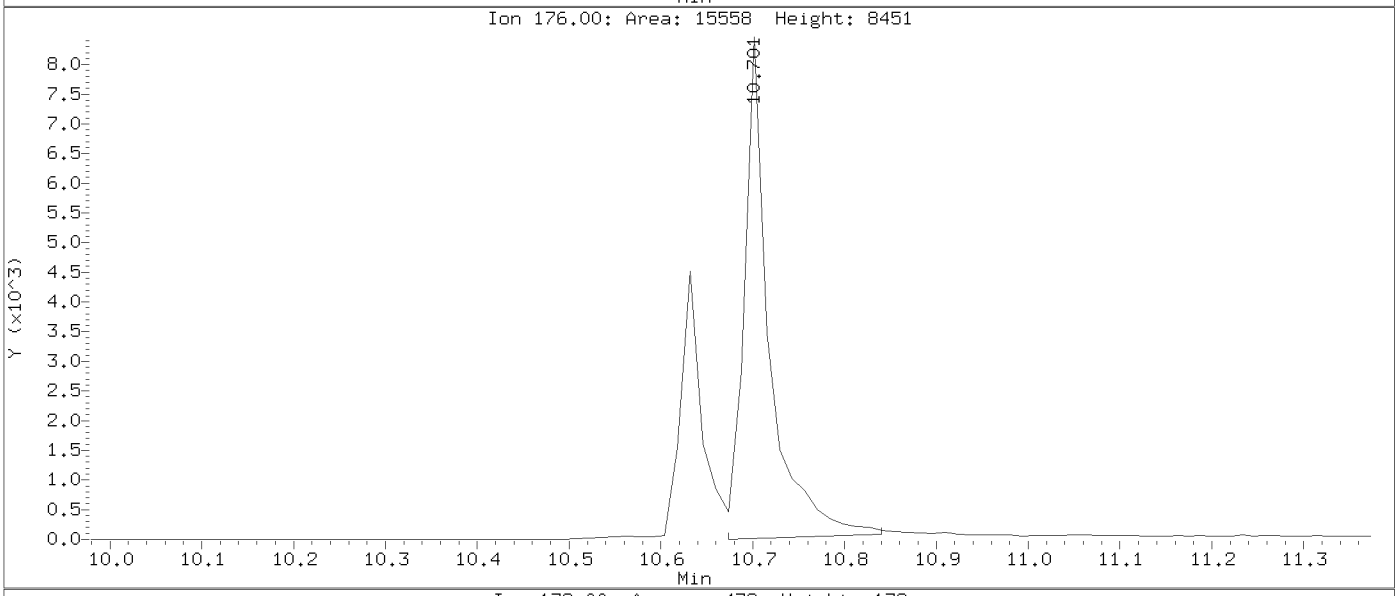

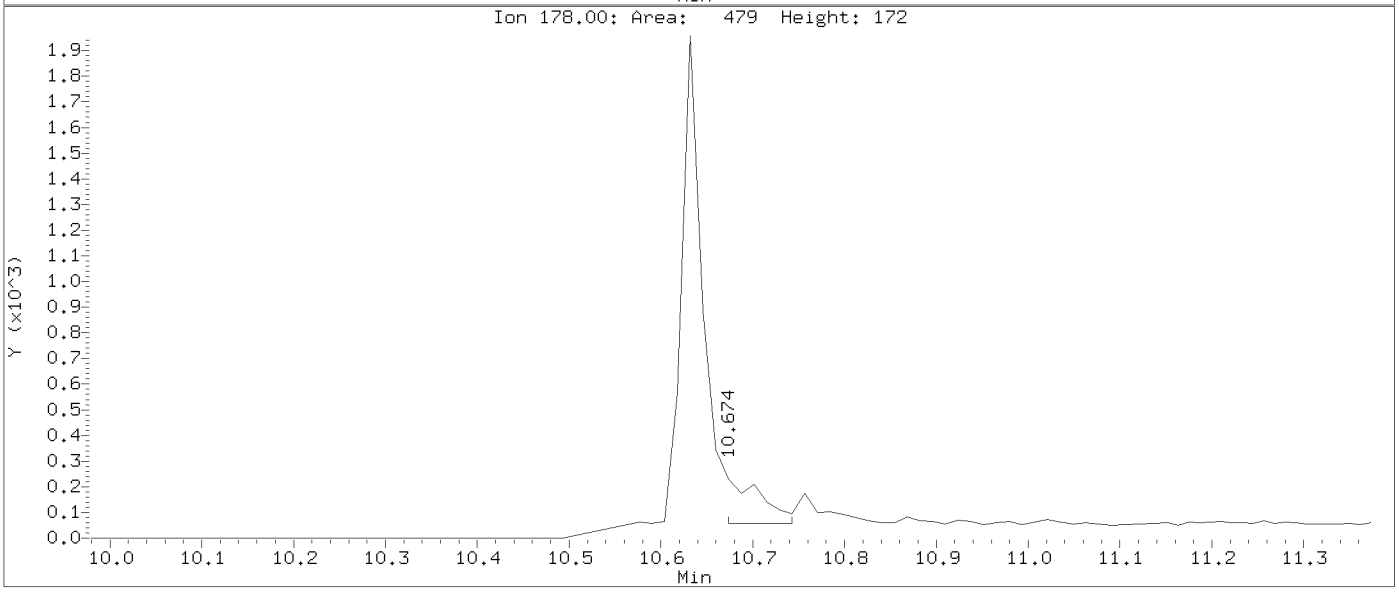

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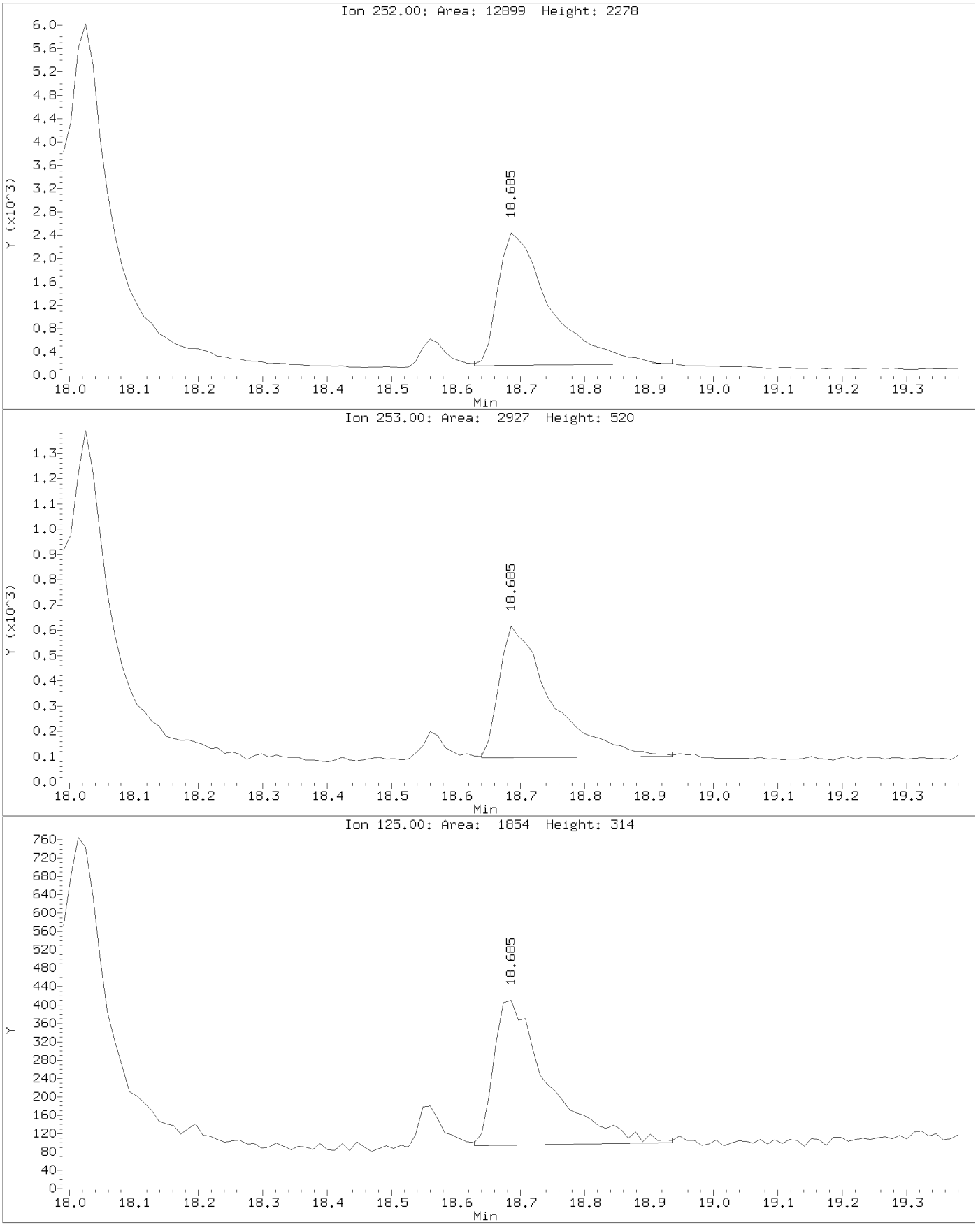
Injection Date: 07-MAY-2018 11:25
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

BEFORE MANUAL INTEGRATION



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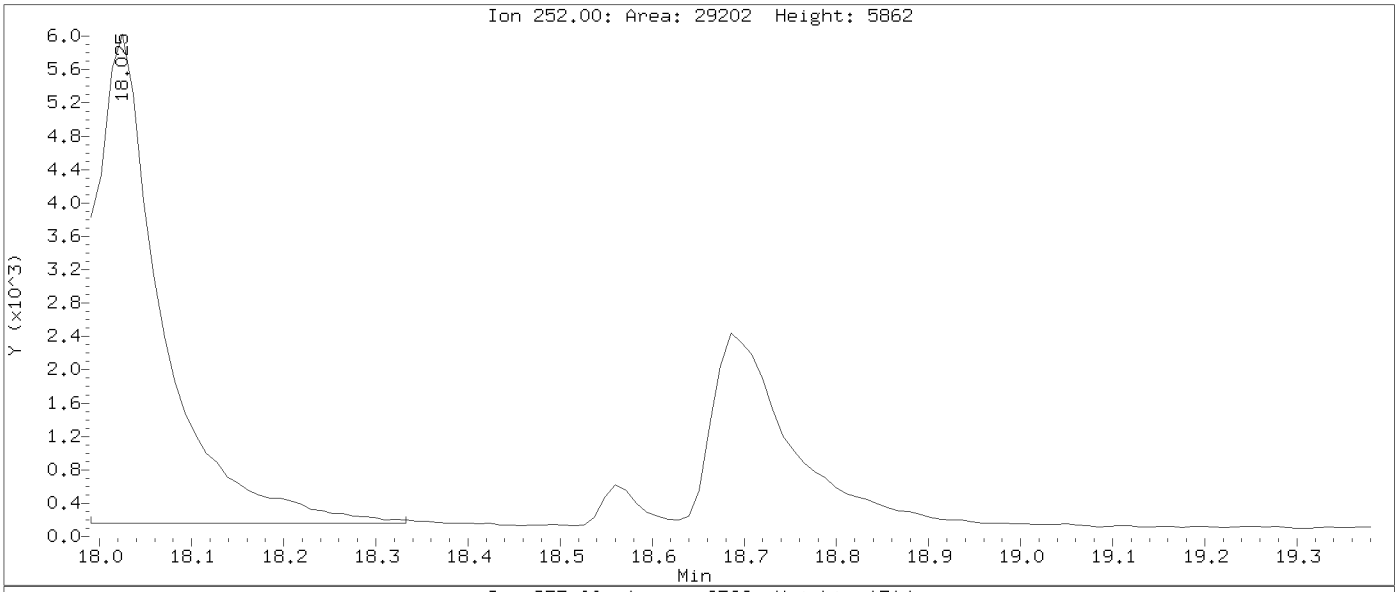
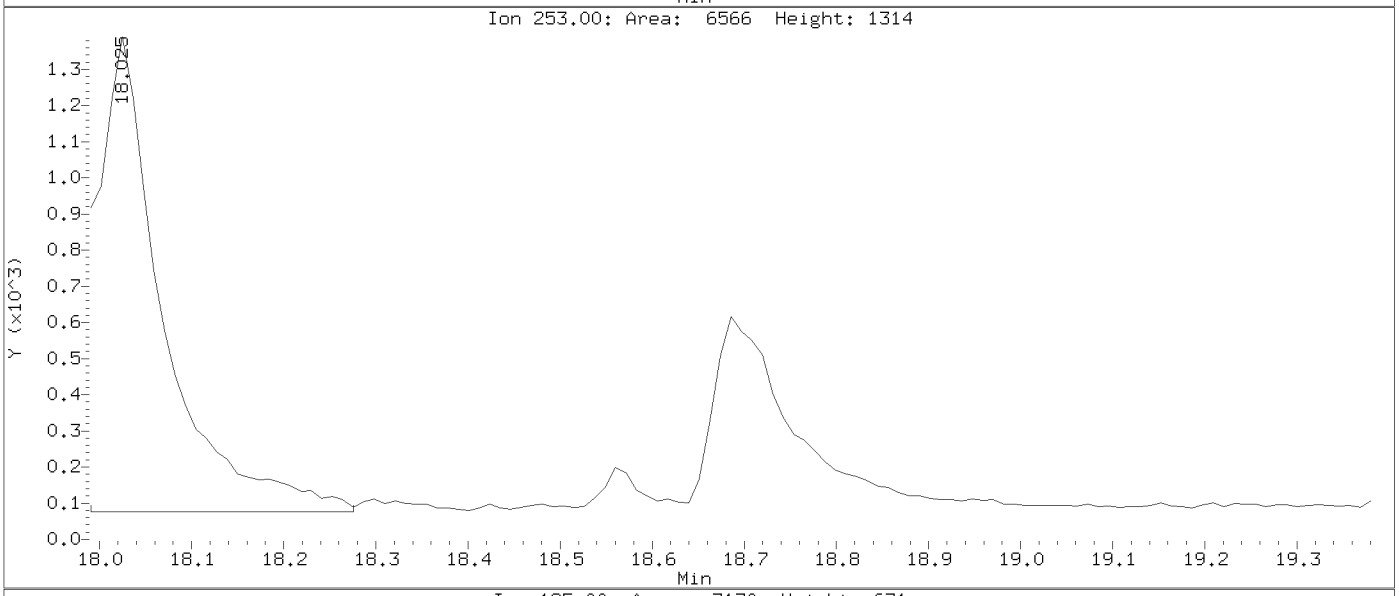
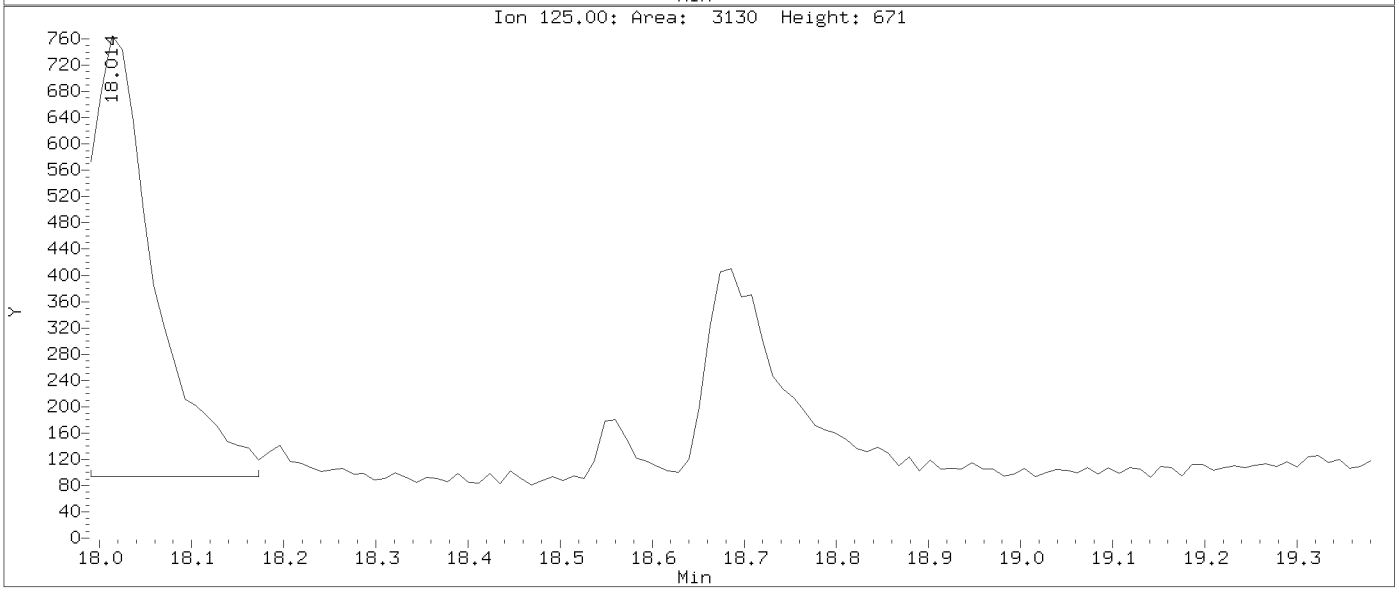
Injection Date: 07-MAY-2018 11:25
Instrument: gcms-u.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

AFTER MANUAL INTEGRATION



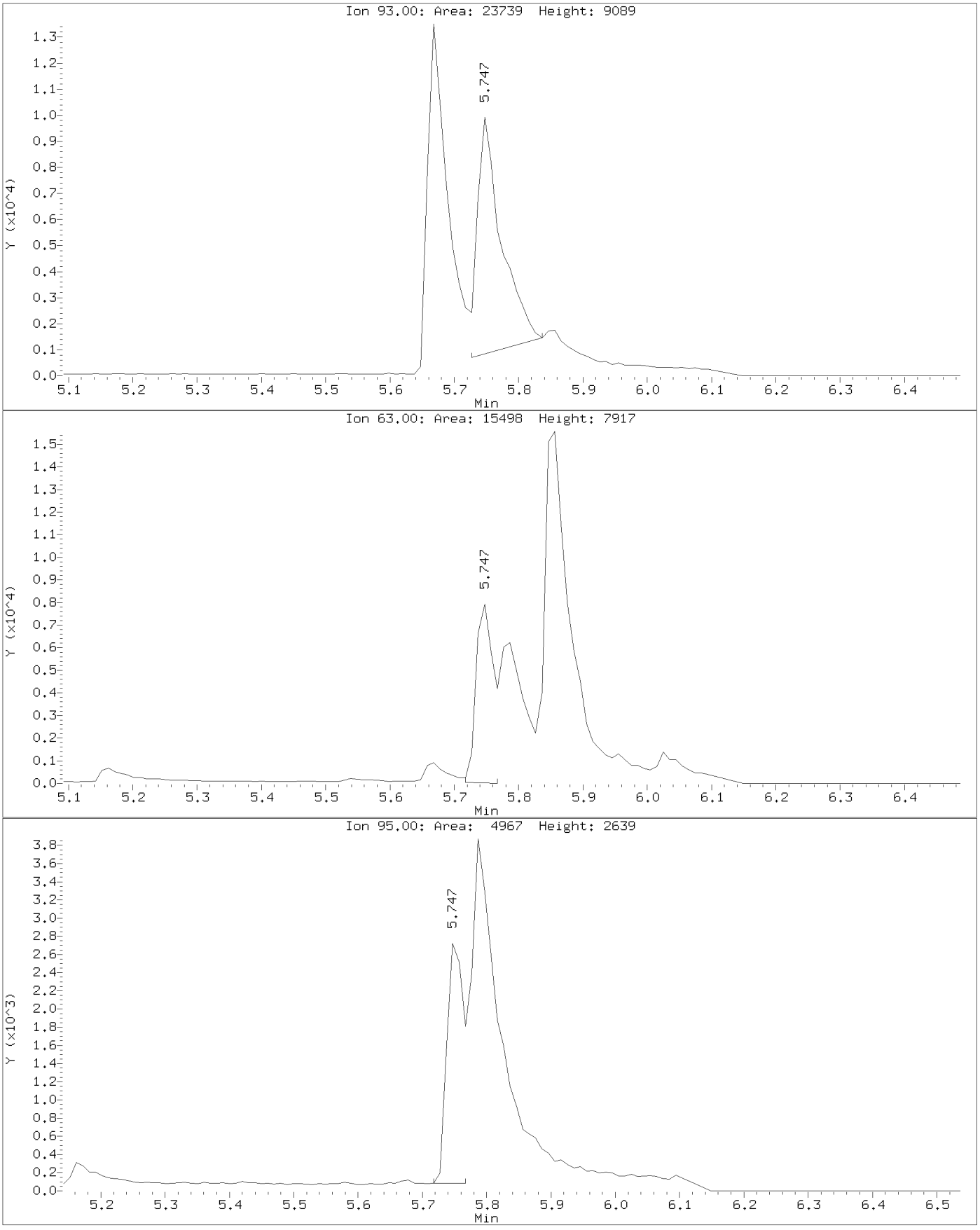




Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0702.D
Injection Date: 07-MAY-2018 11:56
Instrument: gcms-u.i
Client Sample ID:

Compound: Bis(2-Chloroethyl)ether
CAS Number: 111-44-4

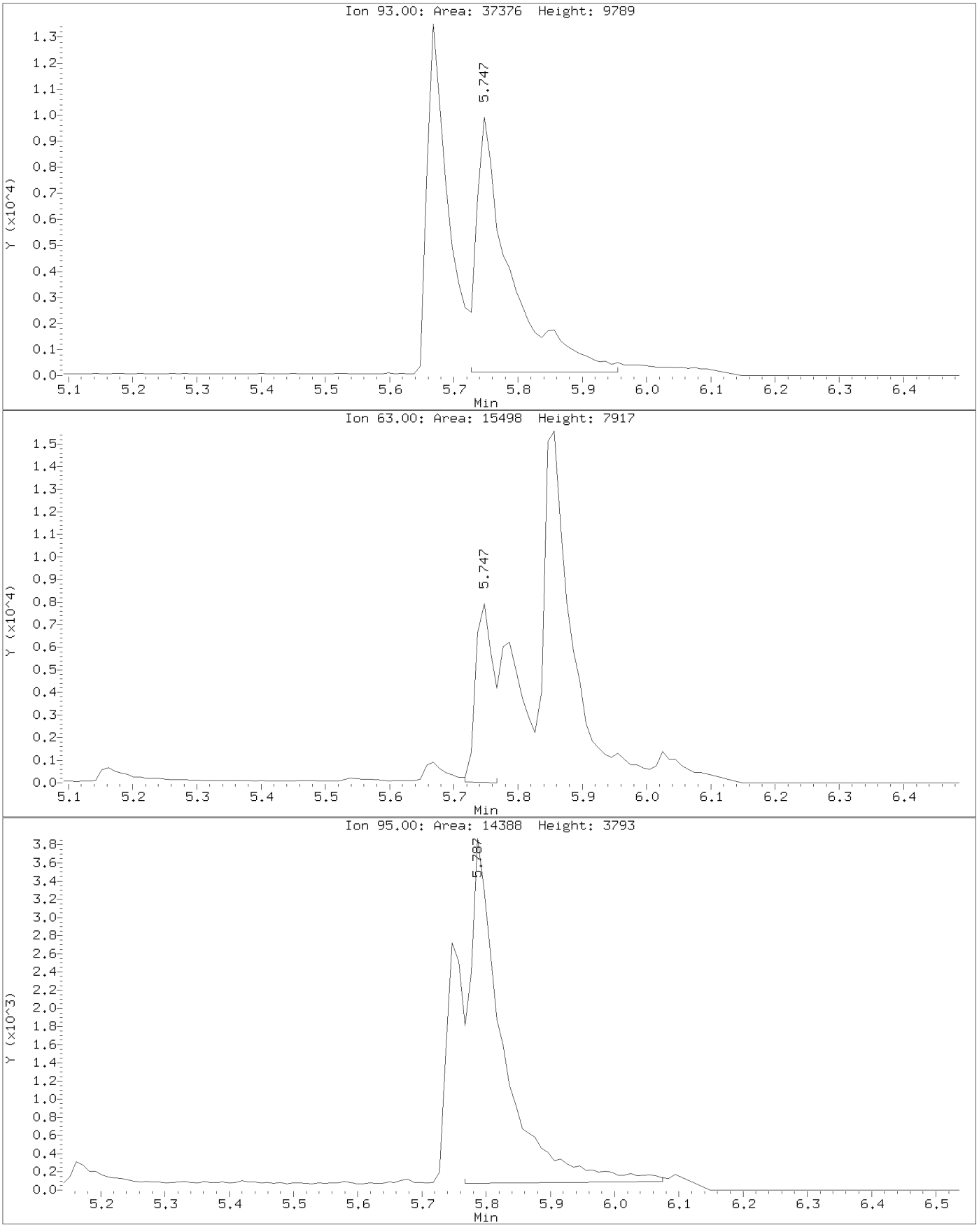
BEFORE MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0702.D
Injection Date: 07-MAY-2018 11:56
Instrument: gcms-u.i
Client Sample ID:

Compound: Bis(2-Chloroethyl)ether
CAS Number: 111-44-4

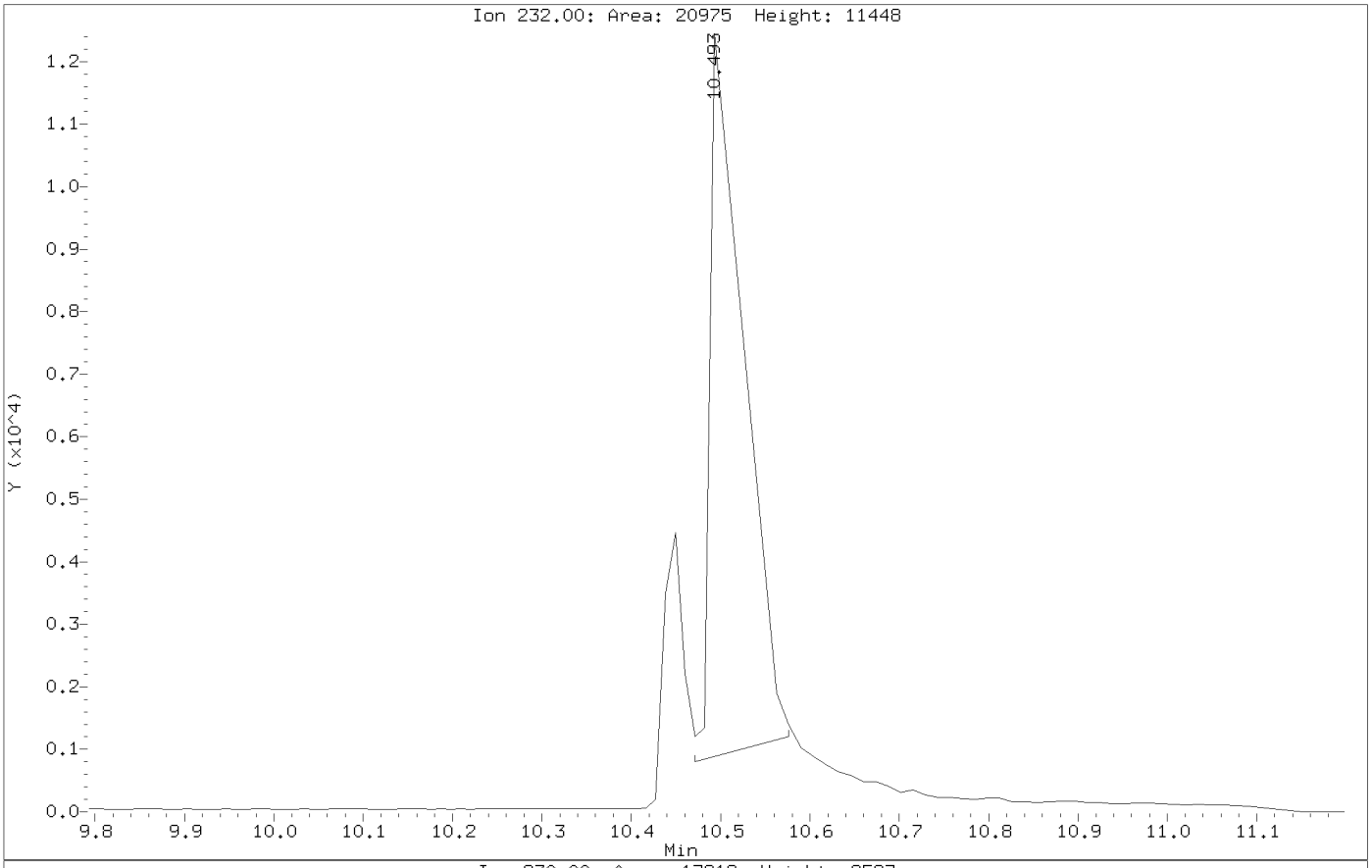
AFTER MANUAL INTEGRATION

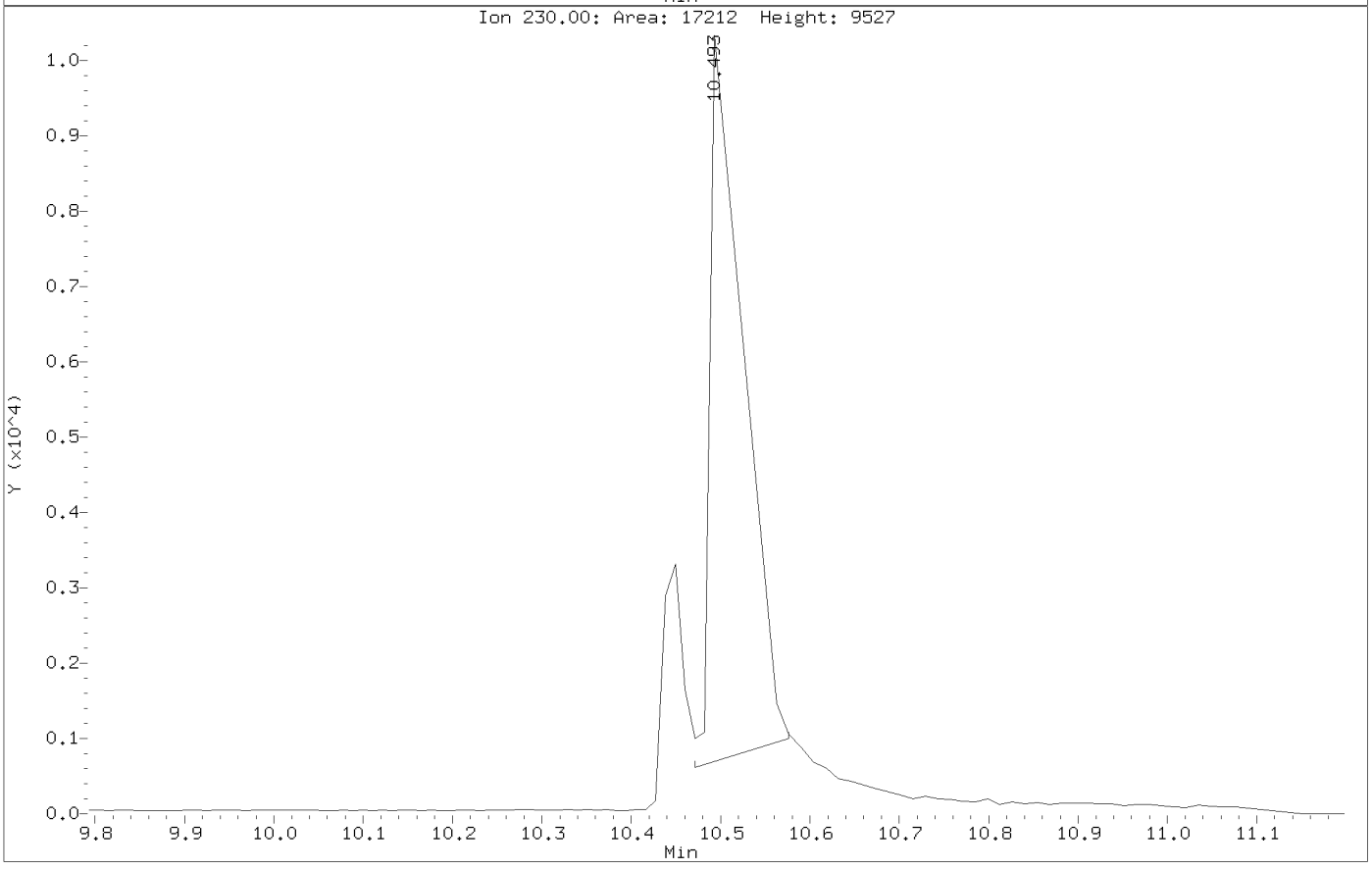


BEFORE MANUAL INTEGRATION

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0702.D
Injection Date: 07-MAY-2018 11:56
Instrument: gcms-u.i
Client Sample ID:

Compound: 2,3,4,6-Tetrachlorophenol
CAS Number: 58-90-2

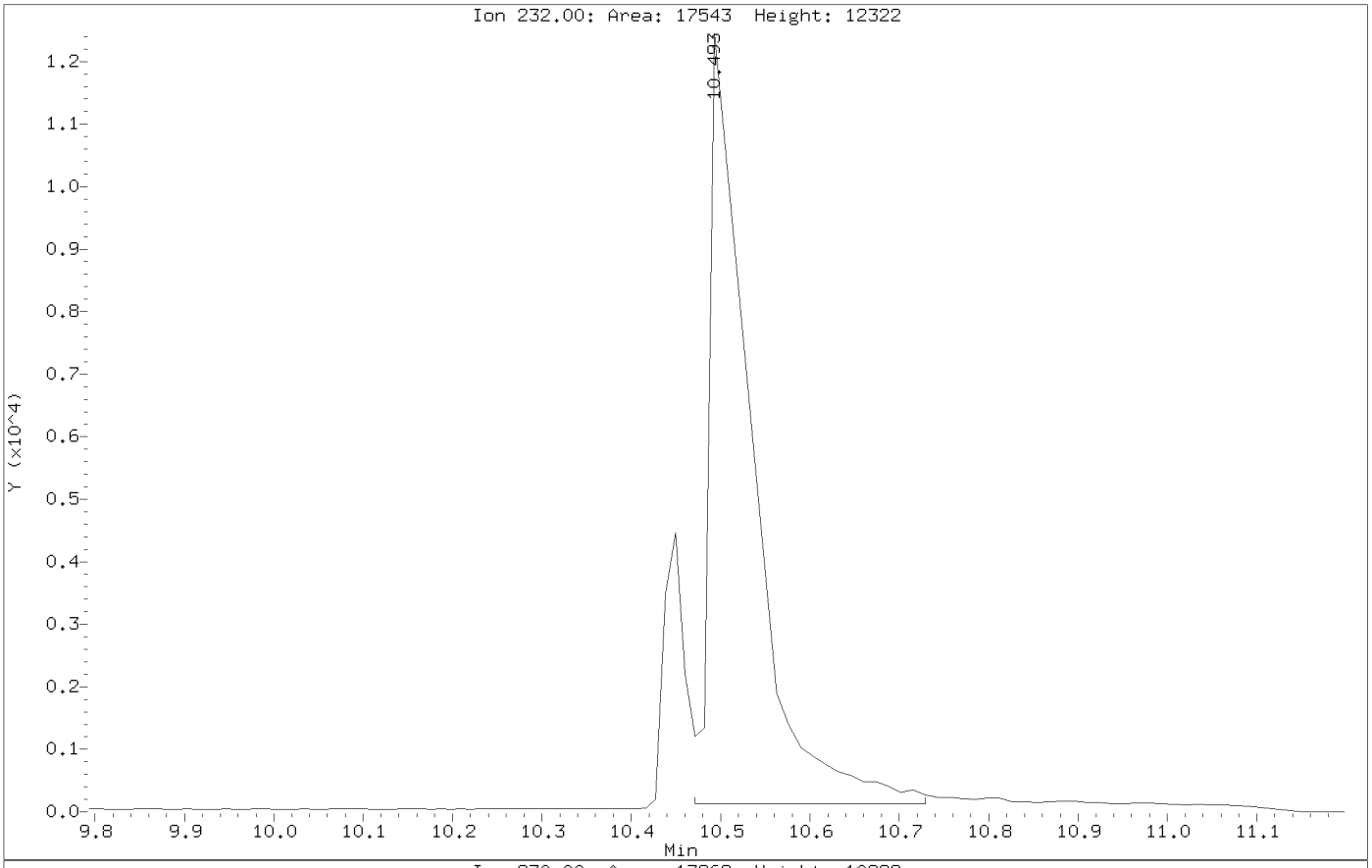


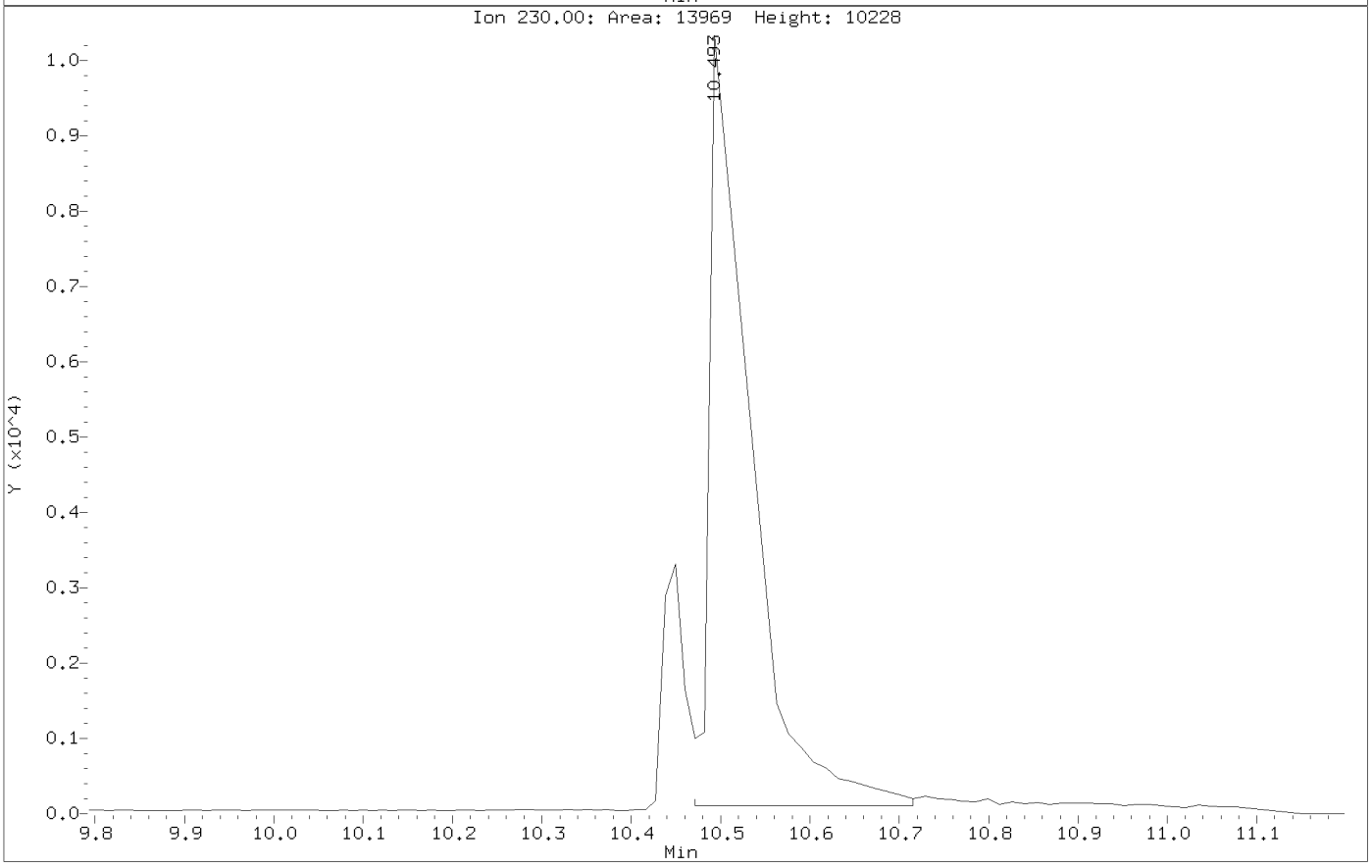


Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0702.D
Injection Date: 07-MAY-2018 11:56
Instrument: gcms-u.i
Client Sample ID:

Compound: 2,3,4,6-Tetrachlorophenol
CAS Number: 58-90-2

AFTER MANUAL INTEGRATION





Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227762-9
Analytical Date: 05/07/18 21:50
Lab File ID : U0721.D
Instrument ID: GCMS-U
Initial Calibration Date(s): 05/07/18 10:52 05/07/18 13:29
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	0.76238	0.83830	0.83830	0.010	9.95841	20.00000	Averaged	
33 2-Methylnaphthalene	0.18453	0.19636	0.19636	0.010	6.40901	20.00000	Averaged	
45 Acenaphthylene	1.52210	1.73860	1.73860	0.010	14.22376	20.00000	Averaged	
48 Acenaphthene	0.97981	1.05567	1.05567	0.010	7.74230	20.01000	Averaged	
56 Fluorene	1.11313	1.23213	1.23213	0.010	10.69096	20.00000	Averaged	
66 Phenanthrene	0.93970	1.00476	1.00476	0.010	6.92340	20.00000	Averaged	
67 Anthracene	0.98314	1.03724	1.03724	0.010	5.50265	20.00000	Averaged	
70 Fluoranthene	0.99283	1.00897	1.00897	0.010	1.62595	20.01000	Averaged	
72 Pyrene	2.00000	2.37455	1.55359	0.010	18.72751	20.00000	Linear	
74 Benzo(a)anthracene	0.90159	0.85496	0.85496	0.010	-5.17214	20.00000	Averaged	
77 Chrysene	2.00000	2.41568	1.25883	0.010	20.78390	20.00000	Linear	*
80 Benzo(b)fluoranthene	2.00000	1.83891	0.92550	0.010	-8.05467	20.00000	Linear	
81 Benzo(k)fluoranthene	2.00000	2.11691	1.48139	0.010	5.84570	20.00000	Linear	
82 Benzo(a)pyrene	1.08340	1.05315	1.05315	0.010	-2.79222	20.01000	Averaged	
84 Indeno(1,2,3-cd)pyrene	2.00000	1.64742	0.70631	0.010	-17.62908	20.00000	Linear	
85 Dibenzo(a,h)anthracene	2.00000	1.61783	0.49485	0.010	-19.10854	20.00000	Linear	
86 Benzo(g,h,i)perylene	2.00000	1.75917	0.72579	0.010	-12.04154	20.00000	Linear	
32 2-Methylnaphthalene-D10	0.96460	1.07247	1.07247	0.010	11.18287	20.00000	Averaged	
55 Fluorene-D10	0.81465	0.92300	0.92300	0.010	13.30050	20.00000	Averaged	
71 Pyrene-D10	0.95015	1.05572	1.05572	0.010	11.11064	20.00000	Averaged	

*** = Compound out of QC criteria**

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0721.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0721.D
Lab Smp Id: WG227762-9
Inj Date : 07-MAY-2018 21:50 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227762-9,SL3808
Misc Info : WG227762,WG227762,WG227762-4,SL3808-2
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 23 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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

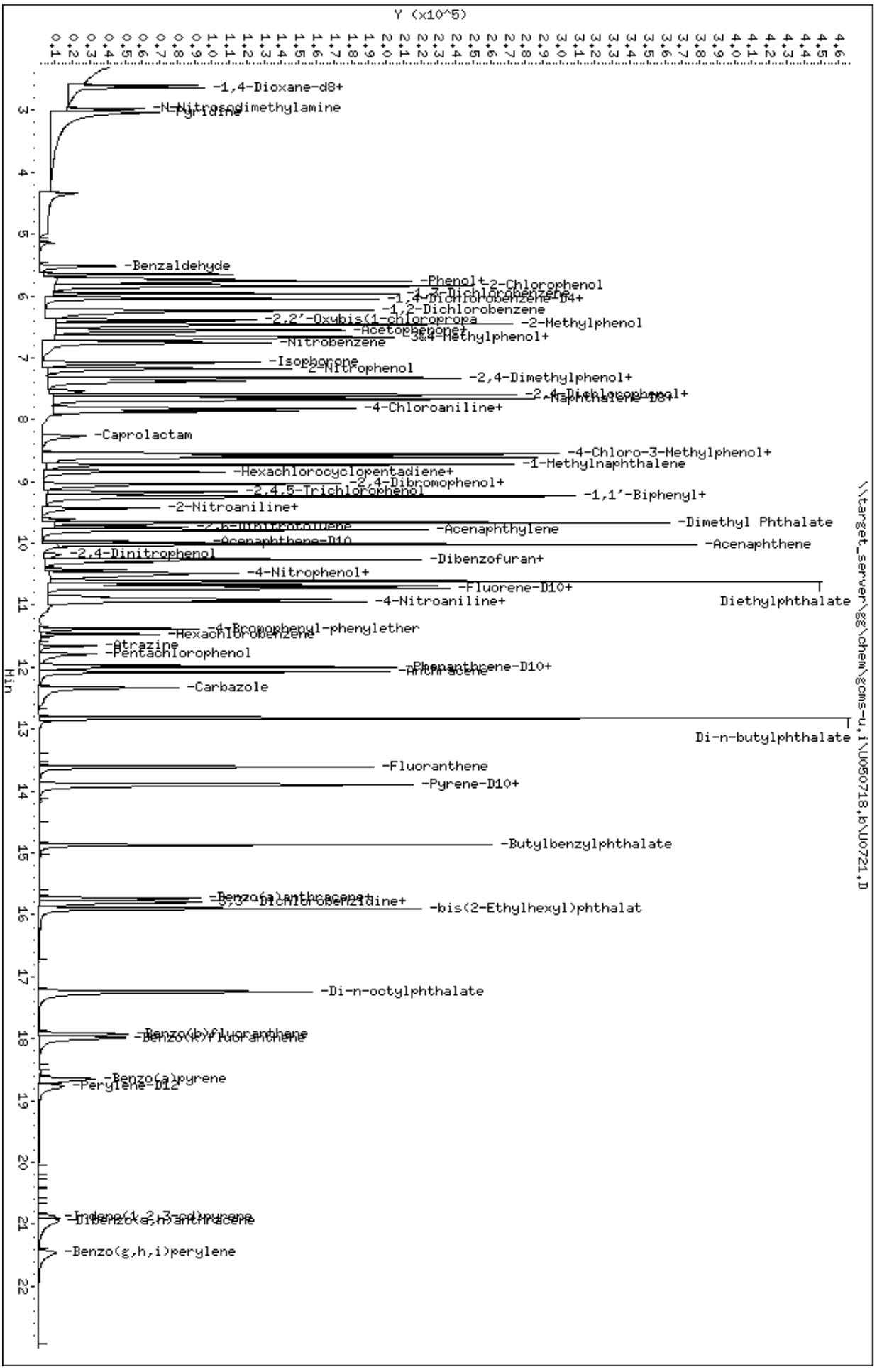
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	6.025	6.025	(1.000)	39728	0.80000	(a)	
*	26 Naphthalene-D8	136	7.646	7.647	(1.000)	108449	0.80000	(a)	
	27 Naphthalene	128	7.671	7.672	(1.003)	227283	2.00000	2.20	
$	32 2-Methylnaphthalene-D10	152	8.563	8.551	(0.859)	125425	2.00000	2.22	
	33 2-Methylnaphthalene	115	8.601	8.589	(1.125)	53237	2.00000	2.13	
	45 Acenaphthylene	152	9.782	9.771	(0.981)	203329	2.00000	2.28	
*	47 Acenaphthene-D10	164	9.967	9.968	(1.000)	46780	0.80000	(a)	
	48 Acenaphthene	153	10.011	10.012	(1.004)	123461	2.00000	2.15	
$	55 Fluorene-D10	174	10.673	10.673	(1.071)	107945	2.00000	2.27	
	56 Fluorene	166	10.715	10.701	(1.075)	144098	2.00000	2.21	
*	65 Phenanthrene-D10	188	11.966	11.955	(1.000)	80735	0.80000	(a)	
	66 Phenanthrene	178	12.001	11.990	(1.003)	202799	2.00000	2.14	
	67 Anthracene	178	12.071	12.059	(1.009)	209353	2.00000	2.11	
	70 Fluoranthene	202	13.604	13.594	(1.137)	203648	2.00000	2.03	
$	71 Pyrene-D10	212	13.885	13.875	(0.882)	145449	2.00000	2.22	
	72 Pyrene	202	13.905	13.895	(0.883)	214042	2.00000	2.37	
	74 Benzo(a)anthracene	228	15.725	15.706	(0.999)	117790	2.00000	1.90	
*	76 Chrysene-D12	240	15.745	15.726	(1.000)	55109	0.80000	(a)	
	77 Chrysene	228	15.793	15.774	(1.003)	173432	2.00000	2.42	
	80 Benzo(b)fluoranthene	252	17.922	17.887	(0.955)	87964	2.00000	1.84	

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0721.D
Report Date: 14-May-2018 11:16

	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	17.990	17.956	(0.958)	140799	2.00000	2.12(H)	
82	Benzo(a)pyrene	252	18.650	18.616	(0.993)	100097	2.00000	1.94	
* 83	Perylene-D12	264	18.776	18.753	(1.000)	38018	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	20.874	20.817	(1.112)	67131	2.00000	1.65	
85	Dibenzo(a,h)anthracene	278	20.950	20.874	(1.116)	47033	2.00000	1.62	
86	Benzo(g,h,i)perylene	276	21.466	21.399	(1.143)	68983	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-u,i\U050718,b\U0721.D
Date : 07-MAY-2018 21:50
Client ID:
Sample Info: WG227762-9,SL3808
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-u,i\U050718,b\U0721.D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine
-Pyridine
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-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+
-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
-Acenaphthylene
-Acenaphthene-D10
-Acenaphthene
-2,4-Dinitrophenol
-Dibenzofuran+
-4-Nitrophenol+
-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+
-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
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227838-2
Analytical Date: 05/08/18 10:57
Lab File ID : U0723.D
Instrument ID: GCMS-U
Initial Calibration Date(s): 05/07/18 10:52 05/07/18 13:29
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	0.76238	0.80826	0.80826	0.010	6.01799	20.00000	Averaged	
33 2-Methylnaphthalene	0.18453	0.19821	0.19821	0.010	7.41125	20.00000	Averaged	
45 Acenaphthylene	1.52210	1.62157	1.62157	0.010	6.53532	20.00000	Averaged	
48 Acenaphthene	0.97981	0.99883	0.99883	0.010	1.94111	20.01000	Averaged	
56 Fluorene	1.11313	1.18195	1.18195	0.010	6.18245	20.00000	Averaged	
66 Phenanthrene	0.93970	1.00923	1.00923	0.010	7.39896	20.00000	Averaged	
67 Anthracene	0.98314	1.05088	1.05088	0.010	6.89100	20.00000	Averaged	
70 Fluoranthene	0.99283	1.02508	1.02508	0.010	3.24817	20.01000	Averaged	
72 Pyrene	2.00000	2.41723	1.58001	0.010	20.86133	20.00000	Linear	*
74 Benzo(a)anthracene	0.90159	0.89052	0.89052	0.010	-1.22812	20.00000	Averaged	
77 Chrysene	2.00000	2.38284	1.24276	0.010	19.14201	20.00000	Linear	
80 Benzo(b)fluoranthene	2.00000	1.84236	0.92729	0.010	-7.88208	20.00000	Linear	
81 Benzo(k)fluoranthene	2.00000	2.13567	1.49362	0.010	6.78369	20.00000	Linear	
82 Benzo(a)pyrene	1.08340	0.94973	0.94973	0.010	-12.33839	20.01000	Averaged	
84 Indeno(1,2,3-cd)pyrene	2.00000	1.64174	0.70382	0.010	-17.91307	20.00000	Linear	
85 Dibenzo(a,h)anthracene	2.00000	1.61961	0.49544	0.010	-19.01944	20.00000	Linear	
86 Benzo(g,h,i)perylene	2.00000	1.75433	0.72389	0.010	-12.28327	20.00000	Linear	
32 2-Methylnaphthalene-D10	0.96460	0.99837	0.99837	0.010	3.50149	20.00000	Averaged	
55 Fluorene-D10	0.81465	0.86587	0.86587	0.010	6.28791	20.00000	Averaged	
71 Pyrene-D10	0.95015	1.05418	1.05418	0.010	10.94889	20.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0723.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050818.b\U0723.D
Lab Smp Id: WG227838-2
Inj Date : 08-MAY-2018 10:57 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227838-2,SL3808
Misc Info : WG227838,WG227838,WG227762-4,SL3808-15
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050818.b\USPSIM36.m
Meth Date : 09-May-2018 09:27 gcms-u.i Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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

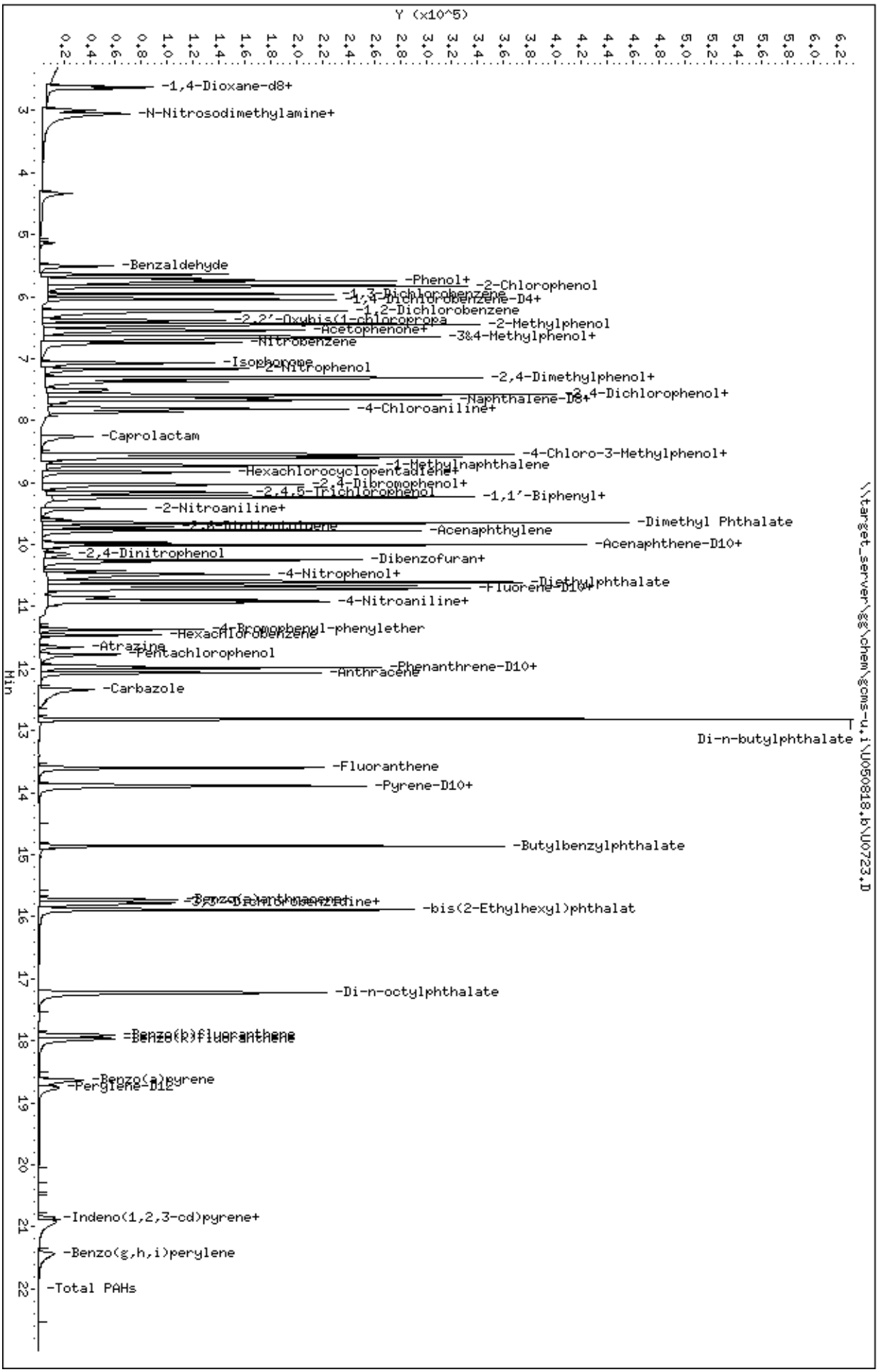
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	6.025	6.025	(1.000)	46490	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.646	7.647	(1.000)	127174	0.80000	(a)	
	27 Naphthalene	128	7.671	7.672	(1.003)	256975	2.00000	2.12(a)	
$	32 2-Methylnaphthalene-D10	152	8.551	8.551	(0.858)	143239	2.00000	2.07	
	33 2-Methylnaphthalene	115	8.588	8.589	(1.123)	63017	2.00000	2.15(aQ)	
	45 Acenaphthylene	152	9.772	9.771	(0.980)	232651	2.00000	2.13(a)	
*	47 Acenaphthene-D10	164	9.969	9.968	(1.000)	57389	0.80000	(a)	
	48 Acenaphthene	153	10.002	10.012	(1.003)	143305	2.00000	2.04(a)	
$	55 Fluorene-D10	174	10.660	10.673	(1.069)	124229	2.00000	2.12	
	56 Fluorene	166	10.702	10.701	(1.074)	169577	2.00000	2.12(a)	
*	65 Phenanthrene-D10	188	11.954	11.955	(1.000)	88946	0.80000	(a)	
	66 Phenanthrene	178	11.989	11.990	(1.003)	224418	2.00000	2.15(a)	
	67 Anthracene	178	12.059	12.059	(1.009)	233680	2.00000	2.14(a)	
	70 Fluoranthene	202	13.594	13.594	(1.137)	227941	2.00000	2.06(a)	
$	71 Pyrene-D10	212	13.874	13.875	(0.882)	161809	2.00000	2.22	
	72 Pyrene	202	13.894	13.895	(0.883)	242520	2.00000	2.42(a)	
	74 Benzo(a)anthracene	228	15.715	15.706	(0.999)	136688	2.00000	1.98(a)	
*	76 Chrysene-D12	240	15.735	15.726	(1.000)	61397	0.80000	(a)	
	77 Chrysene	228	15.774	15.774	(1.002)	190754	2.00000	2.38(a)	
	80 Benzo(b)fluoranthene	252	17.900	17.887	(0.954)	100477	2.00000	1.84(a)	
	81 Benzo(k)fluoranthene	252	17.968	17.956	(0.958)	161841	2.00000	2.14(aH)	

Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0723.D
Report Date: 14-May-2018 11:16

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	82 Benzo(a)pyrene	252	18.640	18.616	(0.993)	102908	2.00000	1.75(a)	
*	83 Perylene-D12	264	18.766	18.753	(1.000)	43342	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.856	20.817	(1.111)	76262	2.00000	1.64(a)	
	85 Dibenzo(a,h)anthracene	278	20.932	20.874	(1.115)	53683	2.00000	1.62(a)	
	86 Benzo(g,h,i)perylene	276	21.439	21.399	(1.142)	78437	2.00000	1.75(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-u,i\U050818,b\U0723,D
Date : 08-MAY-2018 10:57
Client ID:
Sample Info: WG227838-2,SL3808
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-u,i\U050818,b\U0723,D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-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+
-Naphthalene-D8+
-2,4-Dichlorophenol+
-4-Chloroaniline+
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline+
-Dimethyl Phthalate
-Acenaphthylene
-Acenaphthene-D10+
-2,4-Dinitrophenol
-Dibenzofuran+
-4-Nitrophenol+
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene
-Total PAHs

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227838-3
Analytical Date: 05/08/18 22:26
Lab File ID : U0745.D
Instrument ID: GCMS-U
Initial Calibration Date(s): 05/07/18 10:52 05/07/18 13:29
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	0.76238	0.80602	0.80602	0.010	5.72440	20.00000	Averaged
33 2-Methylnaphthalene	0.18453	0.20010	0.20010	0.010	8.43607	20.00000	Averaged
45 Acenaphthylene	1.52210	1.58721	1.58721	0.010	4.27801	20.00000	Averaged
48 Acenaphthene	0.97981	0.97099	0.97099	0.010	-0.90013	20.01000	Averaged
56 Fluorene	1.11313	1.16690	1.16690	0.010	4.83066	20.00000	Averaged
66 Phenanthrene	0.93970	0.94116	0.94116	0.010	0.15479	20.00000	Averaged
67 Anthracene	0.98314	1.01819	1.01819	0.010	3.56547	20.00000	Averaged
70 Fluoranthene	0.99283	0.95986	0.95986	0.010	-3.32008	20.01000	Averaged
72 Pyrene	2.00000	2.31615	1.51744	0.010	15.80772	20.00000	Linear
74 Benzo(a)anthracene	0.90159	0.94494	0.94494	0.010	4.80776	20.00000	Averaged
77 Chrysene	2.00000	2.29199	1.19830	0.010	14.59973	20.00000	Linear
80 Benzo(b)fluoranthene	2.00000	1.85433	0.93353	0.010	-7.28334	20.00000	Linear
81 Benzo(k)fluoranthene	2.00000	2.20777	1.54060	0.010	10.38850	20.00000	Linear
82 Benzo(a)pyrene	1.08340	1.01710	1.01710	0.010	-6.11975	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	1.64320	0.70446	0.010	-17.84000	20.00000	Linear
85 Dibenzo(a,h)anthracene	2.00000	1.68791	0.51791	0.010	-15.60467	20.00000	Linear
86 Benzo(g,h,i)perylene	2.00000	1.63807	0.67810	0.010	-18.09639	20.00000	Linear
32 2-Methylnaphthalene-D10	0.96460	0.99143	0.99143	0.010	2.78202	20.00000	Averaged
55 Fluorene-D10	0.81465	0.85758	0.85758	0.010	5.26937	20.00000	Averaged
71 Pyrene-D10	0.95015	1.06528	1.06528	0.010	12.11686	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0745.D
Report Date: 14-May-2018 11:21

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050818.b\U0745.D
Lab Smp Id: WG227838-3 Client Smp ID: ontinuing Calibrati
Inj Date : 08-MAY-2018 22:26 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227838-3,SL3808
Misc Info : WG227838,WG227838,WG227762-4,SL3808-15
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050818.b\USPSIM36.m
Meth Date : 09-May-2018 09:27 gcms-u.i Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 24 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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

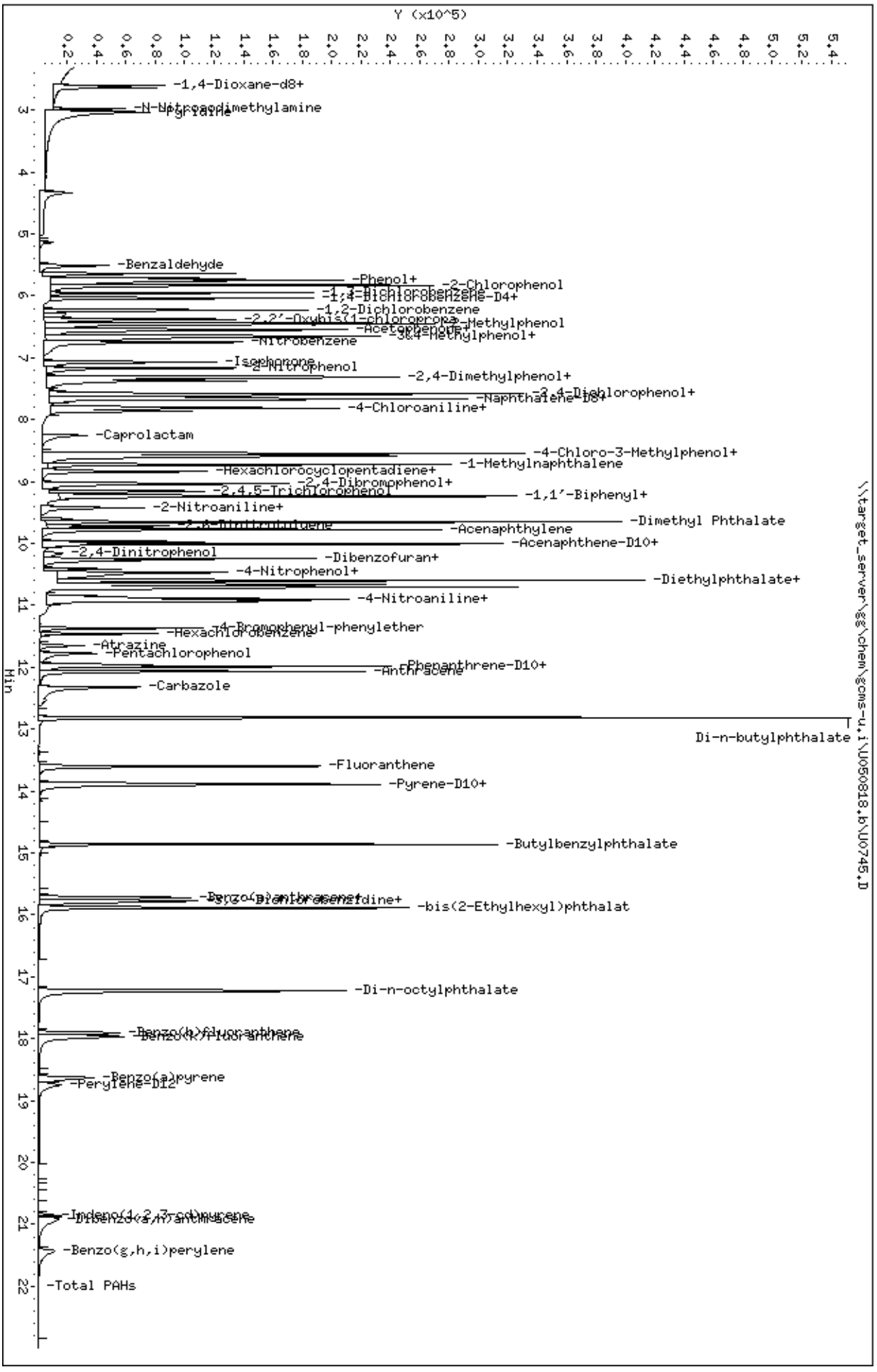
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	6.025	6.025	(1.000)	43462	0.80000	(a)	
*	26 Naphthalene-D8	136	7.647	7.647	(1.000)	115995	0.80000	(a)	
	27 Naphthalene	128	7.672	7.672	(1.003)	233737	2.00000	2.11(a)	
$	32 2-Methylnaphthalene-D10	152	8.550	8.551	(0.858)	133831	2.00000	2.06	
	33 2-Methylnaphthalene	115	8.587	8.589	(1.123)	58026	2.00000	2.17(a)	
	45 Acenaphthylene	152	9.771	9.771	(0.980)	214254	2.00000	2.08(a)	
*	47 Acenaphthene-D10	164	9.968	9.968	(1.000)	53995	0.80000	(a)	
	48 Acenaphthene	153	10.001	10.012	(1.003)	131072	2.00000	1.98(a)	
$	55 Fluorene-D10	174	10.659	10.673	(1.069)	115762	2.00000	2.10	
	56 Fluorene	166	10.701	10.701	(1.074)	157517	2.00000	2.10(a)	
*	65 Phenanthrene-D10	188	11.955	11.955	(1.000)	90389	0.80000	(a)	
	66 Phenanthrene	178	11.990	11.990	(1.003)	212676	2.00000	2.00(a)	
	67 Anthracene	178	12.060	12.059	(1.009)	230083	2.00000	2.07(a)	
	70 Fluoranthene	202	13.604	13.594	(1.138)	216903	2.00000	1.93(a)	
$	71 Pyrene-D10	212	13.875	13.875	(0.882)	156391	2.00000	2.24	
	72 Pyrene	202	13.895	13.895	(0.884)	222771	2.00000	2.32(a)	
	74 Benzo(a)anthracene	228	15.716	15.706	(0.999)	138724	2.00000	2.10(a)	
*	76 Chrysene-D12	240	15.726	15.726	(1.000)	58723	0.80000	(a)	
	77 Chrysene	228	15.775	15.774	(1.003)	175919	2.00000	2.29(a)	
	80 Benzo(b)fluoranthene	252	17.910	17.887	(0.955)	93936	2.00000	1.85(a)	
	81 Benzo(k)fluoranthene	252	17.967	17.956	(0.958)	155023	2.00000	2.21(aH)	

Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0745.D
Report Date: 14-May-2018 11:21

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	82 Benzo(a)pyrene	252	18.628	18.616	(0.993)	102346	2.00000	1.88(a)	
*	83 Perylene-D12	264	18.753	18.753	(1.000)	40250	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.855	20.817	(1.112)	70886	2.00000	1.64(a)	
	85 Dibenzo(a,h)anthracene	278	20.922	20.874	(1.116)	52115	2.00000	1.69(a)	
	86 Benzo(g,h,i)perylene	276	21.438	21.399	(1.143)	68234	2.00000	1.64(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-u,i\U050818,b\U0745.D
Date : 08-MAY-2018 22:26
Client ID: ontinuing Calibrati
Sample Info: WG227838-3,SL3808
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-u,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-u,i\U050818,b\U0745.D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine
-Pyridine
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropa
-Acetophenone
-3&4-Methylphenol+
-2-Methylphenol
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol+
-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
-Acenaphthylene
-Acenaphthene-D10+
-2,4-Dinitrophenol
-Dibenzofuran+
-4-Nitrophenol+
-Diethylphthalate+
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-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
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene
-Total PAHs

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\UD891.D

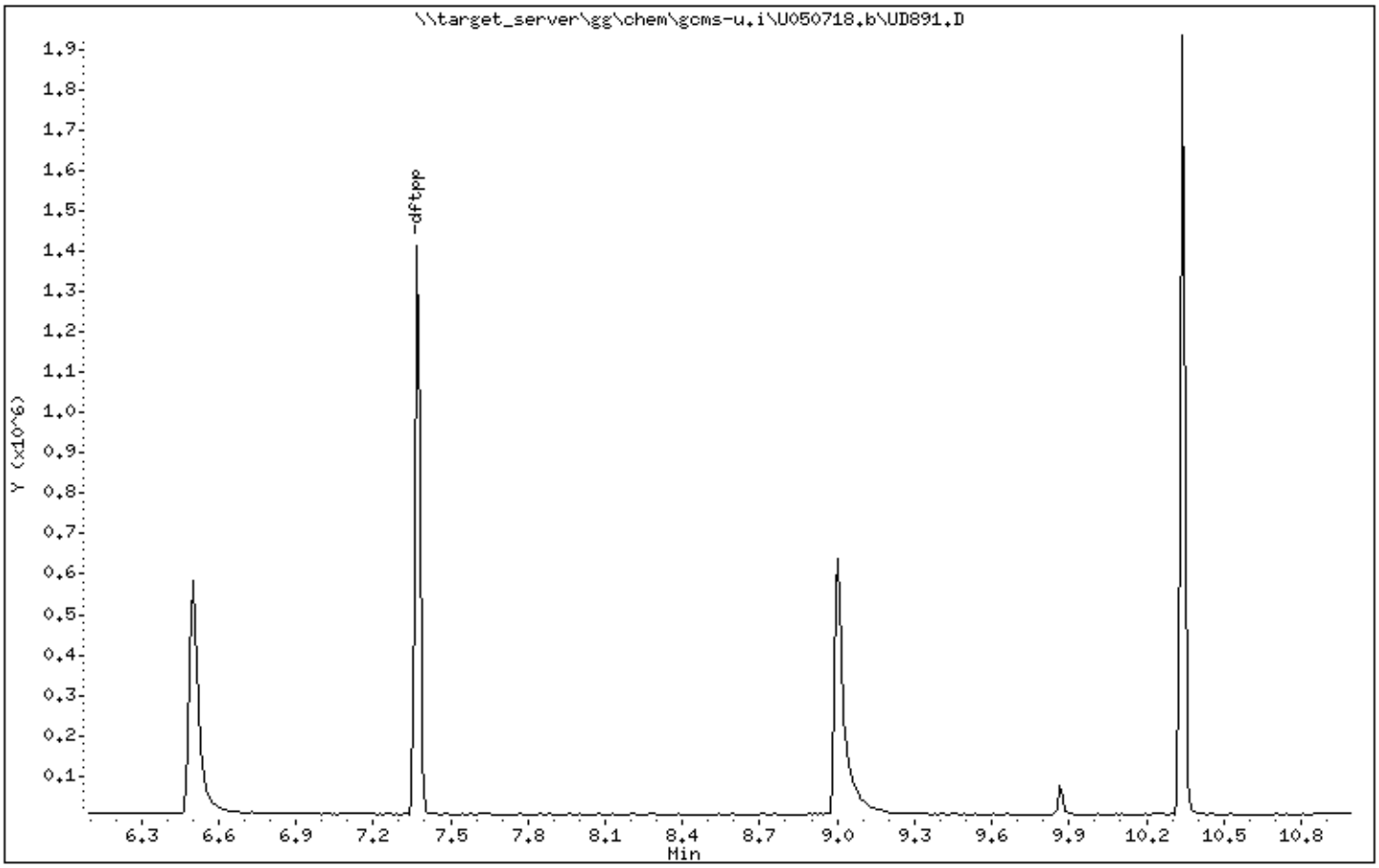
Date : 07-MAY-2018 10:33

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG227762-1,SL3808

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



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Date : 07-MAY-2018 10:33

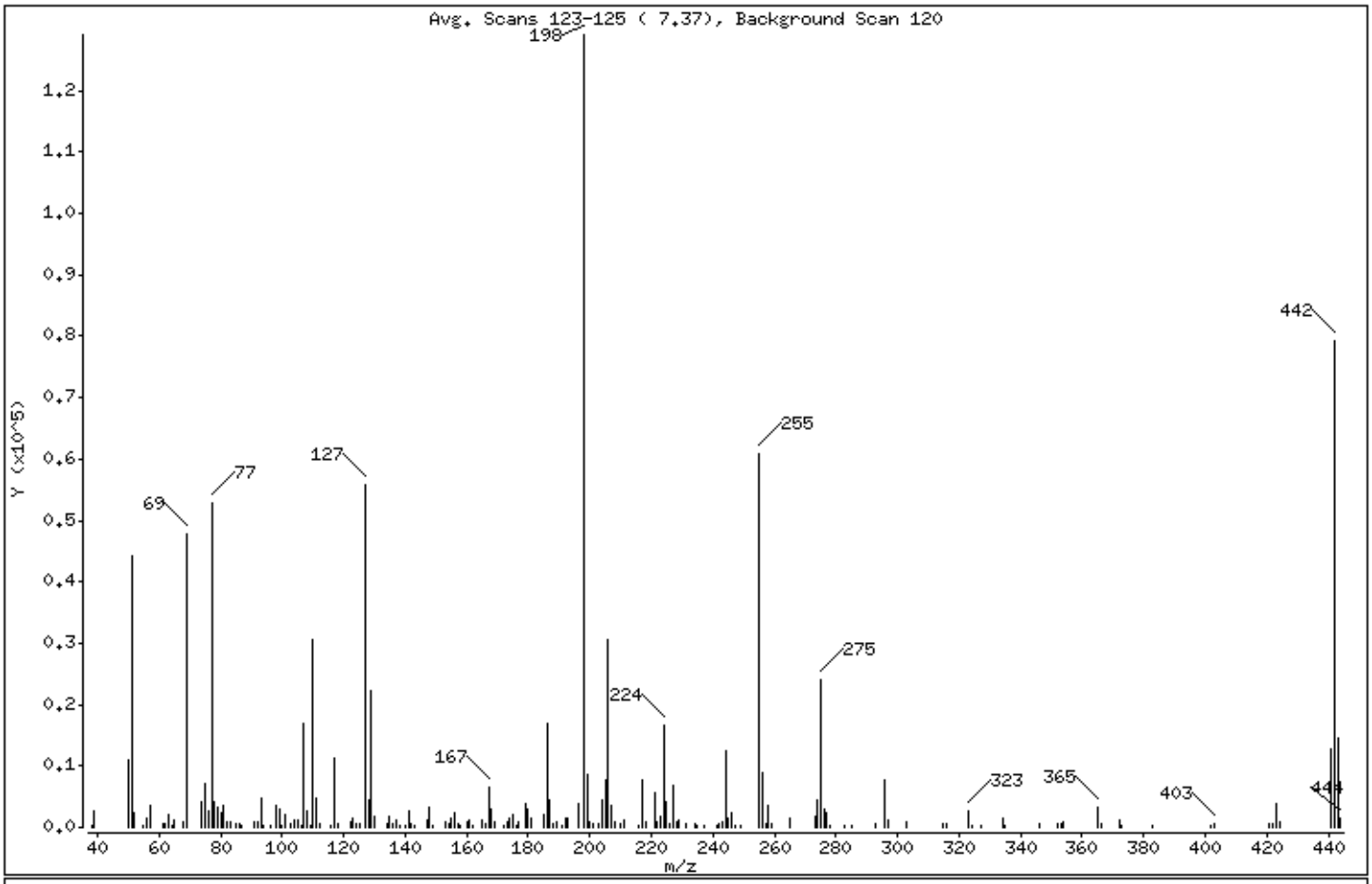
Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG227762-1,SL3808

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	34.14
68	Less than 2.00% of mass 69	0.58 (1.56)
69	Less than 100.00% of mass 198	37.10
70	Less than 2.00% of mass 69	0.00 (0.00)
127	40.00 - 60.00% of mass 198	43.25
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.76
275	10.00 - 30.00% of mass 198	18.58
365	1.00 - 100.00% of mass 198	2.42
441	0.01 - 100.00% of mass 443	9.99 (87.90)
442	40.00 - 100.00% of mass 198	61.38
443	17.00 - 23.00% of mass 442	11.37 (18.52)

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\UD891.D

Date : 07-MAY-2018 10:33

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG227762-1,SL3808

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: UD891.D
Spectrum: Avg. Scans 123-125 (7.37), Background Scan 120
Location of Maximum: 198.00
Number of points: 182

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	304	112.00	588	181.00	1470	255.00	60960
39.00	2771	116.00	333	185.00	2159	256.00	8940
50.00	10941	117.00	11234	186.00	16872	257.00	598
51.00	44088	118.00	698	187.00	4578	258.00	3563
52.00	2257	122.00	808	188.00	488	259.00	462
55.00	239	123.00	1546	189.00	872	265.00	1456
56.00	1570	124.00	537	191.00	238	273.00	1642
57.00	3604	125.00	588	192.00	1350	274.00	4567
61.00	549	127.00	55848	193.00	1511	275.00	23992
62.00	549	128.00	4418	196.00	3804	276.00	3051
63.00	2164	129.00	22216	198.00	129128	277.00	2303
64.00	171	130.00	1896	199.00	8725	278.00	210
65.00	1068	134.00	515	200.00	790	283.00	268
68.00	748	135.00	1642	201.00	653	285.00	170
69.00	47912	136.00	517	203.00	627	293.00	602
74.00	4078	137.00	1141	204.00	4418	296.00	7658
75.00	7088	138.00	219	205.00	7688	297.00	1189
76.00	2597	140.00	218	206.00	30432	303.00	872
77.00	52840	141.00	2643	207.00	3495	315.00	588
78.00	4017	142.00	670	208.00	766	316.00	516
79.00	3230	143.00	327	210.00	455	323.00	2690
80.00	2248	147.00	1220	211.00	1097	324.00	199
81.00	3645	148.00	3303	216.00	414	327.00	393
82.00	830	149.00	391	217.00	7632	334.00	1482
83.00	990	153.00	896	218.00	1004	335.00	205
85.00	594	154.00	522	221.00	5636	346.00	498
86.00	709	155.00	1451	222.00	838	352.00	645
87.00	274	156.00	2452	223.00	1815	353.00	483
91.00	810	157.00	480	224.00	16632	354.00	743
92.00	878	158.00	207	225.00	4119	365.00	3122
93.00	4832	160.00	955	226.00	525	366.00	519
94.00	223	161.00	1285	227.00	6799	372.00	1254
96.00	171	162.00	185	228.00	874	373.00	171
98.00	3483	165.00	1207	229.00	1276	383.00	170
99.00	3077	166.00	713	231.00	454	402.00	330

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\UD891.D

Date : 07-MAY-2018 10:33

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG227762-1,SL3808

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: UD891.D
Spectrum: Avg. Scans 123-125 (7.37), Background Scan 120
Location of Maximum: 198.00
Number of points: 182

m/z	Y	m/z	Y	m/z	Y	m/z	Y
100.00	248	167.00	6667	234.00	448	403.00	680
101.00	2056	168.00	2828	235.00	206	421.00	537
103.00	724	169.00	757	237.00	433	422.00	502
104.00	1244	172.00	307	241.00	295	423.00	3826
105.00	1266	173.00	837	242.00	606	424.00	798
106.00	243	174.00	1387	243.00	879	441.00	12906
107.00	16808	175.00	1988	244.00	12366	442.00	79264
108.00	2536	176.00	421	245.00	1561	443.00	14683
109.00	283	177.00	998	246.00	2321	444.00	1360
110.00	30584	179.00	3820	247.00	252		
111.00	4623	180.00	2956	249.00	227		

Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\UD892.D

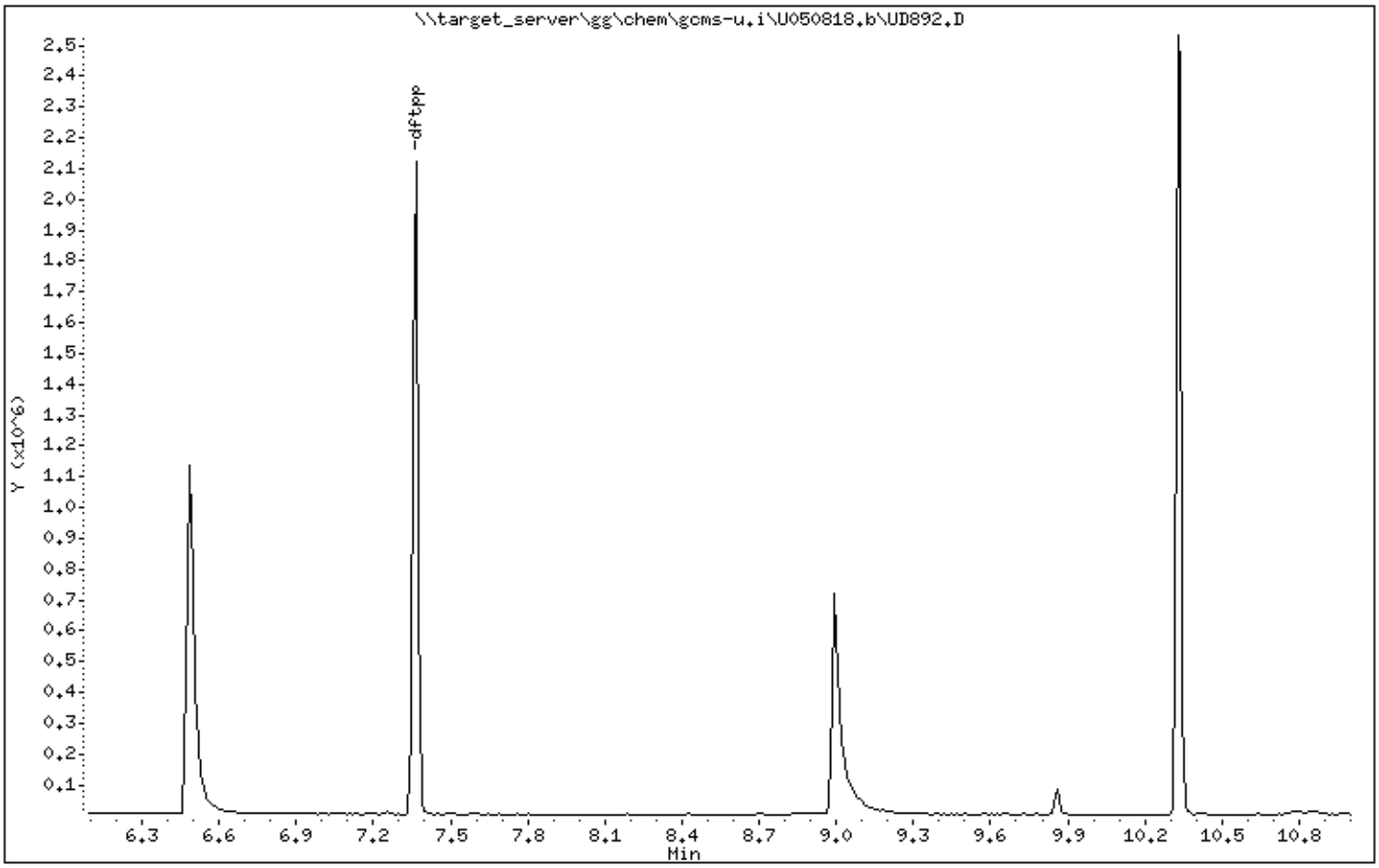
Date : 08-MAY-2018 10:39

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG227838-1,SL3808

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\UD892.D

Date : 08-MAY-2018 10:39

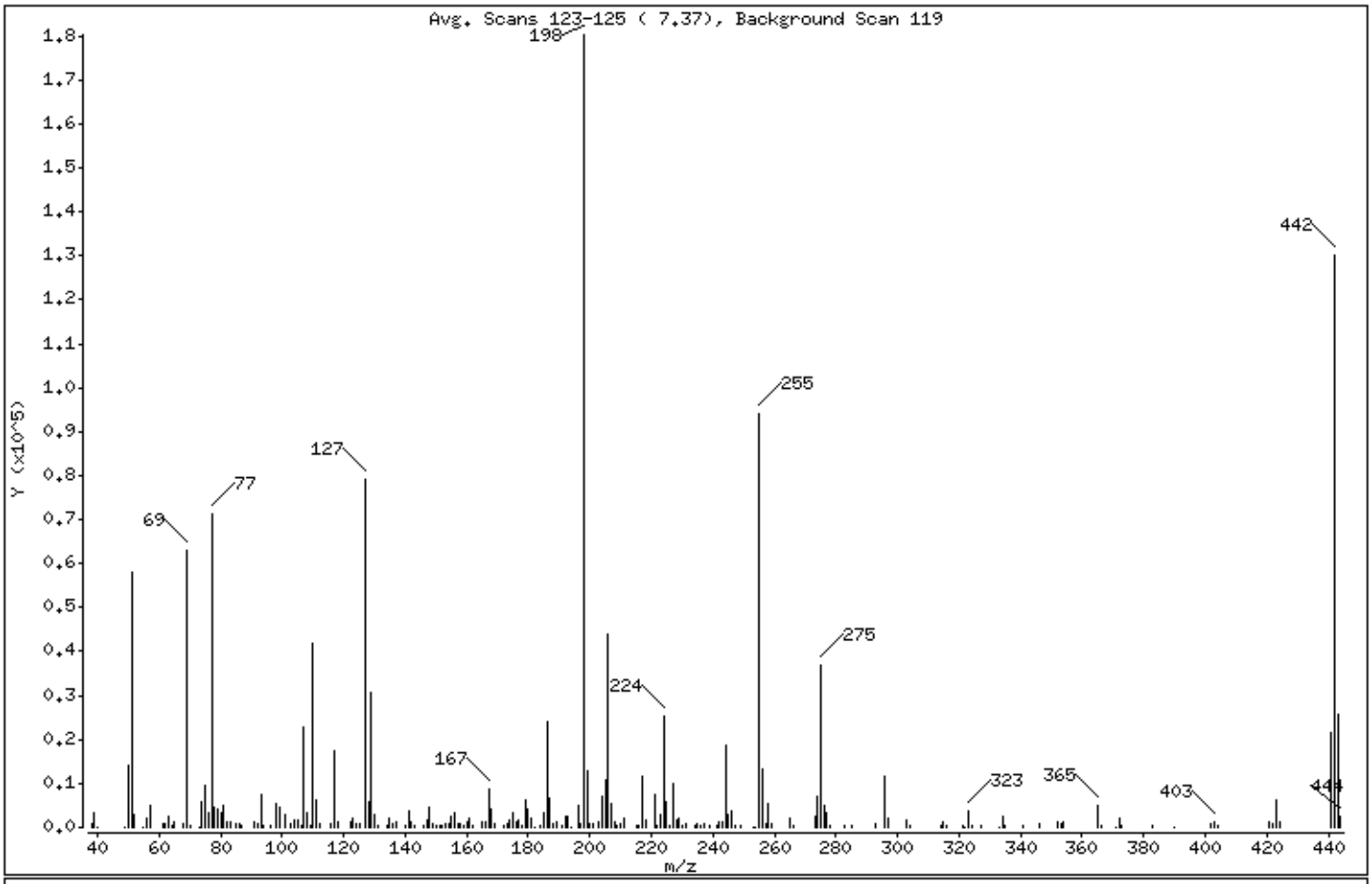
Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG227838-1,SL3808

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	32.25
68	Less than 2.00% of mass 69	0.55 (1.57)
69	Less than 100.00% of mass 198	35.05
70	Less than 2.00% of mass 69	0.21 (0.59)
127	40.00 - 60.00% of mass 198	43.96
197	Less than 1.00% of mass 198	0.41
199	5.00 - 9.00% of mass 198	7.15
275	10.00 - 30.00% of mass 198	20.50
365	1.00 - 100.00% of mass 198	2.80
441	0.01 - 100.00% of mass 443	11.98 (84.05)
442	40.00 - 100.00% of mass 198	72.19
443	17.00 - 23.00% of mass 442	14.25 (19.74)

Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\UD892.D

Date : 08-MAY-2018 10:39

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG227838-1,SL3808

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: UD892.D
Spectrum: Avg. Scans 123-125 (7.37), Background Scan 119
Location of Maximum: 198.00
Number of points: 212

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	672	123.00	1988	189.00	1046	259.00	1028
39.00	3255	124.00	923	191.00	522	265.00	2219
40.00	198	125.00	749	192.00	2592	266.00	420
49.00	52	127.00	79256	193.00	2485	273.00	2658
50.00	14076	128.00	5863	194.00	186	274.00	7226
51.00	58136	129.00	30840	196.00	5102	275.00	36960
52.00	3075	130.00	2723	197.00	734	276.00	5004
55.00	184	131.00	525	198.00	180288	277.00	3484
56.00	2260	134.00	595	199.00	12883	278.00	455
57.00	5143	135.00	2251	200.00	793	283.00	257
61.00	683	136.00	931	201.00	731	285.00	535
62.00	860	137.00	1392	203.00	1114	293.00	756
63.00	2422	140.00	243	204.00	7109	296.00	11601
64.00	452	141.00	3698	205.00	10672	297.00	1897
65.00	1229	142.00	1227	206.00	44016	303.00	1526
68.00	995	143.00	621	207.00	5563	304.00	427
69.00	63184	146.00	564	208.00	1395	314.00	476
70.00	370	147.00	1684	209.00	405	315.00	1373
73.00	176	148.00	4515	210.00	768	316.00	359
74.00	5714	149.00	757	211.00	1958	321.00	218
75.00	9624	150.00	243	215.00	333	322.00	177
76.00	3192	151.00	449	216.00	438	323.00	3814
77.00	71176	152.00	217	217.00	11534	324.00	305
78.00	4703	153.00	1007	218.00	1624	327.00	586
79.00	4115	154.00	909	221.00	7586	333.00	207
80.00	3271	155.00	2340	222.00	253	334.00	2411
81.00	4977	156.00	3218	223.00	2919	335.00	419
82.00	1204	157.00	716	224.00	25112	341.00	246
83.00	1160	158.00	696	225.00	5922	346.00	861
85.00	684	159.00	426	226.00	446	352.00	1281
86.00	941	160.00	1082	227.00	9956	353.00	848
87.00	501	161.00	2012	228.00	1452	354.00	1077
91.00	1195	162.00	574	229.00	2243	365.00	5048
92.00	986	165.00	1333	230.00	348	366.00	593
93.00	7370	166.00	1114	231.00	664	371.00	175

Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\UD892.D

Date : 08-MAY-2018 10:39

Client ID: DFTPP02 Instrument: gcms-u.i

Sample Info: WG227838-1,SL3808

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: UD892.D
Spectrum: Avg. Scans 123-125 (7.37), Background Scan 119
Location of Maximum: 198.00
Number of points: 212

m/z	Y	m/z	Y	m/z	Y	m/z	Y
94.00	543	167.00	8558	234.00	534	372.00	2020
96.00	406	168.00	4341	235.00	900	373.00	393
98.00	5251	169.00	690	236.00	465	383.00	260
99.00	4407	172.00	522	237.00	650	390.00	178
101.00	2921	173.00	700	239.00	221	402.00	901
103.00	851	174.00	1585	241.00	606	403.00	1249
104.00	1451	175.00	3197	242.00	1341	404.00	237
105.00	1549	176.00	1083	243.00	1275	421.00	1134
106.00	570	177.00	1636	244.00	18528	422.00	706
107.00	22720	178.00	250	245.00	2725	423.00	6079
108.00	3177	179.00	6096	246.00	3697	424.00	1249
109.00	521	180.00	4335	247.00	475	441.00	21592
110.00	41672	181.00	1996	249.00	539	442.00	130152
111.00	6082	182.00	190	253.00	185	443.00	25688
112.00	678	184.00	214	254.00	179	444.00	2354
116.00	871	185.00	3323	255.00	94032		
117.00	17448	186.00	24224	256.00	13372		
118.00	1108	187.00	6564	257.00	957		
122.00	1264	188.00	872	258.00	5525		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227671-1RA
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: U0724.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 08-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-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	U	0.10	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	J	0.087	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	J	0.16	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		84.9	%					
Fluorene-D10		85.1	%					
Pyrene-D10		102.	%					

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-u.i\U050818.b\U0724.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050818.b\U0724.D
Lab Smp Id: WG227671-1RA Client Smp ID: WG227671-Blank
Inj Date : 08-MAY-2018 11:38 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227671-1RA,SL3808
Misc Info : WG227838,WG227671,WG227762-4,SL3808-15
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050818.b\USPSIM36.m
Meth Date : 09-May-2018 09:27 gcms-u.i Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 3 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

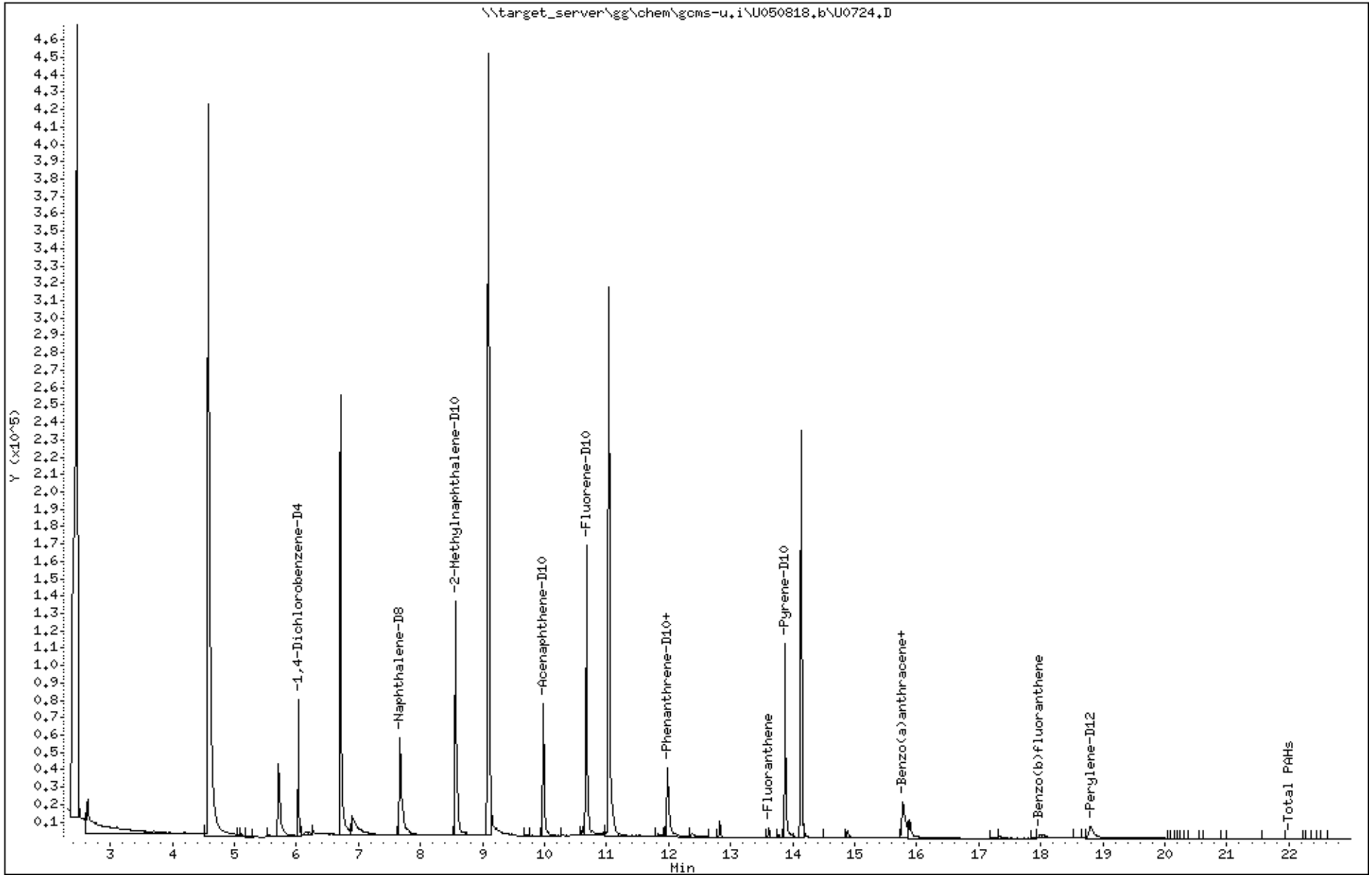
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	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	6.034	6.025	(1.000)	46496	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.670	7.647	(1.000)	149142	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	8.563	8.551	(0.858)	111463	1.69882	1.70	
*	47 Acenaphthene-D10	164	9.979	9.968	(1.000)	54416	0.80000	(a)	
$	55 Fluorene-D10	174	10.674	10.673	(1.070)	94327	1.70227	1.70	
*	65 Phenanthrene-D10	188	11.977	11.955	(1.000)	87677	0.80000	(a)	
$	71 Pyrene-D10	212	13.875	13.875	(0.880)	114960	2.03844	2.04	
	74 Benzo(a)anthracene	228	15.764	15.706	(0.999)	3675	0.06867	0.0687(a)	
*	76 Chrysene-D12	240	15.773	15.726	(1.000)	47484	0.80000	(a)	
	77 Chrysene	228	15.812	15.774	(1.002)	14130	0.08675	0.0867(a)	
	80 Benzo(b)fluoranthene	252	17.991	17.887	(0.957)	4049	0.16148	0.161(a)	
*	83 Perylene-D12	264	18.800	18.753	(1.000)	30742	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-u.i\U050818.b\U0724.D
Date : 08-MAY-2018 11:38
Client ID: WG227671-Blank
Instrument: gcms-u.i
Sample Info: WG227671-1RA,SL3808
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000133

Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0724.D

Date : 08-MAY-2018 11:38

Client ID: WG227671-Blank

Instrument: gcms-u.i

Sample Info: WG227671-1RA,SL3808

Volume Injected (uL): 1.0

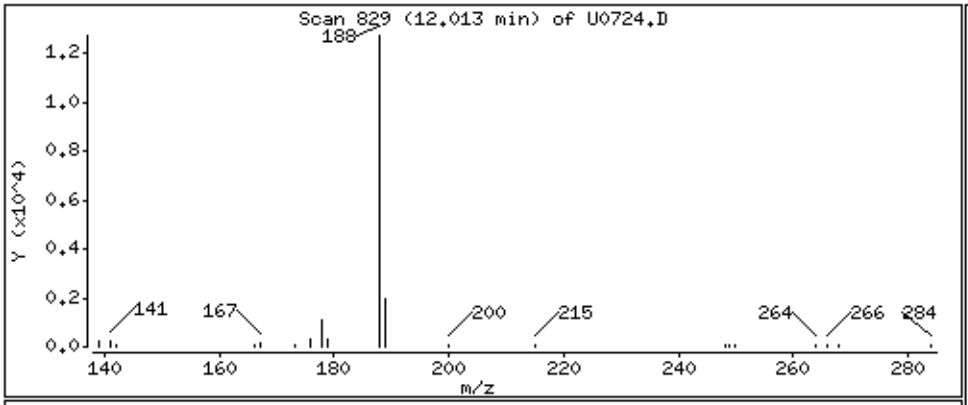
Operator: JCG

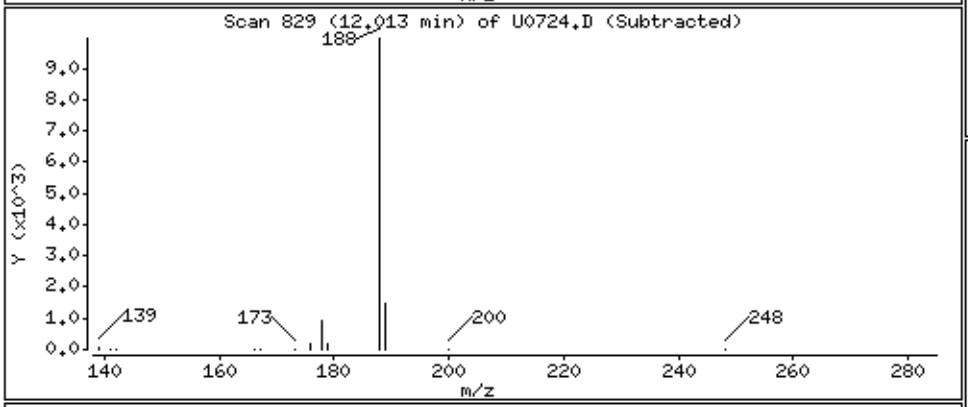
Column phase: ZB5-MS

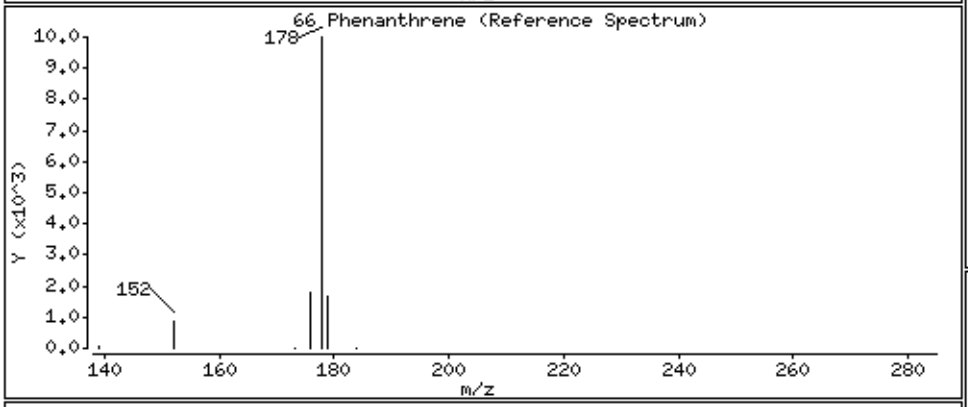
Column diameter: 0.25

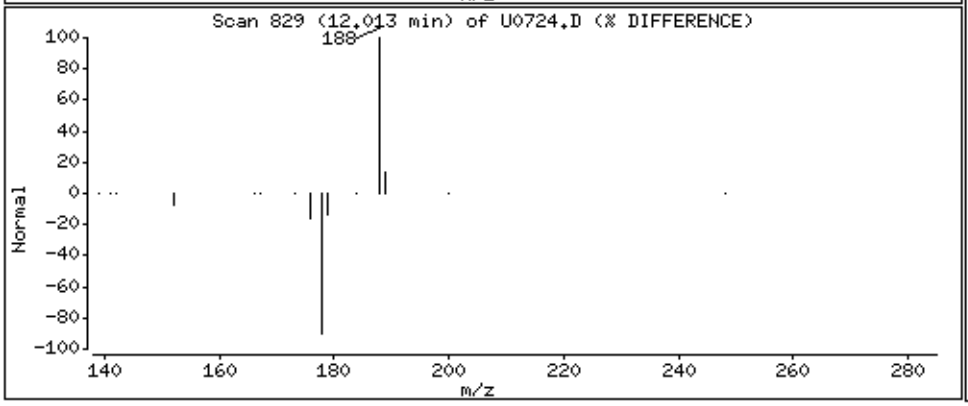
66 Phenanthrene

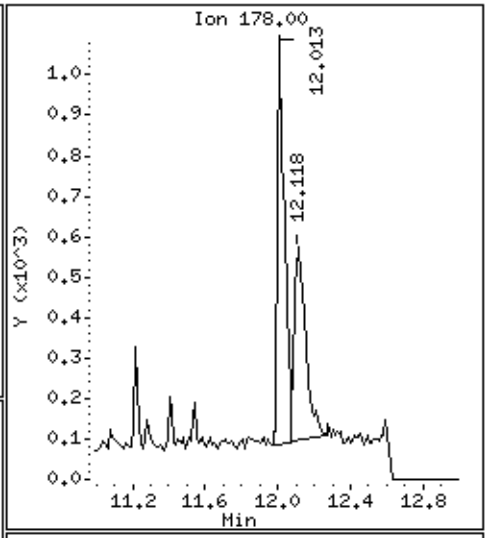
Concentration: 0.0249 ug/L

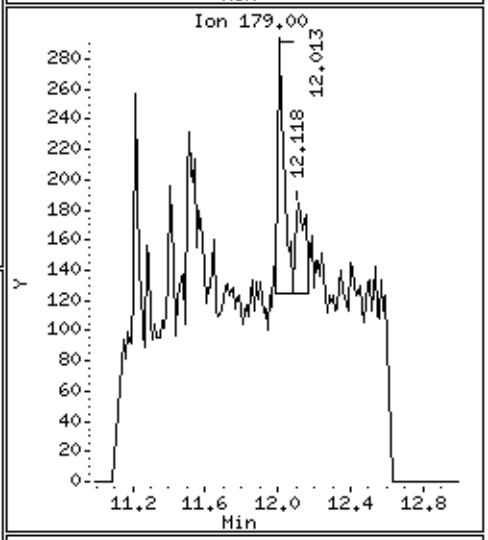


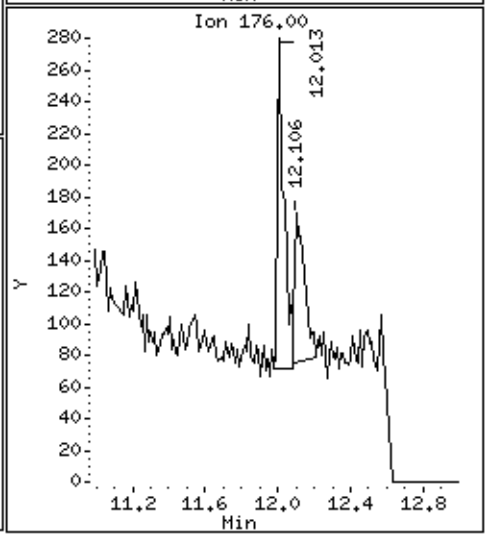












Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0724.D

Date : 08-MAY-2018 11:38

Client ID: WG227671-Blank

Instrument: gcms-u.i

Sample Info: WG227671-1RA,SL3808

Volume Injected (uL): 1.0

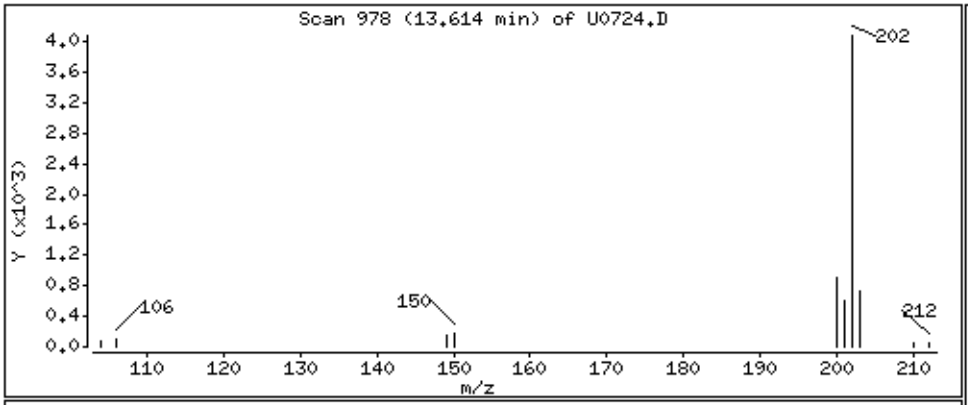
Operator: JCG

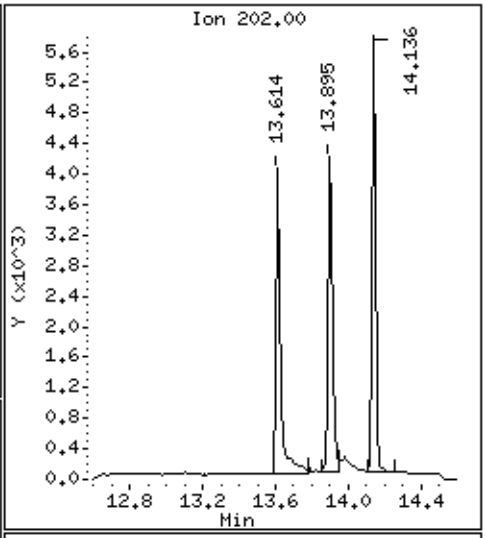
Column phase: ZB5-MS

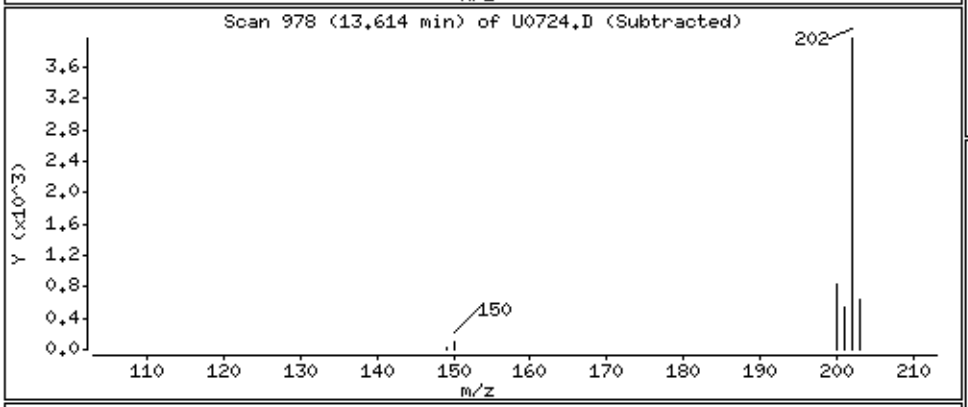
Column diameter: 0.25

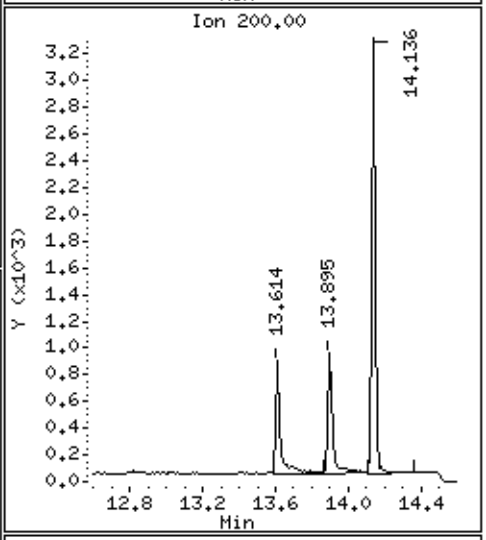
70 Fluoranthene

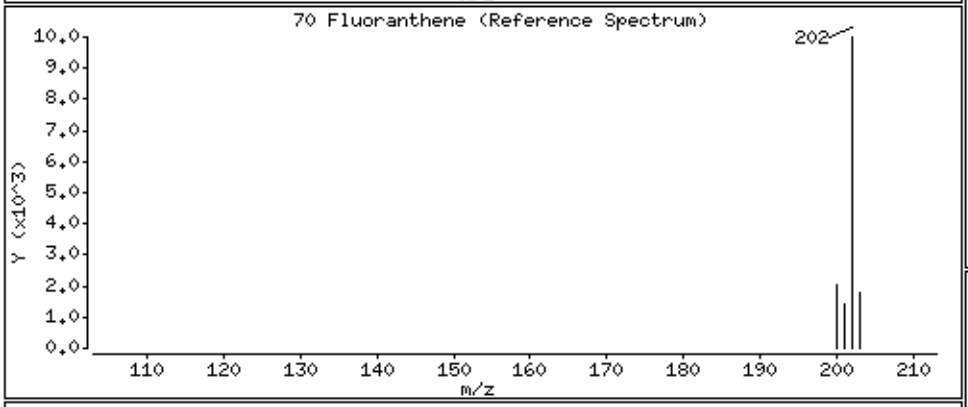
Concentration: 0.0603 ug/L

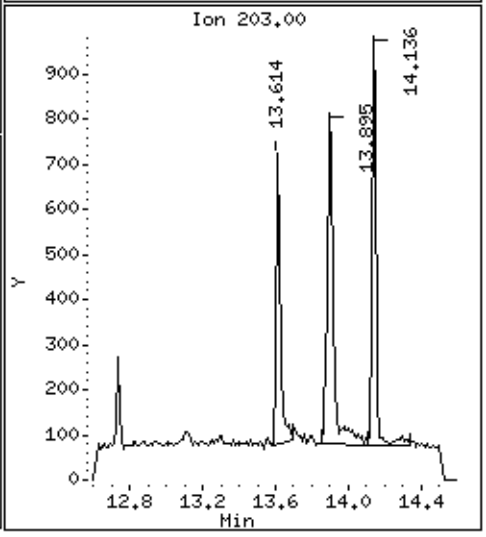


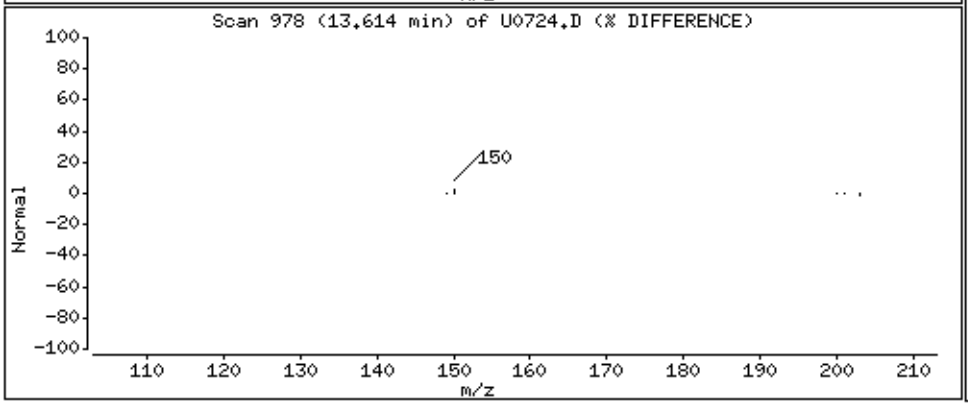












Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0724.D

Date : 08-MAY-2018 11:38

Client ID: WG227671-Blank

Instrument: gcms-u.i

Sample Info: WG227671-1RA,SL3808

Volume Injected (uL): 1.0

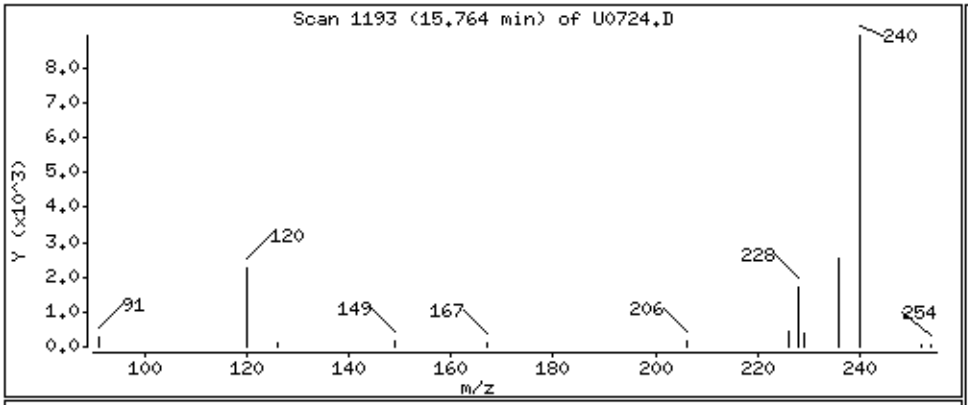
Operator: JCG

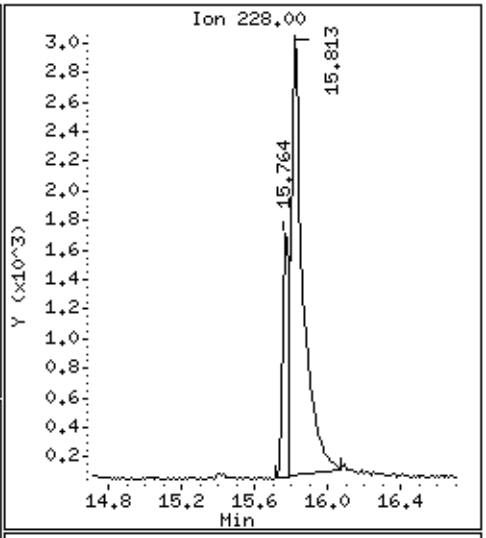
Column phase: ZB5-MS

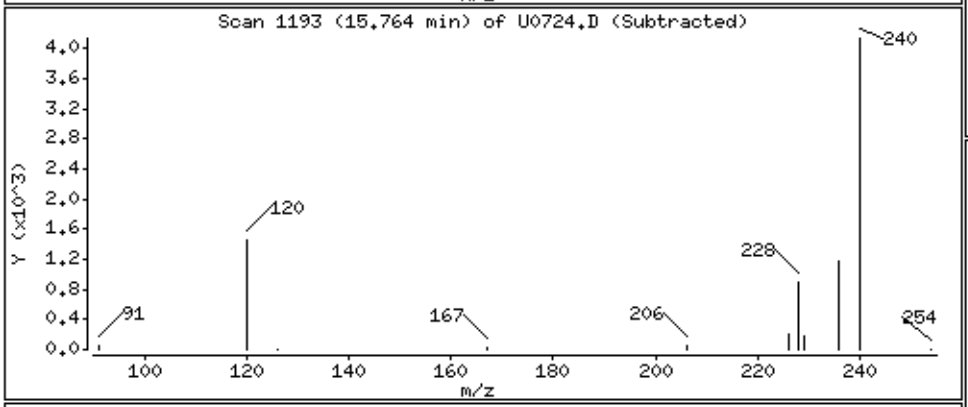
Column diameter: 0.25

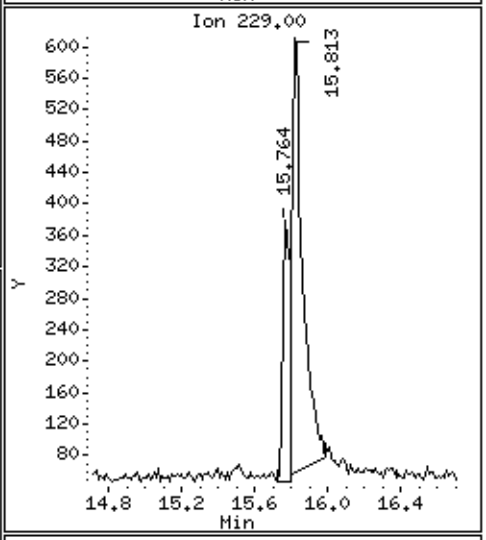
74 Benzo(a)anthracene

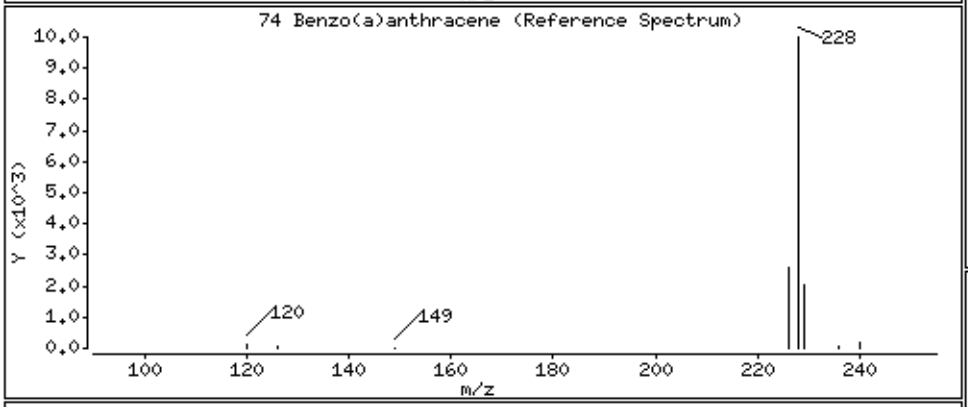
Concentration: 0.0687 ug/L

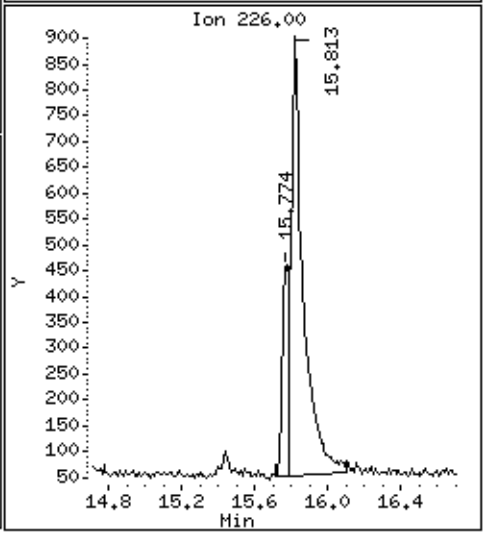


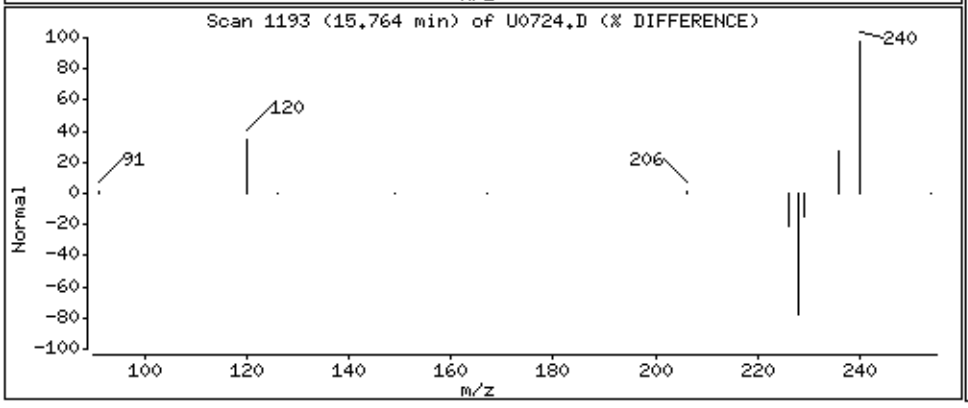












Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0724.D

Date : 08-MAY-2018 11:38

Client ID: WG227671-Blank

Instrument: gcms-u.i

Sample Info: WG227671-1RA,SL3808

Volume Injected (uL): 1.0

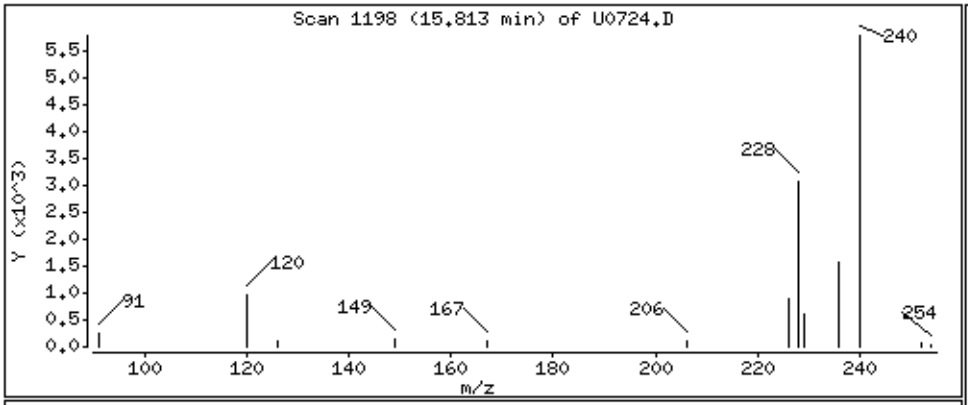
Operator: JCG

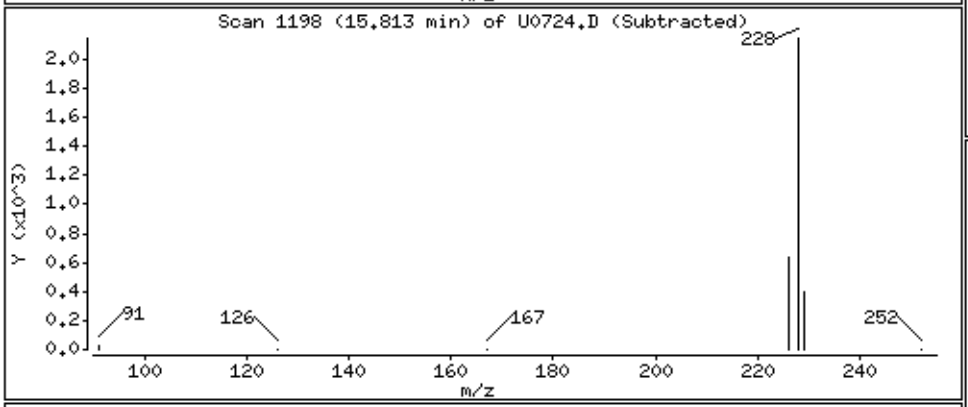
Column phase: ZB5-MS

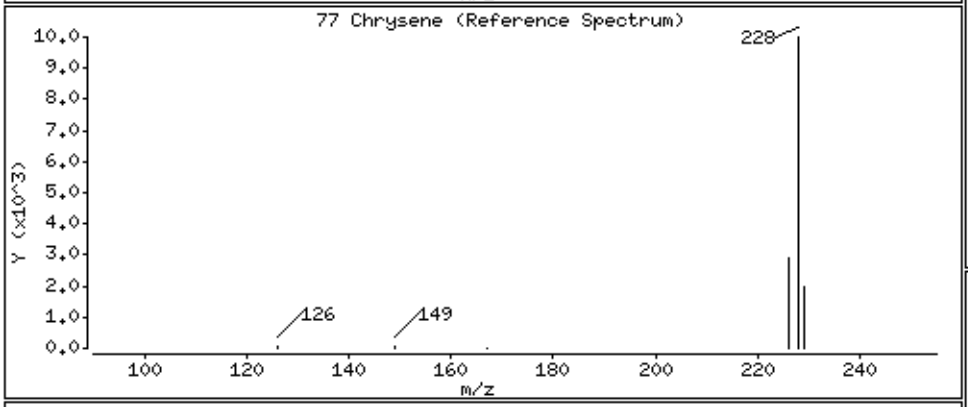
Column diameter: 0.25

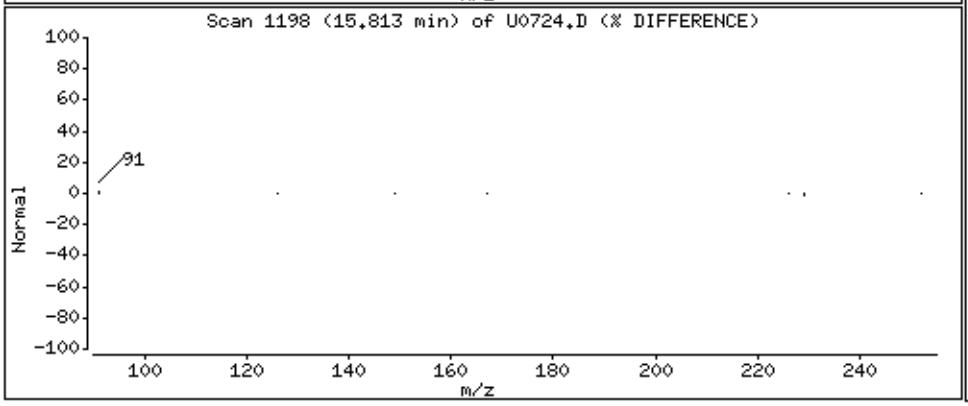
77 Chrysene

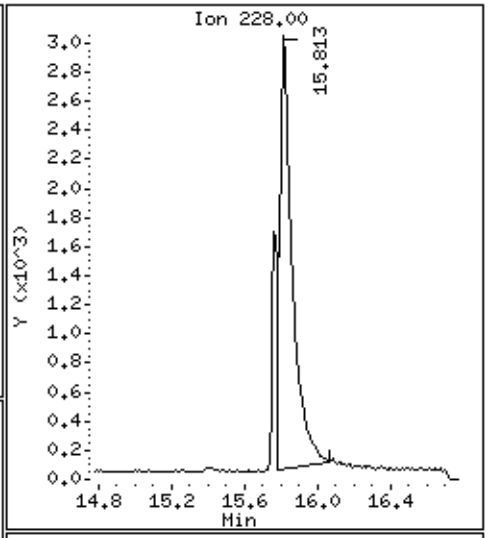
Concentration: 0.0867 ug/L

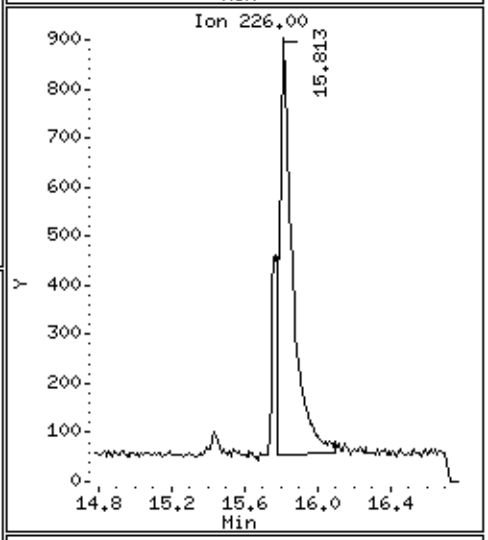


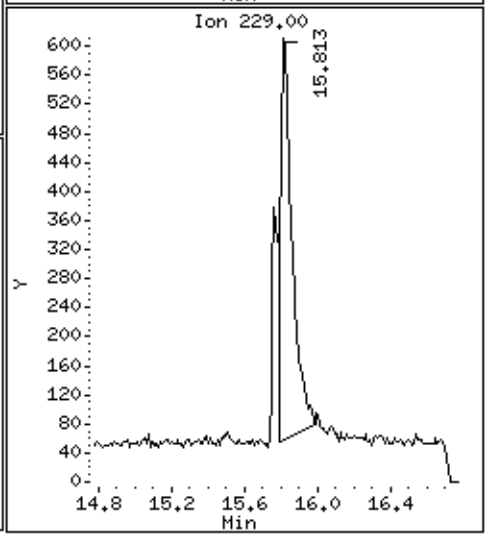












Data File: \\target_server\gg\chem\gcms-u.i\U050818.b\U0724.D

Date : 08-MAY-2018 11:38

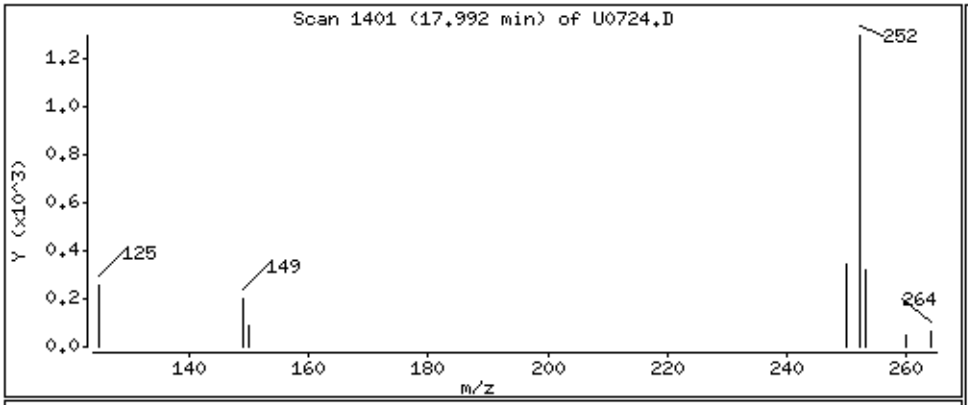
Client ID: WG227671-Blank | Instrument: gcms-u.i

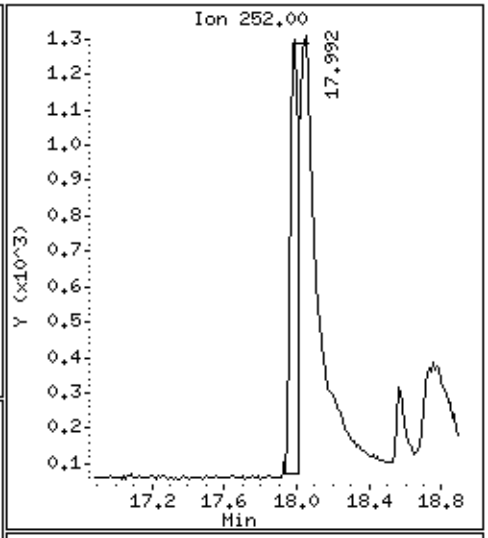
Sample Info: WG227671-1RA,SL3808

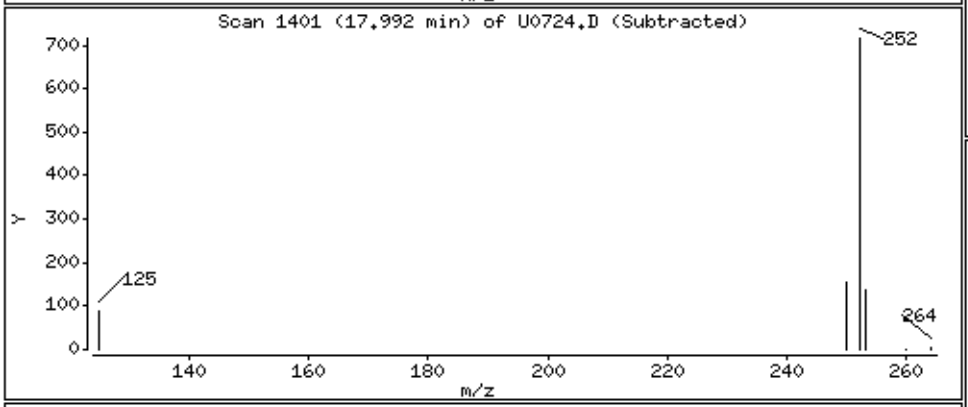
Volume Injected (uL): 1.0 | Operator: JCG

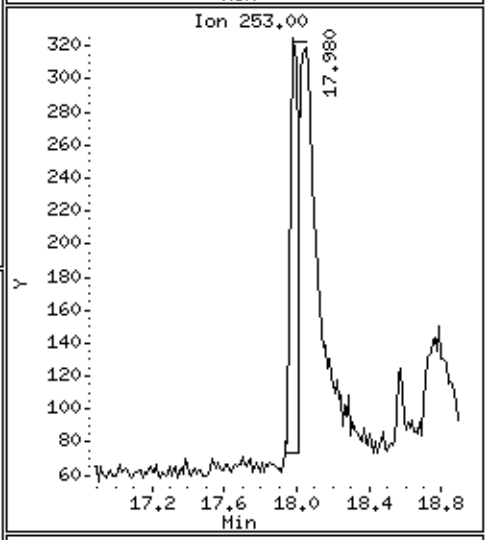
Column phase: ZB5-MS | Column diameter: 0.25

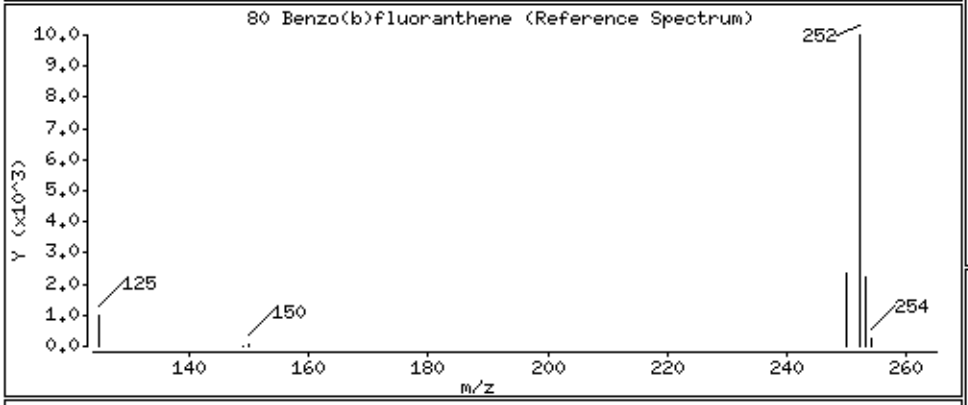
80 Benzo(b)fluoranthene | Concentration: 0.161 ug/L

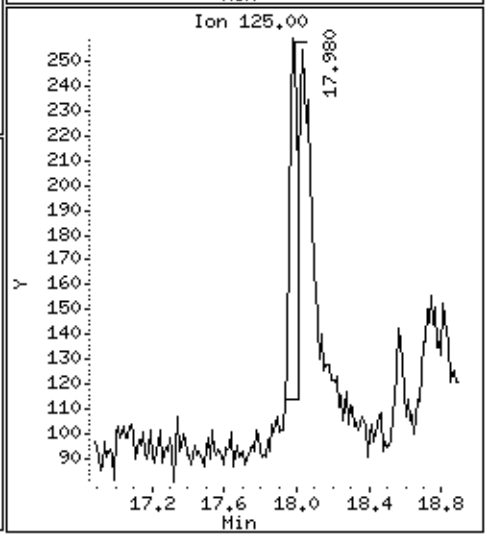


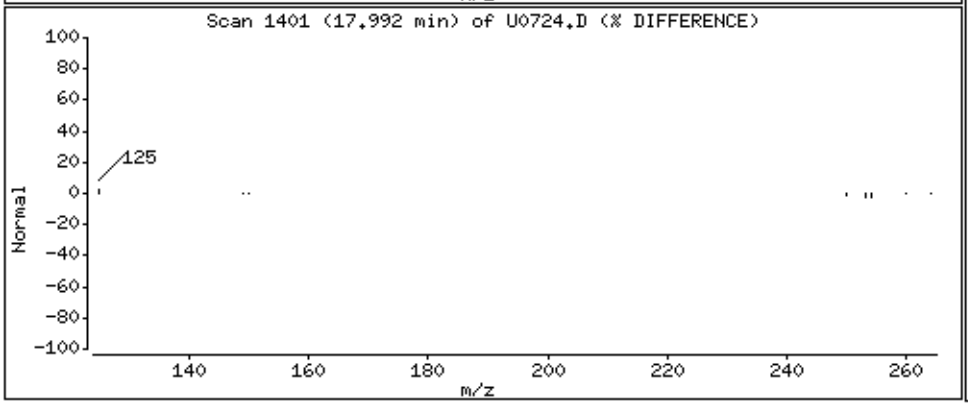












Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227671-2
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: U0708.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 14-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	91.5	2.00	1.83	ug/L	43-120
2-Methylnaphthalene	87.0	2.00	1.74	ug/L	39-120
Acenaphthylene	85.0	2.00	1.70	ug/L	35-121
Acenaphthene	87.5	2.00	1.75	ug/L	48-120
Fluorene	84.0	2.00	1.68	ug/L	50-120
Phenanthrene	89.5	2.00	1.79	ug/L	53-120
Anthracene	93.5	2.00	1.87	ug/L	53-120
Fluoranthene	89.5	2.00	1.79	ug/L	58-120
Pyrene	111.	2.00	2.22	ug/L	53-121
Benzo(a)anthracene	94.0	2.00	1.88	ug/L	59-120
Chrysene	108.	2.00	2.15	ug/L	57-120
Benzo(b)Fluoranthene	90.0	2.00	1.80	ug/L	53-126
Benzo(k)fluoranthene	104.	2.00	2.08	ug/L	54-125
Benzo(a)pyrene	85.5	2.00	1.71	ug/L	53-120
Indeno(1,2,3-cd)pyrene	94.0	2.00	1.88	ug/L	48-130
Dibenzo(a,h)anthracene	92.0	2.00	1.84	ug/L	44-131
Benzo(g,h,i)perylene	96.0	2.00	1.92	ug/L	44-128
2-Methylnaphthalene-D10	87.8				43-120
Fluorene-D10	82.8				29-120
Pyrene-D10	94.9				53-166

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Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0708.D
Report Date: 14-May-2018 11:15

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0708.D
Lab Smp Id: WG227671-2 Client Smp ID: WG227671-LCS
Inj Date : 07-MAY-2018 15:08 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227671-2,SL3808
Misc Info : WG227762,WG227671,WG227762-4,SL3808-2
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 10 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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
*	10 1,4-Dichlorobenzene-D4	152	6.024	6.025	(1.000)	41647	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.658	7.647	(1.000)	109374	0.80000	(a)	
	27 Naphthalene	128	7.683	7.672	(1.003)	190944	1.83193	1.83	
$	32 2-Methylnaphthalene-D10	152	8.563	8.551	(0.859)	102063	1.75635	1.76	
	33 2-Methylnaphthalene	115	8.600	8.589	(1.123)	43778	1.73525	1.74(Q)	
	45 Acenaphthylene	152	9.783	9.771	(0.981)	156275	1.70426	1.70	
*	47 Acenaphthene-D10	164	9.969	9.968	(1.000)	48195	0.80000	(a)	
	48 Acenaphthene	153	10.012	10.012	(1.004)	103240	1.74901	1.75	
$	55 Fluorene-D10	174	10.674	10.673	(1.071)	81224	1.65501	1.66	
	56 Fluorene	166	10.715	10.701	(1.075)	112567	1.67862	1.68	
*	65 Phenanthrene-D10	188	11.967	11.955	(1.000)	77243	0.80000	(a)	
	66 Phenanthrene	178	12.002	11.990	(1.003)	162147	1.78710	1.79	
	67 Anthracene	178	12.072	12.059	(1.009)	177436	1.86921	1.87	
	70 Fluoranthene	202	13.604	13.594	(1.137)	171381	1.78780	1.79	
$	71 Pyrene-D10	212	13.884	13.875	(0.882)	108365	1.89799	1.90	
	72 Pyrene	202	13.904	13.895	(0.883)	174991	2.21704	2.22	
	74 Benzo(a)anthracene	228	15.725	15.706	(0.999)	101855	1.88005	1.88	
*	76 Chrysene-D12	240	15.744	15.726	(1.000)	48072	0.80000	(a)	
	77 Chrysene	228	15.793	15.774	(1.003)	135500	2.14729	2.15	
	80 Benzo(b)fluoranthene	252	17.923	17.887	(0.955)	74919	1.80528	1.80	
	81 Benzo(k)fluoranthene	252	17.991	17.956	(0.958)	120196	2.07909	2.08(H)	

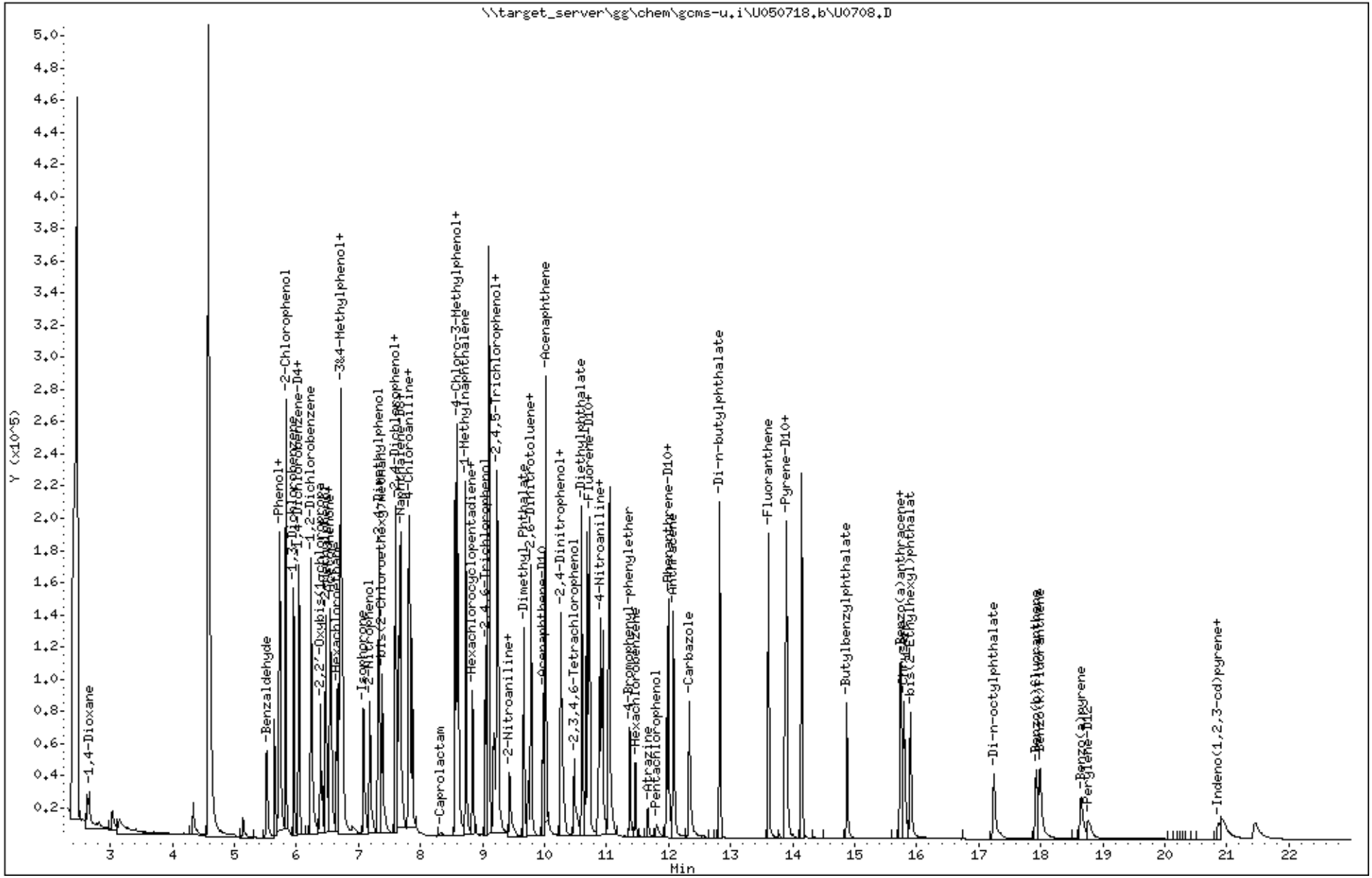
Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0708.D
Report Date: 14-May-2018 11:15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	82 Benzo(a)pyrene	252	18.652	18.616	(0.993)	76267	1.70635	1.71	
*	83 Perylene-D12	264	18.777	18.753	(1.000)	33004	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.865	20.817	(1.111)	66716	1.88058	1.88	
	85 Dibenzo(a,h)anthracene	278	20.932	20.874	(1.115)	46898	1.84129	1.84	
	86 Benzo(g,h,i)perylene	276	21.458	21.399	(1.143)	64964	1.91547	1.92	

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-u.i\U050718.b\U0708.D
Date : 07-MAY-2018 15:08
Client ID: WG227671-LCS
Instrument: gcms-u.i
Sample Info: WG227671-2,SL3808
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000142

Katahdin
ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG227671-3
MSD ID: WG227671-4
Sample ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project:
SDG: SL3808
MS File ID: U0714.D

Received Date:
Extract Date: 04-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227671
Report Date: 14-MAY-18
MSD File ID: U0715.D

Analysis Date: 07-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
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
Naphthalene	1.90	1.92	ug/L	U0.096	1.7	1.6	88.2	82.2	6	20	43-120
2-Methylnaphthalene	1.90	1.92	ug/L	U0.096	1.6	1.5	85.6	76.4	10	20	39-120
Acenaphthylene	1.90	1.92	ug/L	U0.096	1.6	1.5	85.0	77.0	9	20	35-121
Acenaphthene	1.90	1.92	ug/L	U0.096	1.7	1.5	87.7	79.0	9	20	48-120
Fluorene	1.90	1.92	ug/L	U0.096	1.6	1.5	86.1	76.4	11	20	50-120
Phenanthrene	1.90	1.92	ug/L	U0.096	1.6	1.6	85.0	84.2	0	20	53-120
Anthracene	1.90	1.92	ug/L	U0.096	1.6	1.6	84.0	83.7	1	20	53-120
Fluoranthene	1.90	1.92	ug/L	U0.096	1.6	1.6	84.0	82.2	1	20	58-120
Pyrene	1.90	1.92	ug/L	U0.096	1.8	1.8	96.6	93.6	2	20	53-121
Benzo(a)anthracene	1.90	1.92	ug/L	U0.096	1.8	1.7	96.6	88.9	7	20	59-120
Chrysene	1.90	1.92	ug/L	U0.096	1.8	1.9	96.1	96.7	2	20	57-120
Benzo(b)Fluoranthene	1.90	1.92	ug/L	JB0.11	1.5	1.5	72.8	74.2	3	20	53-126
Benzo(k)fluoranthene	1.90	1.92	ug/L	U0.096	1.7	1.6	88.7	83.2	5	20	54-125
Benzo(a)pyrene	1.90	1.92	ug/L	U0.096	1.3	1.2	68.2	62.4	8	20	53-120
Indeno(1,2,3-cd)pyrene	1.90	1.92	ug/L	U0.096	1.2	1.3	60.4	66.0	10	20	48-130
Dibenzo(a,h)anthracene	1.90	1.92	ug/L	U0.096	1.2	1.3	60.9	66.0	9	20	44-131
Benzo(g,h,i)perylene	1.90	1.92	ug/L	U0.096	1.0	1.2	53.6	59.8	12	20	44-128
2-Methylnaphthalene-D10							85.4	76.4			43-120
Fluorene-D10							83.1	76.3			29-120
Pyrene-D10							85.3	82.0			53-166

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Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0714.D
Report Date: 14-May-2018 11:15

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Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0714.D
Lab Smp Id: WG227671-3 Client Smp ID: HAAP-19C-LGIA-DPT18
Inj Date : 07-MAY-2018 18:11 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227671-3,SL3808
Misc Info : WG227762,WG227671,WG227762-4,SL3808-2
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 16 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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	1.050	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	6.025	6.025	(1.000)	50862	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.646	7.647	(1.000)	122350	0.80000	(a)	
	27 Naphthalene	128	7.683	7.672	(1.005)	205754	1.76466	1.68	
$	32 2-Methylnaphthalene-D10	152	8.563	8.551	(0.859)	113695	1.70919	1.63	
	33 2-Methylnaphthalene	115	8.600	8.589	(1.125)	48309	1.71177	1.63(Q)	
	45 Acenaphthylene	152	9.783	9.771	(0.981)	178337	1.69900	1.62	
*	47 Acenaphthene-D10	164	9.969	9.968	(1.000)	55169	0.80000	(a)	
	48 Acenaphthene	153	10.013	10.012	(1.004)	118474	1.75337	1.67	
$	55 Fluorene-D10	174	10.674	10.673	(1.071)	93415	1.66280	1.58	
	56 Fluorene	166	10.716	10.701	(1.075)	132337	1.72397	1.64	
*	65 Phenanthrene-D10	188	11.966	11.955	(1.000)	97139	0.80000	(a)	
	66 Phenanthrene	178	12.001	11.990	(1.003)	194026	1.70045	1.62	
	67 Anthracene	178	12.070	12.059	(1.009)	201075	1.68438	1.60	
	70 Fluoranthene	202	13.604	13.594	(1.137)	202314	1.67822	1.60	
$	71 Pyrene-D10	212	13.875	13.875	(0.881)	131713	1.70695	1.62	
	72 Pyrene	202	13.905	13.895	(0.883)	207549	1.92915	1.84	
	74 Benzo(a)anthracene	228	15.725	15.706	(0.999)	141519	1.93281	1.84	
*	76 Chrysene-D12	240	15.745	15.726	(1.000)	64969	0.80000	(a)	
	77 Chrysene	228	15.793	15.774	(1.003)	165158	1.92123	1.83	
	80 Benzo(b)fluoranthene	252	17.922	17.887	(0.955)	95898	1.58012	1.50	
	81 Benzo(k)fluoranthene	252	17.979	17.956	(0.958)	152419	1.77252	1.69(H)	

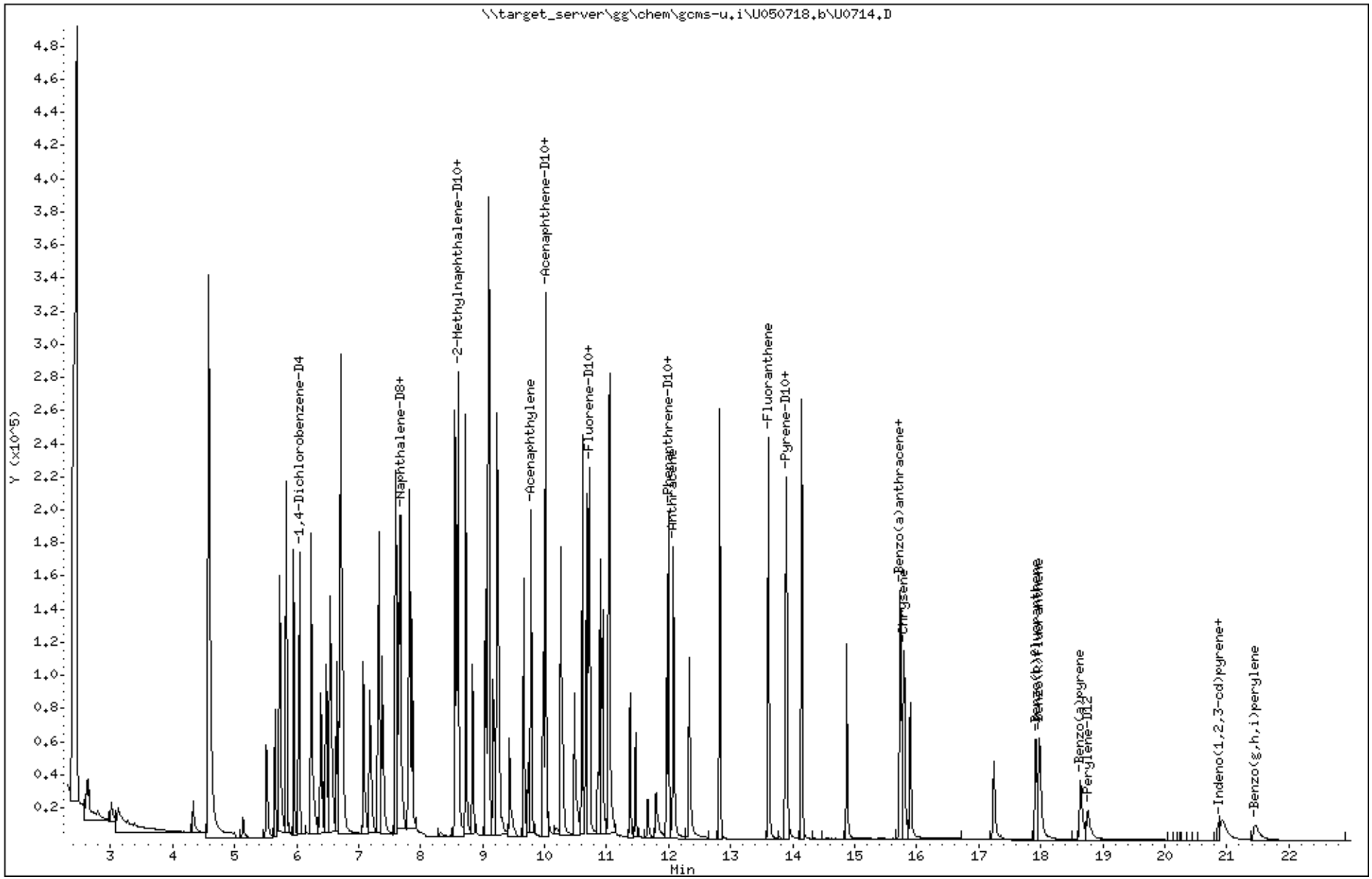
Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0714.D
Report Date: 14-May-2018 11:15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	82 Benzo(a)pyrene	252	18.639	18.616	(0.993)	89449	1.36175	1.30	
*	83 Perylene-D12	264	18.764	18.753	(1.000)	48504	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.866	20.817	(1.112)	62384	1.21007	1.15	
	85 Dibenzo(a,h)anthracene	278	20.933	20.874	(1.116)	43852	1.21306	1.16	
	86 Benzo(g,h,i)perylene	276	21.458	21.399	(1.144)	55425	1.07685	1.02	

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-u.i\U050718.b\U0714.D
Date : 07-MAY-2018 18:11
Client ID: HAAP-19C-LGIA-DPT18
Instrument: gcms-u.i
Sample Info: WG227671-3,SL3808
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000146

Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0715.D
Report Date: 14-May-2018 11:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-u.i\U050718.b\U0715.D
Lab Smp Id: WG227671-4 Client Smp ID: HAAP-19C-LGIA-DPT18
Inj Date : 07-MAY-2018 18:42 MS Autotune Date: 20-FEB-2018 08:25
Operator : JCG Inst ID: gcms-u.i
Smp Info : WG227671-4,SL3808
Misc Info : WG227762,WG227671,WG227762-4,SL3808-2
Comment :
Method : \\target_server\gg\chem\gcms-u.i\U050718.b\USPSIM36.m
Meth Date : 09-May-2018 09:21 cgomez Quant Type: ISTD
Cal Date : 07-MAY-2018 13:29 Cal File: U0705.D
Als bottle: 17 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.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	1.040	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	6.034	6.025	(1.000)	45558	0.80000	(aQ)	
*	26 Naphthalene-D8	136	7.658	7.647	(1.000)	111166	0.80000	(a)	
	27 Naphthalene	128	7.683	7.672	(1.003)	173899	1.64150	1.58	
$	32 2-Methylnaphthalene-D10	152	8.563	8.551	(0.859)	92019	1.52894	1.47	
	33 2-Methylnaphthalene	115	8.600	8.589	(1.123)	39255	1.53089	1.47(Q)	
	45 Acenaphthylene	152	9.783	9.771	(0.981)	146308	1.54058	1.48	
*	47 Acenaphthene-D10	164	9.969	9.968	(1.000)	49915	0.80000	(a)	
	48 Acenaphthene	153	10.012	10.012	(1.004)	96915	1.58528	1.52	
$	55 Fluorene-D10	174	10.674	10.673	(1.071)	77547	1.52564	1.47	
	56 Fluorene	166	10.716	10.701	(1.075)	105903	1.52483	1.47	
*	65 Phenanthrene-D10	188	11.966	11.955	(1.000)	79958	0.80000	(a)	
	66 Phenanthrene	178	12.001	11.990	(1.003)	157753	1.67963	1.62	
	67 Anthracene	178	12.071	12.059	(1.009)	164582	1.67493	1.61	
	70 Fluoranthene	202	13.604	13.594	(1.137)	163263	1.64529	1.58	
$	71 Pyrene-D10	212	13.885	13.875	(0.882)	105268	1.63907	1.58	
	72 Pyrene	202	13.905	13.895	(0.883)	167721	1.86910	1.80	
	74 Benzo(a)anthracene	228	15.725	15.706	(0.999)	108589	1.78184	1.71	
*	76 Chrysene-D12	240	15.744	15.726	(1.000)	54075	0.80000	(a)	
	77 Chrysene	228	15.793	15.774	(1.003)	138249	1.93309	1.86	
	80 Benzo(b)fluoranthene	252	17.923	17.887	(0.955)	81681	1.60068	1.54	
	81 Benzo(k)fluoranthene	252	17.991	17.956	(0.959)	120806	1.66283	1.60(H)	

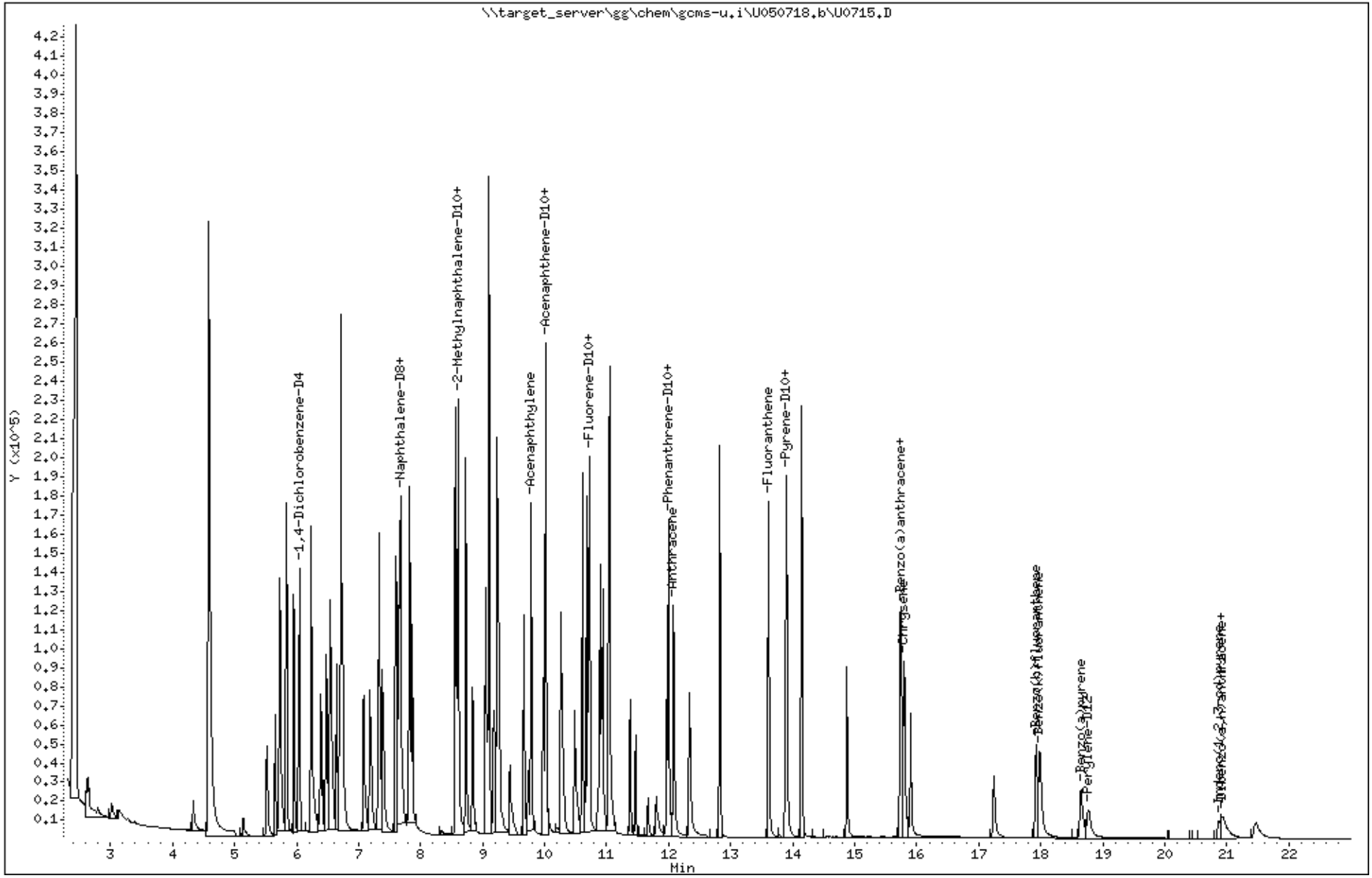
Data File: \\target_server\gg\chem\gcms-u.i\U050718.b\U0715.D
Report Date: 14-May-2018 11:16

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	82 Benzo(a)pyrene	252	18.652	18.616	(0.994)	69134	1.25238	1.20	
*	83 Perylene-D12	264	18.766	18.753	(1.000)	40762	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	20.875	20.817	(1.112)	57599	1.32578	1.27	
	85 Dibenzo(a,h)anthracene	278	20.942	20.874	(1.116)	40581	1.32423	1.27	
	86 Benzo(g,h,i)perylene	276	21.467	21.399	(1.144)	51290	1.19425	1.15	

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-u.i\U050718.b\U0715.D
Date : 07-MAY-2018 18:42
Client ID: HAAP-19C-LGIA-DPT18
Instrument: gcms-u.i
Sample Info: WG227671-4,SL3808
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000149

Logbooks and Supporting Documents

SVOA/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: SV2845	Surrogate ID: SV2833	Spike ID: SIM:SV	Spike ID: —
Methylene Chloride Lot #: DT416	pH Paper Lot # HC727135	KI Starch Paper ID: 022017	Note samples requiring TRC neutralization in comments section.
pH (1st Extraction) ≤2	H_2SO_4 Lot # 177543	pH (2nd Extraction) ≥11	NaOH Lot # 190393
$NaSO_4$ Lot # 2796801	Filter Paper Lot #: 1406/047	Boiling Stones ID: 3-27-2014	Vial Lot #: 393232
Nitrogen Bath Temperature: 36°C	—	—	—
Prep Start Time: 1050	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 SV303	Initials	Comments
5-4-18	KF	WR227671-1 WG227672-1	1000	1mL	NR	✓	✓	1mL	5-4-18	B7	AC	SIM-R472013 SVOA-R472005
		WR227671-2	1000	1mL		~~✓~~ KF	✓			8		
		-3	1050				✓			9		MS SL3808-4S
		-4	1040				✓			10		MSD " -4T
		WG227672-2	1000			✓				C1		
		-3 RE	200		NR	✓				J2		TCLP Blank PBT1450A Diluted to 1000mL RE
										KF	5-4-18	

EX-007 – Revision 5 – 11/08/2017

QAEX342

0000174

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location SV303	Initials	Comments
5-4-18	KF	SL3635-1C RE	200	1mL	NR	✓		1mL	5-4-18	C3	AC	RE TCLP Diluted to 1000mL
		SL3670-1H RE	200			✓				4		RE
		SL3805-1A	1000				✓			5		SM-S.S.
		-2A	1010							6		
		-3A	970							7		
		SL3808-2F	1050							8		
		-4Q	1040							9		MS/D
		-6I	980							10		
		-8F	1060							J1		
		-10G	1020							2		
		-12H	1050							3		
		-14H	1050							4		
		-15I	1050							5		
		-17I	1010							6		
		SL3809-1F	1020							7		
										KF	5-4-18	

Reviewed By_____ Date_____

EX-007 – Revision 5 – 11/08/2017

QAEX342

0000175

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5973-U

DATE OF DFTPP INJECTION: 050718

JOB	SAMPLE	DATAFILE	DF	VIAL #	METHOD	UL INJ	CHEMIST	COMMENTS
WG227762-1	50ng DFTPP	UD891	1	1	DFTPPSM	2.0	JLS	OK
-4	SSTD2.0 U0507	UB700		2	USPSM36			OK
-2	0.2	01		3				✓
-3	0.5	02		4				✓
-5	4.0	03		5				✓
-6	10.	04		6				✓
-7	15	05		7				✓
-8	MB	06		8				OK
WG227671-1		07		9				OK
↓ -2		08		10				OK
SL3805-1		09		11				OK
↓ -2		10		12				OK
↓ -3		11		13				553↑
SL3808-2		12		14				OK
↓ -4		13		15				OK
WG227671-3		14		16				OK
↓ -4		15		17				OK
SL3808-6		16		18				OK
-8		17		19				OK
-10		18		20				OK
-12		19		21				OK
↓ -14		20		22				OK
-9	SSTD2.0 U0507	21		23				OK
-10		22						—
-11	↓	↓ 23	↓	↓				—

STANDARD	CODE
DFTPP	53064
CAL. STD.	53067 53071
ICV. STD.	53061
IS MIX	53063

REVIEWED AND APPROVED BY: _____
DATE: _____

Katahdin Analytical Services 2000152

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5973-U

DATE OF DFTPP INJECTION: 050818

JOB	SAMPLE	DATAFILE	DF	VIAL #	METHOD	UL INJ	CHEMIST	COMMENTS
WG227838-1	50 ng DFTPP	U0892	1	1	DFTPP SIM	2.0	JLK	OK
-2	STD050U0508	U0723		2	USP SIM 36			OK
	WG227671-1 RA	24		3				OK
	WG227664-1	25		4				OK
	-2	26		5				OK
	SL3799-1	27		6				1556 DL1:15
	-1DL	28	15	7				OK 50/750
	SL3808-15	29	1	8				OK
	-17	30		9				OK
	SL3708-1	31		10				OK
	SL3809-1	32		11				OK
	-2	33		12				OK
SL3809	~~WG227664~~-3	34		13				OK ~~[illegible]~~ JLK 050918
WG227664	JLK ~~-4~~-3	35		14				OK
WG227664	~~SL3809-3~~-4	36		15				OK
	-4	37		16				OK
	-5	38		17				OK
	-6	39		18				OK
	-7	40		19				OK
	-8	41		20				OK
	-9	42		21				OK
	-10	43		22				OK
	-11	44		23				OK
-3	5STD 2.0 U0508	45		24				OK
-4		46						–
-5		47						–

STANDARD	CODE
DFTPP	53064
CAL. STD.	53067 53071
ICV. STD.	–
IS MIX	53063

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:** SL3808

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-19C-LGIA-DPT11	SL3808-10	B	96.3	
CHAAP-19C-UGIA-DPT02	SL3808-12	B	97.5	
CHAAP-EB-050218-DPT	SL3808-14	B	95.8	
CHAAP-19C-LGIA-DPT22	SL3808-15	B	94.6	
CHAAP-19C-UGIA-DPT21	SL3808-17	B	96.7	
CHAAP-19C-UGIA-DPT17	SL3808-2	B	98.6	
CHAAP-19C-LGIA-DPT18	SL3808-4	B	94.4	
CHAAP-19C-UGIA-DPT13	SL3808-6	B	94.2	
CHAAP-19C-LGIA-DPT14	SL3808-8	B	95.8	
Method Blank Sample	WG227670-1	B	98.0	
Laboratory Control S	WG227670-2	B	95.7	
Matrix Spike	WG227670-3	B	97.2	
Matrix Spike Duplica	WG227670-4	B	97.7	

		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.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin
ANALYTICAL SERVICES

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10127.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL3808
Lab Sample ID : WG227670-1
Date Extracted : 04-MAY-18
Date Analyzed : 04-MAY-18
Time Analyzed : 15:22

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	WG227670-2	HLE10128.	05/04/18	15:53
Matrix Spike	WG227670-3	HLE10129.	05/04/18	16:23
Matrix Spike Duplica	WG227670-4	HLE10130.	05/04/18	16:54
CHAAP-19C-UGIA-DPT17	SL3808-2	HLE10160.	05/05/18	08:17
CHAAP-19C-LGIA-DPT18	SL3808-4	HLE10161.	05/05/18	08:48
CHAAP-19C-UGIA-DPT13	SL3808-6	HLE10162.	05/05/18	09:19
CHAAP-19C-LGIA-DPT14	SL3808-8	HLE10163.	05/05/18	09:49
CHAAP-19C-LGIA-DPT114	SL3808-10	HLE10286.	05/10/18	10:12
CHAAP-19C-UGIA-DPT02	SL3808-12	HLE10287.	05/10/18	10:43
CHAAP-EB-050218-DPT	SL3808-14	HLE10288.	05/10/18	11:14
CHAAP-19C-LGIA-DPT22	SL3808-15	HLE10289.	05/10/18	11:45
CHAAP-19C-UGIA-DPT21	SL3808-17	HLE10290.	05/10/18	12:16

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Katahdin
ANALYTICAL SERVICES

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10438.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL3808
Lab Sample ID : WG227670-1C
Date Extracted : 04-MAY-18
Date Analyzed : 14-MAY-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-EB-050218-DPT	SL3808-14C	HLE10551.	05/17/18	17:21

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin
ANALYTICAL SERVICES

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SL3808
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		
Continuing Calibrati	WG227584-17	05/04/18	14:47	8.468	
Method Blank Sample	WG227670-1	05/04/18	15:22	8.492	
Laboratory Control S	WG227670-2	05/04/18	15:53	8.504	
Matrix Spike	WG227670-3	05/04/18	16:23	8.503	
Matrix Spike Duplica	WG227670-4	05/04/18	16:54	8.496	
Continuing Calibrati	WG227584-18	05/04/18	20:30	8.502	
Continuing Calibrati	WG227584-20	05/05/18	07:46	8.524	
CHAAP-19C-UGIA-DPT17	SL3808-2	05/05/18	08:17	8.52	
CHAAP-19C-LGIA-DPT18	SL3808-4	05/05/18	08:48	8.526	
CHAAP-19C-UGIA-DPT13	SL3808-6	05/05/18	09:19	8.534	
CHAAP-19C-LGIA-DPT14	SL3808-8	05/05/18	09:49	8.533	
Continuing Calibrati	WG227584-21	05/05/18	10:20	8.518	
Continuing Calibrati	WG227584-35	05/10/18	06:58	8.54	
CHAAP-19C-LGIA-DPT11	SL3808-10	05/10/18	10:12	8.547	
CHAAP-19C-UGIA-DPT02	SL3808-12	05/10/18	10:43	8.542	
CHAAP-EB-050218-DPT	SL3808-14	05/10/18	11:14	8.543	
CHAAP-19C-LGIA-DPT22	SL3808-15	05/10/18	11:45	8.545	
CHAAP-19C-UGIA-DPT21	SL3808-17	05/10/18	12:16	8.549	
Continuing Calibrati	WG227584-36	05/10/18	13:18	8.546	

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SL3808
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	WG227584-37	05/14/18	10:03	13.30	
Method Blank Sample	WG227670-1C	05/14/18	16:52	13.28	
Continuing Calibrati	WG227584-38	05/14/18	19:20	13.28	
Continuing Calibrati	WG227584-42	05/17/18	15:43	13.37	
CHAAP-EB-050218-DPT	SL3808-14C	05/17/18	17:21	13.39	
Continuing Calibrati	WG227584-43	05/18/18	00:43	13.39	

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http://katahdinlab.com
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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

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-2
Client ID: CHAAP-19C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10160.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 05-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		98.6	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10160.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

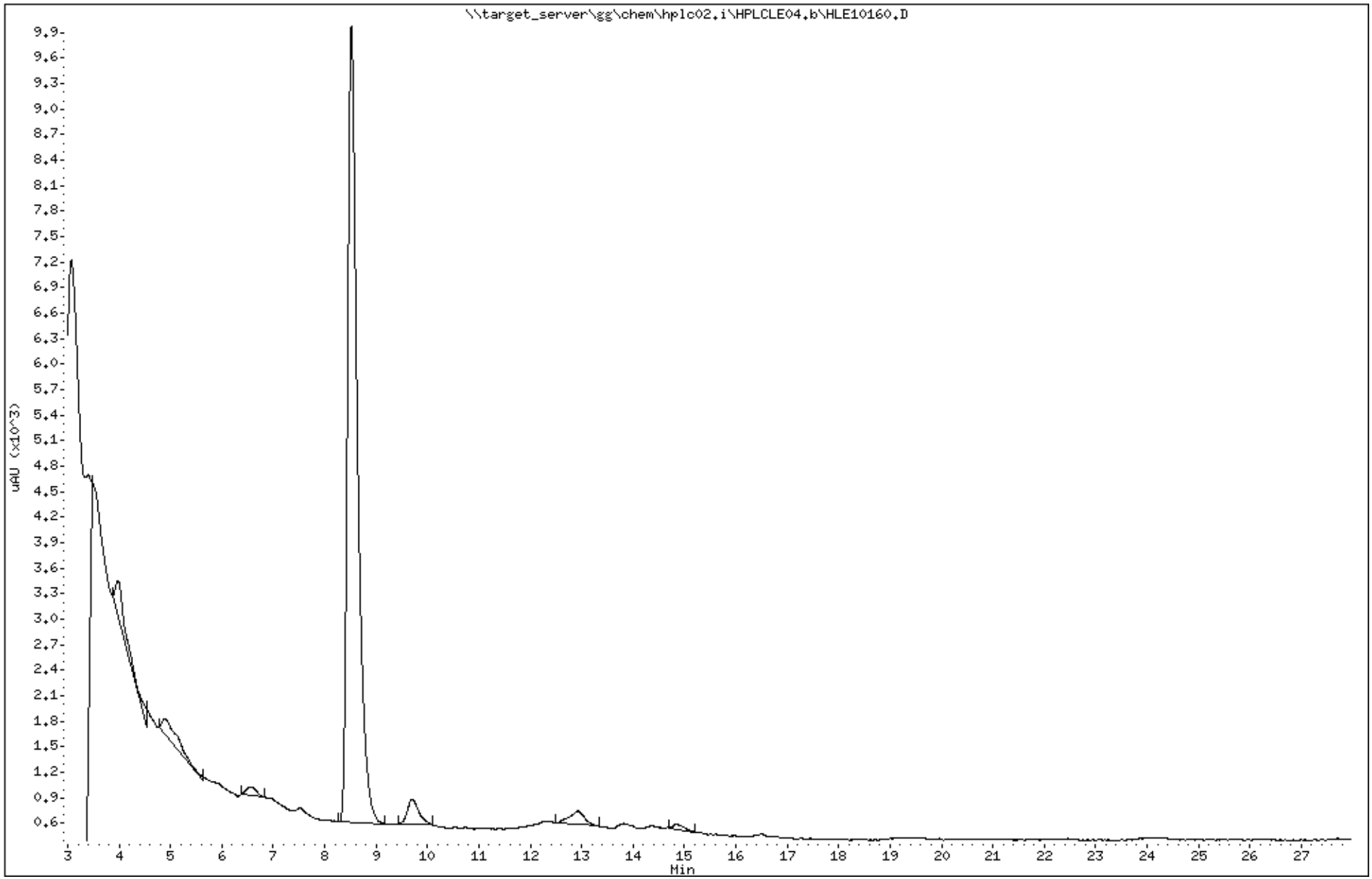
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10160.D
Lab Smp Id: SL3808-2 Client Smp ID: HAAP-19C-UGIA-DPT17
Inj Date : 05-MAY-2018 08:17
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-2
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 3
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\HPLCLE04.b\HLE10160.D
Date : 05-MAY-2018 08:17
Client ID: HAAP-19C-UGIA-DPT17
Instrument: hplc02.i
Sample Info: SL3808-2
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000013

Data File: HLE10160.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

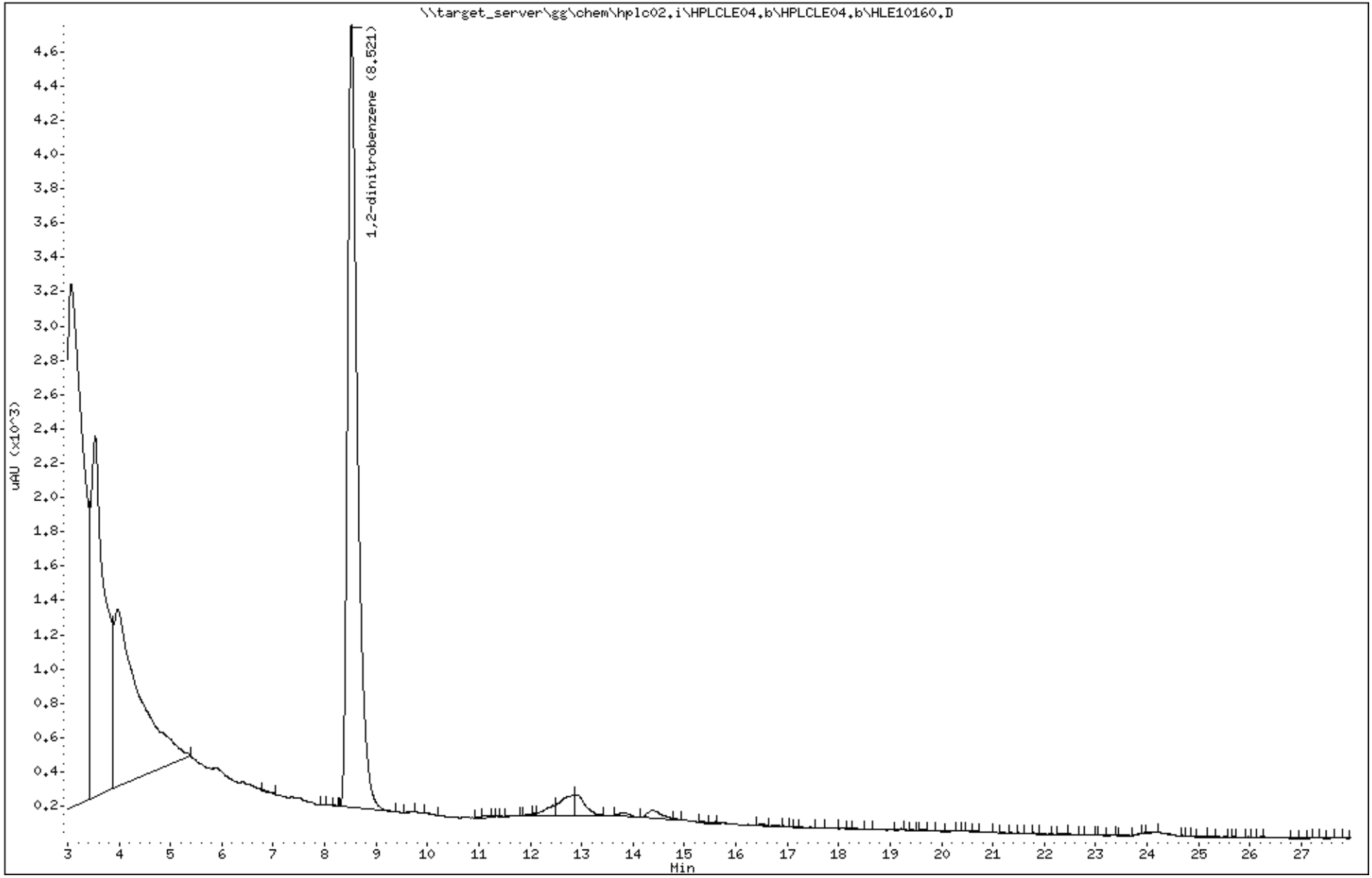
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10160.D
Lab Smp Id: SL3808-2 Client Smp ID: HAAP-19C-UGIA-DPT17
Inj Date : 05-MAY-2018 08:17
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-2
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 3
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	8.520	8.468	0.052	4564	0.98629	9.86	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10160.D
Date : 05-MAY-2018 08:17
Client ID: HAAP-19C-UGIA-DPT17
Instrument: hplc02.i
Sample Info: SL3808-2
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000015

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10161.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 05-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		94.4	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10161.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

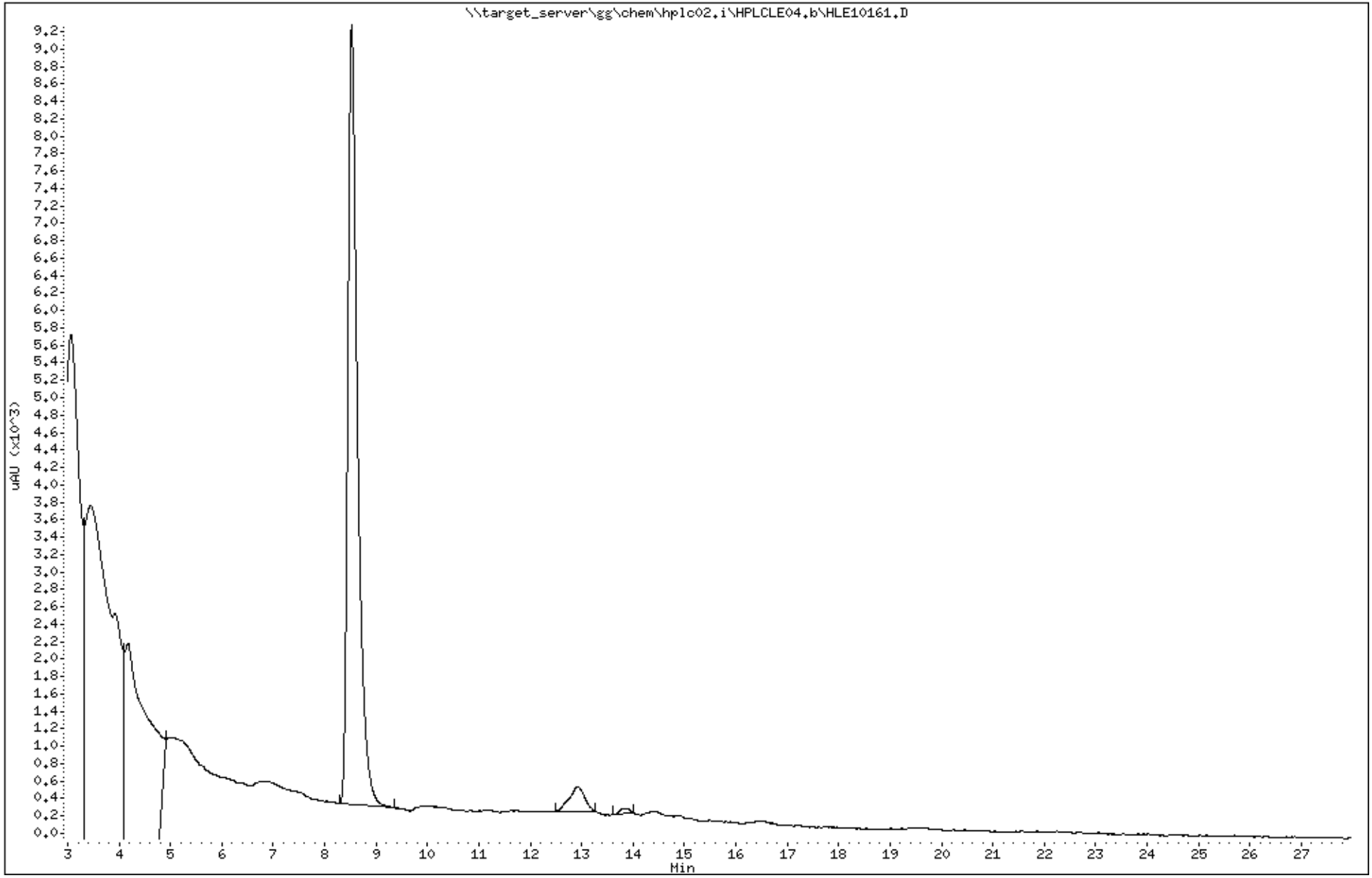
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10161.D
Lab Smp Id: SL3808-4 Client Smp ID: HAAP-19C-LGIA-DPT18
Inj Date : 05-MAY-2018 08:48
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-4
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 4
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\HPLCLE04.b\HLE10161.D
Date : 05-MAY-2018 08:48
Client ID: HAAP-19C-LGIA-DPT18
Instrument: hplc02.i
Sample Info: SL3808-4
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000018

Data File: HLE10161.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

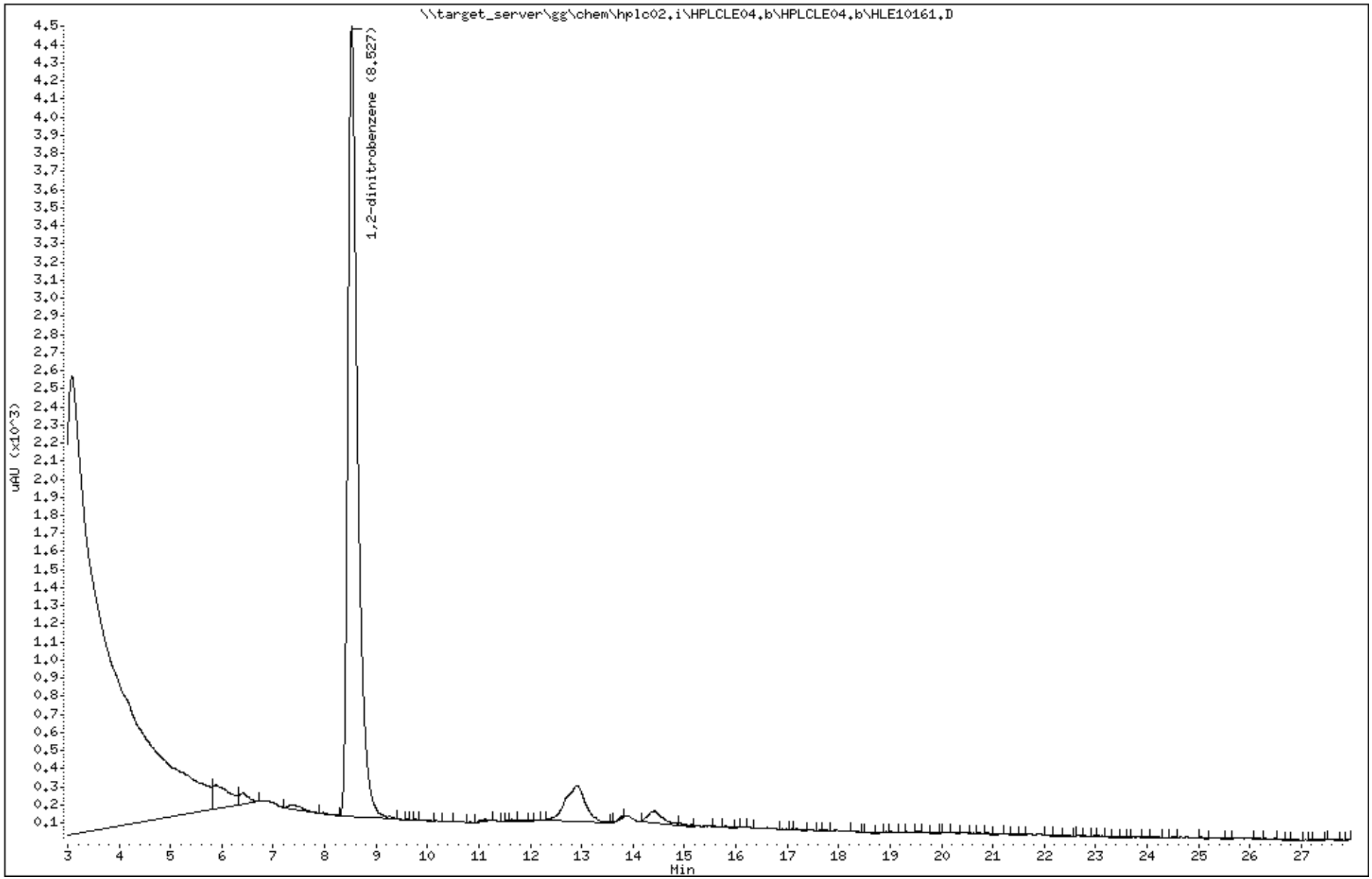
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10161.D
Lab Smp Id: SL3808-4 Client Smp ID: HAAP-19C-LGIA-DPT18
Inj Date : 05-MAY-2018 08:48
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-4
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 4
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	8.526	8.468	0.058	4368	0.94394	9.44	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10161.D
Date : 05-MAY-2018 08:48
Client ID: HAAP-19C-LGIA-DPT18
Instrument: hplc02.i
Sample Info: SL3808-4
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000020

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-6
Client ID: CHAAP-19C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10162.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 05-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		94.2	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10162.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

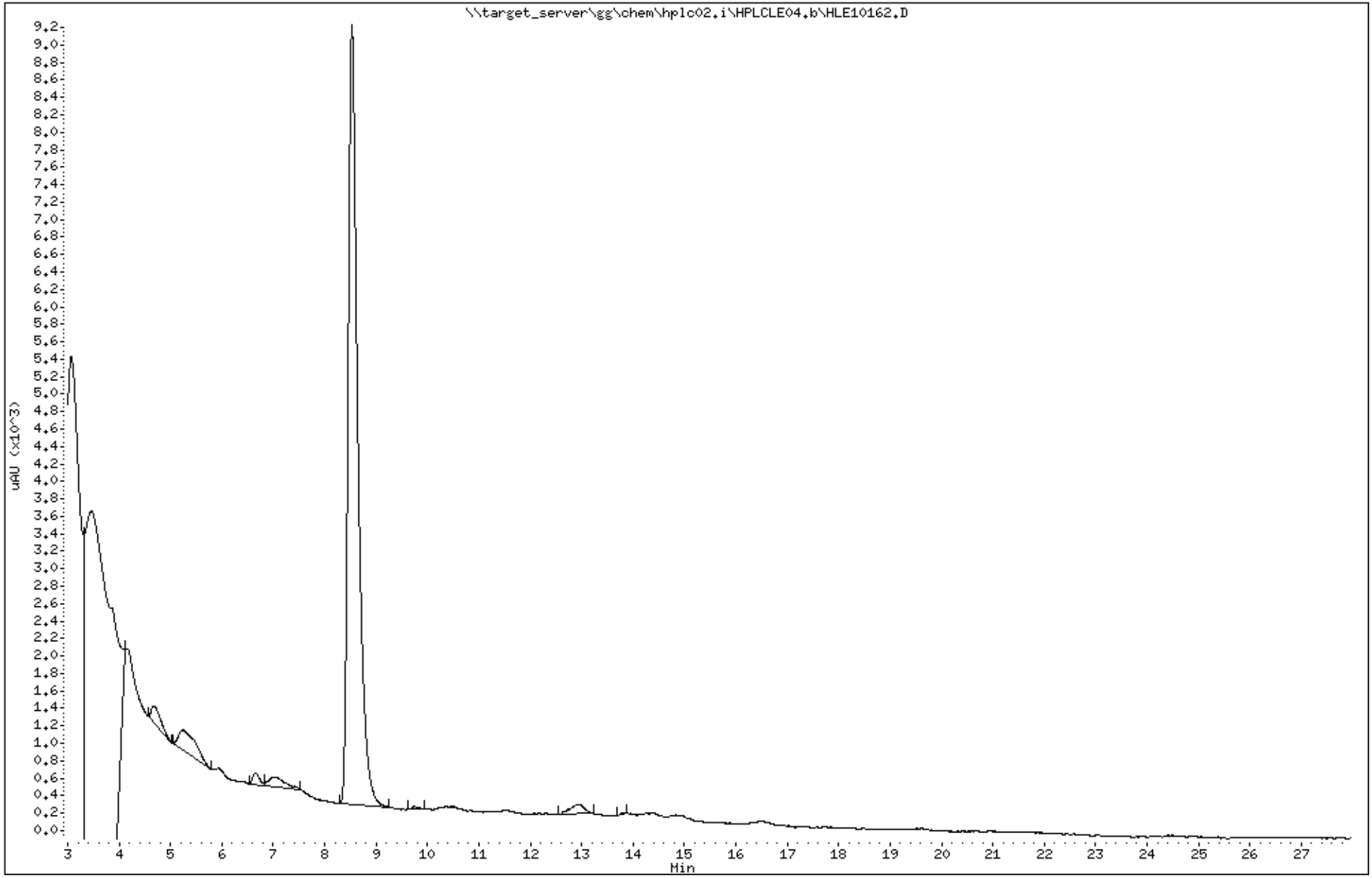
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10162.D
Lab Smp Id: SL3808-6 Client Smp ID: HAAP-19C-UGIA-DPT13
Inj Date : 05-MAY-2018 09:19
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-6
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 5
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\HPLCLE04.b\HLE10162.D
Date : 05-MAY-2018 09:19
Client ID: HAAP-19C-UGIA-DPT13
Instrument: hplc02.i
Sample Info: SL3808-6
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000023

Data File: HLE10162.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

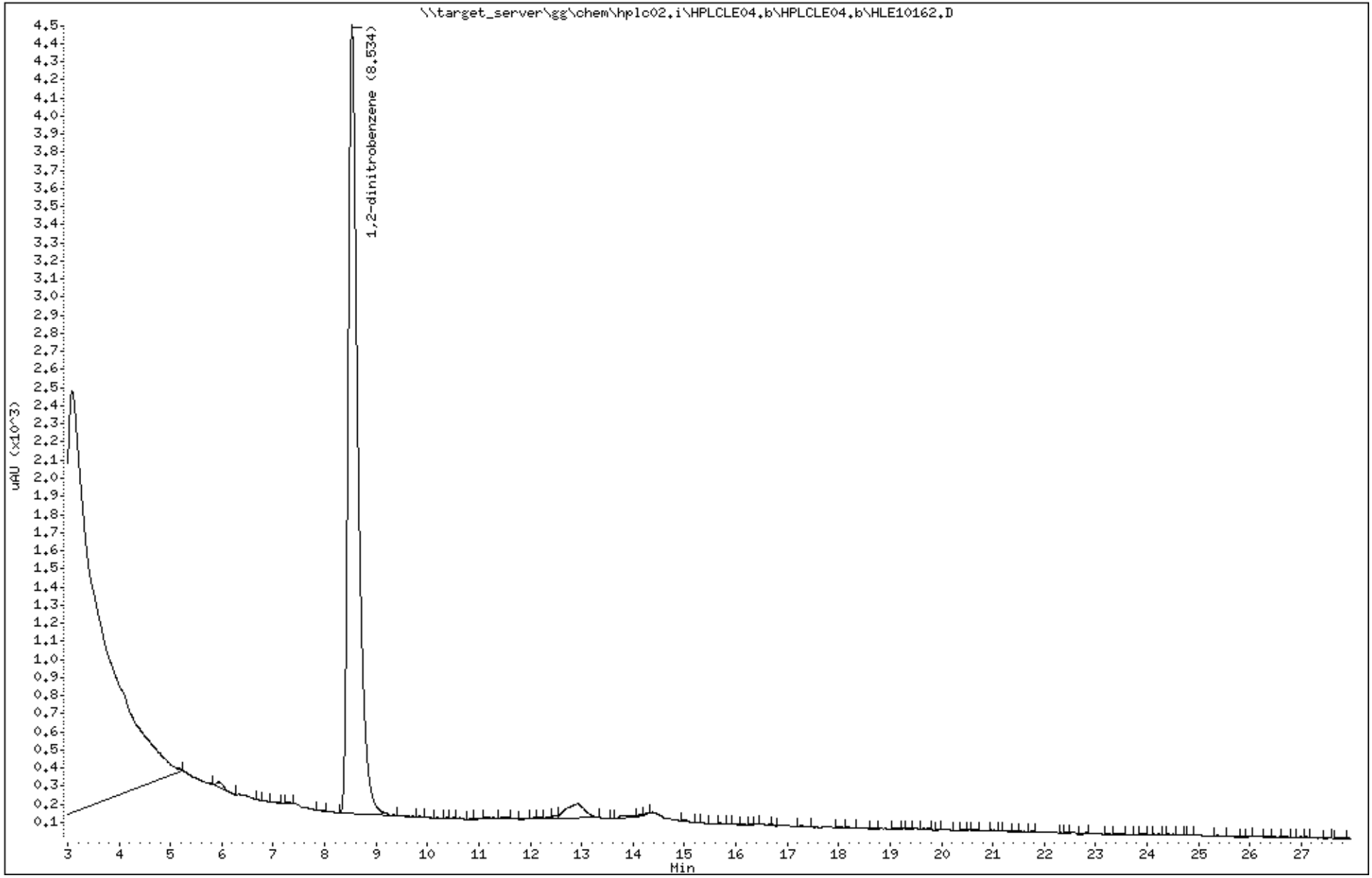
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10162.D
Lab Smp Id: SL3808-6 Client Smp ID: HAAP-19C-UGIA-DPT13
Inj Date : 05-MAY-2018 09:19
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-6
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 5
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	8.534	8.468	0.066	4359	0.94199	9.42	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10162.D
Date : 05-MAY-2018 09:19
Client ID: HAAP-19C-UGIA-DPT13 Instrument: hplc02.i
Sample Info: SL3808-6
Purge Volume: 0.5 Operator: AAB
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 3000025

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-8
Client ID: CHAAP-19C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10163.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 05-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		95.8	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10163.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

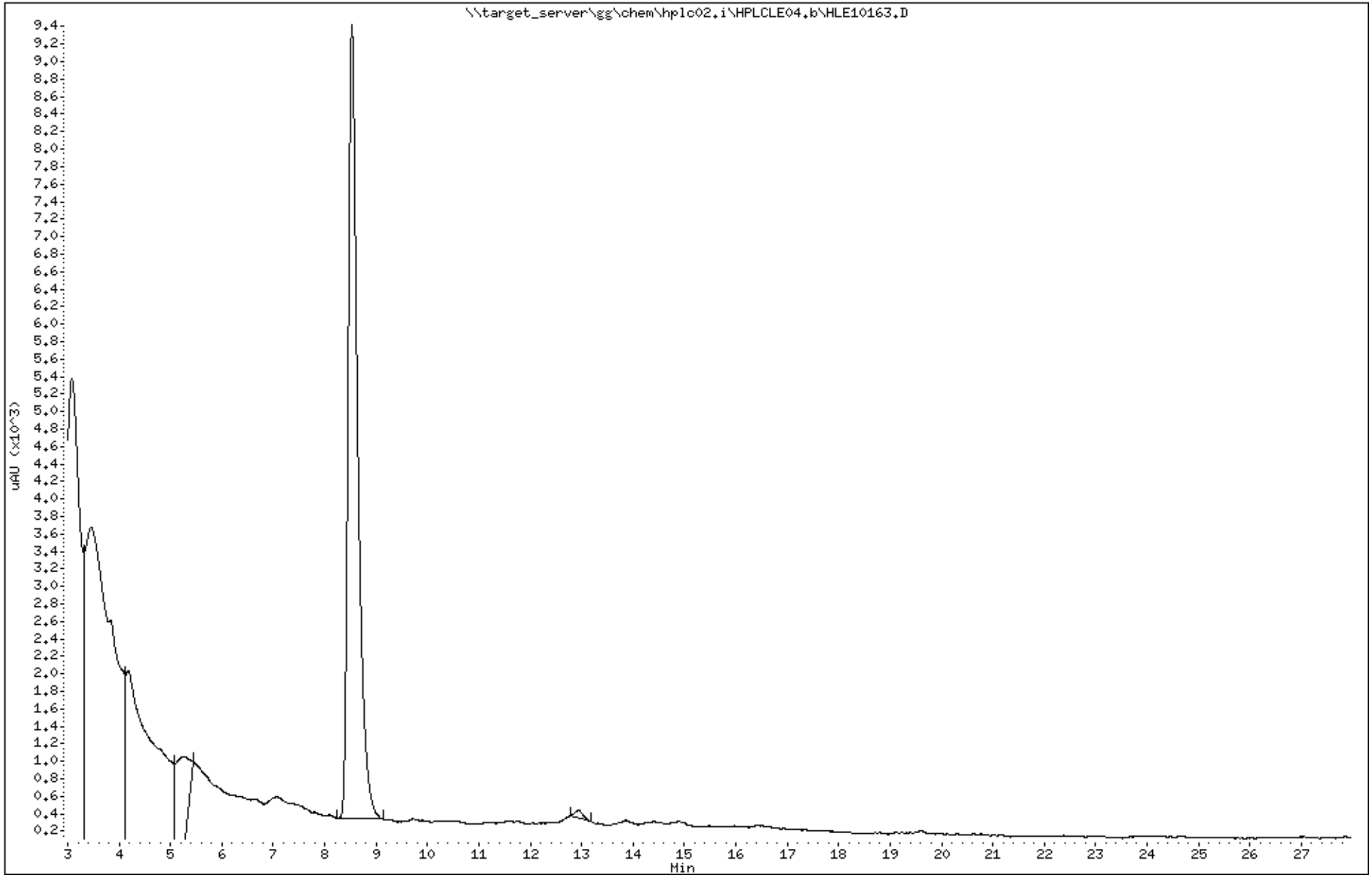
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10163.D
Lab Smp Id: SL3808-8 Client Smp ID: HAAP-19C-LGIA-DPT14
Inj Date : 05-MAY-2018 09:49
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-8
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 6
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\HPLCLE04.b\HLE10163.D
Date : 05-MAY-2018 09:49
Client ID: HAAP-19C-LGIA-DPT14
Instrument: hplc02.i
Sample Info: SL3808-8
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000028

Data File: HLE10163.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

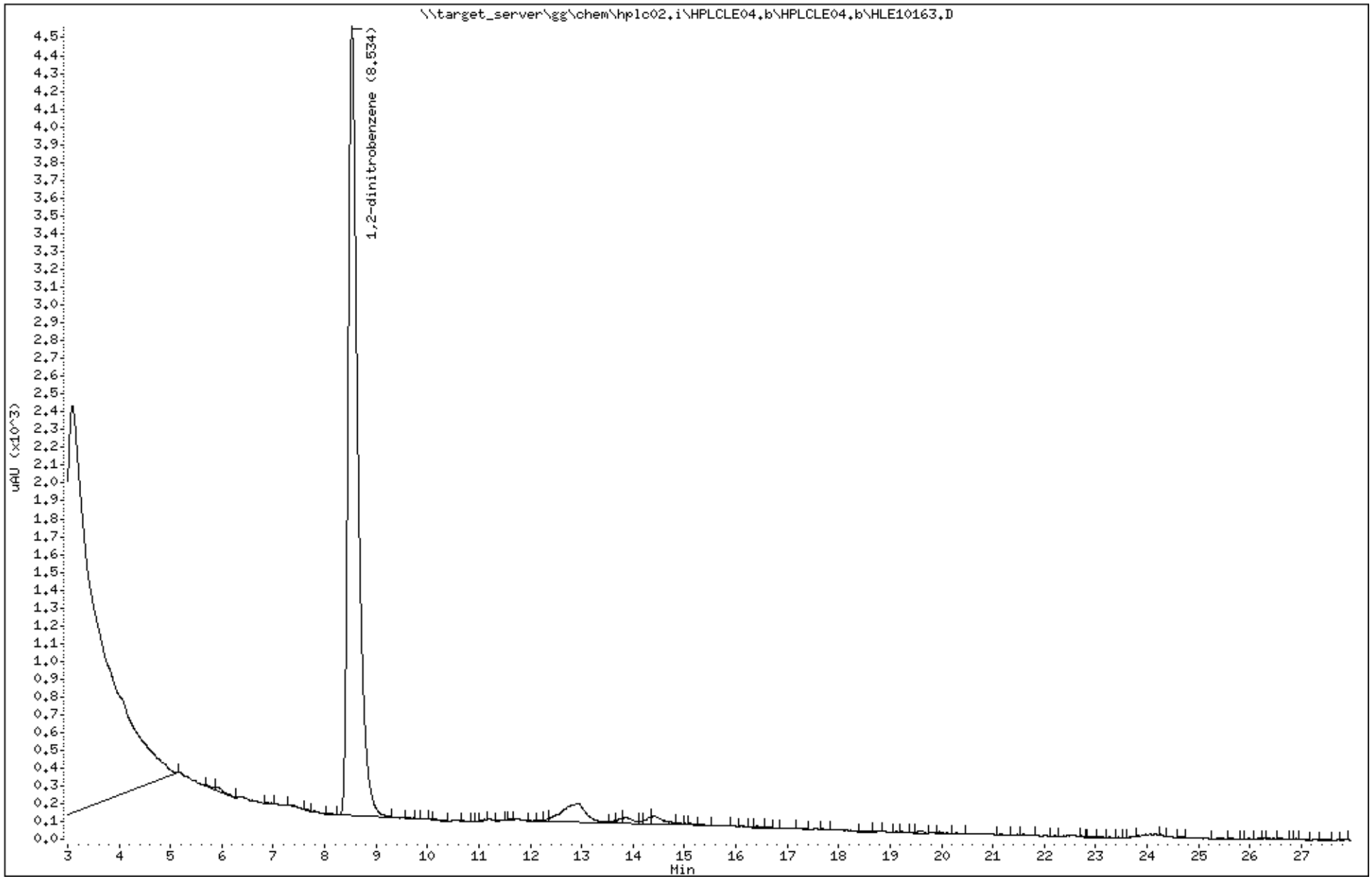
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10163.D
Lab Smp Id: SL3808-8 Client Smp ID: HAAP-19C-LGIA-DPT14
Inj Date : 05-MAY-2018 09:49
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-8
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 6
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	8.533	8.468	0.065	4432	0.95777	9.58	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10163.D
Date : 05-MAY-2018 09:49
Client ID: HAAP-19C-LGIA-DPT14
Instrument: hplc02.i
Sample Info: SL3808-8
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000030

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-10
Client ID: CHAAP-19C-LGIA-DPT114
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10286.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10286.D
Report Date: 18-May-2018 05:32

Katahdin Analytical Services

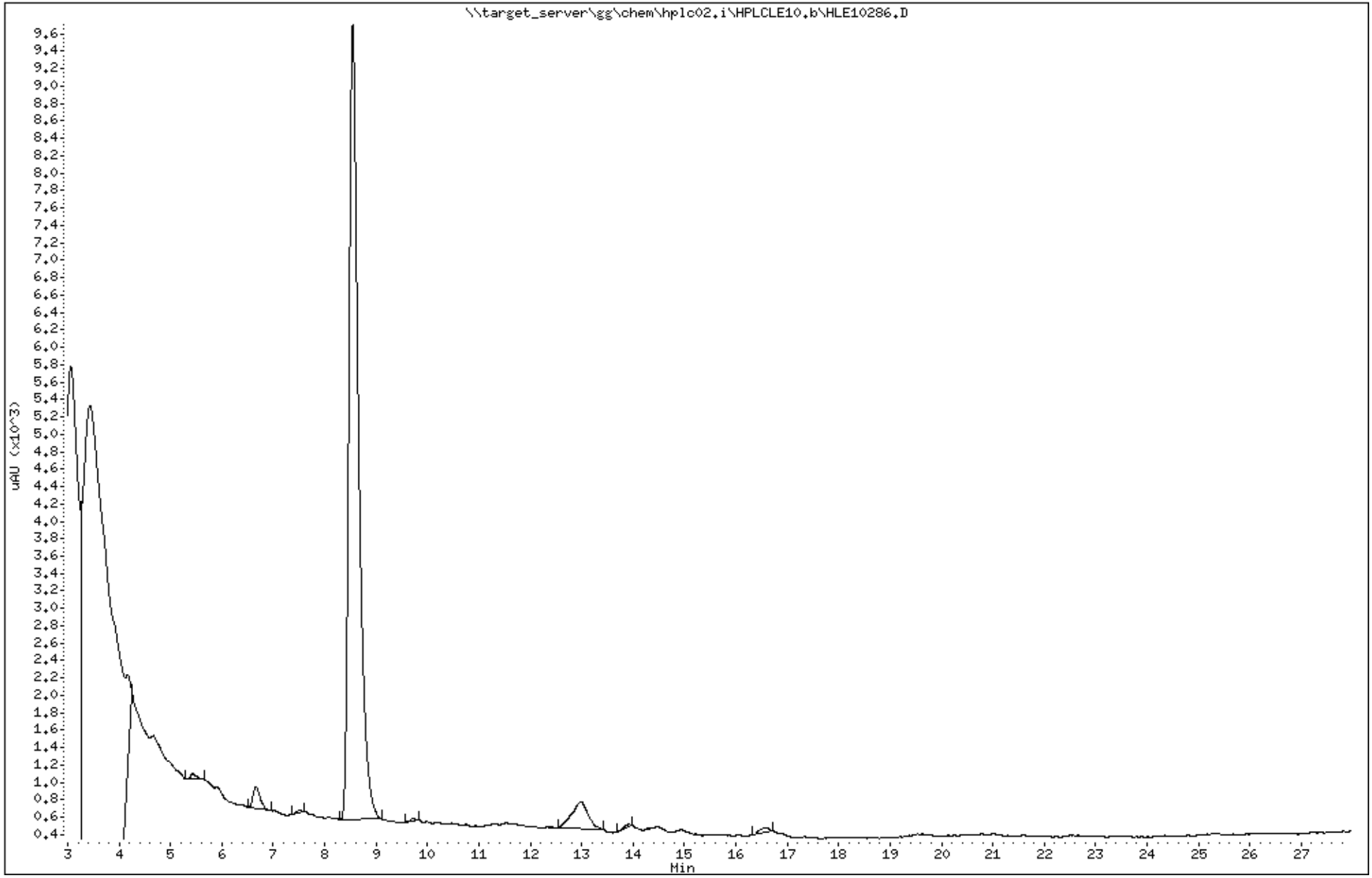
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10286.D
Lab Smp Id: SL3808-10 Client Smp ID: HAAP-19C-LGIA-DPT11
Inj Date : 10-MAY-2018 10:12
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-10
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 5
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\HPLCLE10.b\HLE10286.D
Date : 10-MAY-2018 10:12
Client ID: HAAP-19C-LGIA-DPT11
Instrument: hplc02.i
Sample Info: SL3808-10
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000033

Data File: HLE10286.D
Report Date: 18-May-2018 05:34

Katahdin Analytical Services

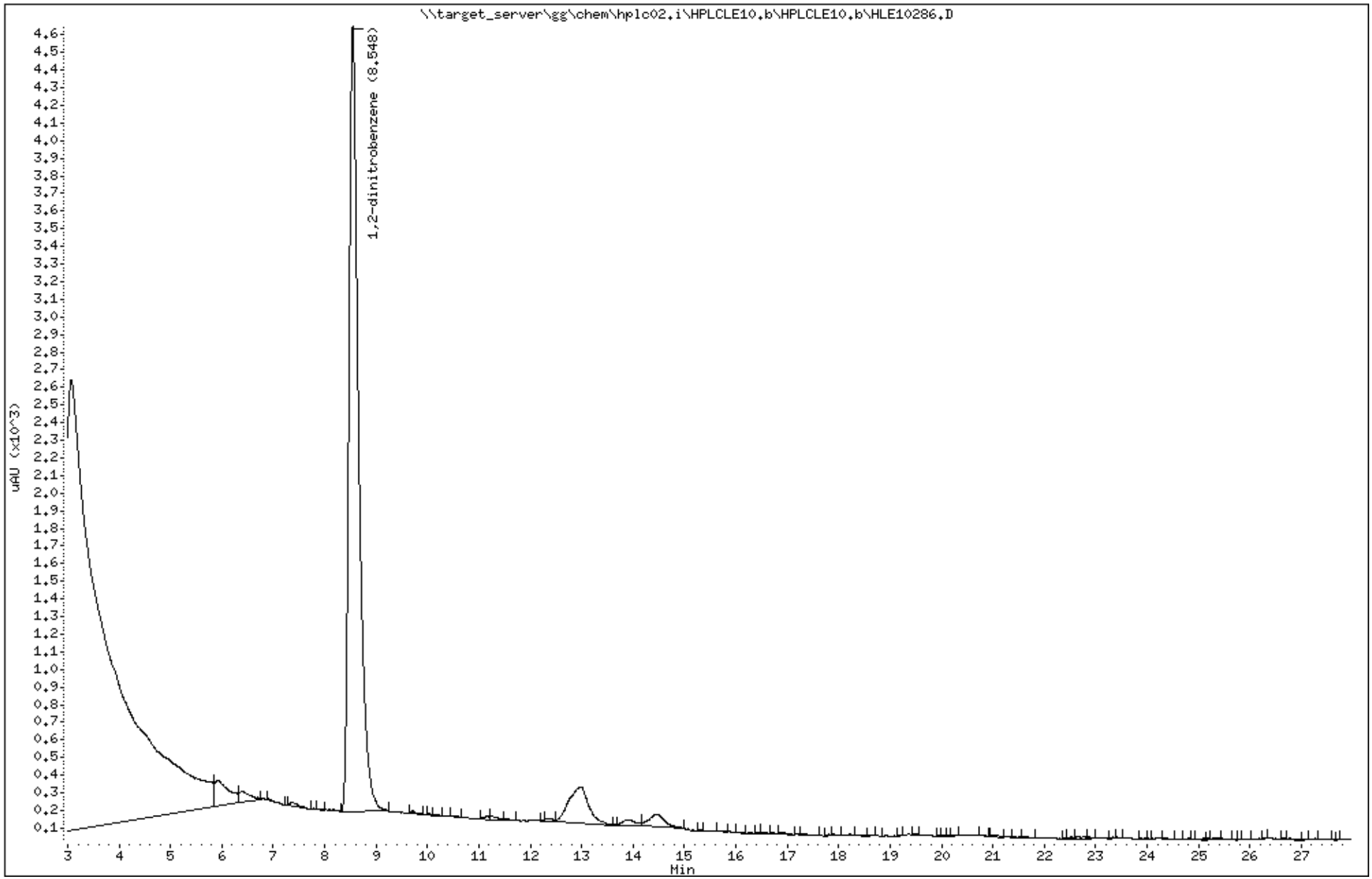
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10286.D
Lab Smp Id: SL3808-10 Client Smp ID: HAAP-19C-LGIA-DPT11
Inj Date : 10-MAY-2018 10:12
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-10
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 5
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	8.547	8.540	0.007	4455	0.96274	9.63	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10286.D
Date : 10-MAY-2018 10:12
Client ID: HAAP-19C-LGIA-DPT11 Instrument: hplc02.i
Sample Info: SL3808-10
Purge Volume: 0.5 Operator: AAB
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 3000035

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-12
Client ID: CHAAP-19C-UGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10287.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		97.5	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10287.D
Report Date: 18-May-2018 05:32

Katahdin Analytical Services

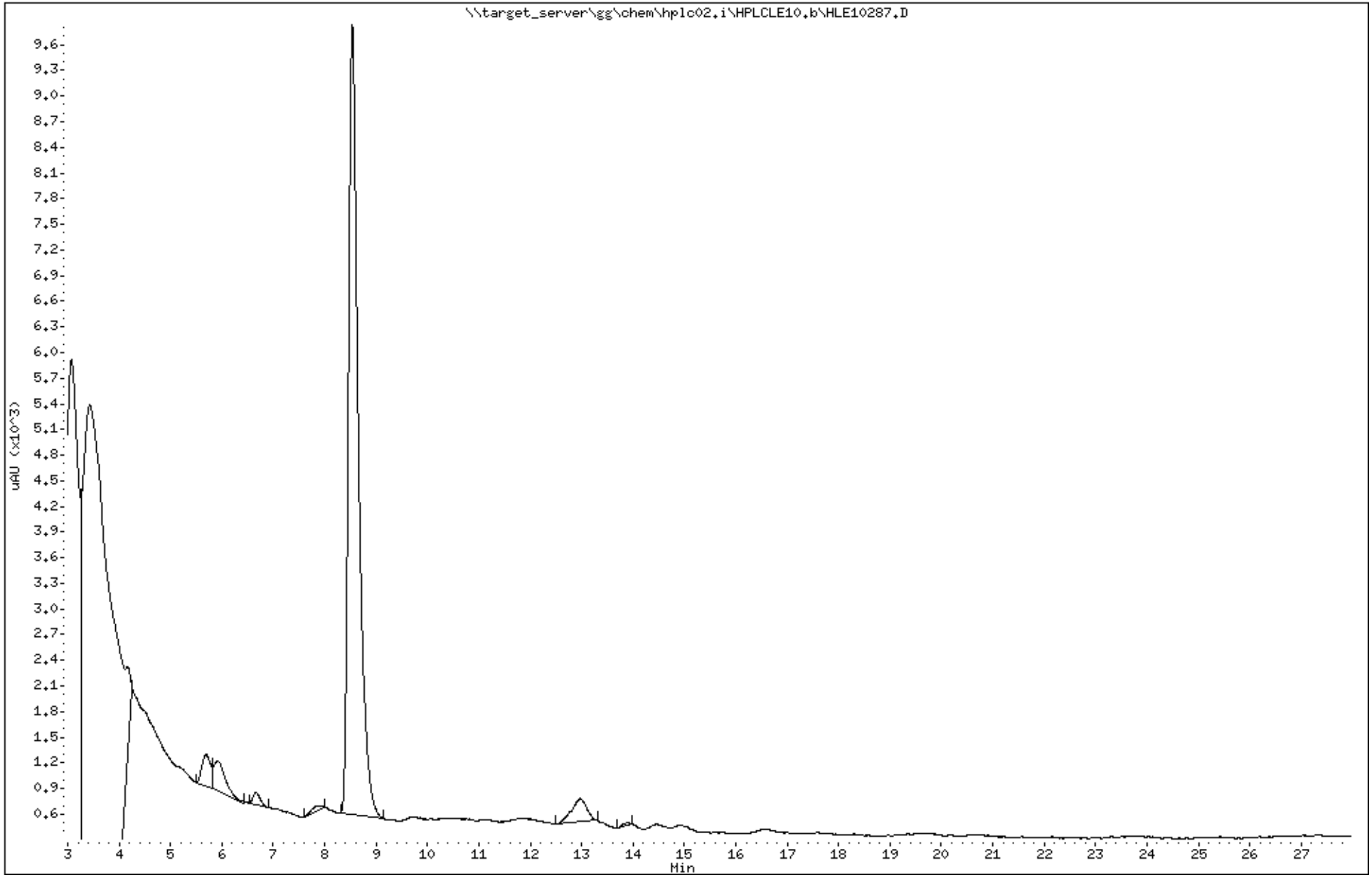
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10287.D
Lab Smp Id: SL3808-12 Client Smp ID: HAAP-19C-UGIA-DPT02
Inj Date : 10-MAY-2018 10:43
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-12
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 6
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\HPLCLE10.b\HLE10287.D
Date : 10-MAY-2018 10:43
Client ID: HAAP-19C-UGIA-DPT02
Instrument: hplc02.i
Sample Info: SL3808-12
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000038

Data File: HLE10287.D
Report Date: 18-May-2018 05:34

Katahdin Analytical Services

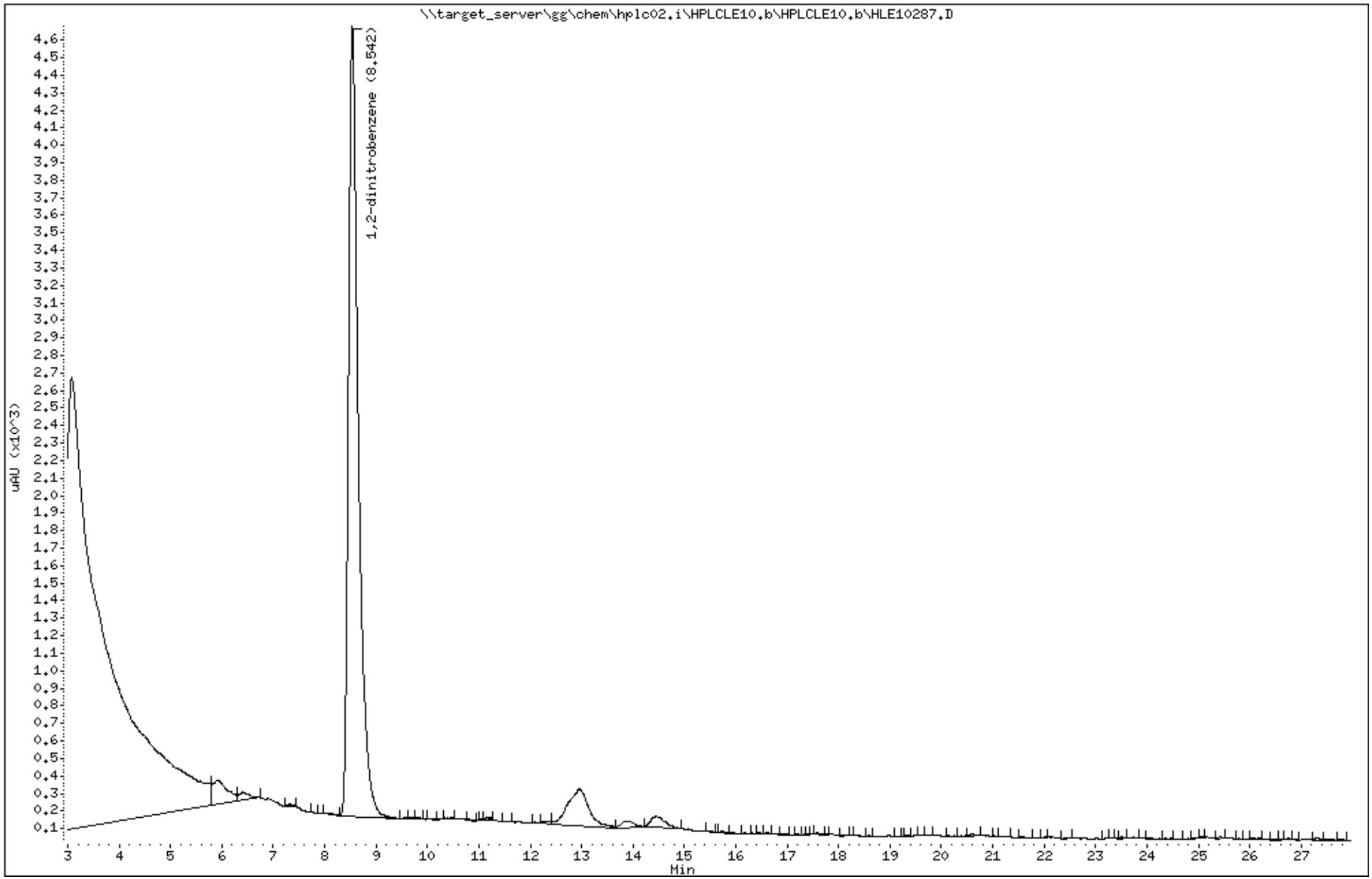
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10287.D
Lab Smp Id: SL3808-12 Client Smp ID: HAAP-19C-UGIA-DPT02
Inj Date : 10-MAY-2018 10:43
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-12
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 6
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	8.542	8.540	0.002	4510	0.97462	9.75	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10287.D
Date : 10-MAY-2018 10:43
Client ID: HAAP-19C-UGIA-DPT02 Instrument: hplc02.i
Sample Info: SL3808-12
Purge Volume: 0.5 Operator: AAB
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 3000040

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-14
Client ID: CHAAP-EB-050218-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10288.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		95.8	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10288.D
Report Date: 18-May-2018 05:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10288.D
Lab Smp Id: SL3808-14 Client Smp ID: CHAAP-EB-050218-DPT
Inj Date : 10-MAY-2018 11:14
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-14
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 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

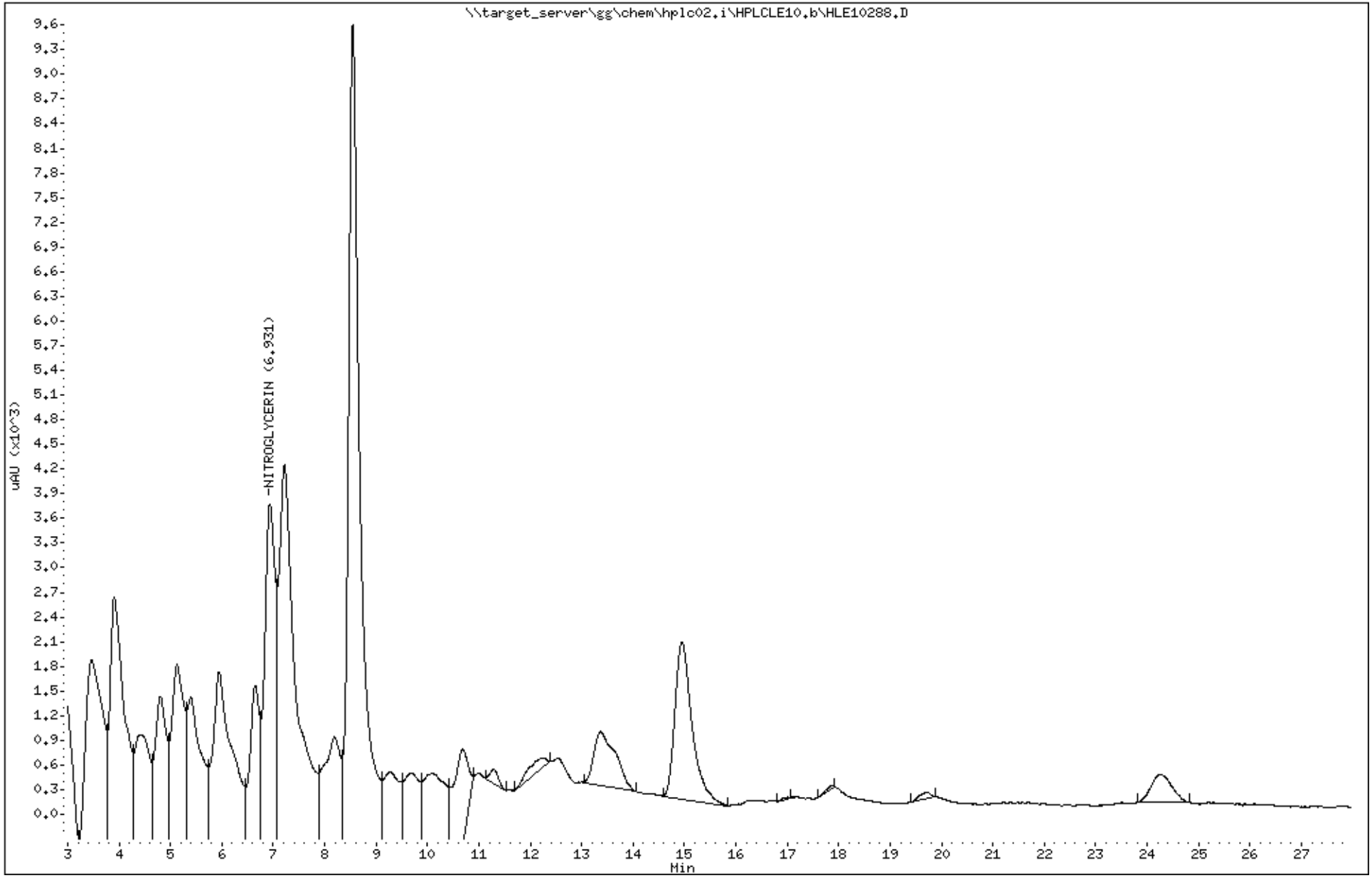
Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

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~~	~~6.930~~	~~6.974~~	~~-0.044~~	~~20138~~	~~3.65269~~	~~36.5~~	NC

AAB
6:16 am, May 18, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10288.D
Date : 10-MAY-2018 11:14
Client ID: CHAAP-EB-050218-DPT
Instrument: hplc02.i
Sample Info: SL3808-14
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000043

Data File: HLE10288.D
Report Date: 18-May-2018 05:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10288.D
Lab Smp Id: SL3808-14 Client Smp ID: CHAAP-EB-050218-DPT
Inj Date : 10-MAY-2018 11:14
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-14
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 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: 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

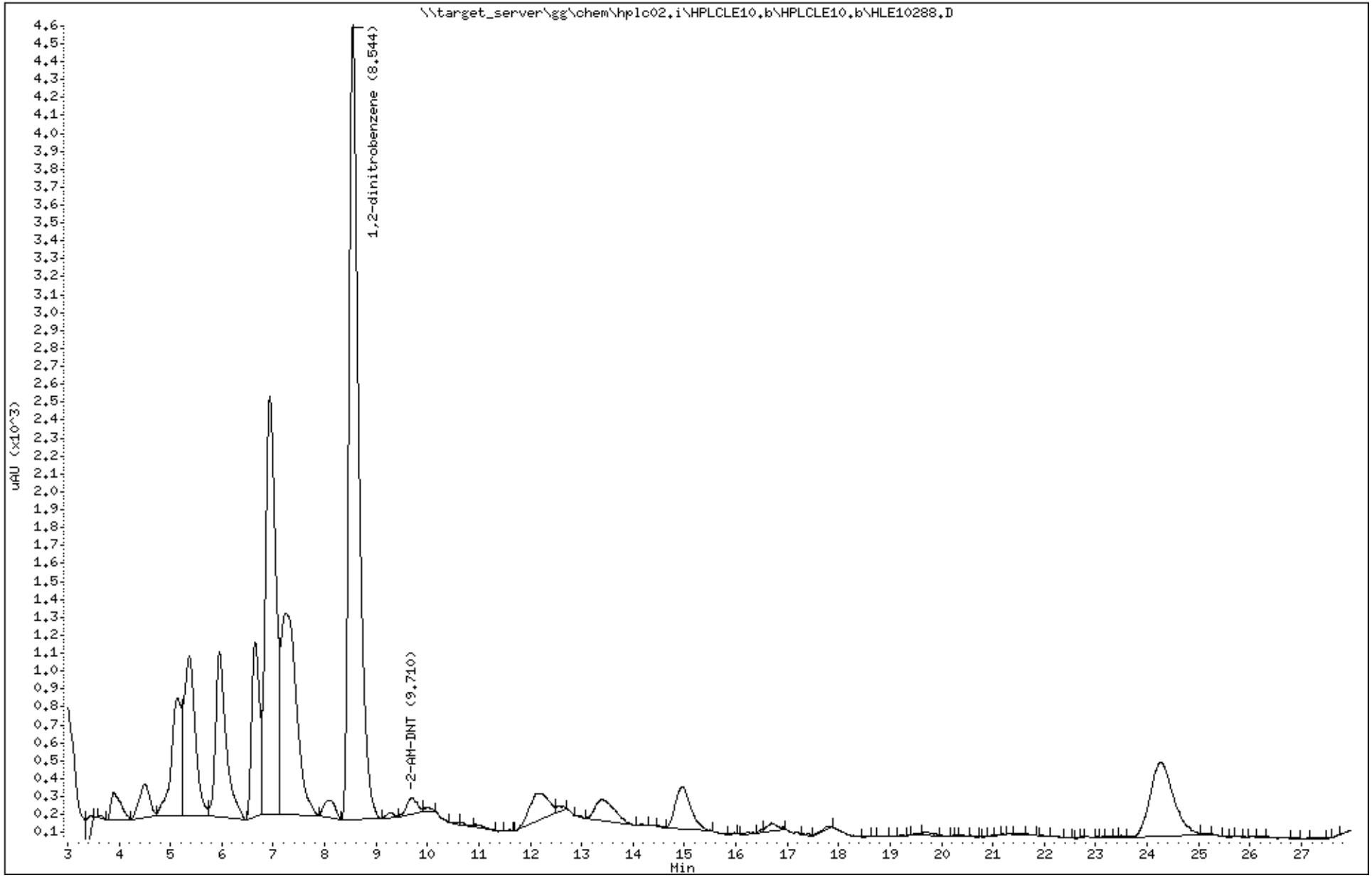
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.543	8.540	0.003	4433	0.95798	9.58	
~~12 2-AM-DNT~~	~~9.710~~	~~9.667~~	~~0.043~~	~~85~~	~~0.01476~~	~~0.148(a)~~	NC

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

AAB
6:17 am, May 18, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10288.D
Date : 10-MAY-2018 11:14
Client ID: CHAAP-EB-050218-DPT
Instrument: hplc02.i
Sample Info: SL3808-14
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000045

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HLE10551.D
Report Date: 18-May-2018 05:49

Katahdin Analytical Services

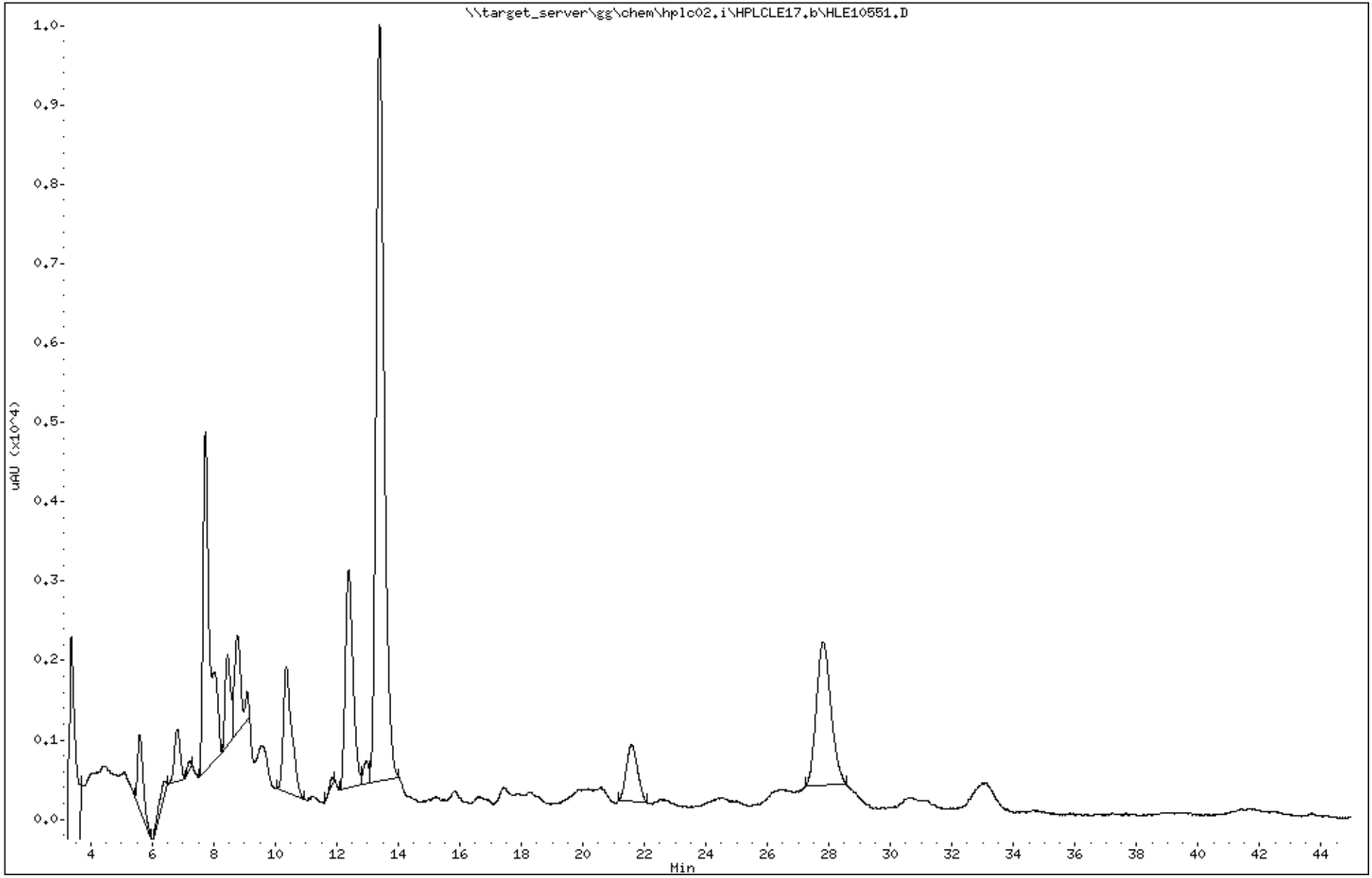
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HLE10551.D
Lab Smp Id: SL3808-14C Client Smp ID: CHAAP-EB-050218-DPT
Inj Date : 17-MAY-2018 17:21
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-14C
Misc Info : WG227584,WG227670,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\E2016A.m
Meth Date : 18-May-2018 02:37 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 70
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\HPLCLE17.b\HLE10551.D
Date : 17-MAY-2018 17:21
Client ID: CHAAP-EB-050218-DPT
Instrument: hplc02.i
Sample Info: SL3808-14C
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000047

Data File: HLE10551.D
Report Date: 18-May-2018 05:50

Katahdin Analytical Services

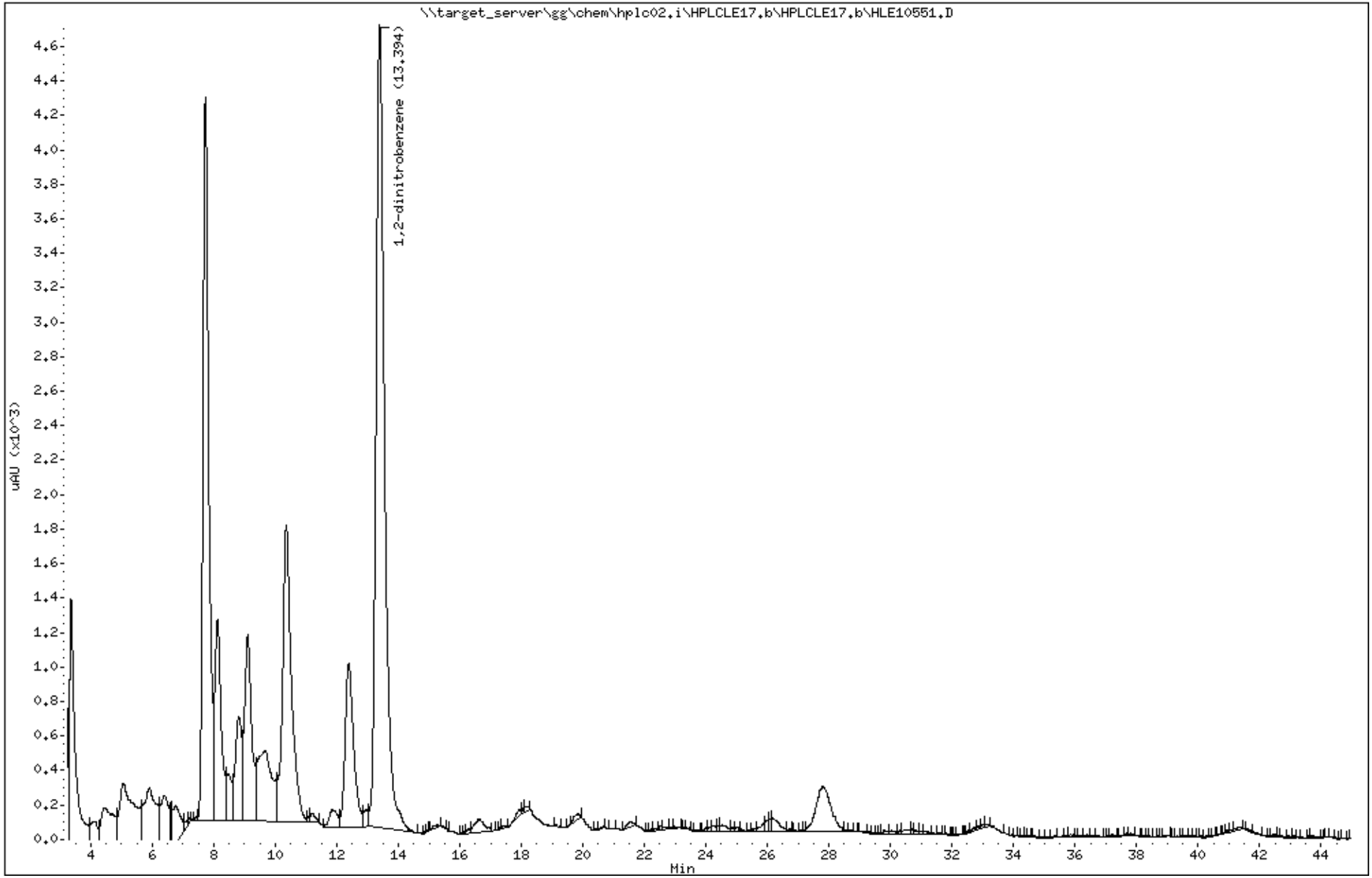
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10551.D
Lab Smp Id: SL3808-14C Client Smp ID: CHAAP-EB-050218-DPT
Inj Date : 17-MAY-2018 17:21
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-14C
Misc Info : WG227584,WG227670,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\E2016A.m\E2016A.m
Meth Date : 18-May-2018 02:33 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 70
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	13.393	13.373	0.020	4662	0.87962	8.80	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10551.D
Date : 17-MAY-2018 17:21
Client ID: CHAAP-EB-050218-DPT
Instrument: hplc02.i
Sample Info: SL3808-14C
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000049

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-15
Client ID: CHAAP-19C-LGIA-DPT22
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10289.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		94.6	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10289.D
Report Date: 18-May-2018 05:32

Katahdin Analytical Services

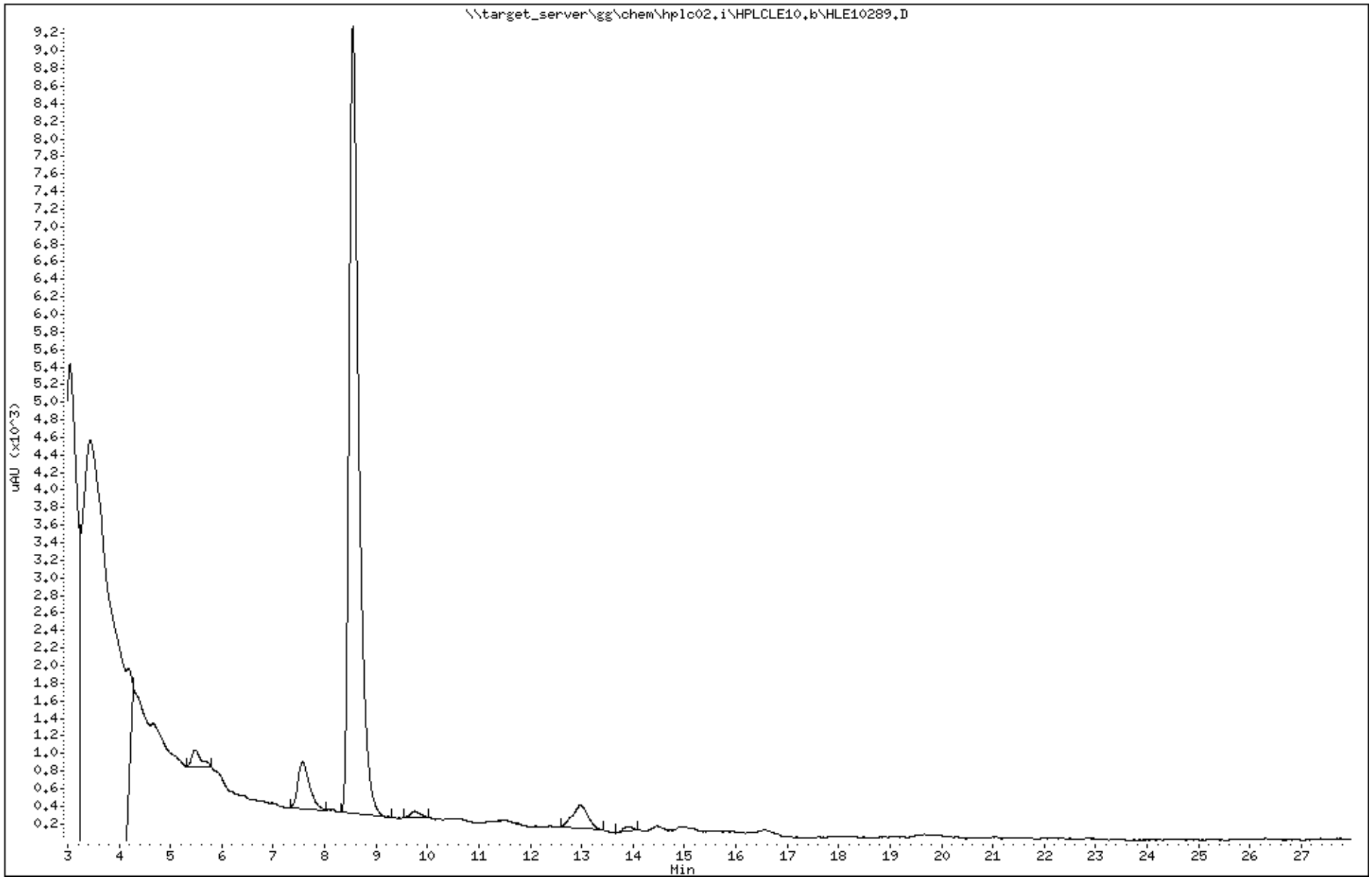
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10289.D
Lab Smp Id: SL3808-15 Client Smp ID: HAAP-19C-LGIA-DPT22
Inj Date : 10-MAY-2018 11:45
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-15
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 8
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\HPLCLE10.b\HLE10289.D
Date : 10-MAY-2018 11:45
Client ID: HAAP-19C-LGIA-DPT22
Instrument: hplc02.i
Sample Info: SL3808-15
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000052

Data File: HLE10289.D
Report Date: 18-May-2018 05:34

Katahdin Analytical Services

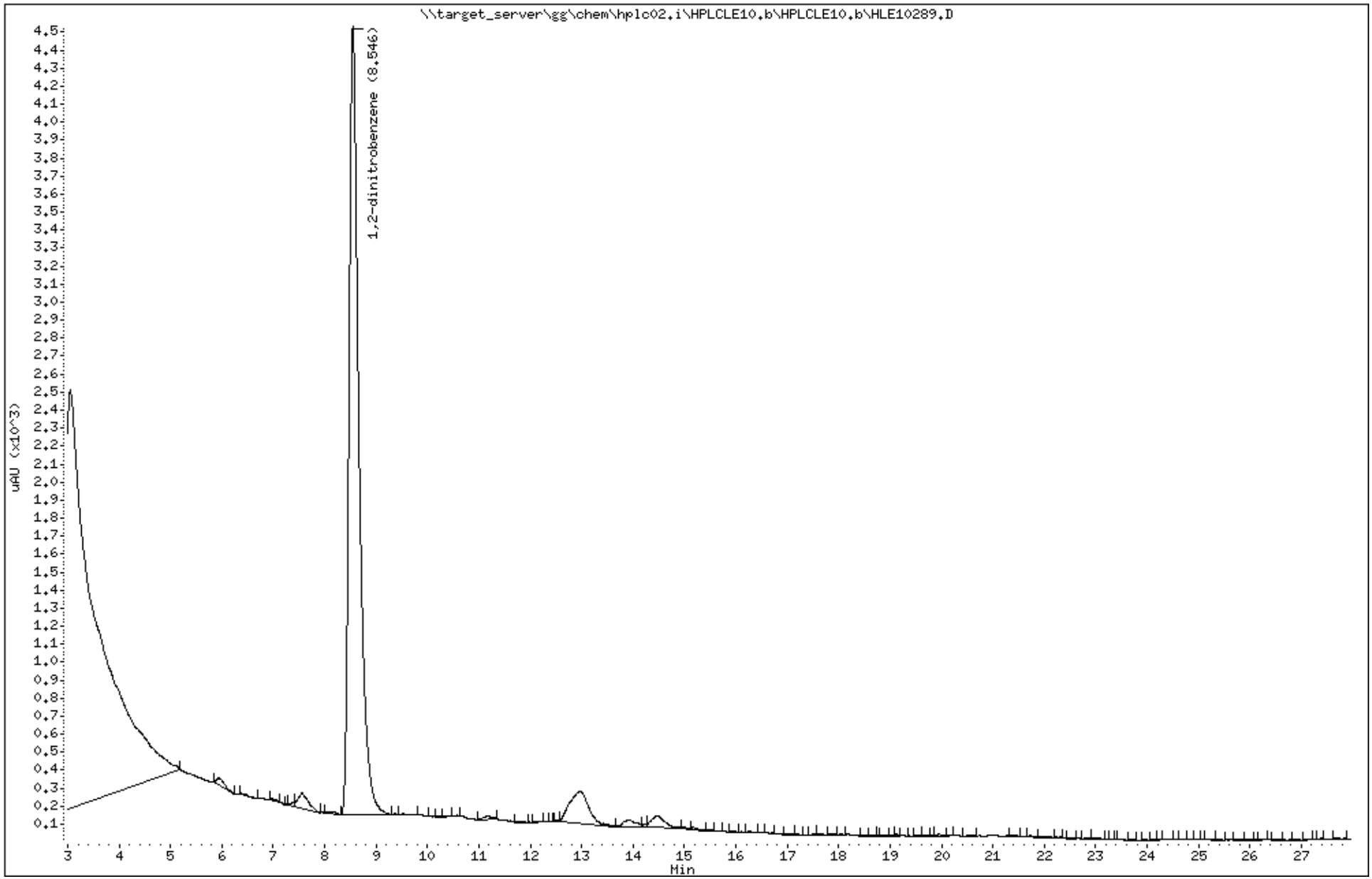
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10289.D
Lab Smp Id: SL3808-15 Client Smp ID: HAAP-19C-LGIA-DPT22
Inj Date : 10-MAY-2018 11:45
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-15
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 8
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	8.545	8.540	0.005	4379	0.94631	9.46	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10289.D
Date : 10-MAY-2018 11:45
Client ID: HAAP-19C-LGIA-DPT22 Instrument: hplc02.i
Sample Info: SL3808-15
Purge Volume: 0.5 Operator: AAB
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 3000054

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3808-17
Client ID: CHAAP-19C-UGIA-DPT21
Project: Cornhusker Army Ammunition Plant
SDG: SL3808
Lab File ID: HLE10290.D

Sample Date: 02-MAY-18
Received Date: 03-MAY-18
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		96.7	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10290.D
Report Date: 18-May-2018 05:32

Katahdin Analytical Services

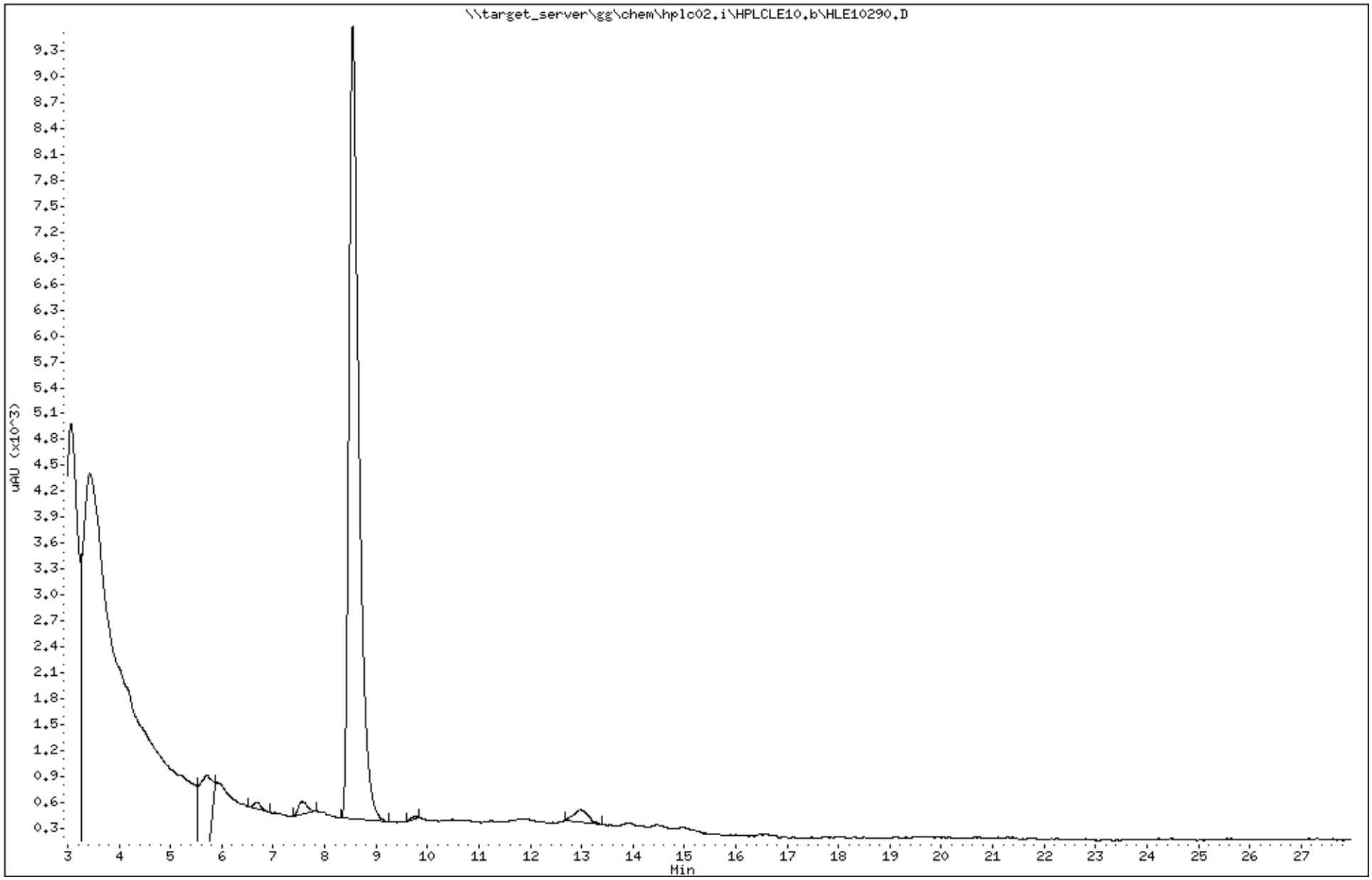
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10290.D
Lab Smp Id: SL3808-17 Client Smp ID: HAAP-19C-UGIA-DPT21
Inj Date : 10-MAY-2018 12:16
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-17
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 9
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\HPLCLE10.b\HLE10290.D
Date : 10-MAY-2018 12:16
Client ID: HAAP-19C-UGIA-DPT21
Instrument: hplc02.i
Sample Info: SL3808-17
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000057

Data File: HLE10290.D
Report Date: 18-May-2018 05:34

Katahdin Analytical Services

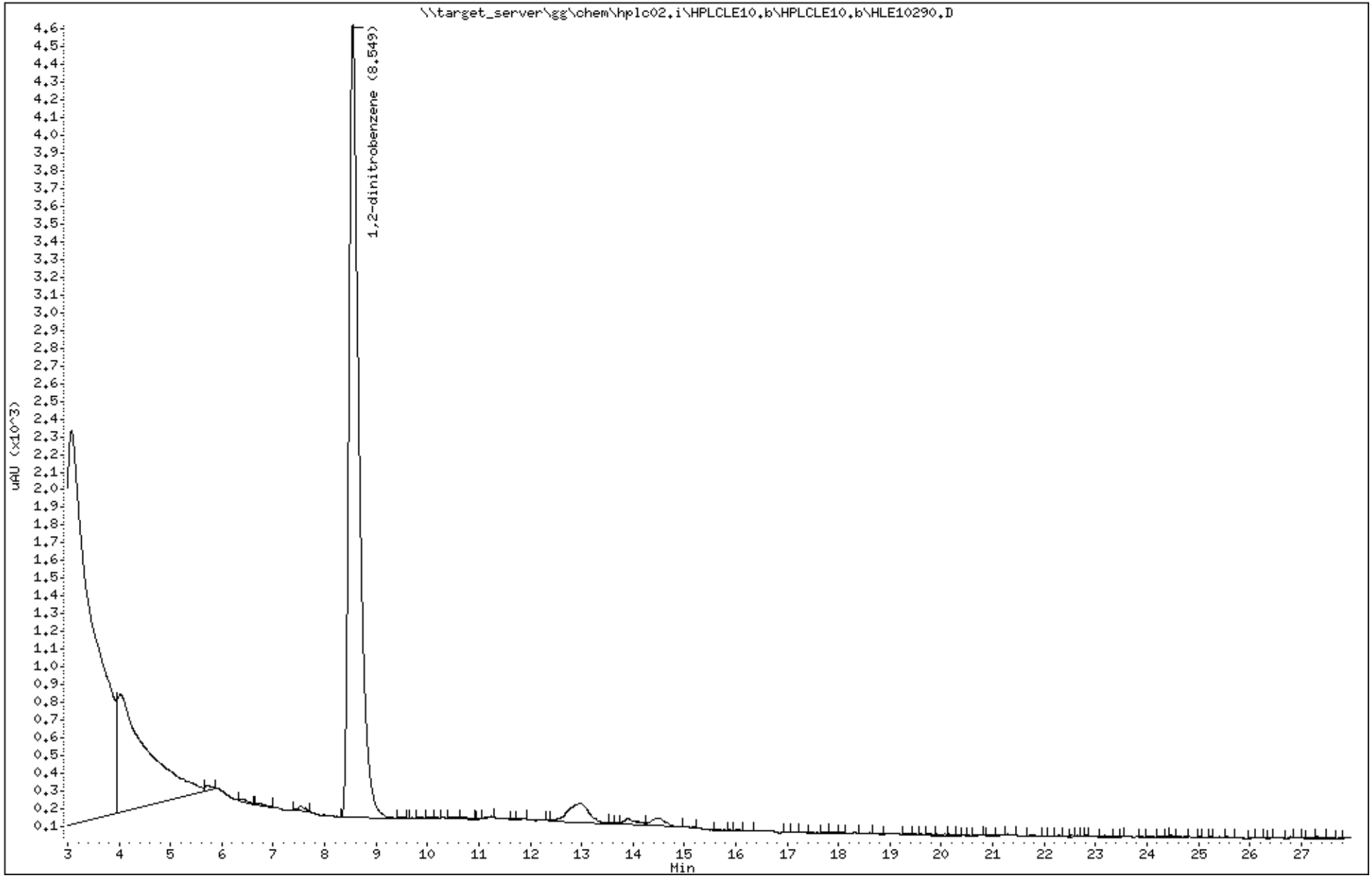
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10290.D
Lab Smp Id: SL3808-17 Client Smp ID: HAAP-19C-UGIA-DPT21
Inj Date : 10-MAY-2018 12:16
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3808-17
Misc Info : WG227584,WG227670,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 9
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	8.549	8.540	0.009	4475	0.96706	9.67	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10290.D
Date : 10-MAY-2018 12:16
Client ID: HAAP-19C-UGIA-DPT21 Instrument: hplc02.i
Sample Info: SL3808-17
Purge Volume: 0.5 Operator: AAB
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 3000059

Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
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
	0.100000(	0.200000(	0.400000(	1.0000	2.0000	0.000000(	0.000000(		New	b	m1	%RSD	%RSD	
NITROGLYCERIN	387	842	1740	4623	9365	17883	35504		LNR	0.000e+00	4458	0.99971	0.99000	O
PETN	146	338	682	1700	3598	6996	13848		LNR	0.00110	1738	0.99984	0.99000	O

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10016.D
Report Date: 02-Aug-2017 10:19

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: all.sub
Method File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m
Misc Info: WG210620,WG210205,WG210620-13,SK6535-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Ethylene Glycol Di	20.0	20.4	102.14	80-120
8 NITROGLYCERIN	20.0	20.2	100.76	80-120
18 PETN	20.0	21.9	109.40	80-120

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10016.D
Report Date: 02-Aug-2017 10:19

Katahdin Analytical Services

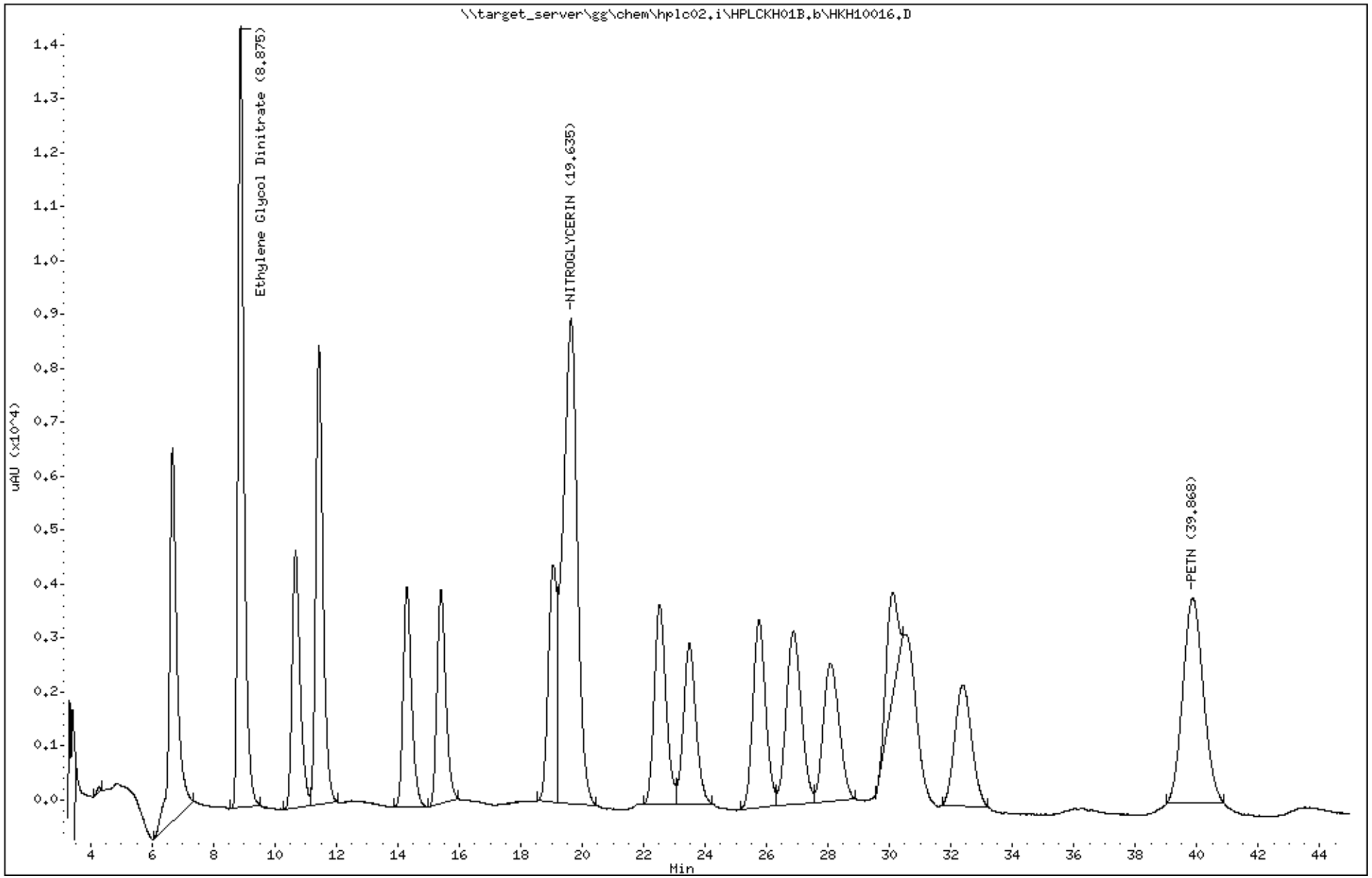
Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10016.D
Lab Smp Id: WG210620-16
Inj Date : 01-AUG-2017 17:01
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-16,SK6535
Misc Info : WG210620,WG210205,WG210620-13,SK6535-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m
Meth Date : 02-Aug-2017 09:48 hplc02.i   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: all.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
3	Ethylene Glycol Dinitrate	8.874	8.878	-0.004	14487	2.04271	20.4	
8	NITROGLYCERIN	19.634	19.651	-0.017	8984	2.01523	20.2	
18	PETN	39.868	39.878	-0.010	3800	2.18806	21.9	

Data File: \\target_server\gg\chem\hplc02.i\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 3000064

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10008.D
Report Date: 02-Aug-2017 09:49

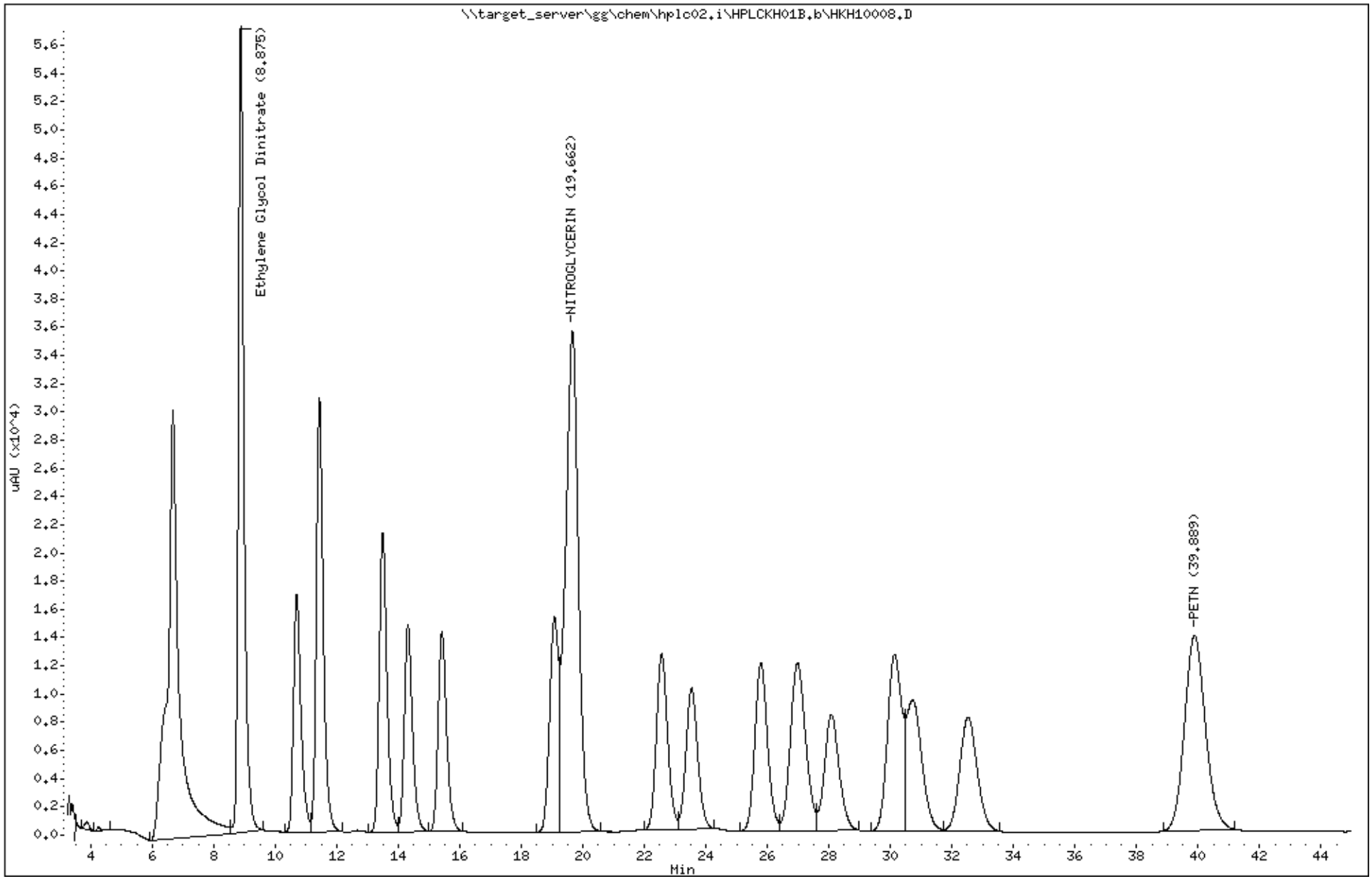
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\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
Meth Date : 02-Aug-2017 09:48 hplc02.i   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: all.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable   Local Compound Variable

						AMOUNTS		
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
3	Ethylene Glycol Dinitrate	8.875	8.878	-0.003	57193	8.00000	7.99	
8	NITROGLYCERIN	19.662	19.651	0.011	35504	8.00000	7.97	
18	PETN	39.888	39.878	0.010	13848	8.00000	7.99	

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10008.D
Date : 01-AUG-2017 09:37
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-15
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000066

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10009.D
Report Date: 02-Aug-2017 09:49

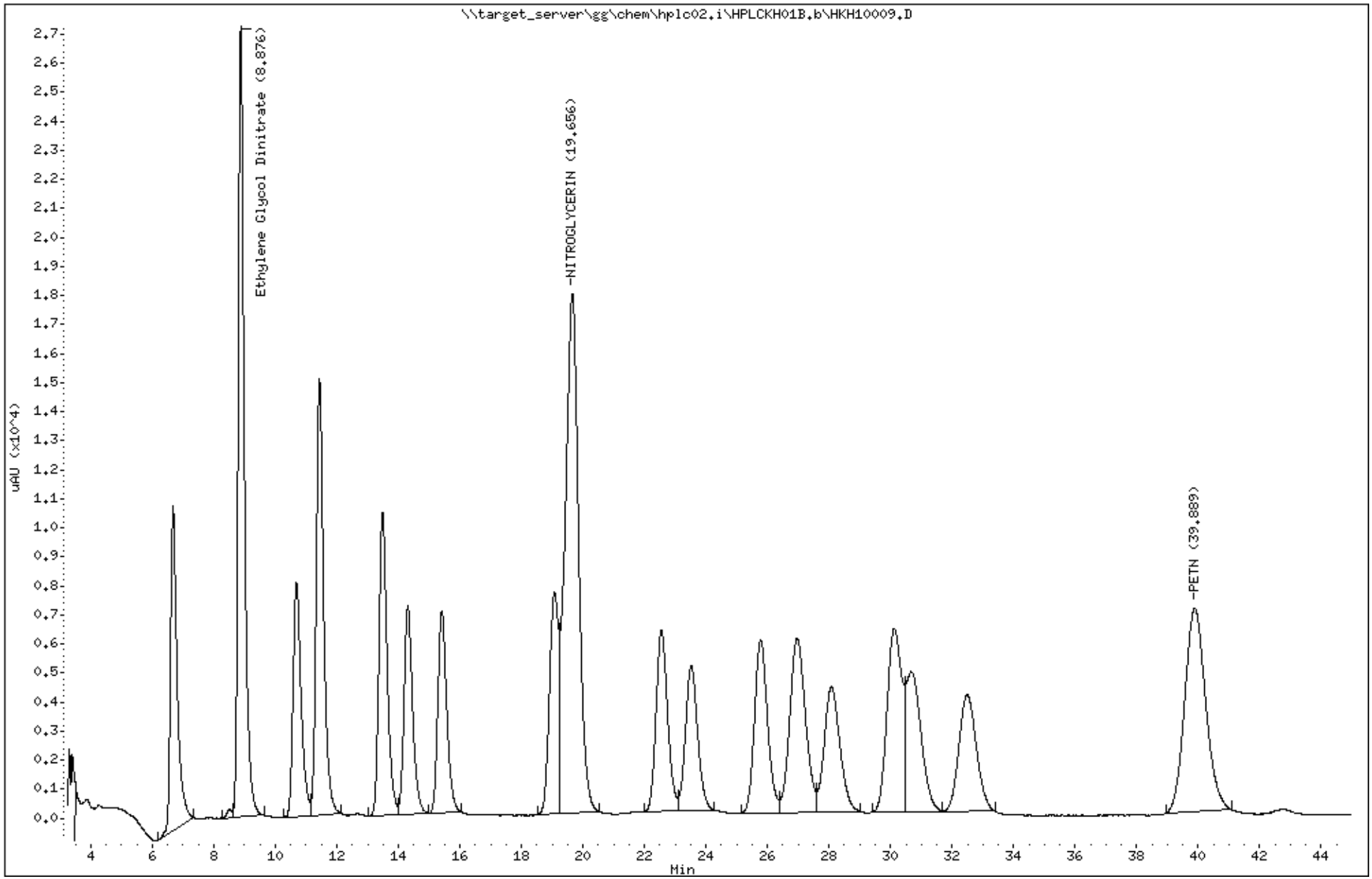
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\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
Meth Date : 02-Aug-2017 09:48 hplc02.i   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: all.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable   Local Compound Variable

					AMOUNTS		
Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
3 Ethylene Glycol Dinitrate	8.875	8.878	-0.003	27233	4.00000	3.84	
8 NITROGLYCERIN	19.655	19.651	0.004	17883	4.00000	4.01	
18 PETN	39.889	39.878	0.011	6996	4.00000	4.01	

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10009.D
Date : 01-AUG-2017 10:27
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-14
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000068

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10010.D
Report Date: 02-Aug-2017 09:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\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
Meth Date : 02-Aug-2017 09:48 hplc02.i   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: all.sub
Target Version: 4.12

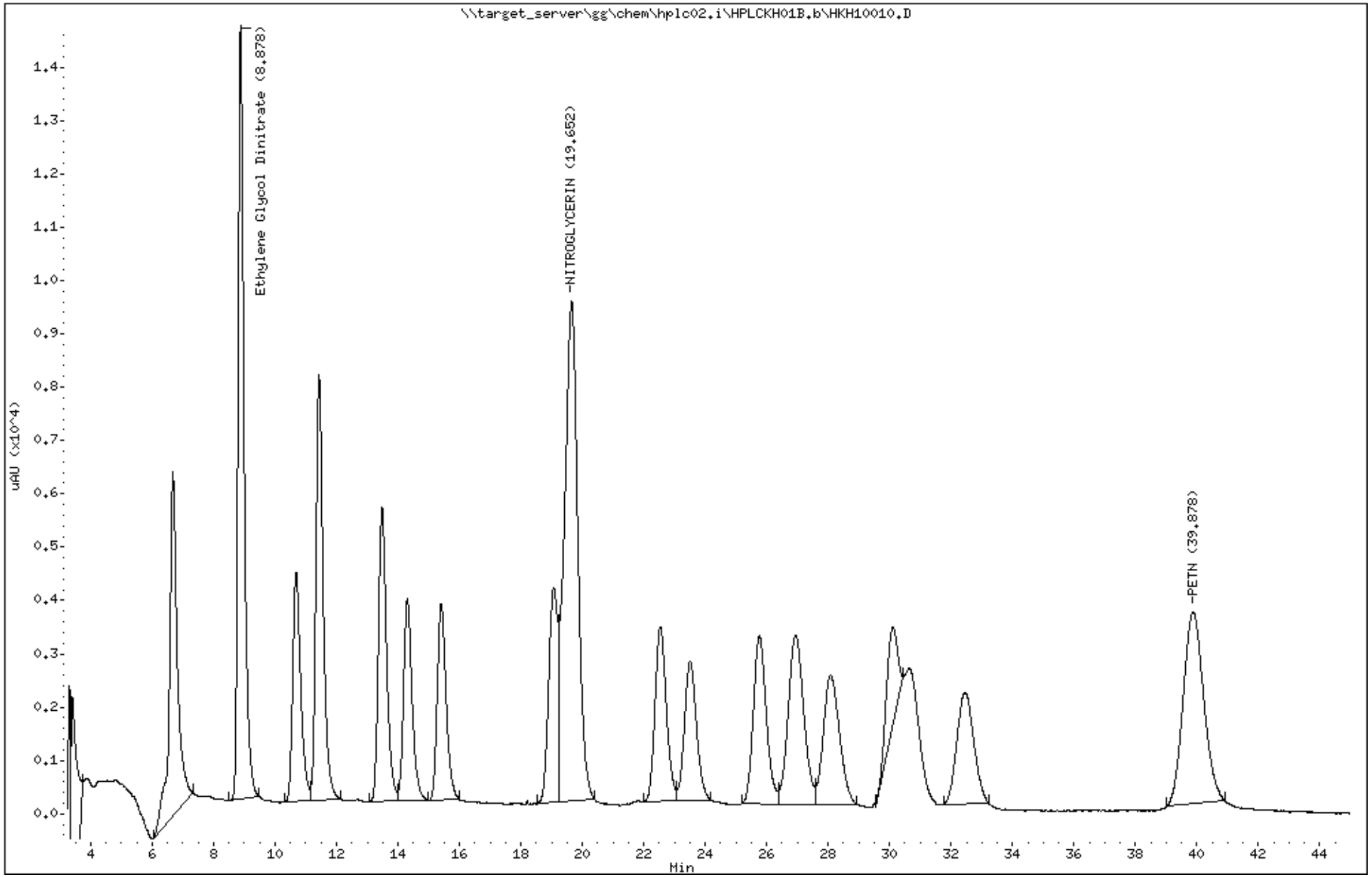
Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable   Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
3 Ethylene Glycol Dinitrate	8.878	8.878	0.000	14502	2.00000	2.00(a)	
8 NITROGLYCERIN	19.651	19.651	0.000	9365	2.00000	2.00(a)	
18 PETN	39.878	39.878	0.000	3598	2.00000	2.00(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\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



Katahdin Analytical Services 3000070

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10011.D
Report Date: 02-Aug-2017 09:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\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
Meth Date : 02-Aug-2017 09:48 hplc02.i   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: all.sub
Target Version: 4.12
Processing Host: V200T1

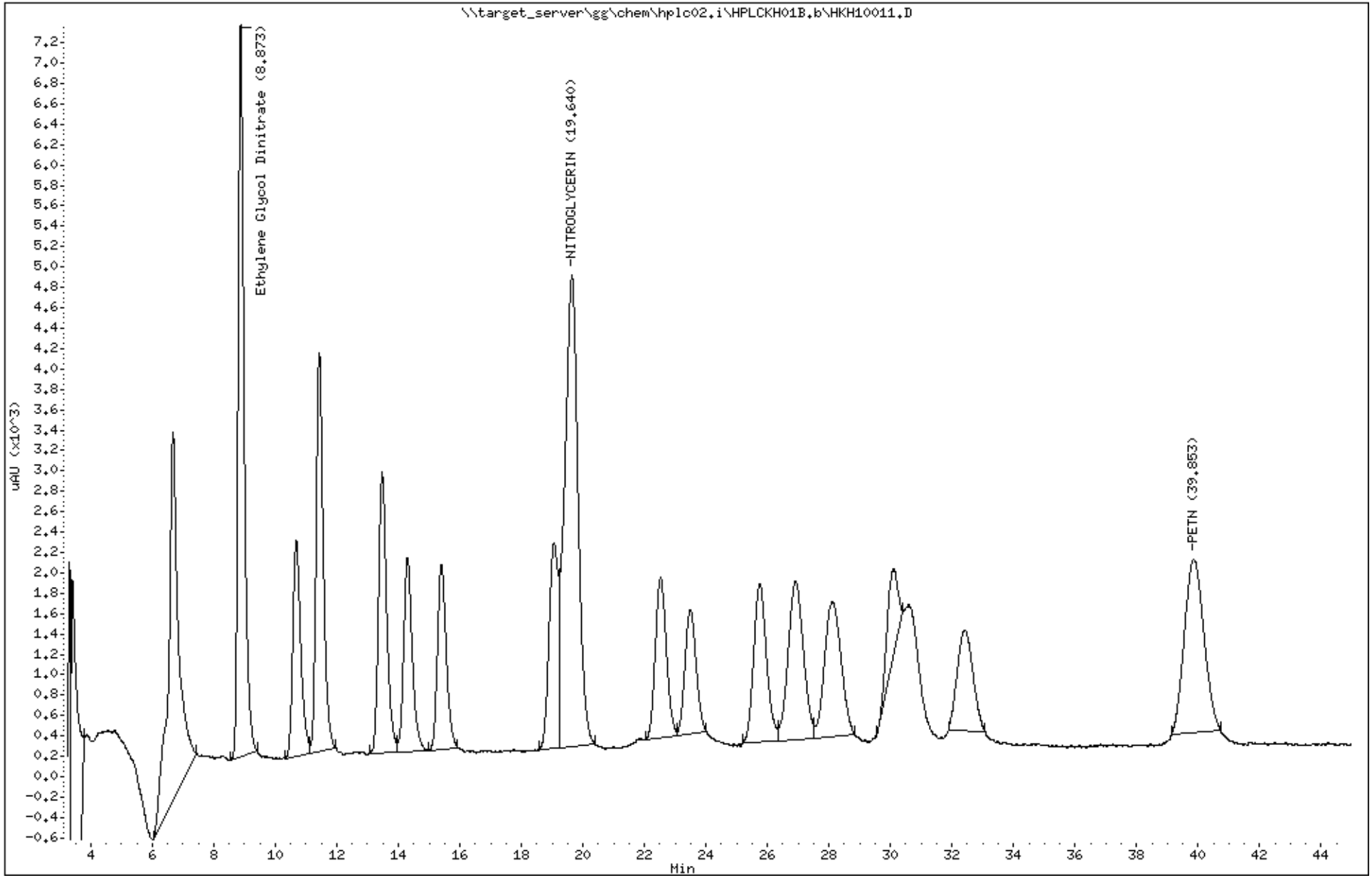
Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable   Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
3 Ethylene Glycol Dinitrate	8.873	8.878	-0.005	7179	1.00000	1.01(a)	
8 NITROGLYCERIN	19.639	19.651	-0.012	4623	1.00000	1.04(a)	
18 PETN	39.853	39.878	-0.025	1700	1.00000	0.962(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10011.D
Date : 01-AUG-2017 12:05
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-12
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000072

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10012.D
Report Date: 02-Aug-2017 09:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\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
Meth Date : 02-Aug-2017 09:48 hplc02.i 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: all.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

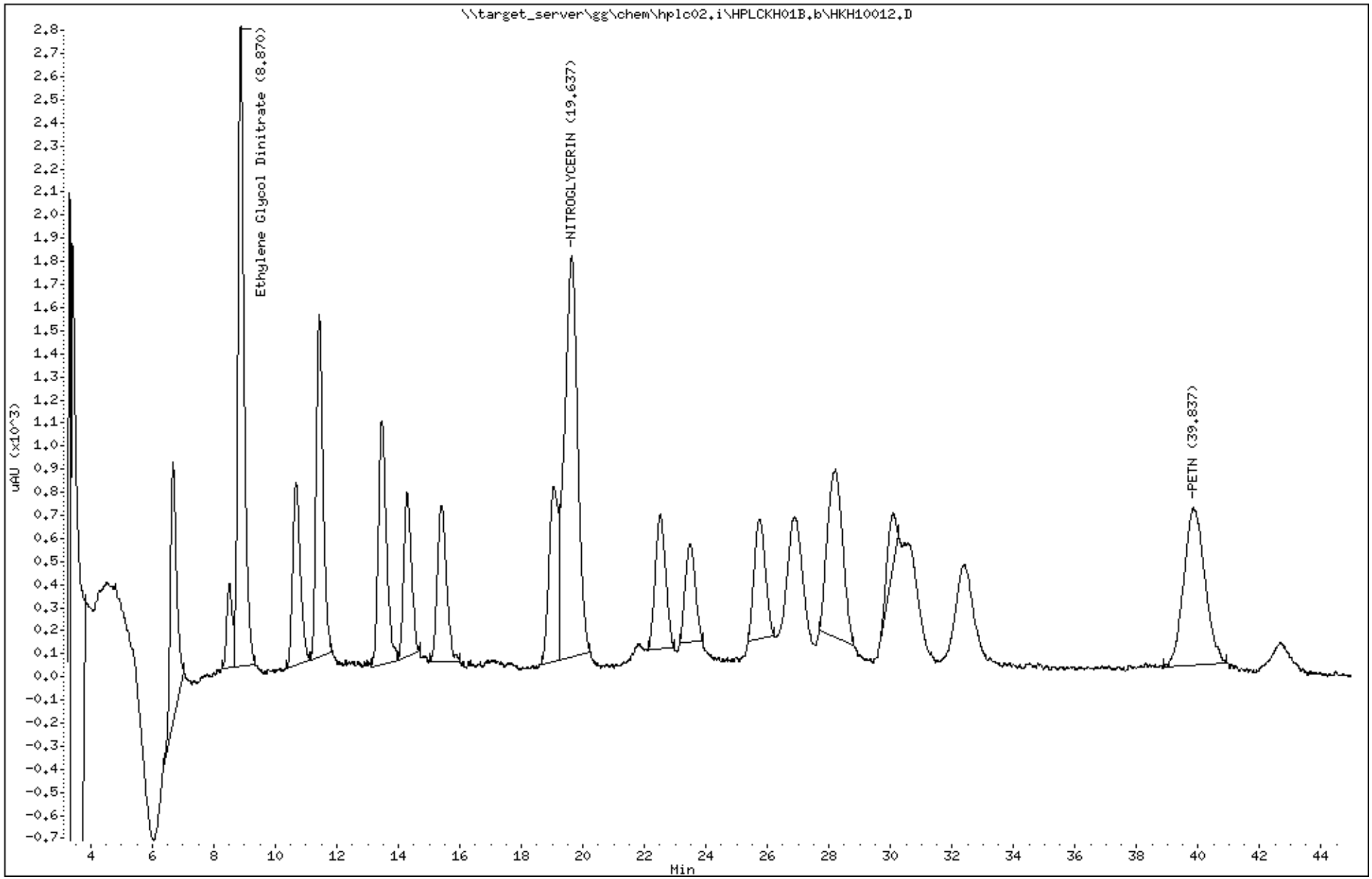
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
3 Ethylene Glycol Dinitrate	8.870	8.878	-0.008	2775	0.40000	0.391(a)	
8 NITROGLYCERIN	19.636	19.651	-0.015	1740	0.40000	0.390(a)	
18 PETN	39.836	39.878	-0.042	682	0.40000	0.381(aM)	M6

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

AAB
10:40 am, Aug 02, 2017

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10012.D
Date : 01-AUG-2017 12:54
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-11
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000074

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10013.D
Report Date: 02-Aug-2017 09:50

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\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
Meth Date : 02-Aug-2017 09:48 hplc02.i   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: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable   Local Compound Variable

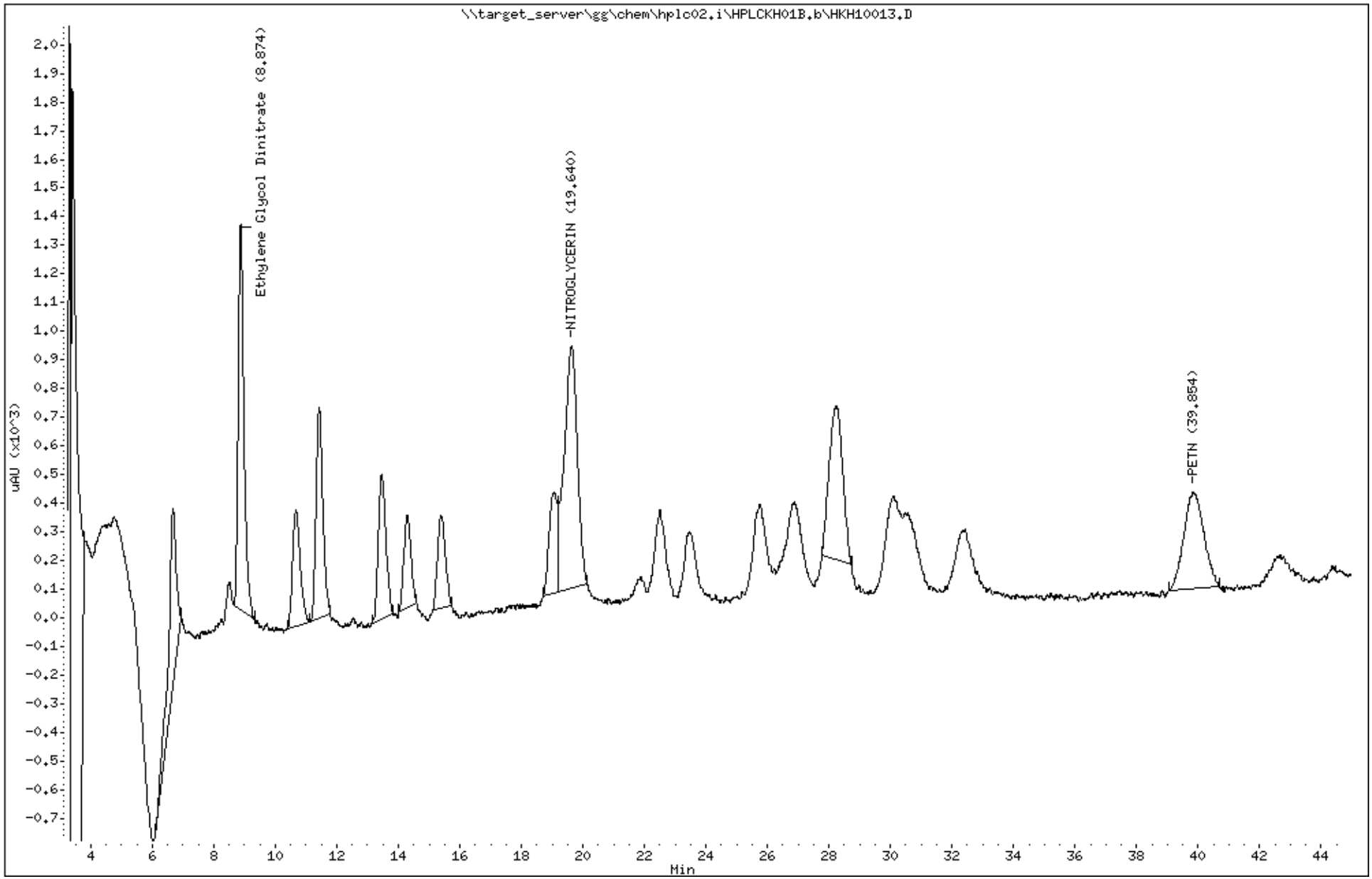
						AMOUNTS		
Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)		REVIEW CODE
3 Ethylene Glycol Dinitrate	8.873	8.878	-0.005	1343	0.20000	0.189(a)		
8 NITROGLYCERIN	19.640	19.651	-0.011	842	0.20000	0.189(a)		
18 PETN	39.853	39.878	-0.025	338	0.20000	0.196(aM)		M6

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

10:40 am, Aug 02, 2017

Data File: \\target_server\gg\chem\hplc02.i\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 3000076

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HKH10014.D
Report Date: 02-Aug-2017 09:50

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\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
Meth Date : 02-Aug-2017 09:48 hplc02.i   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: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable   Local Compound Variable

						AMOUNTS		
Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)		REVIEW CODE
3 Ethylene Glycol Dinitrate	8.875	8.878	-0.003	600	0.12500	0.0846(a)		
8 NITROGLYCERIN	19.621	19.651	-0.030	387	0.12500	0.0868(aM)		M6
18 PETN	39.755	39.878	-0.123	146	0.12500	0.0851(aM)		

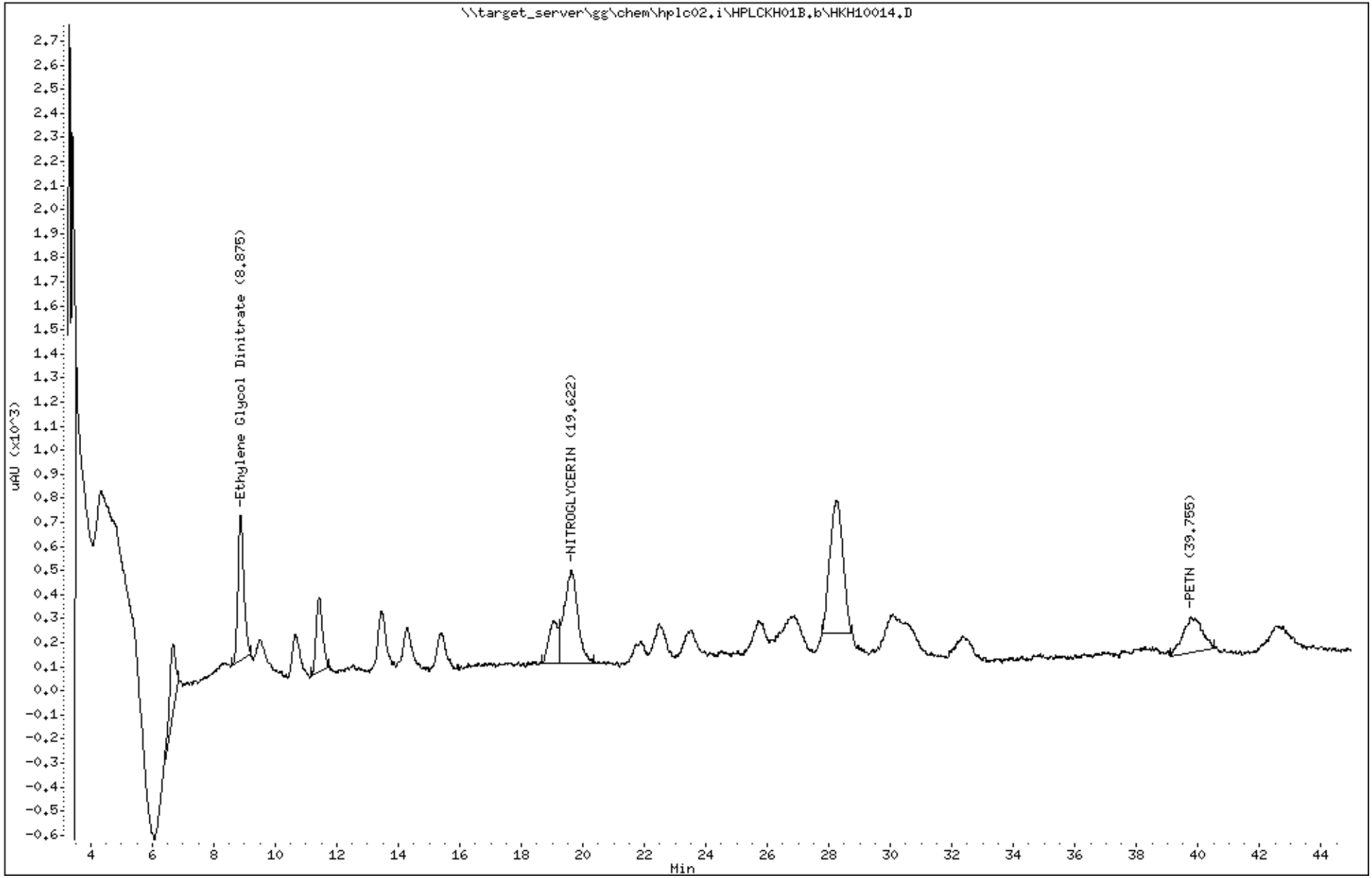
QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



10:40 am, Aug 02, 2017

Data File: \\target_server\gg\chem\hplc02.i\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 3000078

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
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
4-AM-DNT	63.00000	118	244	663	1299	2450	4682		LNR	-0.01508	2353	0.99890	0.99000	O
2-AM-DNT	65.00000	171	311	854	1698	3193	6303		LNR	-0.00832	3155	0.99955	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
4-nitrotoluene	101	120	227	531	1075	2023	3902		LNR	-0.02177	1947	0.99936	0.99000	O
3-nitrotoluene	72.00000	124	256	701	1390	2617	5111		LNR	-0.01061	2561	0.99942	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

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

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

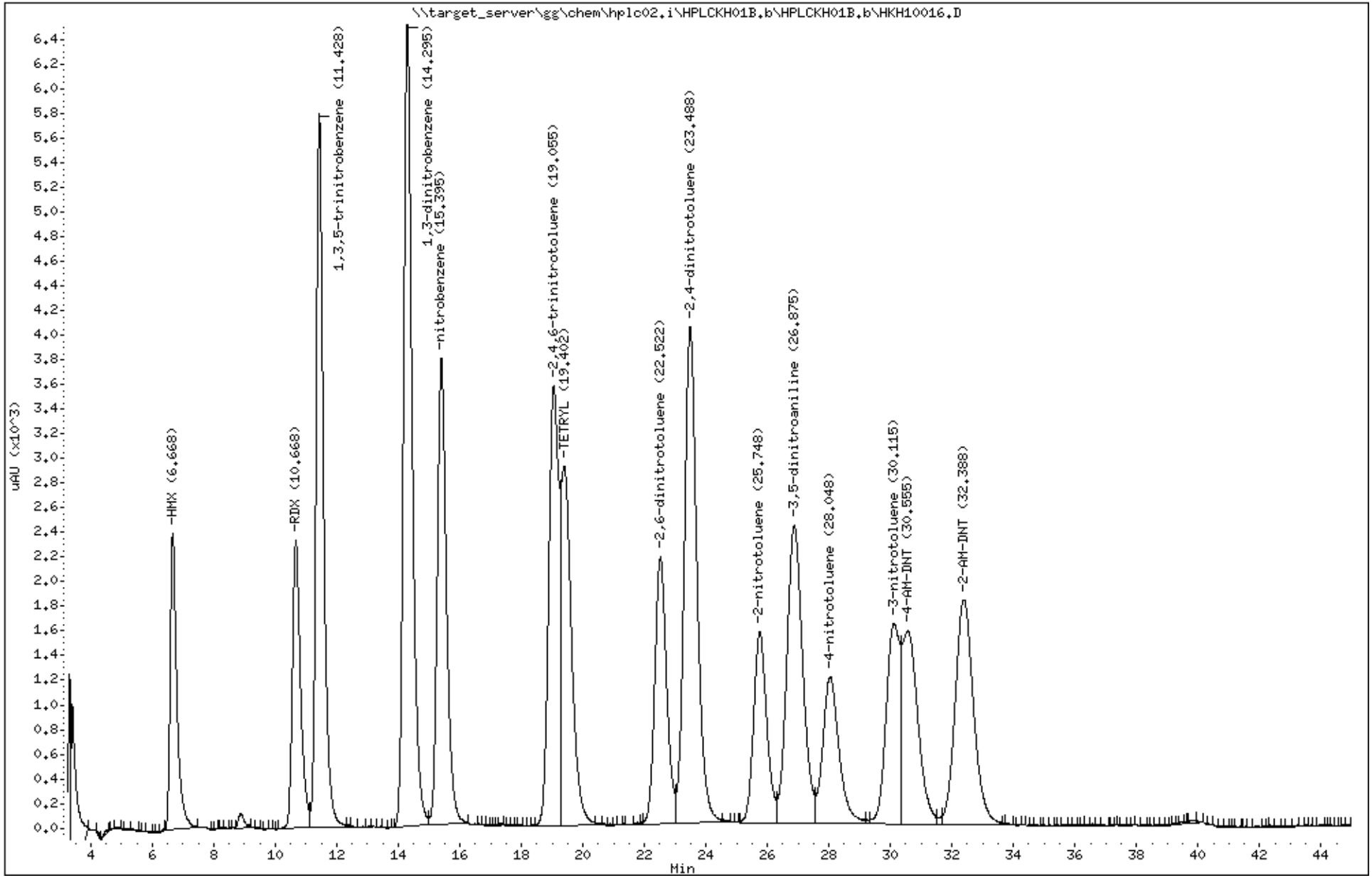
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

						CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	
	Compounds	RT	EXP RT	DLT RT	RESPONSE			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 3000082

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

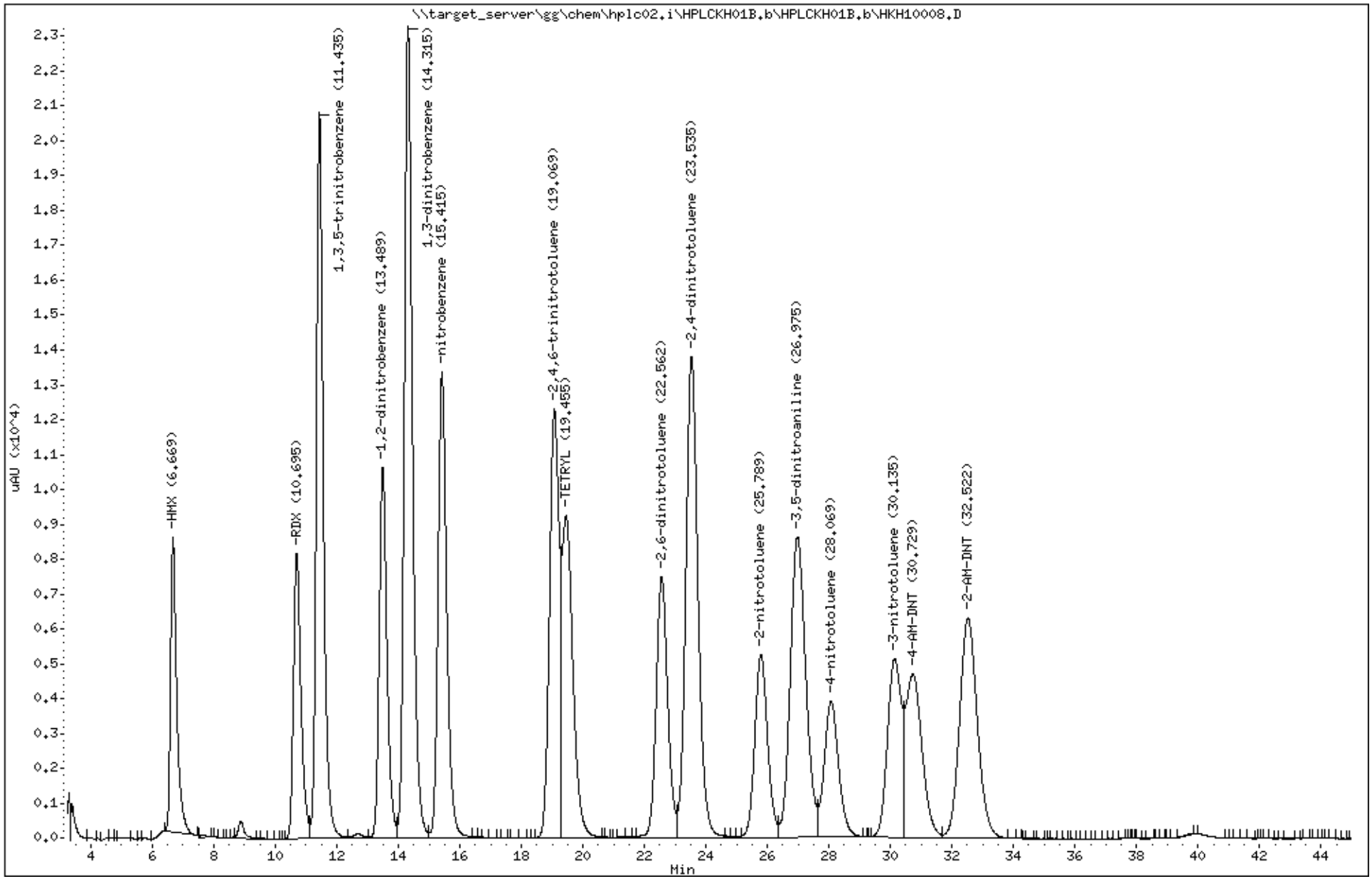
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.668	6.678	-0.010	8448	2.00000	2.01(AM)	M2
4	RDX	10.695	10.684	0.011	8183	2.00000	2.01(A)	
5	1,3,5-trinitrobenzene	11.435	11.431	0.004	20806	2.00000	2.00(A)	
$ 2	1,2-dinitrobenzene	13.488	13.478	0.010	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:
Instrument: hplc02.i
Sample Info: WG210620-15
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000084

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

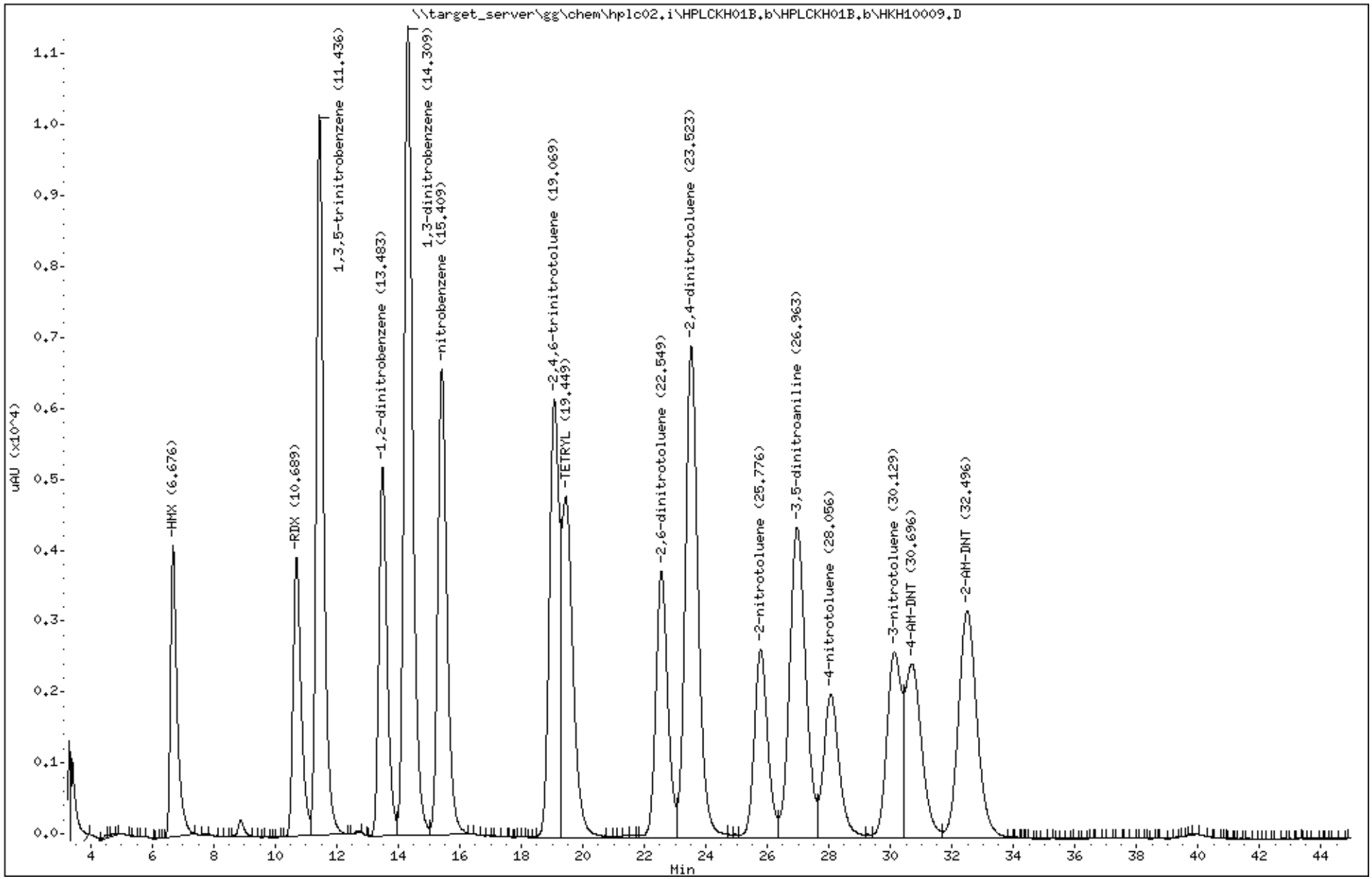
Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

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



Katahdin Analytical Services 3000086

Data File: HKH10010.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

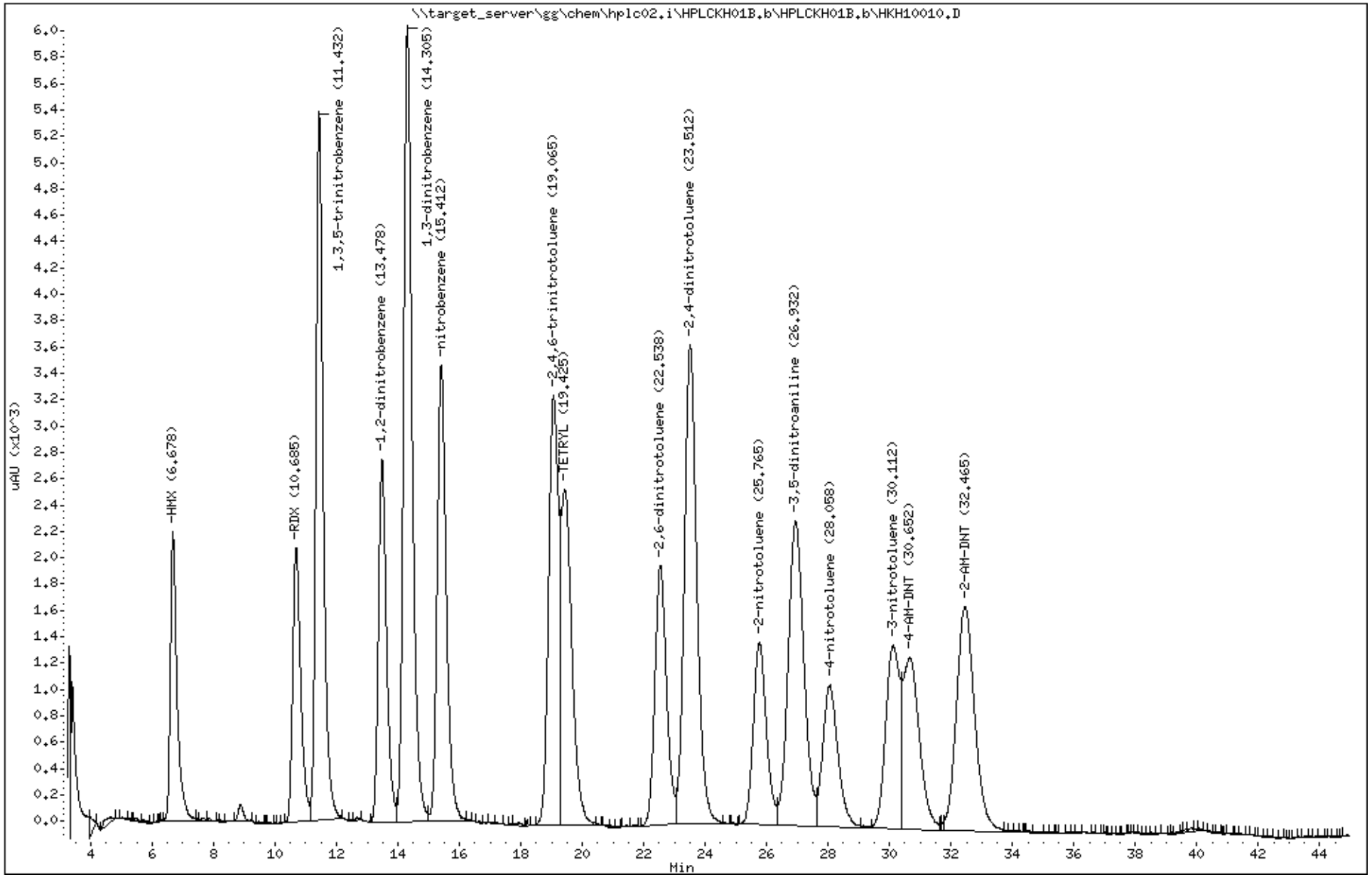
Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10010.D
Lab Smp Id: WG210620-13
Inj Date : 01-AUG-2017 11:16
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-13
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 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



Katahdin Analytical Services 3000088

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

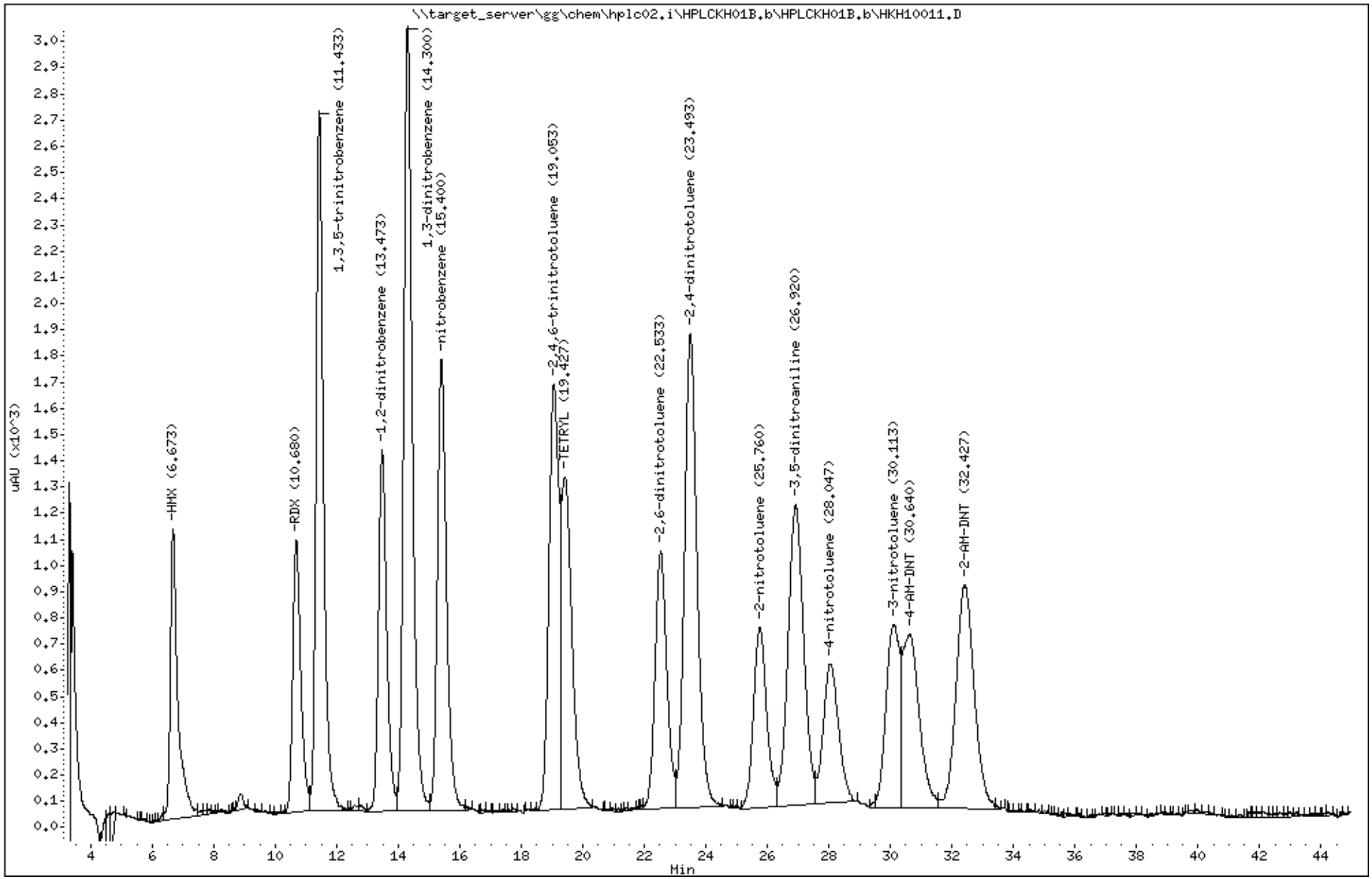
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	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).

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10011.D
Date : 01-AUG-2017 12:05
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-12
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000090

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

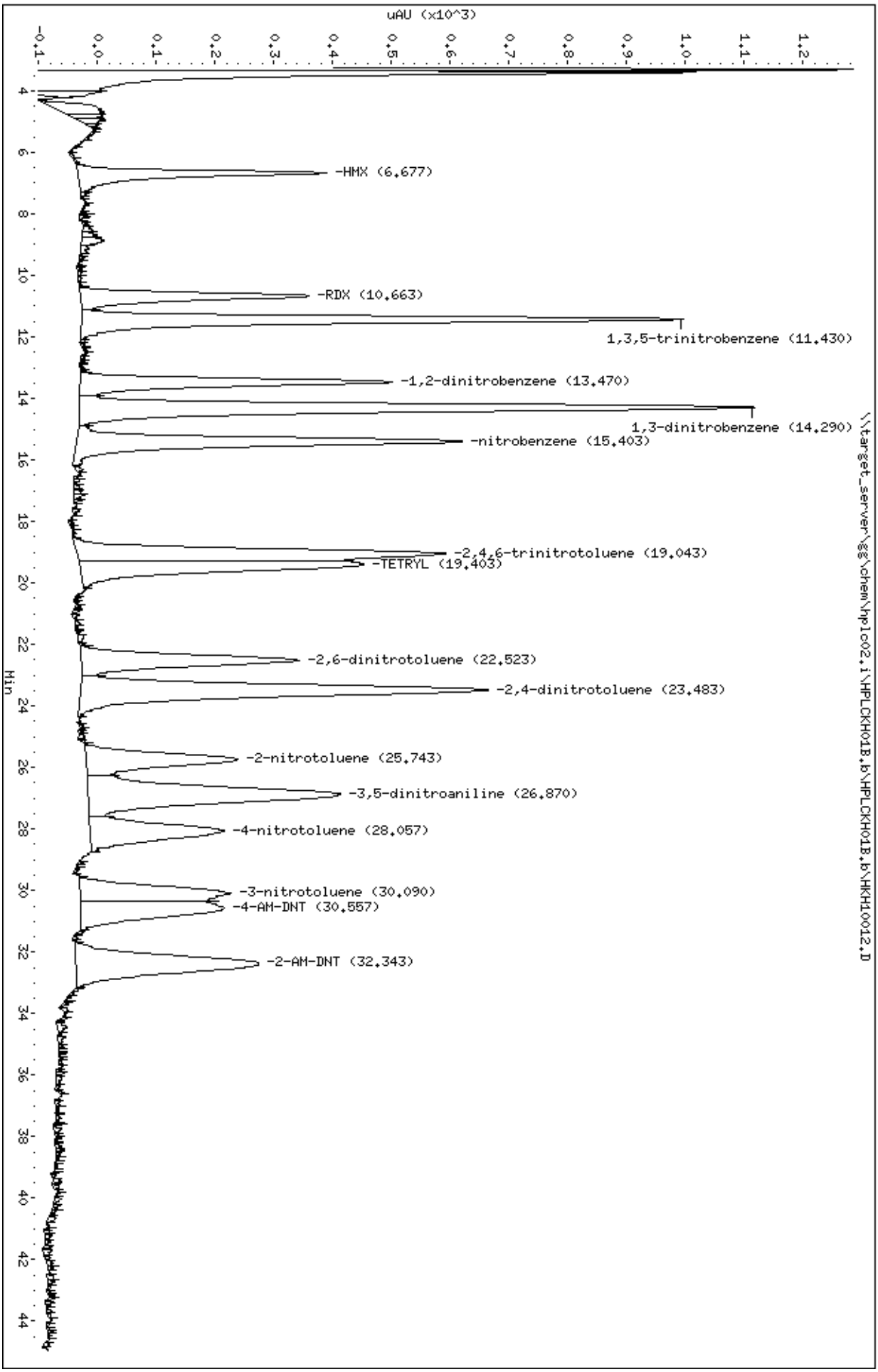
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	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.


Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10012.D
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

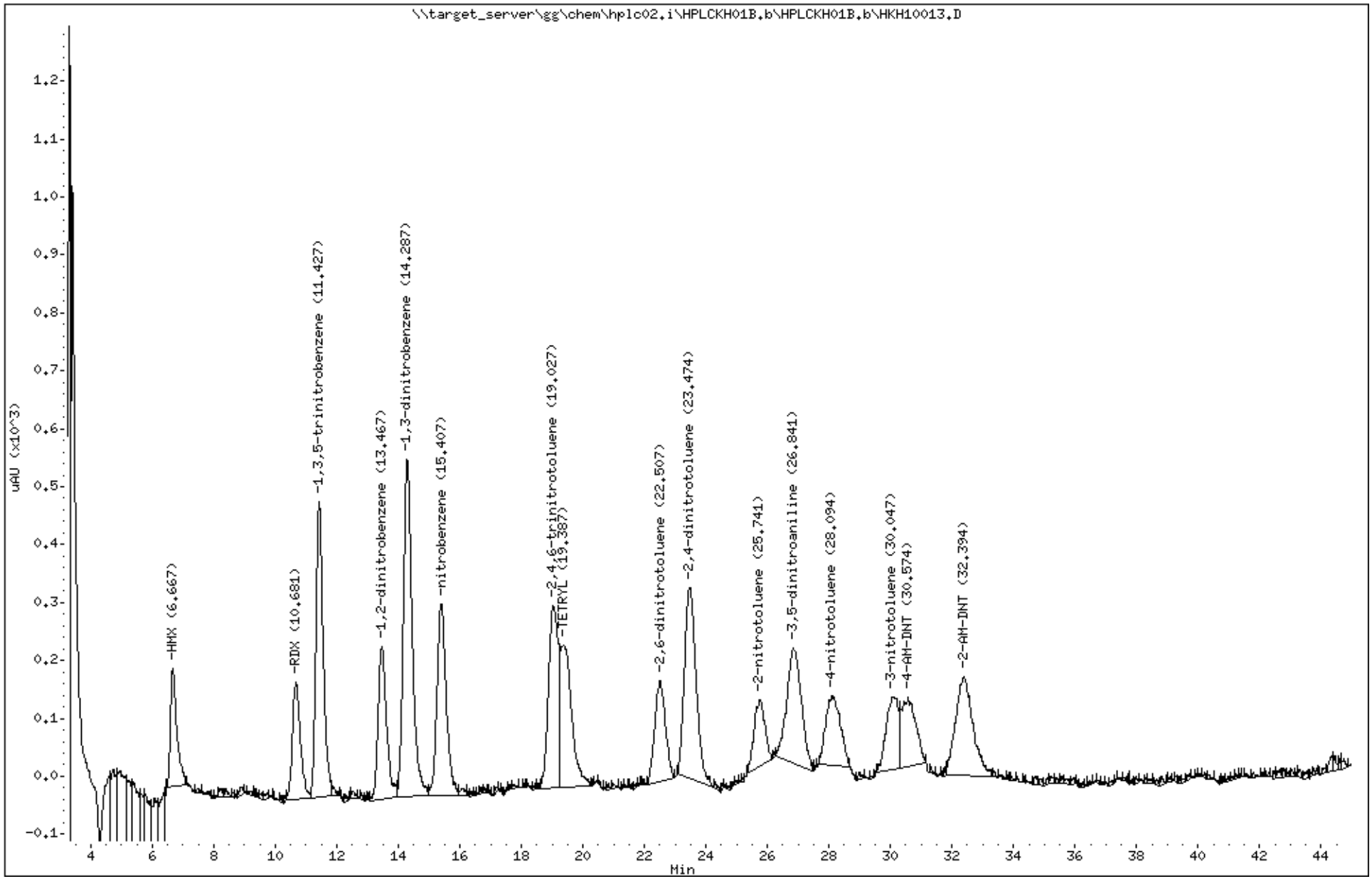
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.667	6.678	-0.011	204	0.05000	0.0456(aM)	M2
4	RDX	10.680	10.684	-0.004	202	0.05000	0.0517(a)	
5	1,3,5-trinitrobenzene	11.427	11.431	-0.004	508	0.05000	0.0473(a)	
$ 2	1,2-dinitrobenzene	13.467	13.478	-0.011	263	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 3000094

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

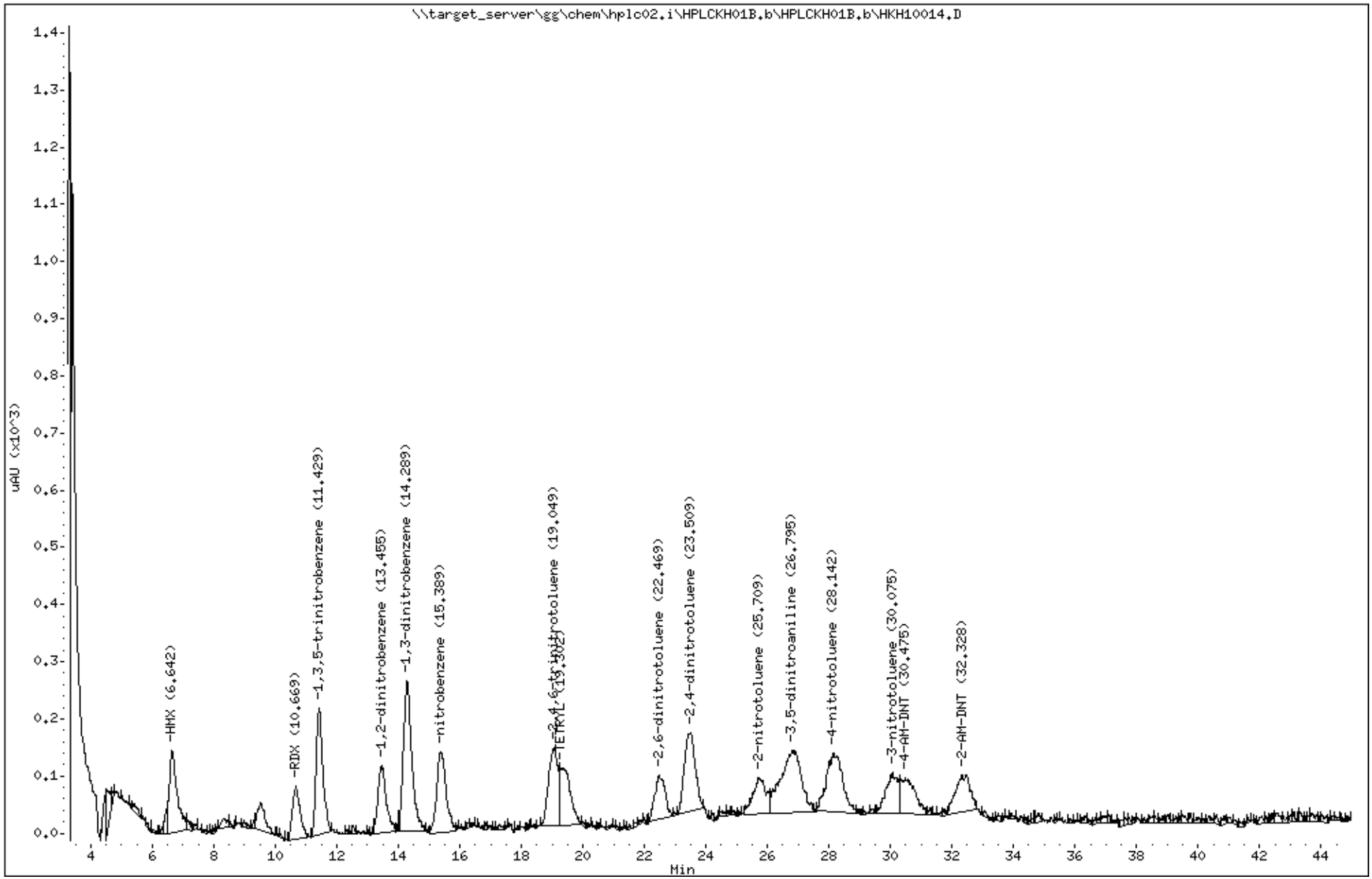
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.641	6.678	-0.037	143	0.02500	0.0300(a)	
4	RDX	10.668	10.684	-0.016	92	0.02500	0.0248(a)	
5	1,3,5-trinitrobenzene	11.428	11.431	-0.003	222	0.02500	0.0207(a)	
$ 2	1,2-dinitrobenzene	13.455	13.478	-0.023	117	0.02500	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 3000096

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
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	
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

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

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

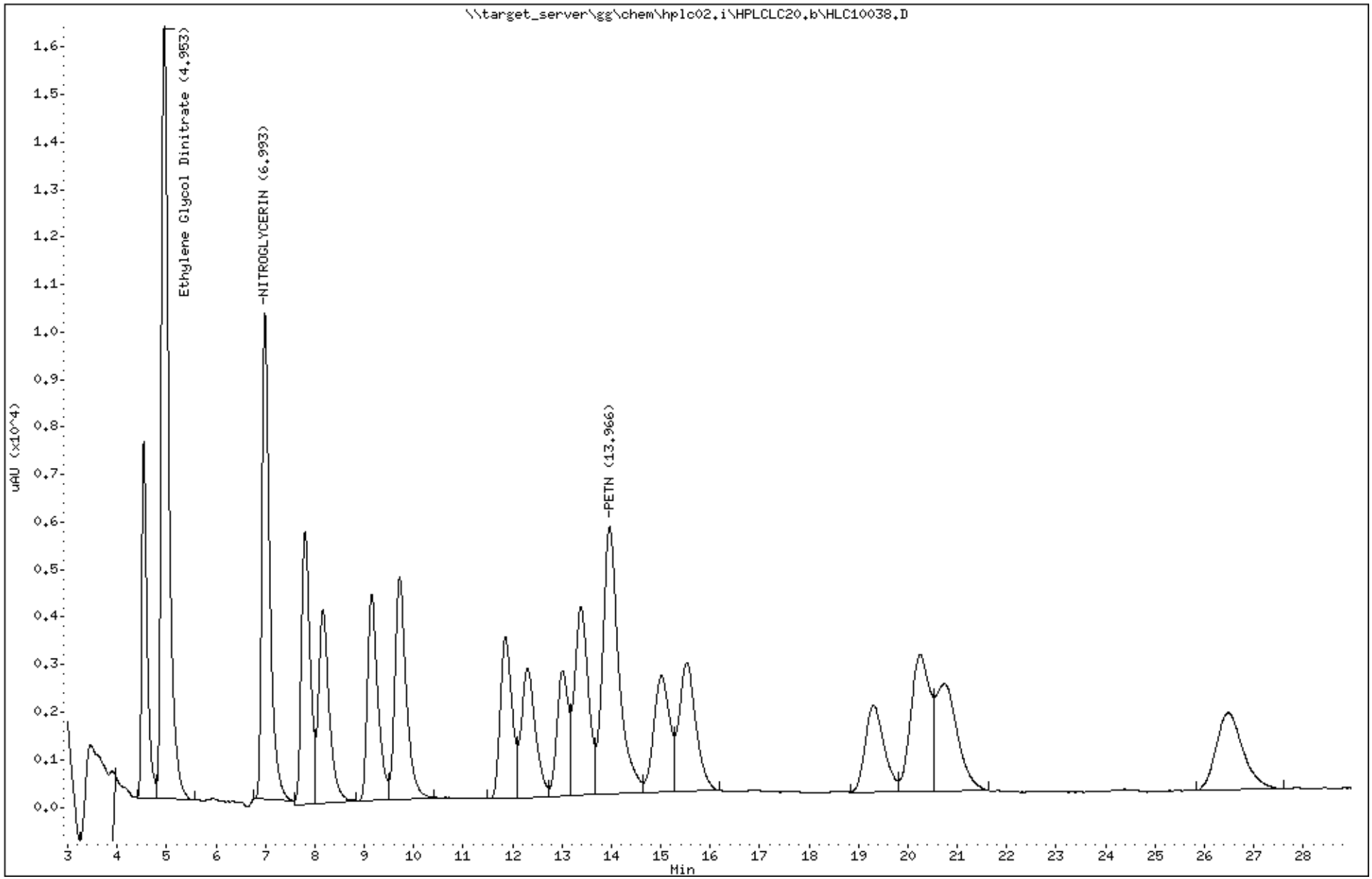
						CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	
Compounds	RT	EXP RT	DLT RT	RESPONSE				
8 NITROGLYCERIN	6.992	6.997	-0.005	10220		1.85373	18.5(M)	M2
18 PETN	13.966	13.963	0.003	5624		1.95560	19.6	
3 Ethylene Glycol Dinitrate	4.952	4.957	-0.005	16261		1.94680	19.5	

QC Flag Legend

M - Compound response manually integrated.

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 3000100

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10031.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

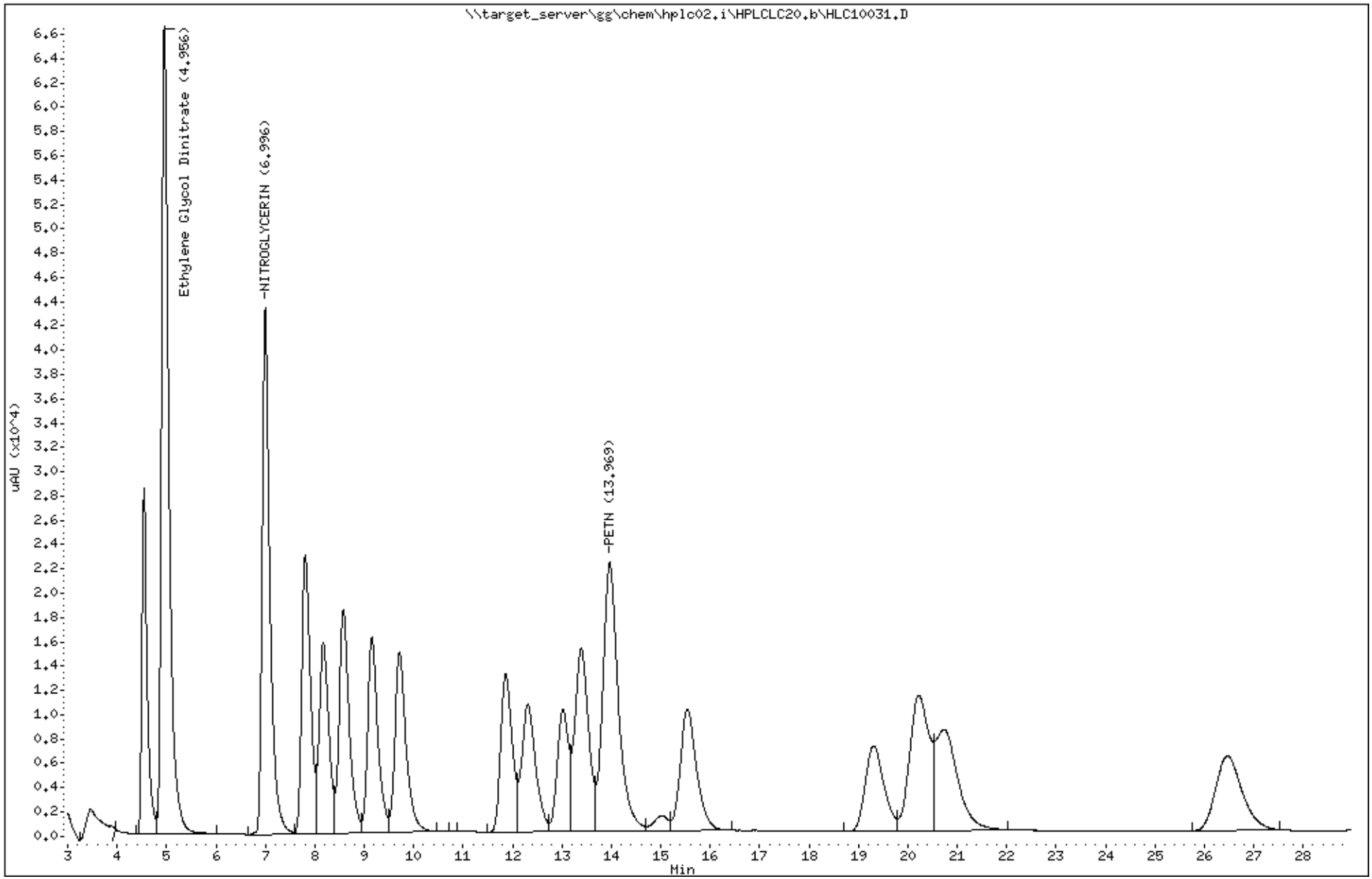
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10031.D
Lab Smp Id: WG225143-7
Inj Date : 20-MAR-2018 14:54
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-7
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin 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 3000102

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

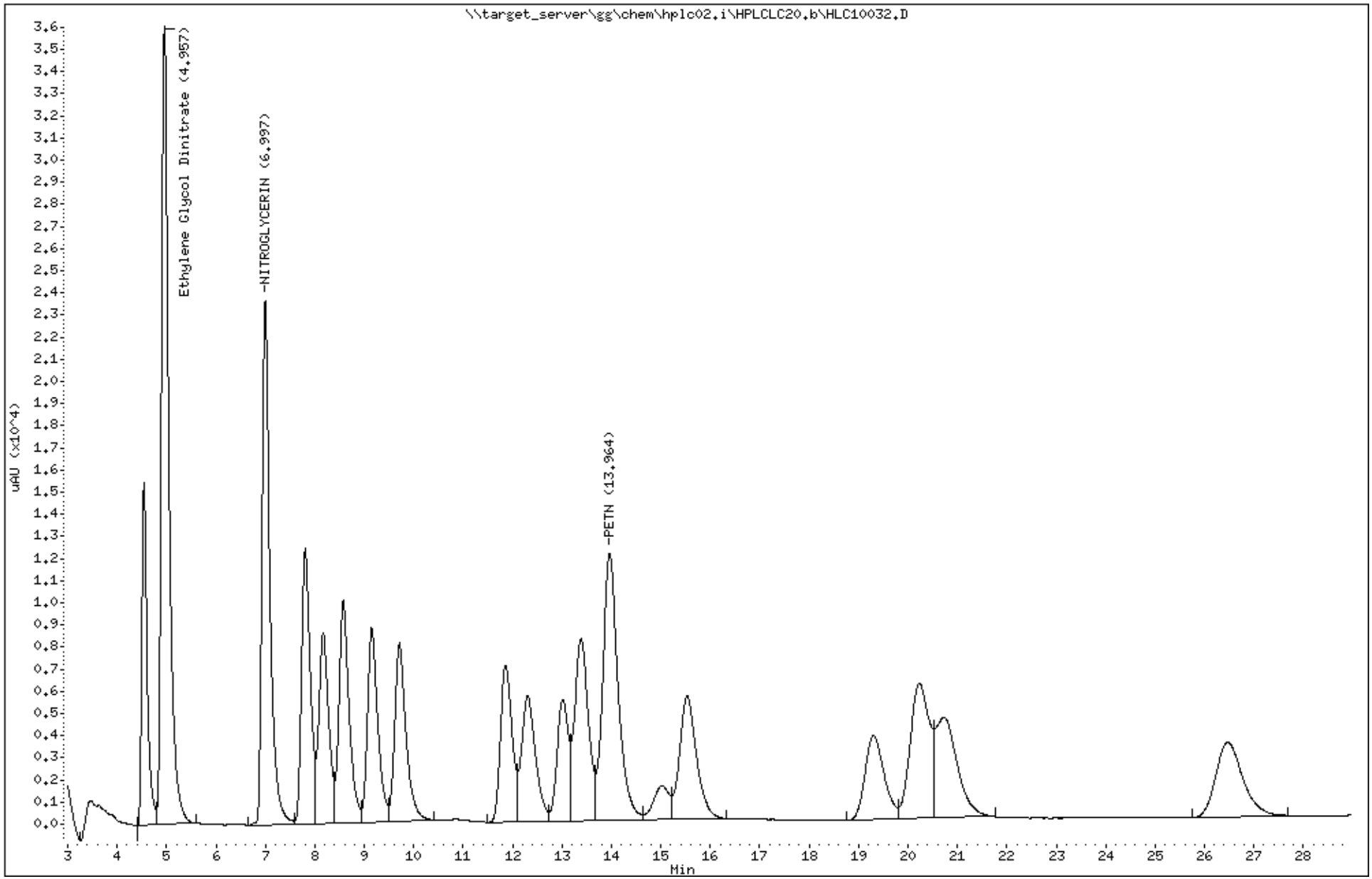
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.997	6.997	0.000	23668	4.00000	4.27	
18 PETN	13.963	13.963	0.000	12041	4.00000	4.43	
3 Ethylene Glycol Dinitrate	4.957	4.957	0.000	36056	4.00000	2.84(M)	M2

QC Flag Legend

M - Compound response manually integrated.

AAB
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 3000104

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

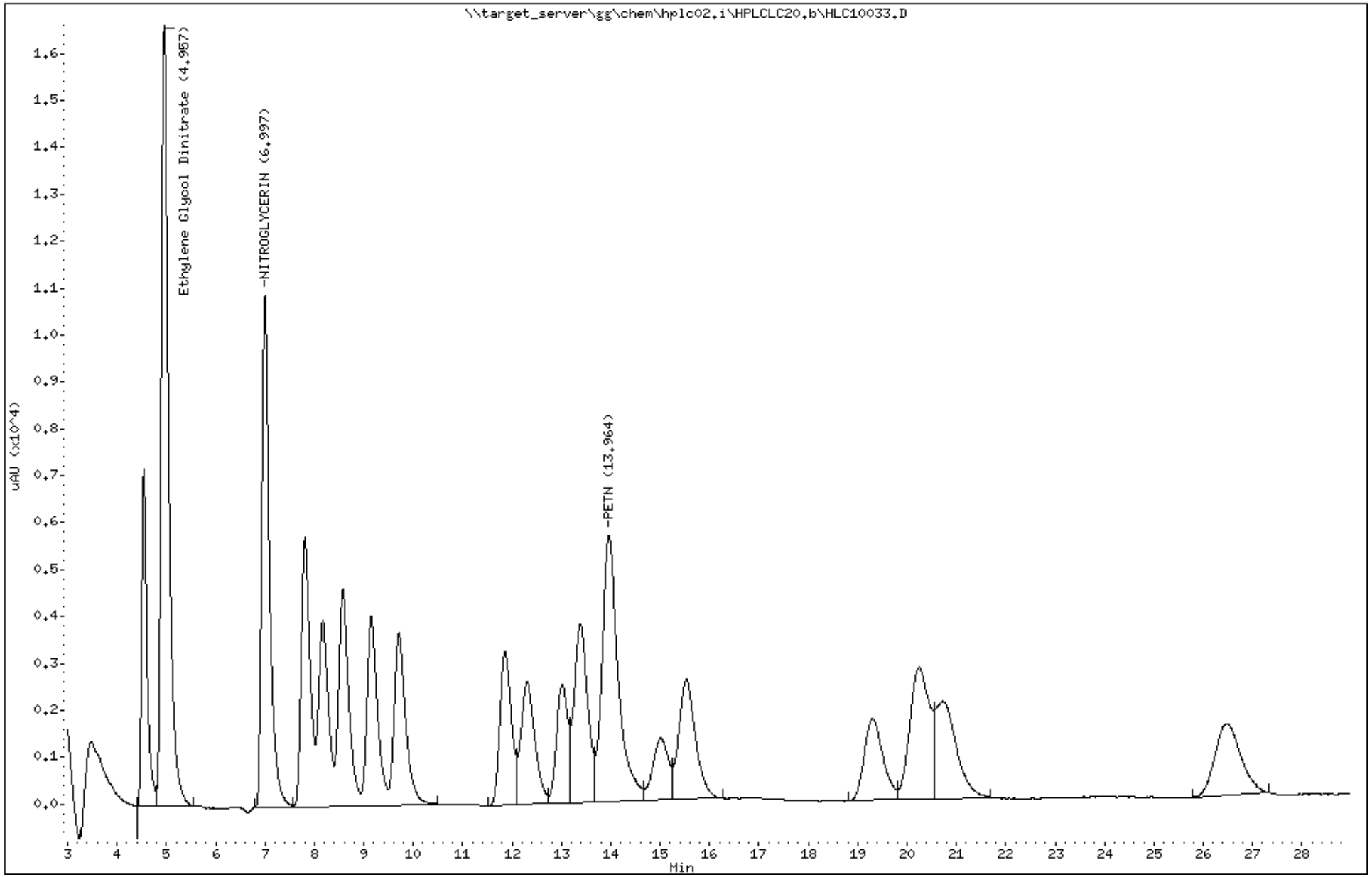
						AMOUNTS		
						CAL-AMT	ON-COL	
	Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.997	6.997	0.000	10907	2.00000	2.00(aM)	M2
18	PETN	13.963	13.963	0.000	5668	2.00000	2.00(a)	
3	Ethylene Glycol Dinitrate	4.957	4.957	0.000	16637	2.00000	2.00(aM)	

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 3000106

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)	

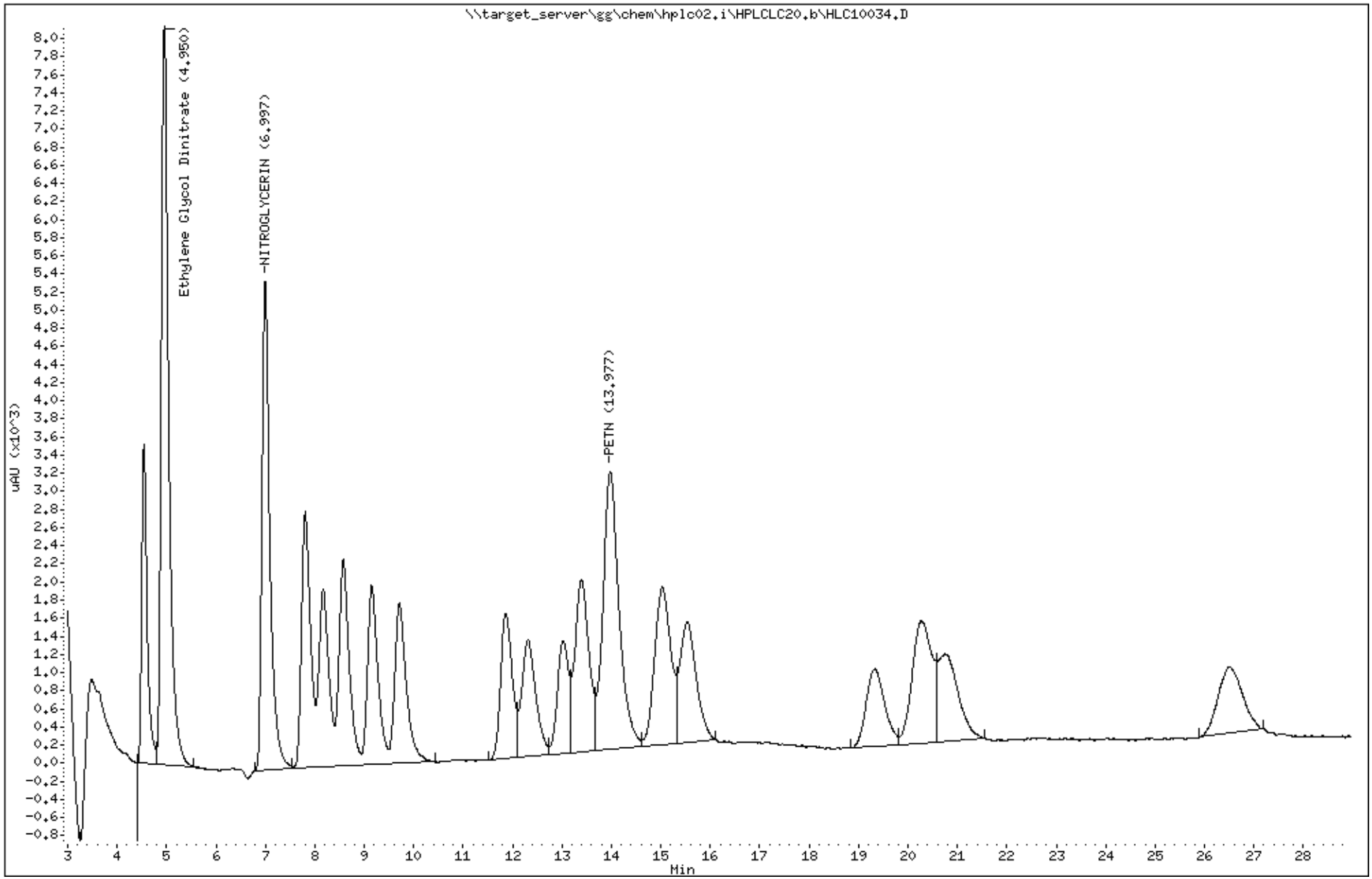


2:42 pm, Mar 26, 2018

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 3000108

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

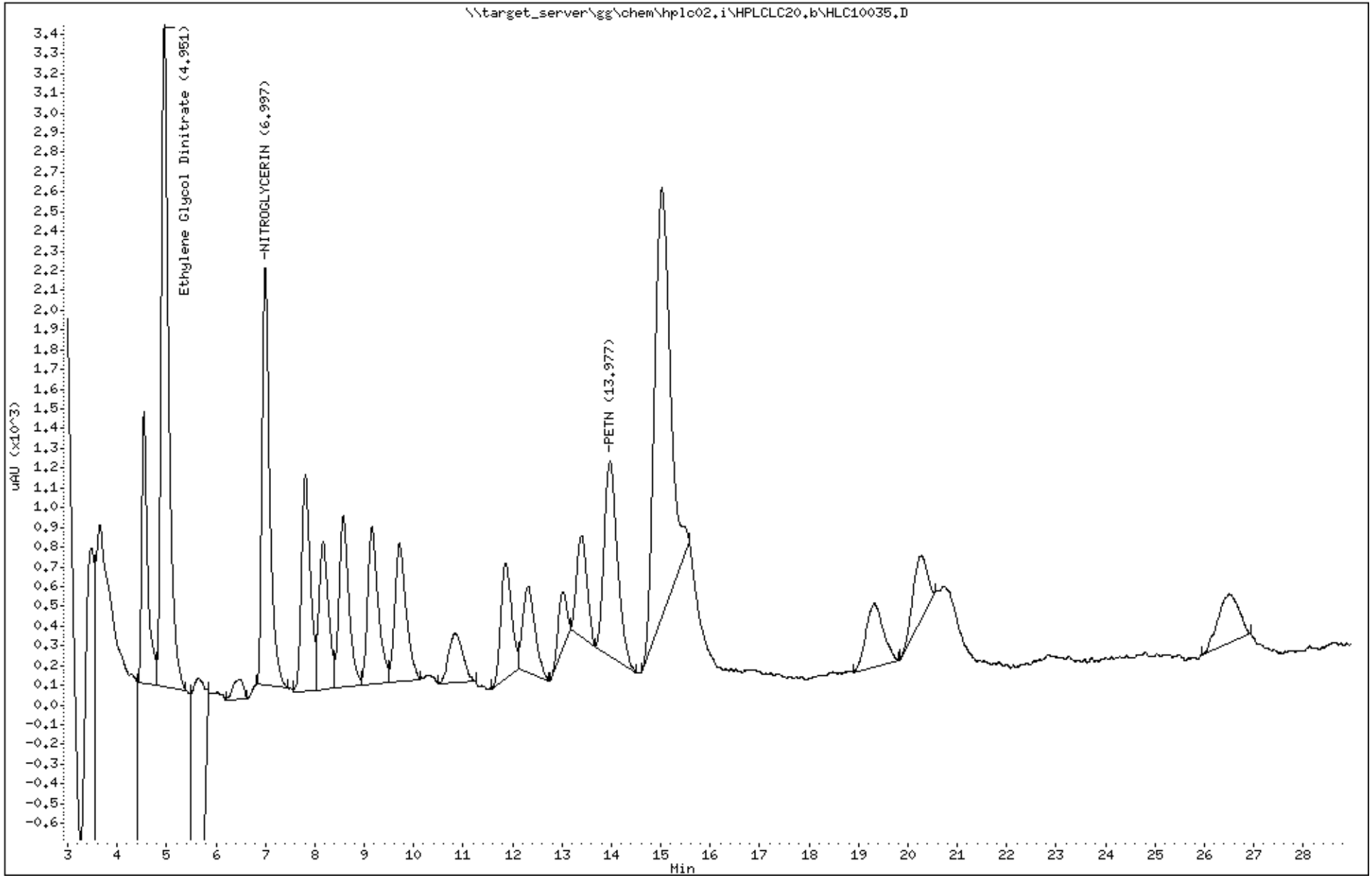
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.997	6.997	0.000	2112	0.40000	0.383(aM)	M2
18 PETN	13.977	13.963	0.014	986	0.40000	0.363(a)	
3 Ethylene Glycol Dinitrate	4.950	4.957	-0.007	3354	0.40000	0.402(aM)	

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 3000110

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

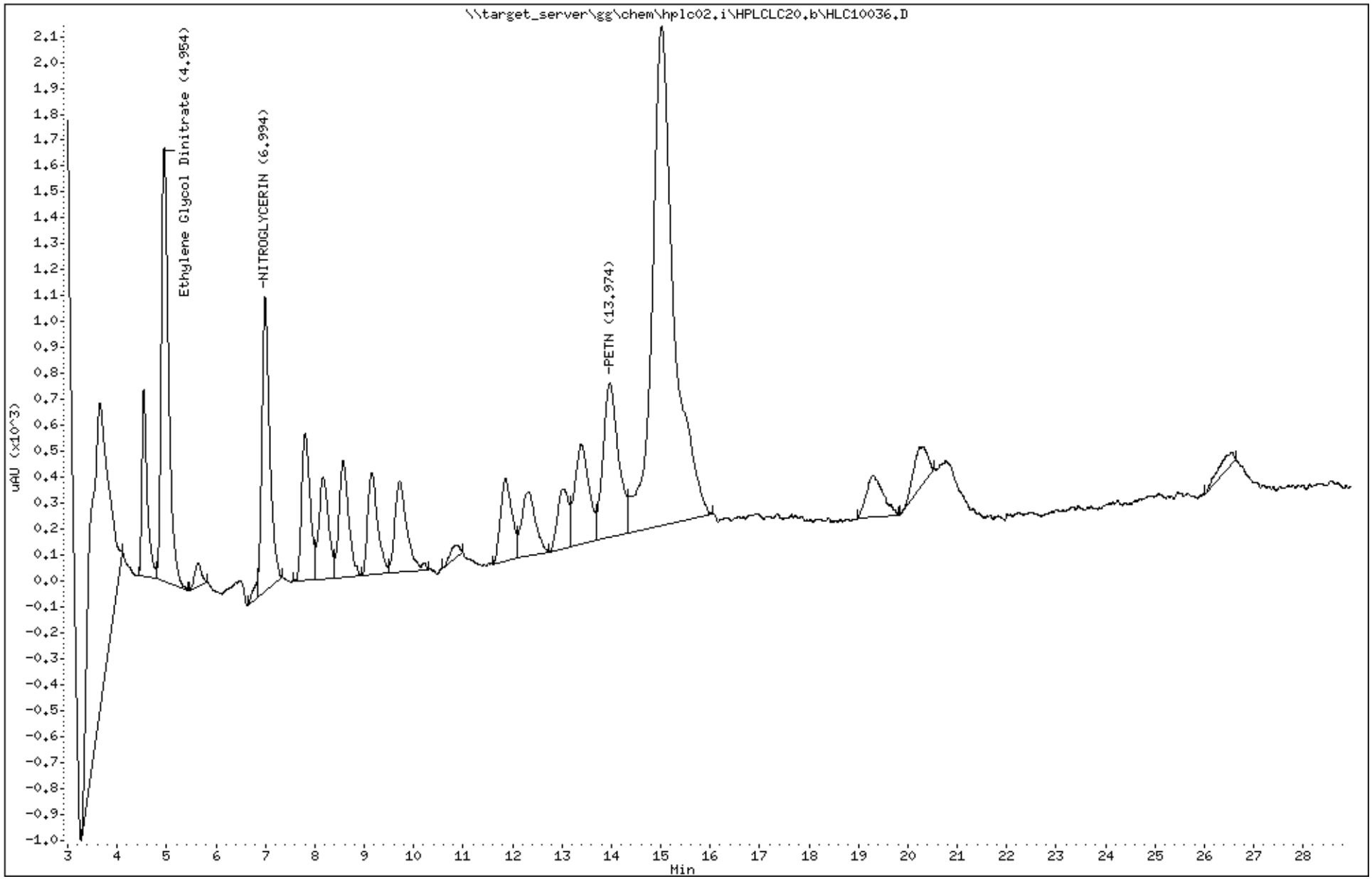
						AMOUNTS		
						CAL-AMT	ON-COL	
	Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.994	6.997	-0.003	1137	0.20000	0.206(aM)	M2
18	PETN	13.974	13.963	0.011	594	0.20000	0.218(a)	
3	Ethylene Glycol Dinitrate	4.954	4.957	-0.003	1670	0.20000	0.200(a)	

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 3000112

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

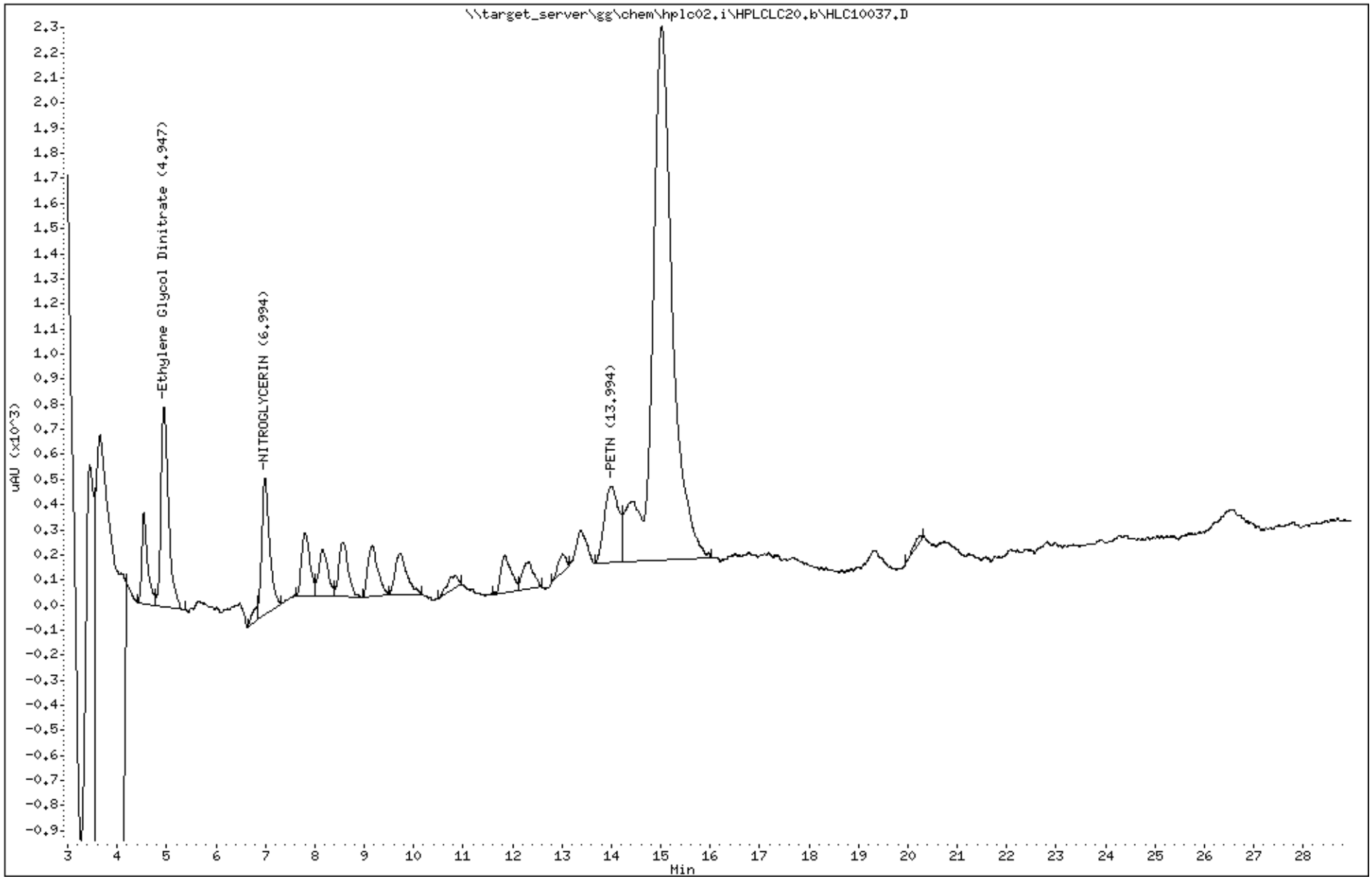
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.993	6.997	-0.004	544	0.10000	0.0987(aM)	M3
18 PETN	13.993	13.963	0.030	302	0.10000	0.105(aM)	
3 Ethylene Glycol Dinitrate	4.947	4.957	-0.010	793	0.10000	0.0949(a)	

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 3000114

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3808
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
4-AM-DNT	4200	4040	4240	4260	4366	4695	4318		AVG		4303	4.68155	20.00000	O
2-AM-DNT	5360	5700	5640	5720	5838	6280	5787		AVG		5761	4.78978	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
4-nitrotoluene	2280	1980	2350	2484	2298	2635	2370		AVG		2342	8.60342	20.00000	O
3-nitrotoluene	3360	3180	3390	3404	3136	3585	3225		AVG		3326	4.69272	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

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

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

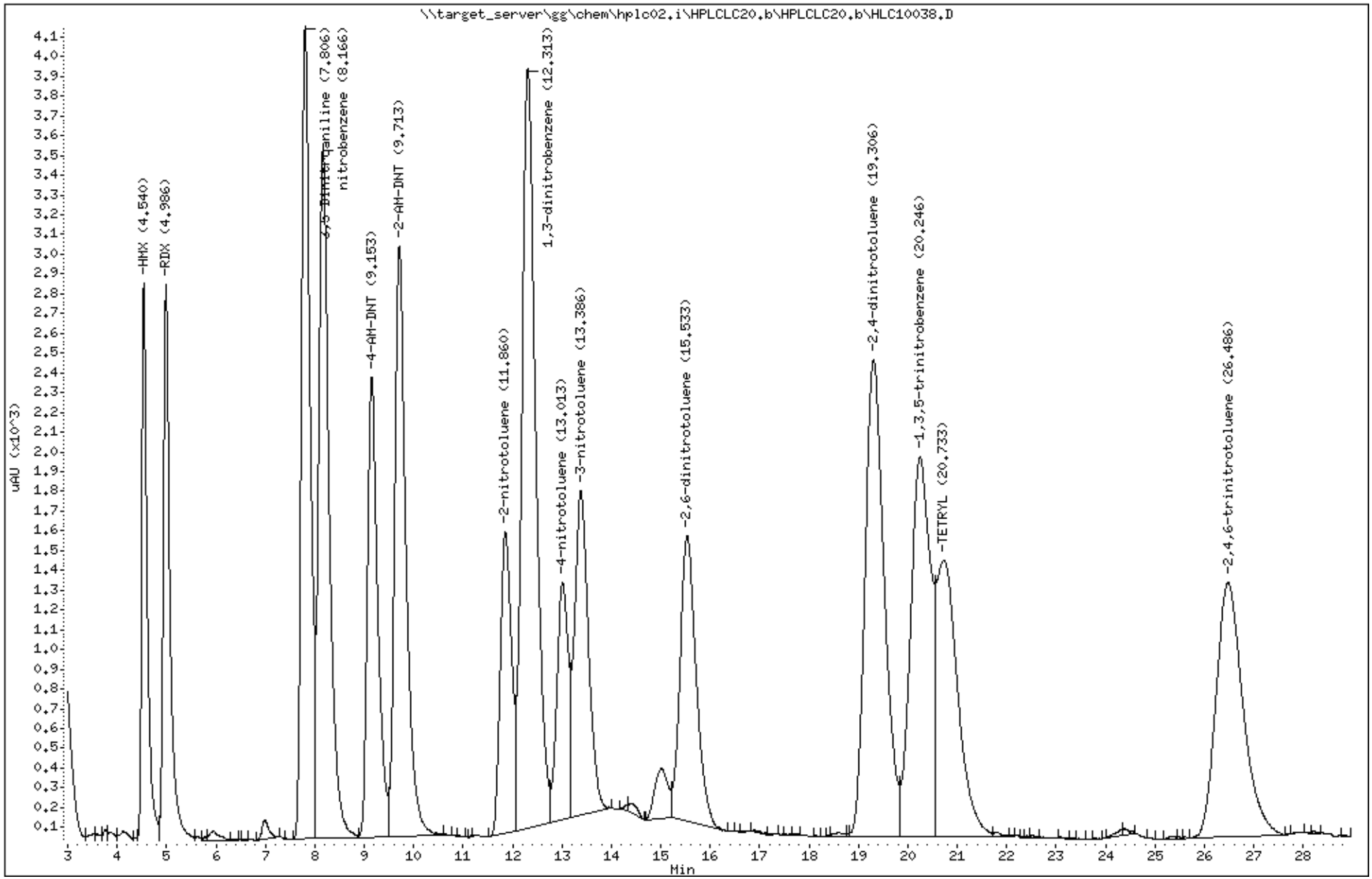
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	HMX	4.539	4.542	-0.003	2829	0.52480	5.25(M)	M5
4	RDX	4.986	4.989	-0.003	2819	0.51364	5.14(M)	
51	3,5-Dinitroaniline	7.806	7.809	-0.003	4113	0.49457	4.94	
7	nitrobenzene	8.166	8.175	-0.009	3495	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.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\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 3000118

Data File: HLC10031.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

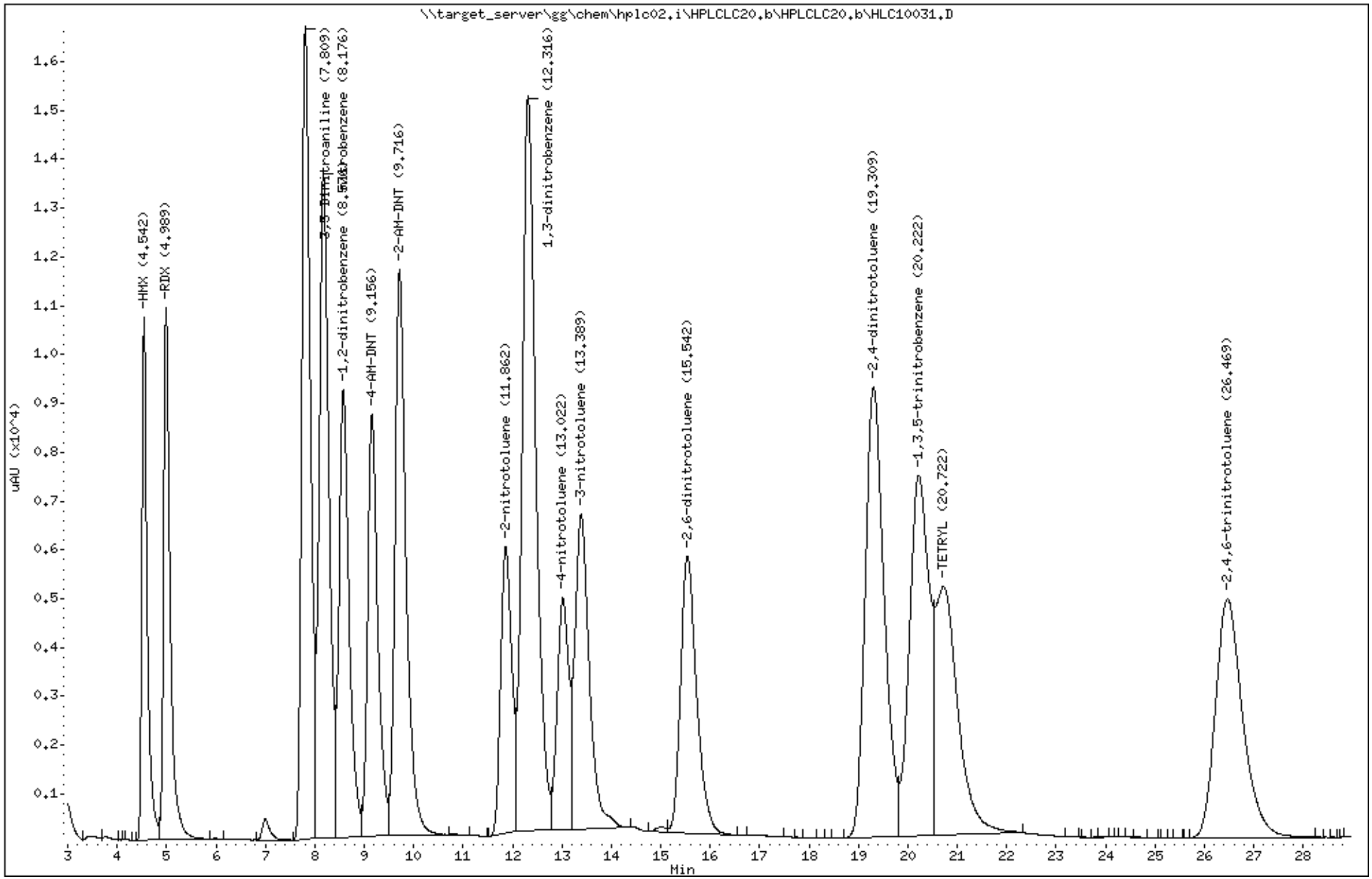
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10031.D
Lab Smp Id: WG225143-7
Inj Date : 20-MAR-2018 14:54
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-7
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 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	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\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 3000120

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

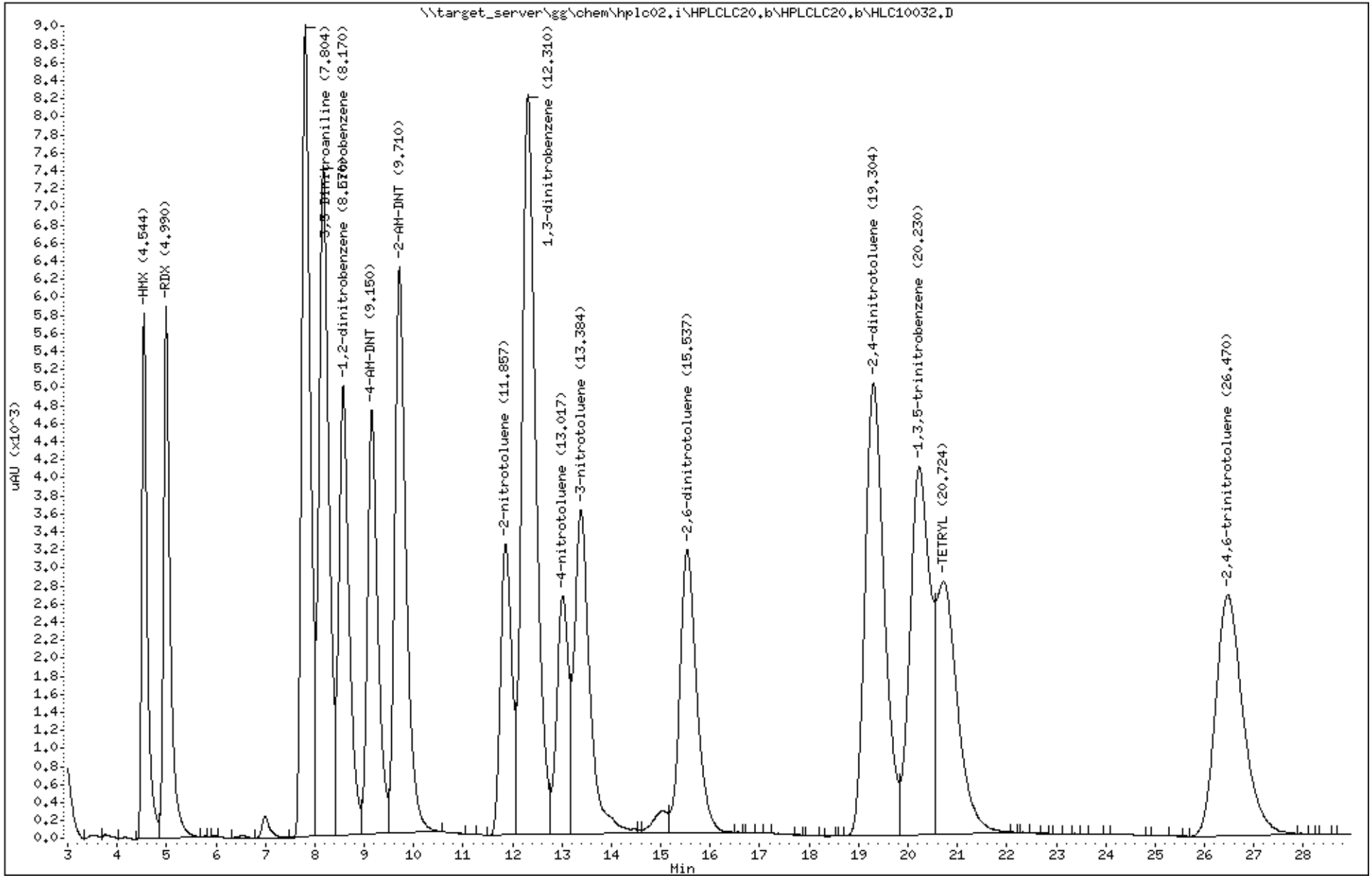
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.543	4.542	0.001	5810	1.00000	1.08(M)	M5
4	RDX	4.990	4.989	0.001	5888	1.00000	1.21(M)	
51	3,5-Dinitroaniline	7.803	7.809	-0.006	8996	1.00000	1.08	
7	nitrobenzene	8.170	8.175	-0.005	7418	1.00000	1.08	
$ 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.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\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 3000122

Data File: HLC10033.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

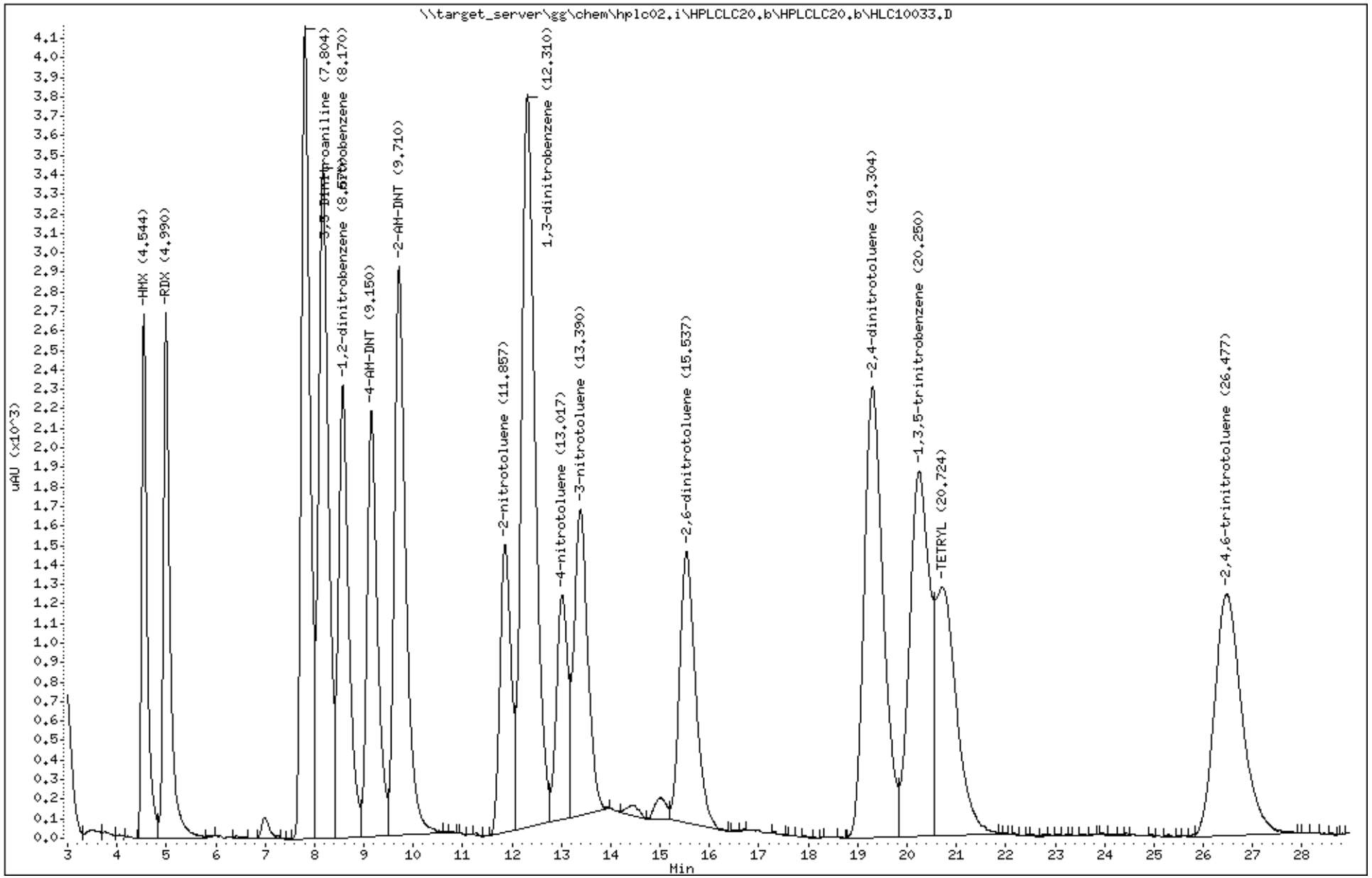
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10033.D
Lab Smp Id: WG225143-5
Inj Date : 20-MAR-2018 15:58
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-5
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 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

	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	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



Katahdin Analytical Services 3000124

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

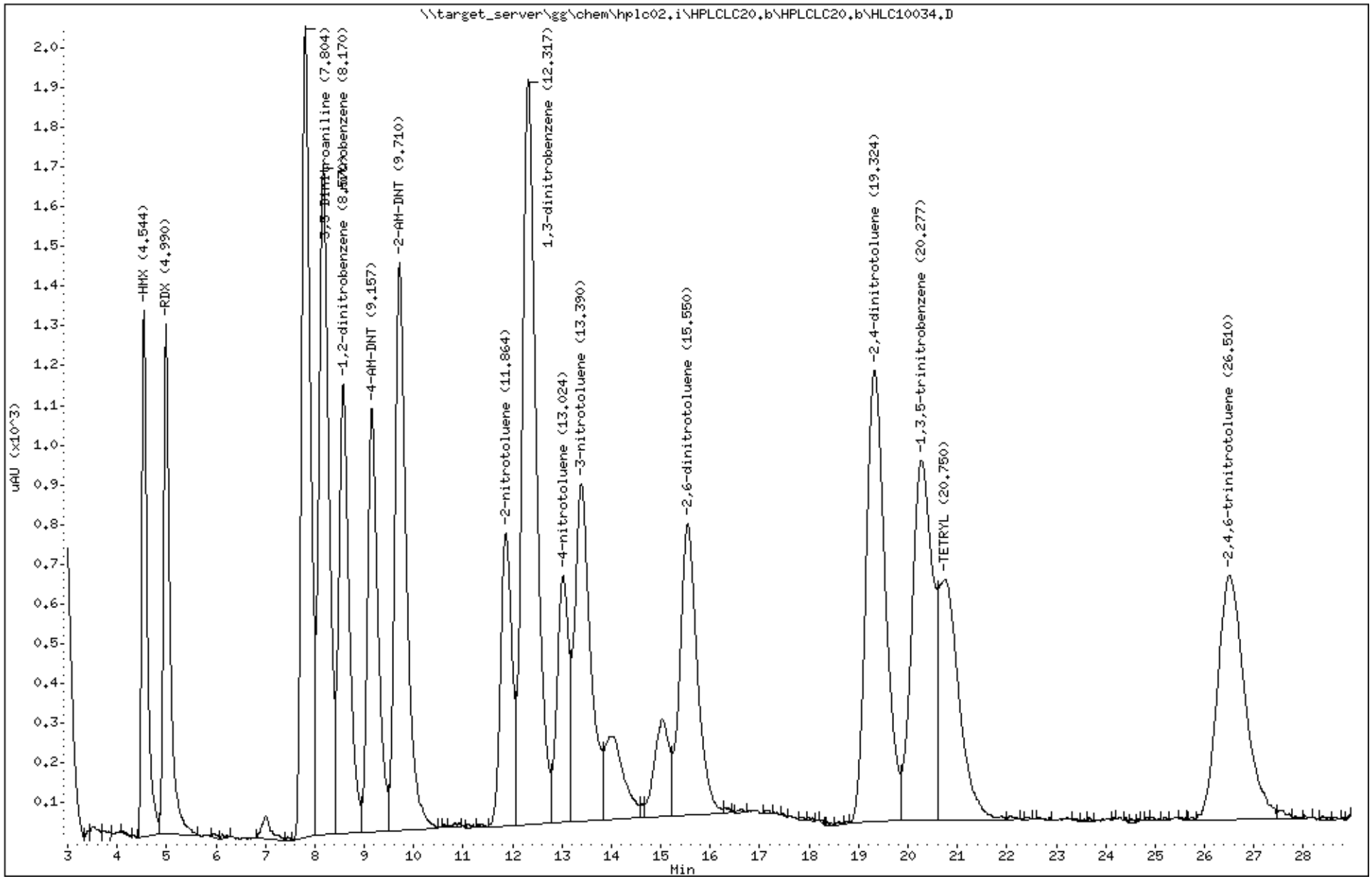
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	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).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\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 3000126

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

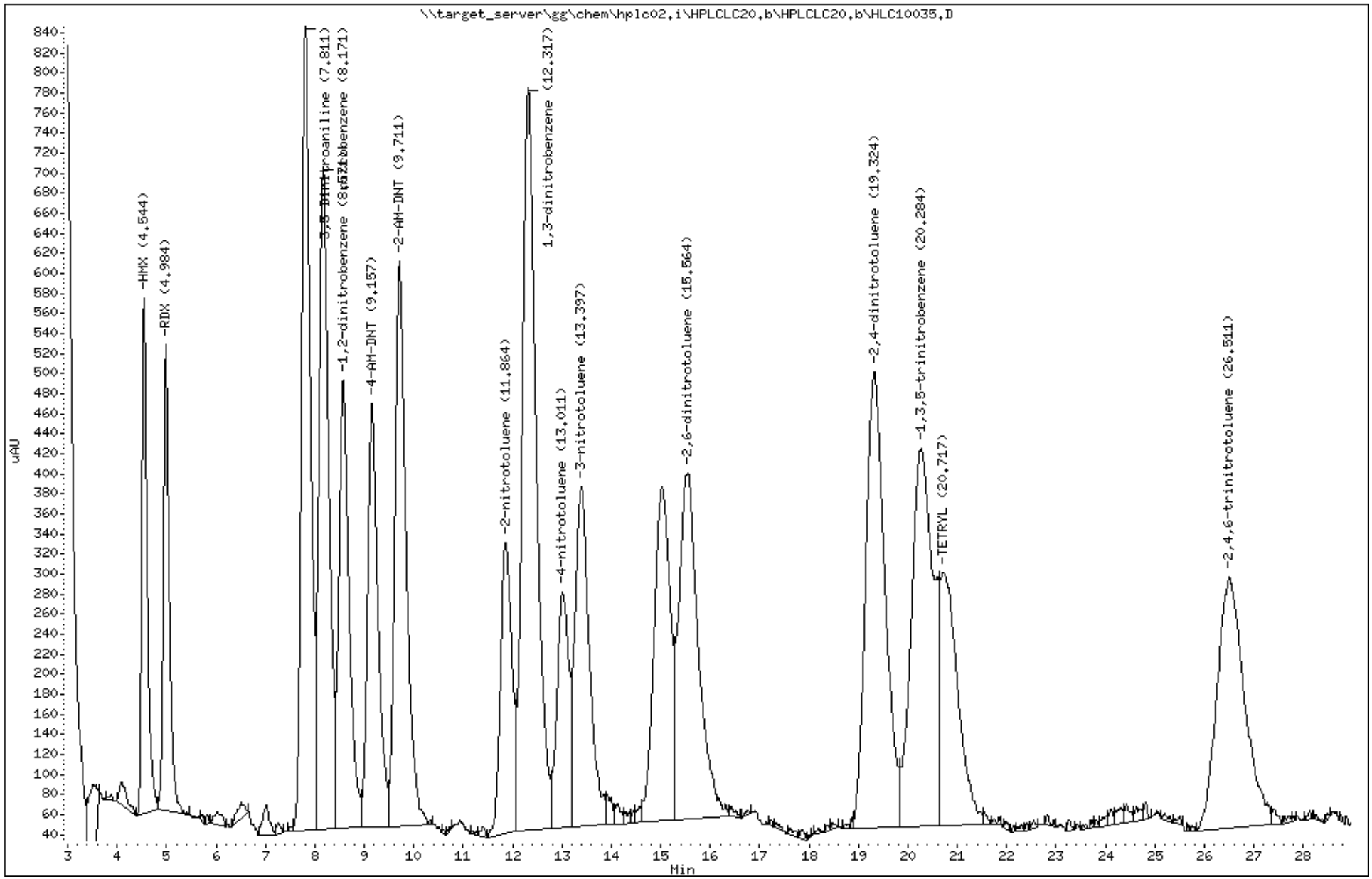
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	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 3000128

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

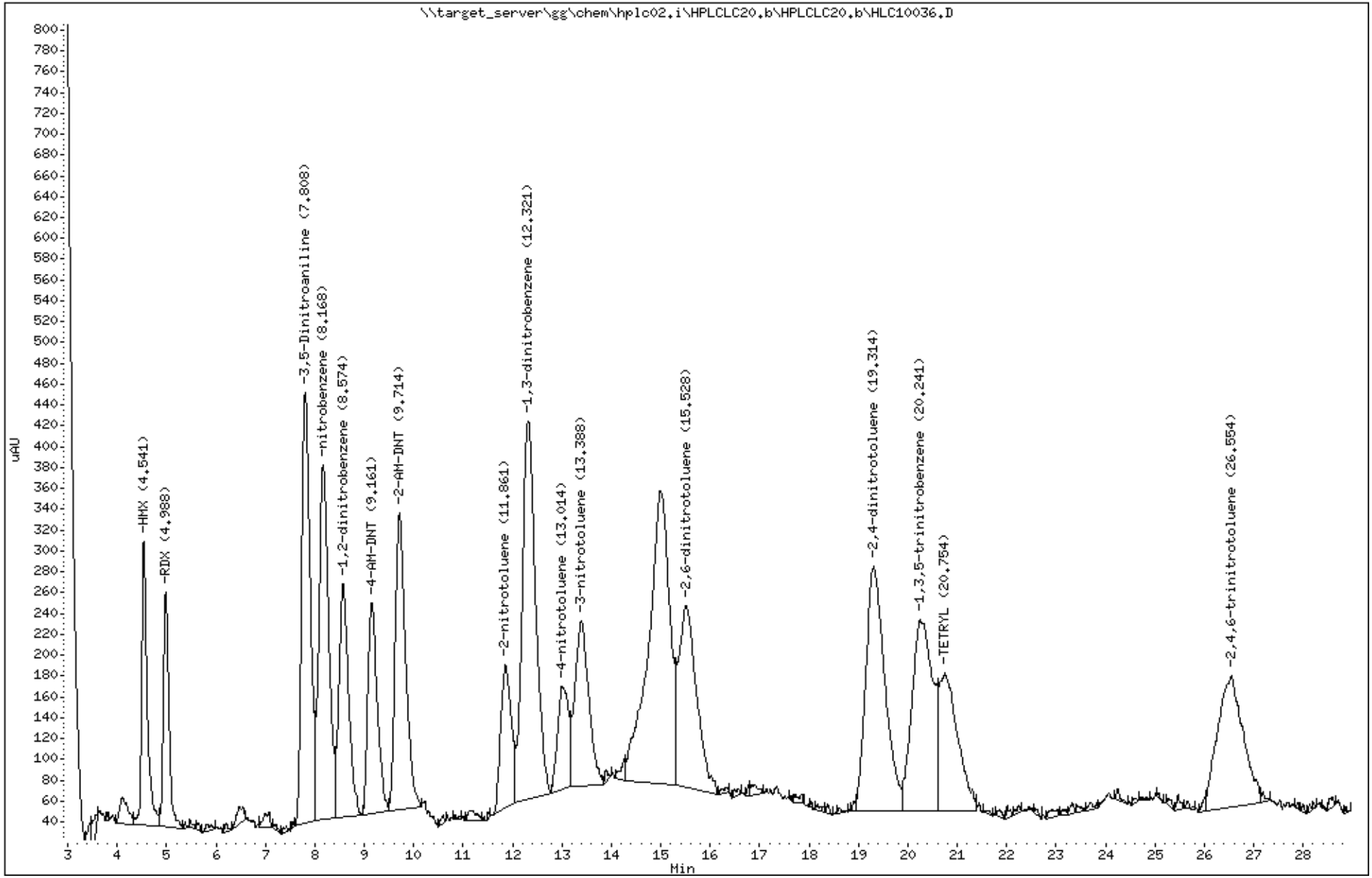
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.541	4.542	-0.001	272	0.05000	0.0504(a)	
4	RDX	4.987	4.989	-0.002	225	0.05000	0.0463(a)	
51	3,5-Dinitroaniline	7.807	7.809	-0.002	414	0.05000	0.0498(a)	
7	nitrobenzene	8.167	8.175	-0.008	341	0.05000	0.0497(a)	
$ 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 3000130

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

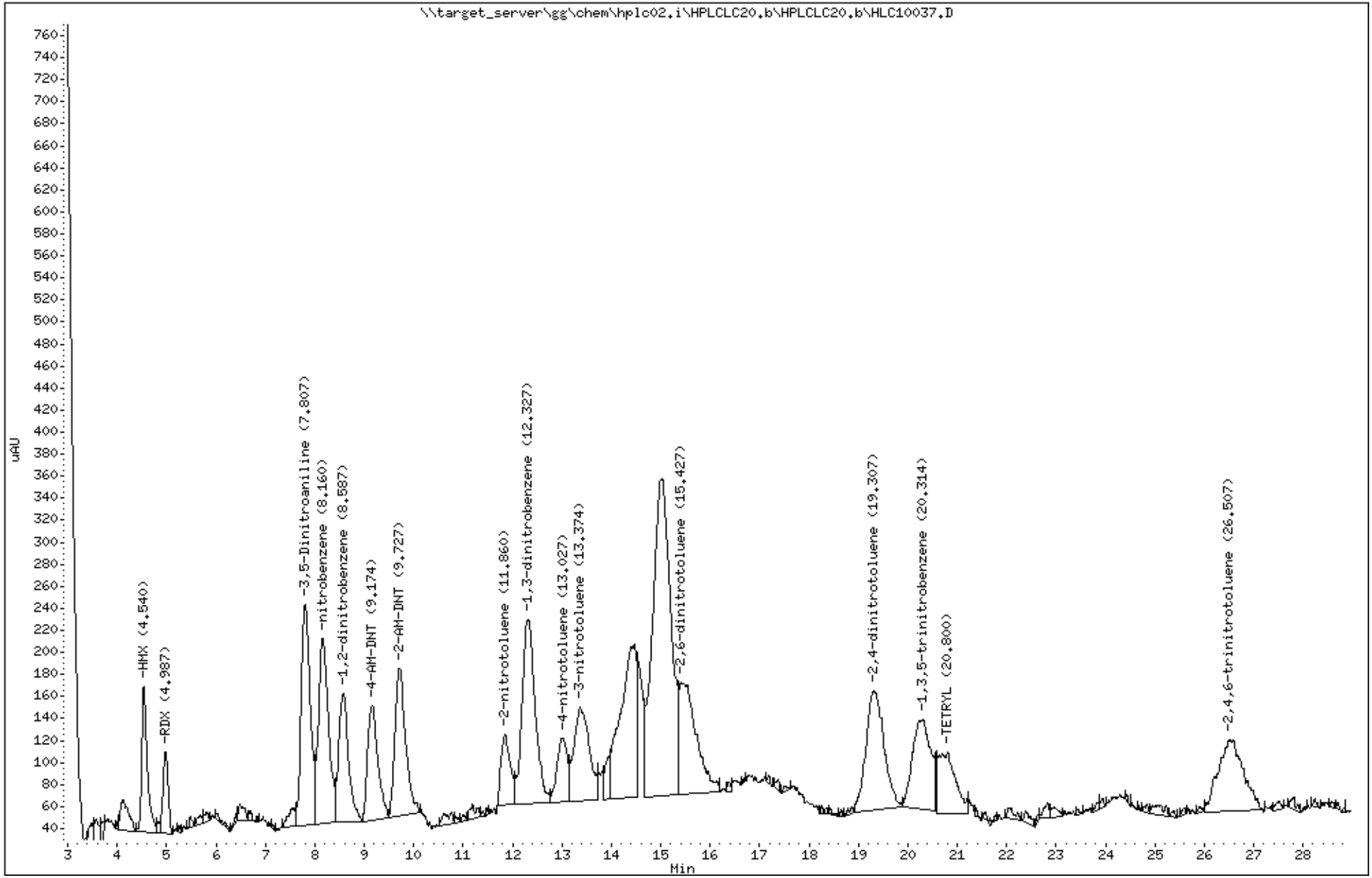
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.540	4.542	-0.002	133	0.02500	0.0247(a)	
4	RDX	4.987	4.989	-0.002	75	0.02500	0.0154(a)	
51	3,5-Dinitroaniline	7.807	7.809	-0.002	202	0.02500	0.0243(a)	
7	nitrobenzene	8.160	8.175	-0.015	169	0.02500	0.0246(a)	
$ 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 3000132

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227584-17
Lab File ID : HLE10126.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/04/18 14:47
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5372	0.010	-2.57013	20.00000	Averaged
155 PETN	2876	3063	0.010	6.49065	20.00000	Averaged

*** = Compound out of QC criteria**

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\hplc02.i\HPLCLE04.b\HLE10126.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10126.D
Lab Smp Id: WG227584-17
Inj Date : 04-MAY-2018 14:47
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-17,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin 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: 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

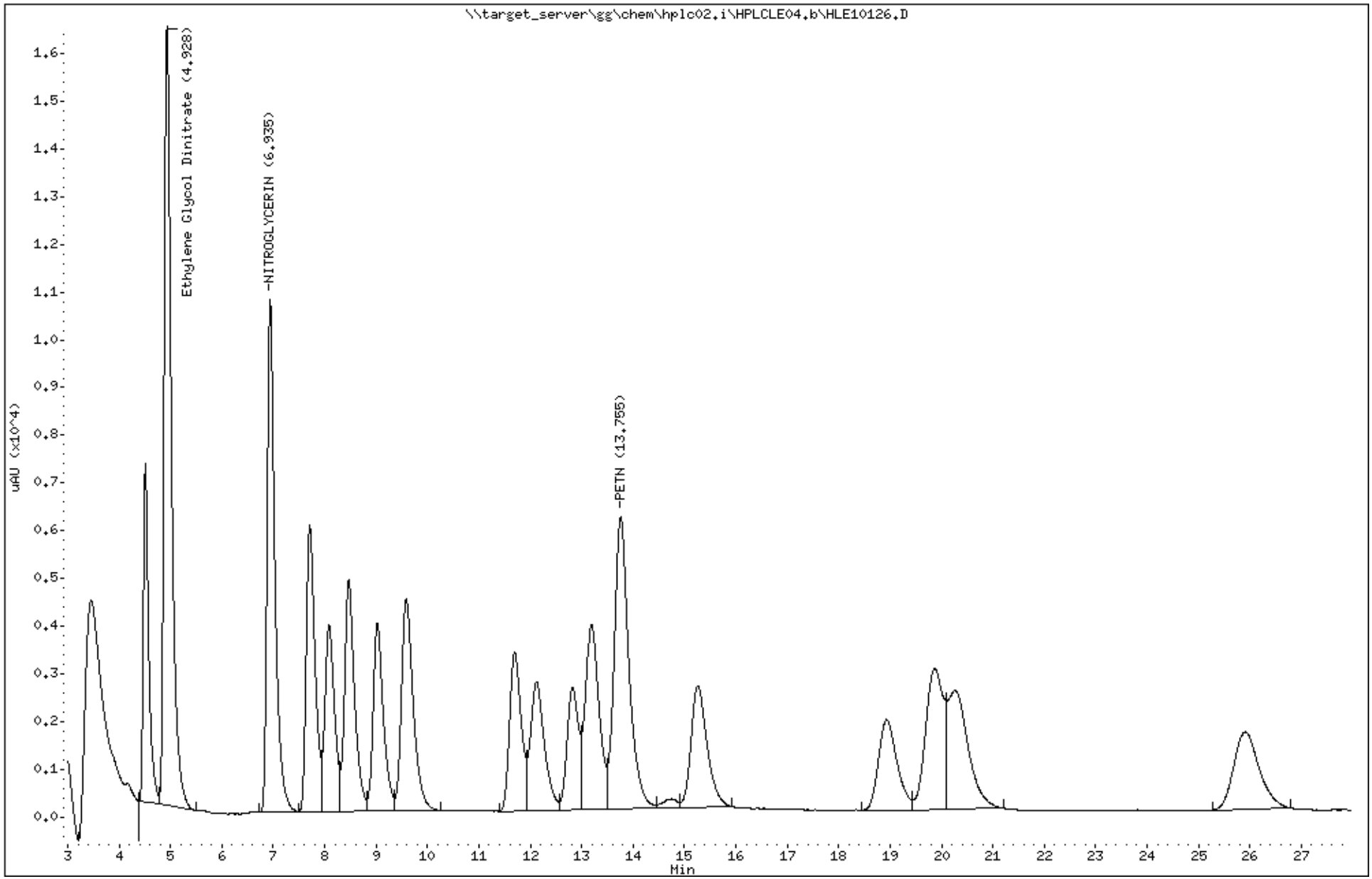
						AMOUNTS		
						CAL-AMT	ON-COL	
	Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.934	6.934	0.000	10743	1.00000	1.95(a)	
18	PETN	13.754	13.754	0.000	6125	1.00000	2.13(a)	
3	Ethylene Glycol Dinitrate	4.928	4.928	0.000	16333	1.00000	1.96(aM)	M2

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

AAB
6:17 am, May 18, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10126.D
Date : 04-MAY-2018 14:47
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-17,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000135

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227584-18
Lab File ID : HLE10137.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/04/18 20:30
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5273	0.010	-4.35675	20.00000	Averaged
155 PETN	2876	3005	0.010	4.49124	20.00000	Averaged

*** = Compound out of QC criteria**

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\hplc02.i\HPLCLE04.b\HLE10137.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10137.D
Lab Smp Id: WG227584-18
Inj Date : 04-MAY-2018 20:30
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-18,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin 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
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

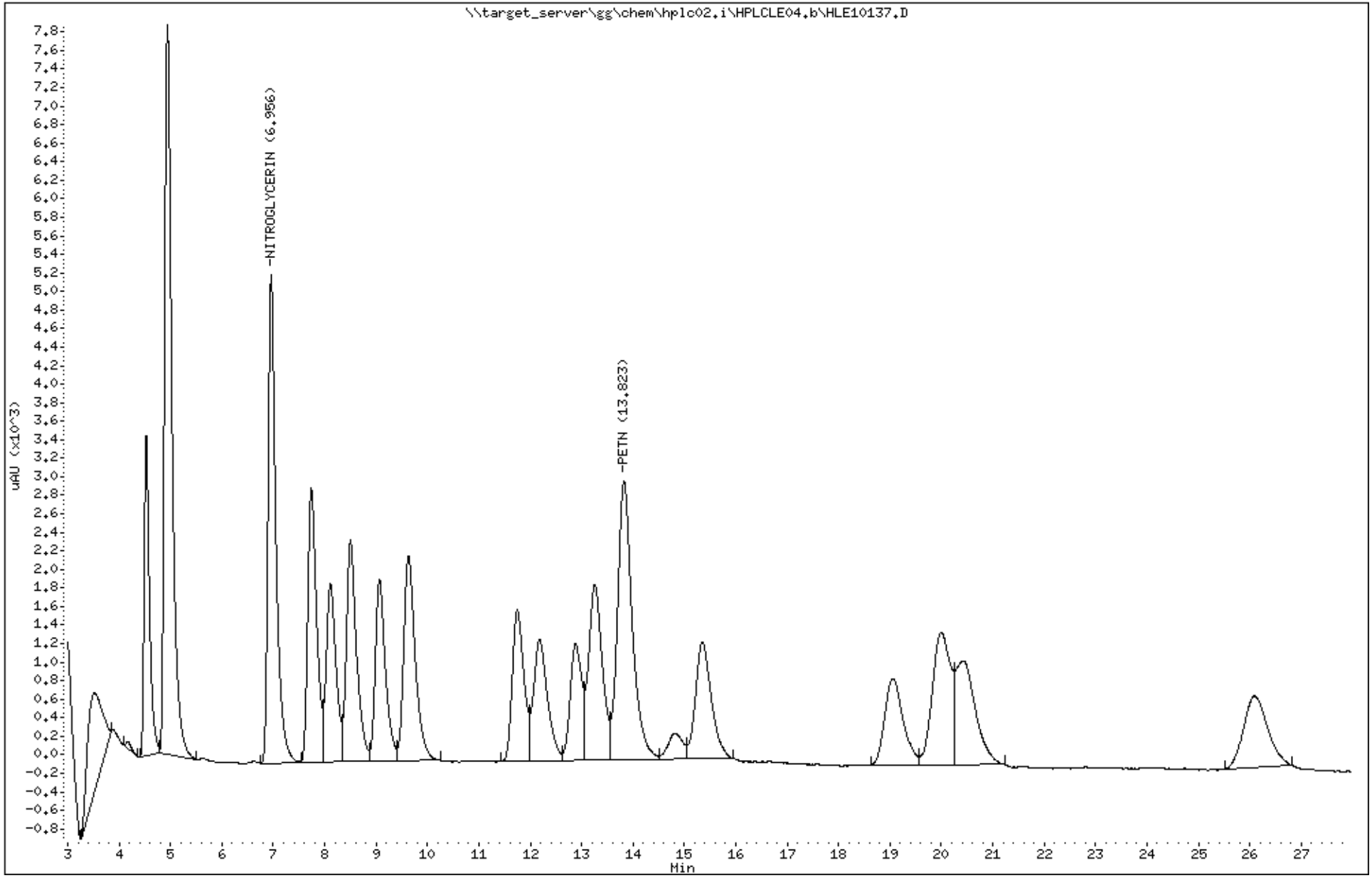
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.955	6.934	0.021	5273	1.00000	0.956(a)
18 PETN	13.822	13.754	0.068	3005	1.00000	1.04(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10137.D
Date : 04-MAY-2018 20:30
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-18,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000138

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227584-20
Lab File ID : HLE10159.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/05/18 07:46
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5205	0.010	-5.59016	20.00000	Averaged
155 PETN	2876	2952	0.010	2.64830	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10159.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10159.D
Lab Smp Id: WG227584-20
Inj Date : 05-MAY-2018 07:46
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-20,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 2   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/Vo) * CpndVariable

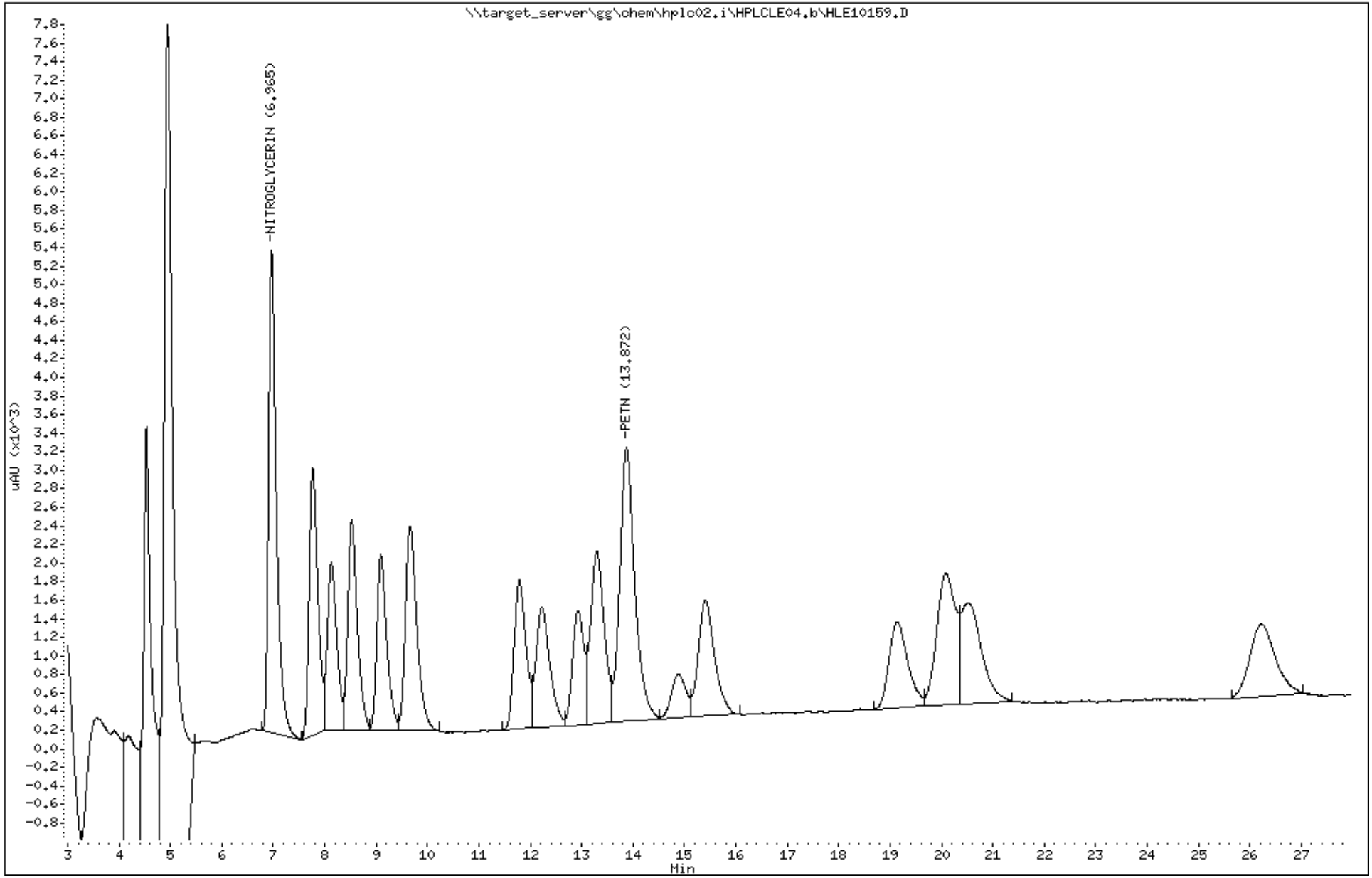
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.964	6.934	0.030	5205	1.00000	0.944(a)
18 PETN	13.871	13.754	0.117	2952	1.00000	1.03(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10159.D
Date : 05-MAY-2018 07:46
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-20,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000141

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227584-21
Lab File ID : HLE10164.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/05/18 10:20
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5384	0.010	-2.34340	20.00000	Averaged
155 PETN	2876	3053	0.010	6.14293	20.00000	Averaged

*** = Compound out of QC criteria**

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\hplc02.i\HPLCLE04.b\HLE10164.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10164.D
Lab Smp Id: WG227584-21
Inj Date : 05-MAY-2018 10:20
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-21,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 7   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/Vo) * CpndVariable

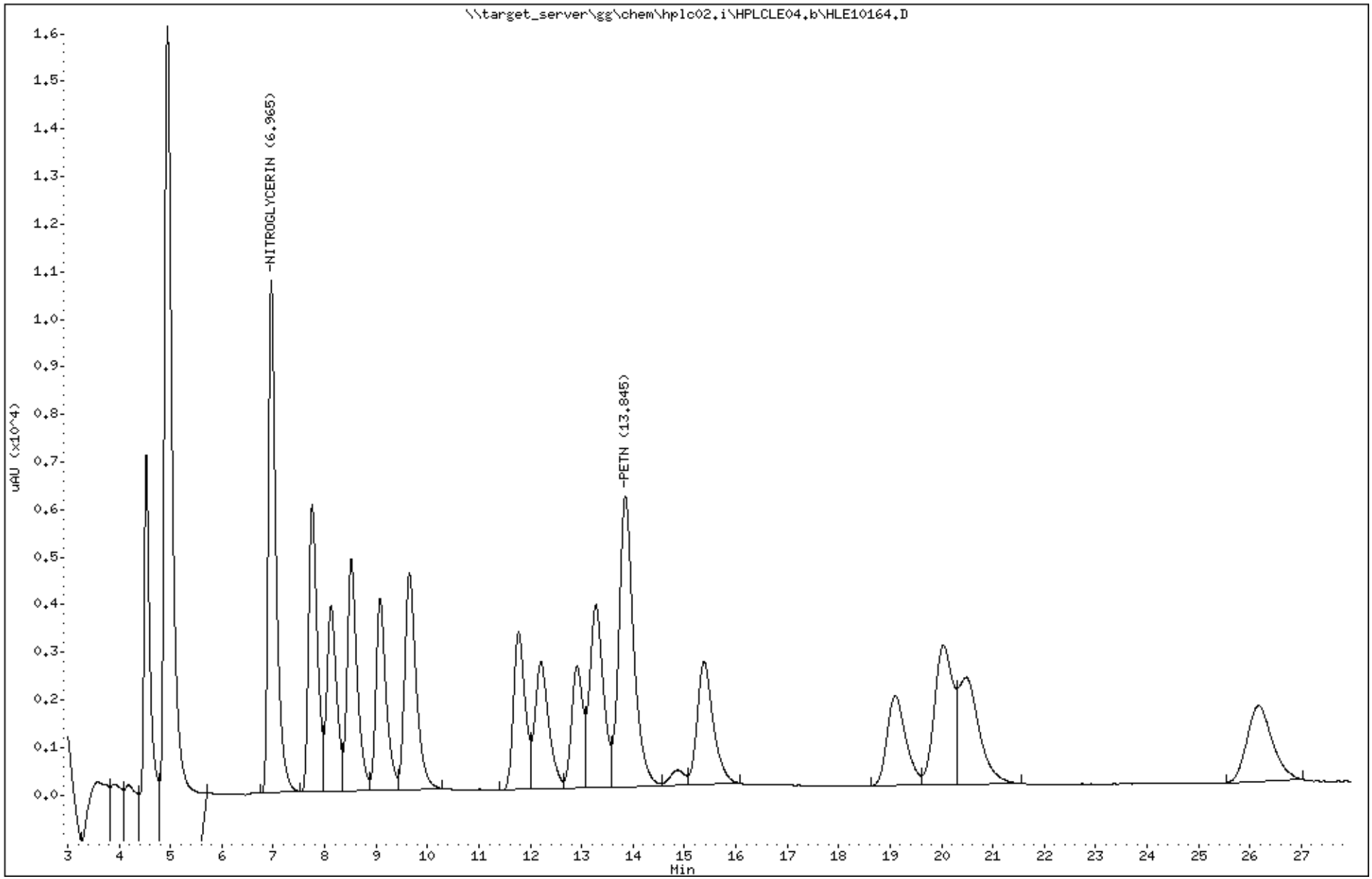
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.965	6.934	0.031	10768	1.00000	1.95(a)
18 PETN	13.845	13.754	0.091	6105	1.00000	2.12(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10164.D
Date : 05-MAY-2018 10:20
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-21,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000144

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227584-35
Lab File ID : HLE10281.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/10/18 06:58
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5322	0.010	-3.46798	20.00000	Averaged
155 PETN	2876	3040	0.010	5.69089	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10281.D
Report Date: 18-May-2018 05:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10281.D
Lab Smp Id: WG227584-35
Inj Date : 10-MAY-2018 06:58
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-35,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 2   Continuing Calibration Sample
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

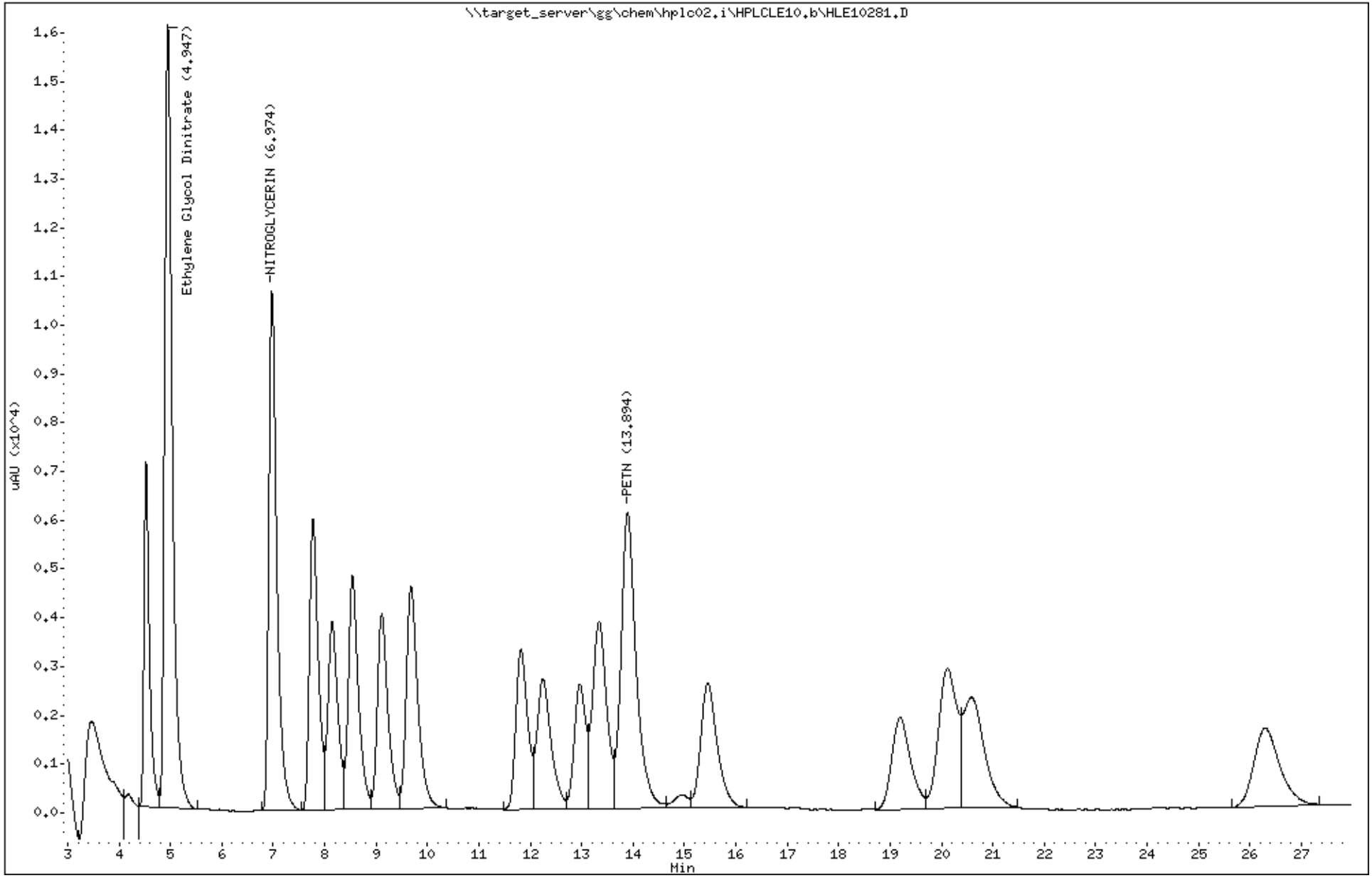
						AMOUNTS		
						CAL-AMT	ON-COL	
	Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.974	6.974	0.000	10644	1.00000	1.93(a)	
18	PETN	13.894	13.894	0.000	6079	1.00000	2.11(a)	
3	Ethylene Glycol Dinitrate	4.947	4.947	0.000	16062	1.00000	1.92(aM)	M2

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

AAB
6:18 am, May 18, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10281.D
Date : 10-MAY-2018 06:58
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-35,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000147

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227584-36
Lab File ID : HLE10292.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/10/18 13:18
Instrument ID: HPLC02
Column ID: A

Compound	$\overline{\text{RRF}}$/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5222	0.010	-5.28181	20.00000	Averaged
155 PETN	2876	2999	0.010	4.28260	20.00000	Averaged

*** = Compound out of QC criteria**

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\hplc02.i\HPLCLE10.b\HLE10292.D
Report Date: 18-May-2018 05:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10292.D
Lab Smp Id: WG227584-36
Inj Date : 10-MAY-2018 13:18
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-36,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 11   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/Vo) * CpndVariable

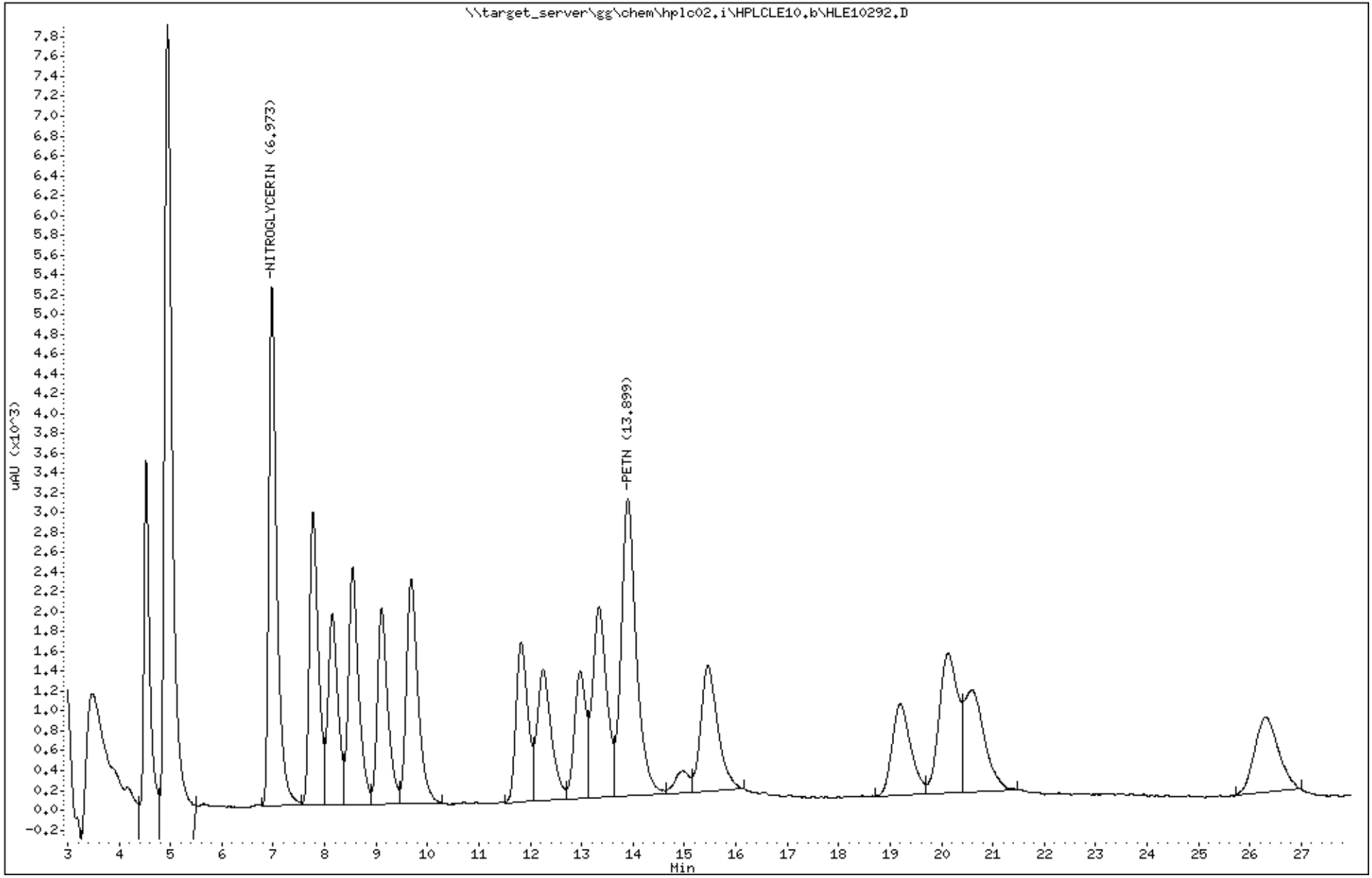
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.972	6.974	-0.002	5222	1.00000	0.947(a)
18 PETN	13.899	13.894	0.005	2999	1.00000	1.04(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10292.D
Date : 10-MAY-2018 13:18
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-36,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000150

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227584-37
Lab File ID : HLE10433.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL3808
Analytical Date: 05/14/18 10:03
Instrument ID: HPLC02
Column ID: A

	Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
8	NITROGLYCERIN	2.00000	2.11976	4725	0.010	5.98822	20.00000	Linear
18	PETN	2.00000	2.01541	1750	0.010	0.77036	20.00000	Linear

*** = Compound out of QC criteria**

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HLE10433.D
Report Date: 18-May-2018 05:54

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Data file : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HLE10433.D
Lab Smp Id: WG227584-37
Inj Date : 14-MAY-2018 10:03
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-37,SL3808
Misc Info : WG227584,WG227670,WG210620-13,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\E2016A.m
Meth Date : 18-May-2018 05:53 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 52   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

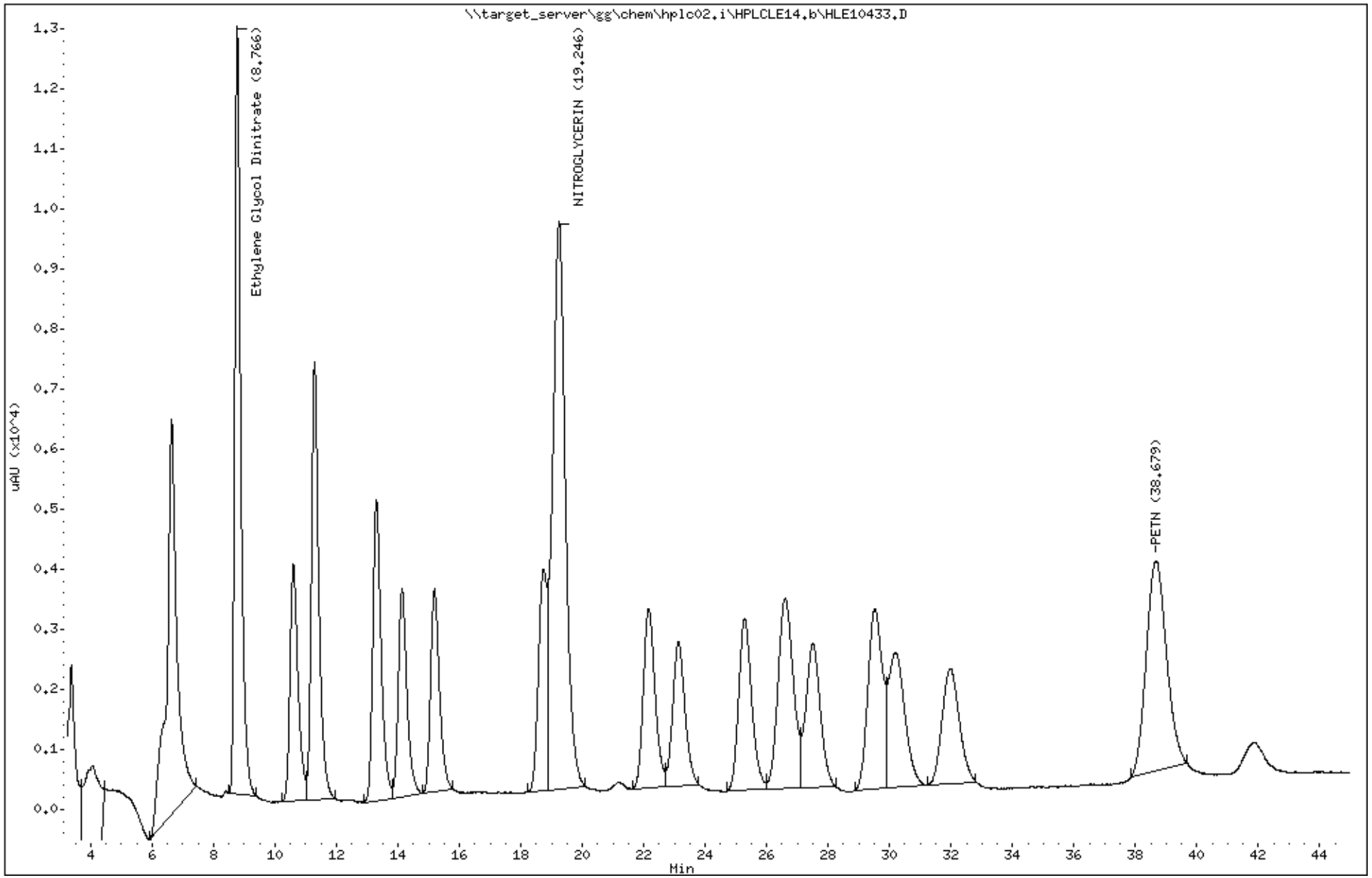
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.10000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
3 Ethylene Glycol Dinitrate	8.765	8.765	0.000	12784	2.00000	1.80(a)	
8 NITROGLYCERIN	19.245	19.245	0.000	9450	2.00000	2.12(a)	
18 PETN	38.679	38.679	0.000	3500	2.00000	2.02(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HLE10433.D
Date : 14-MAY-2018 10:03
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-37,SL3808
Purge Volume: 1.0
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000153

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227584-38
Lab File ID : HLE10441.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL3808
Analytical Date: 05/14/18 19:20
Instrument ID: HPLC02
Column ID: A

	Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
8	NITROGLYCERIN	1.00000	1.02018	4548	0.010	2.01786	20.00000	Linear
18	PETN	1.00000	0.91675	1591	0.010	-8.32544	20.00000	Linear

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HLE10441.D
Report Date: 18-May-2018 05:54

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Data file : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HLE10441.D
Lab Smp Id: WG227584-38
Inj Date : 14-MAY-2018 19:20
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-38,SL3808
Misc Info : WG227584,WG227670,WG210620-13,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\E2016A.m
Meth Date : 18-May-2018 05:53 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 60   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/Vo) * CpndVariable

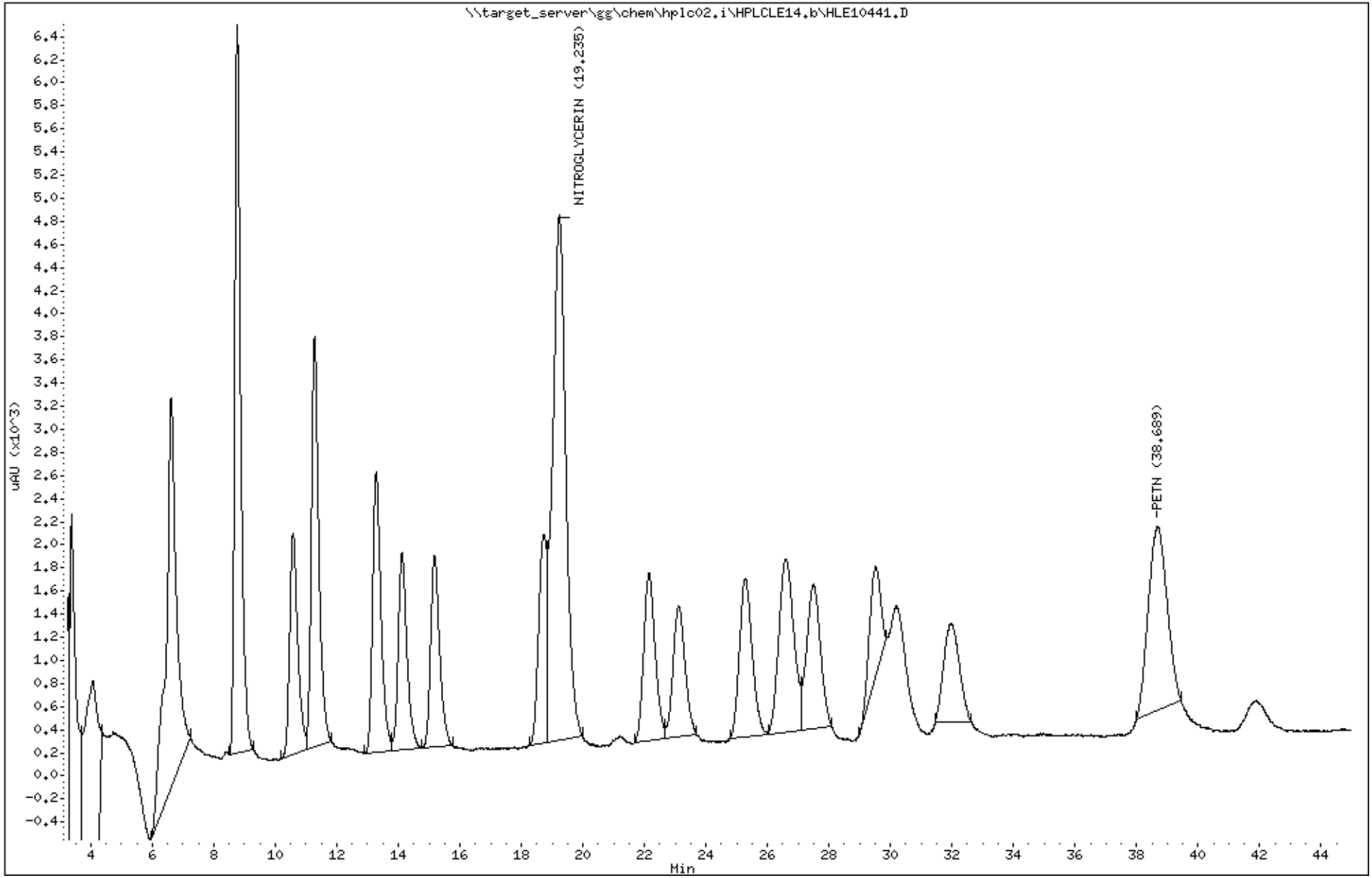
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.10000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
8 NITROGLYCERIN	19.235	19.245	-0.010	4548	2.00000	1.02(a)	
18 PETN	38.688	38.679	0.009	1591	2.00000	0.917(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HLE10441.D
Date : 14-MAY-2018 19:20
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-38,SL3808
Purge Volume: 1.0
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000156

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227584-42
Lab File ID : HLE10549.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL3808
Analytical Date: 05/17/18 15:43
Instrument ID: HPLC02
Column ID: A

	Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
8	NITROGLYCERIN	2.00000	2.12066	4727	0.010	6.03308	20.00000	Linear
18	PETN	2.00000	2.00447	1741	0.010	0.22362	20.00000	Linear

*** = Compound out of QC criteria**

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HLE10549.D
Report Date: 18-May-2018 05:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HLE10549.D
Lab Smp Id: WG227584-42
Inj Date : 17-MAY-2018 15:43
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-42,SL3808
Misc Info : WG227584,WG227670,WG210620-13,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\E2016A.m
Meth Date : 18-May-2018 02:37 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 68   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

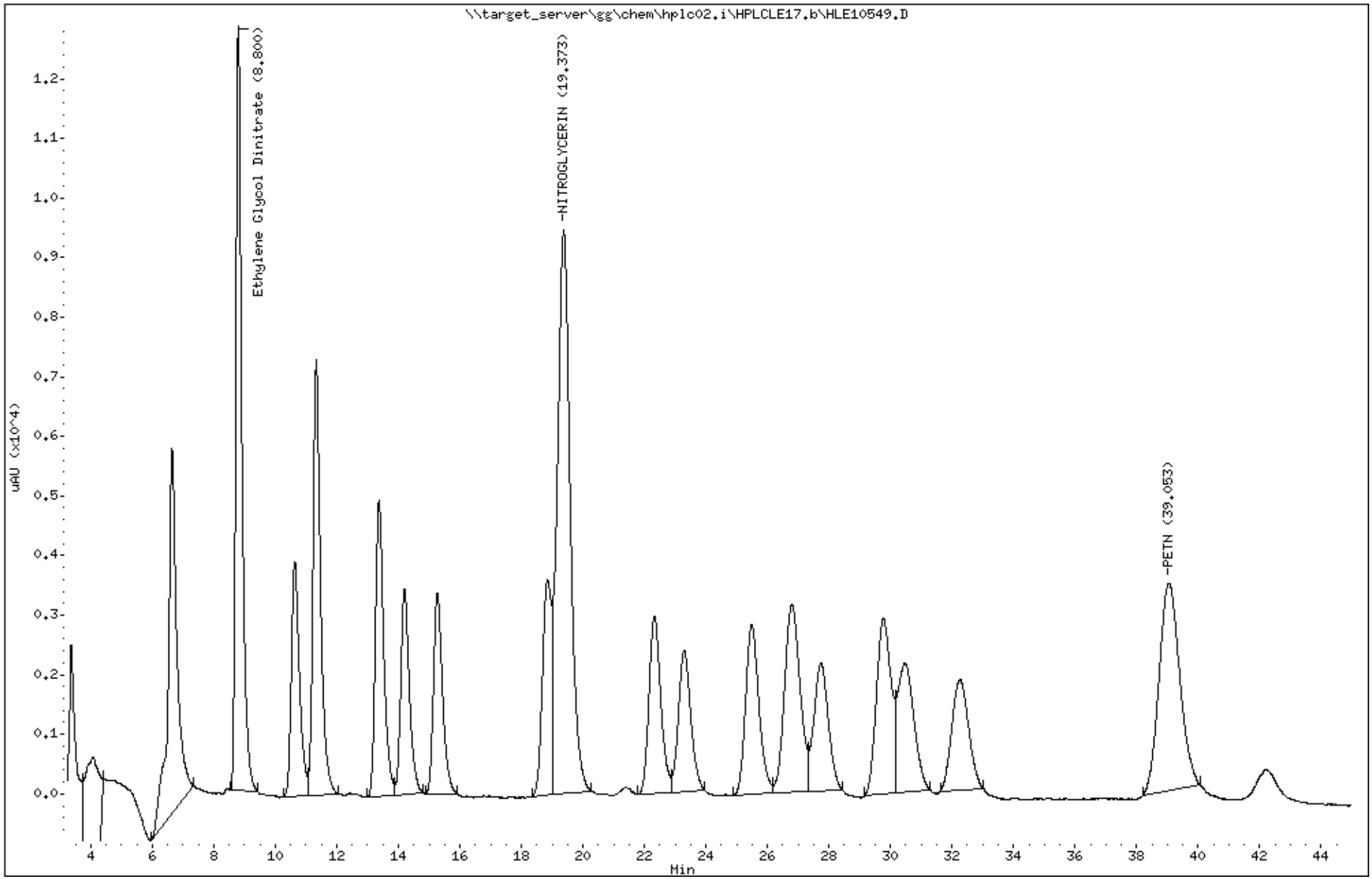
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.10000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
3 Ethylene Glycol Dinitrate	8.799	8.799	0.000	12824	2.00000	1.81(a)	
8 NITROGLYCERIN	19.373	19.373	0.000	9454	2.00000	2.12(a)	
18 PETN	39.053	39.053	0.000	3481	2.00000	2.00(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HLE10549.D
Date : 17-MAY-2018 15:43
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-42,SL3808
Purge Volume: 1.0
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000159

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227584-43
Lab File ID : HLE10560.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL3808
Analytical Date: 05/18/18 00:43
Instrument ID: HPLC02
Column ID: A

	Compound	$\overline{RRF}$/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
8	NITROGLYCERIN	1.00000	1.02938	4589	0.010	2.93755	20.00000	Linear
18	PETN	1.00000	0.93228	1618	0.010	-6.77154	20.00000	Linear

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HLE10560.D
Report Date: 18-May-2018 05:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HLE10560.D
Lab Smp Id: WG227584-43
Inj Date : 18-MAY-2018 00:43
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-43,SL3808
Misc Info : WG227584,WG227670,WG210620-13,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\E2016A.m
Meth Date : 18-May-2018 02:37 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 79   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/Vo) * CpndVariable

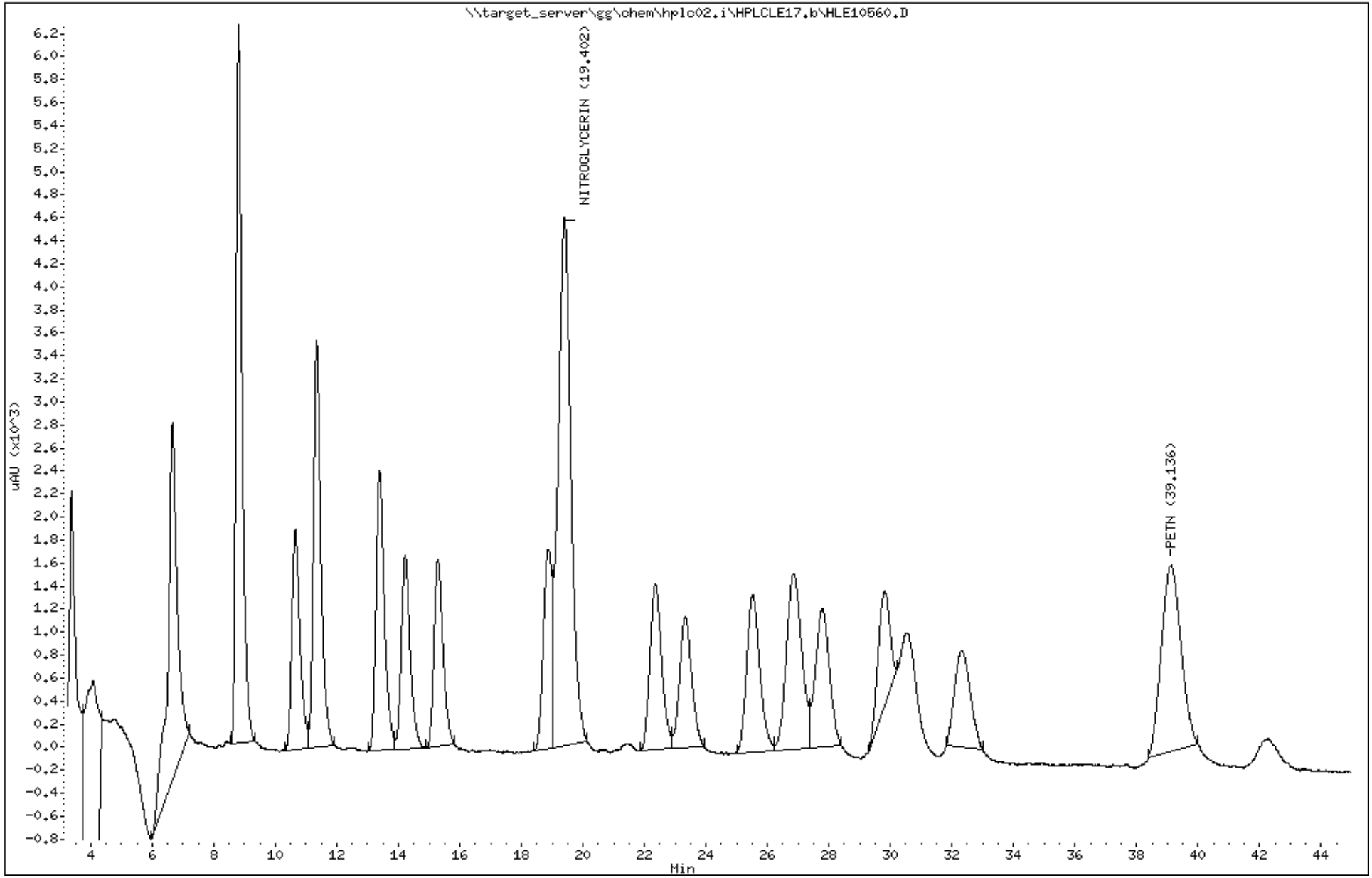
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.10000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
8 NITROGLYCERIN	19.402	19.373	0.029	4589	2.00000	1.03(a)	
18 PETN	39.135	39.053	0.082	1618	2.00000	0.932(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HLE10560.D
Date : 18-MAY-2018 00:43
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-43,SL3808
Purge Volume: 1.0
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000162

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-17
Analytical Date: 05/04/18 14:47
Lab File ID : HLE10126.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	HMX	5391	5390	5390	0.010	-0.01193	20.00000	Averaged	
4	RDX	0.50000	0.49274	5406	0.010	-1.45172	20.00000	Linear	
5	1,3,5-trinitrobenzene	3689	3952	3952	0.010	7.13345	20.00000	Averaged	
6	1,3-dinitrobenzene	7444	7740	7740	0.010	3.98035	20.00000	Averaged	
7	nitrobenzene	6867	6790	6790	0.010	-1.11616	20.00000	Averaged	
9	TETRYL	2535	3100	3100	0.010	22.30865	20.00000	Averaged	*
10	2,4,6-trinitrotoluene	2526	2596	2596	0.010	2.75665	20.00000	Averaged	
11	4-AM-DNT	4303	4274	4274	0.010	-0.66735	20.00000	Averaged	
12	2-AM-DNT	5761	5898	5898	0.010	2.38314	20.00000	Averaged	
13	2,6-dinitrotoluene	0.50000	0.50039	2944	0.010	0.07714	20.00000	Linear	
14	2,4-dinitrotoluene	4619	4786	4786	0.010	3.62672	20.00000	Averaged	
15	2-nitrotoluene	2890	3020	3020	0.010	4.51377	20.00000	Averaged	
16	4-nitrotoluene	2342	2486	2486	0.010	6.12917	20.00000	Averaged	
17	3-nitrotoluene	3326	3376	3376	0.010	1.51421	20.00000	Averaged	
2	1,2-dinitrobenzene	4627	4844	4844	0.010	4.68017	20.00000	Averaged	

*** = Compound out of QC criteria**

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Data File: HLE10126.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

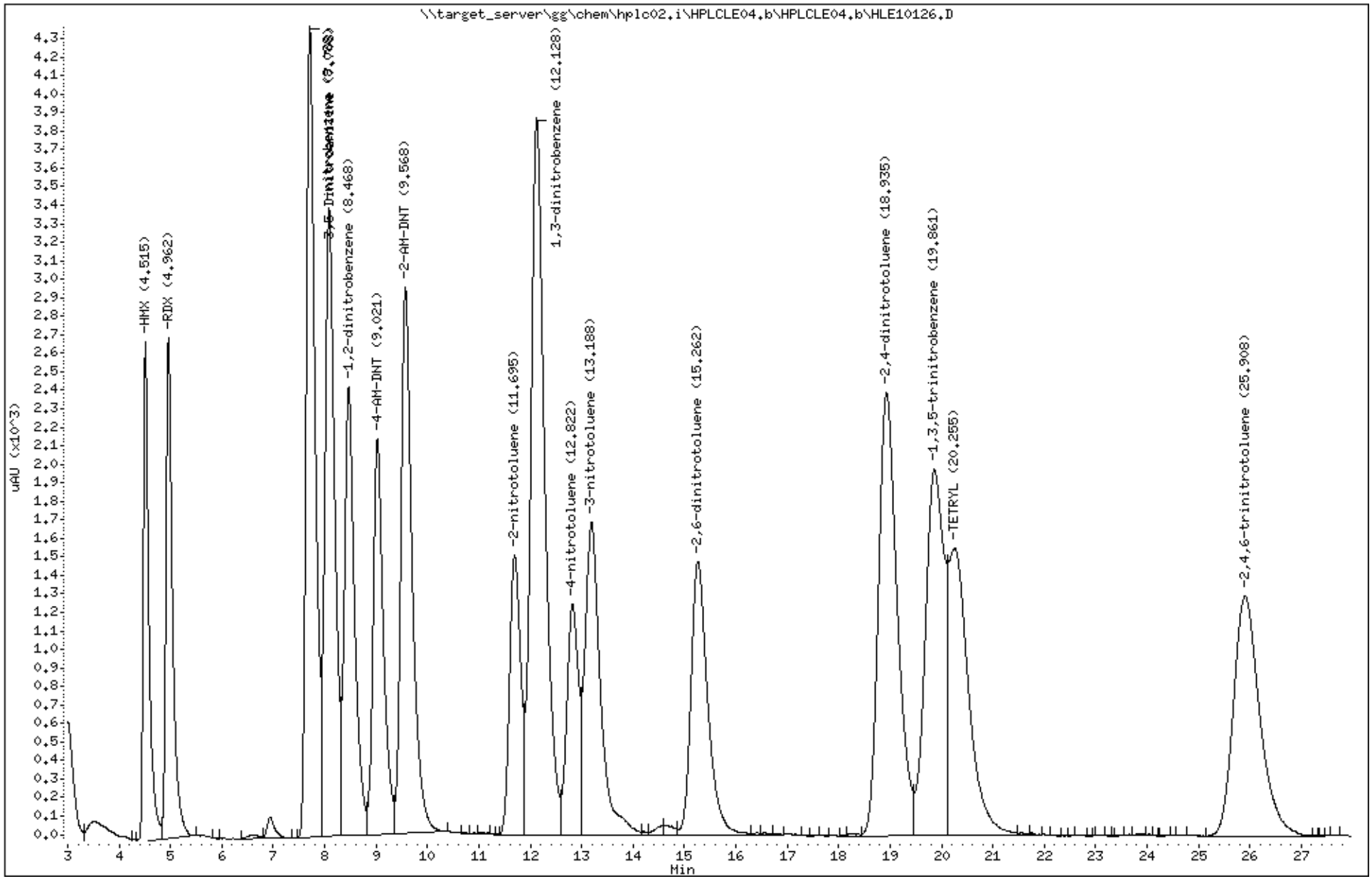
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10126.D
Lab Smp Id: WG227584-17
Inj Date : 04-MAY-2018 14:47
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-17,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin 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
Processing Host: KATHADIN-50E985

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	4.514	4.514	0.000	2695	0.25000	0.500	
4	RDX	4.961	4.961	0.000	2703	0.25000	0.493	
51	3,5-Dinitroaniline	7.708	7.708	0.000	4381	0.25000	0.527	
7	nitrobenzene	8.088	8.088	0.000	3395	0.25000	0.494	
$ 2	1,2-dinitrobenzene	8.468	8.468	0.000	2422	0.25000	0.523	
11	4-AM-DNT	9.021	9.021	0.000	2137	0.25000	0.497	
12	2-AM-DNT	9.568	9.568	0.000	2949	0.25000	0.512	
15	2-nitrotoluene	11.694	11.694	0.000	1510	0.25000	0.522	
6	1,3-dinitrobenzene	12.128	12.128	0.000	3870	0.25000	0.520	
16	4-nitrotoluene	12.821	12.821	0.000	1243	0.25000	0.531	
17	3-nitrotoluene	13.188	13.188	0.000	1688	0.25000	0.508	
13	2,6-dinitrotoluene	15.261	15.261	0.000	1472	0.25000	0.500	
14	2,4-dinitrotoluene	18.934	18.934	0.000	2393	0.25000	0.518	
5	1,3,5-trinitrobenzene	19.861	19.861	0.000	1976	0.25000	0.536	
9	TETRYL	20.254	20.254	0.000	1550	0.25000	0.612	
10	2,4,6-trinitrotoluene	25.908	25.908	0.000	1298	0.25000	0.514	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10126.D
Date : 04-MAY-2018 14:47
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-17,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000165

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-18
Analytical Date: 05/04/18 20:30
Lab File ID : HLE10137.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/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	0.24471	5304	0.010	-2.11449	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3868	3868	0.010	4.85632	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7592	7592	0.010	1.99209	20.00000	Averaged
7	nitrobenzene	6867	6680	6680	0.010	-2.71811	20.00000	Averaged
9	TETRYL	2535	2832	2832	0.010	11.73487	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2548	2548	0.010	0.85668	20.00000	Averaged
11	4-AM-DNT	4303	4304	4304	0.010	0.02988	20.00000	Averaged
12	2-AM-DNT	5761	5828	5828	0.010	1.16801	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.24277	2932	0.010	-2.89023	20.00000	Linear
14	2,4-dinitrotoluene	4619	4724	4724	0.010	2.28429	20.00000	Averaged
15	2-nitrotoluene	2890	2980	2980	0.010	3.12948	20.00000	Averaged
16	4-nitrotoluene	2342	2456	2456	0.010	4.84845	20.00000	Averaged
17	3-nitrotoluene	3326	3352	3352	0.010	0.79254	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4808	4808	0.010	3.90220	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: HLE10137.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10137.D
Lab Smp Id: WG227584-18
Inj Date : 04-MAY-2018 20:30
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-18,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin 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
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

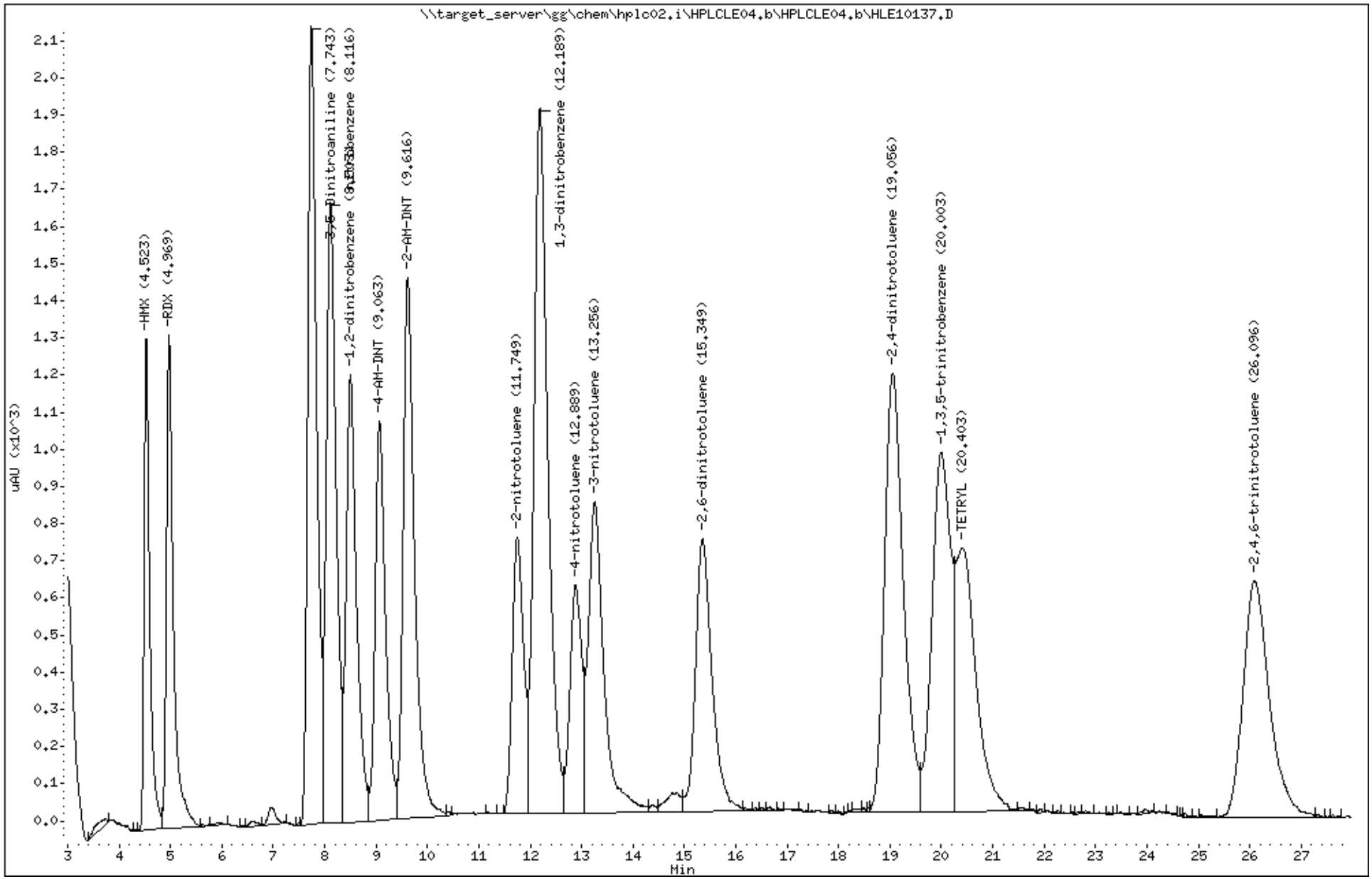
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

						AMOUNTS		
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
	1 HMX	4.522	4.514	0.008	1322	0.25000	0.245(a)	
	4 RDX	4.969	4.961	0.008	1326	0.25000	0.245(a)	
	51 3,5-Dinitroaniline	7.742	7.708	0.034	2148	0.25000	0.258	
	7 nitrobenzene	8.115	8.088	0.027	1670	0.25000	0.243(a)	
$	2 1,2-dinitrobenzene	8.502	8.468	0.034	1202	0.25000	0.260	
	11 4-AM-DNT	9.062	9.021	0.041	1076	0.25000	0.250	
	12 2-AM-DNT	9.615	9.568	0.047	1457	0.25000	0.253	
	15 2-nitrotoluene	11.749	11.694	0.055	745	0.25000	0.258	
	6 1,3-dinitrobenzene	12.189	12.128	0.061	1898	0.25000	0.255	
	16 4-nitrotoluene	12.889	12.821	0.068	614	0.25000	0.262	
	17 3-nitrotoluene	13.255	13.188	0.067	838	0.25000	0.252	
	13 2,6-dinitrotoluene	15.349	15.261	0.088	733	0.25000	0.243(a)	
	14 2,4-dinitrotoluene	19.055	18.934	0.121	1181	0.25000	0.256	
	5 1,3,5-trinitrobenzene	20.002	19.861	0.141	967	0.25000	0.262	
	9 TETRYL	20.402	20.254	0.148	708	0.25000	0.279	
	10 2,4,6-trinitrotoluene	26.095	25.908	0.187	637	0.25000	0.252	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10137.D
Date : 04-MAY-2018 20:30
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-18,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000168

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-20
Analytical Date: 05/05/18 07:46
Lab File ID : HLE10159.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5244	5244	0.010	-2.72032	20.00000	Averaged
4	RDX	0.25000	0.24507	5312	0.010	-1.97039	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3812	3812	0.010	3.33824	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7524	7524	0.010	1.07857	20.00000	Averaged
7	nitrobenzene	6867	6620	6620	0.010	-3.59190	20.00000	Averaged
9	TETRYL	2535	2708	2708	0.010	6.84252	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2512	2512	0.010	-0.56829	20.00000	Averaged
11	4-AM-DNT	4303	4232	4232	0.010	-1.64348	20.00000	Averaged
12	2-AM-DNT	5761	5736	5736	0.010	-0.42901	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23650	2860	0.010	-5.40011	20.00000	Linear
14	2,4-dinitrotoluene	4619	4648	4648	0.010	0.63874	20.00000	Averaged
15	2-nitrotoluene	2890	2940	2940	0.010	1.74519	20.00000	Averaged
16	4-nitrotoluene	2342	2400	2400	0.010	2.45777	20.00000	Averaged
17	3-nitrotoluene	3326	3288	3288	0.010	-1.13190	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4676	4676	0.010	1.04964	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: HLE10159.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10159.D
Lab Smp Id: WG227584-20
Inj Date : 05-MAY-2018 07:46
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-20,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 2   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/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

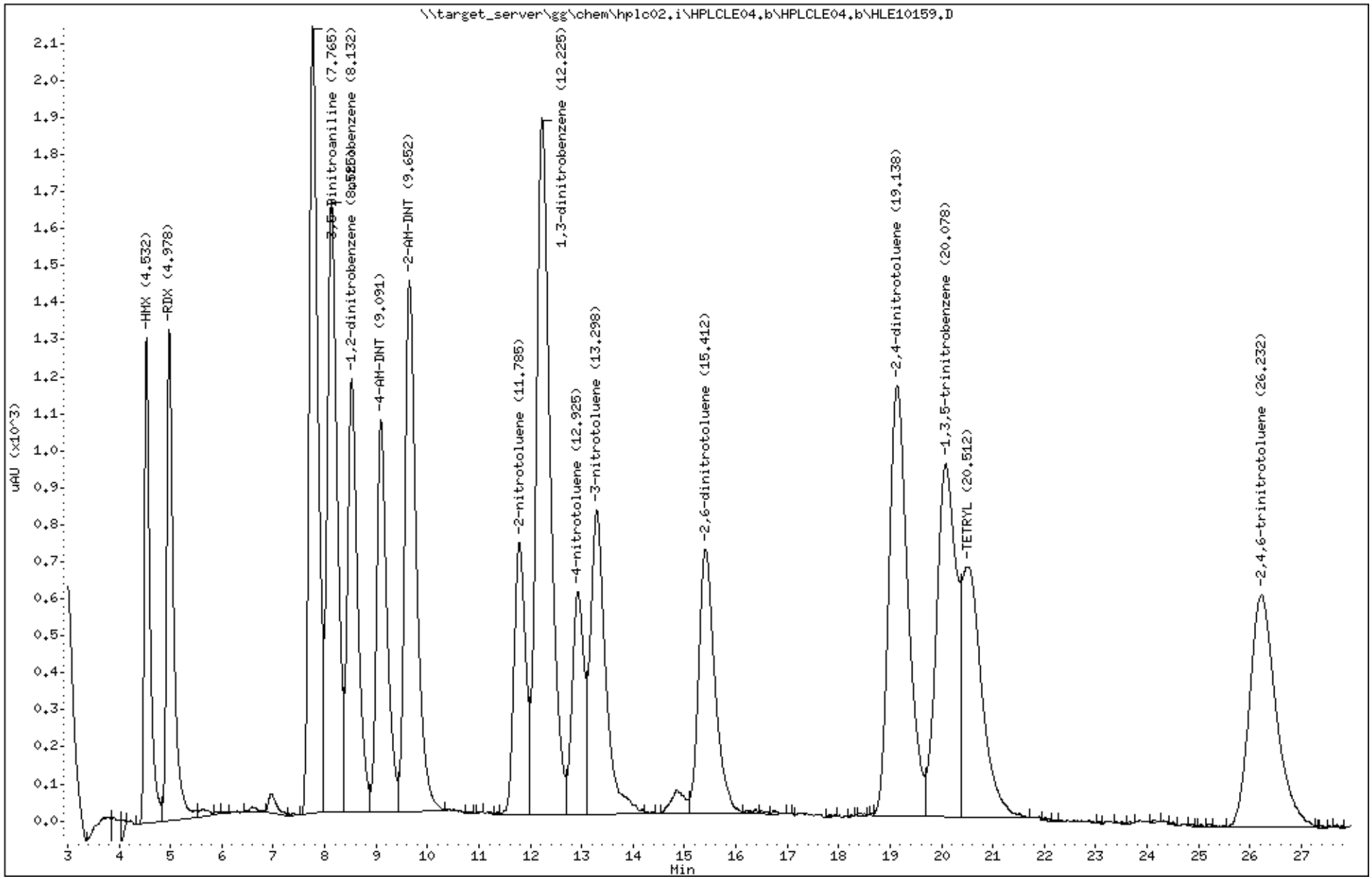
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.531	4.514	0.017	1311	0.25000	0.243(a)	
4	RDX	4.978	4.961	0.017	1328	0.25000	0.245(a)	
51	3,5-Dinitroaniline	7.764	7.708	0.056	2127	0.25000	0.256	
7	nitrobenzene	8.131	8.088	0.043	1655	0.25000	0.241(a)	
$ 2	1,2-dinitrobenzene	8.524	8.468	0.056	1169	0.25000	0.253	
11	4-AM-DNT	9.091	9.021	0.070	1058	0.25000	0.246(a)	
12	2-AM-DNT	9.651	9.568	0.083	1434	0.25000	0.249(a)	
15	2-nitrotoluene	11.784	11.694	0.090	735	0.25000	0.254	
6	1,3-dinitrobenzene	12.224	12.128	0.096	1881	0.25000	0.253	
16	4-nitrotoluene	12.924	12.821	0.103	600	0.25000	0.256	
17	3-nitrotoluene	13.298	13.188	0.110	822	0.25000	0.247(a)	
13	2,6-dinitrotoluene	15.411	15.261	0.150	715	0.25000	0.236(a)	
14	2,4-dinitrotoluene	19.138	18.934	0.204	1162	0.25000	0.252	
5	1,3,5-trinitrobenzene	20.078	19.861	0.217	953	0.25000	0.258(M)	M6
9	TETRYL	20.511	20.254	0.257	677	0.25000	0.267(M)	M6
10	2,4,6-trinitrotoluene	26.231	25.908	0.323	628	0.25000	0.248(a)	

AAB
6:18 am, May 18, 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\HPLCLE04.b\HPLCLE04.b\HLE10159.D
Date : 05-MAY-2018 07:46
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-20,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000171

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-21
Analytical Date: 05/05/18 10:20
Lab File ID : HLE10164.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	RRF/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5374	5374	0.010	-0.30874	20.00000	Averaged
4	RDX	0.50000	0.49815	5466	0.010	-0.37099	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3904	3904	0.010	5.83224	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7724	7724	0.010	3.76540	20.00000	Averaged
7	nitrobenzene	6867	6818	6818	0.010	-0.70839	20.00000	Averaged
9	TETRYL	2535	2788	2788	0.010	9.99887	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2578	2578	0.010	2.04416	20.00000	Averaged
11	4-AM-DNT	4303	4388	4388	0.010	1.98214	20.00000	Averaged
12	2-AM-DNT	5761	5938	5938	0.010	3.07750	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.50178	2952	0.010	0.35601	20.00000	Linear
14	2,4-dinitrotoluene	4619	4778	4778	0.010	3.45350	20.00000	Averaged
15	2-nitrotoluene	2890	3006	3006	0.010	4.02927	20.00000	Averaged
16	4-nitrotoluene	2342	2468	2468	0.010	5.36074	20.00000	Averaged
17	3-nitrotoluene	3326	3348	3348	0.010	0.67227	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4880	4880	0.010	5.45814	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
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Data File: HLE10164.D
Report Date: 18-May-2018 05:30

Katahdin Analytical Services

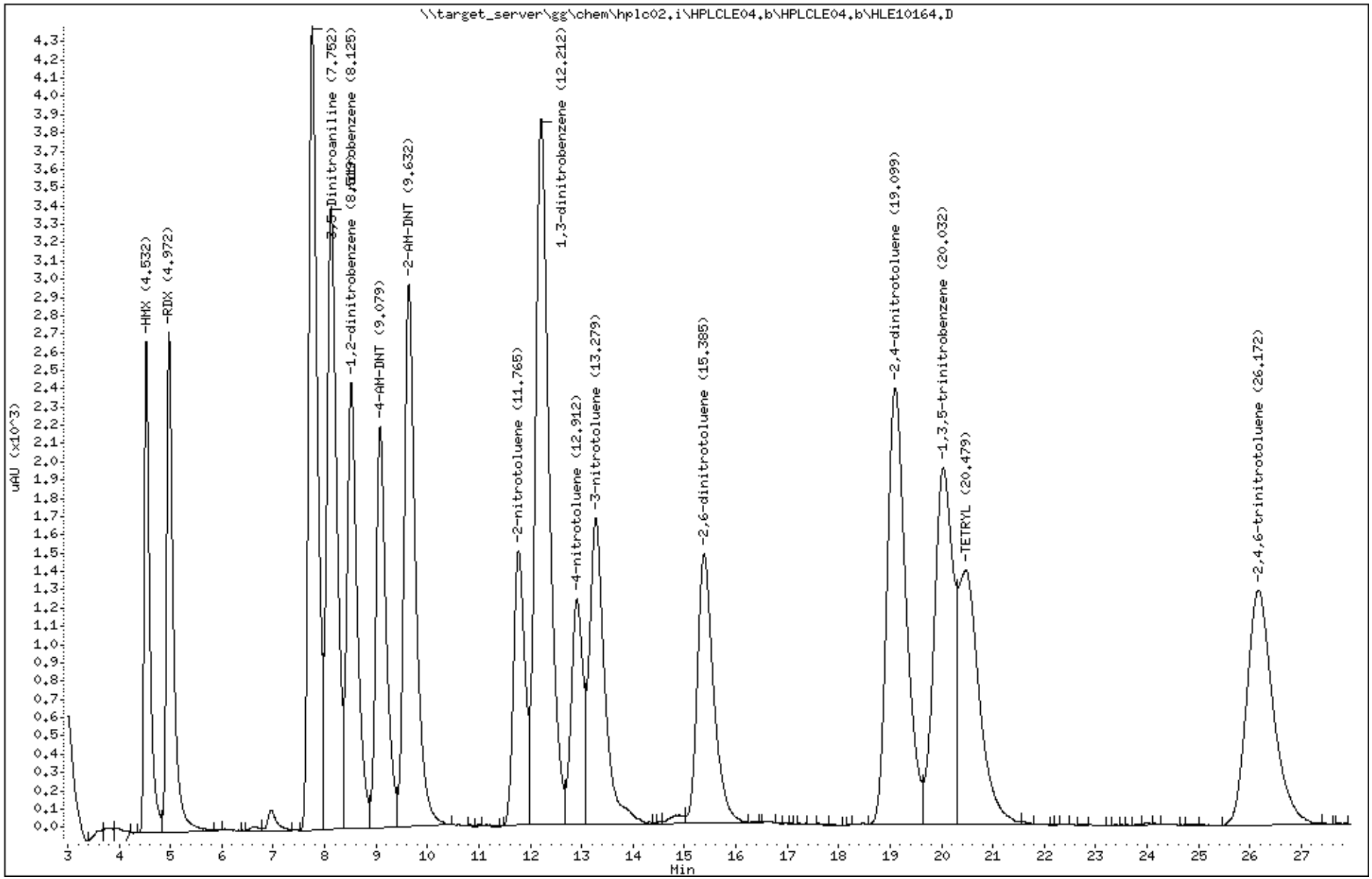
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10164.D
Lab Smp Id: WG227584-21
Inj Date : 05-MAY-2018 10:20
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-21,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 7   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/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	4.532	4.514	0.018	2687	0.25000	0.498	
4	RDX	4.972	4.961	0.011	2733	0.25000	0.498	
51	3,5-Dinitroaniline	7.752	7.708	0.044	4399	0.25000	0.529	
7	nitrobenzene	8.125	8.088	0.037	3409	0.25000	0.496	
$ 2	1,2-dinitrobenzene	8.518	8.468	0.050	2440	0.25000	0.527	
11	4-AM-DNT	9.078	9.021	0.057	2194	0.25000	0.510	
12	2-AM-DNT	9.632	9.568	0.064	2969	0.25000	0.515	
15	2-nitrotoluene	11.765	11.694	0.071	1503	0.25000	0.520	
6	1,3-dinitrobenzene	12.212	12.128	0.084	3862	0.25000	0.519	
16	4-nitrotoluene	12.912	12.821	0.091	1234	0.25000	0.527	
17	3-nitrotoluene	13.278	13.188	0.090	1674	0.25000	0.503	
13	2,6-dinitrotoluene	15.385	15.261	0.124	1476	0.25000	0.502	
14	2,4-dinitrotoluene	19.098	18.934	0.164	2389	0.25000	0.517	
5	1,3,5-trinitrobenzene	20.032	19.861	0.171	1952	0.25000	0.529	
9	TETRYL	20.478	20.254	0.224	1394	0.25000	0.550	
10	2,4,6-trinitrotoluene	26.172	25.908	0.264	1289	0.25000	0.510	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10164.D
Date : 05-MAY-2018 10:20
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-21,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000174

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227584-35
Lab File ID : HLE10281.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3808
Analytical Date: 05/10/18 06:58
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	5391	5336	5336	0.010	-1.01366	20.00000	Averaged
4	RDX	0.50000	0.49310	5410	0.010	-1.37968	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3810	3810	0.010	3.28402	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7616	7616	0.010	2.31451	20.00000	Averaged
7	nitrobenzene	6867	6754	6754	0.010	-1.64044	20.00000	Averaged
9	TETRYL	2535	2780	2780	0.010	9.68324	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2538	2538	0.010	0.46086	20.00000	Averaged
11	4-AM-DNT	4303	4360	4360	0.010	1.33139	20.00000	Averaged
12	2-AM-DNT	5761	5886	5886	0.010	2.17483	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.49028	2886	0.010	-1.94471	20.00000	Linear
14	2,4-dinitrotoluene	4619	4730	4730	0.010	2.41420	20.00000	Averaged
15	2-nitrotoluene	2890	2970	2970	0.010	2.78341	20.00000	Averaged
16	4-nitrotoluene	2342	2428	2428	0.010	3.65311	20.00000	Averaged
17	3-nitrotoluene	3326	3314	3314	0.010	-0.35009	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4808	4808	0.010	3.90220	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: HLE10281.D
Report Date: 18-May-2018 05:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10281.D
Lab Smp Id: WG227584-35
Inj Date : 10-MAY-2018 06:58
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227584-35,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 2 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/Vo) * CpndVariable

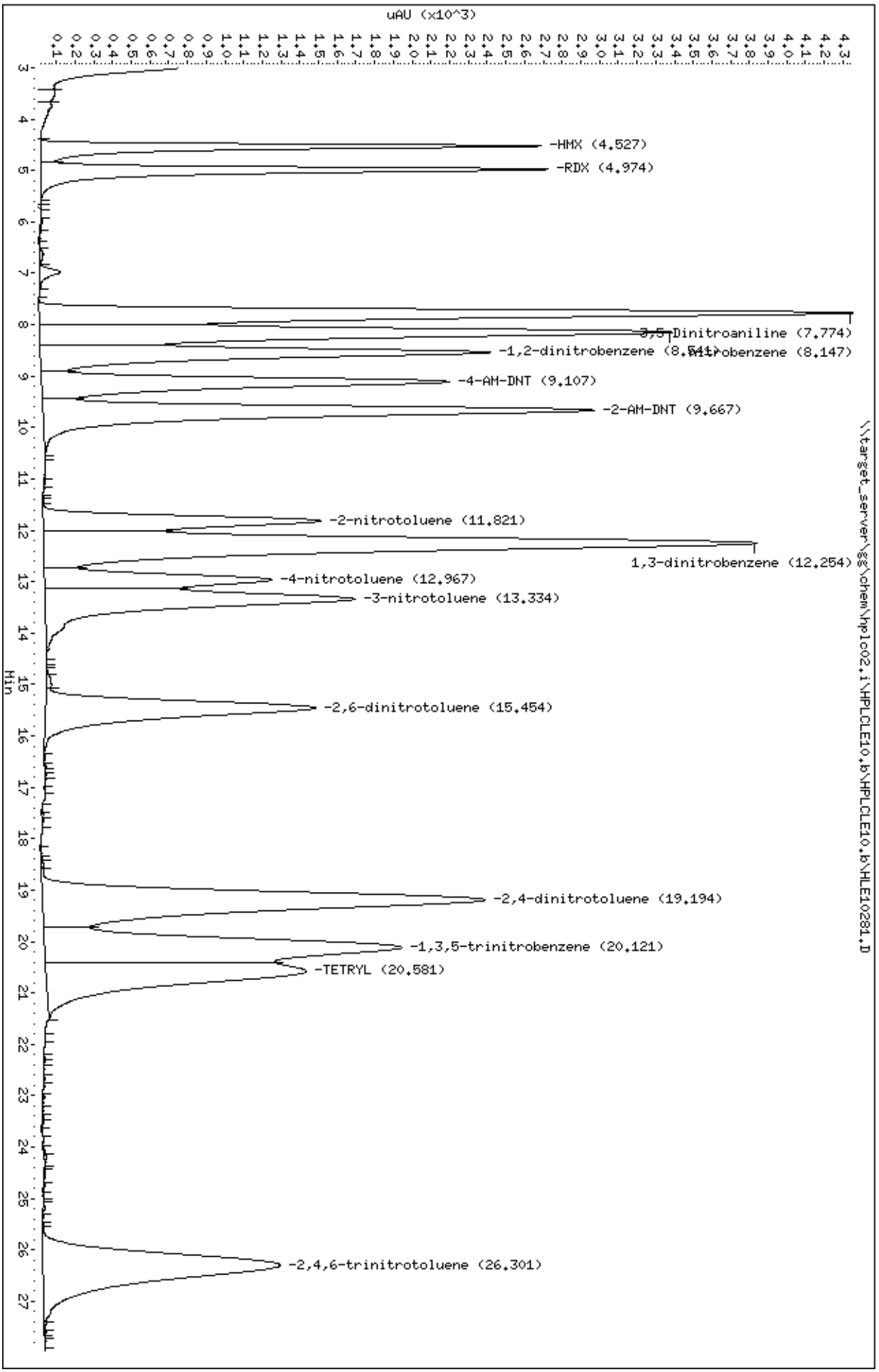
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.527	4.527	0.000	2668	0.25000	0.495(M)	M2
4	RDX	4.974	4.974	0.000	2705	0.25000	0.493(M)	M2
51	3,5-Dinitroaniline	7.774	7.774	0.000	4346	0.25000	0.522	
7	nitrobenzene	8.147	8.147	0.000	3377	0.25000	0.492	
$ 2	1,2-dinitrobenzene	8.540	8.540	0.000	2404	0.25000	0.520	
11	4-AM-DNT	9.107	9.107	0.000	2180	0.25000	0.507	
12	2-AM-DNT	9.667	9.667	0.000	2943	0.25000	0.511	
15	2-nitrotoluene	11.820	11.820	0.000	1485	0.25000	0.514	
6	1,3-dinitrobenzene	12.254	12.254	0.000	3808	0.25000	0.512	
16	4-nitrotoluene	12.967	12.967	0.000	1214	0.25000	0.518	
17	3-nitrotoluene	13.334	13.334	0.000	1657	0.25000	0.498	
13	2,6-dinitrotoluene	15.454	15.454	0.000	1443	0.25000	0.490	
14	2,4-dinitrotoluene	19.194	19.194	0.000	2365	0.25000	0.512	
5	1,3,5-trinitrobenzene	20.120	20.120	0.000	1905	0.25000	0.516	
9	TETRYL	20.580	20.580	0.000	1390	0.25000	0.548	
10	2,4,6-trinitrotoluene	26.300	26.300	0.000	1269	0.25000	0.502	

6:18 am, May 18, 2018

QC Flag Legend

M - Compound response manually integrated.


Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10281.D
Date : 10-MAY-2018 06:58
Client ID:
Sample Info: WG227584-35,SL3808
Purge Volume: 0.5
Column phase: Acclaim Exp E1
Instrument: hplc02.i
Operator: AAB
Column diameter: 4.60
uAU (x10^3)
Min
-HMX (4.527)
-RDX (4.974)
3,5-Dinitroaniline (7.774)
-1,2-dinitrobenzene (8.541)
-nitrobenzene (8.147)
-4-AM-DNT (9.107)
-2-AM-DNT (9.667)
-2-nitrotoluene (11.821)
1,3-dinitrobenzene (12.254)
-4-nitrotoluene (12.967)
-3-nitrotoluene (13.334)
-2,6-dinitrotoluene (15.454)
-2,4-dinitrotoluene (19.194)
-1,3,5-trinitrobenzene (20.121)
-TETRYL (20.581)
-2,4,6-trinitrotoluene (26.301)
\\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10281.D

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-36
Analytical Date: 05/10/18 13:18
Lab File ID : HLE10292.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5236	5236	0.010	-2.86873	20.00000	Averaged
4	RDX	0.25000	0.24381	5284	0.010	-2.47473	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3772	3772	0.010	2.25389	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7564	7564	0.010	1.61594	20.00000	Averaged
7	nitrobenzene	6867	6608	6608	0.010	-3.76666	20.00000	Averaged
9	TETRYL	2535	2568	2568	0.010	1.31890	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2484	2484	0.010	-1.67661	20.00000	Averaged
11	4-AM-DNT	4303	4248	4248	0.010	-1.27162	20.00000	Averaged
12	2-AM-DNT	5761	5736	5736	0.010	-0.42901	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23267	2816	0.010	-6.93393	20.00000	Linear
14	2,4-dinitrotoluene	4619	4628	4628	0.010	0.20569	20.00000	Averaged
15	2-nitrotoluene	2890	2944	2944	0.010	1.88362	20.00000	Averaged
16	4-nitrotoluene	2342	2628	2628	0.010	12.19125	20.00000	Averaged
17	3-nitrotoluene	3326	3584	3584	0.010	7.76864	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4732	4732	0.010	2.25982	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: HLE10292.D
Report Date: 18-May-2018 05:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10292.D
Lab Smp Id: WG227584-36
Inj Date : 10-MAY-2018 13:18
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-36,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 11   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/Vo) * CpndVariable

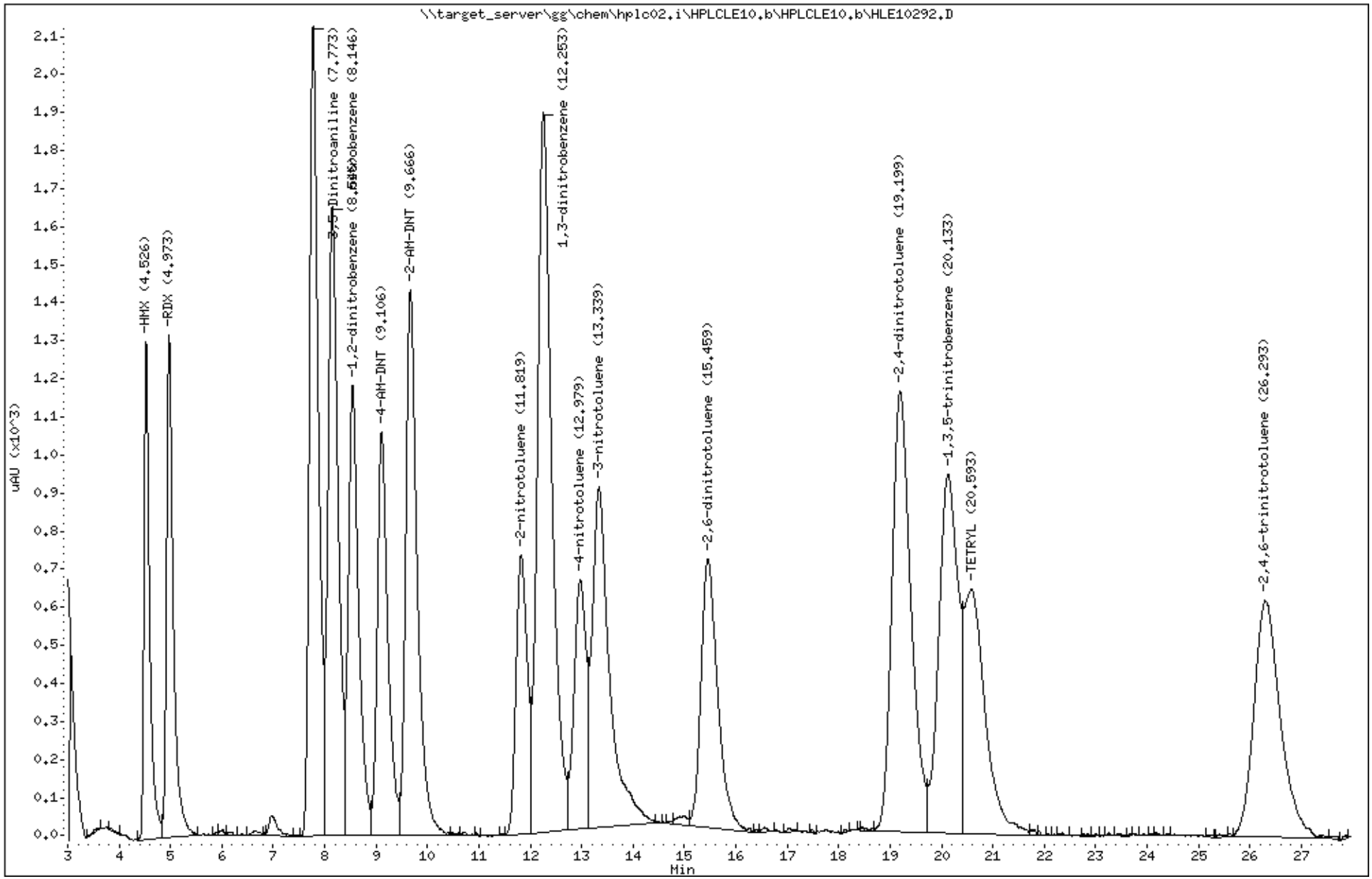
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.526	4.527	-0.001	1309	0.25000	0.243(a)	
4	RDX	4.972	4.974	-0.002	1321	0.25000	0.244(a)	
51	3,5-Dinitroaniline	7.772	7.774	-0.002	2127	0.25000	0.256	
7	nitrobenzene	8.146	8.147	-0.001	1652	0.25000	0.240(a)	
$ 2	1,2-dinitrobenzene	8.546	8.540	0.006	1183	0.25000	0.256	
11	4-AM-DNT	9.106	9.107	-0.001	1062	0.25000	0.247(a)	
12	2-AM-DNT	9.666	9.667	-0.001	1434	0.25000	0.249(a)	
15	2-nitrotoluene	11.819	11.820	-0.001	736	0.25000	0.255	
6	1,3-dinitrobenzene	12.252	12.254	-0.002	1891	0.25000	0.254	
16	4-nitrotoluene	12.979	12.967	0.012	657	0.25000	0.280	
17	3-nitrotoluene	13.339	13.334	0.005	896	0.25000	0.269	
13	2,6-dinitrotoluene	15.459	15.454	0.005	704	0.25000	0.233(a)	
14	2,4-dinitrotoluene	19.199	19.194	0.005	1157	0.25000	0.250	
5	1,3,5-trinitrobenzene	20.132	20.120	0.012	943	0.25000	0.256	
9	TETRYL	20.592	20.580	0.012	642	0.25000	0.253	
10	2,4,6-trinitrotoluene	26.292	26.300	-0.008	621	0.25000	0.246(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10292.D
Date : 10-MAY-2018 13:18
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-36,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000180

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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-37
Analytical Date: 05/14/18 10:03
Lab File ID : HLE10433.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.47050	3986	0.010	-5.89919	20.00000	Linear
4	RDX	0.50000	0.47282	3832	0.010	-5.43691	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.47487	9866	0.010	-5.02517	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.47586	11084	0.010	-4.82886	20.00000	Linear
7	nitrobenzene	0.50000	0.48165	6436	0.010	-3.66948	20.00000	Linear
9	TETRYL	0.50000	0.51746	4920	0.010	3.49177	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.47695	5948	0.010	-4.61006	20.00000	Linear
11	4-AM-DNT	0.50000	0.47878	2324	0.010	-4.24443	20.00000	Linear
12	2-AM-DNT	0.50000	0.48512	3114	0.010	-2.97629	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.47989	3622	0.010	-4.02174	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.48332	6728	0.010	-3.33511	20.00000	Linear
15	2-nitrotoluene	0.50000	0.48568	2576	0.010	-2.86354	20.00000	Linear
16	4-nitrotoluene	0.50000	0.53205	2156	0.010	6.40905	20.00000	Linear
17	3-nitrotoluene	0.50000	0.47467	2486	0.010	-5.06655	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.47121	5006	0.010	-5.75761	20.00000	Linear

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: HLE10433.D
Report Date: 18-May-2018 05:46

Katahdin Analytical Services

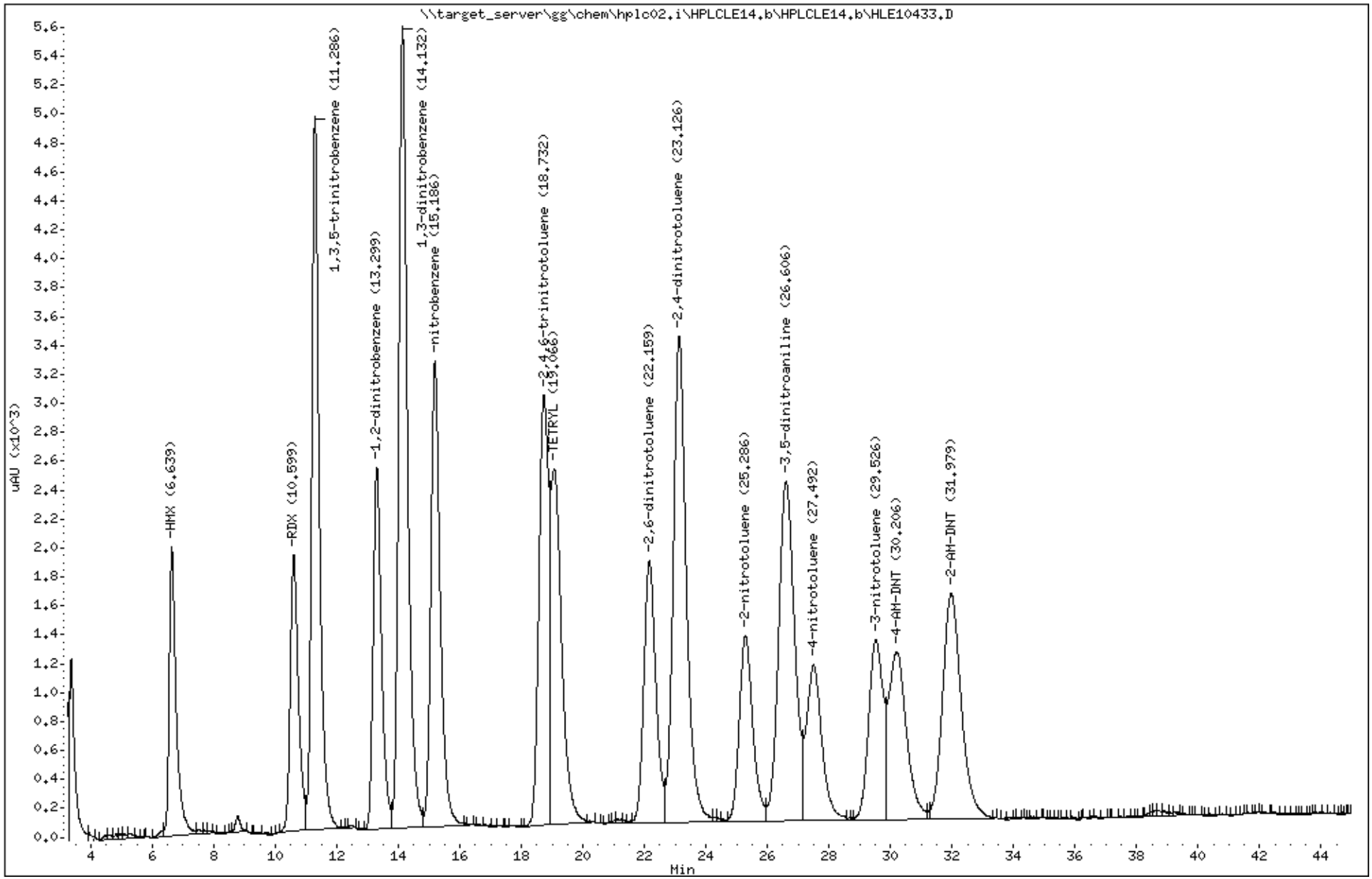
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HPLCLE14.b\HLE10433.D
Lab Smp Id: WG227584-37
Inj Date : 14-MAY-2018 10:03
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-37,SL3808
Misc Info : WG227584,WG227670,WG210620-13,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\E2016A.m\E2016A.m
Meth Date : 16-May-2018 09:26 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 52   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/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.10000	Final Volume (L)
Vo	1.000	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	6.639	6.639	0.000	1993	0.25000	0.470	
4	RDX	10.599	10.599	0.000	1916	0.25000	0.473	
5	1,3,5-trinitrobenzene	11.285	11.285	0.000	4933	0.25000	0.475	
$ 2	1,2-dinitrobenzene	13.299	13.299	0.000	2503	0.25000	0.471	
6	1,3-dinitrobenzene	14.132	14.132	0.000	5542	0.25000	0.476	
7	nitrobenzene	15.185	15.185	0.000	3218	0.25000	0.482	
10	2,4,6-trinitrotoluene	18.732	18.732	0.000	2974	0.25000	0.477	
9	TETRYL	19.065	19.065	0.000	2460	0.25000	0.517	
13	2,6-dinitrotoluene	22.159	22.159	0.000	1811	0.25000	0.480	
14	2,4-dinitrotoluene	23.125	23.125	0.000	3364	0.25000	0.483	
15	2-nitrotoluene	25.285	25.285	0.000	1288	0.25000	0.486	
52	3,5-dinitroaniline	26.605	26.605	0.000	2349	0.25000	0.537	
16	4-nitrotoluene	27.492	27.492	0.000	1078	0.25000	0.532	
17	3-nitrotoluene	29.525	29.525	0.000	1243	0.25000	0.475	
11	4-AM-DNT	30.205	30.205	0.000	1162	0.25000	0.479	
12	2-AM-DNT	31.979	31.979	0.000	1557	0.25000	0.485	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HPLCLE14.b\HLE10433.D
Date : 14-MAY-2018 10:03
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-37,SL3808
Purge Volume: 1.0
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000183

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-38
Analytical Date: 05/14/18 19:20
Lab File ID : HLE10441.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.25000	0.22691	3880	0.010	-9.23618	20.00000	Linear
4	RDX	0.25000	0.23429	3780	0.010	-6.28380	20.00000	Linear
5	1,3,5-trinitrobenzene	0.25000	0.23424	9748	0.010	-6.30532	20.00000	Linear
6	1,3-dinitrobenzene	0.25000	0.23257	10876	0.010	-6.97361	20.00000	Linear
7	nitrobenzene	0.25000	0.23628	6336	0.010	-5.48718	20.00000	Linear
9	TETRYL	0.25000	0.25154	4900	0.010	0.61708	20.00000	Linear
10	2,4,6-trinitrotoluene	0.25000	0.23331	5892	0.010	-6.67604	20.00000	Linear
11	4-AM-DNT	0.25000	0.22632	2272	0.010	-9.47119	20.00000	Linear
12	2-AM-DNT	0.25000	0.23222	3036	0.010	-7.11236	20.00000	Linear
13	2,6-dinitrotoluene	0.25000	0.23242	3532	0.010	-7.03331	20.00000	Linear
14	2,4-dinitrotoluene	0.25000	0.23188	6516	0.010	-7.24783	20.00000	Linear
15	2-nitrotoluene	0.25000	0.23360	2500	0.010	-6.55805	20.00000	Linear
16	4-nitrotoluene	0.25000	0.25719	2172	0.010	2.87782	20.00000	Linear
17	3-nitrotoluene	0.25000	0.22598	2424	0.010	-9.60807	20.00000	Linear
2	1,2-dinitrobenzene	0.25000	0.22814	4872	0.010	-8.74592	20.00000	Linear

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: HLE10441.D
Report Date: 18-May-2018 05:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HPLCLE14.b\HLE10441.D
Lab Smp Id: WG227584-38
Inj Date : 14-MAY-2018 19:20
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-38,SL3808
Misc Info : WG227584,WG227670,WG210620-13,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\E2016A.m\E2016A.m
Meth Date : 16-May-2018 09:26 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 60   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/Vo) * CpndVariable

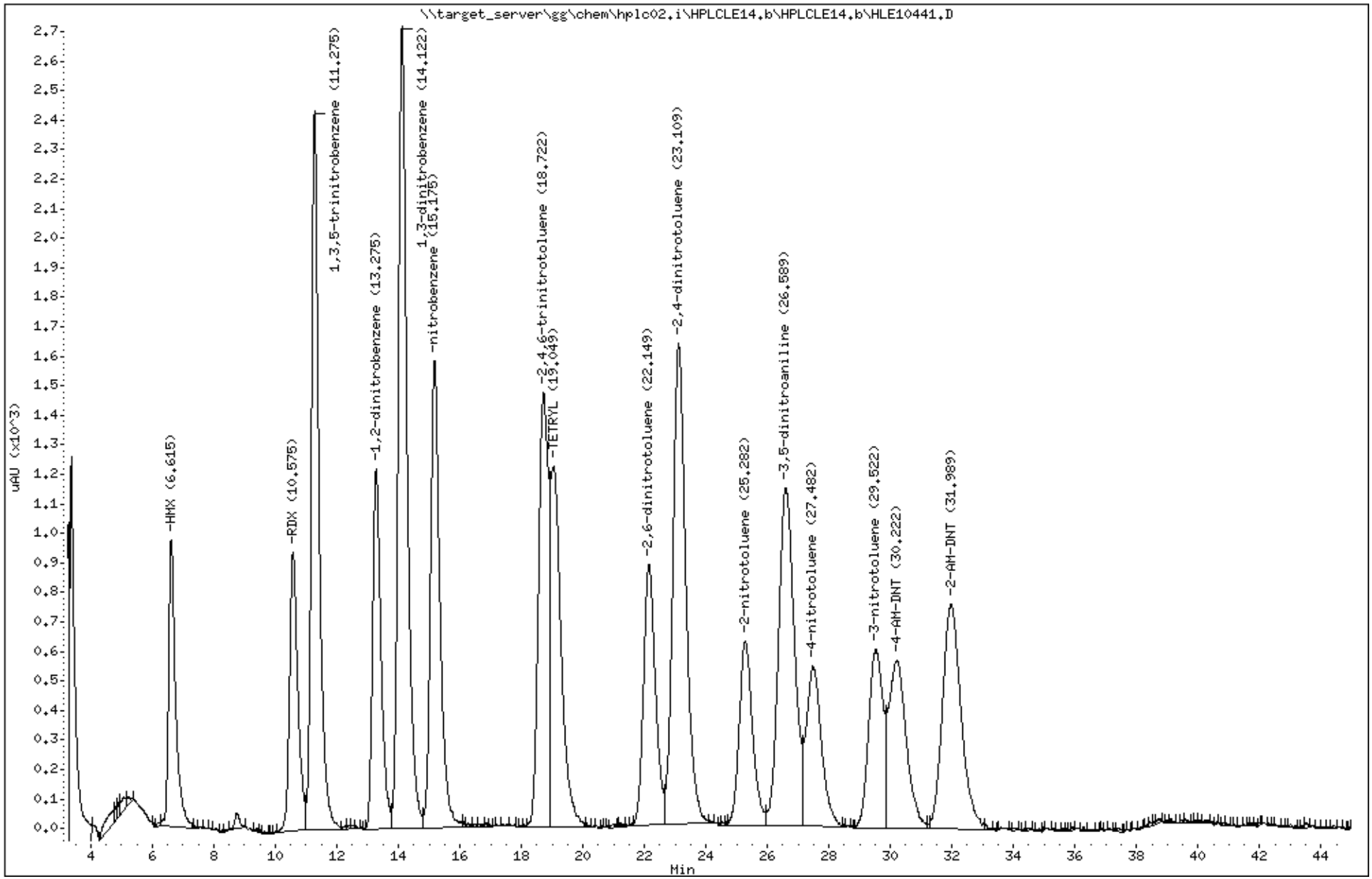
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.10000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.615	6.639	-0.024	970	0.25000	0.227(a)	
4	RDX	10.575	10.599	-0.024	945	0.25000	0.234(a)	
5	1,3,5-trinitrobenzene	11.275	11.285	-0.010	2437	0.25000	0.234(a)	
$ 2	1,2-dinitrobenzene	13.275	13.299	-0.024	1218	0.25000	0.228	
6	1,3-dinitrobenzene	14.122	14.132	-0.010	2719	0.25000	0.232(a)	
7	nitrobenzene	15.175	15.185	-0.010	1584	0.25000	0.236(a)	
10	2,4,6-trinitrotoluene	18.722	18.732	-0.010	1473	0.25000	0.233(a)	
9	TETRYL	19.048	19.065	-0.017	1225	0.25000	0.252	
13	2,6-dinitrotoluene	22.148	22.159	-0.011	883	0.25000	0.232(a)	
14	2,4-dinitrotoluene	23.108	23.125	-0.017	1629	0.25000	0.232(a)	
15	2-nitrotoluene	25.282	25.285	-0.003	625	0.25000	0.234(a)	
52	3,5-dinitroaniline	26.588	26.605	-0.017	1145	0.25000	0.258	
16	4-nitrotoluene	27.482	27.492	-0.010	543	0.25000	0.257	
17	3-nitrotoluene	29.522	29.525	-0.003	606	0.25000	0.226(a)	
11	4-AM-DNT	30.222	30.205	0.017	568	0.25000	0.226(a)	
12	2-AM-DNT	31.988	31.979	0.009	759	0.25000	0.232(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HPLCLE14.b\HLE10441.D
Date : 14-MAY-2018 19:20
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-38,SL3808
Purge Volume: 1.0
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000186

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-42
Analytical Date: 05/17/18 15:43
Lab File ID : HLE10549.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.46788	3964	0.010	-6.42305	20.00000	Linear
4	RDX	0.50000	0.47208	3826	0.010	-5.58430	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.47420	9852	0.010	-5.16014	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.47465	11056	0.010	-5.07017	20.00000	Linear
7	nitrobenzene	0.50000	0.47985	6412	0.010	-4.02988	20.00000	Linear
9	TETRYL	0.50000	0.50540	4808	0.010	1.08022	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.47224	5890	0.010	-5.55151	20.00000	Linear
11	4-AM-DNT	0.50000	0.46263	2248	0.010	-7.47450	20.00000	Linear
12	2-AM-DNT	0.50000	0.47815	3070	0.010	-4.37072	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.47509	3586	0.010	-4.98177	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.47608	6628	0.010	-4.78436	20.00000	Linear
15	2-nitrotoluene	0.50000	0.47770	2534	0.010	-4.46041	20.00000	Linear
16	4-nitrotoluene	0.50000	0.50225	2040	0.010	0.44967	20.00000	Linear
17	3-nitrotoluene	0.50000	0.46530	2438	0.010	-6.94049	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.46592	4950	0.010	-6.81693	20.00000	Linear

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: HLE10549.D
Report Date: 18-May-2018 05:50

Katahdin Analytical Services

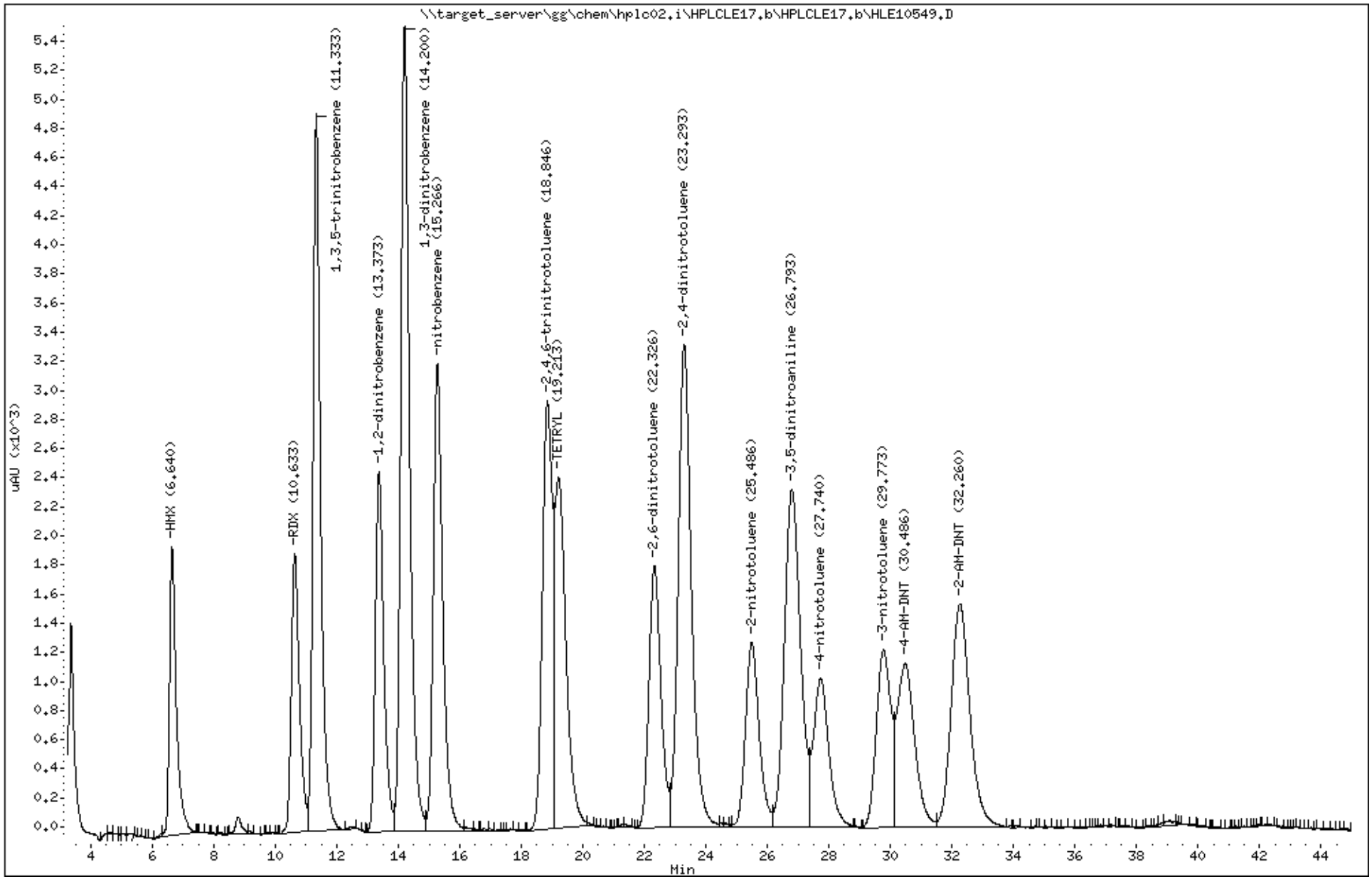
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10549.D
Lab Smp Id: WG227584-42
Inj Date : 17-MAY-2018 15:43
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-42,SL3808
Misc Info : WG227584,WG227670,WG210620-13,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\E2016A.m\E2016A.m
Meth Date : 18-May-2018 02:33 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 68   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/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.10000	Final Volume (L)
Vo	1.000	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	6.639	6.639	0.000	1982	0.25000	0.468	
4	RDX	10.633	10.633	0.000	1913	0.25000	0.472	
5	1,3,5-trinitrobenzene	11.333	11.333	0.000	4926	0.25000	0.474	
$ 2	1,2-dinitrobenzene	13.373	13.373	0.000	2475	0.25000	0.466	
6	1,3-dinitrobenzene	14.199	14.199	0.000	5528	0.25000	0.475	
7	nitrobenzene	15.266	15.266	0.000	3206	0.25000	0.480	
10	2,4,6-trinitrotoluene	18.846	18.846	0.000	2945	0.25000	0.472	
9	TETRYL	19.213	19.213	0.000	2404	0.25000	0.505	
13	2,6-dinitrotoluene	22.326	22.326	0.000	1793	0.25000	0.475	
14	2,4-dinitrotoluene	23.293	23.293	0.000	3314	0.25000	0.476	
15	2-nitrotoluene	25.486	25.486	0.000	1267	0.25000	0.478	
52	3,5-dinitroaniline	26.793	26.793	0.000	2323	0.25000	0.531	
16	4-nitrotoluene	27.739	27.739	0.000	1020	0.25000	0.502	
17	3-nitrotoluene	29.773	29.773	0.000	1219	0.25000	0.465	
11	4-AM-DNT	30.486	30.486	0.000	1124	0.25000	0.463	
12	2-AM-DNT	32.259	32.259	0.000	1535	0.25000	0.478	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10549.D
Date : 17-MAY-2018 15:43
Client ID:
Instrument: hplc02.i
Sample Info: WG227584-42,SL3808
Purge Volume: 1.0
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000189

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3808
Lab ID : WG227584-43
Analytical Date: 05/18/18 00:43
Lab File ID : HLE10560.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.25000	0.22762	3892	0.010	-8.95044	20.00000	Linear
4	RDX	0.25000	0.22889	3692	0.010	-8.44551	20.00000	Linear
5	1,3,5-trinitrobenzene	0.25000	0.23115	9620	0.010	-7.53936	20.00000	Linear
6	1,3-dinitrobenzene	0.25000	0.22989	10752	0.010	-8.04226	20.00000	Linear
7	nitrobenzene	0.25000	0.23073	6188	0.010	-7.70963	20.00000	Linear
9	TETRYL	0.25000	0.22872	4476	0.010	-8.51235	20.00000	Linear
10	2,4,6-trinitrotoluene	0.25000	0.22454	5676	0.010	-10.18211	20.00000	Linear
11	4-AM-DNT	0.25000	0.21910	2204	0.010	-12.36126	20.00000	Linear
12	2-AM-DNT	0.25000	0.22715	2972	0.010	-9.14062	20.00000	Linear
13	2,6-dinitrotoluene	0.25000	0.22895	3480	0.010	-8.42002	20.00000	Linear
14	2,4-dinitrotoluene	0.25000	0.22884	6432	0.010	-8.46520	20.00000	Linear
15	2-nitrotoluene	0.25000	0.22676	2428	0.010	-9.29554	20.00000	Linear
16	4-nitrotoluene	0.25000	0.24692	2092	0.010	-1.23210	20.00000	Linear
17	3-nitrotoluene	0.25000	0.21817	2344	0.010	-12.73131	20.00000	Linear
2	1,2-dinitrobenzene	0.25000	0.22738	4856	0.010	-9.04858	20.00000	Linear

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: HLE10560.D
Report Date: 18-May-2018 05:50

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10560.D
Lab Smp Id: WG227584-43
Inj Date : 18-MAY-2018 00:43
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227584-43,SL3808
Misc Info : WG227584,WG227670,WG210620-13,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\E2016A.m\E2016A.m
Meth Date : 18-May-2018 02:33 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 79   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

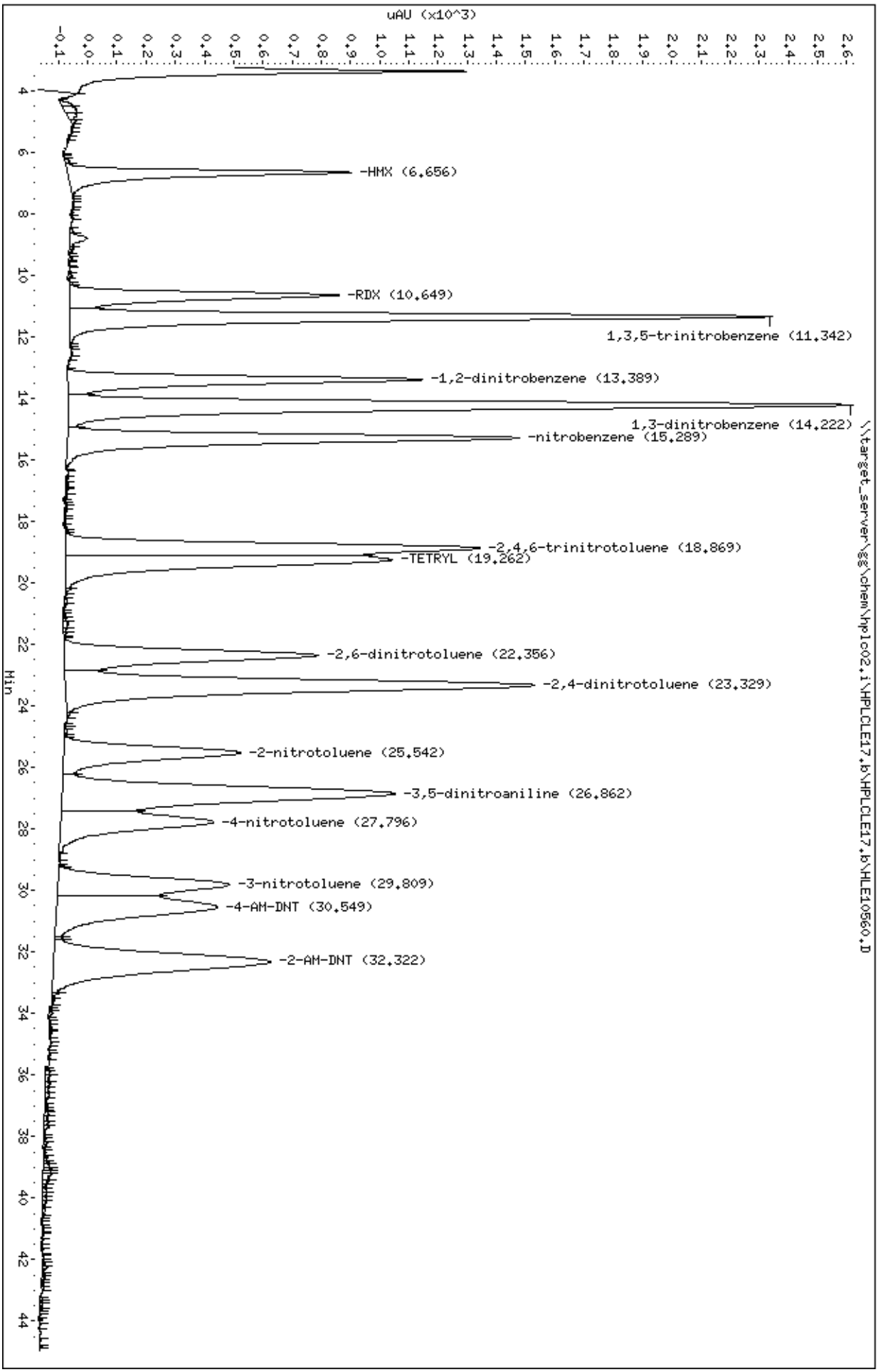
Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.10000	Final Volume (L)
Vo	1.000	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	6.655	6.639	0.016	973	0.25000	0.228(a)	
4	RDX	10.649	10.633	0.016	923	0.25000	0.229(a)	
5	1,3,5-trinitrobenzene	11.342	11.333	0.009	2405	0.25000	0.231(a)	
$ 2	1,2-dinitrobenzene	13.389	13.373	0.016	1214	0.25000	0.227	
6	1,3-dinitrobenzene	14.222	14.199	0.023	2688	0.25000	0.230(a)	
7	nitrobenzene	15.289	15.266	0.023	1547	0.25000	0.231(a)	
10	2,4,6-trinitrotoluene	18.869	18.846	0.023	1419	0.25000	0.224(a)	
9	TETRYL	19.262	19.213	0.049	1119	0.25000	0.229(a)	
13	2,6-dinitrotoluene	22.355	22.326	0.029	870	0.25000	0.229(a)	
14	2,4-dinitrotoluene	23.329	23.293	0.036	1608	0.25000	0.229(a)	
15	2-nitrotoluene	25.542	25.486	0.056	607	0.25000	0.227(a)	
52	3,5-dinitroaniline	26.862	26.793	0.069	1138	0.25000	0.257	
16	4-nitrotoluene	27.795	27.739	0.056	523	0.25000	0.247(a)	
17	3-nitrotoluene	29.809	29.773	0.036	586	0.25000	0.218(a)	
11	4-AM-DNT	30.549	30.486	0.063	551	0.25000	0.219(a)	
12	2-AM-DNT	32.322	32.259	0.063	743	0.25000	0.227(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).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Date : 18-MAY-2018 00:43
Client ID:
Sample Info: WG227584-43,SL3808
Purge Volume: 1.0
Column phase: Acclaim Exp E2
Instrument: hplc02.i
Operator: AAB
Column diameter: 4.60
uAU (x10^3)
Min
-HMX (6.656)
-RDX (10.649)
1,3,5-trinitrobenzene (11.342)
-1,2-dinitrobenzene (13.389)
1,3-dinitrobenzene (14.222)
-nitrobenzene (15.289)
-2,4,6-trinitrotoluene (18.869)
-TETRYL (19.262)
-2,6-dinitrotoluene (22.356)
-2,4-dinitrotoluene (23.329)
-2-nitrotoluene (25.542)
-3,5-dinitroaniline (26.862)
-4-nitrotoluene (27.796)
-3-nitrotoluene (29.809)
-4-AM-DNT (30.549)
-2-AM-DNT (32.322)
\\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10560.D

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227670-1
Client ID: Method Blank Sample
Project:
SDG: SL3808
Lab File ID: HLE10127.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 04-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-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		98.0	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10127.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

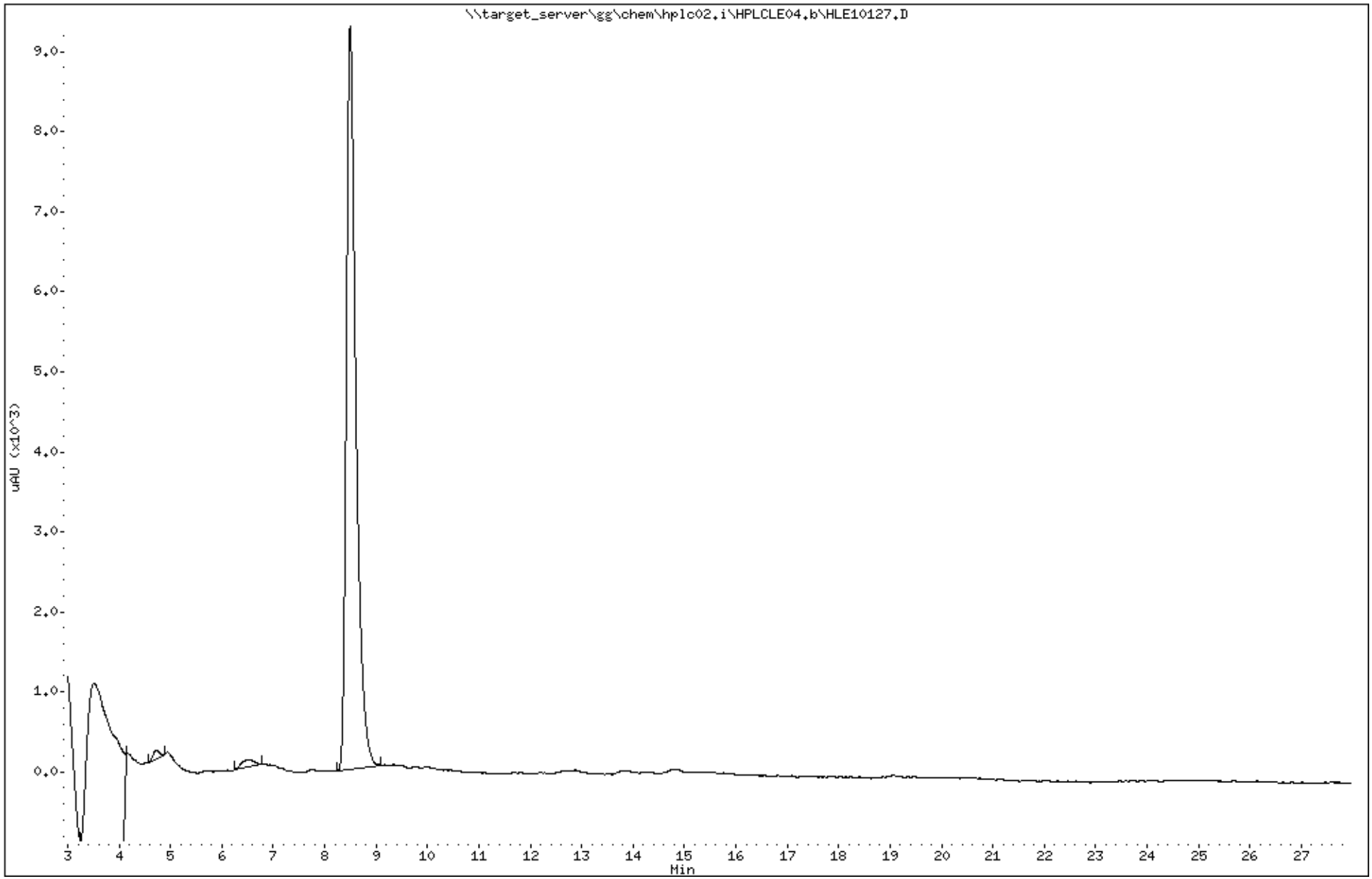
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10127.D
Lab Smp Id: WG227670-1 Client Smp ID: WG227670-Blank
Inj Date : 04-MAY-2018 15:22
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227670-1,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 70 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/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\HPLCLE04.b\HLE10127.D
Date : 04-MAY-2018 15:22
Client ID: WG227670-Blank
Instrument: hplc02.i
Sample Info: WG227670-1,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000196

Data File: HLE10127.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

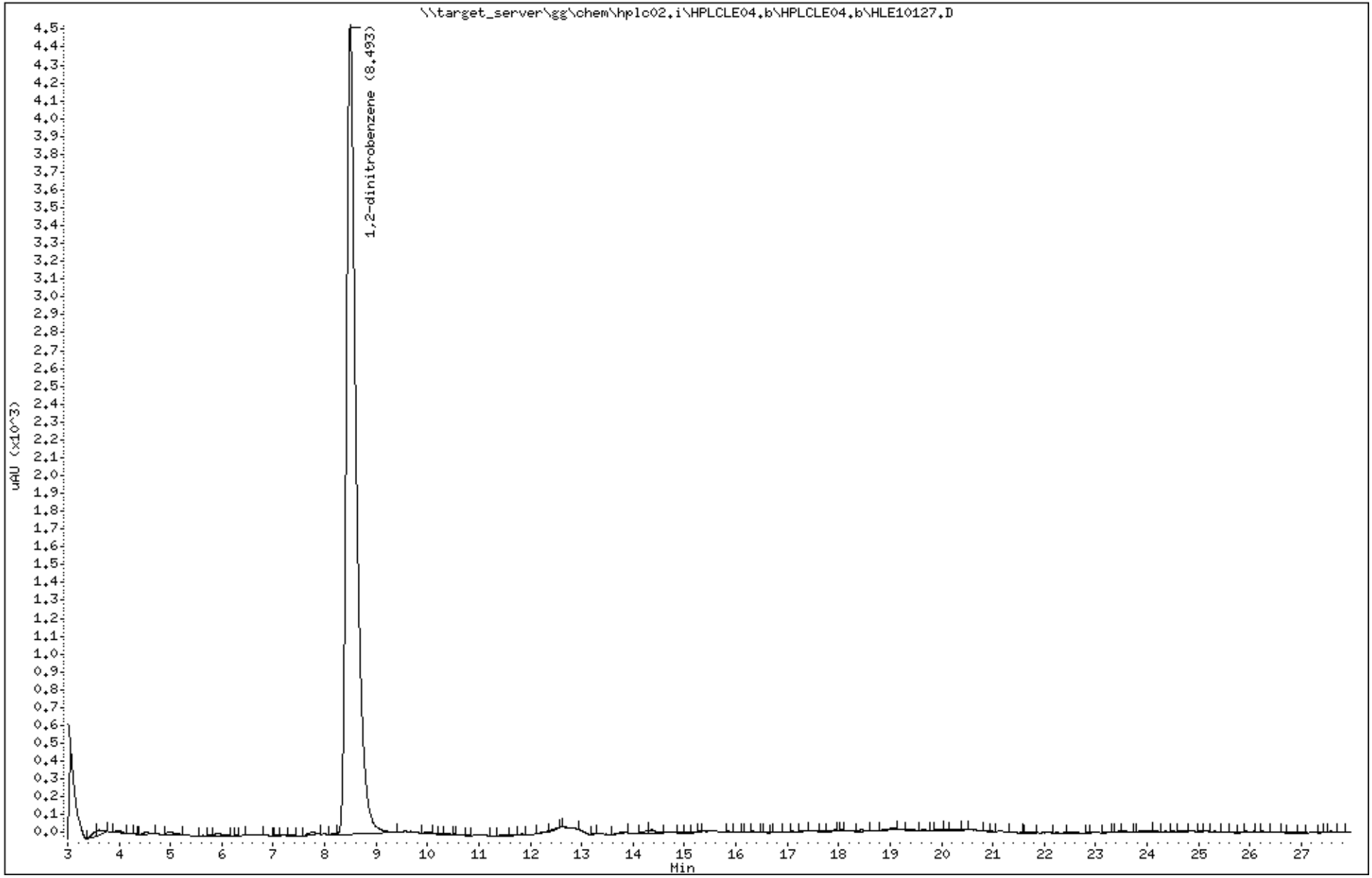
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10127.D
Lab Smp Id: WG227670-1 Client Smp ID: WG227670-Blank
Inj Date : 04-MAY-2018 15:22
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227670-1,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 70 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/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	8.492	8.468	0.024	4534	0.97981	9.80	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10127.D
Date : 04-MAY-2018 15:22
Client ID: WG227670-Blank
Instrument: hplc02.i
Sample Info: WG227670-1,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000198

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HLE10438.D
Report Date: 18-May-2018 05:54

Katahdin Analytical Services

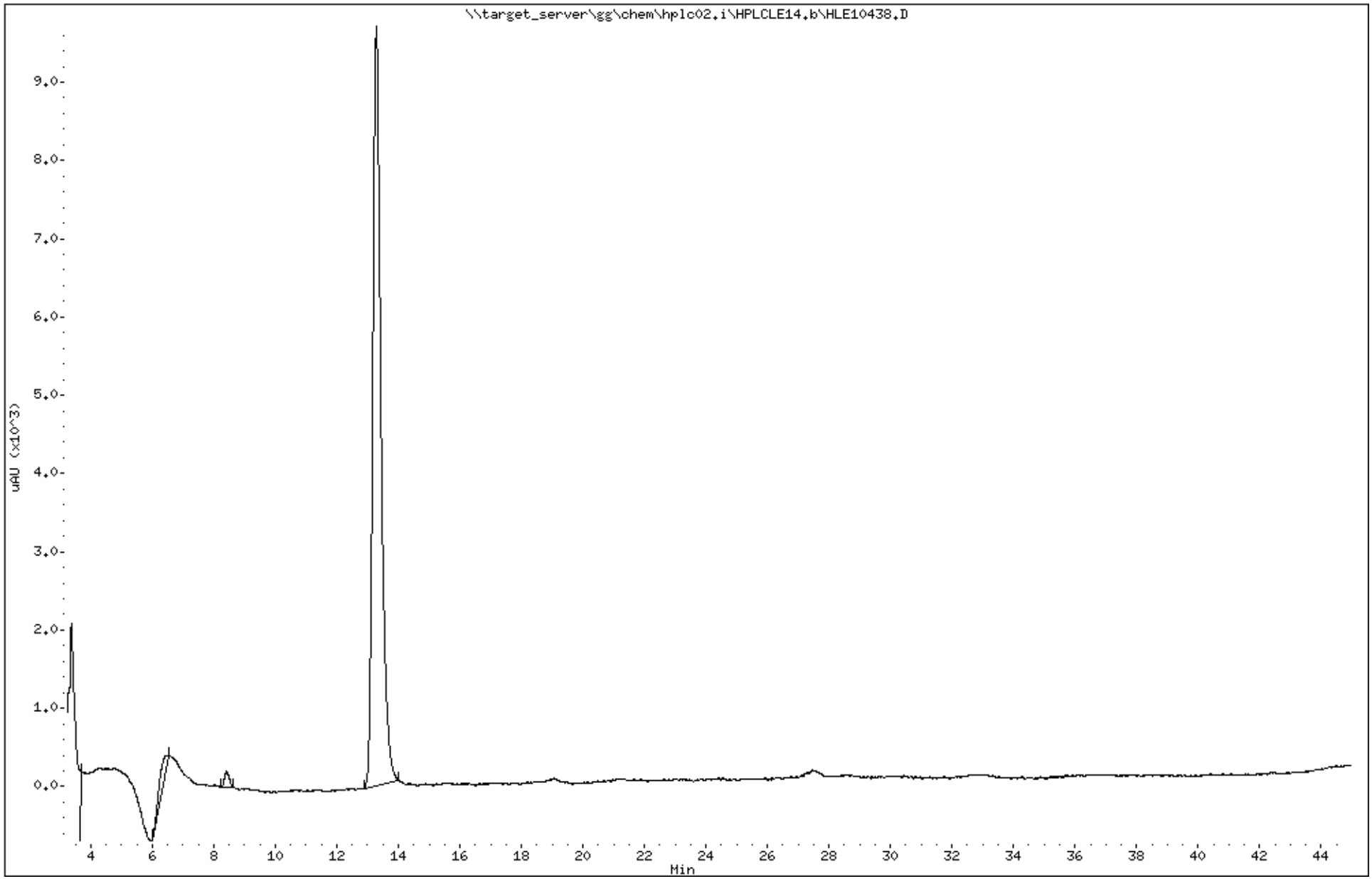
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HLE10438.D
Lab Smp Id: WG227670-1C Client Smp ID: WG227670-Blank
Inj Date : 14-MAY-2018 16:52
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227670-1C,SL3808
Misc Info : WG227584,WG227670,WG210620-13,SL3808-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\E2016A.m
Meth Date : 18-May-2018 05:53 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 57 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/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\HPLCLE14.b\HLE10438.D
Date : 14-MAY-2018 16:52
Client ID: WG227670-Blank
Instrument: hplc02.i
Sample Info: WG227670-1C,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000200

Data File: HLE10438.D
Report Date: 18-May-2018 05:46

Katahdin Analytical Services

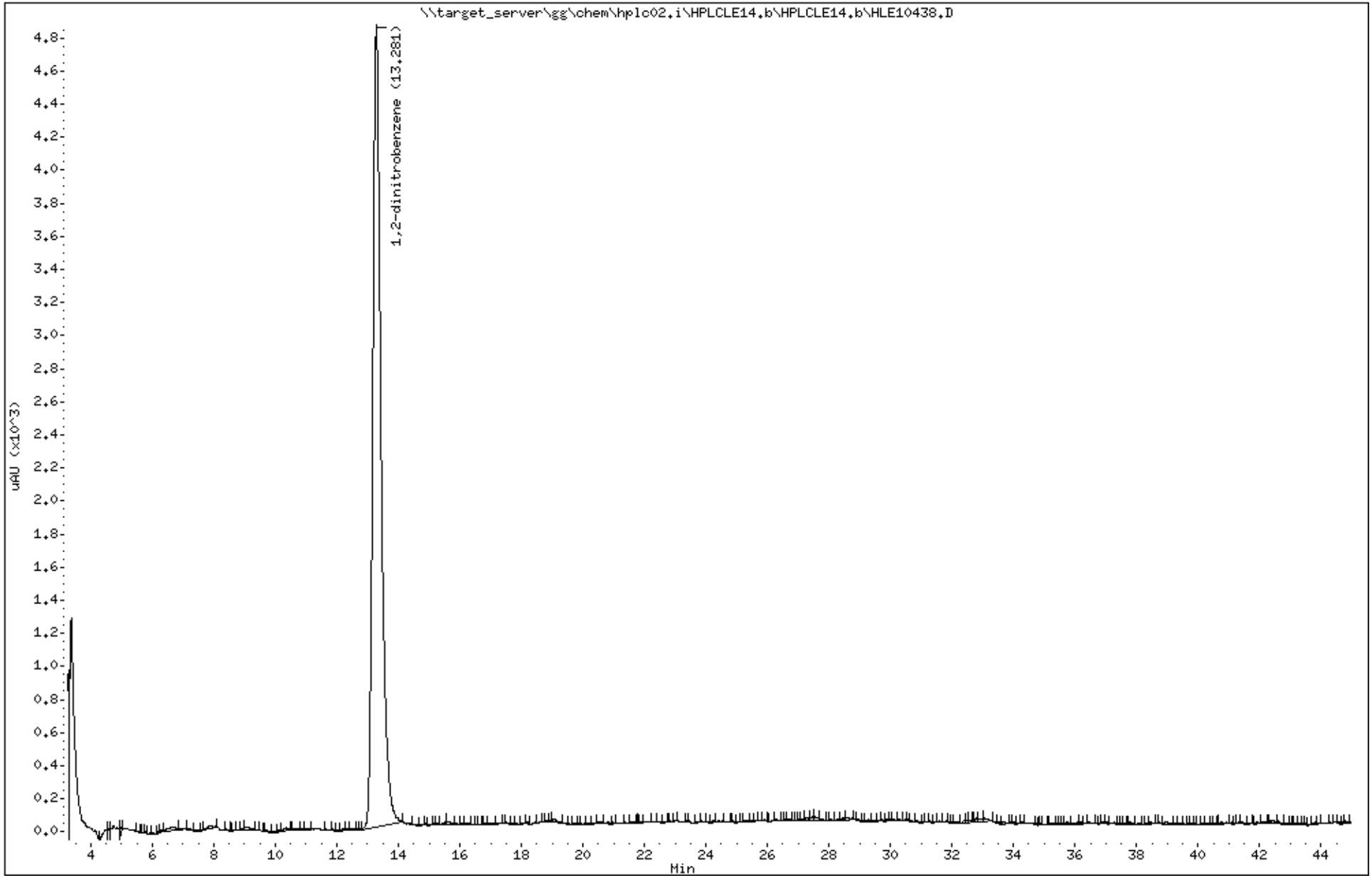
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HPLCLE14.b\HLE10438.D
Lab Smp Id: WG227670-1C Client Smp ID: WG227670-Blank
Inj Date : 14-MAY-2018 16:52
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227670-1C,SL3808
Misc Info : WG227584,WG227670,WG210620-13,SL3808-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE14.b\E2016A.m\E2016A.m
Meth Date : 16-May-2018 09:26 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 57 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/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	13.281	13.299	-0.018	4851	0.91537	9.15	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE14.b\HPLCLE14.b\HLE10438.D
Date : 14-MAY-2018 16:52
Client ID: WG227670-Blank
Instrument: hplc02.i
Sample Info: WG227670-1C,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000202

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227670-2
Client ID: LCS
Project:
SDG: SL3808
LCS File ID: HLE10128.D

Sample Date:
Received Date:
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670

Analysis Date: 04-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 18-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	104.	5.00	5.21	ug/L	65-135
RDX	103.	5.00	5.13	ug/L	68-130
1,3,5-Trinitrobenzene	104.	5.00	5.18	ug/L	73-125
1,3-Dinitrobenzene	105.	5.00	5.23	ug/L	78-120
Tetryl	121.	5.00	6.06	ug/L	64-128
Nitrobenzene	101.	5.00	5.07	ug/L	65-134
2,4,6-Trinitrotoluene	106.	5.00	5.31	ug/L	71-123
4-Am-DNT	110.	5.00	5.52	ug/L	76-125
2-Am-DNT	105.	5.00	5.25	ug/L	79-120
2,6-Dinitrotoluene	101.	5.00	5.04	ug/L	77-127
2,4-Dinitrotoluene	105.	5.00	5.25	ug/L	78-120
2-Nitrotoluene	106.	5.00	5.28	ug/L	70-127
4-Nitrotoluene	110.	5.00	5.49	ug/L	71-127
3-Nitrotoluene	103.	5.00	5.13	ug/L	73-125
Nitroglycerin	89.0	20.0	17.8	ug/L	74-127
PETN	99.5	20.0	19.9	ug/L	73-127
1,2-Dinitrobenzene	95.7				83-120

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10128.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10128.D
Lab Smp Id: WG227670-2 Client Smp ID: WG227670-LCS
Inj Date : 04-MAY-2018 15:53
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227670-2,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 71 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/Vo) * CpndVariable

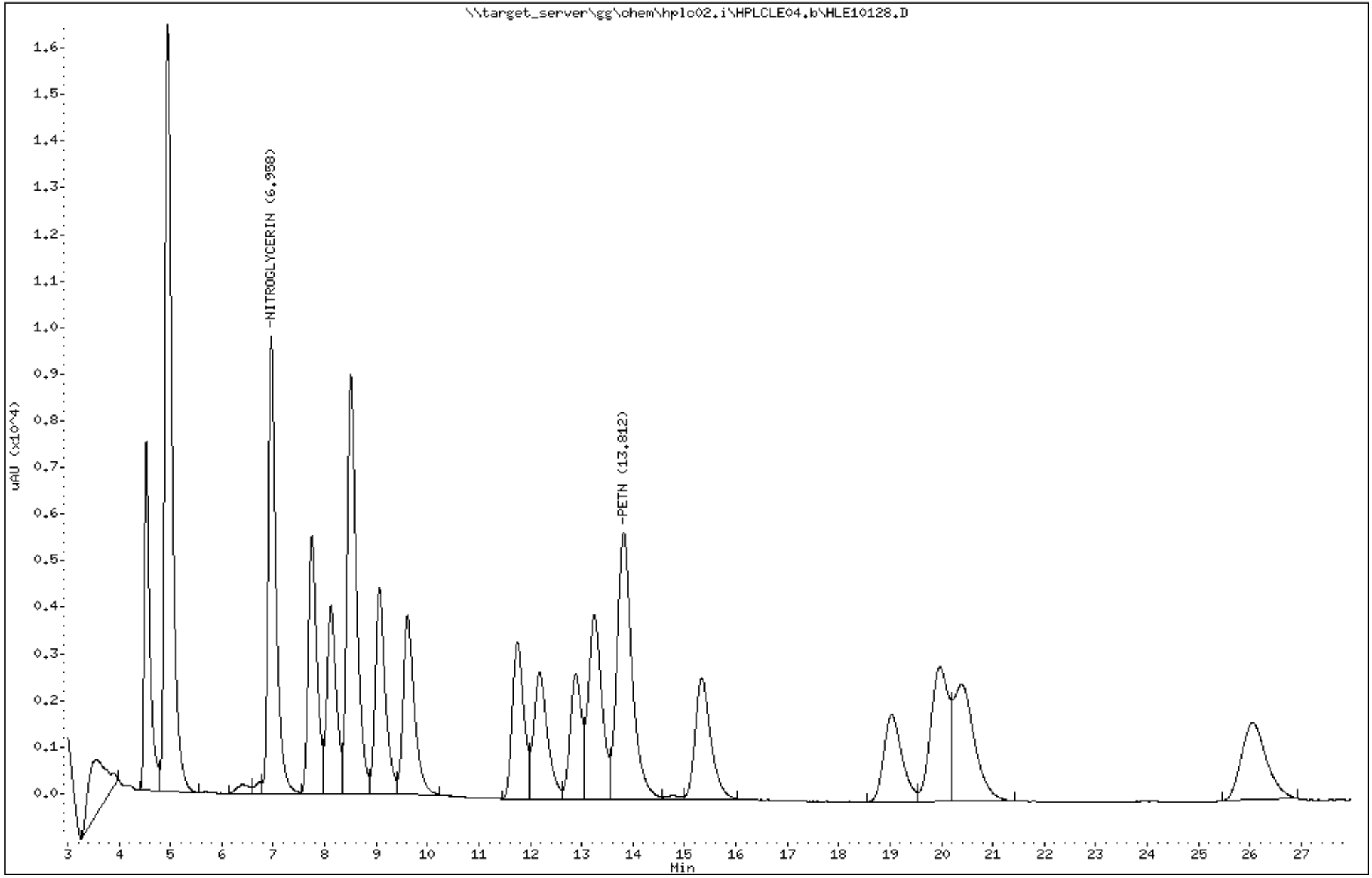
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
8 NITROGLYCERIN	6.958	6.934	0.024	9819	1.78100	17.8
18 PETN	13.811	13.754	0.057	5715	1.98725	19.9(R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10128.D
Date : 04-MAY-2018 15:53
Client ID: WG227670-LCS
Instrument: hplc02.i
Sample Info: WG227670-2,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000205

Data File: HLE10128.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

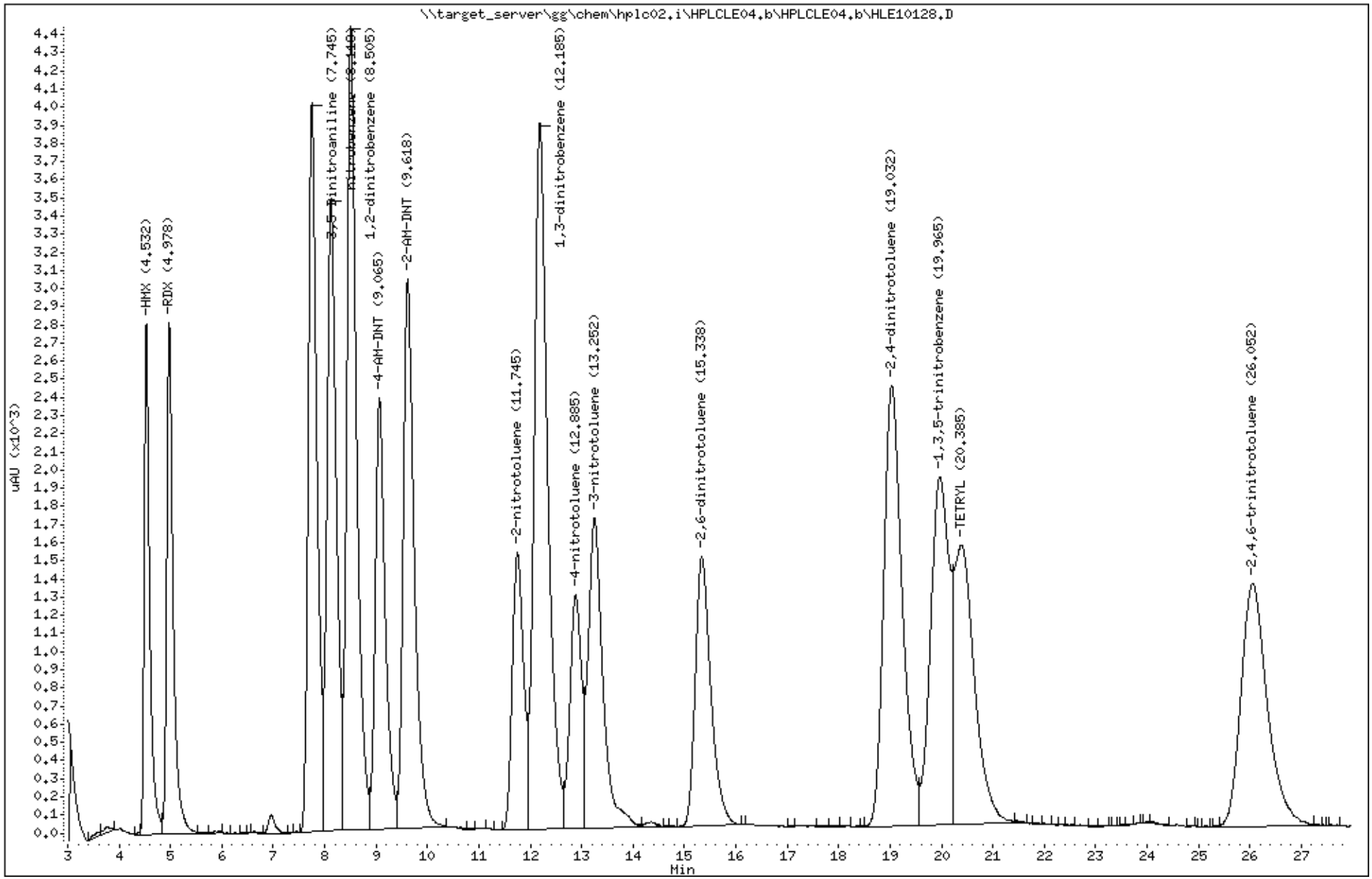
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10128.D
Lab Smp Id: WG227670-2 Client Smp ID: WG227670-LCS
Inj Date : 04-MAY-2018 15:53
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227670-2,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 71 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/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	4.531	4.514	0.017	2810	0.52127	5.21	
4	RDX	4.978	4.961	0.017	2817	0.51328	5.13	
51	3,5-Dinitroaniline	7.744	7.708	0.036	4015	0.48279	4.83	
7	nitrobenzene	8.118	8.088	0.030	3481	0.50694	5.07	
$ 2	1,2-dinitrobenzene	8.504	8.468	0.036	4428	0.95690	9.57	
11	4-AM-DNT	9.064	9.021	0.043	2375	0.55198	5.52	
12	2-AM-DNT	9.618	9.568	0.050	3024	0.52493	5.25	
15	2-nitrotoluene	11.744	11.694	0.050	1525	0.52776	5.28	
6	1,3-dinitrobenzene	12.184	12.128	0.056	3893	0.52299	5.23	
16	4-nitrotoluene	12.884	12.821	0.063	1286	0.54900	5.49	
17	3-nitrotoluene	13.251	13.188	0.063	1706	0.51298	5.13	
13	2,6-dinitrotoluene	15.338	15.261	0.077	1484	0.50457	5.04	
14	2,4-dinitrotoluene	19.031	18.934	0.097	2427	0.52550	5.25	
5	1,3,5-trinitrobenzene	19.964	19.861	0.103	1913	0.51859	5.18	
9	TETRYL	20.384	20.254	0.130	1537	0.60641	6.06	
10	2,4,6-trinitrotoluene	26.051	25.908	0.143	1341	0.53080	5.31	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10128.D
Date : 04-MAY-2018 15:53
Client ID: WG227670-LCS
Instrument: hplc02.i
Sample Info: WG227670-2,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000207

Katahdin
ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG227670-3
MSD ID: WG227670-4
Sample ID: SL3808-4
Client ID: CHAAP-19C-LGIA-DPT18
Project:
SDG: SL3808
MS File ID: HLE10129.D

Received Date:
Extract Date: 04-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227670
Report Date: 18-MAY-18
MSD File ID: HLE10130.D

Analysis Date: 04-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
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
HMX	5.00	5.00	ug/L	U0.12	5.2	4.9	103.	98.2	5	20	65-135
RDX	5.00	5.00	ug/L	U0.12	5.1	4.9	103.	98.0	4	20	68-130
1,3,5-Trinitrobenzene	5.00	5.00	ug/L	U0.12	5.3	5.1	106.	101.	4	20	73-125
1,3-Dinitrobenzene	5.00	5.00	ug/L	U0.12	5.2	5.1	105.	102.	3	20	78-120
Tetryl	5.00	5.00	ug/L	U0.12	6.1	5.8	121.	116.	4	20	64-128
Nitrobenzene	5.00	5.00	ug/L	U0.12	5.1	4.9	103.	97.8	5	20	65-134
2,4,6-Trinitrotoluene	5.00	5.00	ug/L	U0.12	5.4	5.2	107.	104.	3	20	71-123
4-Am-DNT	5.00	5.00	ug/L	U0.12	5.6	5.3	112.	106.	5	20	76-125
2-Am-DNT	5.00	5.00	ug/L	U0.12	5.4	5.1	107.	101.	6	20	79-120
2,6-Dinitrotoluene	5.00	5.00	ug/L	U0.12	5.1	4.9	102.	97.8	4	20	77-127
2,4-Dinitrotoluene	5.00	5.00	ug/L	U0.12	5.4	5.1	107.	103.	4	20	78-120
2-Nitrotoluene	5.00	5.00	ug/L	U0.12	5.3	5.1	107.	102.	4	20	70-127
4-Nitrotoluene	5.00	5.00	ug/L	U0.12	6.2	6.0	124.	121.	3	20	71-127
3-Nitrotoluene	5.00	5.00	ug/L	U0.12	5.0	4.8	101.	96.2	5	20	73-125
Nitroglycerin	20.0	20.0	ug/L	U2.0	18.	20.	91.5	99.5	8	20	74-127
PETN	20.0	20.0	ug/L	U2.0	20.	21.	101.	105.	4	20	73-127
1,2-Dinitrobenzene							97.2	97.7			83-120

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10129.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

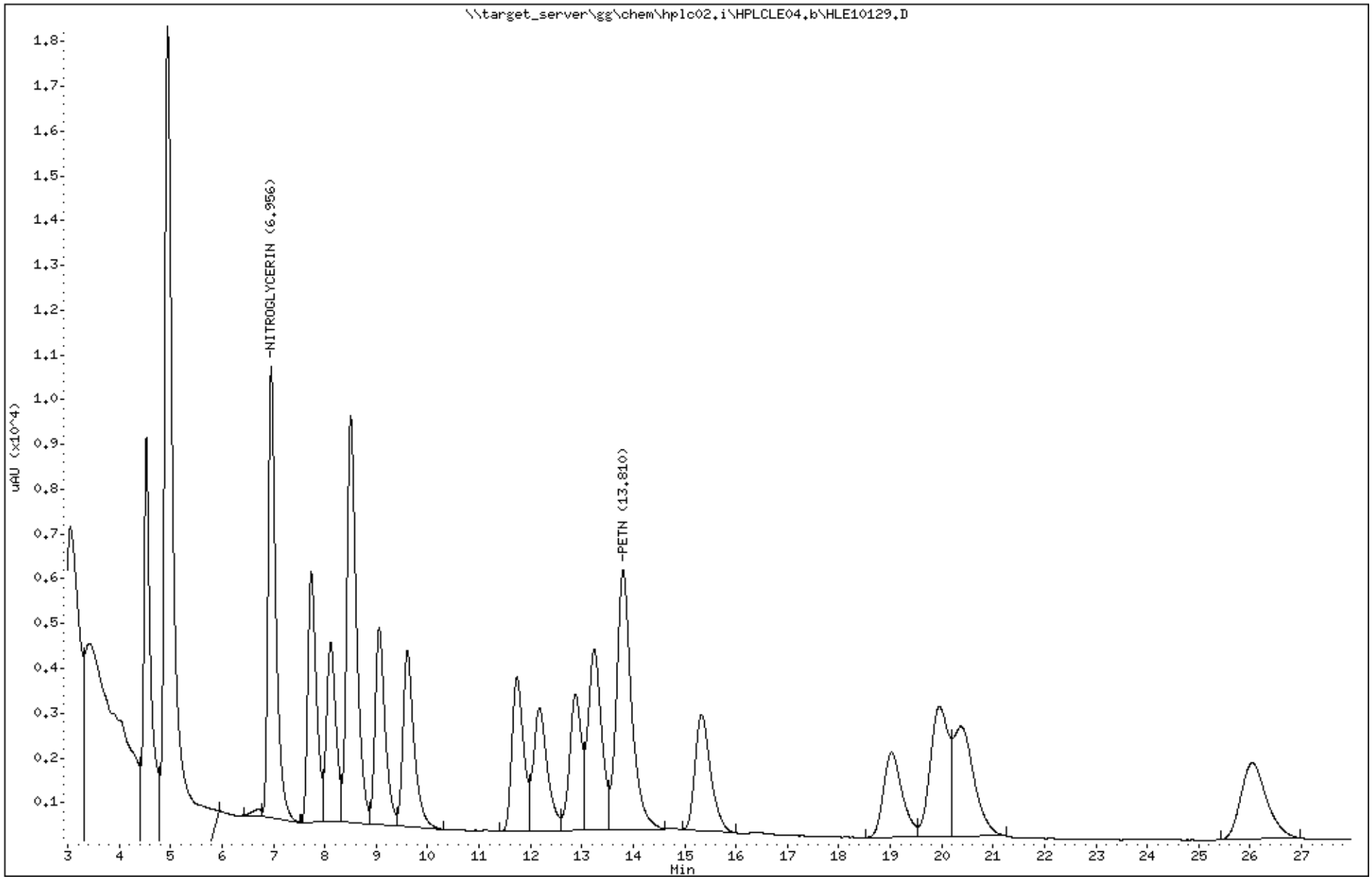
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10129.D
Lab Smp Id: WG227670-3 Client Smp ID: HAAP-19C-LGIA-DPT18
Inj Date : 04-MAY-2018 16:23
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227670-3,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-4
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 72 QC Sample: MS
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)
8 NITROGLYCERIN	6.956	6.934	0.022	10084	1.82907	18.3
18 PETN	13.809	13.754	0.055	5796	2.01541	20.2

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10129.D
Date : 04-MAY-2018 16:23
Client ID: HAAP-19C-LGIA-DPT18
Instrument: hplc02.i
Sample Info: WG227670-3,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000210

Data File: HLE10129.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10129.D
Lab Smp Id: WG227670-3 Client Smp ID: HAAP-19C-LGIA-DPT18
Inj Date : 04-MAY-2018 16:23
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227670-3,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-4
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 72 QC Sample: MS
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

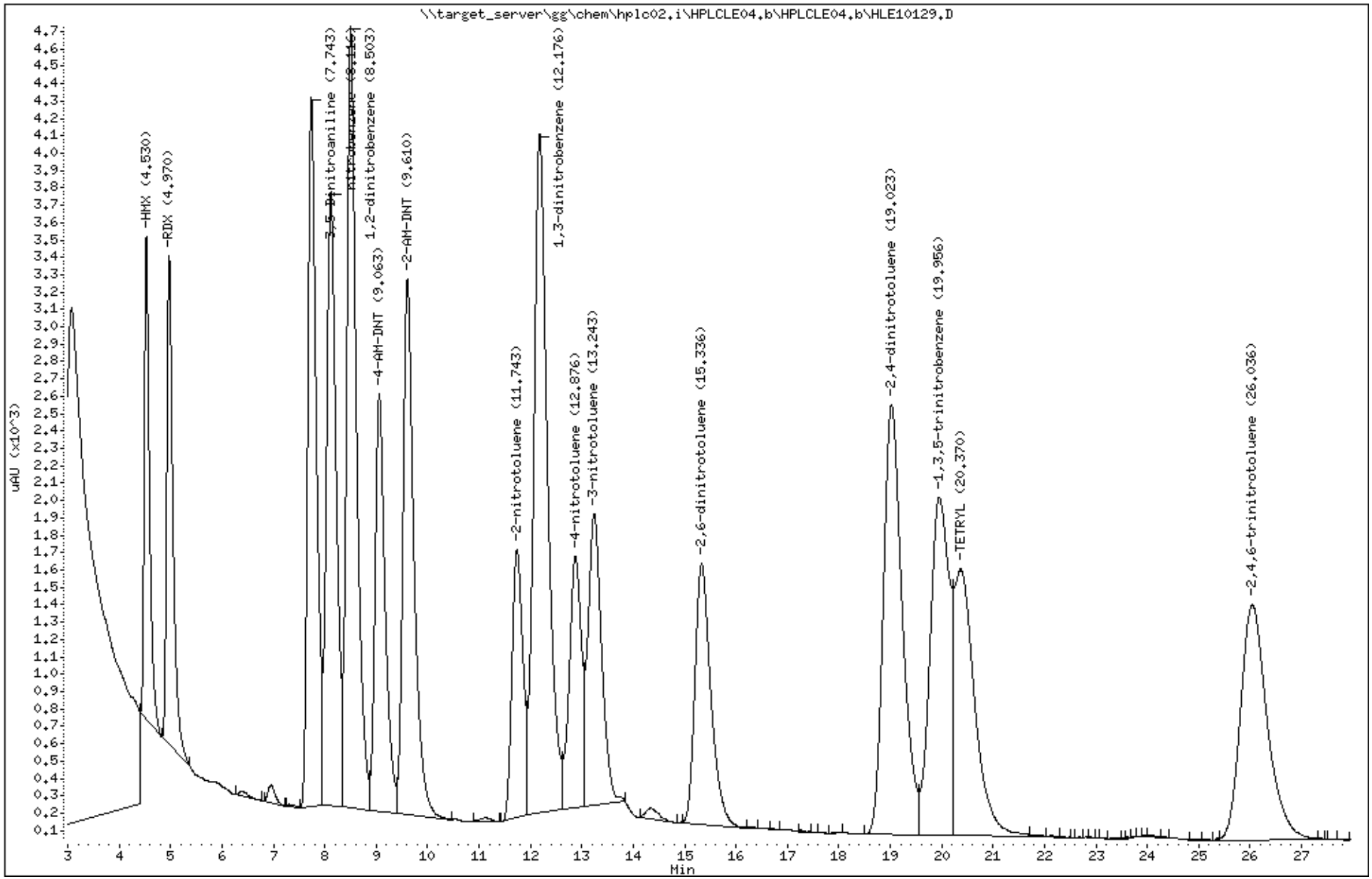
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	HMX	4.529	4.514	0.015	2783	0.51626	5.16(M)	M2
4	RDX	4.969	4.961	0.008	2818	0.51346	5.13(M)	M2
51	3,5-Dinitroaniline	7.743	7.708	0.035	4078	0.49036	4.90	
7	nitrobenzene	8.116	8.088	0.028	3531	0.51423	5.14	
$ 2	1,2-dinitrobenzene	8.503	8.468	0.035	4500	0.97246	9.72	
11	4-AM-DNT	9.063	9.021	0.042	2404	0.55872	5.59	
12	2-AM-DNT	9.609	9.568	0.041	3086	0.53570	5.36	
15	2-nitrotoluene	11.743	11.694	0.049	1541	0.53330	5.33	
6	1,3-dinitrobenzene	12.176	12.128	0.048	3906	0.52474	5.25	
16	4-nitrotoluene	12.876	12.821	0.055	1450	0.61902	6.19	
17	3-nitrotoluene	13.243	13.188	0.055	1676	0.50396	5.04	
13	2,6-dinitrotoluene	15.336	15.261	0.075	1503	0.51119	5.11	
14	2,4-dinitrotoluene	19.023	18.934	0.089	2477	0.53632	5.36	
5	1,3,5-trinitrobenzene	19.956	19.861	0.095	1949	0.52835	5.28	
9	TETRYL	20.369	20.254	0.115	1535	0.60563	6.06	
10	2,4,6-trinitrotoluene	26.036	25.908	0.128	1354	0.53595	5.36	

AAB
6:16 am, May 18, 2018

QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10129.D
Date : 04-MAY-2018 16:23
Client ID: HAAP-19C-LGIA-DPT18
Instrument: hplc02.i
Sample Info: WG227670-3,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000212

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10130.D
Report Date: 18-May-2018 05:26

Katahdin Analytical Services

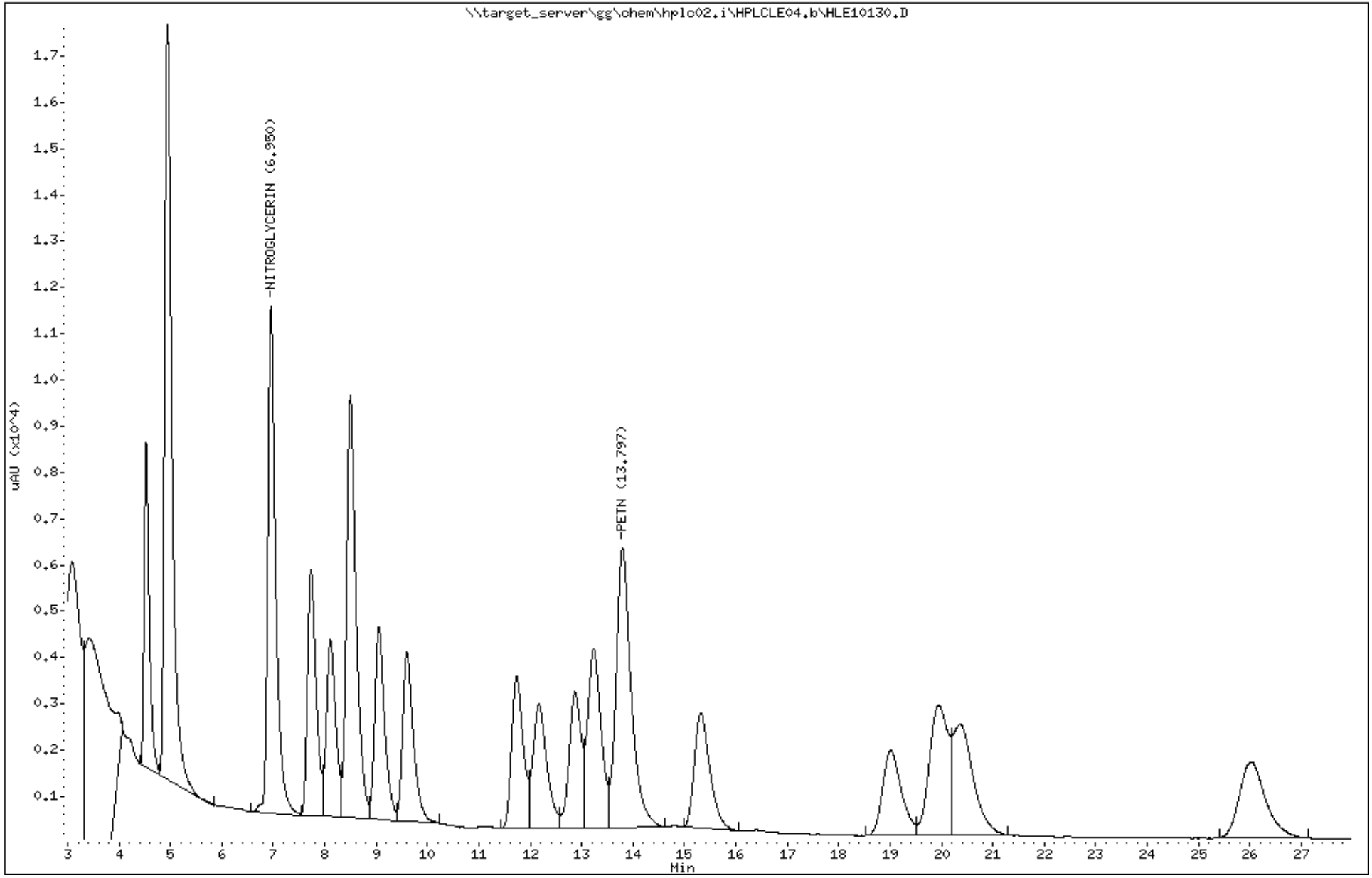
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10130.D
Lab Smp Id: WG227670-4 Client Smp ID: HAAP-19C-LGIA-DPT18
Inj Date : 04-MAY-2018 16:54
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227670-4,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-4
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m
Meth Date : 09-May-2018 05:12 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 73 QC Sample: MSD
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

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)
8 NITROGLYCERIN	6.950	6.934	0.016	10966	1.98905	19.9
18 PETN	13.796	13.754	0.042	6045	2.10200	21.0

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HLE10130.D
Date : 04-MAY-2018 16:54
Client ID: HAAP-19C-LGIA-DPT18
Instrument: hplc02.i
Sample Info: WG227670-4,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000214

Data File: HLE10130.D
Report Date: 18-May-2018 05:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10130.D
Lab Smp Id: WG227670-4 Client Smp ID: HAAP-19C-LGIA-DPT18
Inj Date : 04-MAY-2018 16:54
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227670-4,SL3808
Misc Info : WG227584,WG227670,WG225143-5,SL3808-4
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE04.b\EXPB05A.m\EXPB05A.m
Meth Date : 09-May-2018 05:04 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 73 QC Sample: MSD
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

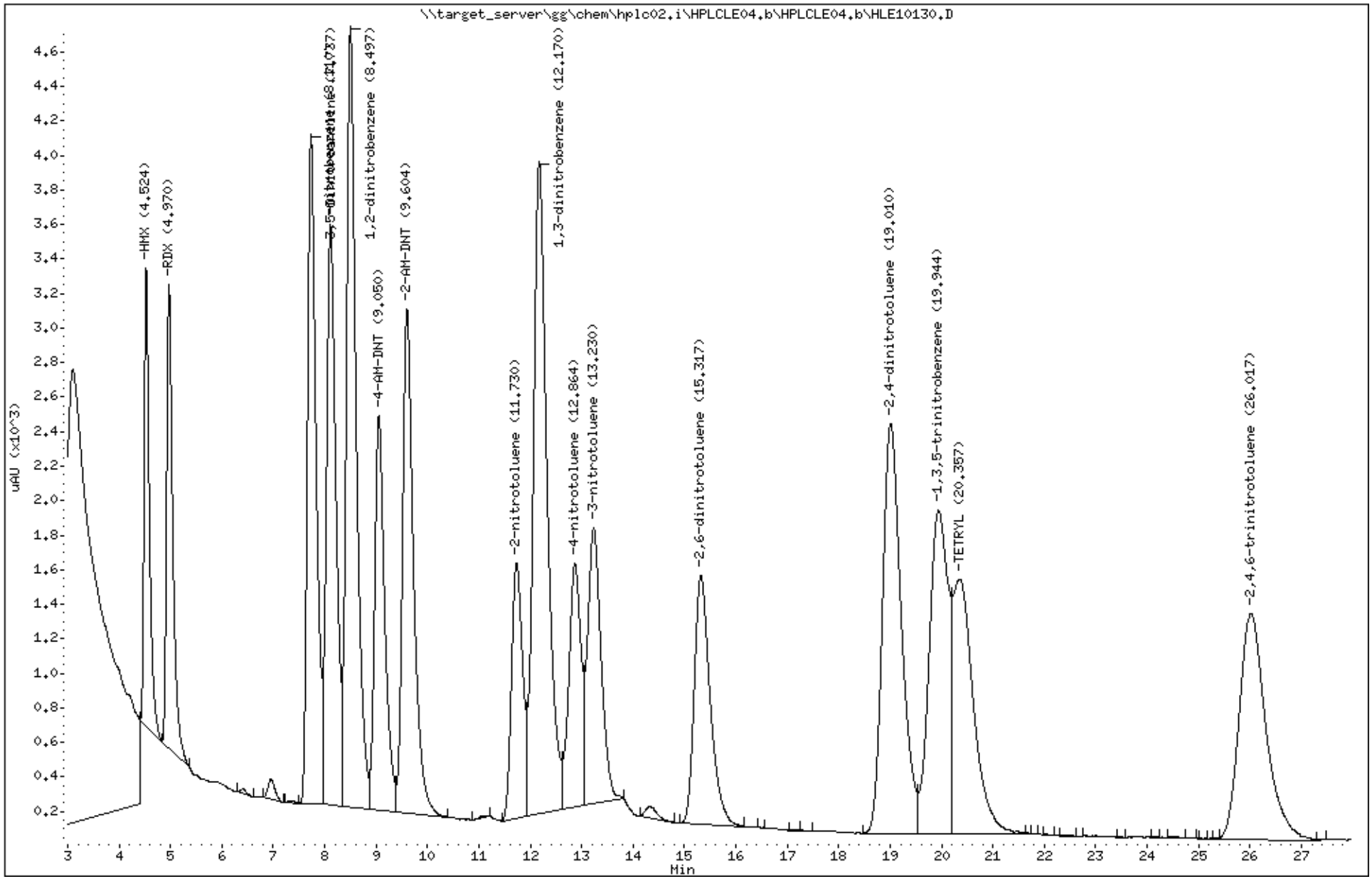
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	HMX	4.523	4.514	0.009	2648	0.49122	4.91(M)	M2
4	RDX	4.970	4.961	0.009	2690	0.49040	4.90(M)	M2
51	3,5-Dinitroaniline	7.736	7.708	0.028	3878	0.46631	4.66	
7	nitrobenzene	8.110	8.088	0.022	3361	0.48947	4.89	
$ 2	1,2-dinitrobenzene	8.496	8.468	0.028	4521	0.97700	9.77	
11	4-AM-DNT	9.050	9.021	0.029	2284	0.53083	5.31	
12	2-AM-DNT	9.603	9.568	0.035	2921	0.50706	5.07	
15	2-nitrotoluene	11.730	11.694	0.036	1478	0.51149	5.11	
6	1,3-dinitrobenzene	12.170	12.128	0.042	3779	0.50768	5.08	
16	4-nitrotoluene	12.863	12.821	0.042	1412	0.60279	6.03	
17	3-nitrotoluene	13.230	13.188	0.042	1600	0.48111	4.81	
13	2,6-dinitrotoluene	15.316	15.261	0.055	1439	0.48888	4.89	
14	2,4-dinitrotoluene	19.010	18.934	0.076	2372	0.51359	5.14	
5	1,3,5-trinitrobenzene	19.943	19.861	0.082	1872	0.50747	5.07	
9	TETRYL	20.356	20.254	0.102	1475	0.58195	5.82	
10	2,4,6-trinitrotoluene	26.016	25.908	0.108	1309	0.51814	5.18	

AAB
6:16 am, May 18, 2018

QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE04.b\HPLCLE04.b\HLE10130.D
Date : 04-MAY-2018 16:54
Client ID: HAAP-19C-LGIA-DPT18
Instrument: hplc02.i
Sample Info: WG227670-4,SL3808
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000216

Logbooks and Supporting Documents

QAEX339

KATAHDIN ANALYTICAL SERVICES
ORGANIC EXTRACTIONS LOGBOOK - AQUEOUS EXPLOSIVES
METHOD: SW846 8330 B Mod.

Surrogate Lot # P9096
Spike Lot # P9095
Acetonitrile (ACN) Lot # ~~D Q315-695~~
Cartridge Lot # 1095284, 102019

Vial Lot # 172777216

Other Lot # NG: STK5436
Other Lot # PETN: STK 5438
EDGN: STK5437

Extraction Start Time: 10:45
Extraction Finish Time: 15:20

Extract Date	Extract Time	Analyst	Sample ID	Bottle ID.	Initial Vol. (500 mL)	Surr.: Add 500 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 27B Tray Location	Comments
5-4-18	10:45	JMS	W622J670-1	2	✓	✓	NR	✓	✓	✓	✓	✓	✓	A7	RU72052
			-2	2			✓							B	for PTNGTE
			-3	V										9	MS SL3808-4
			-4	V										10	MSD ✓
	14:00		-5	C										11	MS SL3448-4
			-6	C										12	MSD ✓

0000076

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QAEX339

Extract Date	Extract Time	Analyst	Sample ID	Bottle ID.	Initial Vol. (500 mL)	Surr.: Add 500 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 23B Tray Location	Comments
5-4-18	10:45	JMS	SL3708-22	C	✓	✓	NR	✓	✓	✓	✓	✓	✓	B1	
			SL3804-1	B										2	
			-2	B										3	
			-3	B										4	
			-4	B										5	
			SL3808-2	I										6	
	12:30		-4	R										7	MS10
			-6	F										8	
			-8	G										9	
			-10	H										10	
			-12	I										11	
			-14	E										12	
			-15	F										C1	
			-17	G										2	
	14:00		SL3809-1	I										3	
			SL3810-1	B										4	
			-2	B										5	
			-3	B										6	
			-4	B										7	
			-5	B										8	

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HP-001 - Revision 1 - 02/11/2010

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): 8330B MOD. 8330B

Column: PHENOMENEX	Injection Volume: 100 µL	Standard	Standard ID
Flow Rate: 1.0 mL/MIN	Methanol lot #: DQ788	C5	P8846
Detector Wavelengths: 210 nm/254 nm		C4	P8847

Date	Init.	Result File	Sample ID	Y/N	Analytical Workgroup	Method	Comments
073117	AAB	HKG10216	IND -8	Y	WG201620 10 AAB 080217	EXPB03A	
080117	AAB	HKH10001	C5 -17	Y		EXPB03A	
		002	WG210205-1	Y			
		003	-2				
		004	SK6535-1				
		005	-2				
		006	C4 -18	Y			
CHANGE TO ACCLAIM E2 COLUMN							
080117	AAB	HKG10007	PRIME	N	WG201620 10 AAB 080217	E2016A	
		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	HKH10022	C5	Y	WG210944-1	EXPB03A	
		023	WG210421-1	Y	WG210944		
		024	-2				
		025	-3				

Reviewed by/Date: _____

HP-003 - Revision 2 - 09/01/2016

QAGC344

0000068

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ 8330B

Column: PHENOMENEX	Injection Volume: 100uL	Standard	Standard ID
Flow Rate: 1.0 mL/MIN	Methanol lot #: DS 202	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		CANNA81	CANN TESTING
CHANGE TO PHENOMENEX COLUMN							
032018	AC	HLC10024	C5	Y		EXP804A	
		025	WL225027-1	N			
		026	-2				
		027	-5				
		028	-3				
		029	-4				
		030	IND	N	WL225143	EXP805A	
		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	WL225027-1	Y			
		040	-2				
		041	-5				
		042	-3				
		043	-4				SS DOUBLE SPIKE
		044	WL225094-1	Y			
		045	-2				
		046	SL2079-14	Y			8,4
		047	SL2135-20	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: 100uL	Standard	Standard ID
Flow Rate: 1.0mL/MIN	Methanol lot #: DT507	C5	P9009, P9101
Detector Wavelengths: 210nm / 254nm		C4	P9010

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
050918	[illegible]	HLE10106	SL3708-5	Y	WG227584	EXPB05A	H R
		107	-6				
		108	C5 -15	Y			
		109	SL3708-7	Y			H R
		110	-8				
		111	-9				
		112	-10				
		113	-11				H
		114	-12				
		115	-13				H R
		116	-14				
		117	-15				
		118	-16				
		119	C4 -16	Y			
		120	SL3708-17	Y			
		121	-18				
		122	-19				H
		123	-20				H R
		124	-21				H
		125	WG227324-2BA	N			1,3,5 ↓ NO TET
050418	AC	HLE10125A	C5 -	N		EXPB05A	P9009 1,3,5 TET ↑
		126	C5 -17	Y	WG227584		P9101 TET ↑
		127	WG227670-1	Y			
		128	-2				
		129	-3				
		130	-4				
		131	-5				R ↑
		132	-6				R ↑ PETN ↑

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: 1.0mL/min	Methanol lot #: DT507	c5	P9101
Detector Wavelengths: 210nm / 254nm		c4	P9102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
050418	AC	HLE10133	SL3708-22	Y	WL227584	EXP8052	H ZAM
		134	SL3808-1 3808 AAB 050818	Y			H R DNA HAM ZAM TNT
		135	-2				
		136	-3				
		137	c4 -18	Y			
		138	SL3804-4	Y			3NT
		139	SL3810-1	Y			
		140	-2				
		141	-3				
		142	-4				
		143	-5				H < PQL
050518		144	SL3427-19DL	Y			100→200
		145	-24DL				40→400
		146	-32DL				80→400
		147	SL3452-5DL	Y			50→500 50→250
		148	c5 -19	Y			
		149	SL3452-6RA	Y			H R HAM ZAM TNT
		150	-17DL				40→400
		151	-20DL				50→500 50→250
		152	-21DL				100→200
		153	-21RA				H R HAM ZAM TNT
		154	-30DL				100→200 SS↓
		155	-31DL				40→400
		156	-32DL				40→400
		157	SL3453-6DL	Y			50→250
		158	-7DL				50→250
		159	c4 -20	Y			
		160	SL3808-2	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 #: DT 507	CS	P9101
Detector Wavelengths: 210nm / 254 nm		CCV	P9102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
050518	AC	HLE10161	SL3808-1	Y	WG227584	EXPB05A	
		162	-6				
		163	-8				
		164	CS -21	Y			
CHANGE TO ACCLAIM EZ COLUMN							
050518	AC	HLE10165	CS -22	Y	WG227584	EZ016A	
		166	WG227057-1C	N			
		167	SL3448-3C	Y			H R
		168	-4C				H R
		169	SL3452-9C	Y			NONE
		170	-35C				NONE
		171	SL3453-9C	Y			NONE
		172	-22C				NONE
		173	SL3427-10C	N			NOT NEEDED
		174	-36C				
		175	SL3427-1C	Y			H R TNT DAM ZAM
		176	CCV -23	Y			
		177	WG226952-1C	Y			
		178	WG226953-1C	Y			
		179	SL3427-2C	Y			1,3,5 TNT DAM ZAM
050618		180	-3C				TNT DAM ZAM
		181	-4C				H R
		182	-5C				H R TNT DAM ZAM
		183	-6C				H R TNT DAM ZAM
		184	-7C				H R
		185	-8C				H R
		186	-9C				H R
		187	CS -24	Y			

Reviewed by/Date: _____

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ 8330B

Column: ACCLAIM EZ	Injection Volume: 150uL	Standard	Standard ID
Flow Rate: 1.0mL/min	Methanol lot #: DS243	C5	PS101
Detector Wavelengths: 210 nm / 254 nm		CH	PS102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
050918	AAB	HLE10272	SL3453-16C	Y	WG227584	EZ016A	H R TNT 4AM 2AM
		273	-17C				H R TNT 4AM 2AM
		274	CH -33	Y			
		275	SL3453-18C	Y			H R TNT 4AM 2AM
051018		276	-19C				H R TNT 4AM 2AM
		277	-20C				H R TNT 4AM 2AM
		278	-21C				H R TNT 4AM 2AM
		279	C5 -34	Y			
CHANGE TO PHENOMENEX COLUMN							
051018	MB	HLE10280	PRIME	N		EXP805A	
		281	C5 -35 -1	Y	WG227584 WG227995		
		282	WG227925-1	Y	WG227995 AAB 051818		
		288	-2				
		284	-3				
		285	-4				4 HIT ↑
		286	SL3808-10	Y	WG227584		
		287	-12				
		288	-14				NG 2AM
		289	-15				
		290	-17				
		291	SL3809-1	Y			2AM
		292	CH -36 -2	Y	WG227584 WG227995		
		293	SL3841-2	Y	WG227995		
		294	-4				
		295	-6				
		296	-8				
		297	-10				
		298	-12				

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 #: DS 243	C5	P9101
Detector Wavelengths: 210nm/254nm		C4	P9102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
051318	AC	HLE10411	SL3809-47	Y	W4227995	EXP8015A	
		412	-48				H
		413	-49				H R
		414	-50				H
		415	-51				
		416	-52				
		417	C5 -15	Y			
051418		418	SL3809-53	Y			
		419	-54				H R
		420	-55				
		421	-56				NB
		422	-57				
		423	-58				H
		424	-59				HAM (2AM < MDL)
		425	-60				
		426	-61				H (2AM < MDL)
		427	-62				
		428	C4 -16	Y			
		429	SL3809-63	Y			H
		430	-64				
		431	-65				H R
		432	C5 -17	Y			
CHANGE TO ACCLAIM E2 COLUMN							
051418	AC	HLE10433	C5 -37 -18	Y	W4227584 W4227995	E2016A	
		434	SL3452-23CRA	Y	W4227584		
		435	W4228023-1C	Y	W4227995		R
		436	SL3451-3C	Y			
		437	-4C				

Reviewed by/Date: _____

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): (8330B MOD.) (8330B)

Column: ACCLAIM E2	Injection Volume: 150 µL	Standard	Standard ID
Flow Rate: 1.0mL/MIN	Methanol lot #: DS 213	C5	P9101
Detector Wavelengths: 210nm / 254nm		C4	P9102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
051418	AC	HL610438	WG227670-1C	Y	WG227584	E2016A	
		439	SL3804-1C	Y			H R TNT HAM ZAM
		440	-4C				NONE
		441	C4 -38 -19	Y	WG227584 WG227995		
		442	WG227692-1C	Y	WG227584		
		443	SL3708-5C	Y			H
		444	-7C				H R
		445	-11C				NONE
		446	-13C				H R
051518		447	-19C				H
		448	-20C				H R
		449	-21C				NONE
		450	C5 -39	Y			
051518	CHANGE TO PHENOMENEX COLUMN						
051518	AC	HL610451	C5			E8015A	
		452					
		453					
		454	WG228250-1				
		455	-2				
		456	-3DL				100→200 4X
		457	-4DL				100→200 4X
		458	SL4032-1				
		459	-2				
		460	-3				
		461	-4				
		462	C4				
		463	SL4032-5				
		464	-6				

Reviewed by/Date:

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): 8330B MOD 8330B

Column: ACCLAIMER	Injection Volume: 150ml	Standard	Standard ID
Flow Rate: 1.0mL/min	~~AAG~~ 051817 Methanol lot #: ~~DZ~~ DS 243	c5	P9101
Detector Wavelengths: 210nm / 254nm		c4	P9102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
051718	AC	HLE10549	c5 -42	Y	WG227584 WG227995	E2016A	
		550	SL3708-22C	Y	WG227584		NONE
		551	SL3808-14C	Y	↓		NONE
		552	SL3809-1C	Y	↓		NONE
		553	WG228038-1C		WG227995		
		554	SL3802-1C		↓		
		555	↓ -2C		↓		
		556	WG227925-1C		↓		
		557	SL3841-14C		↓		
		558	↓ -20C		↓		
		559	WG227928-1C		↓		
		560	c4 -43	Y	WG227584 WG227995		
		561	WG228021-1C		WG227995		

Reviewed by/Date: _____

HP-003 - Revision 2 - 09/01/2016

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: SL3808 **SOW No.** SW846

Client Field ID	Lab Sample ID
CHAAP-19C-LGIA-DPT114	SL3808-010
CHAAP-19C-LGIA-DPT114-FF	SL3808-011
CHAAP-19C-LGIA-DPT14	SL3808-008
CHAAP-19C-LGIA-DPT14-FF	SL3808-009
CHAAP-19C-LGIA-DPT18	SL3808-004
CHAAP-19C-LGIA-DPT18	SL3808-004P
CHAAP-19C-LGIA-DPT18	SL3808-004S
CHAAP-19C-LGIA-DPT18-FF	SL3808-005
CHAAP-19C-LGIA-DPT18-FF	SL3808-005P
CHAAP-19C-LGIA-DPT18-FF	SL3808-005S
CHAAP-19C-LGIA-DPT22	SL3808-015
CHAAP-19C-LGIA-DPT22-FF	SL3808-016
CHAAP-19C-UGIA-DPT02	SL3808-012
CHAAP-19C-UGIA-DPT02-FF	SL3808-013
CHAAP-19C-UGIA-DPT13	SL3808-006
CHAAP-19C-UGIA-DPT13-FF	SL3808-007
CHAAP-19C-UGIA-DPT17	SL3808-002
CHAAP-19C-UGIA-DPT17-FF	SL3808-003
CHAAP-19C-UGIA-DPT21	SL3808-017
CHAAP-19C-UGIA-DPT21-FF	SL3808-018
CHAAP-EB-050218-DPT	SL3808-014

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 Dinsmore

Date: 5/16/18 Title: Analyst

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT17

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	10400			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.974	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	20			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	245			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.565	J		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	331000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	41.6			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	6.26			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	15.4			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	15600			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	10.7			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	66400			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1480			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.014	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	20.2			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	20300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	1.4	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	281000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.25	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	34.9			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	142			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT17-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-003

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.9	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.764	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	13			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	38.3			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	355000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.24	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	1.55			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	5.28			MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	1780			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	71200			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1410			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	5.68			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	19100			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.4	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	305000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.076	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.4	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	27			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-004

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	3140		N	MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.30	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	12			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	96.8			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.16	J		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	372000		NA	MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	27.8			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	1.96			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	12.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	11200		N	MS	5	100	13	60
7439-92-1	LEAD, TOTAL	3.40		N	MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	79200		NA	MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1370		NA	MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.044	J	N	CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	10.9			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	19600		N	MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.12	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	319000		NA	MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.11	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	7.28			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	142			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-005

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.8	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.26	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	12			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	30.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	381000		NA	MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.9	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.805	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.5	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	6960			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	81900		NA	MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1340		A	MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	4.24			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	19100			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	2.31	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	330000		N	MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.82	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	49.1			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT13

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-006

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	34000			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.667	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	15			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	364			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	1.73			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.327	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	378000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	114			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	17.8			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	47.8			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	43600			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	34.5			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	77100			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1720			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.030	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	55.8			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	24800			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	4.24	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.11	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	297000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.50	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	78.8			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	197			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT13-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-007

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	20	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.10	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.8			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	32.4			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	350000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.44	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.622	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.4	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	6580			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	68600			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1330			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	4.24			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	17200			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.9	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	288000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.2	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	18			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT14

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-008

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	26600			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.49	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	45.5			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	704			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	1.76			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.14	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	419000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	92.1			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	10.3			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	42.4			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	43000			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	23.4			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	77100			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1870			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.028	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	47.2			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	24100			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	4.80	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.14	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	274000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.38	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	75.6			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	207			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT14-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-009

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	17	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.15	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	26.6			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	40.7			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	377000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.9	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	1.09			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.6	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	4090			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	69200			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1280			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	20.4			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18400			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	2.63	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	272000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.3	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	52.4			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT114

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-010

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	40900			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.779	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	16			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	448			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	2.10			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.391	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	366000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	145			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	22.7			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	54.5			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	52000			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	41.2			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	74800			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1740			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.026	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	71.6			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	25100			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	3.88	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.11	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	282000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.59	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	99.8			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	225			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT114-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-011

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	11	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.14	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.4			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	32.3			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	349000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.32	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.605	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.4	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	6380			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	68800			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1300			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	3.64			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	17200			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.96	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	280000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.1	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	15			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT02

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-012

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	24400			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.41	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	31.2			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	330			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	1.48			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.478	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	419000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	106			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	12.3			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	31.8			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	35400			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	22.8			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	81400			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1990			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	63.8			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	23800			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	6.90			MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.12	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	296000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.43	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	60.0			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	143			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT02-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-013

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.9	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.095	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	10			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	41.8			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	390000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.30	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.49	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.6	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	5120			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	76200			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1380			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.90	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18700			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	2.94	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	308000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.3	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	21			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-EB-050218-DPT

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-014

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	9.5	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.50	U		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	54	J		MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	1.9	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	1.0	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	18	J		MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	0.59	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	0.65	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	49	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	1.6	J		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-19C-LGIA-DPT22

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-015

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	10300			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.32	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	13			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	224			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.508	J		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	361000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	56.1			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	5.53			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	26.0			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	21000			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	10.3			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	66800			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1410			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	28.4			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	20500			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.79	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	280000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.16	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	34.6			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	90.3			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT22-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-016

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	10	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.12	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.2			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	36.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	362000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.2	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.736	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.94	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	6240			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	64200			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1320			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	7.23			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	17800			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.4	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	281000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	27			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT21

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-017

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	8650			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.43	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	28.2			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	198			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.509	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.12	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	361000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	33.6			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	4.07			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	17.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	16100			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	12.2			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	59100			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1400			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	13.8			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	19400			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.62	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	238000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.11	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	26.1			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	60.5			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT21-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-018

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.1	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.19	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	22			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	30.0			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	349000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.6	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.51	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.4	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	2300			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	58000			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1240			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.014	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.67	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	17800			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.7	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	240000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.74	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	13			MS	5	10	3.9	8.0

Comments:

QC Summary Section

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICV

File: HLE07A May 07, 2018 12:13

Analyte	True	Found	%R (1)
MERCURY	6.0	5.74	95.7

SAMPLE: CCV

File: HLE07A May 07, 2018 12:19

Analyte	True	Found	%R (1)
MERCURY	5.0	4.84	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:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 12:42

Analyte	True	Found	%R (1)
MERCURY	5.0	4.89	97.8

SAMPLE: CCV

File: HLE07A May 07, 2018 13:08

Analyte	True	Found	%R (1)
MERCURY	5.0	4.83	96.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 13:34

Analyte	True	Found	%R (1)
MERCURY	5.0	4.78	95.6

SAMPLE: CCV

File: HLE07A May 07, 2018 14:01

Analyte	True	Found	%R (1)
MERCURY	5.0	4.67	93.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 14:27

Analyte	True	Found	%R (1)
MERCURY	5.0	4.66	93.2

SAMPLE: CCV

File: HLE07A May 07, 2018 14:57

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:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 15:26

Analyte	True	Found	%R (1)
MERCURY	5.0	4.61	92.2

SAMPLE: CCV

File: HLE07A May 07, 2018 15:52

Analyte	True	Found	%R (1)
MERCURY	5.0	4.59	91.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 16:18

Analyte	True	Found	%R (1)
MERCURY	5.0	4.53	90.6

SAMPLE: CCV

File: HLE07A May 07, 2018 16:24

Analyte	True	Found	%R (1)
MERCURY	5.0	4.58	91.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICV

File: JLE14A May 14, 2018 15:20

Analyte	True	Found	%R (1)
ALUMINUM	400.0	412.60	103.2
ANTIMONY	20.0	19.92	99.6
ARSENIC	20.0	19.33	96.6
BARIUM	20.0	19.88	99.4
CADMIUM	20.0	19.60	98.0
CALCIUM	4000.0	3999.00	100.0
COBALT	20.0	19.70	98.5
COPPER	20.0	19.99	99.9
IRON	4000.0	3963.00	99.1
MAGNESIUM	4000.0	4031.00	100.8
MANGANESE	20.0	19.33	96.6
MOLYBDENUM	40.0	37.59	94.0
NICKEL	20.0	19.36	96.8
POTASSIUM	4000.0	3962.00	99.1
SELENIUM	20.0	20.14	100.7
SILVER	20.0	19.39	97.0
SODIUM	4000.0	4031.00	100.8
THALLIUM	20.0	19.76	98.8
VANADIUM	20.0	19.56	97.8
ZINC	20.0	20.57	102.8

SAMPLE: CCV

File: JLE14A May 14, 2018 16:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.10	101.4
ANTIMONY	25.0	25.82	103.3
ARSENIC	25.0	24.37	97.5
BARIUM	25.0	25.39	101.6
CADMIUM	25.0	24.37	97.5
CALCIUM	5000.0	5012.00	100.2
COBALT	25.0	24.75	99.0
COPPER	25.0	24.90	99.6
IRON	5000.0	4950.00	99.0
MAGNESIUM	5000.0	5259.00	105.2
MANGANESE	25.0	24.45	97.8
MOLYBDENUM	25.0	23.94	95.8
NICKEL	25.0	24.20	96.8
POTASSIUM	5000.0	4848.00	97.0
SELENIUM	25.0	24.52	98.1
SILVER	25.0	24.29	97.2
SODIUM	5000.0	5302.00	106.0
THALLIUM	25.0	24.42	97.7
VANADIUM	25.0	25.17	100.7
ZINC	25.0	24.98	99.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 16:45

Analyte	True	Found	%R (1)
ALUMINUM	500.0	503.30	100.7
ANTIMONY	25.0	24.99	100.0
ARSENIC	25.0	24.38	97.5
BARIUM	25.0	24.76	99.0
CADMIUM	25.0	24.71	98.8
CALCIUM	5000.0	4893.00	97.9
COBALT	25.0	24.38	97.5
COPPER	25.0	24.74	99.0
IRON	5000.0	4931.00	98.6
MAGNESIUM	5000.0	5149.00	103.0
MANGANESE	25.0	24.54	98.2
MOLYBDENUM	25.0	23.98	95.9
NICKEL	25.0	24.47	97.9
POTASSIUM	5000.0	4878.00	97.6
SELENIUM	25.0	25.09	100.4
SILVER	25.0	24.55	98.2
SODIUM	5000.0	5107.00	102.1
THALLIUM	25.0	24.57	98.3
VANADIUM	25.0	25.05	100.2
ZINC	25.0	24.91	99.6

SAMPLE: CCV

File: JLE14A May 14, 2018 17:32

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.00	101.2
ANTIMONY	25.0	25.34	101.4
ARSENIC	25.0	24.56	98.2
BARIUM	25.0	25.80	103.2
CADMIUM	25.0	24.64	98.6
CALCIUM	5000.0	4998.00	100.0
COBALT	25.0	25.15	100.6
COPPER	25.0	25.61	102.4
IRON	5000.0	5048.00	101.0
MAGNESIUM	5000.0	5154.00	103.1
MANGANESE	25.0	24.75	99.0
MOLYBDENUM	25.0	24.29	97.2
NICKEL	25.0	24.53	98.1
POTASSIUM	5000.0	4993.00	99.9
SELENIUM	25.0	25.35	101.4
SILVER	25.0	24.69	98.8
SODIUM	5000.0	5166.00	103.3
THALLIUM	25.0	24.62	98.5
VANADIUM	25.0	25.26	101.0
ZINC	25.0	24.81	99.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 18:20

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.30	98.9
ANTIMONY	25.0	25.61	102.4
ARSENIC	25.0	24.70	98.8
BARIUM	25.0	25.53	102.1
CADMIUM	25.0	24.39	97.6
CALCIUM	5000.0	4984.00	99.7
COBALT	25.0	24.85	99.4
COPPER	25.0	25.29	101.2
IRON	5000.0	4996.00	99.9
MAGNESIUM	5000.0	5172.00	103.4
MANGANESE	25.0	24.19	96.8
MOLYBDENUM	25.0	24.03	96.1
NICKEL	25.0	24.28	97.1
POTASSIUM	5000.0	4926.00	98.5
SELENIUM	25.0	24.99	100.0
SILVER	25.0	24.33	97.3
SODIUM	5000.0	5178.00	103.6
THALLIUM	25.0	24.63	98.5
VANADIUM	25.0	25.00	100.0
ZINC	25.0	24.73	98.9

SAMPLE: CCV

File: JLE14A May 14, 2018 19:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	510.50	102.1
ANTIMONY	25.0	25.50	102.0
ARSENIC	25.0	24.83	99.3
BARIUM	25.0	25.50	102.0
CADMIUM	25.0	24.24	97.0
CALCIUM	5000.0	5012.00	100.2
COBALT	25.0	24.72	98.9
COPPER	25.0	25.06	100.2
IRON	5000.0	4965.00	99.3
MAGNESIUM	5000.0	5289.00	105.8
MANGANESE	25.0	24.55	98.2
MOLYBDENUM	25.0	23.71	94.8
NICKEL	25.0	24.43	97.7
POTASSIUM	5000.0	4923.00	98.5
SELENIUM	25.0	25.02	100.1
SILVER	25.0	24.03	96.1
SODIUM	5000.0	5316.00	106.3
THALLIUM	25.0	24.93	99.7
VANADIUM	25.0	25.70	102.8
ZINC	25.0	24.98	99.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 19:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	454.70	90.9
ANTIMONY	25.0	24.19	96.8
ARSENIC	25.0	24.80	99.2
BARIUM	25.0	24.39	97.6
CADMIUM	25.0	26.34	105.4
CALCIUM	5000.0	5001.00	100.0
COBALT	25.0	24.42	97.7
COPPER	25.0	24.68	98.7
IRON	5000.0	5021.00	100.4
MAGNESIUM	5000.0	4572.00	91.4
MANGANESE	25.0	24.81	99.2
MOLYBDENUM	25.0	25.79	103.2
NICKEL	25.0	23.77	95.1
POTASSIUM	5000.0	4776.00	95.5
SELENIUM	25.0	25.80	103.2
SILVER	25.0	26.14	104.6
SODIUM	5000.0	4536.00	90.7
THALLIUM	25.0	24.49	98.0
VANADIUM	25.0	24.41	97.6
ZINC	25.0	25.44	101.8

SAMPLE: CCV

File: JLE14A May 14, 2018 20:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	462.60	92.5
ANTIMONY	25.0	23.87	95.5
ARSENIC	25.0	25.07	100.3
BARIUM	25.0	24.17	96.7
CADMIUM	25.0	26.62	106.5
CALCIUM	5000.0	5012.00	100.2
COBALT	25.0	24.29	97.2
COPPER	25.0	24.69	98.8
IRON	5000.0	4952.00	99.0
MAGNESIUM	5000.0	4604.00	92.1
MANGANESE	25.0	24.57	98.3
MOLYBDENUM	25.0	26.10	104.4
NICKEL	25.0	23.99	96.0
POTASSIUM	5000.0	4649.00	93.0
SELENIUM	25.0	26.09	104.4
SILVER	25.0	26.37	105.5
SODIUM	5000.0	4412.00	88.2•
THALLIUM	25.0	24.81	99.2
VANADIUM	25.0	24.30	97.2
ZINC	25.0	25.25	101.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 21:40

Analyte	True	Found	%R (1)
ALUMINUM	500.0	469.40	93.9
ANTIMONY	25.0	23.62	94.5
ARSENIC	25.0	24.63	98.5
BARIUM	25.0	24.17	96.7
CADMIUM	25.0	26.24	105.0
CALCIUM	5000.0	5035.00	100.7
COBALT	25.0	24.31	97.2
COPPER	25.0	24.54	98.2
IRON	5000.0	5023.00	100.5
MAGNESIUM	5000.0	4663.00	93.3
MANGANESE	25.0	24.53	98.1
MOLYBDENUM	25.0	25.76	103.0
NICKEL	25.0	23.97	95.9
POTASSIUM	5000.0	4803.00	96.1
SELENIUM	25.0	25.43	101.7
SILVER	25.0	26.04	104.2
SODIUM	5000.0	4447.00	88.9•
THALLIUM	25.0	24.53	98.1
VANADIUM	25.0	24.57	98.3
ZINC	25.0	25.03	100.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICV

File: JLE15C May 15, 2018 18:44

Analyte	True	Found	%R (1)
ALUMINUM	400.0	400.10	100.0
ARSENIC	20.0	20.14	100.7
BERYLLIUM	20.0	20.02	100.1
CADMIUM	20.0	20.08	100.4
CALCIUM	4000.0	4046.00	101.2
CHROMIUM	20.0	19.51	97.5
COBALT	20.0	20.05	100.3
COPPER	20.0	19.96	99.8
IRON	4000.0	3993.00	99.8
LEAD	20.0	19.62	98.1
MAGNESIUM	4000.0	3846.00	96.2
MANGANESE	20.0	19.59	98.0
MOLYBDENUM	40.0	38.80	97.0
NICKEL	20.0	20.07	100.4
POTASSIUM	4000.0	3913.00	97.8
SELENIUM	20.0	20.39	102.0
SILVER	20.0	19.93	99.6
SODIUM	4000.0	3902.00	97.5
VANADIUM	20.0	19.62	98.1
ZINC	20.0	20.48	102.4

SAMPLE: CCV

File: JLE15C May 15, 2018 19:29

Analyte	True	Found	%R (1)
ALUMINUM	500.0	490.70	98.1
ARSENIC	25.0	24.92	99.7
BERYLLIUM	25.0	25.37	101.5
CADMIUM	25.0	24.93	99.7
CALCIUM	5000.0	4941.00	98.8
CHROMIUM	25.0	24.81	99.2
COBALT	25.0	24.93	99.7
COPPER	25.0	24.93	99.7
IRON	5000.0	4942.00	98.8
LEAD	25.0	24.35	97.4
MAGNESIUM	5000.0	4845.00	96.9
MANGANESE	25.0	24.52	98.1
MOLYBDENUM	25.0	24.72	98.9
NICKEL	25.0	24.56	98.2
POTASSIUM	5000.0	4833.00	96.7
SELENIUM	25.0	25.33	101.3
SILVER	25.0	24.80	99.2
SODIUM	5000.0	4828.00	96.6
VANADIUM	25.0	24.51	98.0
ZINC	25.0	24.60	98.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 20:19

Analyte	True	Found	%R (1)
ALUMINUM	500.0	479.70	95.9
ARSENIC	25.0	24.72	98.9
BERYLLIUM	25.0	24.66	98.6
CADMIUM	25.0	24.98	99.9
CALCIUM	5000.0	4918.00	98.4
CHROMIUM	25.0	24.45	97.8
COBALT	25.0	24.49	98.0
COPPER	25.0	24.50	98.0
IRON	5000.0	4875.00	97.5
LEAD	25.0	24.23	96.9
MAGNESIUM	5000.0	4686.00	93.7
MANGANESE	25.0	24.21	96.8
MOLYBDENUM	25.0	24.66	98.6
NICKEL	25.0	24.60	98.4
POTASSIUM	5000.0	4757.00	95.1
SELENIUM	25.0	25.41	101.6
SILVER	25.0	24.95	99.8
SODIUM	5000.0	4618.00	92.4
VANADIUM	25.0	24.04	96.2
ZINC	25.0	24.97	99.9

SAMPLE: CCV

File: JLE15C May 15, 2018 21:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	498.70	99.7
ARSENIC	25.0	24.61	98.4
BERYLLIUM	25.0	25.11	100.4
CADMIUM	25.0	24.53	98.1
CALCIUM	5000.0	4924.00	98.5
CHROMIUM	25.0	24.44	97.8
COBALT	25.0	24.20	96.8
COPPER	25.0	24.54	98.2
IRON	5000.0	4884.00	97.7
LEAD	25.0	24.22	96.9
MAGNESIUM	5000.0	4897.00	97.9
MANGANESE	25.0	24.44	97.8
MOLYBDENUM	25.0	24.22	96.9
NICKEL	25.0	24.70	98.8
POTASSIUM	5000.0	4848.00	97.0
SELENIUM	25.0	25.19	100.8
SILVER	25.0	24.61	98.4
SODIUM	5000.0	4816.00	96.3
VANADIUM	25.0	24.16	96.6
ZINC	25.0	24.76	99.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 21:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.30	98.9
ARSENIC	25.0	24.69	98.8
BERYLLIUM	25.0	24.84	99.4
CADMIUM	25.0	24.33	97.3
CALCIUM	5000.0	4870.00	97.4
CHROMIUM	25.0	24.43	97.7
COBALT	25.0	24.26	97.0
COPPER	25.0	24.18	96.7
IRON	5000.0	4840.00	96.8
LEAD	25.0	24.02	96.1
MAGNESIUM	5000.0	4900.00	98.0
MANGANESE	25.0	24.20	96.8
MOLYBDENUM	25.0	24.17	96.7
NICKEL	25.0	24.47	97.9
POTASSIUM	5000.0	4812.00	96.2
SELENIUM	25.0	24.95	99.8
SILVER	25.0	24.49	98.0
SODIUM	5000.0	4835.00	96.7
VANADIUM	25.0	24.27	97.1
ZINC	25.0	24.60	98.4

SAMPLE: CCV

File: JLE15C May 15, 2018 22:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	488.70	97.7
ARSENIC	25.0	24.31	97.2
BERYLLIUM	25.0	24.94	99.8
CADMIUM	25.0	24.29	97.2
CALCIUM	5000.0	4898.00	98.0
CHROMIUM	25.0	24.50	98.0
COBALT	25.0	24.11	96.4
COPPER	25.0	24.27	97.1
IRON	5000.0	4806.00	96.1
LEAD	25.0	23.81	95.2
MAGNESIUM	5000.0	4900.00	98.0
MANGANESE	25.0	24.05	96.2
MOLYBDENUM	25.0	23.96	95.8
NICKEL	25.0	24.46	97.8
POTASSIUM	5000.0	4846.00	96.9
SELENIUM	25.0	24.99	100.0
SILVER	25.0	24.21	96.8
SODIUM	5000.0	4891.00	97.8
VANADIUM	25.0	24.14	96.6
ZINC	25.0	24.40	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: PQL

File: HLE07A May 07, 2018 12:17

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.23	115.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: PQL

File: JLE14A May 14, 2018 15:26

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.37	101.8
ANTIMONY	0.2	0.22	110.0
ARSENIC	1.0	0.98	98.0
BARIUM	0.4	0.42	105.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	20.40	102.0
COBALT	0.2	0.20	100.0
COPPER	0.6	0.58	96.7
IRON	20.0	19.66	98.3
MAGNESIUM	20.0	20.57	102.8
MANGANESE	0.4	0.41	102.5
MOLYBDENUM	1.0	1.00	100.0
NICKEL	0.4	0.40	100.0
POTASSIUM	200.0	198.10	99.0
SELENIUM	1.0	0.95	95.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	211.10	105.5
THALLIUM	0.2	0.22	110.0
VANADIUM	1.0	0.92	92.0
ZINC	2.0	2.08	104.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: PQL

File: JLE15C May 15, 2018 18:52

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.29	96.4
ARSENIC	1.0	0.99	99.0
BERYLLIUM	0.2	0.21	105.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	19.83	99.1
CHROMIUM	1.0	0.92	92.0
COBALT	0.2	0.19	95.0
COPPER	0.6	0.60	100.0
IRON	20.0	19.56	97.8
LEAD	0.2	0.20	100.0
MAGNESIUM	20.0	19.19	96.0
MANGANESE	0.4	0.38	95.0
MOLYBDENUM	1.0	0.97	97.0
NICKEL	0.4	0.38	95.0
POTASSIUM	200.0	191.10	95.5
SELENIUM	1.0	1.16	116.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	194.10	97.0
VANADIUM	1.0	1.03	103.0
ZINC	2.0	2.13	106.5

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICB

File: HLE07A May 07, 2018 12:15

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 12:21

Analyte	Result	C
MERCURY	0.027	J

SAMPLE: CCB

File: HLE07A May 07, 2018 12:44

Analyte	Result	C
MERCURY	0.025	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCB

File: HLE07A May 07, 2018 13:10

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 13:36

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 14:03

Analyte	Result	C
MERCURY	0.025	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCB

File: HLE07A May 07, 2018 14:29

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 14:59

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 15:28

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCB
File: HLE07A May 07, 2018 15:54

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB
File: HLE07A May 07, 2018 16:20

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB
File: HLE07A May 07, 2018 16:27

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICB
File: JLE14A May 14, 2018 15:23

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.075	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.006	J
SODIUM	4.400	U
THALLIUM	0.009	J
VANADIUM	-0.124	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 16:03

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.012	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.066	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.006	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 16:49

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.039	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
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:** SL3808

Concentration Units: ug/L

SAMPLE: CCB
File: JLE14A May 14, 2018 17:36

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	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	0.006	J
SODIUM	4.400	U
THALLIUM	0.009	J
VANADIUM	-0.163	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 18:24

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	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	0.007	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 19:13

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	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	0.004	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	-0.103	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCB
File: JLE14A May 14, 2018 20:03

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.039	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	-0.114	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 20:53

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.010	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	7.151	J
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.509	J
MANGANESE	0.043	J
MOLYBDENUM	0.036	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	8.908	J
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE14A May 14, 2018 21:44

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.008	J
ARSENIC	0.180	U
BARIUM	0.075	U
CADMIUM	0.007	U
CALCIUM	5.300	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.025	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.005	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	-0.133	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICB
File: JLE15C May 15, 2018 18:48

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	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	0.021	U
MOLYBDENUM	0.056	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	4.400	U
VANADIUM	0.110	J
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 19:33

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.282	J
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	-0.022	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.051	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	J
SODIUM	4.400	U
VANADIUM	0.067	J
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 20:23

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	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	-0.014	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	0.004	J
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: CCB
File: JLE15C May 15, 2018 21:13

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.041	J
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	4.937	J
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 22:03

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.042	J
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	J
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 22:53

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.060	J
IRON	4.300	U
LEAD	0.016	J
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

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLE07HGW3

Matrix: WATER **SDG Name:** SL3808

QC Batch ID: LE07HGW3

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.10	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLE07IMW1

Matrix: WATER **SDG Name:** SL3808

QC Batch ID: LE07IMW1

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	7.4	J
ANTIMONY	0.50	U
ARSENIC	4.0	U
BARIUM	1.0	U
BERYLLIUM	0.20	U
CADMIUM	0.20	U
CALCIUM	80	U
CHROMIUM	4.0	U
COBALT	0.30	U
COPPER	2.0	U
IRON	60	U
LEAD	0.50	U
MAGNESIUM	9.7	J
MANGANESE	1.0	U
NICKEL	1.2	U
POTASSIUM	400	U
SELENIUM	0.73	J
SILVER	0.40	U
SODIUM	400	U
THALLIUM	0.063	J
VANADIUM	4.0	U
ZINC	8.0	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE14A May 14, 2018 15:34

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	99860.00	99.9
ANTIMONY	0	0.04	
ARSENIC	0	0.07	
BARIUM	0	0.09	
CADMIUM	0	0.02	
CALCIUM	100000.00	97280.00	97.3
COBALT	0	0.09	
COPPER	0	1.04	
IRON	100000.00	92940.00	92.9
MAGNESIUM	100000.00	99940.00	99.9
MANGANESE	0	0.35	
MOLYBDENUM	2000.00	1890.00	94.5
NICKEL	0	-0.24	
POTASSIUM	100000.00	99380.00	99.4
SELENIUM	0	0.19	
SILVER	0	0.02	
SODIUM	100000.00	102200.00	102.2
THALLIUM	0	0.01	
VANADIUM	0	0.19	
ZINC	0	2.54	

SAMPLE: ICSAB

File: JLE14A May 14, 2018 15:38

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	100600.00	100.6
ANTIMONY	20.00	21.00	105.0
ARSENIC	20.00	19.69	100.0
BARIUM	21.00	21.12	100.0
CADMIUM	20.00	18.01	90.0
CALCIUM	100000.00	96790.00	96.8
COBALT	20.00	19.52	100.0
COPPER	20.00	19.98	100.0
IRON	100000.00	93950.00	94.0
MAGNESIUM	100000.00	101300.00	101.3
MANGANESE	20.00	19.71	100.0
MOLYBDENUM	2000.00	1912.00	95.6
NICKEL	20.00	18.27	90.0
POTASSIUM	100000.00	98850.00	98.9
SELENIUM	20.00	19.38	95.0
SILVER	20.00	17.84	90.0
SODIUM	100000.00	105400.00	105.4
THALLIUM	20.00	21.27	105.0
VANADIUM	20.00	20.78	105.0
ZINC	20.00	19.69	100.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE15C May 15, 2018 19:00

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	91500.00	91.5
ARSENIC	0	0.29	
BERYLLIUM	0	0.00	
CADMIUM	0	0.04	
CALCIUM	100000.00	95500.00	95.5
CHROMIUM	0	0.93	
COBALT	0	0.10	
COPPER	0	1.00	
IRON	100000.00	90640.00	90.6
LEAD	0	0.06	
MAGNESIUM	100000.00	89100.00	89.1
MANGANESE	0	0.38	
MOLYBDENUM	2000.00	1911.00	95.5
NICKEL	0	-0.31	
POTASSIUM	100000.00	95450.00	95.5
SELENIUM	0	0.25	
SILVER	0	0.02	
SODIUM	100000.00	92410.00	92.4
VANADIUM	0	0.22	
ZINC	0	2.48	

SAMPLE: ICSAB

File: JLE15C May 15, 2018 19:04

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	93940.00	93.9
ARSENIC	20.00	19.62	100.0
BERYLLIUM	20.00	21.05	105.0
CADMIUM	20.00	18.49	90.0
CALCIUM	100000.00	96200.00	96.2
CHROMIUM	20.00	20.13	100.0
COBALT	20.00	19.25	95.0
COPPER	20.00	19.39	95.0
IRON	100000.00	91150.00	91.1
LEAD	20.00	20.80	105.0
MAGNESIUM	100000.00	91850.00	91.8
MANGANESE	20.00	19.54	100.0
MOLYBDENUM	2000.00	1960.00	98.0
NICKEL	20.00	18.31	90.0
POTASSIUM	100000.00	97210.00	97.2
SELENIUM	20.00	19.32	95.0
SILVER	20.00	18.35	90.0
SODIUM	100000.00	94170.00	94.2
VANADIUM	20.00	19.81	100.0
ZINC	20.00	20.19	100.0

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18S

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-004P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	5490		3140		2000	117.5	N	84	117	MS
ANTIMONY, TOTAL	96.0		0.30	J	100	95.7		85	117	MS
ARSENIC, TOTAL	111		12		100	99.3		84	116	MS
BARIUM, TOTAL	2070		96.8		2000	98.8		86	114	MS
BERYLLIUM, TOTAL	49.4		0.16	J	50	98.5		83	121	MS
CADMIUM, TOTAL	231		0.20	U	250	92.3		87	115	MS
CALCIUM, TOTAL	374000		372000		2500	96.0		87	118	MS
CHROMIUM, TOTAL	220		27.8		200	96.0		85	116	MS
COBALT, TOTAL	504		1.96		500	100.5		86	115	MS
COPPER, TOTAL	248		12.6		250	94.2		85	118	MS
IRON, TOTAL	11900		11200		1000	69.0	N	87	118	MS
LEAD, TOTAL	104		3.40		100	100.4		88	115	MS
MAGNESIUM, TOTAL	86600		79200		5000	148.0	N	83	118	MS
MANGANESE, TOTAL	1820		1370		500	89.4		87	115	MS
MERCURY, TOTAL	0.816		0.044	J	1	77.2	N	82	119	CV
NICKEL, TOTAL	489		10.9		500	95.6		85	117	MS
POTASSIUM, TOTAL	29200		19600		10000	96.2		87	115	MS
SELENIUM, TOTAL	96.4		2.12	J	100	94.3		80	120	MS
SILVER, TOTAL	46.1		0.40	U	50	92.2		85	116	MS
SODIUM, TOTAL	337000		319000		7500	239.3	N	85	117	MS
THALLIUM, TOTAL	104		0.11	J	100	104.3		82	116	MS
VANADIUM, TOTAL	516		7.28		500	101.7		86	115	MS
ZINC, TOTAL	594		142		500	90.3		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18S

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-004S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	5830		3140		2000	134.5	N	84	117	MS
ANTIMONY, TOTAL	101		0.30	J	100	100.8		85	117	MS
ARSENIC, TOTAL	120		12		100	108.3		84	116	MS
BARIUM, TOTAL	2170		96.8		2000	103.5		86	114	MS
BERYLLIUM, TOTAL	56.0		0.16	J	50	111.8		83	121	MS
CADMIUM, TOTAL	270		0.20	U	250	108.1		87	115	MS
CALCIUM, TOTAL	418000		372000		2500	1850.0	N	87	118	MS
CHROMIUM, TOTAL	246		27.8		200	109.1		85	116	MS
COBALT, TOTAL	533		1.96		500	106.2		86	115	MS
COPPER, TOTAL	265		12.6		250	100.9		85	118	MS
IRON, TOTAL	12600		11200		1000	141.0	N	87	118	MS
LEAD, TOTAL	119		3.40		100	115.7	N	88	115	MS
MAGNESIUM, TOTAL	94200		79200		5000	300.0	N	83	118	MS
MANGANESE, TOTAL	1950		1370		500	115.2	N	87	115	MS
MERCURY, TOTAL	0.965		0.044	J	1	92.1		82	119	CV
NICKEL, TOTAL	506		10.9		500	98.9		85	117	MS
POTASSIUM, TOTAL	31900		19600		10000	123.3	N	87	115	MS
SELENIUM, TOTAL	107		2.12	J	100	104.8		80	120	MS
SILVER, TOTAL	53.9		0.40	U	50	107.8		85	116	MS
SODIUM, TOTAL	357000		319000		7500	510.0	N	85	117	MS
THALLIUM, TOTAL	110		0.11	J	100	109.6		82	116	MS
VANADIUM, TOTAL	554		7.28		500	109.2		86	115	MS
ZINC, TOTAL	638		142		500	99.2		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FFS

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-005P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	2090		9.8	J	2000	104.1		84	117	MS
ANTIMONY, DISSOLVED	95.4		0.26	J	100	95.1		85	117	MS
ARSENIC, DISSOLVED	113		12		100	100.8		84	116	MS
BARIUM, DISSOLVED	1970		30.6		2000	96.8		86	114	MS
BERYLLIUM, DISSOLVED	50.9		0.20	U	50	101.8		83	121	MS
CADMIUM, DISSOLVED	235		0.20	U	250	94.0		87	115	MS
CALCIUM, DISSOLVED	387000		381000		2500	242.0	N	87	118	MS
CHROMIUM, DISSOLVED	198		1.9	J	200	98.2		85	116	MS
COBALT, DISSOLVED	511		0.805	J	500	102.0		86	115	MS
COPPER, DISSOLVED	243		1.5	J	250	96.5		85	118	MS
IRON, DISSOLVED	8140		6960		1000	117.5		87	118	MS
LEAD, DISSOLVED	102		0.50	U	100	101.8		88	115	MS
MAGNESIUM, DISSOLVED	87800		81900		5000	117.0		83	118	MS
MANGANESE, DISSOLVED	1870		1340		500	106.1		87	115	MS
MERCURY, DISSOLVED	0.905		0.10	U	1	90.5		82	119	CV
NICKEL, DISSOLVED	488		4.24		500	96.7		85	117	MS
POTASSIUM, DISSOLVED	29100		19100		10000	99.8		87	115	MS
SELENIUM, DISSOLVED	97.5		2.31	J	100	95.2		80	120	MS
SILVER, DISSOLVED	47.2		0.40	U	50	94.4		85	116	MS
SODIUM, DISSOLVED	352000		330000		7500	296.0	N	85	117	MS
THALLIUM, DISSOLVED	102		0.40	U	100	101.8		82	116	MS
VANADIUM, DISSOLVED	516		0.82	J	500	103.1		86	115	MS
ZINC, DISSOLVED	514		49.1		500	92.9		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FFS

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-005S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	2050		9.8	J	2000	101.9		84	117	MS
ANTIMONY, DISSOLVED	98.4		0.26	J	100	98.1		85	117	MS
ARSENIC, DISSOLVED	111		12		100	99.0		84	116	MS
BARIUM, DISSOLVED	2020		30.6		2000	99.5		86	114	MS
BERYLLIUM, DISSOLVED	49.9		0.20	U	50	99.8		83	121	MS
CADMIUM, DISSOLVED	234		0.20	U	250	93.5		87	115	MS
CALCIUM, DISSOLVED	390000		381000		2500	366.0	N	87	118	MS
CHROMIUM, DISSOLVED	195		1.9	J	200	96.7		85	116	MS
COBALT, DISSOLVED	500		0.805	J	500	99.8		86	115	MS
COPPER, DISSOLVED	239		1.5	J	250	95.0		85	118	MS
IRON, DISSOLVED	8020		6960		1000	106.0		87	118	MS
LEAD, DISSOLVED	102		0.50	U	100	101.6		88	115	MS
MAGNESIUM, DISSOLVED	88500		81900		5000	132.0	N	83	118	MS
MANGANESE, DISSOLVED	1850		1340		500	102.1		87	115	MS
MERCURY, DISSOLVED	0.892		0.10	U	1	89.2		82	119	CV
NICKEL, DISSOLVED	487		4.24		500	96.5		85	117	MS
POTASSIUM, DISSOLVED	29600		19100		10000	105.3		87	115	MS
SELENIUM, DISSOLVED	96.2		2.31	J	100	93.8		80	120	MS
SILVER, DISSOLVED	47.2		0.40	U	50	94.3		85	116	MS
SODIUM, DISSOLVED	347000		330000		7500	225.3	N	85	117	MS
THALLIUM, DISSOLVED	102		0.40	U	100	102.4		82	116	MS
VANADIUM, DISSOLVED	504		0.82	J	500	100.5		86	115	MS
ZINC, DISSOLVED	508		49.1		500	91.8		83	119	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18S

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-004A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	806		628		200	88.9		80	120	MS
ANTIMONY, TOTAL	2.04		0.061	J	2	99.0		80	120	MS
ARSENIC, TOTAL	12.8		2.4		10	103.5		80	120	MS
BARIUM, TOTAL	22.9		19.4		4	87.5		80	120	MS
BERYLLIUM, TOTAL	2.14		0.032	J	2	105.1		80	120	MS
CADMIUM, TOTAL	2.06		0.0059	U	2	102.9		80	120	MS
CALCIUM, TOTAL	72700		74400		200	-860.0	A	80	120	MS
CHROMIUM, TOTAL	15.3		5.55		10	97.5		80	120	MS
COBALT, TOTAL	2.36		0.392		2	98.2		80	120	MS
COPPER, TOTAL	8.42		2.52		6	98.4		80	120	MS
IRON, TOTAL	2430		2250		200	91.0		80	120	MS
LEAD, TOTAL	2.77		0.680		2	104.7		80	120	MS
MAGNESIUM, TOTAL	15800		15800		200	-20.0	A	80	120	MS
MANGANESE, TOTAL	275		275		4	7.5	A	80	120	MS
MERCURY, TOTAL	0.846		0.044	J	1	80.2		80	120	CV
NICKEL, TOTAL	5.74		2.17		4	89.3		80	120	MS
POTASSIUM, TOTAL	5820		3920		2000	95.0		80	120	MS
SELENIUM, TOTAL	10.3		0.424	J	10	98.5		80	120	MS
SILVER, TOTAL	2.03		0.010	U	2	101.5		80	120	MS
SODIUM, TOTAL	64700		63800		2000	46.0	A	80	120	MS
THALLIUM, TOTAL	2.12		0.022	J	2	105.2		80	120	MS
VANADIUM, TOTAL	11.4		1.46		10	99.6		80	120	MS
ZINC, TOTAL	47.1		28.4		20	93.7		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FFS

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-005A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	212		2.0	J	200	104.8		80	120	MS
ANTIMONY, DISSOLVED	1.83		0.051	J	2	88.8		80	120	MS
ARSENIC, DISSOLVED	12.6		2.4		10	101.7		80	120	MS
BARIUM, DISSOLVED	9.90		6.12		4	94.6		80	120	MS
BERYLLIUM, DISSOLVED	2.10		0.0067	U	2	104.8		80	120	MS
CADMIUM, DISSOLVED	1.88		0.0059	U	2	94.0		80	120	MS
CALCIUM, DISSOLVED	75800		76200		200	-205.0	A	80	120	MS
CHROMIUM, DISSOLVED	10.5		0.38	J	10	101.2		80	120	MS
COBALT, DISSOLVED	2.11		0.161	J	2	97.3		80	120	MS
COPPER, DISSOLVED	6.06		0.30	J	6	96.0		80	120	MS
IRON, DISSOLVED	1590		1390		200	101.0		80	120	MS
LEAD, DISSOLVED	2.00		0.015	U	2	100.3		80	120	MS
MAGNESIUM, DISSOLVED	16400		16400		200	5.0	A	80	120	MS
MANGANESE, DISSOLVED	269		268		4	35.0	A	80	120	MS
MERCURY, DISSOLVED	0.813		0.013	U	1	81.3		80	120	CV
NICKEL, DISSOLVED	4.74		0.848		4	97.2		80	120	MS
POTASSIUM, DISSOLVED	5750		3820		2000	96.6		80	120	MS
SELENIUM, DISSOLVED	9.95		0.462	J	10	94.9		80	120	MS
SILVER, DISSOLVED	1.89		0.010	U	2	94.5		80	120	MS
SODIUM, DISSOLVED	68400		66000		2000	118.5		80	120	MS
THALLIUM, DISSOLVED	1.93		0.012	U	2	96.7		80	120	MS
VANADIUM, DISSOLVED	10.4		0.16	J	10	102.0		80	120	MS
ZINC, DISSOLVED	28.4		9.81		20	93.1		80	120	MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-004

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ALUMINUM, TOTAL		5830		5490		6.0		MS
ANTIMONY, TOTAL		101		96.0		5.1		MS
ARSENIC, TOTAL		120		111		7.8		MS
BARIUM, TOTAL		2170		2070		4.4		MS
BERYLLIUM, TOTAL		56.0		49.4		12.6		MS
CADMIUM, TOTAL		270		231		15.8		MS
CALCIUM, TOTAL		418000		374000		11.1		MS
CHROMIUM, TOTAL		246		220		11.2		MS
COBALT, TOTAL		533		504		5.5		MS
COPPER, TOTAL		265		248		6.5		MS
IRON, TOTAL		12600		11900		5.9		MS
LEAD, TOTAL		119		104		13.7		MS
MAGNESIUM, TOTAL		94200		86600		8.4		MS
MANGANESE, TOTAL		1950		1820		6.9		MS
MERCURY, TOTAL		0.965		0.816		16.7		CV
NICKEL, TOTAL		506		489		3.3		MS
POTASSIUM, TOTAL		31900		29200		8.8		MS
SELENIUM, TOTAL		107		96.4		10.4		MS
SILVER, TOTAL		53.9		46.1		15.6		MS
SODIUM, TOTAL		357000		337000		5.8		MS
THALLIUM, TOTAL		110		104		5.0		MS
VANADIUM, TOTAL		554		516		7.0		MS
ZINC, TOTAL		638		594		7.2		MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FF

Matrix: WATER **SDG Name:** SL3808

Percent Solids: 0.00 **Lab Sample ID:** SL3808-005

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ALUMINUM, DISSOLVED		2050		2090		2.1		MS
ANTIMONY, DISSOLVED		98.4		95.4		3.1		MS
ARSENIC, DISSOLVED		111		113		1.7		MS
BARIUM, DISSOLVED		2020		1970		2.7		MS
BERYLLIUM, DISSOLVED		49.9		50.9		2.0		MS
CADMIUM, DISSOLVED		234		235		0.5		MS
CALCIUM, DISSOLVED		390000		387000		0.8		MS
CHROMIUM, DISSOLVED		195		198		1.6		MS
COBALT, DISSOLVED		500		511		2.2		MS
COPPER, DISSOLVED		239		243		1.6		MS
IRON, DISSOLVED		8020		8140		1.4		MS
LEAD, DISSOLVED		102		102		0.3		MS
MAGNESIUM, DISSOLVED		88500		87800		0.9		MS
MANGANESE, DISSOLVED		1850		1870		1.1		MS
MERCURY, DISSOLVED		0.892		0.905		1.4		CV
NICKEL, DISSOLVED		487		488		0.2		MS
POTASSIUM, DISSOLVED		29600		29100		1.9		MS
SELENIUM, DISSOLVED		96.2		97.5		1.4		MS
SILVER, DISSOLVED		47.2		47.2		0.0		MS
SODIUM, DISSOLVED		347000		352000		1.5		MS
THALLIUM, DISSOLVED		102		102		0.6		MS
VANADIUM, DISSOLVED		504		516		2.5		MS
ZINC, DISSOLVED		508		514		1.1		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLE07HGW3

Matrix: WATER **SDG Name:** SL3808

QC Batch ID: LE07HGW3

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	4.32	86.4	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLE07IMW1

Matrix: WATER **SDG Name:** SL3808

QC Batch ID: LE07IMW1

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000	2030	101.7	84	117
ANTIMONY	100	101	101.3	85	117
ARSENIC	100	105	104.7	84	116
BARIUM	2000	2030	101.4	86	114
BERYLLIUM	50.0	48.9	97.8	83	121
CADMIUM	250	270	108.1	87	115
CALCIUM	2500	2510	100.5	87	118
CHROMIUM	200	197	98.4	85	116
COBALT	500	525	105.0	86	115
COPPER	250	258	103.2	85	118
IRON	1000	1050	105.5	87	118
LEAD	100	100	100.1	88	115
MAGNESIUM	5000	5020	100.4	83	118
MANGANESE	500	522	104.5	87	115
NICKEL	500	507	101.4	85	117
POTASSIUM	10000	9920	99.2	87	115
SELENIUM	100	104	104.0	80	120
SILVER	50.0	54.6	109.2	85	116
SODIUM	7500	7440	99.1	85	117
THALLIUM	100	104	104.5	82	116
VANADIUM	500	528	105.5	86	115
ZINC	500	518	103.6	83	119

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18L

Matrix: WATER **SDG Name:** SL3808

Lab Sample ID: SL3808-004L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	628		668		6.4		MS
ANTIMONY, TOTAL	0.061	J	0.079	J	29.5		MS
ARSENIC, TOTAL	2.4		2.3	U	100.0		MS
BARIUM, TOTAL	19.4		20.0		3.1		MS
BERYLLIUM, TOTAL	0.032	J	0.034	U	100.0		MS
CADMIUM, TOTAL	0.0059	U	0.029	U			MS
CALCIUM, TOTAL	74400		75400		1.3		MS
CHROMIUM, TOTAL	5.55		5.55		0.0		MS
COBALT, TOTAL	0.392		0.42	J	7.1		MS
COPPER, TOTAL	2.52		2.74	J	8.7		MS
IRON, TOTAL	2250		2300		2.2		MS
LEAD, TOTAL	0.680		0.51	J	25.0		MS
MAGNESIUM, TOTAL	15800		16100		1.9		MS
MANGANESE, TOTAL	275		295		7.3		MS
MERCURY, TOTAL	0.044	J	0.070	J	59.1		CV
NICKEL, TOTAL	2.17		2.20		1.4		MS
POTASSIUM, TOTAL	3920		3840		2.0		MS
SELENIUM, TOTAL	0.424	J	0.19	U	100.0		MS
SILVER, TOTAL	0.010	U	0.050	U			MS
SODIUM, TOTAL	63800		64700		1.4		MS
THALLIUM, TOTAL	0.022	J	0.072	J	227.3		MS
VANADIUM, TOTAL	1.46		1.1	J	24.7		MS
ZINC, TOTAL	28.4		33		16.2		MS

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT18-FFL

Matrix: WATER **SDG Name:** SL3808

Lab Sample ID: SL3808-005L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, DISSOLVED	2.0	J	4.6	J	130.0		MS
ANTIMONY, DISSOLVED	0.051	J	0.069	J	35.3		MS
ARSENIC, DISSOLVED	2.4		3.0	J	25.0		MS
BARIUM, DISSOLVED	6.12		6.06		1.0		MS
BERYLLIUM, DISSOLVED	0.0067	U	0.034	U			MS
CADMIUM, DISSOLVED	0.0059	U	0.029	U			MS
CALCIUM, DISSOLVED	76200		78800		3.4		MS
CHROMIUM, DISSOLVED	0.38	J	0.59	J	55.3		MS
COBALT, DISSOLVED	0.161	J	0.14	J	13.0		MS
COPPER, DISSOLVED	0.30	J	0.56	J	86.7		MS
IRON, DISSOLVED	1390		1510		8.6		MS
LEAD, DISSOLVED	0.015	U	0.075	U			MS
MAGNESIUM, DISSOLVED	16400		17200		4.9		MS
MANGANESE, DISSOLVED	268		292		9.0		MS
MERCURY, DISSOLVED	0.013	U	0.065	U			CV
NICKEL, DISSOLVED	0.848		0.89	J	5.0		MS
POTASSIUM, DISSOLVED	3820		3940		3.1		MS
SELENIUM, DISSOLVED	0.462	J	0.19	U	100.0		MS
SILVER, DISSOLVED	0.010	U	0.050	U			MS
SODIUM, DISSOLVED	66000		68200		3.3		MS
THALLIUM, DISSOLVED	0.012	U	0.060	U			MS
VANADIUM, DISSOLVED	0.16	J	0.50	U	100.0		MS
ZINC, DISSOLVED	9.81		12		22.3		MS

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 4/6/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
MERCURY	0.20	0.025	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:** 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

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

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:** LE07HGW3

Matrix: WATER **SDG Name:** SL3808

Method: CV **Prep Date:** 05/07/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLE07HGW3	LCSWLE07HGW3	0.025	0.025	
PBWLE07HGW3	PBWLE07HGW3	0.025	0.025	
CHAAP-19C-UGIA-DPT17	SL3808-002	0.025	0.025	D
CHAAP-19C-UGIA-DPT17-FF	SL3808-003	0.025	0.025	A
CHAAP-19C-LGIA-DPT18	SL3808-004	0.025	0.025	L
CHAAP-19C-LGIA-DPT18P	SL3808-004P	0.025	0.025	L
CHAAP-19C-LGIA-DPT18S	SL3808-004S	0.025	0.025	L
CHAAP-19C-LGIA-DPT18-FF	SL3808-005	0.025	0.025	A
CHAAP-19C-LGIA-DPT18-FFP	SL3808-005P	0.025	0.025	A
CHAAP-19C-LGIA-DPT18-FFS	SL3808-005S	0.025	0.025	A
CHAAP-19C-UGIA-DPT13	SL3808-006	0.025	0.025	D
CHAAP-19C-UGIA-DPT13-FF	SL3808-007	0.025	0.025	A
CHAAP-19C-LGIA-DPT14	SL3808-008	0.025	0.025	D
CHAAP-19C-LGIA-DPT14-FF	SL3808-009	0.025	0.025	A
CHAAP-19C-LGIA-DPT114	SL3808-010	0.025	0.025	D
CHAAP-19C-LGIA-DPT114-FF	SL3808-011	0.025	0.025	A
CHAAP-19C-UGIA-DPT02	SL3808-012	0.025	0.025	D
CHAAP-19C-UGIA-DPT02-FF	SL3808-013	0.025	0.025	A
CHAAP-EB-050218-DPT	SL3808-014	0.025	0.025	D
CHAAP-19C-LGIA-DPT22	SL3808-015	0.025	0.025	D
CHAAP-19C-LGIA-DPT22-FF	SL3808-016	0.025	0.025	A
CHAAP-19C-UGIA-DPT21	SL3808-017	0.025	0.025	D
CHAAP-19C-UGIA-DPT21-FF	SL3808-018	0.025	0.025	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LE07IMW1

Matrix: WATER **SDG Name:** SL3808

Method: MS **Prep Date:** 05/07/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLE07IMW1	LCSWLE07IMW1	0.05	0.05	
PBWLE07IMW1	PBWLE07IMW1	0.05	0.05	
CHAAP-19C-UGIA-DPT17	SL3808-002	0.05	0.05	E
CHAAP-19C-UGIA-DPT17-FF	SL3808-003	0.05	0.05	A
CHAAP-19C-LGIA-DPT18	SL3808-004	0.05	0.05	J
CHAAP-19C-LGIA-DPT18P	SL3808-004P	0.05	0.05	J
CHAAP-19C-LGIA-DPT18S	SL3808-004S	0.05	0.05	J
CHAAP-19C-LGIA-DPT18-FF	SL3808-005	0.05	0.05	C
CHAAP-19C-LGIA-DPT18-FFP	SL3808-005P	0.05	0.05	C
CHAAP-19C-LGIA-DPT18-FFS	SL3808-005S	0.05	0.05	C
CHAAP-19C-UGIA-DPT13	SL3808-006	0.05	0.05	D
CHAAP-19C-UGIA-DPT13-FF	SL3808-007	0.05	0.05	A
CHAAP-19C-LGIA-DPT14	SL3808-008	0.05	0.05	D
CHAAP-19C-LGIA-DPT14-FF	SL3808-009	0.05	0.05	A
CHAAP-19C-LGIA-DPT114	SL3808-010	0.05	0.05	D
CHAAP-19C-LGIA-DPT114-FF	SL3808-011	0.05	0.05	A
CHAAP-19C-UGIA-DPT02	SL3808-012	0.05	0.05	D
CHAAP-19C-UGIA-DPT02-FF	SL3808-013	0.05	0.05	A
CHAAP-EB-050218-DPT	SL3808-014	0.05	0.05	D
CHAAP-19C-LGIA-DPT22	SL3808-015	0.05	0.05	A
CHAAP-19C-LGIA-DPT22-FF	SL3808-016	0.05	0.05	D
CHAAP-19C-UGIA-DPT21	SL3808-017	0.05	0.05	A
CHAAP-19C-UGIA-DPT21-FF	SL3808-018	0.05	0.05	D

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	12:00	Hg
Standard #1 (0.2 ppb		1	12:02	Hg
Standard #2 (0.5 ppb		1	12:04	Hg
Standard #3 (1.0 ppb		1	12:06	Hg
Standard #4 (5.0 ppb		1	12:08	Hg
Standard #5 (10.0 pp		1	12:10	Hg
ICV		1	12:13	HG
ICB		1	12:15	HG
PQL		1	12:17	HG
CCV		1	12:19	HG
CCB		1	12:21	HG
ZZZZZZ		1	12:23	
ZZZZZZ		1	12:25	
ZZZZZZ		1	12:27	
ZZZZZZ		1	12:29	
ZZZZZZ		1	12:32	
ZZZZZZ		1	12:34	
ZZZZZZ		5	12:36	
ZZZZZZ		1	12:38	
ZZZZZZ		1	12:40	
CCV		1	12:42	HG
CCB		1	12:44	HG
ZZZZZZ		1	12:47	
ZZZZZZ		1	12:49	
ZZZZZZ		1	12:51	
ZZZZZZ		1	12:53	
ZZZZZZ		1	12:55	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	12:57	
ZZZZZZ		1	12:59	
ZZZZZZ		1	13:01	
ZZZZZZ		1	13:04	
ZZZZZZ		1	13:06	
CCV		1	13:08	HG
CCB		1	13:10	HG
ZZZZZZ		1	13:12	
ZZZZZZ		1	13:14	
ZZZZZZ		1	13:16	
ZZZZZZ		5	13:19	
ZZZZZZ		1	13:21	
ZZZZZZ		1	13:23	
ZZZZZZ		1	13:25	
ZZZZZZ		1	13:27	
ZZZZZZ		1	13:29	
ZZZZZZ		1	13:32	
CCV		1	13:34	HG
CCB		1	13:36	HG
ZZZZZZ		1	13:38	
ZZZZZZ		1	13:40	
ZZZZZZ		1	13:42	
ZZZZZZ		1	13:44	
ZZZZZZ		1	13:47	
ZZZZZZ		1	13:49	
ZZZZZZ		1	13:52	
ZZZZZZ		1	13:54	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	13:56	
ZZZZZZ		1	13:59	
CCV		1	14:01	HG
CCB		1	14:03	HG
SL3808-002	CHAAP-19C-UGIA-DPT17	1	14:05	HG
SL3808-003	CHAAP-19C-UGIA-DPT17-FF	1	14:07	HG
SL3808-004	CHAAP-19C-LGIA-DPT18	1	14:09	HG
SL3808-004L	CHAAP-19C-LGIA-DPT18L	5	14:12	HG
SL3808-004A	CHAAP-19C-LGIA-DPT18A	1	14:14	HG
SL3808-004S	CHAAP-19C-LGIA-DPT18S	1	14:16	HG
SL3808-004P	CHAAP-19C-LGIA-DPT18P	1	14:18	HG
SL3808-005	CHAAP-19C-LGIA-DPT18-FF	1	14:20	HG
SL3808-005L	CHAAP-19C-LGIA-DPT18-FFL	5	14:22	HG
SL3808-005A	HAAP-19C-LGIA-DPT18-FFA	1	14:25	HG
CCV		1	14:27	HG
CCB		1	14:29	HG
SL3808-006	CHAAP-19C-UGIA-DPT13	1	14:31	HG
SL3808-007	CHAAP-19C-UGIA-DPT13-FF	1	14:35	HG
SL3808-009	CHAAP-19C-LGIA-DPT14-FF	1	14:37	HG
SL3808-010	CHAAP-19C-LGIA-DPT114	1	14:39	HG
SL3808-011	CHAAP-19C-LGIA-DPT114-FF	1	14:41	HG
SL3808-012	CHAAP-19C-UGIA-DPT02	1	14:43	HG
SL3808-013	CHAAP-19C-UGIA-DPT02-FF	1	14:46	HG
SL3808-014	CHAAP-EB-050218-DPT	1	14:48	HG
SL3808-015	CHAAP-19C-LGIA-DPT22	1	14:50	HG
SL3808-017	CHAAP-19C-UGIA-DPT21	1	14:52	HG
CCV		1	14:57	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
CCB		1	14:59	HG
SL3808-018	CHAAP-19C-UGIA-DPT21-FF	1	15:01	HG
ZZZZZZ		1	15:03	
ZZZZZZ		1	15:05	
ZZZZZZ		1	15:07	
ZZZZZZ		1	15:10	
ZZZZZZ		1	15:15	
ZZZZZZ		1	15:18	
ZZZZZZ		1	15:20	
ZZZZZZ		1	15:22	
ZZZZZZ		1	15:24	
CCV		1	15:26	HG
CCB		1	15:28	HG
ZZZZZZ		1	15:30	
ZZZZZZ		5	15:33	
ZZZZZZ		1	15:35	
ZZZZZZ		1	15:37	
ZZZZZZ		1	15:39	
ZZZZZZ		1	15:41	
ZZZZZZ		1	15:43	
ZZZZZZ		1	15:45	
ZZZZZZ		1	15:48	
ZZZZZZ		1	15:50	
CCV		1	15:52	HG
CCB		1	15:54	HG
ZZZZZZ		1	15:56	
ZZZZZZ		1	15:58	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	16:00	
ZZZZZZ		1	16:03	
ZZZZZZ		1	16:05	
PBWLE07HGW3		1	16:07	HG
LCSWLE07HGW3		1	16:09	HG
SL3808-005S	HAAP-19C-LGIA-DPT18-FFS	1	16:11	HG
SL3808-005P	HAAP-19C-LGIA-DPT18-FFP	1	16:13	HG
SL3808-008	CHAAP-19C-LGIA-DPT14	1	16:16	HG
CCV		1	16:18	HG
CCB		1	16:20	HG
SL3808-016	CHAAP-19C-LGIA-DPT22-FF	1	16:22	HG
CCV		1	16:24	HG
CCB		1	16:27	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:23	
200.8 TUNE		1	14:26	
Cal Blank		1	15:12	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std		1	15:16	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	15:20	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	15:23	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	15:26	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	15:30	
ICSA		1	15:34	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	15:38	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	15:41	
ZZZZZZ		1	15:45	
ZZZZZZ		1	15:48	
ZZZZZZ		1	15:52	
ZZZZZZ		1	15:56	
CCV		1	16:00	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:03	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	16:07	
ZZZZZZ		1	16:11	
ZZZZZZ		1	16:14	
ZZZZZZ		5	16:18	
ZZZZZZ		1	16:22	
ZZZZZZ		25	16:26	
ZZZZZZ		1	16:30	
ZZZZZZ		1	16:33	
ZZZZZZ		5	16:37	
ZZZZZZ		5	16:41	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	16:45	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:49	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		10	16:52	
ZZZZZZ		10	16:56	
ZZZZZZ		10	17:00	
ZZZZZZ		10	17:04	
ZZZZZZ		10	17:08	
ZZZZZZ		10	17:12	
ZZZZZZ		1	17:16	
ZZZZZZ		5	17:20	
ZZZZZZ		5	17:24	
ZZZZZZ		5	17:28	
CCV		1	17:32	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:36	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	17:40	
ZZZZZZ		5	17:44	
ZZZZZZ		5	17:48	
ZZZZZZ		5	17:52	
ZZZZZZ		5	17:56	
ZZZZZZ		5	18:00	
ZZZZZZ		10	18:04	
ZZZZZZ		10	18:08	
ZZZZZZ		50	18:12	
ZZZZZZ		10	18:16	
CCV		1	18:20	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:24	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		10	18:28	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		10	18:32	
ZZZZZZ		10	18:37	
ZZZZZZ		1	18:41	
ZZZZZZ		1	18:45	
ZZZZZZ		5	18:49	
ZZZZZZ		1	18:53	
ZZZZZZ		1	18:57	
ZZZZZZ		1	19:01	
ZZZZZZ		1	19:05	
CCV		1	19:09	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:13	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	19:17	
ZZZZZZ		1	19:22	
PBWLE07IMW1		5	19:26	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
LCSWLE07IMW1		5	19:30	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-002	CHAAP-19C-UGIA-DPT17	5	19:34	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-003	CHAAP-19C-UGIA-DPT17-FF	5	19:38	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-004	CHAAP-19C-LGIA-DPT18	5	19:42	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-004L	CHAAP-19C-LGIA-DPT18L	25	19:47	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-004A	CHAAP-19C-LGIA-DPT18A	5	19:51	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
SL3808-004S	CHAAP-19C-LGIA-DPT18S	5	19:55	Sb As Ba Cd Co Cu Fe Mn Ni Se Ag Tl V Zn
CCV		1	19:59	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:03	Al Sb As Ba Cd Ca Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
SL3808-004P	CHAAP-19C-LGIA-DPT18P	5	20:07	Sb Ba Tl
SL3808-005	CHAAP-19C-LGIA-DPT18-FF	5	20:11	Sb Ba Tl
SL3808-005L	CHAAP-19C-LGIA-DPT18-FFL	25	20:16	Sb Ba Tl
SL3808-005A	CHAAP-19C-LGIA-DPT18-FFA	5	20:20	Sb Ba Tl

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements																						
SL3808-005S	HAAP-19C-LGIA-DPT18-FFS	5	20:24				Sb			Ba														Tl		
SL3808-005P	HAAP-19C-LGIA-DPT18-FFP	5	20:28				Sb			Ba														Tl		
SL3808-006	CHAAP-19C-UGIA-DPT13	5	20:33				Sb			Ba														Tl		
SL3808-007	CHAAP-19C-UGIA-DPT13-FF	5	20:37				Sb			Ba														Tl		
SL3808-008	CHAAP-19C-LGIA-DPT14	5	20:41				Sb			Ba														Tl		
SL3808-009	CHAAP-19C-LGIA-DPT14-FF	5	20:45				Sb			Ba														Tl		
CCV		1	20:49	Al		Sb		As		Ba		Cd	Ca		Co	Cu		Fe		Mg	Mn		Mo	Ni	K	Se	Ag	Na	Tl		V	Zn
CCB		1	20:53	Al		Sb		As		Ba		Cd	Ca		Co	Cu		Fe		Mg	Mn		Mo	Ni	K	Se	Ag	Na	Tl		V	Zn
SL3808-010	CHAAP-19C-LGIA-DPT114	5	20:58				Sb			Ba														Tl		
SL3808-011	CHAAP-19C-LGIA-DPT114-FF	5	21:02				Sb			Ba														Tl		
SL3808-012	CHAAP-19C-UGIA-DPT02	5	21:06				Sb			Ba														Tl		
SL3808-013	CHAAP-19C-UGIA-DPT02-FF	5	21:10				Sb			Ba														Tl		
SL3808-014	CHAAP-EB-050218-DPT	5	21:14				Sb			Ba														Tl		
SL3808-015	CHAAP-19C-LGIA-DPT22	5	21:19				Sb			Ba														Tl		
SL3808-016	CHAAP-19C-LGIA-DPT22-FF	5	21:23				Sb			Ba														Tl		
SL3808-017	CHAAP-19C-UGIA-DPT21	5	21:27				Sb			Ba														Tl		
SL3808-018	CHAAP-19C-UGIA-DPT21-FF	5	21:31				Sb			Ba														Tl		
ZZZZZZ		1	21:36																							
CCV		1	21:40	Al		Sb		As		Ba		Cd	Ca		Co	Cu		Fe		Mg	Mn		Mo	Ni	K	Se	Ag	Na	Tl		V	Zn
CCB		1	21:44	Al		Sb		As		Ba		Cd	Ca		Co	Cu		Fe		Mg	Mn		Mo	Ni	K	Se	Ag	Na	Tl		V	Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:18	
200.8 TUNE		1	14:21	
Cal Blank		1	18:36	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
Cal Std		1	18:40	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ICV		1	18:44	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ICB		1	18:48	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
PQL		1	18:52	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	18:56	
ICSA		1	19:00	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ICSAB		1	19:04	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	19:08	
ZZZZZZ		1	19:13	
ZZZZZZ		1	19:16	
ZZZZZZ		1	19:21	
ZZZZZZ		1	19:25	
CCV		1	19:29	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	19:33	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	19:37	
ZZZZZZ		5	19:41	
ZZZZZZ		1	19:45	
ZZZZZZ		1	19:50	
ZZZZZZ		5	19:54	
ZZZZZZ		5	19:58	
ZZZZZZ		1	20:02	
PBWLE07IMW1		5	20:07	Al Be Ca Cr Pb Mg K Na
LCSWLE07IMW1		5	20:11	Al Be Ca Cr Pb Mg K Na
SL3808-002	CHAAP-19C-UGIA-DPT17	5	20:15	Al Be Ca Cr Pb Mg K Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements																						
CCV		1	20:19	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
CCB		1	20:23	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
SL3808-003	CHAAP-19C-UGIA-DPT17-FF	5	20:27	Al		Be		Ca	Cr				Pb	Mg				K			Na					
SL3808-004	CHAAP-19C-LGIA-DPT18	5	20:31	Al		Be		Ca	Cr				Pb	Mg				K			Na					
SL3808-004L	CHAAP-19C-LGIA-DPT18L	25	20:36	Al		Be		Ca	Cr				Pb	Mg				K			Na					
SL3808-004A	CHAAP-19C-LGIA-DPT18A	5	20:40	Al		Be		Ca	Cr				Pb	Mg				K			Na					
SL3808-004S	CHAAP-19C-LGIA-DPT18S	5	20:44	Al		Be		Ca	Cr				Pb	Mg				K			Na					
SL3808-004P	CHAAP-19C-LGIA-DPT18P	5	20:48	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-005	CHAAP-19C-LGIA-DPT18-FF	5	20:52	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-005L	CHAAP-19C-LGIA-DPT18-FFL	25	20:56	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-005A	HAAP-19C-LGIA-DPT18-FFA	5	21:01	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
ZZZZZZ		5	21:05																							
CCV		1	21:09	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
CCB		1	21:13	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
SL3808-005S	HAAP-19C-LGIA-DPT18-FFS	5	21:17	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-005P	HAAP-19C-LGIA-DPT18-FFP	5	21:21	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-006	CHAAP-19C-UGIA-DPT13	5	21:25	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-007	CHAAP-19C-UGIA-DPT13-FF	5	21:30	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-008	CHAAP-19C-LGIA-DPT14	5	21:34	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-009	CHAAP-19C-LGIA-DPT14-FF	5	21:38	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-010	CHAAP-19C-LGIA-DPT114	5	21:42	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-011	CHAAP-19C-LGIA-DPT114-FF	5	21:47	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
SL3808-012	CHAAP-19C-UGIA-DPT02	5	21:51	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn
ZZZZZZ		1	21:55																							
CCV		1	21:59	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
CCB		1	22:03	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na				V	Zn
SL3808-013	CHAAP-19C-UGIA-DPT02-FF	5	22:07	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na				V	Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3808

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SL3808-014	CHAAP-EB-050218-DPT	5	22:12	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na V Zn
SL3808-015	CHAAP-19C-LGIA-DPT22	5	22:16	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na V Zn
SL3808-016	CHAAP-19C-LGIA-DPT22-FF	5	22:20	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na V Zn
SL3808-017	CHAAP-19C-UGIA-DPT21	5	22:24	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na V Zn
SL3808-018	CHAAP-19C-UGIA-DPT21-FF	5	22:28	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na V Zn
ZZZZZZ		1	22:33	
ZZZZZZ		1	22:37	
ZZZZZZ		5	22:41	
ZZZZZZ		5	22:45	
CCV		1	22:49	Al As Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	22:53	Al As Be Cd Ca Cr Co Cu Fe Pb 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**: 05/07/2018

FILE NAME: HLE07A **METHOD**: CVAA

☐ 245.1
☑ 7470
☐ 7471
☑ DoD
☐ _____

REVIEWED
amj 5/7/18
KATAHDIN ANALYTICAL
METALS SECTION

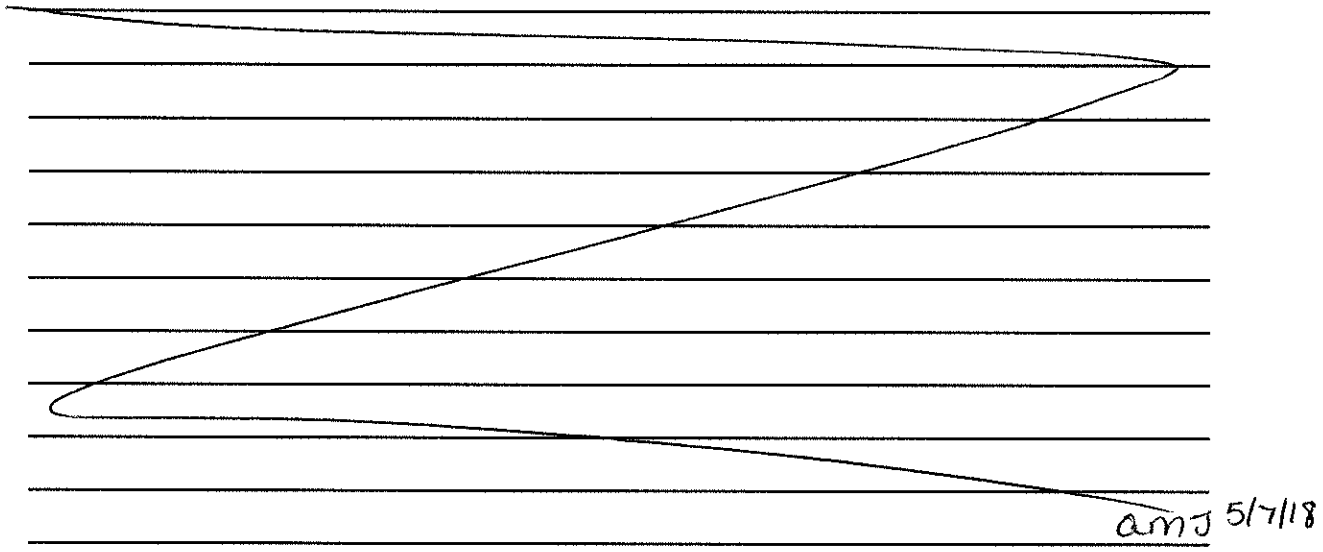
Analyte : Mercury

$SnCl_2$ Lot : MR2005

STANDARDS USED:

Standard Name	Prep. Date	Expiration Date	Standard Conc.
Cal. Blank / ICB / CCB	05/07/2018	06/01/2018	0.00 ug/L
Standard #1 / PQL	05/07/2018	06/01/2018	0.20 ug/L
Standard #2	05/07/2018	06/01/2018	0.50 ug/L
Standard #3	05/07/2018	06/01/2018	1.00 ug/L
Standard #4	05/07/2018	06/01/2018	5.00 ug/L
Standard #5	05/07/2018	06/01/2018	10.00 ug/L
ICV	05/07/2018	06/01/2018	6.00 ug/L

Additional Comments and Notes:



Post Spike (245.1/7470): 0.005 mL MW17721 (pipet M17) into 8.0mL (pipet M12) of sample

Post Spike (7471): 0.008 mL MW17721 (pipet M17) into 8.0mL (pipet M12) of sample

5x Dilution: 1.6mL (pipet M13) of sample + 6.4mL (pipet M13) 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	HLE07A	5/7/2018	12:00	JS
Standard #1 (0.2 ppb)	1.0000	HLE07A	5/7/2018	12:02	JS
Standard #2 (0.5 ppb)	1.0000	HLE07A	5/7/2018	12:04	JS
Standard #3 (1.0 ppb)	1.0000	HLE07A	5/7/2018	12:06	JS
Standard #4 (5.0 ppb)	1.0000	HLE07A	5/7/2018	12:08	JS
Standard #5 (10.0 ppb)	1.0000	HLE07A	5/7/2018	12:10	JS
ICV	1.0000	HLE07A	5/7/2018	12:13	JS
ICB	1.0000	HLE07A	5/7/2018	12:15	JS
PQL	1.0000	HLE07A	5/7/2018	12:17	JS
CCV	1.0000	HLE07A	5/7/2018	12:19	JS
CCB	1.0000	HLE07A	5/7/2018	12:21	JS
PBWLE07HGW1	1.0000	HLE07A	5/7/2018	12:23	JS
LCSWLE07HGW1	1.0000	HLE07A	5/7/2018	12:25	JS
PBSLE04ICS3	1.0000	HLE07A	5/7/2018	12:27	JS
LCSOLE04ICS3	1.0000	HLE07A	5/7/2018	12:29	JS
Q2 SEM MDL01	1.0000	HLE07A	5/7/2018	12:32	JS
SL3557-013	1.0000	HLE07A	5/7/2018	12:34	JS
SL3557-013L	5.0000	HLE07A	5/7/2018	12:36	JS
SL3557-013A	1.0000	HLE07A	5/7/2018	12:38	JS
SL3557-013S	1.0000	HLE07A	5/7/2018	12:40	JS
CCV	1.0000	HLE07A	5/7/2018	12:42	JS
CCB	1.0000	HLE07A	5/7/2018	12:44	JS
SL3557-013P	1.0000	HLE07A	5/7/2018	12:47	JS
SL3557-014	1.0000	HLE07A	5/7/2018	12:49	JS
SL3557-015	1.0000	HLE07A	5/7/2018	12:51	JS
SL3557-016	1.0000	HLE07A	5/7/2018	12:53	JS
SL3557-017	1.0000	HLE07A	5/7/2018	12:55	JS
PBWLE07HGW2	1.0000	HLE07A	5/7/2018	12:57	JS
LCSWLE07HGW2	1.0000	HLE07A	5/7/2018	12:59	JS
SL3265-001	1.0000	HLE07A	5/7/2018	13:01	JS
SL3265-002	1.0000	HLE07A	5/7/2018	13:04	JS
SL3265-003	1.0000	HLE07A	5/7/2018	13:06	JS
CCV	1.0000	HLE07A	5/7/2018	13:08	JS
CCB	1.0000	HLE07A	5/7/2018	13:10	JS
SL3380-001	1.0000	HLE07A	5/7/2018	13:12	JS
SL3380-002	1.0000	HLE07A	5/7/2018	13:14	JS
SL3380-003	1.0000	HLE07A	5/7/2018	13:16	JS
SL3380-003L	5.0000	HLE07A	5/7/2018	13:19	JS
SL3380-003A	1.0000	HLE07A	5/7/2018	13:21	JS
SL3380-003S	1.0000	HLE07A	5/7/2018	13:23	JS
SL3380-003P	1.0000	HLE07A	5/7/2018	13:25	JS
SL3604-001	1.0000	HLE07A	5/7/2018	13:27	JS
SL3708-022	1.0000	HLE07A	5/7/2018	13:29	JS
SL3764-001	1.0000	HLE07A	5/7/2018	13:32	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
CCV	1.0000	HLE07A	5/7/2018	13:34	JS
CCB	1.0000	HLE07A	5/7/2018	13:36	JS
SL3764-002	1.0000	HLE07A	5/7/2018	13:38	JS
SL3764-003	1.0000	HLE07A	5/7/2018	13:40	JS
SL3809-001	1.0000	HLE07A	5/7/2018	13:42	JS
SL3810-001	1.0000	HLE07A	5/7/2018	13:44	JS
SL3810-002	1.0000	HLE07A	5/7/2018	13:47	JS
SL3810-003	1.0000	HLE07A	5/7/2018	13:49	JS
SL3810-004	1.0000	HLE07A	5/7/2018	13:52	JS
SL3810-005	1.0000	HLE07A	5/7/2018	13:54	JS
SL3557-013S	1.0000	HLE07A	5/7/2018	13:56	JS
SL3380-003A	1.0000	HLE07A	5/7/2018	13:59	JS
CCV	1.0000	HLE07A	5/7/2018	14:01	JS
CCB	1.0000	HLE07A	5/7/2018	14:03	JS
SL3808-002	1.0000	HLE07A	5/7/2018	14:05	JS
SL3808-003	1.0000	HLE07A	5/7/2018	14:07	JS
SL3808-004	1.0000	HLE07A	5/7/2018	14:09	JS
SL3808-004L	5.0000	HLE07A	5/7/2018	14:12	JS
SL3808-004A	1.0000	HLE07A	5/7/2018	14:14	JS
SL3808-004S	1.0000	HLE07A	5/7/2018	14:16	JS
SL3808-004P	1.0000	HLE07A	5/7/2018	14:18	JS
SL3808-005	1.0000	HLE07A	5/7/2018	14:20	JS
SL3808-005L	5.0000	HLE07A	5/7/2018	14:22	JS
SL3808-005A	1.0000	HLE07A	5/7/2018	14:25	JS
CCV	1.0000	HLE07A	5/7/2018	14:27	JS
CCB	1.0000	HLE07A	5/7/2018	14:29	JS
SL3808-006	1.0000	HLE07A	5/7/2018	14:31	JS
SL3808-007	1.0000	HLE07A	5/7/2018	14:35	JS
SL3808-009	1.0000	HLE07A	5/7/2018	14:37	JS
SL3808-010	1.0000	HLE07A	5/7/2018	14:39	JS
SL3808-011	1.0000	HLE07A	5/7/2018	14:41	JS
SL3808-012	1.0000	HLE07A	5/7/2018	14:43	JS
SL3808-013	1.0000	HLE07A	5/7/2018	14:46	JS
SL3808-014	1.0000	HLE07A	5/7/2018	14:48	JS
SL3808-015	1.0000	HLE07A	5/7/2018	14:50	JS
SL3808-017	1.0000	HLE07A	5/7/2018	14:52	JS
CCV	1.0000	HLE07A	5/7/2018	14:57	JS
CCB	1.0000	HLE07A	5/7/2018	14:59	JS
SL3808-018	1.0000	HLE07A	5/7/2018	15:01	JS
PBWLE07HGW4	1.0000	HLE07A	5/7/2018	15:03	JS
LCSWLE07HGW4	1.0000	HLE07A	5/7/2018	15:05	JS
SL3841-002	1.0000	HLE07A	5/7/2018	15:07	JS
SL3841-003	1.0000	HLE07A	5/7/2018	15:10	JS
SL3841-004	1.0000	HLE07A	5/7/2018	15:15	JS
SL3841-005	1.0000	HLE07A	5/7/2018	15:18	JS
SL3841-006	1.0000	HLE07A	5/7/2018	15:20	JS
SL3841-008	1.0000	HLE07A	5/7/2018	15:22	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-009	1.0000	HLE07A	5/7/2018	15:24	JS
CCV	1.0000	HLE07A	5/7/2018	15:26	JS
CCB	1.0000	HLE07A	5/7/2018	15:28	JS
SL3841-010	1.0000	HLE07A	5/7/2018	15:30	JS
SL3841-010L	5.0000	HLE07A	5/7/2018	15:33	JS
SL3841-010A	1.0000	HLE07A	5/7/2018	15:35	JS
SL3841-010S	1.0000	HLE07A	5/7/2018	15:37	JS
SL3841-010P	1.0000	HLE07A	5/7/2018	15:39	JS
SL3841-011	1.0000	HLE07A	5/7/2018	15:41	JS
SL3841-012	1.0000	HLE07A	5/7/2018	15:43	JS
SL3841-013	1.0000	HLE07A	5/7/2018	15:45	JS
SL3841-014	1.0000	HLE07A	5/7/2018	15:48	JS
SL3841-015	1.0000	HLE07A	5/7/2018	15:50	JS
CCV	1.0000	HLE07A	5/7/2018	15:52	JS
CCB	1.0000	HLE07A	5/7/2018	15:54	JS
SL3841-016	1.0000	HLE07A	5/7/2018	15:56	JS
SL3841-017	1.0000	HLE07A	5/7/2018	15:58	JS
SL3841-018	1.0000	HLE07A	5/7/2018	16:00	JS
SL3841-019	1.0000	HLE07A	5/7/2018	16:03	JS
SL3841-020	1.0000	HLE07A	5/7/2018	16:05	JS
PBWLE07HGW3	1.0000	HLE07A	5/7/2018	16:07	JS
LCSWLE07HGW3	1.0000	HLE07A	5/7/2018	16:09	JS
SL3808-005S	1.0000	HLE07A	5/7/2018	16:11	JS
SL3808-005P	1.0000	HLE07A	5/7/2018	16:13	JS
SL3808-008	1.0000	HLE07A	5/7/2018	16:16	JS
CCV	1.0000	HLE07A	5/7/2018	16:18	JS
CCB	1.0000	HLE07A	5/7/2018	16:20	JS
SL3808-~~010K~~ JS 5.7.18	1.0000	HLE07A	5/7/2018	16:22	JS
CCV	1.0000	HLE07A	5/7/2018	16:24	JS
CCB	1.0000	HLE07A	5/7/2018	16:27	JS

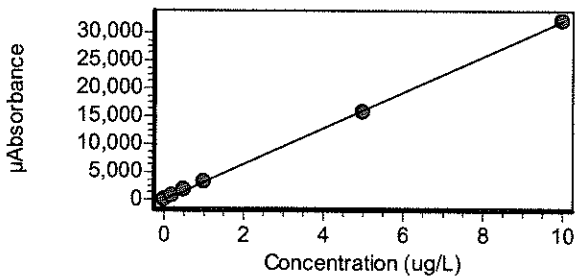
Report Generated By CETAC QuickTrace
Analyst: kasgc
Worksheet file: C:\Program Files\QuickTrace\Worksheets\HLE07A.wsz
Date Started: 5/7/2018 11:39:05 AM
Comment:

Results

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Calibration Blank				STD	05/07/18 12:00:13 pm	0.000	9	152.41		1.00
Replicates	-8.0	5.0	15.2	25.3						
Standard #1 (0.2 ppb)				STD	05/07/18 12:02:19 pm	0.200	660	2.71		1.00
Replicates	648.2	641.8	679.6	670.3						
Standard #2 (0.5 ppb)				STD	05/07/18 12:04:26 pm	0.500	1632	1.75		1.00
Replicates	1602.7	1651.0	1611.9	1660.7						
Standard #3 (1.0 ppb)				STD	05/07/18 12:06:34 pm	1.000	3309	0.58		1.00
Replicates	3336.2	3302.7	3304.2	3291.7						
Standard #4 (5.0 ppb)				STD	05/07/18 12:08:42 pm	5.000	15794	0.37		1.00
Replicates	15854.0	15753.4	15735.4	15834.9						
Standard #5 (10.0 ppb)				STD	05/07/18 12:10:50 pm	10.000	32262	0.22		1.00
Replicates	32295.6	32161.9	32262.6	32327.9						

Calibration

Equation: A = -0.391 + 3213.675C
R2: 0.99988
SEE: 158.7390
Flags:



ICV				ICV	05/07/18 12:13:00 pm	5.739	18442	0.38		1.00
Replicates	18513.3	18373.3	18389.8	18492.8						
% Recovery	95.65									
ICB				ICB	05/07/18 12:15:06 pm	-0.001	-4	609.66		1.00
Replicates	-6.3	-29.2	-9.9	29.4						

Katahdin Analytical Services 4000091

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
PQL					CRDL	05/07/18 12:17:12 pm	0.228	732	0.82		1.00
	Replicates	730.5	727.0	740.8	730.5						
	% Recovery	113.98									
CCV					CCV	05/07/18 12:19:20 pm	4.843	15563	0.22		1.00
	Replicates	15602.9	15520.7	15571.7	15558.7						
	% Recovery	96.86									
CCB					CCB	05/07/18 12:21:27 pm	0.027	85	25.18		1.00
	Replicates	108.5	67.9	98.7	66.2						
PBWLE07HGW1					PBK	05/07/18 12:23:34 pm	0.005	16	211.98		1.00
	Replicates	-33.4	24.1	33.1	39.0						
LCSWLE07HGW1					LCS	05/07/18 12:25:41 pm	4.771	15331	0.32		1.00
	Replicates	15400.8	15320.0	15314.3	15287.6						
	% Recovery	95.41									
PBSLE04ICS3					UNK	05/07/18 12:27:49 pm	0.018	58	22.62		1.00
	Replicates	59.9	64.2	38.8	68.2						
LCSOLE04ICS3					UNK	05/07/18 12:29:57 pm	4.178	13426	0.35		1.00
	Replicates	13496.6	13402.2	13396.5	13407.4						
Q2 SEM MDL01					UNK	05/07/18 12:32:05 pm	0.124	397	11.14		1.00
	Replicates	418.4	429.1	331.9	409.4						
SL3557-013					UNK	05/07/18 12:34:13 pm	0.037	120	6.95		1.00
	Replicates	129.0	125.4	113.4	112.6						
SL3557-013L					UNK	05/07/18 12:36:21 pm	0.113	72	10.22		5.00
	Replicates	70.0	75.7	79.9	62.9						
SL3557-013A					UNK	05/07/18 12:38:29 pm	0.859	2759	0.85		1.00
	Replicates	2770.4	2733.2	2785.3	2746.3						
SL3557-013S					UNK	05/07/18 12:40:37 pm	0.331	1062	3.35		1.00
	Replicates	1070.3	1039.9	1028.9	1108.4						

Reanalyzed to Confirm result JS 5.7.18

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/07/18 12:42:45 pm	4.887	15706	0.33		1.00
	Replicates	15775.4	15699.1	15649.1	15698.6						
	% Recovery	97.74									
CCB					CCB	05/07/18 12:44:52 pm	0.006	20	170.66		1.00
	Replicates	24.8	30.8	-27.9	51.1						
SL3557-013P					UNK	05/07/18 12:47:00 pm	1.301	4182	0.79		1.00
	Replicates	4170.2	4140.2	4202.4	4213.4						
SL3557-014					UNK	05/07/18 12:49:08 pm	0.011	36	57.19		1.00
	Replicates	8.3	52.2	50.7	32.2						
SL3557-015					UNK	05/07/18 12:51:16 pm	0.009	29	140.40		1.00
	Replicates	51.1	75.2	6.6	-15.4						
SL3557-016					UNK	05/07/18 12:53:25 pm	0.013	42	59.68		1.00
	Replicates	29.7	60.2	66.9	13.2						
SL3557-017					UNK	05/07/18 12:55:34 pm	0.016	51	42.41		1.00
	Replicates	77.6	38.0	29.5	57.1						
PBWLE07HGW2					PBK	05/07/18 12:57:43 pm	0.002	5	149.57		1.00
	Replicates	10.4	12.1	-3.4	0.8						
LCSWLE07HGW2					LCS	05/07/18 12:59:51 pm	4.670	15008	0.27		1.00
	Replicates	15064.9	15011.2	14986.0	14971.5						
	% Recovery	93.41									
SL3265-001					UNK	05/07/18 01:01:59 pm	-0.001	-5	580.73		1.00
	Replicates	4.0	-2.7	22.5	-42.5						
SL3265-002					UNK	05/07/18 01:04:08 pm	0.005	14	225.40		1.00
	Replicates	-13.0	60.3	-1.9	11.9						
SL3265-003					UNK	05/07/18 01:06:17 pm	-0.004	-14	149.18		1.00
	Replicates	-41.6	3.6	-16.2	-0.7						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 01:08:26 pm	4.831	15526	0.31		1.00
Replicates	15576.3	15514.5	15465.6	15547.1						
% Recovery	96.63									
CCB				CCB	05/07/18 01:10:32 pm	-0.009	-29	89.29		1.00
Replicates	-0.7	-17.8	-60.3	-35.3						
SL3380-001				UNK	05/07/18 01:12:41 pm	-0.014	-45	47.99		1.00
Replicates	-15.0	-65.5	-54.3	-45.6						
SL3380-002				UNK	05/07/18 01:14:50 pm	-0.012	-38	45.08		1.00
Replicates	-26.1	-46.2	-21.0	-57.2						
SL3380-003				UNK	05/07/18 01:16:59 pm	-0.017	-55	65.52		1.00
Replicates	-96.8	-9.3	-58.3	-54.3						
SL3380-003L				UNK	05/07/18 01:19:08 pm	-0.120	-77	17.10		5.00
Replicates	-80.0	-86.0	-85.6	-58.0						
SL3380-003A				UNK	05/07/18 01:21:17 pm	-0.018	-58	26.22		1.00
Replicates	-56.2	-63.4	-75.1	-38.6						
reanalyzed due to missed spike JS 5.7.18										
SL3380-003S				UNK	05/07/18 01:23:27 pm	0.966	3103	0.60		1.00
Replicates	3094.9	3131.1	3090.0	3097.5						
SL3380-003P				UNK	05/07/18 01:25:36 pm	0.974	3130	0.26		1.00
Replicates	3131.1	3119.0	3138.8	3131.1						
SL3604-001				UNK	05/07/18 01:27:45 pm	0.028	90	26.55		1.00
Replicates	60.3	92.4	118.2	87.1						
SL3708-022				UNK	05/07/18 01:29:54 pm	0.020	65	29.21		1.00
Replicates	83.1	48.6	79.1	48.3						
SL3764-001				UNK	05/07/18 01:32:04 pm	0.011	35	30.83		1.00
Replicates	24.1	50.1	32.3	34.6						

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Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 01:34:12 pm	4.780	15360	0.41		1.00
Replicates	15449.7	15358.2	15308.0	15322.7						
% Recovery	95.59									
CCB				CCB	05/07/18 01:36:19 pm	-0.016	-53	13.05		1.00
Replicates	-54.8	-42.6	-57.1	-56.7						
SL3764-002				UNK	05/07/18 01:38:29 pm	-0.006	-18	236.74		1.00
Replicates	-63.0	-35.9	-11.5	38.0						
SL3764-003				UNK	05/07/18 01:40:38 pm	0.003	8	429.45		1.00
Replicates	-23.3	44.5	-22.2	34.8						
SL3809-001				UNK	05/07/18 01:42:47 pm	-0.003	-10	400.77		1.00
Replicates	-17.2	-36.7	-37.5	50.1						
SL3810-001				UNK	05/07/18 01:44:57 pm	-0.010	-33	87.26		1.00
Replicates	2.0	-67.4	-27.1	-39.3						
SL3810-002				UNK	05/07/18 01:47:07 pm	0.001	1	405.23		1.00
Replicates	-9.8	-5.7	45.9	-25.2						
SL3810-003				UNK	05/07/18 01:49:18 pm	-0.008	-26	118.48		1.00
Replicates	14.2	-24.1	-61.2	-34.4						
SL3810-004				UNK	05/07/18 01:52:39 pm	-0.002	-5	607.56		1.00
Replicates	-38.4	-22.6	0.6	38.4						
SL3810-005				UNK	05/07/18 01:54:49 pm	-0.010	-32	68.72		1.00
Replicates	-19.8	-11.5	-61.4	-34.7						
SL3557-013S				UNK	05/07/18 01:56:58 pm	0.323	1036	2.78		1.00
Replicates	1056.8	1063.8	1004.1	1019.5						
SL3380-003A				UNK	05/07/18 01:59:07 pm	0.813	2612	1.44		1.00
Replicates	2655.9	2603.7	2622.7	2565.7						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 02:01:16 pm	4.670	15007	0.29		1.00
Replicates	15065.8	14996.9	14961.5	15005.2						
% Recovery	93.40									
CCB				CCB	05/07/18 02:03:22 pm	0.012	38	81.77		1.00
Replicates	23.7	4.5	76.5	47.2						
SL3808-002				UNK	05/07/18 02:05:33 pm	0.014	44	32.01		1.00
Replicates	28.0	38.4	60.9	48.7						
SL3808-003				UNK	05/07/18 02:07:42 pm	0.007	23	86.28		1.00
Replicates	39.6	-5.2	24.7	31.2						
SL3808-004				UNK	05/07/18 02:09:53 pm	0.044	142	15.87		1.00
Replicates	115.1	139.8	170.1	142.1						
SL3808-004L				UNK	05/07/18 02:12:03 pm	0.068	43	77.45		5.00
Replicates	-2.6	47.9	77.7	49.7						
SL3808-004A				UNK	05/07/18 02:14:14 pm	0.846	2719	1.18		1.00
Replicates	2694.4	2700.6	2714.5	2765.0						
SL3808-004S				UNK	05/07/18 02:16:25 pm	0.965	3100	0.64		1.00
Replicates	3095.8	3127.7	3096.2	3080.5						
SL3808-004P				UNK	05/07/18 02:18:35 pm	0.816	2622	0.71		1.00
Replicates	2641.9	2617.4	2628.5	2598.2						
SL3808-005				UNK	05/07/18 02:20:46 pm	0.008	26	119.12		1.00
Replicates	38.5	58.6	-15.7	24.1						
SL3808-005L				UNK	05/07/18 02:22:56 pm	0.007	4	432.20		5.00
Replicates	-12.5	26.8	-1.4	2.5						
SL3808-005A				UNK	05/07/18 02:25:07 pm	0.813	2611	0.97		1.00
Replicates	2596.0	2593.9	2648.1	2605.1						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 02:27:16 pm	4.658	14969	0.40		1.00
Replicates	15049.5	14944.1	14908.9	14972.8						
% Recovery	93.16									
CCB				CCB	05/07/18 02:29:22 pm	0.006	19	152.82		1.00
Replicates	25.2	36.0	39.3	-23.8						
SL3808-006				UNK	05/07/18 02:31:33 pm	0.030	98	9.48		1.00
Replicates	103.3	90.6	107.6	88.9						
SL3808-007				UNK	05/07/18 02:35:07 pm	-0.015	-50	89.41		1.00
Replicates	8.7	-50.0	-58.1	-98.6						
SL3808-009				UNK	05/07/18 02:37:18 pm	-0.006	-20	111.58		1.00
Replicates	-16.2	-17.4	-49.2	4.0						
SL3808-010				UNK	05/07/18 02:39:29 pm	0.026	82	38.59		1.00
Replicates	111.4	43.8	104.8	68.8						
SL3808-011				UNK	05/07/18 02:41:40 pm	0.003	9	312.71		1.00
Replicates	15.3	21.5	33.6	-33.0						
SL3808-012				UNK	05/07/18 02:43:52 pm	0.007	23	100.21		1.00
Replicates	48.9	24.2	25.4	-7.0						
SL3808-013				UNK	05/07/18 02:46:03 pm	-0.005	-15	158.06		1.00
Replicates	-14.6	15.0	-17.5	-43.8						
SL3808-014				UNK	05/07/18 02:48:14 pm	0.000	0	050.87		1.00
Replicates	13.5	-4.0	-16.0	7.3						
SL3808-015				UNK	05/07/18 02:50:26 pm	0.009	27	36.63		1.00
Replicates	17.4	40.6	29.5	22.5						
SL3808-017				UNK	05/07/18 02:52:37 pm	-0.002	-6	252.29		1.00
Replicates	-2.3	14.7	-20.6	-17.6						

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/07/18 02:57:15 pm	4.650	14944	0.54		1.00
	Replicates	14922.8	14875.3	14917.5	15060.3						
	% Recovery	93.00									
CCB					CCB	05/07/18 02:59:21 pm	0.001	4	358.59		1.00
	Replicates	20.2	-1.2	-14.5	12.6						
SL3808-018					UNK	05/07/18 03:01:33 pm	0.014	45	42.14		1.00
	Replicates	67.0	43.7	48.4	20.9						
PBWLE07HGW4					PBK	05/07/18 03:03:40 pm	-0.006	-19	176.08		1.00
	Replicates	-27.7	-2.6	15.8	-62.7						
LCSWLE07HGW4					LCS	05/07/18 03:05:48 pm	4.285	13770	0.28		1.00
	Replicates	13804.1	13717.5	13792.3	13768.0						
	% Recovery	85.70									
SL3841-002					UNK	05/07/18 03:07:55 pm	0.027	87	6.33		1.00
	Replicates	93.5	85.0	80.4	88.0						
SL3841-003					UNK	05/07/18 03:10:03 pm	0.003	8	317.43		1.00
	Replicates	29.5	27.4	5.7	-28.6						
SL3841-004					UNK	05/07/18 03:15:59 pm	0.010	32	75.48		1.00
	Replicates	31.8	16.8	13.5	66.5						
SL3841-005					UNK	05/07/18 03:18:06 pm	0.007	21	212.66		1.00
	Replicates	57.3	25.8	-43.8	46.0						
SL3841-006					UNK	05/07/18 03:20:14 pm	0.000	-1	298.25		1.00
	Replicates	33.9	-50.8	16.4	-1.5						
SL3841-008					UNK	05/07/18 03:22:22 pm	0.032	103	30.34		1.00
	Replicates	113.5	88.4	68.7	140.7						
SL3841-009					UNK	05/07/18 03:24:31 pm	0.005	16	195.50		1.00
	Replicates	29.6	41.9	20.7	-28.8						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 03:26:39 pm	4.609	14812	0.46		1.00
Replicates	14801.1	14724.2	14837.4	14884.1						
% Recovery	92.18									
CCB				CCB	05/07/18 03:28:45 pm	-0.010	-33	95.27		1.00
Replicates	-49.7	12.4	-36.8	-57.1						
SL3841-010				UNK	05/07/18 03:30:54 pm	0.010	31	30.50		1.00
Replicates	28.0	34.6	41.8	19.6						
SL3841-010L				UNK	05/07/18 03:33:02 pm	-0.054	-35	58.72		5.00
Replicates	-21.7	-65.2	-20.7	-33.9						
SL3841-010A				UNK	05/07/18 03:35:10 pm	0.774	2487	0.75		1.00
Replicates	2510.4	2465.1	2484.6	2489.1						
SL3841-010S				UNK	05/07/18 03:37:18 pm	0.894	2873	0.90		1.00
Replicates	2840.9	2880.3	2903.1	2867.6						
SL3841-010P				UNK	05/07/18 03:39:27 pm	0.885	2845	1.44		1.00
Replicates	2872.4	2811.8	2807.6	2886.9						
SL3841-011				UNK	05/07/18 03:41:36 pm	-0.017	-56	62.19		1.00
Replicates	-30.2	-99.1	-25.5	-68.5						
SL3841-012				UNK	05/07/18 03:43:45 pm	-0.005	-15	238.95		1.00
Replicates	-55.1	16.9	-38.5	15.0						
SL3841-013				UNK	05/07/18 03:45:53 pm	-0.007	-24	74.99		1.00
Replicates	-0.8	-21.2	-43.2	-29.7						
SL3841-014				UNK	05/07/18 03:48:02 pm	0.021	66	24.36		1.00
Replicates	85.4	67.6	64.1	46.3						
SL3841-015				UNK	05/07/18 03:50:11 pm	-0.003	-9	450.38		1.00
Replicates	35.7	-60.3	-13.1	2.4						

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/07/18 03:52:19 pm	4.593	14760	0.35		1.00
Replicates	14768.2	14703.2	14740.9	14826.7							
% Recovery	91.86										
CCB					CCB	05/07/18 03:54:26 pm	-0.001	-4	297.14		1.00
Replicates	-8.8	-5.0	-15.0	12.8							
SL3841-016					UNK	05/07/18 03:56:35 pm	-0.001	-3	737.67		1.00
Replicates	15.7	14.1	-23.1	-17.8							
SL3841-017					UNK	05/07/18 03:58:43 pm	-0.002	-7	362.06		1.00
Replicates	-15.5	16.0	9.8	-37.4							
SL3841-018					UNK	05/07/18 04:00:52 pm	0.039	124	8.65		1.00
Replicates	121.0	137.6	124.5	111.8							
SL3841-019					UNK	05/07/18 04:03:01 pm	0.001	4	371.57		1.00
Replicates	8.9	17.1	1.6	-13.6							
SL3841-020					UNK	05/07/18 04:05:11 pm	0.008	24	80.24		1.00
Replicates	42.6	27.8	28.9	-3.1							
PBWLE07HGW3					PBK	05/07/18 04:07:21 pm	0.004	11	147.91		1.00
Replicates	22.0	11.3	-12.4	24.8							
LCSWLE07HGW3					LCS	05/07/18 04:09:32 pm	4.317	13871	0.56		1.00
Replicates	13828.3	13808.0	13868.6	13981.1							
% Recovery	86.33										
SL3808-005S					UNK	05/07/18 04:11:41 pm	0.891	2865	0.83		1.00
Replicates	2899.4	2846.9	2856.1	2855.6							
SL3808-005P					UNK	05/07/18 04:13:50 pm	0.905	2907	0.64		1.00
Replicates	2916.2	2888.1	2895.5	2928.3							
SL3808-008					UNK	05/07/18 04:16:00 pm	0.028	90	14.64		1.00
Replicates	102.8	73.8	84.5	98.0							

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/07/18 04:18:08 pm	4.533	14568	0.69		1.00
	Replicates	14463.9	14518.4	14598.1	14693.2						
	% Recovery	90.67									
CCB					CCB	05/07/18 04:20:14 pm	-0.009	-28	103.73		1.00
	Replicates	-46.7	-13.0	-58.5	5.0						
SL3808-01 ~~06~~ 5/7/18					UNK	05/07/18 04:22:48 pm	0.004	12	89.00		1.00
	Replicates	3.1	3.0	24.0	16.6						
CCV					CCV	05/07/18 04:24:57 pm	4.583	14727	0.62		1.00
	Replicates	14628.3	14686.2	14752.7	14839.2						
	% Recovery	91.65									
CCB					CCB	05/07/18 04:27:03 pm	0.000	0	564.50		1.00
	Replicates	12.5	1.2	1.4	-17.0						

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: JS

ANALYSIS DATE: 05/14/2018

REVIEWED
MD 5/25/18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE14A

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

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 JS (initals) on 5.14.18 (date).
5.14.18

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17761	05/14/2018	05/14/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17763	05/14/2018	05/20/2018	Varies by Element
ICSAB	MW17764	05/14/2018	05/20/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17762	05/14/2018	08/142018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

10x diln. Post Spike: 0.1mL of MW17698 (pipet M16) into 10x diln. of sample (pipet M18)

Pb failed in final PQL due to sample carryover; accepted Pb results for all non-DW samples analyzed prior to CCV/CCB for analyte at 20:49/20:53.

MD 5/25/18

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 10x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17761 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

Post Spike: 0.08mL of MW17698 (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	JLE14A	5/14/2018 3:12:00	14:23	JS
200.8 TUNE	1	JLE14A	5/14/2018 3:12:00	14:26	JS
Cal Blank	1	JLE14A	5/14/2018 3:12:00	15:12	JS
Cal Std	1	JLE14A	5/14/2018 3:16:00	15:16	JS
ICV	1	JLE14A	5/14/2018 3:20:00	15:20	JS
ICB	1	JLE14A	5/14/2018 3:23:00	15:23	JS
PQL	1	JLE14A	5/14/2018 3:26:00	15:26	JS
RINSE	1	JLE14A	5/14/2018 3:30:00	15:30	JS
ICSA	1	JLE14A	5/14/2018 3:34:00	15:34	JS
ICSAB	1	JLE14A	5/14/2018 3:38:00	15:38	JS
RINSE	1	JLE14A	5/14/2018 3:41:00	15:41	JS
LRS1	1	JLE14A	5/14/2018 3:45:00	15:45	JS
LRS2	1	JLE14A	5/14/2018 3:48:00	15:48	JS
RINSE	1	JLE14A	5/14/2018 3:52:00	15:52	JS
RINSE	1	JLE14A	5/14/2018 3:56:00	15:56	JS
CCV	1	JLE14A	5/14/2018 4:00:00	16:00	JS
CCB	1	JLE14A	5/14/2018 4:03:00	16:03	JS
SL4088-001	1	JLE14A	5/14/2018 4:07:00	16:07	JS
SL4104-001	1	JLE14A	5/14/2018 4:11:00	16:11	JS
PBWLE11IMW1	1	JLE14A	5/14/2018 4:14:00	16:14	JS
LCSWLE11IMW1	5	JLE14A	5/14/2018 4:18:00	16:18	JS
SL4028-001	1	JLE14A	5/14/2018 4:22:00	16:22	JS
SL4027-001	25	JLE14A	5/14/2018 4:26:00	16:26	JS
RINSE	1	JLE14A	5/14/2018 4:30:00	16:30	JS
RISNE	1	JLE14A	5/14/2018 4:33:00	16:33	JS
PBSLE04IMS1	5	JLE14A	5/14/2018 4:37:00	16:37	JS
LCSOLE04IMS1	5	JLE14A	5/14/2018 4:41:00	16:41	JS
CCV	1	JLE14A	5/14/2018 4:45:00	16:45	JS
CCB	1	JLE14A	5/14/2018 4:49:00	16:49	JS
SL3708-007	10	JLE14A	5/14/2018 4:52:00	16:52	JS
SL3708-019	10	JLE14A	5/14/2018 4:56:00	16:56	JS
SL3708-020	10	JLE14A	5/14/2018 5:00:00	17:00	JS
SL3708-021	10	JLE14A	5/14/2018 5:04:00	17:04	JS
SL3807-001	10	JLE14A	5/14/2018 5:08:00	17:08	JS
SL3807-002	10	JLE14A	5/14/2018 5:12:00	17:12	JS
RINSE	1	JLE14A	5/14/2018 5:16:00	17:16	JS
PBSLE11IMS2	5	JLE14A	5/14/2018 5:20:00	17:20	JS
LCSOLE11IMS2	5	JLE14A	5/14/2018 5:24:00	17:24	JS
LC2OLE11IMS2	5	JLE14A	5/14/2018 5:28:00	17:28	JS
CCV	1	JLE14A	5/14/2018 5:32:00	17:32	JS
CCB	1	JLE14A	5/14/2018 5:36:00	17:36	JS
SL3756-001	5	JLE14A	5/14/2018 5:40:00	17:40	JS
SL3756-003	5	JLE14A	5/14/2018 5:44:00	17:44	JS
SL3756-004	5	JLE14A	5/14/2018 5:48:00	17:48	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3756-005	5	JLE14A	5/14/2018	5:52:00 17:52	JS
PBSLE09IMS1	5	JLE14A	5/14/2018	5:56:00 17:56	JS
LCSOLE09IMS1	5	JLE14A	5/14/2018	6:00:00 18:00	JS
SL3809-048	10	JLE14A	5/14/2018	6:04:00 18:04	JS
SL3951-001	10	JLE14A	5/14/2018	6:08:00 18:08	JS
SL3951-001L	50	JLE14A	5/14/2018	6:12:00 18:12	JS
SL3951-001A	10	JLE14A	5/14/2018	6:16:00 18:16	JS
CCV	1	JLE14A	5/14/2018	6:20:00 18:20	JS
CCB	1	JLE14A	5/14/2018	6:24:00 18:24	JS
SL3951-001S	10	JLE14A	5/14/2018	6:28:00 18:28	JS
SL3951-001P	10	JLE14A	5/14/2018	6:32:00 18:32	JS
SL3809-020	10	JLE14A	5/14/2018	6:37:00 18:37	JS
RINSE	1	JLE14A	5/14/2018	6:41:00 18:41	JS
PBWLE14IMW1	1	JLE14A	5/14/2018	6:45:00 18:45	JS
LCSWLE14IMW1	5	JLE14A	5/14/2018	6:49:00 18:49	JS
SL4085-001	1	JLE14A	5/14/2018	6:53:00 18:53	JS
SL4085-002	1	JLE14A	5/14/2018	6:57:00 18:57	JS
SL4096-002	1	JLE14A	5/14/2018	7:01:00 19:01	JS
SL4105-001	1	JLE14A	5/14/2018	7:05:00 19:05	JS
CCV	1	JLE14A	5/14/2018	7:09:00 19:09	JS
CCB	1	JLE14A	5/14/2018	7:13:00 19:13	JS
SL4105-003	1	JLE14A	5/14/2018	7:17:00 19:17	JS
SL4096-001	1	JLE14A	5/14/2018	7:22:00 19:22	JS
PBWLE07IMW1	5	JLE14A	5/14/2018	7:26:00 19:26	JS
LCSWLE07IMW1	5	JLE14A	5/14/2018	7:30:00 19:30	JS
SL3808-002	5	JLE14A	5/14/2018	7:34:00 19:34	JS
SL3808-003	5	JLE14A	5/14/2018	7:38:00 19:38	JS
SL3808-004	5	JLE14A	5/14/2018	7:42:00 19:42	JS
SL3808-004L	25	JLE14A	5/14/2018	7:47:00 19:47	JS
SL3808-004A	5	JLE14A	5/14/2018	7:51:00 19:51	JS
SL3808-004S	5	JLE14A	5/14/2018	7:55:00 19:55	JS
CCV	1	JLE14A	5/14/2018	7:59:00 19:59	JS
CCB	1	JLE14A	5/14/2018	8:03:00 20:03	JS
SL3808-004P	5	JLE14A	5/14/2018	8:07:00 20:07	JS
SL3808-005	5	JLE14A	5/14/2018	8:11:00 20:11	JS
SL3808-005L	25	JLE14A	5/14/2018	8:16:00 20:16	JS
SL3808-005A	5	JLE14A	5/14/2018	8:20:00 20:20	JS
SL3808-005S	5	JLE14A	5/14/2018	8:24:00 20:24	JS
SL3808-005P	5	JLE14A	5/14/2018	8:28:00 20:28	JS
SL3808-006	5	JLE14A	5/14/2018	8:33:00 20:33	JS
SL3808-007	5	JLE14A	5/14/2018	8:37:00 20:37	JS
SL3808-008	5	JLE14A	5/14/2018	8:41:00 20:41	JS
SL3808-009	5	JLE14A	5/14/2018	8:45:00 20:45	JS
CCV	1	JLE14A	5/14/2018	8:49:00 20:49	JS
CCB	1	JLE14A	5/14/2018	8:53:00 20:53	JS
SL3808-010	5	JLE14A	5/14/2018	8:58:00 20:58	JS
SL3808-011	5	JLE14A	5/14/2018	9:02:00 21:02	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3808-012	5	JLE14A	5/14/2018	9:06:00 21:06	JS
SL3808-013	5	JLE14A	5/14/2018	9:10:00 21:10	JS
SL3808-014	5	JLE14A	5/14/2018	9:14:00 21:14	JS
SL3808-015	5	JLE14A	5/14/2018	9:19:00 21:19	JS
SL3808-016	5	JLE14A	5/14/2018	9:23:00 21:23	JS
SL3808-017	5	JLE14A	5/14/2018	9:27:00 21:27	JS
SL3808-018	5	JLE14A	5/14/2018	9:31:00 21:31	JS
RINSE	1	JLE14A	5/14/2018	9:36:00 21:36	JS
CCV	1	JLE14A	5/14/2018	9:40:00 21:40	JS
CCB	1	JLE14A	5/14/2018	9:44:00 21:44	JS
PBSLE08IMS2	5	JLE14A	5/14/2018	9:48:00 21:48	JS
LCSOLE08IMS2	5	JLE14A	5/14/2018	9:52:00 21:52	JS
SL3809-024	5	JLE14A	5/14/2018	9:56:00 21:56	JS
SL3809-024L	25	JLE14A	5/14/2018	10:01:0 22:01	JS
SL3809-024A	5	JLE14A	5/14/2018	10:05:0 22:05	JS
SL3809-024S	5	JLE14A	5/14/2018	10:09:0 22:09	JS
SL3809-024P	5	JLE14A	5/14/2018	10:13:0 22:13	JS
SL3809-041	5	JLE14A	5/14/2018	10:18:0 22:18	JS
SL3809-042	5	JLE14A	5/14/2018	10:22:0 22:22	JS
RINSE	1	JLE14A	5/14/2018	10:26:0 22:26	JS
CCV	1	JLE14A	5/14/2018	10:31:0 22:31	JS
CCB	1	JLE14A	5/14/2018	10:35:0 22:35	JS
SL3809-043	5	JLE14A	5/14/2018	10:39:0 22:39	JS
SL3809-044	5	JLE14A	5/14/2018	10:43:0 22:43	JS
SL3809-046	5	JLE14A	5/14/2018	10:48:0 22:48	JS
SL3809-047	5	JLE14A	5/14/2018	10:52:0 22:52	JS
RINSE	1	JLE14A	5/14/2018	10:56:0 22:56	JS
PBWLE07IMW2	5	JLE14A	5/14/2018	11:00:0 23:00	JS
LCSWLE07IMW2	5	JLE14A	5/14/2018	11:04:0 23:04	JS
SL3841-002	5	JLE14A	5/14/2018	11:09:0 23:09	JS
SL3841-003	5	JLE14A	5/14/2018	11:13:0 23:13	JS
SL3841-004	5	JLE14A	5/14/2018	11:17:0 23:17	JS
CCV	1	JLE14A	5/14/2018	11:21:0 23:21	JS
CCB	1	JLE14A	5/14/2018	11:25:0 23:25	JS
SL3841-005	5	JLE14A	5/14/2018	11:30:0 23:30	JS
SL3841-006	5	JLE14A	5/14/2018	11:34:0 23:34	JS
SL3841-010	5	JLE14A	5/14/2018	11:38:0 23:38	JS
SL3841-011	5	JLE14A	5/14/2018	11:42:0 23:42	JS
SL3841-011L	25	JLE14A	5/14/2018	11:47:0 23:47	JS
SL3841-011A	5	JLE14A	5/14/2018	11:51:0 23:51	JS
SL3841-011S	5	JLE14A	5/14/2018	11:55:0 23:55	JS
SL3841-011P	5	JLE14A	5/14/2018	11:59:0 23:59	JS
SL3841-012	5	JLE14A	5/15/2018	12:04:0 0:04	JS
SL3841-013	5	JLE14A	5/15/2018	12:08:0 0:08	JS
CCV	1	JLE14A	5/15/2018	12:12:0 0:12	JS
CCB	1	JLE14A	5/15/2018	12:16:0 0:16	JS
SL3841-014	5	JLE14A	5/15/2018	12:21:0 0:21	JS

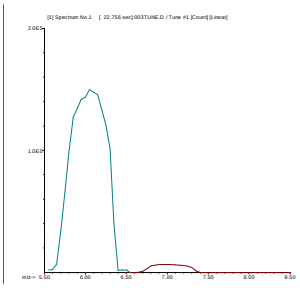
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-015	5	JLE14A	5/15/2018	12:25:0 0:25	JS
SL3841-016	5	JLE14A	5/15/2018	12:29:0 0:29	JS
SL3841-018	5	JLE14A	5/15/2018	12:33:0 0:33	JS
SL3841-019	5	JLE14A	5/15/2018	12:38:0 0:38	JS
SL3841-020	5	JLE14A	5/15/2018	12:42:0 0:42	JS
SL3841-008	5	JLE14A	5/15/2018	12:46:0 0:46	JS
SL3841-009	5	JLE14A	5/15/2018	12:50:0 0:50	JS
SL3841-017	5	JLE14A	5/15/2018	12:55:0 0:55	JS
RINSE	1	JLE14A	5/15/2018	12:59:0 0:59	JS
CCV	1	JLE14A	5/15/2018	1:03:00 1:03	JS
CCB	1	JLE14A	5/15/2018	1:07:00 1:07	JS
PQL	1	JLE14A	5/15/2018	1:11:00 1:11	JS
CCV	1	JLE14A	5/15/2018	1:16:00 1:16	JS
CCB	1	JLE14A	5/15/2018	1:20:00 1:20	JS

6020 QC Tune Report

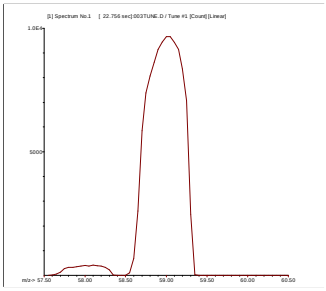
Data File: C:\ICPCHEM\1\DATA\JLE14A.B\003TUNE.D
Date Acquired: May 14 2018 02:23 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

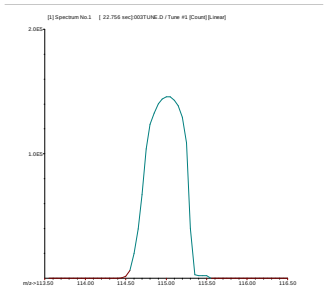
Element	Actual	Required	Flag
7 Li	2.74	5.00	
59 Co	2.02	5.00	
115 In	1.00	5.00	
205 Tl	0.68	5.00	



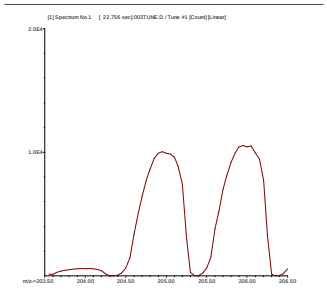
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



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:



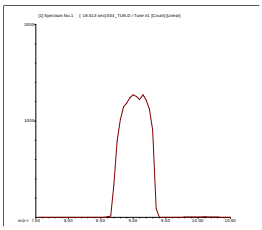
205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

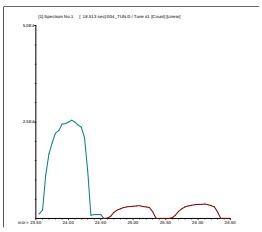
Data File: C:\ICPCHEM\1\DATA\JLE14A.B\004_TUN.D
Date Acquired: May 14 2018 02:26 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

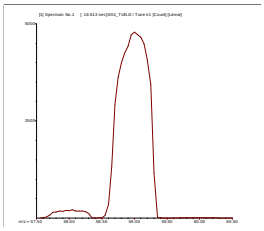
Element	Actual	Required	Flag
9 Be	1.13	5.00	
24 Mg	4.09	5.00	
59 Co	1.47	5.00	
115 In	1.15	5.00	
208 Pb	1.25	5.00	



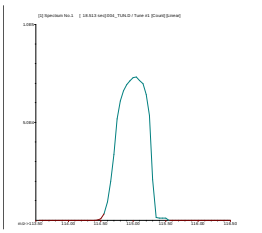
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



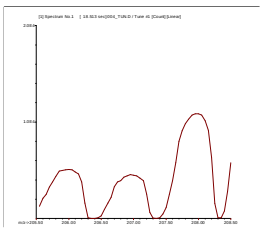
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
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 4000108

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.I
Date Acquired: May 14 2018 03:12 pm
Operator: JS
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: May 14 2018 03:14 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	4492941.00	A	63100.00	1.40
9	Be	8.52	P	3.39	39.84
11	B	363.35	P	23.33	6.42
23	Na	27923.40	P	1151.00	4.12
25	Mg	235.57	P	10.19	4.33
27	Al	2790.18	P	467.30	16.75
28	Si	1028041.00	A	9654.00	0.94
29	Si	87162.95	P	378.00	0.43
39	K	869563.19	A	7103.00	0.82
43	Ca	196.32	P	55.93	28.49
44	Ca	3096.37	P	46.37	1.50
45	Sc	3094961.00	A	25110.00	0.81
51	V	3827.64	P	97.58	2.55
52	Cr	9817.96	P	77.09	0.79
53	Cr	7332.00	P	146.30	2.00
55	Mn	1281.21	P	102.80	8.02
56	Fe	1940419.00	A	6890.00	0.36
57	Fe	9757.58	P	524.30	5.37
59	Co	126.68	P	13.33	10.52
60	Ni	57.42	P	15.40	26.82
63	Cu	493.36	P	50.45	10.23
65	Cu	236.67	P	24.04	10.16
66	Zn	951.17	P	86.57	9.10
68	Zn	1210.09	P	76.24	6.30
72	Ge	631723.63	P	4177.00	0.66
75	As	-79.20	P	79.24	100.05
82	Se	-8.77	P	41.39	471.73
88	Sr	81.49	P	16.97	20.83
89	Y	4547444.00	A	48600.00	1.07
98	Mo	22.20	P	1.96	8.81
107	Ag	33.33	P	8.82	26.46
109	Ag	24.45	P	12.62	51.63
111	Cd	941.05	P	13.84	1.47
114	Cd	10.19	P	20.58	202.01
115	In	4449646.00	A	16060.00	0.36
118	Sn	480.02	P	23.33	4.86
120	Sn	734.49	P	30.25	4.12
121	Sb	35.56	P	3.85	10.83
123	Sb	33.33	P	20.82	62.46
135	Ba	16.67	P	8.82	52.91
137	Ba	36.67	P	5.77	15.75
159	Tb	6220065.00	A	6427.00	0.10
182	W	33.33	P	5.77	17.32
203	Tl	280.01	P	44.10	15.75
205	Tl	720.04	P	45.10	6.26
208	Pb	2367.94	P	207.20	8.75
209	Bi	3318257.00	A	46850.00	1.41
232	Th	17.78	P	7.70	43.30
238	U	8.89	P	5.09	57.28

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\018CALI.D\018CALI.D#
Date Acquired: May 14 2018 03:16 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 14 2018 03:15 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	4392296.00	A	175800.00	4.00
9 Be	155583.41	P	3385.00	2.18
11 B	78512.41	P	4006.00	5.10
23 Na	87351000.00	A	3325000.00	3.81
25 Mg	7282041.00	A	107400.00	1.47
27 Al	6936554.00	A	372500.00	5.37
28 Si	4907787.00	A	166600.00	3.39
29 Si	297128.00	P	4726.00	1.59
39 K	97162120.00	A	1541000.00	1.59
43 Ca	173829.09	P	3799.00	2.19
44 Ca	2787016.00	A	27020.00	0.97
45 Sc	3192133.00	A	13830.00	0.43
51 V	537061.69	P	11930.00	2.22
52 Cr	473225.50	P	4999.00	1.06
53 Cr	61469.20	P	1430.00	2.33
55 Mn	600436.38	P	5586.00	0.93
56 Fe	98280152.00	A	1630000.00	1.66
57 Fe	2402100.00	A	33670.00	1.40
59 Co	526513.63	P	3691.00	0.70
60 Ni	120150.60	P	2336.00	1.94
63 Cu	285760.41	P	394.70	0.14
65 Cu	132106.20	P	1202.00	0.91
66 Zn	67576.40	P	847.30	1.25
68 Zn	49902.06	P	100.30	0.20
72 Ge	614107.69	P	3683.00	0.60
75 As	66479.13	P	1104.00	1.66
82 Se	5359.70	P	46.96	0.88
88 Sr	727325.00	P	2674.00	0.37
89 Y	4523317.00	A	45600.00	1.01
98 Mo	225425.09	P	869.60	0.39
107 Ag	365532.31	P	1726.00	0.47
109 Ag	347452.41	P	1654.00	0.48
111 Cd	72763.38	P	725.70	1.00
114 Cd	160262.80	P	1032.00	0.64
115 In	4357767.00	A	51820.00	1.19
118 Sn	217639.41	P	1337.00	0.61
120 Sn	299108.00	P	2144.00	0.72
121 Sb	254592.59	P	442.80	0.17
123 Sb	193107.09	P	1885.00	0.98
135 Ba	65242.41	P	142.10	0.22
137 Ba	114025.60	P	749.70	0.66
159 Tb	6276308.00	A	43250.00	0.69
182 W	283551.31	P	2614.00	0.92
203 Tl	237673.80	P	1898.00	0.80
205 Tl	563718.38	P	6126.00	1.09
208 Pb	771226.19	P	5415.00	0.70
209 Bi	3189297.00	A	6814.00	0.21
232 Th	792938.38	M	906.20	0.11
238 U	753721.63	P	14960.00	1.98

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4392296.00	4.00	4492941.00	97.8	79.5 - 120.4	
45 Sc	3192133.50	0.43	3094960.50	103.1	79.5 - 120.4	
72 Ge	614107.75	0.60	631723.63	97.2	79.5 - 120.4	
159 Tb	6276308.00	0.69	6220065.50	100.9	79.5 - 120.4	
209 Bi	3189297.50	0.21	3318256.50	96.1	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000110

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\019_ICV.D\019_ICV.D#
Date Acquired: May 14 2018 03:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.07	ppb	2.37	20	95.35	
11 B	21.69	ppb	1.86	20	108.45	
23 Na	4,031.	ppb	1.06	4,000	100.775	
25 Mg	4,031.	ppb	2.23	4,000	100.775	
27 Al	412.6	ppb	1.43	400	103.15	
28 Si	388.7	ppb	5.27	400	97.175	
29 Si	373.9	ppb	3.98	400	93.475	
39 K	3,962.	ppb	1.32	4,000	99.05	
43 Ca	3,896.	ppb	1.89	4,000	97.4	
44 Ca	3,999.	ppb	0.40	4,000	99.975	
51 V	19.56	ppb	1.01	20	97.8	
52 Cr	19.14	ppb	0.86	20	95.7	
53 Cr	16.39	ppb	3.43	20	81.95	
55 Mn	19.33	ppb	0.84	20	96.65	
56 Fe	3,920.	ppb	0.32	4,000	98	
57 Fe	3,963.	ppb	1.52	4,000	99.075	
59 Co	19.7	ppb	1.34	20	98.5	
60 Ni	19.36	ppb	2.27	20	96.8	
63 Cu	19.53	ppb	1.36	20	97.65	
65 Cu	19.99	ppb	1.35	20	99.95	
66 Zn	20.57	ppb	1.51	20	102.85	
68 Zn	20.19	ppb	0.43	20	100.95	
75 As	19.33	ppb	1.13	20	96.65	
82 Se	20.14	ppb	2.10	20	100.7	
88 Sr	19.35	ppb	0.51	20	96.75	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	37.59	ppb	0.47	40	93.975	
107 Ag	19.39	ppb	0.94	20	96.95	
109 Ag	19.53	ppb	0.47	20	97.65	
111 Cd	19.55	ppb	0.17	20	97.75	
114 Cd	19.6	ppb	0.25	20	98	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.83	ppb	1.26	20	99.15	
120 Sn	20.15	ppb	1.25	20	100.75	
121 Sb	20.01	ppb	0.97	20	100.05	
123 Sb	19.92	ppb	0.55	20	99.6	
135 Ba	19.88	ppb	0.74	20	99.4	
137 Ba	19.9	ppb	0.47	20	99.5	
182 W	19.44	ppb	1.81	20	97.2	
203 Tl	19.76	ppb	1.16	20	98.8	
205 Tl	19.79	ppb	0.59	20	98.95	
208 Pb	19.34	ppb	1.19	20	96.7	
232 Th	19.15	ppb	1.38	20	95.75	
238 U	19.17	ppb	2.33	20	95.85	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4554242.00	2.43	4492941.00	101.4	80 - 120.4	
45 Sc	3280234.30	0.99	3094960.50	106.0	80 - 120.4	
72 Ge	646170.63	0.77	631723.63	102.3	80 - 120.4	
159 Tb	6296521.00	0.37	6220065.50	101.2	80 - 120.4	
209 Bi	3282468.30	1.21	3318256.50	98.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\020_ICB.D\020_ICB.D#
Date Acquired: May 14 2018 03:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0024	ppb	203.14	1.00	
11 B	1.625	ppb	21.03	1.00	
23 Na	0.4833	ppb	128.20	1.00	
25 Mg	0.3642	ppb	185.28	1.00	
27 Al	0.0388	ppb	267.78	1.00	
28 Si	0.4705	ppb	1145.80	1.00	
29 Si	-12.3	ppb	72.41	1.00	
39 K	-0.4823	ppb	405.56	1.00	
43 Ca	0.4224	ppb	175.83	1.00	
44 Ca	1.092	ppb	121.52	1.00	
51 V	-0.1244	ppb	39.87	1.00	
52 Cr	-0.0797	ppb	32.14	1.00	
53 Cr	-1.143	ppb	27.94	1.00	
55 Mn	0.0099	ppb	42.69	1.00	
56 Fe	-6.95	ppb	44.73	1.00	
57 Fe	0.6893	ppb	106.86	1.00	
59 Co	0.0012	ppb	255.72	1.00	
60 Ni	0.0018	ppb	262.78	1.00	
63 Cu	-0.0053	ppb	73.02	1.00	
65 Cu	-0.0111	ppb	172.65	1.00	
66 Zn	0.0008	ppb	4280.90	1.00	
68 Zn	0.0718	ppb	116.03	1.00	
75 As	-0.074	ppb	72.76	1.00	
82 Se	0.1465	ppb	172.08	1.00	
88 Sr	0.0017	ppb	63.36	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0746	ppb	30.42	1.00	
107 Ag	0.0062	ppb	69.51	1.00	
109 Ag	0.0045	ppb	73.59	1.00	
111 Cd	-0.0299	ppb	32.39	1.00	
114 Cd	-0.0009	ppb	254.81	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0363	ppb	20.14	1.00	
120 Sn	0.0206	ppb	14.13	1.00	
121 Sb	0.005	ppb	48.38	1.00	
123 Sb	0.0025	ppb	141.07	1.00	
135 Ba	0.0042	ppb	89.05	1.00	
137 Ba	0.0043	ppb	164.01	1.00	
182 W	0.0606	ppb	26.73	1.00	
203 Tl	0.0088	ppb	126.55	1.00	
205 Tl	0.0054	ppb	107.50	1.00	
208 Pb	-0.0174	ppb	30.95	1.00	
232 Th	0.0573	ppb	11.13	1.00	
238 U	0.0064	ppb	24.96	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4481757.00	3.35	4492941.00	99.8	79.5 - 120	
45 Sc	3096233.80	1.70	3094960.50	100.0	79.5 - 120	
72 Ge	631557.81	0.62	631723.63	100.0	79.5 - 120	
159 Tb	6238624.50	1.48	6220065.50	100.3	79.5 - 120	
209 Bi	3309879.00	1.87	3318256.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\021_PQL.D\021_PQL.D#
Date Acquired: May 14 2018 03:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1904	ppb	3.58	0.20	95.2	
11 B	4.479	ppb	2.96	4.00	111.975	
23 Na	211.1	ppb	3.65	200.00	105.55	
25 Mg	20.57	ppb	3.21	20.00	102.85	
27 Al	20.37	ppb	1.79	20.00	101.85	
28 Si	107.4	ppb	3.22	100.00	107.4	
29 Si	90.32	ppb	7.79	100.00	90.32	
39 K	198.1	ppb	2.73	200.00	99.05	
43 Ca	14.45	ppb	15.68	20.00	72.25	
44 Ca	20.4	ppb	6.09	20.00	102	
51 V	0.9234	ppb	3.39	1.00	92.34	
52 Cr	0.8888	ppb	4.56	1.00	88.88	
53 Cr	-0.9714	ppb	9.47	---	#VALUE!	
55 Mn	0.4067	ppb	4.84	0.40	101.675	
56 Fe	15.81	ppb	22.02	20.00	79.05	
57 Fe	19.66	ppb	12.74	20.00	98.3	
59 Co	0.1998	ppb	5.49	0.20	99.9	
60 Ni	0.3995	ppb	2.10	0.40	99.875	
63 Cu	0.6149	ppb	8.58	0.60	102.483	
65 Cu	0.5779	ppb	5.29	0.60	96.3167	
66 Zn	2.082	ppb	4.59	2.00	104.1	
68 Zn	1.961	ppb	6.74	2.00	98.05	
75 As	0.9836	ppb	28.33	1.00	98.36	
82 Se	0.9533	ppb	34.25	1.00	95.33	
88 Sr	0.9733	ppb	6.85	1.00	97.33	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9958	ppb	1.59	1.00	99.58	
107 Ag	0.1996	ppb	1.54	0.20	99.8	
109 Ag	0.2023	ppb	4.06	0.20	101.15	
111 Cd	0.1522	ppb	19.26	0.20	76.1	
114 Cd	0.2013	ppb	5.68	0.20	100.65	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.01	ppb	4.66	1.00	101	
120 Sn	1.028	ppb	4.57	1.00	102.8	
121 Sb	0.2139	ppb	1.88	0.20	106.95	
123 Sb	0.2206	ppb	6.49	0.20	110.3	
135 Ba	0.4154	ppb	4.29	0.40	103.85	
137 Ba	0.4108	ppb	4.25	0.40	102.7	
182 W	0.9916	ppb	1.89	1.00	99.16	
203 Tl	0.2199	ppb	5.96	0.20	109.95	
205 Tl	0.2031	ppb	6.07	0.20	101.55	
208 Pb	0.2184	ppb	7.78	0.20	109.2	
232 Th	0.2097	ppb	5.51	0.20	104.85	
238 U	0.2019	ppb	3.11	0.20	100.95	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4444047.50	1.03	4492941.00	98.9	80 - 120.4	
45 Sc	3077699.80	1.28	3094960.50	99.4	80 - 120.4	
72 Ge	629745.25	1.20	631723.63	99.7	80 - 120.4	
159 Tb	6219506.00	1.88	6220065.50	100.0	80 - 120.4	
209 Bi	3244998.80	1.68	3318256.50	97.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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

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Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\022SMPL.D\022SMPL.D#
Date Acquired: May 14 2018 03:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	137.77	100.	
11 B	0.436	0.436	ppb	18.90	1000.	
23 Na	0.7888	0.7888	ppb	32.44	200000.	
25 Mg	0.0542	0.0542	ppb	190.30	200000.	
27 Al	0.4346	0.4346	ppb	23.72	200000.	
28 Si	1.401	1.401	ppb	356.46	#VALUE!	
29 Si	-11.54	-11.54	ppb	9.58	10000.	
39 K	-0.8045	-0.8045	ppb	117.92	200000.	
43 Ca	-2.125	-2.125	ppb	183.53	#VALUE!	
44 Ca	1.18	1.18	ppb	33.25	200000.	
51 V	-0.0835	-0.0835	ppb	66.90	1000.	
52 Cr	-0.0481	-0.0481	ppb	23.69	2000.	
53 Cr	-1.862	-1.862	ppb	4.98	#VALUE!	
55 Mn	-0.0058	-0.0058	ppb	18.09	2000.	
56 Fe	-0.139	-0.139	ppb	3915.10	#VALUE!	
57 Fe	0.8098	0.8098	ppb	124.10	100000.	
59 Co	-0.0014	-0.0014	ppb	122.85	1000.	
60 Ni	0.0139	0.0139	ppb	129.62	1000.	
63 Cu	0.1345	0.1345	ppb	8.17	#VALUE!	
65 Cu	0.1353	0.1353	ppb	10.85	2000.	
66 Zn	0.0079	0.0079	ppb	406.56	2000.	
68 Zn	0.0125	0.0125	ppb	657.67	#VALUE!	
75 As	0.0086	0.0086	ppb	1671.70	1000.	
82 Se	0.1142	0.1142	ppb	105.34	1000.	
88 Sr	-0.0008	-0.0008	ppb	64.71	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0104	0.0104	ppb	43.62	1000.	
107 Ag	0.0019	0.0019	ppb	88.65	100.	
109 Ag	0.001	0.001	ppb	18.07	#VALUE!	
111 Cd	-0.0329	-0.0329	ppb	30.45	#VALUE!	
114 Cd	-0.0021	-0.0021	ppb	39.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0033	-0.0033	ppb	179.33	1000.	
120 Sn	-0.014	-0.014	ppb	70.57	#VALUE!	
121 Sb	-0.0008	-0.0008	ppb	128.72	#VALUE!	
123 Sb	0.001	0.001	ppb	451.61	1000.	
135 Ba	0.0134	0.0134	ppb	60.19	2000.	
137 Ba	0.0033	0.0033	ppb	45.96	#VALUE!	
182 W	0.0088	0.0088	ppb	17.26	1000.	
203 Tl	0.0046	0.0046	ppb	34.34	1000.	
205 Tl	-0.0047	-0.0047	ppb	55.81	#VALUE!	
208 Pb	0.1539	0.1539	ppb	7.46	2000.	
232 Th	0.0085	0.0085	ppb	28.43	1000.	
238 U	0.001	0.001	ppb	97.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4664009.00	4.81	4492941.00	103.8	69.5 - 120	
45 Sc	3153090.30	2.15	3094960.50	101.9	69.5 - 120	
72 Ge	638596.25	1.79	631723.63	101.1	69.5 - 120	
159 Tb	6112078.50	0.70	6220065.50	98.3	69.5 - 120	
209 Bi	3190041.30	1.55	3318256.50	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000114

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\023ICSA.D\023ICSA.D#
Date Acquired: May 14 2018 03:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	78.58		
11 B	0.6987	ppb	12.46		
23 Na	102,200.	ppb	1.42		
25 Mg	99,940.	ppb	3.06		
27 Al	99,860.	ppb	3.13		
28 Si	20.08	ppb	6.03		
29 Si	54.59	ppb	8.16		
39 K	99,380.	ppb	1.26		
43 Ca	101,500.	ppb	1.80		
44 Ca	97,280.	ppb	1.99		
51 V	0.1946	ppb	38.18		
52 Cr	1.129	ppb	3.48		
53 Cr	0.434	ppb	116.18		
55 Mn	0.3535	ppb	3.80		
56 Fe	96,200.	ppb	2.31		
57 Fe	92,940.	ppb	0.97		
59 Co	0.0926	ppb	8.26		
60 Ni	-0.2361	ppb	5.15		
63 Cu	4.21	ppb	2.84		
65 Cu	1.045	ppb	3.45		
66 Zn	2.543	ppb	6.28		
68 Zn	0.4309	ppb	15.97		
75 As	0.0733	ppb	175.10		
82 Se	0.1863	ppb	114.06		
88 Sr	0.9453	ppb	3.25		
89 Y	--------	---	--------		
98 Mo	1,890.	ppb	1.29		
107 Ag	0.0248	ppb	24.67		
109 Ag	0.0172	ppb	15.52		
111 Cd	0.0345	ppb	32.33		
114 Cd	0.017	ppb	103.35		
115 In	--------	---	--------		
118 Sn	0.0491	ppb	18.29		
120 Sn	0.0273	ppb	62.33		
121 Sb	0.0373	ppb	5.28		
123 Sb	0.045	ppb	9.56		
135 Ba	0.0925	ppb	7.74		
137 Ba	0.0878	ppb	13.09		
182 W	0.2336	ppb	1.86		
203 Tl	0.0088	ppb	3.85		
205 Tl	-0.0024	ppb	154.03		
208 Pb	0.0625	ppb	19.23		
232 Th	0.0469	ppb	13.67		
238 U	0.0013	ppb	50.10		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4353064.00	1.58	4492941.00	96.9	69.5 - 120.4	
45 Sc	3237120.30	3.31	3094960.50	104.6	69.5 - 120.4	
72 Ge	639350.69	1.73	631723.63	101.2	69.5 - 120.4	
159 Tb	6088915.50	0.18	6220065.50	97.9	69.5 - 120.4	
209 Bi	2721698.50	0.92	3318256.50	82.0	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000115

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\024ICSB.D\024ICSB.D#
Date Acquired: May 14 2018 03:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	19.25	ppb	5.62	20.00	79.5 - 120	
11 B	22.54	ppb	4.29	20.00	79.5 - 120	
23 Na	105,400.	ppb	1.28	#########	79.5 - 120	
25 Mg	101,300.	ppb	1.35	#########	79.5 - 120	
27 Al	100,600.	ppb	1.78	#########	79.5 - 120	
28 Si	532.8	ppb	1.77	---	##### - #####	
29 Si	557.7	ppb	2.74	---	##### - #####	
39 K	98,850.	ppb	0.87	#########	79.5 - 120	
43 Ca	101,400.	ppb	1.51	#########	79.5 - 120	
44 Ca	96,790.	ppb	0.63	#########	79.5 - 120	
51 V	20.78	ppb	1.14	20.00	79.5 - 120	
52 Cr	20.93	ppb	1.68	20.00	79.5 - 120	
53 Cr	21.48	ppb	1.61	---	##### - #####	
55 Mn	19.71	ppb	0.89	20.00	79.5 - 120	
56 Fe	96,320.	ppb	0.83	#########	79.5 - 120	
57 Fe	93,950.	ppb	0.96	#########	79.5 - 120	
59 Co	19.52	ppb	2.01	20.00	79.5 - 120	
60 Ni	18.27	ppb	1.76	20.00	79.5 - 120	
63 Cu	22.58	ppb	1.15	20.00	79.5 - 120	
65 Cu	19.98	ppb	1.71	20.00	79.5 - 120	
66 Zn	19.69	ppb	0.24	20.00	79.5 - 120	
68 Zn	17.97	ppb	2.46	20.00	79.5 - 120	
75 As	19.69	ppb	0.59	20.00	79.5 - 120	
82 Se	19.38	ppb	2.06	20.00	79.5 - 120	
88 Sr	21.04	ppb	0.92	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,912.	ppb	1.01	2000.00	79.5 - 120	
107 Ag	17.84	ppb	2.04	20.00	79.5 - 120	
109 Ag	18.	ppb	1.71	20.00	79.5 - 120	
111 Cd	18.08	ppb	1.66	20.00	79.5 - 120	
114 Cd	18.01	ppb	1.07	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.12	ppb	1.37	20.00	79.5 - 120	
120 Sn	21.19	ppb	1.03	20.00	79.5 - 120	
121 Sb	20.82	ppb	0.90	20.00	79.5 - 120	
123 Sb	21.	ppb	0.69	20.00	79.5 - 120	
135 Ba	21.12	ppb	1.60	20.00	79.5 - 120	
137 Ba	20.93	ppb	0.48	20.00	79.5 - 120	
182 W	20.21	ppb	1.42	20.00	79.5 - 120	
203 Tl	21.27	ppb	0.95	20.00	79.5 - 120	
205 Tl	21.31	ppb	2.14	20.00	79.5 - 120	
208 Pb	21.15	ppb	1.50	20.00	79.5 - 120	
232 Th	22.13	ppb	1.43	20.00	79.5 - 120	
238 U	21.82	ppb	1.98	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4469143.00	4.45	4492941.00	99.5	69.5 - 120	
45 Sc	3342195.80	1.59	3094960.50	108.0	69.5 - 120	
72 Ge	656262.25	1.58	631723.63	103.9	69.5 - 120	
159 Tb	6200078.50	1.32	6220065.50	99.7	69.5 - 120	
209 Bi	2746144.30	1.36	3318256.50	82.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000116

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\025SMPL.D\025SMPL.D#
Date Acquired: May 14 2018 03:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	141.83	100.	
11 B	0.382	0.382	ppb	15.94	1000.	
23 Na	8.213	8.213	ppb	75.02	200000.	
25 Mg	6.045	6.045	ppb	95.60	200000.	
27 Al	7.325	7.325	ppb	91.90	200000.	
28 Si	5.261	5.261	ppb	74.40	#VALUE!	
29 Si	-28.5	-28.5	ppb	17.73	10000.	
39 K	1.954	1.954	ppb	276.97	200000.	
43 Ca	4.073	4.073	ppb	73.39	#VALUE!	
44 Ca	5.841	5.841	ppb	83.19	200000.	
51 V	-0.0922	-0.0922	ppb	40.17	1000.	
52 Cr	-0.0064	-0.0064	ppb	162.19	2000.	
53 Cr	1.336	1.336	ppb	10.42	#VALUE!	
55 Mn	0.0023	0.0023	ppb	272.38	2000.	
56 Fe	3.359	3.359	ppb	74.96	#VALUE!	
57 Fe	8.593	8.593	ppb	28.02	100000.	
59 Co	-0.0001	-0.0001	ppb	2888.70	1000.	
60 Ni	0.0223	0.0223	ppb	32.26	1000.	
63 Cu	0.1581	0.1581	ppb	7.33	#VALUE!	
65 Cu	0.1542	0.1542	ppb	5.98	2000.	
66 Zn	0.1394	0.1394	ppb	66.61	2000.	
68 Zn	0.12	0.12	ppb	52.58	#VALUE!	
75 As	0.0177	0.0177	ppb	1054.70	1000.	
82 Se	-0.0035	-0.0035	ppb	2385.10	1000.	
88 Sr	0.0009	0.0009	ppb	220.73	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.214	1.214	ppb	34.62	1000.	
107 Ag	0.0055	0.0055	ppb	76.14	100.	
109 Ag	0.0046	0.0046	ppb	54.44	#VALUE!	
111 Cd	-0.0689	-0.0689	ppb	29.71	#VALUE!	
114 Cd	-0.0003	-0.0003	ppb	869.80	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0071	0.0071	ppb	83.16	1000.	
120 Sn	0.0003	0.0003	ppb	1882.80	#VALUE!	
121 Sb	0.0066	0.0066	ppb	54.91	#VALUE!	
123 Sb	0.	0.	ppb	18969.00	1000.	
135 Ba	0.0284	0.0284	ppb	47.20	2000.	
137 Ba	0.0404	0.0404	ppb	22.28	#VALUE!	
182 W	0.0115	0.0115	ppb	42.11	1000.	
203 Tl	0.0107	0.0107	ppb	46.22	1000.	
205 Tl	-0.0026	-0.0026	ppb	78.42	#VALUE!	
208 Pb	0.1394	0.1394	ppb	5.86	2000.	
232 Th	0.0109	0.0109	ppb	17.75	1000.	
238 U	0.0029	0.0029	ppb	12.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4698673.50	1.50	4492941.00	104.6	69.5 - 120	
45 Sc	3332540.80	0.94	3094960.50	107.7	69.5 - 120	
72 Ge	670699.69	0.52	631723.63	106.2	69.5 - 120	
159 Tb	6211803.50	0.10	6220065.50	99.9	69.5 - 120	
209 Bi	3211532.50	0.71	3318256.50	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000117

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\026SMPL.D\026SMPL.D#
Date Acquired: May 14 2018 03:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	95.75	95.75	ppb	1.77	100.	
11 B	0.175	0.175	ppb	8.77	1000.	
23 Na	3.2	3.2	ppb	10.04	200000.	
25 Mg	1.057	1.057	ppb	3.53	200000.	
27 Al	3.751	3.751	ppb	4.63	200000.	
28 Si	-1.858	-1.858	ppb	250.54	#VALUE!	
29 Si	-6.36	-6.36	ppb	38.52	10000.	
39 K	0.6925	0.6925	ppb	195.81	200000.	
43 Ca	1,593.	1,593.	ppb	0.51	#VALUE!	
44 Ca	124.7	124.7	ppb	5.32	200000.	
51 V	1,078.	1,078.	ppb	1.16	1000.	>LDR
52 Cr	2,077.	2,077.	ppb	1.39	2000.	>LDR
53 Cr	2,120.	2,120.	ppb	0.82	#VALUE!	
55 Mn	2,032.	2,032.	ppb	1.22	2000.	>LDR
56 Fe	-0.0508	-0.0508	ppb	4049.60	#VALUE!	
57 Fe	0.1191	0.1191	ppb	359.78	100000.	
59 Co	1,039.	1,039.	ppb	0.61	1000.	>LDR
60 Ni	1,024.	1,024.	ppb	1.53	1000.	>LDR
63 Cu	2,000.	2,000.	ppb	1.87	#VALUE!	
65 Cu	2,058.	2,058.	ppb	1.60	2000.	>LDR
66 Zn	2,093.	2,093.	ppb	1.70	2000.	>LDR
68 Zn	2,096.	2,096.	ppb	1.45	#VALUE!	
75 As	1,059.	1,059.	ppb	1.27	1000.	>LDR
82 Se	1,095.	1,095.	ppb	0.44	1000.	>LDR
88 Sr	1,972.	1,972.	ppb	0.44	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,002.	1,002.	ppb	0.85	1000.	>LDR
107 Ag	107.2	107.2	ppb	0.35	100.	>LDR
109 Ag	107.5	107.5	ppb	0.42	#VALUE!	
111 Cd	1,050.	1,050.	ppb	2.14	#VALUE!	
114 Cd	1,014.	1,014.	ppb	0.93	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,038.	1,038.	ppb	1.19	1000.	>LDR
120 Sn	1,039.	1,039.	ppb	0.51	#VALUE!	
121 Sb	1,050.	1,050.	ppb	1.03	#VALUE!	
123 Sb	1,065.	1,065.	ppb	0.70	1000.	>LDR
135 Ba	2,124.	2,124.	ppb	1.24	2000.	>LDR
137 Ba	2,091.	2,091.	ppb	1.79	#VALUE!	
182 W	1,008.	1,008.	ppb	1.62	1000.	>LDR
203 Tl	1,013.	1,013.	ppb	1.22	1000.	>LDR
205 Tl	993.6	993.6	ppb	1.44	#VALUE!	
208 Pb	1,981.	1,981.	ppb	1.72	2000.	
232 Th	980.6	980.6	ppb	2.04	1000.	
238 U	964.8	964.8	ppb	0.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4737063.50	1.51	4492941.00	105.4	69.5 - 120	
45 Sc	3138263.00	0.98	3094960.50	101.4	69.5 - 120	
72 Ge	617598.38	1.73	631723.63	97.8	69.5 - 120	
159 Tb	6094814.50	1.26	6220065.50	98.0	69.5 - 120	
209 Bi	3233750.00	0.83	3318256.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

17 :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 4000118

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\027SMPL.D\027SMPL.D#
Date Acquired: May 14 2018 03:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	0.0075	0.0075	ppb	17.13	100.	
11 B	0.5894	0.5894	ppb	7.38	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	204,300.	204,300.	ppb	2.12	200000.	>LDR
27 Al	203,300.	203,300.	ppb	0.75	200000.	>LDR
28 Si	10,460.	10,460.	ppb	2.09	#VALUE!	
29 Si	10,650.	10,650.	ppb	2.02	10000.	>LDR
39 K	194,500.	194,500.	ppb	2.89	200000.	
43 Ca	196,100.	196,100.	ppb	1.72	#VALUE!	
44 Ca	192,800.	192,800.	ppb	0.82	200000.	
51 V	0.1165	0.1165	ppb	63.26	1000.	
52 Cr	3.045	3.045	ppb	2.51	2000.	
53 Cr	1.139	1.139	ppb	13.92	#VALUE!	
55 Mn	7.572	7.572	ppb	0.51	2000.	
56 Fe	98,020.	98,020.	ppb	0.62	#VALUE!	
57 Fe	94,840.	94,840.	ppb	0.63	100000.	
59 Co	2.848	2.848	ppb	0.73	1000.	
60 Ni	3.123	3.123	ppb	4.92	1000.	
63 Cu	10.14	10.14	ppb	1.18	#VALUE!	
65 Cu	3.067	3.067	ppb	2.95	2000.	
66 Zn	3.9	3.9	ppb	1.40	2000.	
68 Zn	1.192	1.192	ppb	3.20	#VALUE!	
75 As	0.2336	0.2336	ppb	28.20	1000.	
82 Se	0.4522	0.4522	ppb	1.83	1000.	
88 Sr	6.963	6.963	ppb	0.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.52	1.52	ppb	41.95	1000.	
107 Ag	0.3507	0.3507	ppb	3.43	100.	
109 Ag	0.361	0.361	ppb	4.13	#VALUE!	
111 Cd	0.0216	0.0216	ppb	80.42	#VALUE!	
114 Cd	-0.0068	-0.0068	ppb	68.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.5872	0.5872	ppb	17.00	1000.	
120 Sn	0.5519	0.5519	ppb	14.27	#VALUE!	
121 Sb	0.173	0.173	ppb	15.17	#VALUE!	
123 Sb	0.1852	0.1852	ppb	6.51	1000.	
135 Ba	0.2458	0.2458	ppb	8.38	2000.	
137 Ba	0.2546	0.2546	ppb	7.39	#VALUE!	
182 W	1.228	1.228	ppb	36.19	1000.	
203 Tl	0.0425	0.0425	ppb	22.16	1000.	
205 Tl	0.046	0.046	ppb	11.64	#VALUE!	
208 Pb	0.4767	0.4767	ppb	3.33	2000.	
232 Th	1.034	1.034	ppb	22.76	1000.	
238 U	0.1286	0.1286	ppb	19.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4356302.50	4.05	4492941.00	97.0	69.5 - 120	
45 Sc	3386027.50	5.69	3094960.50	109.4	69.5 - 120	
72 Ge	633735.94	3.61	631723.63	100.3	69.5 - 120	
159 Tb	5556815.00	1.03	6220065.50	89.3	69.5 - 120	
209 Bi	2277712.30	1.60	3318256.50	68.6	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

4 :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 4000119

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\028SMPL.D\028SMPL.D#
Date Acquired: May 14 2018 03:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	44.51	100.	
11 B	0.1114	0.1114	ppb	33.73	1000.	
23 Na	15.13	15.13	ppb	65.08	200000.	
25 Mg	6.106	6.106	ppb	106.06	200000.	
27 Al	6.494	6.494	ppb	112.26	200000.	
28 Si	19.67	19.67	ppb	8.81	#VALUE!	
29 Si	-24.68	-24.68	ppb	27.35	10000.	
39 K	5.93	5.93	ppb	136.17	200000.	
43 Ca	4.335	4.335	ppb	115.89	#VALUE!	
44 Ca	6.913	6.913	ppb	78.88	200000.	
51 V	0.012	0.012	ppb	621.75	1000.	
52 Cr	0.0059	0.0059	ppb	83.39	2000.	
53 Cr	3.468	3.468	ppb	10.12	#VALUE!	
55 Mn	-0.0026	-0.0026	ppb	201.16	2000.	
56 Fe	8.523	8.523	ppb	84.65	#VALUE!	
57 Fe	7.524	7.524	ppb	46.48	100000.	
59 Co	0.0017	0.0017	ppb	114.89	1000.	
60 Ni	0.0248	0.0248	ppb	16.62	1000.	
63 Cu	0.193	0.193	ppb	11.24	#VALUE!	
65 Cu	0.1661	0.1661	ppb	2.58	2000.	
66 Zn	0.1708	0.1708	ppb	23.37	2000.	
68 Zn	0.2252	0.2252	ppb	32.61	#VALUE!	
75 As	-0.0605	-0.0605	ppb	158.49	1000.	
82 Se	-0.0989	-0.0989	ppb	299.71	1000.	
88 Sr	0.0027	0.0027	ppb	47.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2214	0.2214	ppb	48.51	1000.	
107 Ag	0.0019	0.0019	ppb	95.69	100.	
109 Ag	0.0027	0.0027	ppb	105.00	#VALUE!	
111 Cd	-0.0817	-0.0817	ppb	3.81	#VALUE!	
114 Cd	-0.0008	-0.0008	ppb	367.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0741	0.0741	ppb	31.44	1000.	
120 Sn	0.0713	0.0713	ppb	15.16	#VALUE!	
121 Sb	0.0211	0.0211	ppb	26.27	#VALUE!	
123 Sb	0.0243	0.0243	ppb	24.59	1000.	
135 Ba	0.0428	0.0428	ppb	27.66	2000.	
137 Ba	0.0433	0.0433	ppb	59.15	#VALUE!	
182 W	0.2225	0.2225	ppb	38.54	1000.	
203 Tl	0.0061	0.0061	ppb	49.96	1000.	
205 Tl	0.0043	0.0043	ppb	84.25	#VALUE!	
208 Pb	0.1451	0.1451	ppb	7.34	2000.	
232 Th	0.0378	0.0378	ppb	56.06	1000.	
238 U	0.0056	0.0056	ppb	20.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4675134.00	0.31	4492941.00	104.1	69.5 - 120	
45 Sc	3493044.50	1.14	3094960.50	112.9	69.5 - 120	
72 Ge	694221.38	1.26	631723.63	109.9	69.5 - 120	
159 Tb	6229378.00	0.52	6220065.50	100.1	69.5 - 120	
209 Bi	3102786.50	1.17	3318256.50	93.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000120

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\029SMPL.D\029SMPL.D#
Date Acquired: May 14 2018 03:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	555.95	100.	
11 B	0.1167	0.1167	ppb	8.58	1000.	
23 Na	4.542	4.542	ppb	9.13	200000.	
25 Mg	1.038	1.038	ppb	9.53	200000.	
27 Al	1.248	1.248	ppb	8.46	200000.	
28 Si	15.76	15.76	ppb	39.66	#VALUE!	
29 Si	-17.75	-17.75	ppb	13.71	10000.	
39 K	-0.7393	-0.7393	ppb	244.29	200000.	
43 Ca	-2.352	-2.352	ppb	108.55	#VALUE!	
44 Ca	1.545	1.545	ppb	60.63	200000.	
51 V	-0.0589	-0.0589	ppb	136.21	1000.	
52 Cr	0.0041	0.0041	ppb	552.64	2000.	
53 Cr	4.153	4.153	ppb	5.69	#VALUE!	
55 Mn	0.0009	0.0009	ppb	56.62	2000.	
56 Fe	-3.143	-3.143	ppb	59.66	#VALUE!	
57 Fe	2.474	2.474	ppb	58.04	100000.	
59 Co	-0.003	-0.003	ppb	89.84	1000.	
60 Ni	0.0169	0.0169	ppb	80.76	1000.	
63 Cu	0.183	0.183	ppb	10.08	#VALUE!	
65 Cu	0.159	0.159	ppb	1.77	2000.	
66 Zn	0.125	0.125	ppb	9.12	2000.	
68 Zn	0.1245	0.1245	ppb	75.23	#VALUE!	
75 As	0.123	0.123	ppb	78.81	1000.	
82 Se	-0.0321	-0.0321	ppb	97.66	1000.	
88 Sr	0.0009	0.0009	ppb	133.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0997	0.0997	ppb	43.55	1000.	
107 Ag	0.0014	0.0014	ppb	126.29	100.	
109 Ag	0.0004	0.0004	ppb	165.19	#VALUE!	
111 Cd	-0.0852	-0.0852	ppb	21.00	#VALUE!	
114 Cd	-0.0038	-0.0038	ppb	17.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0279	0.0279	ppb	10.55	1000.	
120 Sn	0.0178	0.0178	ppb	35.91	#VALUE!	
121 Sb	0.0106	0.0106	ppb	32.13	#VALUE!	
123 Sb	0.0082	0.0082	ppb	13.76	1000.	
135 Ba	0.0389	0.0389	ppb	28.69	2000.	
137 Ba	0.0362	0.0362	ppb	46.25	#VALUE!	
182 W	0.0977	0.0977	ppb	23.18	1000.	
203 Tl	0.0014	0.0014	ppb	390.83	1000.	
205 Tl	-0.002	-0.002	ppb	116.99	#VALUE!	
208 Pb	0.1315	0.1315	ppb	5.38	2000.	
232 Th	0.0262	0.0262	ppb	63.84	1000.	
238 U	0.0026	0.0026	ppb	17.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4631282.00	2.10	4492941.00	103.1	69.5 - 120	
45 Sc	3366437.80	1.56	3094960.50	108.8	69.5 - 120	
72 Ge	667159.63	1.04	631723.63	105.6	69.5 - 120	
159 Tb	6194958.00	1.25	6220065.50	99.6	69.5 - 120	
209 Bi	3183284.00	0.98	3318256.50	95.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\030_CCV.D\030_CCV.D#
Date Acquired: May 14 2018 04:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.14	ppb	3.55	25	92.56	
11 B	24.09	ppb	5.13	25	96.36	
23 Na	5,302.	ppb	3.99	5,000	106.04	
25 Mg	5,259.	ppb	1.70	5,000	105.18	
27 Al	507.1	ppb	1.73	500	101.42	
28 Si	510.4	ppb	3.60	500	102.08	
29 Si	475.5	ppb	5.01	500	95.1	
39 K	4,848.	ppb	1.05	5,000	96.96	
43 Ca	4,937.	ppb	2.37	5,000	98.74	
44 Ca	5,012.	ppb	0.17	5,000	100.24	
51 V	25.17	ppb	2.31	25	100.68	
52 Cr	24.55	ppb	1.37	25	98.2	
53 Cr	25.08	ppb	3.43	25	100.32	
55 Mn	24.45	ppb	0.38	25	97.8	
56 Fe	4,872.	ppb	1.05	5,000	97.44	
57 Fe	4,950.	ppb	1.41	5,000	99	
59 Co	24.75	ppb	0.55	25	99	
60 Ni	24.2	ppb	1.31	25	96.8	
63 Cu	24.74	ppb	1.21	25	98.96	
65 Cu	24.9	ppb	0.84	25	99.6	
66 Zn	24.98	ppb	0.42	25	99.92	
68 Zn	24.58	ppb	0.94	25	98.32	
75 As	24.37	ppb	1.42	25	97.48	
82 Se	24.52	ppb	0.47	25	98.08	
88 Sr	24.07	ppb	1.57	25	96.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.94	ppb	0.82	25	95.76	
107 Ag	24.29	ppb	1.00	25	97.16	
109 Ag	24.38	ppb	0.50	25	97.52	
111 Cd	24.38	ppb	0.59	25	97.52	
114 Cd	24.37	ppb	0.40	25	97.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.11	ppb	0.41	25	100.44	
120 Sn	25.29	ppb	1.06	25	101.16	
121 Sb	25.67	ppb	1.42	25	102.68	
123 Sb	25.82	ppb	1.29	25	103.28	
135 Ba	25.39	ppb	2.94	25	101.56	
137 Ba	25.26	ppb	1.51	25	101.04	
182 W	24.11	ppb	0.96	25	96.44	
203 Tl	24.42	ppb	0.87	25	97.68	
205 Tl	24.41	ppb	1.63	25	97.64	
208 Pb	24.55	ppb	1.56	25	98.2	
232 Th	23.91	ppb	0.96	25	95.64	
238 U	23.76	ppb	1.86	25	95.04	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4779091.00	2.93	4492941.00	106.4	80 - 120.4	
45 Sc	3299230.00	1.20	3094960.50	106.6	80 - 120.4	
72 Ge	642495.13	1.01	631723.63	101.7	80 - 120.4	
159 Tb	6194052.50	0.76	6220065.50	99.6	80 - 120.4	
209 Bi	3159346.30	0.63	3318256.50	95.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\031_CCB.D\031_CCB.D#
Date Acquired: May 14 2018 04:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	82.34	1.00	
11 B	0.9984	ppb	17.72	1.00	
23 Na	2.923	ppb	22.36	1.00	
25 Mg	0.9045	ppb	69.93	1.00	
27 Al	0.5653	ppb	91.53	1.00	
28 Si	9.482	ppb	32.21	1.00	
29 Si	-7.587	ppb	107.46	1.00	
39 K	1.493	ppb	111.19	1.00	
43 Ca	-1.615	ppb	99.38	1.00	
44 Ca	1.587	ppb	61.22	1.00	
51 V	-0.0448	ppb	284.02	1.00	
52 Cr	-0.0665	ppb	48.82	1.00	
53 Cr	1.351	ppb	26.80	1.00	
55 Mn	0.0035	ppb	265.35	1.00	
56 Fe	-7.403	ppb	18.97	1.00	
57 Fe	-0.6607	ppb	172.24	1.00	
59 Co	0.0004	ppb	612.17	1.00	
60 Ni	0.0009	ppb	864.46	1.00	
63 Cu	0.0158	ppb	45.58	1.00	
65 Cu	0.0148	ppb	45.24	1.00	
66 Zn	0.0134	ppb	185.36	1.00	
68 Zn	-0.0111	ppb	259.04	1.00	
75 As	0.0498	ppb	163.80	1.00	
82 Se	0.1398	ppb	102.36	1.00	
88 Sr	0.0036	ppb	78.30	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0664	ppb	28.45	1.00	
107 Ag	0.0059	ppb	42.48	1.00	
109 Ag	0.0038	ppb	87.51	1.00	
111 Cd	-0.0311	ppb	72.58	1.00	
114 Cd	-0.0004	ppb	622.65	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0411	ppb	10.96	1.00	
120 Sn	0.038	ppb	6.52	1.00	
121 Sb	0.007	ppb	87.78	1.00	
123 Sb	0.0116	ppb	89.66	1.00	
135 Ba	0.0128	ppb	73.91	1.00	
137 Ba	0.0015	ppb	109.77	1.00	
182 W	0.0789	ppb	41.16	1.00	
203 Tl	0.0015	ppb	648.05	1.00	
205 Tl	0.0004	ppb	2219.10	1.00	
208 Pb	-0.0389	ppb	10.84	1.00	
232 Th	0.0825	ppb	10.85	1.00	
238 U	0.0039	ppb	81.62	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4777584.00	0.61	4492941.00	106.3	79.5 - 120	
45 Sc	3181318.30	0.72	3094960.50	102.8	79.5 - 120	
72 Ge	641312.81	0.76	631723.63	101.5	79.5 - 120	
159 Tb	6051368.00	0.87	6220065.50	97.3	79.5 - 120	
209 Bi	3203150.30	1.83	3318256.50	96.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000123

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\032SMPL.D\032SMPL.D#
Date Acquired: May 14 2018 04:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4088-001
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: May 14 2018 03:18 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	0.3216	0.3216	ppb	4.29	100.	
11 B	5.6	5.6	ppb	3.36	1000.	
23 Na	145,100.	145,100.	ppb	1.21	200000.	
25 Mg	1,500.	1,500.	ppb	1.50	200000.	
27 Al	676.1	676.1	ppb	1.42	200000.	
28 Si	2,520.	2,520.	ppb	0.37	#VALUE!	
29 Si	2,541.	2,541.	ppb	0.88	10000.	
39 K	2,537.	2,537.	ppb	2.41	200000.	
43 Ca	27,600.	27,600.	ppb	1.58	#VALUE!	
44 Ca	27,060.	27,060.	ppb	0.44	200000.	
51 V	0.1489	0.1489	ppb	39.07	1000.	
52 Cr	0.7271	0.7271	ppb	3.40	2000.	
53 Cr	-1.31	-1.31	ppb	41.38	#VALUE!	
55 Mn	110.2	110.2	ppb	0.80	2000.	
56 Fe	25.5	25.5	ppb	17.24	#VALUE!	
57 Fe	45.32	45.32	ppb	13.92	100000.	
59 Co	0.2846	0.2846	ppb	3.84	1000.	
60 Ni	4.26	4.26	ppb	1.31	1000.	
63 Cu	42.7	42.7	ppb	0.61	#VALUE!	
65 Cu	38.14	38.14	ppb	1.34	2000.	
66 Zn	9.262	9.262	ppb	1.63	2000.	
68 Zn	12.81	12.81	ppb	3.85	#VALUE!	
75 As	0.1692	0.1692	ppb	21.84	1000.	
82 Se	0.4385	0.4385	ppb	12.97	1000.	
88 Sr	102.3	102.3	ppb	1.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0514	0.0514	ppb	28.99	1000.	
107 Ag	0.0857	0.0857	ppb	30.50	100.	
109 Ag	0.0985	0.0985	ppb	31.47	#VALUE!	
111 Cd	0.3008	0.3008	ppb	5.49	#VALUE!	
114 Cd	0.2808	0.2808	ppb	1.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.012	0.012	ppb	66.62	1000.	
120 Sn	-0.0025	-0.0025	ppb	348.39	#VALUE!	
121 Sb	0.0173	0.0173	ppb	17.88	#VALUE!	
123 Sb	0.0173	0.0173	ppb	12.30	1000.	
135 Ba	103.4	103.4	ppb	1.42	2000.	
137 Ba	102.7	102.7	ppb	1.11	#VALUE!	
182 W	0.0442	0.0442	ppb	35.36	1000.	
203 Tl	0.0286	0.0286	ppb	33.65	1000.	
205 Tl	0.0228	0.0228	ppb	12.23	#VALUE!	
208 Pb	0.7485	0.7485	ppb	1.61	2000.	
232 Th	0.0609	0.0609	ppb	23.39	1000.	
238 U	0.0337	0.0337	ppb	11.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4617807.50	5.03	4492941.00	102.8	69.5 - 120	
45 Sc	3355415.30	2.28	3094960.50	108.4	69.5 - 120	
72 Ge	640903.63	0.87	631723.63	101.5	69.5 - 120	
159 Tb	5966605.50	1.34	6220065.50	95.9	69.5 - 120	
209 Bi	2855604.30	1.36	3318256.50	86.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000124

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\033SMPL.D\033SMPL.D#
Date Acquired: May 14 2018 04:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4104-001
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: May 14 2018 03:18 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	43.78	100.	
11 B	3.64	3.64	ppb	7.88	1000.	
23 Na	3,835.	3,835.	ppb	2.60	200000.	
25 Mg	1,086.	1,086.	ppb	2.13	200000.	
27 Al	2.171	2.171	ppb	4.59	200000.	
28 Si	6,355.	6,355.	ppb	2.81	#VALUE!	
29 Si	6,681.	6,681.	ppb	4.03	10000.	
39 K	642.	642.	ppb	4.31	200000.	
43 Ca	4,776.	4,776.	ppb	1.87	#VALUE!	
44 Ca	4,891.	4,891.	ppb	2.01	200000.	
51 V	0.1554	0.1554	ppb	20.36	1000.	
52 Cr	0.7197	0.7197	ppb	2.78	2000.	
53 Cr	12.12	12.12	ppb	20.41	#VALUE!	
55 Mn	0.2532	0.2532	ppb	3.47	2000.	
56 Fe	-4.797	-4.797	ppb	73.96	#VALUE!	
57 Fe	2.634	2.634	ppb	113.21	100000.	
59 Co	0.0054	0.0054	ppb	79.04	1000.	
60 Ni	0.0363	0.0363	ppb	27.72	1000.	
63 Cu	0.2341	0.2341	ppb	2.10	#VALUE!	
65 Cu	0.1398	0.1398	ppb	7.70	2000.	
66 Zn	0.2374	0.2374	ppb	35.02	2000.	
68 Zn	0.3812	0.3812	ppb	18.95	#VALUE!	
75 As	0.3111	0.3111	ppb	83.48	1000.	
82 Se	0.2328	0.2328	ppb	117.78	1000.	
88 Sr	33.35	33.35	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.5272	0.5272	ppb	2.73	1000.	
107 Ag	0.0057	0.0057	ppb	6.97	100.	
109 Ag	0.0027	0.0027	ppb	42.66	#VALUE!	
111 Cd	-0.084	-0.084	ppb	25.74	#VALUE!	
114 Cd	-0.0011	-0.0011	ppb	480.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0079	-0.0079	ppb	103.61	1000.	
120 Sn	-0.0155	-0.0155	ppb	68.26	#VALUE!	
121 Sb	0.0061	0.0061	ppb	26.39	#VALUE!	
123 Sb	0.0071	0.0071	ppb	39.30	1000.	
135 Ba	0.8492	0.8492	ppb	6.68	2000.	
137 Ba	0.8386	0.8386	ppb	1.23	#VALUE!	
182 W	0.0261	0.0261	ppb	27.19	1000.	
203 Tl	0.0023	0.0023	ppb	410.98	1000.	
205 Tl	0.0031	0.0031	ppb	97.65	#VALUE!	
208 Pb	0.0159	0.0159	ppb	84.42	2000.	
232 Th	0.0421	0.0421	ppb	31.64	1000.	
238 U	0.0023	0.0023	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4686413.50	5.12	4492941.00	104.3	69.5 - 120	
45 Sc	3264231.80	3.84	3094960.50	105.5	69.5 - 120	
72 Ge	645425.00	1.56	631723.63	102.2	69.5 - 120	
159 Tb	6166778.00	1.86	6220065.50	99.1	69.5 - 120	
209 Bi	3249049.30	1.03	3318256.50	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000125

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\034SMPL.D\034SMPL.D#
Date Acquired: May 14 2018 04:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE11IMW1
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	1184.50	100.	
11 B	0.3897	0.3897	ppb	5.43	1000.	
23 Na	12.14	12.14	ppb	2.07	200000.	
25 Mg	8.983	8.983	ppb	3.89	200000.	
27 Al	5.288	5.288	ppb	3.53	200000.	
28 Si	-5.42	-5.42	ppb	133.95	#VALUE!	
29 Si	-9.229	-9.229	ppb	201.65	10000.	
39 K	-2.116	-2.116	ppb	161.67	200000.	
43 Ca	-0.4333	-0.4333	ppb	707.82	#VALUE!	
44 Ca	3.	3.	ppb	1.80	200000.	
51 V	0.0311	0.0311	ppb	84.20	1000.	
52 Cr	0.0818	0.0818	ppb	34.03	2000.	
53 Cr	10.41	10.41	ppb	2.71	#VALUE!	
55 Mn	0.0901	0.0901	ppb	9.33	2000.	
56 Fe	0.9356	0.9356	ppb	234.18	#VALUE!	
57 Fe	4.645	4.645	ppb	43.42	100000.	
59 Co	-0.003	-0.003	ppb	32.99	1000.	
60 Ni	0.0239	0.0239	ppb	61.62	1000.	
63 Cu	0.0368	0.0368	ppb	24.77	#VALUE!	
65 Cu	0.0305	0.0305	ppb	37.44	2000.	
66 Zn	0.642	0.642	ppb	9.73	2000.	
68 Zn	0.6056	0.6056	ppb	2.76	#VALUE!	
75 As	-0.0715	-0.0715	ppb	135.62	1000.	
82 Se	-0.1396	-0.1396	ppb	148.28	1000.	
88 Sr	0.0092	0.0092	ppb	61.90	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0176	0.0176	ppb	43.24	1000.	
107 Ag	-0.0008	-0.0008	ppb	122.39	100.	
109 Ag	-0.0017	-0.0017	ppb	28.38	#VALUE!	
111 Cd	-0.0113	-0.0113	ppb	109.88	#VALUE!	
114 Cd	-0.0022	-0.0022	ppb	190.62	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1388	0.1388	ppb	5.46	1000.	
120 Sn	0.1244	0.1244	ppb	5.28	#VALUE!	
121 Sb	0.003	0.003	ppb	119.01	#VALUE!	
123 Sb	0.0013	0.0013	ppb	115.84	1000.	
135 Ba	0.0367	0.0367	ppb	12.83	2000.	
137 Ba	0.0341	0.0341	ppb	21.62	#VALUE!	
182 W	0.0183	0.0183	ppb	30.28	1000.	
203 Tl	0.0014	0.0014	ppb	380.58	1000.	
205 Tl	-0.0007	-0.0007	ppb	763.95	#VALUE!	
208 Pb	0.0058	0.0058	ppb	92.57	2000.	
232 Th	0.0129	0.0129	ppb	48.41	1000.	
238 U	0.0002	0.0002	ppb	146.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4954067.00	4.51	4492941.00	110.3	69.5 - 120	
45 Sc	3286522.50	3.34	3094960.50	106.2	69.5 - 120	
72 Ge	641809.88	1.93	631723.63	101.6	69.5 - 120	
159 Tb	6141080.50	1.72	6220065.50	98.7	69.5 - 120	
209 Bi	3253345.30	1.22	3318256.50	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000126

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\035SMPL.D\035SMPL.D#
Date Acquired: May 14 2018 04:18 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE11IMW1
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	47.585	9.517	ppb	8.22	100.	
11 B	490.9	98.18	ppb	1.06	1000.	
23 Na	8,335.	1,667.	ppb	0.08	200000.	
25 Mg	5,665.	1,133.	ppb	3.57	200000.	
27 Al	2,166.5	433.3	ppb	2.79	200000.	
28 Si	1,066.5	213.3	ppb	3.31	#VALUE!	
29 Si	950.5	190.1	ppb	6.98	10000.	
39 K	10,090.	2,018.	ppb	3.48	200000.	
43 Ca	2,841.	568.2	ppb	6.83	#VALUE!	
44 Ca	2,580.	516.	ppb	3.58	200000.	
51 V	541.	108.2	ppb	1.38	1000.	
52 Cr	205.5	41.1	ppb	2.31	2000.	
53 Cr	235.25	47.05	ppb	3.16	#VALUE!	
55 Mn	521.5	104.3	ppb	0.88	2000.	
56 Fe	1,041.	208.2	ppb	3.51	#VALUE!	
57 Fe	1,070.	214.	ppb	4.04	100000.	
59 Co	532.	106.4	ppb	2.25	1000.	
60 Ni	518.5	103.7	ppb	2.31	1000.	
63 Cu	259.5	51.9	ppb	2.21	#VALUE!	
65 Cu	265.4	53.08	ppb	2.12	2000.	
66 Zn	542.5	108.5	ppb	2.10	2000.	
68 Zn	603.	120.6	ppb	2.72	#VALUE!	
75 As	106.75	21.35	ppb	3.01	1000.	
82 Se	108.05	21.61	ppb	3.77	1000.	
88 Sr	503.5	100.7	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.2	20.24	ppb	3.84	1000.	
107 Ag	52.2	10.44	ppb	3.05	100.	
109 Ag	52.4	10.48	ppb	2.66	#VALUE!	
111 Cd	261.3	52.26	ppb	3.18	#VALUE!	
114 Cd	262.2	52.44	ppb	3.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	521.	104.2	ppb	3.94	1000.	
120 Sn	524.	104.8	ppb	4.13	#VALUE!	
121 Sb	108.5	21.7	ppb	4.12	#VALUE!	
123 Sb	108.95	21.79	ppb	3.93	1000.	
135 Ba	2,139.5	427.9	ppb	4.21	2000.	
137 Ba	2,158.	431.6	ppb	4.03	#VALUE!	
182 W	103.2	20.64	ppb	5.81	1000.	
203 Tl	104.45	20.89	ppb	2.35	1000.	
205 Tl	104.25	20.85	ppb	3.59	#VALUE!	
208 Pb	105.45	21.09	ppb	3.28	2000.	
232 Th	98.55	19.71	ppb	2.17	1000.	
238 U	101.6	20.32	ppb	3.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4804903.00	10.29	4492941.00	106.9	69.5 - 120	
45 Sc	3145366.30	3.68	3094960.50	101.6	69.5 - 120	
72 Ge	608951.25	2.61	631723.63	96.4	69.5 - 120	
159 Tb	6037850.50	2.98	6220065.50	97.1	69.5 - 120	
209 Bi	3200861.80	1.22	3318256.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000127

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\036SMPL.D\036SMPL.D#
Date Acquired: May 14 2018 04:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4028-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0035	0.0035	ppb	55.70	100.	
11 B	563.8	563.8	ppb	2.27	1000.	
23 Na	150,700.	150,700.	ppb	0.50	200000.	
25 Mg	195.1	195.1	ppb	0.72	200000.	
27 Al	295.7	295.7	ppb	1.68	200000.	
28 Si	24,680.	24,680.	ppb	0.60	#VALUE!	
29 Si	24,620.	24,620.	ppb	2.99	10000.	>LDR
39 K	48,120.	48,120.	ppb	3.96	200000.	
43 Ca	1,051.	1,051.	ppb	0.29	#VALUE!	
44 Ca	1,098.	1,098.	ppb	0.98	200000.	
51 V	0.7133	0.7133	ppb	13.54	1000.	
52 Cr	6.615	6.615	ppb	8.53	2000.	
53 Cr	16.38	16.38	ppb	5.43	#VALUE!	
55 Mn	7.324	7.324	ppb	0.86	2000.	
56 Fe	61.91	61.91	ppb	13.21	#VALUE!	
57 Fe	55.46	55.46	ppb	1.42	100000.	
59 Co	8.197	8.197	ppb	1.95	1000.	
60 Ni	40.16	40.16	ppb	0.60	1000.	
63 Cu	131.3	131.3	ppb	2.56	#VALUE!	
65 Cu	132.5	132.5	ppb	0.52	2000.	
66 Zn	21.37	21.37	ppb	0.26	2000.	
68 Zn	21.1	21.1	ppb	0.84	#VALUE!	
75 As	0.3353	0.3353	ppb	52.43	1000.	
82 Se	0.0612	0.0612	ppb	102.01	1000.	
88 Sr	2.529	2.529	ppb	0.85	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.139	2.139	ppb	1.63	1000.	
107 Ag	0.0132	0.0132	ppb	5.37	100.	
109 Ag	0.011	0.011	ppb	19.90	#VALUE!	
111 Cd	-0.0373	-0.0373	ppb	117.29	#VALUE!	
114 Cd	-0.0025	-0.0025	ppb	80.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9024	0.9024	ppb	4.48	1000.	
120 Sn	0.8946	0.8946	ppb	7.66	#VALUE!	
121 Sb	2.505	2.505	ppb	1.14	#VALUE!	
123 Sb	2.519	2.519	ppb	1.77	1000.	
135 Ba	1.653	1.653	ppb	3.87	2000.	
137 Ba	1.596	1.596	ppb	3.34	#VALUE!	
182 W	5.192	5.192	ppb	0.30	1000.	
203 Tl	0.0117	0.0117	ppb	36.96	1000.	
205 Tl	0.0022	0.0022	ppb	87.51	#VALUE!	
208 Pb	7.193	7.193	ppb	0.25	2000.	
232 Th	0.2086	0.2086	ppb	31.49	1000.	
238 U	0.0975	0.0975	ppb	5.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4497600.50	2.67	4492941.00	100.1	69.5 - 120	
45 Sc	3241483.50	0.37	3094960.50	104.7	69.5 - 120	
72 Ge	628529.13	1.41	631723.63	99.5	69.5 - 120	
159 Tb	5964664.00	0.82	6220065.50	95.9	69.5 - 120	
209 Bi	2812955.30	1.78	3318256.50	84.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000128

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\037SMPL.D\037SMPL.D#
Date Acquired: May 14 2018 04:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4027-001
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0127	0.0005	ppb	164.87	100.	
11 B	3,732.5	149.3	ppb	1.83	1000.	
23 Na	1,408,000.	56,320.	ppb	2.36	200000.	
25 Mg	844.25	33.77	ppb	1.56	200000.	
27 Al	871.5	34.86	ppb	2.06	200000.	
28 Si	81,200.	3,248.	ppb	2.64	#VALUE!	
29 Si	86,925.	3,477.	ppb	2.07	10000.	
39 K	431,500.	17,260.	ppb	1.67	200000.	
43 Ca	10,230.	409.2	ppb	1.98	#VALUE!	
44 Ca	10,295.	411.8	ppb	1.68	200000.	
51 V	4.5075	0.1803	ppb	9.12	1000.	
52 Cr	21.29	0.8516	ppb	4.38	2000.	
53 Cr	232.2	9.288	ppb	2.41	#VALUE!	
55 Mn	6.55	0.262	ppb	1.86	2000.	
56 Fe	158.4	6.336	ppb	45.64	#VALUE!	
57 Fe	125.375	5.015	ppb	24.73	100000.	
59 Co	19.7475	0.7899	ppb	5.13	1000.	
60 Ni	57.15	2.286	ppb	8.03	1000.	
63 Cu	191.85	7.674	ppb	0.31	#VALUE!	
65 Cu	151.675	6.067	ppb	1.65	2000.	
66 Zn	49.25	1.97	ppb	1.31	2000.	
68 Zn	52.575	2.103	ppb	3.18	#VALUE!	
75 As	0.8568	0.0343	ppb	222.12	1000.	
82 Se	4.5425	0.1817	ppb	93.34	1000.	
88 Sr	68.6	2.744	ppb	2.40	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	8.115	0.3246	ppb	3.33	1000.	
107 Ag	0.0206	0.0008	ppb	109.12	100.	
109 Ag	0.0384	0.0015	ppb	30.81	#VALUE!	
111 Cd	-1.3383	-0.0535	ppb	18.27	#VALUE!	
114 Cd	0.0195	0.0008	ppb	269.02	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	4.06	0.1624	ppb	15.67	1000.	
120 Sn	3.09	0.1236	ppb	9.92	#VALUE!	
121 Sb	4.3275	0.1731	ppb	2.88	#VALUE!	
123 Sb	4.295	0.1718	ppb	3.20	1000.	
135 Ba	6.16	0.2464	ppb	3.91	2000.	
137 Ba	6.0575	0.2423	ppb	16.05	#VALUE!	
182 W	21.945	0.8778	ppb	1.48	1000.	
203 Tl	0.1601	0.0064	ppb	66.85	1000.	
205 Tl	0.0252	0.001	ppb	248.26	#VALUE!	
208 Pb	16.825	0.673	ppb	1.74	2000.	
232 Th	0.5393	0.0216	ppb	35.81	1000.	
238 U	0.526	0.021	ppb	9.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4764936.00	3.55	4492941.00	106.1	69.5 - 120	
45 Sc	3362311.80	1.74	3094960.50	108.6	69.5 - 120	
72 Ge	655194.25	1.51	631723.63	103.7	69.5 - 120	
159 Tb	6082687.00	0.65	6220065.50	97.8	69.5 - 120	
209 Bi	2980553.30	0.17	3318256.50	89.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000129

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\038SMPL.D\038SMPL.D#
Date Acquired: May 14 2018 04:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	66.65	100.	
11 B	4.519	4.519	ppb	14.00	1000.	
23 Na	15.12	15.12	ppb	10.98	200000.	
25 Mg	0.7485	0.7485	ppb	19.60	200000.	
27 Al	1.042	1.042	ppb	7.84	200000.	
28 Si	4.427	4.427	ppb	88.46	#VALUE!	
29 Si	-13.2	-13.2	ppb	62.88	10000.	
39 K	-0.624	-0.624	ppb	382.85	200000.	
43 Ca	24.82	24.82	ppb	11.97	#VALUE!	
44 Ca	28.8	28.8	ppb	3.46	200000.	
51 V	0.0319	0.0319	ppb	129.70	1000.	
52 Cr	0.1511	0.1511	ppb	18.77	2000.	
53 Cr	7.956	7.956	ppb	1.33	#VALUE!	
55 Mn	0.0384	0.0384	ppb	5.55	2000.	
56 Fe	3.574	3.574	ppb	86.40	#VALUE!	
57 Fe	3.326	3.326	ppb	34.73	100000.	
59 Co	0.0026	0.0026	ppb	47.98	1000.	
60 Ni	0.0124	0.0124	ppb	16.69	1000.	
63 Cu	0.1841	0.1841	ppb	3.19	#VALUE!	
65 Cu	0.1805	0.1805	ppb	1.91	2000.	
66 Zn	0.1586	0.1586	ppb	15.56	2000.	
68 Zn	0.168	0.168	ppb	23.55	#VALUE!	
75 As	0.0962	0.0962	ppb	14.77	1000.	
82 Se	0.1686	0.1686	ppb	91.87	1000.	
88 Sr	0.0168	0.0168	ppb	31.07	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0375	0.0375	ppb	12.34	1000.	
107 Ag	-0.0004	-0.0004	ppb	143.16	100.	
109 Ag	-0.0012	-0.0012	ppb	68.42	#VALUE!	
111 Cd	-0.03	-0.03	ppb	49.97	#VALUE!	
114 Cd	-0.0034	-0.0034	ppb	96.39	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0112	0.0112	ppb	116.77	1000.	
120 Sn	0.0034	0.0034	ppb	219.38	#VALUE!	
121 Sb	0.0008	0.0008	ppb	156.28	#VALUE!	
123 Sb	-0.0012	-0.0012	ppb	227.02	1000.	
135 Ba	0.0717	0.0717	ppb	18.88	2000.	
137 Ba	0.0587	0.0587	ppb	22.77	#VALUE!	
182 W	0.0155	0.0155	ppb	22.02	1000.	
203 Tl	-0.0018	-0.0018	ppb	123.68	1000.	
205 Tl	-0.0004	-0.0004	ppb	514.25	#VALUE!	
208 Pb	0.1331	0.1331	ppb	5.79	2000.	
232 Th	0.0118	0.0118	ppb	19.77	1000.	
238 U	0.	0.	ppb	2899.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5020043.00	2.40	4492941.00	111.7	69.5 - 120	
45 Sc	3318592.50	1.83	3094960.50	107.2	69.5 - 120	
72 Ge	654051.75	0.66	631723.63	103.5	69.5 - 120	
159 Tb	6254588.00	1.18	6220065.50	100.6	69.5 - 120	
209 Bi	3238309.80	1.34	3318256.50	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000130

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\039SMPL.D\039SMPL.D#
Date Acquired: May 14 2018 04:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RISNE
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	252.44	100.	
11 B	2.42	2.42	ppb	10.42	1000.	
23 Na	5.05	5.05	ppb	7.56	200000.	
25 Mg	0.4762	0.4762	ppb	11.29	200000.	
27 Al	0.8725	0.8725	ppb	2.01	200000.	
28 Si	4.279	4.279	ppb	119.19	#VALUE!	
29 Si	-2.942	-2.942	ppb	148.61	10000.	
39 K	1.716	1.716	ppb	44.18	200000.	
43 Ca	12.35	12.35	ppb	45.25	#VALUE!	
44 Ca	17.3	17.3	ppb	12.74	200000.	
51 V	0.044	0.044	ppb	27.38	1000.	
52 Cr	0.0557	0.0557	ppb	66.25	2000.	
53 Cr	7.444	7.444	ppb	5.62	#VALUE!	
55 Mn	0.0272	0.0272	ppb	34.09	2000.	
56 Fe	-1.589	-1.589	ppb	271.68	#VALUE!	
57 Fe	3.982	3.982	ppb	21.38	100000.	
59 Co	-0.0027	-0.0027	ppb	16.01	1000.	
60 Ni	0.0113	0.0113	ppb	59.88	1000.	
63 Cu	0.1612	0.1612	ppb	11.84	#VALUE!	
65 Cu	0.1965	0.1965	ppb	17.87	2000.	
66 Zn	0.3958	0.3958	ppb	6.24	2000.	
68 Zn	0.4182	0.4182	ppb	12.21	#VALUE!	
75 As	0.0431	0.0431	ppb	569.07	1000.	
82 Se	-0.0846	-0.0846	ppb	221.97	1000.	
88 Sr	0.0123	0.0123	ppb	41.17	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0109	0.0109	ppb	55.91	1000.	
107 Ag	0.0017	0.0017	ppb	49.61	100.	
109 Ag	-0.0012	-0.0012	ppb	41.45	#VALUE!	
111 Cd	-0.0218	-0.0218	ppb	179.87	#VALUE!	
114 Cd	-0.0017	-0.0017	ppb	198.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0052	0.0052	ppb	119.82	1000.	
120 Sn	-0.0123	-0.0123	ppb	53.27	#VALUE!	
121 Sb	0.0014	0.0014	ppb	156.72	#VALUE!	
123 Sb	0.0016	0.0016	ppb	193.43	1000.	
135 Ba	0.0177	0.0177	ppb	38.67	2000.	
137 Ba	0.0048	0.0048	ppb	83.59	#VALUE!	
182 W	0.008	0.008	ppb	35.34	1000.	
203 Tl	-0.0015	-0.0015	ppb	562.90	1000.	
205 Tl	0.0017	0.0017	ppb	210.20	#VALUE!	
208 Pb	0.1397	0.1397	ppb	7.44	2000.	
232 Th	0.0079	0.0079	ppb	35.63	1000.	
238 U	0.0002	0.0002	ppb	47.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4855947.50	2.03	4492941.00	108.1	69.5 - 120	
45 Sc	3177009.80	0.83	3094960.50	102.7	69.5 - 120	
72 Ge	634195.00	1.19	631723.63	100.4	69.5 - 120	
159 Tb	6122523.00	1.33	6220065.50	98.4	69.5 - 120	
209 Bi	3234714.30	2.38	3318256.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000131

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\040SMPL.D\040SMPL.D#
Date Acquired: May 14 2018 04:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE04IMS1
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	-0.0007	-0.0001	ppb	124.74	100.	
11 B	10.07	2.014	ppb	2.04	1000.	
23 Na	69.05	13.81	ppb	4.52	200000.	
25 Mg	23.485	4.697	ppb	3.61	200000.	
27 Al	9.92	1.984	ppb	6.95	200000.	
28 Si	-60.3	-12.06	ppb	33.07	#VALUE!	
29 Si	-49.615	-9.923	ppb	25.13	10000.	
39 K	31.315	6.263	ppb	25.48	200000.	
43 Ca	51.8	10.36	ppb	33.02	#VALUE!	
44 Ca	56.8	11.36	ppb	12.03	200000.	
51 V	0.631	0.1262	ppb	45.84	1000.	
52 Cr	2.706	0.5412	ppb	5.90	2000.	
53 Cr	107.4	21.48	ppb	2.18	#VALUE!	
55 Mn	1.3275	0.2655	ppb	6.10	2000.	
56 Fe	30.185	6.037	ppb	11.41	#VALUE!	
57 Fe	30.74	6.148	ppb	16.06	100000.	
59 Co	-0.0071	-0.0014	ppb	108.70	1000.	
60 Ni	0.3889	0.0778	ppb	19.16	1000.	
63 Cu	1.16	0.232	ppb	9.28	#VALUE!	
65 Cu	1.1645	0.2329	ppb	5.87	2000.	
66 Zn	0.7545	0.1509	ppb	36.69	2000.	
68 Zn	0.901	0.1802	ppb	22.14	#VALUE!	
75 As	0.9225	0.1845	ppb	100.54	1000.	
82 Se	-0.1373	-0.0275	ppb	322.00	1000.	
88 Sr	0.1742	0.0348	ppb	14.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1315	0.0263	ppb	21.89	1000.	
107 Ag	0.0331	0.0066	ppb	36.56	100.	
109 Ag	0.0203	0.0041	ppb	17.07	#VALUE!	
111 Cd	0.034	0.0068	ppb	418.34	#VALUE!	
114 Cd	-0.0821	-0.0164	ppb	15.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.14	8.628	ppb	0.68	1000.	
120 Sn	43.93	8.786	ppb	1.98	#VALUE!	
121 Sb	0.0464	0.0093	ppb	60.85	#VALUE!	
123 Sb	0.0243	0.0049	ppb	76.79	1000.	
135 Ba	0.2755	0.0551	ppb	13.68	2000.	
137 Ba	0.2984	0.0597	ppb	33.69	#VALUE!	
182 W	0.0546	0.0109	ppb	43.37	1000.	
203 Tl	0.0063	0.0013	ppb	567.23	1000.	
205 Tl	-0.0076	-0.0015	ppb	182.45	#VALUE!	
208 Pb	0.1783	0.0357	ppb	44.34	2000.	
232 Th	0.2306	0.0461	ppb	11.66	1000.	
238 U	0.0018	0.0004	ppb	34.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4747934.00	0.82	4492941.00	105.7	69.5 - 120	
45 Sc	3122076.30	0.30	3094960.50	100.9	69.5 - 120	
72 Ge	617412.69	0.78	631723.63	97.7	69.5 - 120	
159 Tb	6130698.00	0.55	6220065.50	98.6	69.5 - 120	
209 Bi	3269302.80	1.00	3318256.50	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000132

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\041SMPL.D\041SMPL.D#
Date Acquired: May 14 2018 04:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE04IMS1
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	47.475	9.495	ppb	2.97	100.	
11 B	521.5	104.3	ppb	1.99	1000.	
23 Na	8,640.	1,728.	ppb	1.65	200000.	
25 Mg	5,855.	1,171.	ppb	1.06	200000.	
27 Al	2,265.5	453.1	ppb	2.94	200000.	
28 Si	1,059.	211.8	ppb	3.19	#VALUE!	
29 Si	1,078.	215.6	ppb	6.15	10000.	
39 K	10,735.	2,147.	ppb	3.52	200000.	
43 Ca	2,909.	581.8	ppb	5.18	#VALUE!	
44 Ca	2,680.5	536.1	ppb	3.42	200000.	
51 V	555.	111.	ppb	2.05	1000.	
52 Cr	212.75	42.55	ppb	1.67	2000.	
53 Cr	307.8	61.56	ppb	2.89	#VALUE!	
55 Mn	534.	106.8	ppb	1.37	2000.	
56 Fe	1,121.5	224.3	ppb	3.42	#VALUE!	
57 Fe	1,123.5	224.7	ppb	3.14	100000.	
59 Co	550.5	110.1	ppb	0.17	1000.	
60 Ni	528.5	105.7	ppb	0.72	1000.	
63 Cu	264.15	52.83	ppb	2.63	#VALUE!	
65 Cu	272.15	54.43	ppb	0.79	2000.	
66 Zn	512.	102.4	ppb	1.93	2000.	
68 Zn	574.	114.8	ppb	2.77	#VALUE!	
75 As	103.4	20.68	ppb	1.16	1000.	
82 Se	101.4	20.28	ppb	1.12	1000.	
88 Sr	518.5	103.7	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.9	20.58	ppb	1.95	1000.	
107 Ag	53.1	10.62	ppb	1.53	100.	
109 Ag	53.	10.6	ppb	2.19	#VALUE!	
111 Cd	261.3	52.26	ppb	1.43	#VALUE!	
114 Cd	259.45	51.89	ppb	1.99	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	565.5	113.1	ppb	2.65	1000.	
120 Sn	570.	114.	ppb	3.30	#VALUE!	
121 Sb	106.4	21.28	ppb	3.02	#VALUE!	
123 Sb	107.75	21.55	ppb	2.37	1000.	
135 Ba	2,154.5	430.9	ppb	3.23	2000.	
137 Ba	2,158.	431.6	ppb	2.07	#VALUE!	
182 W	108.35	21.67	ppb	3.73	1000.	
203 Tl	107.5	21.5	ppb	2.01	1000.	
205 Tl	107.2	21.44	ppb	1.81	#VALUE!	
208 Pb	108.	21.6	ppb	1.84	2000.	
232 Th	104.45	20.89	ppb	0.69	1000.	
238 U	106.3	21.26	ppb	2.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4724471.50	3.73	4492941.00	105.2	69.5 - 120	
45 Sc	3018500.30	2.20	3094960.50	97.5	69.5 - 120	
72 Ge	592091.56	1.17	631723.63	93.7	69.5 - 120	
159 Tb	5988898.50	2.35	6220065.50	96.3	69.5 - 120	
209 Bi	3227712.80	1.37	3318256.50	97.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000133

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\042_CCV.D\042_CCV.D#
Date Acquired: May 14 2018 04:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.76	ppb	1.65	25	91.04	
11 B	28.54	ppb	5.19	25	114.16	Fail
23 Na	5,107.	ppb	3.98	5,000	102.14	
25 Mg	5,149.	ppb	2.15	5,000	102.98	
27 Al	503.3	ppb	2.20	500	100.66	
28 Si	492.9	ppb	3.72	500	98.58	
29 Si	468.	ppb	3.49	500	93.6	
39 K	4,878.	ppb	1.45	5,000	97.56	
43 Ca	4,790.	ppb	2.58	5,000	95.8	
44 Ca	4,893.	ppb	2.26	5,000	97.86	
51 V	25.05	ppb	0.97	25	100.2	
52 Cr	24.65	ppb	1.44	25	98.6	
53 Cr	28.25	ppb	7.25	25	113	
55 Mn	24.54	ppb	1.17	25	98.16	
56 Fe	4,895.	ppb	0.89	5,000	97.9	
57 Fe	4,931.	ppb	1.75	5,000	98.62	
59 Co	24.38	ppb	2.03	25	97.52	
60 Ni	24.47	ppb	0.97	25	97.88	
63 Cu	24.51	ppb	1.90	25	98.04	
65 Cu	24.74	ppb	1.55	25	98.96	
66 Zn	24.91	ppb	2.59	25	99.64	
68 Zn	24.28	ppb	2.19	25	97.12	
75 As	24.38	ppb	2.29	25	97.52	
82 Se	25.09	ppb	2.27	25	100.36	
88 Sr	24.44	ppb	2.11	25	97.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.98	ppb	1.66	25	95.92	
107 Ag	24.55	ppb	0.92	25	98.2	
109 Ag	24.63	ppb	1.59	25	98.52	
111 Cd	24.67	ppb	1.29	25	98.68	
114 Cd	24.71	ppb	2.03	25	98.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.34	ppb	1.16	25	97.36	
120 Sn	24.41	ppb	1.52	25	97.64	
121 Sb	24.67	ppb	1.50	25	98.68	
123 Sb	24.99	ppb	1.02	25	99.96	
135 Ba	24.76	ppb	0.83	25	99.04	
137 Ba	24.7	ppb	1.35	25	98.8	
182 W	24.5	ppb	1.13	25	98	
203 Tl	24.57	ppb	2.61	25	98.28	
205 Tl	24.45	ppb	1.88	25	97.8	
208 Pb	24.44	ppb	1.72	25	97.76	
232 Th	24.06	ppb	2.37	25	96.24	
238 U	24.3	ppb	1.82	25	97.2	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4703443.50	1.20	4492941.00	104.7	80 - 120.4	
45 Sc	3147044.50	1.61	3094960.50	101.7	80 - 120.4	
72 Ge	609165.81	1.27	631723.63	96.4	80 - 120.4	
159 Tb	6157993.00	0.95	6220065.50	99.0	80 - 120.4	
209 Bi	3260452.30	0.88	3318256.50	98.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000134

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\043_CCB.D\043_CCB.D#
Date Acquired: May 14 2018 04:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0004	ppb	244.08	1.00	
11 B	3.044	ppb	11.00	1.00	
23 Na	1.96	ppb	3.69	1.00	
25 Mg	0.0625	ppb	102.15	1.00	
27 Al	0.114	ppb	28.09	1.00	
28 Si	-10.33	ppb	71.35	1.00	
29 Si	-13.34	ppb	59.72	1.00	
39 K	-1.108	ppb	96.84	1.00	
43 Ca	-0.3326	ppb	631.99	1.00	
44 Ca	0.5745	ppb	139.50	1.00	
51 V	0.0066	ppb	714.82	1.00	
52 Cr	0.035	ppb	38.66	1.00	
53 Cr	4.038	ppb	10.31	1.00	
55 Mn	0.0013	ppb	520.97	1.00	
56 Fe	-4.53	ppb	89.51	1.00	
57 Fe	0.5267	ppb	85.00	1.00	
59 Co	-0.0022	ppb	77.97	1.00	
60 Ni	-0.0003	ppb	1758.00	1.00	
63 Cu	0.0081	ppb	38.14	1.00	
65 Cu	0.0103	ppb	1.27	1.00	
66 Zn	0.0423	ppb	134.55	1.00	
68 Zn	-0.0178	ppb	189.80	1.00	
75 As	-0.0144	ppb	532.96	1.00	
82 Se	-0.0077	ppb	1015.30	1.00	
88 Sr	0.0032	ppb	112.30	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.039	ppb	43.16	1.00	
107 Ag	0.0041	ppb	16.81	1.00	
109 Ag	0.0036	ppb	73.16	1.00	
111 Cd	-0.0073	ppb	203.22	1.00	
114 Cd	-0.0031	ppb	145.24	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0353	ppb	11.09	1.00	
120 Sn	0.0304	ppb	39.93	1.00	
121 Sb	0.0021	ppb	157.07	1.00	
123 Sb	0.0057	ppb	24.27	1.00	
135 Ba	0.0124	ppb	52.17	1.00	
137 Ba	-0.0012	ppb	331.83	1.00	
182 W	0.0494	ppb	38.31	1.00	
203 Tl	0.0052	ppb	186.94	1.00	
205 Tl	-0.0025	ppb	304.84	1.00	
208 Pb	-0.0224	ppb	17.37	1.00	
232 Th	0.0829	ppb	2.47	1.00	
238 U	0.0035	ppb	60.37	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4712421.00	2.30	4492941.00	104.9	79.5 - 120	
45 Sc	3125634.50	1.29	3094960.50	101.0	79.5 - 120	
72 Ge	615452.94	0.65	631723.63	97.4	79.5 - 120	
159 Tb	6123339.00	1.02	6220065.50	98.4	79.5 - 120	
209 Bi	3309427.50	1.34	3318256.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000135

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\044SMPL.D\044SMPL.D#
Date Acquired: May 14 2018 04:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-007
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	11.72	1.172	ppb	7.25	100.	
11 B	184.3	18.43	ppb	5.26	1000.	
23 Na	21,630.	2,163.	ppb	3.49	200000.	
25 Mg	129,800.	12,980.	ppb	2.78	200000.	
27 Al	273,400.	27,340.	ppb	1.59	200000.	
28 Si	3,364.	336.4	ppb	2.04	#VALUE!	
29 Si	3,209.	320.9	ppb	4.34	10000.	
39 K	62,190.	6,219.	ppb	2.52	200000.	
43 Ca	588,100.	58,810.	ppb	2.37	#VALUE!	
44 Ca	554,600.	55,460.	ppb	0.76	200000.	
51 V	509.4	50.94	ppb	1.04	1000.	
52 Cr	260.7	26.07	ppb	1.07	2000.	
53 Cr	283.6	28.36	ppb	3.19	#VALUE!	
55 Mn	13,700.	1,370.	ppb	1.20	2000.	
56 Fe	272,200.	27,220.	ppb	0.94	#VALUE!	
57 Fe	263,500.	26,350.	ppb	1.27	100000.	
59 Co	104.2	10.42	ppb	1.70	1000.	
60 Ni	267.4	26.74	ppb	1.02	1000.	
63 Cu	177.9	17.79	ppb	1.59	#VALUE!	
65 Cu	185.3	18.53	ppb	0.36	2000.	
66 Zn	708.8	70.88	ppb	0.56	2000.	
68 Zn	816.	81.6	ppb	0.39	#VALUE!	
75 As	36.97	3.697	ppb	3.84	1000.	
82 Se	7.016	0.7016	ppb	9.97	1000.	
88 Sr	1,508.	150.8	ppb	0.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.95	1.795	ppb	1.77	1000.	
107 Ag	1.13	0.113	ppb	5.93	100.	
109 Ag	0.9151	0.0915	ppb	2.91	#VALUE!	
111 Cd	5.375	0.5375	ppb	5.45	#VALUE!	
114 Cd	1.491	0.1491	ppb	8.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.03	5.403	ppb	1.04	1000.	
120 Sn	54.25	5.425	ppb	2.21	#VALUE!	
121 Sb	2.916	0.2916	ppb	5.66	#VALUE!	
123 Sb	2.817	0.2817	ppb	3.81	1000.	
135 Ba	3,820.	382.	ppb	0.94	2000.	
137 Ba	3,744.	374.4	ppb	1.44	#VALUE!	
182 W	1.239	0.1239	ppb	12.07	1000.	
203 Tl	4.371	0.4371	ppb	6.53	1000.	
205 Tl	4.505	0.4505	ppb	3.66	#VALUE!	
208 Pb	158.5	15.85	ppb	1.00	2000.	
232 Th	116.	11.6	ppb	0.98	1000.	
238 U	16.73	1.673	ppb	0.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4596578.00	4.36	4492941.00	102.3	69.5 - 120	
45 Sc	3129128.80	1.99	3094960.50	101.1	69.5 - 120	
72 Ge	593802.00	0.28	631723.63	94.0	69.5 - 120	
159 Tb	6118795.50	0.26	6220065.50	98.4	69.5 - 120	
209 Bi	3159649.00	0.91	3318256.50	95.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\045SMPL.D\045SMPL.D#
Date Acquired: May 14 2018 04:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-019
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	13.98	1.398	ppb	3.53	100.	
11 B	203.4	20.34	ppb	8.40	1000.	
23 Na	5,113.	511.3	ppb	3.35	200000.	
25 Mg	122,700.	12,270.	ppb	0.72	200000.	
27 Al	338,100.	33,810.	ppb	0.87	200000.	
28 Si	4,577.	457.7	ppb	3.20	#VALUE!	
29 Si	4,327.	432.7	ppb	3.41	10000.	
39 K	78,870.	7,887.	ppb	0.95	200000.	
43 Ca	513,100.	51,310.	ppb	3.33	#VALUE!	
44 Ca	483,800.	48,380.	ppb	1.54	200000.	
51 V	670.8	67.08	ppb	0.71	1000.	
52 Cr	290.4	29.04	ppb	1.41	2000.	
53 Cr	312.5	31.25	ppb	0.97	#VALUE!	
55 Mn	11,750.	1,175.	ppb	0.62	2000.	
56 Fe	304,500.	30,450.	ppb	1.57	#VALUE!	
57 Fe	298,400.	29,840.	ppb	0.60	100000.	
59 Co	207.3	20.73	ppb	1.58	1000.	
60 Ni	334.7	33.47	ppb	3.02	1000.	
63 Cu	194.2	19.42	ppb	1.01	#VALUE!	
65 Cu	203.9	20.39	ppb	1.42	2000.	
66 Zn	783.1	78.31	ppb	1.75	2000.	
68 Zn	1,007.	100.7	ppb	0.64	#VALUE!	
75 As	139.2	13.92	ppb	0.78	1000.	
82 Se	6.313	0.6313	ppb	47.68	1000.	
88 Sr	1,765.	176.5	ppb	1.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.48	1.648	ppb	2.18	1000.	
107 Ag	1.207	0.1207	ppb	6.48	100.	
109 Ag	0.9985	0.0999	ppb	4.90	#VALUE!	
111 Cd	7.41	0.741	ppb	3.66	#VALUE!	
114 Cd	2.976	0.2976	ppb	8.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.27	5.627	ppb	1.89	1000.	
120 Sn	56.51	5.651	ppb	1.43	#VALUE!	
121 Sb	3.412	0.3412	ppb	2.24	#VALUE!	
123 Sb	3.261	0.3261	ppb	0.94	1000.	
135 Ba	6,854.	685.4	ppb	1.84	2000.	
137 Ba	6,738.	673.8	ppb	1.34	#VALUE!	
182 W	1.412	0.1412	ppb	7.49	1000.	
203 Tl	5.564	0.5564	ppb	1.76	1000.	
205 Tl	5.585	0.5585	ppb	1.41	#VALUE!	
208 Pb	248.8	24.88	ppb	0.42	2000.	
232 Th	134.4	13.44	ppb	0.42	1000.	
238 U	25.57	2.557	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4598611.50	4.38	4492941.00	102.4	69.5 - 120	
45 Sc	3114014.80	2.89	3094960.50	100.6	69.5 - 120	
72 Ge	595082.31	1.41	631723.63	94.2	69.5 - 120	
159 Tb	6107695.50	1.30	6220065.50	98.2	69.5 - 120	
209 Bi	3160861.00	0.34	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000137

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\046SMPL.D\046SMPL.D#
Date Acquired: May 14 2018 05:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-020
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	6.908	0.6908	ppb	5.35	100.	
11 B	148.2	14.82	ppb	0.41	1000.	
23 Na	3,770.	377.	ppb	0.88	200000.	
25 Mg	125,700.	12,570.	ppb	2.83	200000.	
27 Al	177,700.	17,770.	ppb	2.60	200000.	
28 Si	3,059.	305.9	ppb	3.28	#VALUE!	
29 Si	2,858.	285.8	ppb	3.67	10000.	
39 K	43,030.	4,303.	ppb	1.69	200000.	
43 Ca	1,602,000.	160,200.	ppb	1.46	#VALUE!	
44 Ca	1,562,000.	156,200.	ppb	1.61	200000.	
51 V	359.9	35.99	ppb	1.22	1000.	
52 Cr	157.3	15.73	ppb	1.91	2000.	
53 Cr	164.	16.4	ppb	1.84	#VALUE!	
55 Mn	5,292.	529.2	ppb	1.06	2000.	
56 Fe	154,100.	15,410.	ppb	0.08	#VALUE!	
57 Fe	152,100.	15,210.	ppb	1.12	100000.	
59 Co	84.11	8.411	ppb	1.19	1000.	
60 Ni	182.6	18.26	ppb	0.69	1000.	
63 Cu	99.99	9.999	ppb	1.28	#VALUE!	
65 Cu	104.4	10.44	ppb	1.21	2000.	
66 Zn	393.	39.3	ppb	1.21	2000.	
68 Zn	542.	54.2	ppb	1.03	#VALUE!	
75 As	63.74	6.374	ppb	0.75	1000.	
82 Se	5.95	0.595	ppb	13.97	1000.	
88 Sr	3,594.	359.4	ppb	1.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.94	1.094	ppb	1.85	1000.	
107 Ag	0.6867	0.0687	ppb	7.52	100.	
109 Ag	0.4121	0.0412	ppb	6.69	#VALUE!	
111 Cd	5.058	0.5058	ppb	1.81	#VALUE!	
114 Cd	2.035	0.2035	ppb	4.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.68	5.068	ppb	2.71	1000.	
120 Sn	50.71	5.071	ppb	1.06	#VALUE!	
121 Sb	2.031	0.2031	ppb	2.95	#VALUE!	
123 Sb	2.142	0.2142	ppb	7.63	1000.	
135 Ba	4,424.	442.4	ppb	1.05	2000.	
137 Ba	4,353.	435.3	ppb	1.35	#VALUE!	
182 W	1.244	0.1244	ppb	3.29	1000.	
203 Tl	3.488	0.3488	ppb	2.37	1000.	
205 Tl	3.213	0.3213	ppb	2.35	#VALUE!	
208 Pb	117.	11.7	ppb	1.12	2000.	
232 Th	67.94	6.794	ppb	1.76	1000.	
238 U	19.13	1.913	ppb	0.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4829804.00	4.18	4492941.00	107.5	69.5 - 120	
45 Sc	3120462.30	1.80	3094960.50	100.8	69.5 - 120	
72 Ge	590034.13	0.92	631723.63	93.4	69.5 - 120	
159 Tb	6066736.00	0.95	6220065.50	97.5	69.5 - 120	
209 Bi	3074171.50	0.70	3318256.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\047SMPL.D\047SMPL.D#
Date Acquired: May 14 2018 05:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-021
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	8.798	0.8798	ppb	2.39	100.	
11 B	144.6	14.46	ppb	3.46	1000.	
23 Na	5,347.	534.7	ppb	3.30	200000.	
25 Mg	92,300.	9,230.	ppb	1.89	200000.	
27 Al	212,100.	21,210.	ppb	0.74	200000.	
28 Si	3,896.	389.6	ppb	2.45	#VALUE!	
29 Si	3,575.	357.5	ppb	2.41	10000.	
39 K	48,670.	4,867.	ppb	1.37	200000.	
43 Ca	525,500.	52,550.	ppb	1.64	#VALUE!	
44 Ca	496,300.	49,630.	ppb	0.19	200000.	
51 V	388.7	38.87	ppb	1.65	1000.	
52 Cr	197.5	19.75	ppb	1.23	2000.	
53 Cr	204.4	20.44	ppb	1.05	#VALUE!	
55 Mn	2,006.	200.6	ppb	1.30	2000.	
56 Fe	236,900.	23,690.	ppb	1.03	#VALUE!	
57 Fe	232,700.	23,270.	ppb	1.95	100000.	
59 Co	50.12	5.012	ppb	2.27	1000.	
60 Ni	145.	14.5	ppb	0.75	1000.	
63 Cu	144.9	14.49	ppb	1.90	#VALUE!	
65 Cu	147.	14.7	ppb	1.46	2000.	
66 Zn	510.7	51.07	ppb	0.81	2000.	
68 Zn	553.8	55.38	ppb	1.06	#VALUE!	
75 As	33.25	3.325	ppb	1.63	1000.	
82 Se	5.18	0.518	ppb	41.37	1000.	
88 Sr	1,237.	123.7	ppb	1.18	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.349	0.4349	ppb	5.66	1000.	
107 Ag	0.8161	0.0816	ppb	11.53	100.	
109 Ag	0.6946	0.0695	ppb	4.04	#VALUE!	
111 Cd	3.761	0.3761	ppb	4.11	#VALUE!	
114 Cd	0.3952	0.0395	ppb	91.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.2	5.62	ppb	3.19	1000.	
120 Sn	56.1	5.61	ppb	1.34	#VALUE!	
121 Sb	2.179	0.2179	ppb	2.26	#VALUE!	
123 Sb	2.291	0.2291	ppb	4.28	1000.	
135 Ba	1,808.	180.8	ppb	1.59	2000.	
137 Ba	1,799.	179.9	ppb	1.15	#VALUE!	
182 W	0.6111	0.0611	ppb	5.93	1000.	
203 Tl	3.173	0.3173	ppb	6.96	1000.	
205 Tl	3.118	0.3118	ppb	2.23	#VALUE!	
208 Pb	118.2	11.82	ppb	0.74	2000.	
232 Th	90.29	9.029	ppb	0.55	1000.	
238 U	11.3	1.13	ppb	2.45	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4571476.50	1.77	4492941.00	101.7	69.5 - 120	
45 Sc	3070011.50	0.48	3094960.50	99.2	69.5 - 120	
72 Ge	594391.63	0.96	631723.63	94.1	69.5 - 120	
159 Tb	6179867.50	1.07	6220065.50	99.4	69.5 - 120	
209 Bi	3215048.80	0.28	3318256.50	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\048SMPL.D\048SMPL.D#
Date Acquired: May 14 2018 05:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	5.19	0.519	ppb	5.07	100.	
11 B	69.05	6.905	ppb	5.28	1000.	
23 Na	1,259.	125.9	ppb	3.87	200000.	
25 Mg	27,070.	2,707.	ppb	2.08	200000.	
27 Al	108,600.	10,860.	ppb	2.38	200000.	
28 Si	3,689.	368.9	ppb	6.04	#VALUE!	
29 Si	3,174.	317.4	ppb	5.14	10000.	
39 K	34,780.	3,478.	ppb	0.93	200000.	
43 Ca	26,630.	2,663.	ppb	1.92	#VALUE!	
44 Ca	26,310.	2,631.	ppb	0.99	200000.	
51 V	222.8	22.28	ppb	0.68	1000.	
52 Cr	113.6	11.36	ppb	0.93	2000.	
53 Cr	147.9	14.79	ppb	2.06	#VALUE!	
55 Mn	2,920.	292.	ppb	0.33	2000.	
56 Fe	97,930.	9,793.	ppb	1.09	#VALUE!	
57 Fe	97,590.	9,759.	ppb	1.89	100000.	
59 Co	55.56	5.556	ppb	2.23	1000.	
60 Ni	86.37	8.637	ppb	2.32	1000.	
63 Cu	97.5	9.75	ppb	0.63	#VALUE!	
65 Cu	101.4	10.14	ppb	1.58	2000.	
66 Zn	343.7	34.37	ppb	0.90	2000.	
68 Zn	392.9	39.29	ppb	0.46	#VALUE!	
75 As	28.14	2.814	ppb	2.83	1000.	
82 Se	4.386	0.4386	ppb	13.35	1000.	
88 Sr	348.4	34.84	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.75	1.175	ppb	0.63	1000.	
107 Ag	0.5349	0.0535	ppb	10.33	100.	
109 Ag	0.5028	0.0503	ppb	21.38	#VALUE!	
111 Cd	3.006	0.3006	ppb	4.16	#VALUE!	
114 Cd	1.939	0.1939	ppb	8.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.14	4.714	ppb	0.37	1000.	
120 Sn	47.6	4.76	ppb	1.22	#VALUE!	
121 Sb	1.456	0.1456	ppb	7.63	#VALUE!	
123 Sb	1.349	0.1349	ppb	6.50	1000.	
135 Ba	1,676.	167.6	ppb	0.92	2000.	
137 Ba	1,665.	166.5	ppb	0.66	#VALUE!	
182 W	0.7759	0.0776	ppb	3.35	1000.	
203 Tl	2.305	0.2305	ppb	3.80	1000.	
205 Tl	2.294	0.2294	ppb	5.93	#VALUE!	
208 Pb	132.7	13.27	ppb	2.54	2000.	
232 Th	78.45	7.845	ppb	3.02	1000.	
238 U	17.94	1.794	ppb	1.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4676636.00	3.23	4492941.00	104.1	69.5 - 120	
45 Sc	3108395.50	0.94	3094960.50	100.4	69.5 - 120	
72 Ge	612528.19	0.41	631723.63	97.0	69.5 - 120	
159 Tb	6199708.00	0.22	6220065.50	99.7	69.5 - 120	
209 Bi	3293176.30	1.47	3318256.50	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000140

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\049SMPL.D\049SMPL.D#
Date Acquired: May 14 2018 05:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	7.072	0.7072	ppb	4.78	100.	
11 B	146.1	14.61	ppb	5.03	1000.	
23 Na	2,241.	224.1	ppb	0.64	200000.	
25 Mg	97,100.	9,710.	ppb	1.21	200000.	
27 Al	182,900.	18,290.	ppb	3.09	200000.	
28 Si	4,335.	433.5	ppb	2.89	#VALUE!	
29 Si	4,052.	405.2	ppb	2.86	10000.	
39 K	48,210.	4,821.	ppb	0.70	200000.	
43 Ca	328,500.	32,850.	ppb	0.67	#VALUE!	
44 Ca	319,700.	31,970.	ppb	0.41	200000.	
51 V	455.1	45.51	ppb	1.30	1000.	
52 Cr	172.1	17.21	ppb	0.48	2000.	
53 Cr	184.3	18.43	ppb	0.75	#VALUE!	
55 Mn	3,056.	305.6	ppb	1.14	2000.	
56 Fe	172,500.	17,250.	ppb	0.48	#VALUE!	
57 Fe	168,200.	16,820.	ppb	1.44	100000.	
59 Co	67.84	6.784	ppb	1.22	1000.	
60 Ni	149.8	14.98	ppb	1.38	1000.	
63 Cu	114.9	11.49	ppb	0.51	#VALUE!	
65 Cu	120.2	12.02	ppb	0.44	2000.	
66 Zn	447.2	44.72	ppb	0.39	2000.	
68 Zn	510.1	51.01	ppb	0.43	#VALUE!	
75 As	115.6	11.56	ppb	1.60	1000.	
82 Se	3.431	0.3431	ppb	34.42	1000.	
88 Sr	1,418.	141.8	ppb	0.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.44	1.044	ppb	1.04	1000.	
107 Ag	0.744	0.0744	ppb	8.88	100.	
109 Ag	0.6254	0.0625	ppb	9.06	#VALUE!	
111 Cd	2.308	0.2308	ppb	10.79	#VALUE!	
114 Cd	-0.0201	-0.002	ppb	622.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.5	5.05	ppb	1.58	1000.	
120 Sn	50.89	5.089	ppb	1.03	#VALUE!	
121 Sb	2.475	0.2475	ppb	4.72	#VALUE!	
123 Sb	2.638	0.2638	ppb	7.02	1000.	
135 Ba	2,290.	229.	ppb	0.78	2000.	
137 Ba	2,287.	228.7	ppb	0.55	#VALUE!	
182 W	0.8114	0.0811	ppb	8.06	1000.	
203 Tl	2.778	0.2778	ppb	2.66	1000.	
205 Tl	2.757	0.2757	ppb	0.91	#VALUE!	
208 Pb	107.5	10.75	ppb	0.44	2000.	
232 Th	72.66	7.266	ppb	1.59	1000.	
238 U	15.62	1.562	ppb	0.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4726084.00	1.50	4492941.00	105.2	69.5 - 120	
45 Sc	3085480.80	0.94	3094960.50	99.7	69.5 - 120	
72 Ge	602808.56	0.69	631723.63	95.4	69.5 - 120	
159 Tb	6243403.00	0.44	6220065.50	100.4	69.5 - 120	
209 Bi	3269470.30	0.94	3318256.50	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\050SMPL.D\050SMPL.D#
Date Acquired: May 14 2018 05:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 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	201.45	100.	
11 B	1.225	1.225	ppb	10.15	1000.	
23 Na	26.21	26.21	ppb	4.23	200000.	
25 Mg	2.064	2.064	ppb	17.41	200000.	
27 Al	2.881	2.881	ppb	30.51	200000.	
28 Si	-1.093	-1.093	ppb	375.75	#VALUE!	
29 Si	-25.51	-25.51	ppb	33.90	10000.	
39 K	-1.136	-1.136	ppb	42.53	200000.	
43 Ca	9.212	9.212	ppb	23.14	#VALUE!	
44 Ca	15.87	15.87	ppb	11.82	200000.	
51 V	-0.1784	-0.1784	ppb	33.99	1000.	
52 Cr	-0.0966	-0.0966	ppb	27.53	2000.	
53 Cr	-1.595	-1.595	ppb	4.77	#VALUE!	
55 Mn	0.1228	0.1228	ppb	13.90	2000.	
56 Fe	1.206	1.206	ppb	317.25	#VALUE!	
57 Fe	5.609	5.609	ppb	59.41	100000.	
59 Co	0.006	0.006	ppb	24.27	1000.	
60 Ni	7.349	7.349	ppb	1.76	1000.	
63 Cu	4.345	4.345	ppb	0.86	#VALUE!	
65 Cu	4.551	4.551	ppb	1.23	2000.	
66 Zn	0.6473	0.6473	ppb	4.42	2000.	
68 Zn	0.7208	0.7208	ppb	11.44	#VALUE!	
75 As	0.0091	0.0091	ppb	425.43	1000.	
82 Se	0.0981	0.0981	ppb	124.22	1000.	
88 Sr	0.0318	0.0318	ppb	23.05	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0088	0.0088	ppb	41.83	1000.	
107 Ag	0.0012	0.0012	ppb	249.79	100.	
109 Ag	-0.0006	-0.0006	ppb	206.25	#VALUE!	
111 Cd	-0.0669	-0.0669	ppb	2.48	#VALUE!	
114 Cd	-0.0024	-0.0024	ppb	139.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0128	0.0128	ppb	39.69	1000.	
120 Sn	0.0122	0.0122	ppb	97.95	#VALUE!	
121 Sb	0.0025	0.0025	ppb	15.63	#VALUE!	
123 Sb	0.	0.	ppb	7059.50	1000.	
135 Ba	0.1646	0.1646	ppb	11.08	2000.	
137 Ba	0.1401	0.1401	ppb	8.29	#VALUE!	
182 W	0.0032	0.0032	ppb	76.18	1000.	
203 Tl	0.0016	0.0016	ppb	168.04	1000.	
205 Tl	-0.0058	-0.0058	ppb	72.82	#VALUE!	
208 Pb	0.1801	0.1801	ppb	4.91	2000.	
232 Th	0.0132	0.0132	ppb	33.40	1000.	
238 U	0.0035	0.0035	ppb	5.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4879572.50	3.71	4492941.00	108.6	69.5 - 120	
45 Sc	3131826.50	0.85	3094960.50	101.2	69.5 - 120	
72 Ge	630687.06	0.59	631723.63	99.8	69.5 - 120	
159 Tb	6201667.50	0.88	6220065.50	99.7	69.5 - 120	
209 Bi	3315243.30	0.20	3318256.50	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000142

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\051SMPL.D\051SMPL.D#
Date Acquired: May 14 2018 05:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE11IMS2
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	-0.0039	-0.0008	ppb	121.37	100.	
11 B	4.913	0.9826	ppb	16.64	1000.	
23 Na	105.8	21.16	ppb	1.26	200000.	
25 Mg	22.07	4.414	ppb	4.87	200000.	
27 Al	18.305	3.661	ppb	6.44	200000.	
28 Si	-20.18	-4.036	ppb	135.06	#VALUE!	
29 Si	-103.6	-20.72	ppb	0.41	10000.	
39 K	11.93	2.386	ppb	34.21	200000.	
43 Ca	-6.335	-1.267	ppb	352.49	#VALUE!	
44 Ca	7.375	1.475	ppb	47.40	200000.	
51 V	-0.2545	-0.0509	ppb	67.42	1000.	
52 Cr	0.5635	0.1127	ppb	21.05	2000.	
53 Cr	-6.455	-1.291	ppb	10.91	#VALUE!	
55 Mn	0.1482	0.0296	ppb	32.68	2000.	
56 Fe	13.03	2.606	ppb	115.96	#VALUE!	
57 Fe	6.47	1.294	ppb	20.05	100000.	
59 Co	-0.0094	-0.0019	ppb	112.97	1000.	
60 Ni	0.3674	0.0735	ppb	13.79	1000.	
63 Cu	0.5645	0.1129	ppb	14.13	#VALUE!	
65 Cu	0.5845	0.1169	ppb	5.94	2000.	
66 Zn	0.6765	0.1353	ppb	36.79	2000.	
68 Zn	0.5745	0.1149	ppb	61.81	#VALUE!	
75 As	0.1774	0.0355	ppb	168.51	1000.	
82 Se	0.1575	0.0315	ppb	171.86	1000.	
88 Sr	0.0456	0.0091	ppb	48.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0791	0.0158	ppb	8.22	1000.	
107 Ag	0.0028	0.0006	ppb	155.10	100.	
109 Ag	-0.0031	-0.0006	ppb	128.57	#VALUE!	
111 Cd	-0.2371	-0.0474	ppb	38.49	#VALUE!	
114 Cd	-0.0878	-0.0176	ppb	91.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.5	8.9	ppb	0.65	1000.	
120 Sn	44.55	8.91	ppb	1.03	#VALUE!	
121 Sb	-0.0003	-0.0001	ppb	1736.00	#VALUE!	
123 Sb	-0.0005	-0.0001	ppb	3683.90	1000.	
135 Ba	0.0763	0.0153	ppb	60.61	2000.	
137 Ba	0.0749	0.015	ppb	76.44	#VALUE!	
182 W	0.024	0.0048	ppb	51.10	1000.	
203 Tl	0.0585	0.0117	ppb	48.71	1000.	
205 Tl	0.0274	0.0055	ppb	22.29	#VALUE!	
208 Pb	0.563	0.1126	ppb	37.44	2000.	
232 Th	0.0823	0.0165	ppb	26.94	1000.	
238 U	0.0008	0.0002	ppb	328.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5100677.50	6.14	4492941.00	113.5	69.5 - 120	
45 Sc	3261646.00	1.46	3094960.50	105.4	69.5 - 120	
72 Ge	633628.88	0.87	631723.63	100.3	69.5 - 120	
159 Tb	6077184.00	0.11	6220065.50	97.7	69.5 - 120	
209 Bi	3185726.30	1.20	3318256.50	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000143

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\052SMPL.D\052SMPL.D#
Date Acquired: May 14 2018 05:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE11IMS2
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	45.555	9.111	ppb	3.78	100.	
11 B	492.8	98.56	ppb	3.29	1000.	
23 Na	8,730.	1,746.	ppb	0.44	200000.	
25 Mg	6,045.	1,209.	ppb	4.40	200000.	
27 Al	2,278.5	455.7	ppb	4.31	200000.	
28 Si	891.5	178.3	ppb	5.06	#VALUE!	
29 Si	780.	156.	ppb	5.60	10000.	
39 K	10,435.	2,087.	ppb	1.60	200000.	
43 Ca	3,020.	604.	ppb	4.07	#VALUE!	
44 Ca	2,636.5	527.3	ppb	2.12	200000.	
51 V	557.5	111.5	ppb	0.71	1000.	
52 Cr	213.3	42.66	ppb	0.50	2000.	
53 Cr	207.65	41.53	ppb	2.41	#VALUE!	
55 Mn	531.	106.2	ppb	0.70	2000.	
56 Fe	1,125.5	225.1	ppb	2.33	#VALUE!	
57 Fe	1,083.	216.6	ppb	0.95	100000.	
59 Co	545.	109.	ppb	1.58	1000.	
60 Ni	530.5	106.1	ppb	0.48	1000.	
63 Cu	262.65	52.53	ppb	0.35	#VALUE!	
65 Cu	271.85	54.37	ppb	0.06	2000.	
66 Zn	507.	101.4	ppb	0.49	2000.	
68 Zn	569.	113.8	ppb	1.59	#VALUE!	
75 As	102.45	20.49	ppb	1.26	1000.	
82 Se	98.15	19.63	ppb	0.16	1000.	
88 Sr	514.5	102.9	ppb	1.46	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.5	20.3	ppb	0.57	1000.	
107 Ag	51.9	10.38	ppb	0.88	100.	
109 Ag	51.95	10.39	ppb	1.00	#VALUE!	
111 Cd	252.95	50.59	ppb	0.72	#VALUE!	
114 Cd	251.6	50.32	ppb	0.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	583.	116.6	ppb	1.91	1000.	
120 Sn	586.5	117.3	ppb	1.68	#VALUE!	
121 Sb	108.75	21.75	ppb	2.55	#VALUE!	
123 Sb	109.25	21.85	ppb	2.92	1000.	
135 Ba	2,196.5	439.3	ppb	1.51	2000.	
137 Ba	2,187.	437.4	ppb	0.76	#VALUE!	
182 W	105.4	21.08	ppb	1.75	1000.	
203 Tl	107.05	21.41	ppb	2.47	1000.	
205 Tl	106.25	21.25	ppb	2.36	#VALUE!	
208 Pb	107.45	21.49	ppb	1.60	2000.	
232 Th	102.05	20.41	ppb	2.99	1000.	
238 U	102.35	20.47	ppb	2.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5171522.50	3.57	4492941.00	115.1	69.5 - 120	
45 Sc	3259848.80	2.46	3094960.50	105.3	69.5 - 120	
72 Ge	621268.13	0.61	631723.63	98.3	69.5 - 120	
159 Tb	5961187.00	1.63	6220065.50	95.8	69.5 - 120	
209 Bi	3098841.50	1.99	3318256.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\053SMPL.D\053SMPL.D#
Date Acquired: May 14 2018 05:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LC2OLE11IMS2
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	44.805	8.961	ppb	3.65	100.	
11 B	507.5	101.5	ppb	3.33	1000.	
23 Na	8,675.	1,735.	ppb	2.67	200000.	
25 Mg	6,015.	1,203.	ppb	0.84	200000.	
27 Al	2,321.5	464.3	ppb	2.24	200000.	
28 Si	897.	179.4	ppb	6.39	#VALUE!	
29 Si	772.	154.4	ppb	10.47	10000.	
39 K	10,965.	2,193.	ppb	3.11	200000.	
43 Ca	3,011.	602.2	ppb	4.71	#VALUE!	
44 Ca	2,691.	538.2	ppb	1.65	200000.	
51 V	550.5	110.1	ppb	3.19	1000.	
52 Cr	213.95	42.79	ppb	2.76	2000.	
53 Cr	213.65	42.73	ppb	0.62	#VALUE!	
55 Mn	540.5	108.1	ppb	1.30	2000.	
56 Fe	1,149.5	229.9	ppb	3.03	#VALUE!	
57 Fe	1,106.5	221.3	ppb	1.20	100000.	
59 Co	554.5	110.9	ppb	2.12	1000.	
60 Ni	537.	107.4	ppb	1.53	1000.	
63 Cu	265.95	53.19	ppb	1.51	#VALUE!	
65 Cu	272.1	54.42	ppb	2.63	2000.	
66 Zn	518.5	103.7	ppb	2.61	2000.	
68 Zn	586.	117.2	ppb	1.02	#VALUE!	
75 As	103.35	20.67	ppb	1.86	1000.	
82 Se	100.4	20.08	ppb	2.27	1000.	
88 Sr	519.5	103.9	ppb	1.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	103.95	20.79	ppb	1.79	1000.	
107 Ag	52.45	10.49	ppb	2.35	100.	
109 Ag	52.6	10.52	ppb	1.81	#VALUE!	
111 Cd	256.5	51.3	ppb	1.77	#VALUE!	
114 Cd	255.15	51.03	ppb	1.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	582.	116.4	ppb	1.33	1000.	
120 Sn	586.	117.2	ppb	1.02	#VALUE!	
121 Sb	108.55	21.71	ppb	0.77	#VALUE!	
123 Sb	109.8	21.96	ppb	1.71	1000.	
135 Ba	2,190.5	438.1	ppb	1.91	2000.	
137 Ba	2,188.	437.6	ppb	1.37	#VALUE!	
182 W	104.55	20.91	ppb	1.03	1000.	
203 Tl	106.85	21.37	ppb	2.56	1000.	
205 Tl	106.75	21.35	ppb	1.60	#VALUE!	
208 Pb	107.5	21.5	ppb	1.14	2000.	
232 Th	102.35	20.47	ppb	2.33	1000.	
238 U	102.7	20.54	ppb	1.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5252613.50	3.78	4492941.00	116.9	69.5 - 120	
45 Sc	3202045.50	3.34	3094960.50	103.5	69.5 - 120	
72 Ge	620392.94	1.29	631723.63	98.2	69.5 - 120	
159 Tb	6053057.00	1.06	6220065.50	97.3	69.5 - 120	
209 Bi	3123357.50	1.13	3318256.50	94.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\054_CCV.D\054_CCV.D#
Date Acquired: May 14 2018 05:32 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.08	ppb	4.57	25	92.32	
11 B	29.5	ppb	3.07	25	118	Fail
23 Na	5,166.	ppb	2.80	5,000	103.32	
25 Mg	5,154.	ppb	0.92	5,000	103.08	
27 Al	506.	ppb	2.52	500	101.2	
28 Si	500.5	ppb	1.87	500	100.1	
29 Si	473.7	ppb	4.59	500	94.74	
39 K	4,993.	ppb	2.86	5,000	99.86	
43 Ca	4,894.	ppb	2.22	5,000	97.88	
44 Ca	4,998.	ppb	0.77	5,000	99.96	
51 V	25.26	ppb	0.45	25	101.04	
52 Cr	24.84	ppb	1.16	25	99.36	
53 Cr	24.35	ppb	1.52	25	97.4	
55 Mn	24.75	ppb	1.09	25	99	
56 Fe	4,960.	ppb	1.44	5,000	99.2	
57 Fe	5,048.	ppb	2.37	5,000	100.96	
59 Co	25.15	ppb	0.69	25	100.6	
60 Ni	24.53	ppb	1.20	25	98.12	
63 Cu	24.88	ppb	1.97	25	99.52	
65 Cu	25.61	ppb	0.94	25	102.44	
66 Zn	24.81	ppb	0.75	25	99.24	
68 Zn	24.68	ppb	2.10	25	98.72	
75 As	24.56	ppb	1.85	25	98.24	
82 Se	25.35	ppb	1.65	25	101.4	
88 Sr	24.4	ppb	2.24	25	97.6	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.29	ppb	1.82	25	97.16	
107 Ag	24.69	ppb	1.03	25	98.76	
109 Ag	24.81	ppb	1.34	25	99.24	
111 Cd	24.85	ppb	0.73	25	99.4	
114 Cd	24.64	ppb	1.55	25	98.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.92	ppb	0.89	25	99.68	
120 Sn	24.9	ppb	0.92	25	99.6	
121 Sb	25.39	ppb	0.94	25	101.56	
123 Sb	25.34	ppb	0.80	25	101.36	
135 Ba	25.8	ppb	1.39	25	103.2	
137 Ba	25.13	ppb	1.70	25	100.52	
182 W	24.65	ppb	0.35	25	98.6	
203 Tl	24.62	ppb	1.31	25	98.48	
205 Tl	24.52	ppb	1.47	25	98.08	
208 Pb	24.62	ppb	1.84	25	98.48	
232 Th	24.04	ppb	1.53	25	96.16	
238 U	23.91	ppb	1.87	25	95.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4698694.50	4.18	4492941.00	104.6	80 - 120.4	
45 Sc	3158179.00	1.26	3094960.50	102.0	80 - 120.4	
72 Ge	615455.00	1.53	631723.63	97.4	80 - 120.4	
159 Tb	6124527.50	0.52	6220065.50	98.5	80 - 120.4	
209 Bi	3224862.00	0.69	3318256.50	97.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\055_CCB.D\055_CCB.D#
Date Acquired: May 14 2018 05:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.	ppb	2655.90	1.00	
11 B	2.938	ppb	16.87	1.00	
23 Na	1.084	ppb	47.39	1.00	
25 Mg	0.2821	ppb	69.20	1.00	
27 Al	0.109	ppb	68.24	1.00	
28 Si	-6.522	ppb	55.60	1.00	
29 Si	-24.98	ppb	11.44	1.00	
39 K	-3.412	ppb	51.64	1.00	
43 Ca	-2.088	ppb	89.90	1.00	
44 Ca	-0.2322	ppb	162.88	1.00	
51 V	-0.1629	ppb	67.59	1.00	
52 Cr	-0.0844	ppb	33.60	1.00	
53 Cr	-0.2948	ppb	107.94	1.00	
55 Mn	-0.0017	ppb	442.32	1.00	
56 Fe	-5.924	ppb	24.56	1.00	
57 Fe	0.0791	ppb	596.69	1.00	
59 Co	-0.0014	ppb	35.40	1.00	
60 Ni	0.0037	ppb	229.47	1.00	
63 Cu	0.0169	ppb	32.99	1.00	
65 Cu	-0.0046	ppb	126.60	1.00	
66 Zn	0.0273	ppb	214.83	1.00	
68 Zn	0.0461	ppb	158.68	1.00	
75 As	-0.0784	ppb	36.95	1.00	
82 Se	0.1182	ppb	166.84	1.00	
88 Sr	0.003	ppb	124.46	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0319	ppb	31.17	1.00	
107 Ag	0.0061	ppb	22.94	1.00	
109 Ag	0.0054	ppb	54.35	1.00	
111 Cd	-0.0486	ppb	34.19	1.00	
114 Cd	-0.0015	ppb	145.69	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0456	ppb	10.53	1.00	
120 Sn	0.0393	ppb	26.67	1.00	
121 Sb	0.0037	ppb	67.52	1.00	
123 Sb	0.0069	ppb	44.88	1.00	
135 Ba	0.0194	ppb	20.30	1.00	
137 Ba	0.0078	ppb	103.29	1.00	
182 W	0.0527	ppb	35.47	1.00	
203 Tl	0.0089	ppb	112.34	1.00	
205 Tl	-0.0027	ppb	69.88	1.00	
208 Pb	-0.0232	ppb	18.86	1.00	
232 Th	0.0673	ppb	8.76	1.00	
238 U	0.0036	ppb	15.84	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4846041.00	0.85	4492941.00	107.9	79.5 - 120	
45 Sc	3195603.30	1.09	3094960.50	103.3	79.5 - 120	
72 Ge	628458.88	1.38	631723.63	99.5	79.5 - 120	
159 Tb	6120629.50	0.72	6220065.50	98.4	79.5 - 120	
209 Bi	3283907.80	0.96	3318256.50	99.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000147

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\056SMPL.D\056SMPL.D#
Date Acquired: May 14 2018 05:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-001
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0086	0.0017	ppb	141.14	100.	
11 B	10.33	2.066	ppb	5.83	1000.	
23 Na	14,280.	2,856.	ppb	0.69	200000.	
25 Mg	9,060.	1,812.	ppb	0.29	200000.	
27 Al	78.75	15.75	ppb	2.53	200000.	
28 Si	118.95	23.79	ppb	16.19	#VALUE!	
29 Si	181.7	36.34	ppb	14.55	10000.	
39 K	117,400.	23,480.	ppb	1.51	200000.	
43 Ca	4,201.	840.2	ppb	4.17	#VALUE!	
44 Ca	4,224.5	844.9	ppb	1.56	200000.	
51 V	0.5125	0.1025	ppb	64.57	1000.	
52 Cr	4.3895	0.8779	ppb	7.03	2000.	
53 Cr	-1.4975	-0.2995	ppb	157.66	#VALUE!	
55 Mn	7.265	1.453	ppb	1.32	2000.	
56 Fe	271.5	54.3	ppb	8.88	#VALUE!	
57 Fe	278.55	55.71	ppb	1.06	100000.	
59 Co	0.1362	0.0272	ppb	20.32	1000.	
60 Ni	0.732	0.1464	ppb	5.01	1000.	
63 Cu	26.845	5.369	ppb	1.58	#VALUE!	
65 Cu	27.15	5.43	ppb	1.38	2000.	
66 Zn	127.4	25.48	ppb	1.49	2000.	
68 Zn	120.25	24.05	ppb	2.69	#VALUE!	
75 As	0.631	0.1262	ppb	33.83	1000.	
82 Se	3.174	0.6348	ppb	29.19	1000.	
88 Sr	5.695	1.139	ppb	1.81	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1652	0.033	ppb	20.36	1000.	
107 Ag	0.0235	0.0047	ppb	22.92	100.	
109 Ag	0.0171	0.0034	ppb	81.85	#VALUE!	
111 Cd	-0.2797	-0.0559	ppb	9.24	#VALUE!	
114 Cd	-0.0575	-0.0115	ppb	40.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.355	9.471	ppb	1.34	1000.	
120 Sn	46.725	9.345	ppb	1.65	#VALUE!	
121 Sb	0.0207	0.0041	ppb	102.39	#VALUE!	
123 Sb	0.0185	0.0037	ppb	125.16	1000.	
135 Ba	1.02	0.204	ppb	5.74	2000.	
137 Ba	1.1125	0.2225	ppb	6.54	#VALUE!	
182 W	0.0841	0.0168	ppb	18.58	1000.	
203 Tl	0.1257	0.0251	ppb	19.26	1000.	
205 Tl	0.0553	0.0111	ppb	47.86	#VALUE!	
208 Pb	1.053	0.2106	ppb	14.42	2000.	
232 Th	0.5765	0.1153	ppb	14.57	1000.	
238 U	0.0141	0.0028	ppb	34.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4972476.00	1.93	4492941.00	110.7	69.5 - 120	
45 Sc	3223737.80	0.14	3094960.50	104.2	69.5 - 120	
72 Ge	632739.56	0.43	631723.63	100.2	69.5 - 120	
159 Tb	6111211.00	1.00	6220065.50	98.2	69.5 - 120	
209 Bi	3128048.80	0.20	3318256.50	94.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\057SMPL.D\057SMPL.D#
Date Acquired: May 14 2018 05:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-003
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	108.99	100.	
11 B	7.565	1.513	ppb	5.12	1000.	
23 Na	13,280.	2,656.	ppb	1.69	200000.	
25 Mg	9,510.	1,902.	ppb	2.83	200000.	
27 Al	76.3	15.26	ppb	5.87	200000.	
28 Si	99.3	19.86	ppb	30.30	#VALUE!	
29 Si	183.6	36.72	ppb	13.31	10000.	
39 K	134,850.	26,970.	ppb	1.90	200000.	
43 Ca	10,185.	2,037.	ppb	1.05	#VALUE!	
44 Ca	10,105.	2,021.	ppb	2.78	200000.	
51 V	0.754	0.1508	ppb	18.86	1000.	
52 Cr	4.991	0.9982	ppb	5.21	2000.	
53 Cr	1.2355	0.2471	ppb	107.16	#VALUE!	
55 Mn	11.895	2.379	ppb	1.63	2000.	
56 Fe	252.65	50.53	ppb	3.82	#VALUE!	
57 Fe	216.45	43.29	ppb	5.74	100000.	
59 Co	0.1407	0.0281	ppb	22.02	1000.	
60 Ni	0.51	0.102	ppb	23.79	1000.	
63 Cu	15.335	3.067	ppb	1.96	#VALUE!	
65 Cu	15.415	3.083	ppb	0.95	2000.	
66 Zn	135.4	27.08	ppb	2.44	2000.	
68 Zn	128.4	25.68	ppb	2.91	#VALUE!	
75 As	0.5	0.1	ppb	154.00	1000.	
82 Se	3.538	0.7076	ppb	59.09	1000.	
88 Sr	15.995	3.199	ppb	2.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1487	0.0297	ppb	14.68	1000.	
107 Ag	0.0158	0.0032	ppb	88.90	100.	
109 Ag	0.0152	0.003	ppb	89.23	#VALUE!	
111 Cd	-0.365	-0.073	ppb	50.11	#VALUE!	
114 Cd	-0.0425	-0.0085	ppb	100.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.33	9.266	ppb	2.33	1000.	
120 Sn	46.605	9.321	ppb	2.12	#VALUE!	
121 Sb	0.0086	0.0017	ppb	107.83	#VALUE!	
123 Sb	0.023	0.0046	ppb	101.76	1000.	
135 Ba	1.1795	0.2359	ppb	12.25	2000.	
137 Ba	1.2905	0.2581	ppb	5.35	#VALUE!	
182 W	0.0521	0.0104	ppb	36.65	1000.	
203 Tl	0.0612	0.0122	ppb	64.22	1000.	
205 Tl	0.084	0.0168	ppb	33.26	#VALUE!	
208 Pb	0.8355	0.1671	ppb	19.59	2000.	
232 Th	0.2311	0.0462	ppb	29.60	1000.	
238 U	0.0056	0.0011	ppb	52.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4989537.50	1.07	4492941.00	111.1	69.5 - 120	
45 Sc	3328112.00	1.08	3094960.50	107.5	69.5 - 120	
72 Ge	637414.38	1.34	631723.63	100.9	69.5 - 120	
159 Tb	6081391.50	2.08	6220065.50	97.8	69.5 - 120	
209 Bi	3074320.80	0.44	3318256.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\058SMPL.D\058SMPL.D#
Date Acquired: May 14 2018 05:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-004
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0047	0.0009	ppb	132.53	100.	
11 B	6.345	1.269	ppb	9.94	1000.	
23 Na	12,590.	2,518.	ppb	3.44	200000.	
25 Mg	10,665.	2,133.	ppb	2.09	200000.	
27 Al	66.8	13.36	ppb	2.05	200000.	
28 Si	152.45	30.49	ppb	12.82	#VALUE!	
29 Si	293.35	58.67	ppb	8.83	10000.	
39 K	158,800.	31,760.	ppb	1.91	200000.	
43 Ca	2,981.5	596.3	ppb	0.30	#VALUE!	
44 Ca	3,016.5	603.3	ppb	0.98	200000.	
51 V	0.7255	0.1451	ppb	32.85	1000.	
52 Cr	5.13	1.026	ppb	2.06	2000.	
53 Cr	14.425	2.885	ppb	33.78	#VALUE!	
55 Mn	5.44	1.088	ppb	3.05	2000.	
56 Fe	219.5	43.9	ppb	2.54	#VALUE!	
57 Fe	177.45	35.49	ppb	7.76	100000.	
59 Co	0.1572	0.0314	ppb	19.37	1000.	
60 Ni	0.514	0.1028	ppb	10.12	1000.	
63 Cu	15.36	3.072	ppb	1.89	#VALUE!	
65 Cu	15.18	3.036	ppb	2.39	2000.	
66 Zn	145.1	29.02	ppb	1.57	2000.	
68 Zn	136.25	27.25	ppb	0.73	#VALUE!	
75 As	0.976	0.1952	ppb	71.06	1000.	
82 Se	3.2855	0.6571	ppb	20.03	1000.	
88 Sr	3.0765	0.6153	ppb	3.60	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1301	0.026	ppb	26.90	1000.	
107 Ag	0.0237	0.0047	ppb	31.46	100.	
109 Ag	0.0097	0.0019	ppb	44.84	#VALUE!	
111 Cd	-0.4027	-0.0805	ppb	10.53	#VALUE!	
114 Cd	-0.0773	-0.0155	ppb	102.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.68	9.536	ppb	1.11	1000.	
120 Sn	47.705	9.541	ppb	1.16	#VALUE!	
121 Sb	0.0169	0.0034	ppb	9.95	#VALUE!	
123 Sb	0.0072	0.0014	ppb	230.82	1000.	
135 Ba	0.8075	0.1615	ppb	19.04	2000.	
137 Ba	0.7695	0.1539	ppb	12.46	#VALUE!	
182 W	0.0672	0.0134	ppb	24.64	1000.	
203 Tl	0.1449	0.029	ppb	20.46	1000.	
205 Tl	0.0573	0.0115	ppb	40.86	#VALUE!	
208 Pb	0.836	0.1672	ppb	4.65	2000.	
232 Th	0.143	0.0286	ppb	27.16	1000.	
238 U	0.0006	0.0001	ppb	187.38	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5040500.00	1.80	4492941.00	112.2	69.5 - 120	
45 Sc	3275311.30	2.48	3094960.50	105.8	69.5 - 120	
72 Ge	640735.75	1.71	631723.63	101.4	69.5 - 120	
159 Tb	6041418.00	1.11	6220065.50	97.1	69.5 - 120	
209 Bi	3083239.50	1.35	3318256.50	92.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\059SMPL.D\059SMPL.D#
Date Acquired: May 14 2018 05:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-005
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	-0.0046	-0.0009	ppb	50.09	100.	
11 B	5.345	1.069	ppb	4.78	1000.	
23 Na	12,350.	2,470.	ppb	0.44	200000.	
25 Mg	10,295.	2,059.	ppb	1.88	200000.	
27 Al	65.6	13.12	ppb	1.50	200000.	
28 Si	123.65	24.73	ppb	31.02	#VALUE!	
29 Si	251.75	50.35	ppb	14.32	10000.	
39 K	153,150.	30,630.	ppb	2.42	200000.	
43 Ca	2,842.5	568.5	ppb	2.17	#VALUE!	
44 Ca	2,962.5	592.5	ppb	0.86	200000.	
51 V	1.1655	0.2331	ppb	30.55	1000.	
52 Cr	6.445	1.289	ppb	1.36	2000.	
53 Cr	20.78	4.156	ppb	17.82	#VALUE!	
55 Mn	8.66	1.732	ppb	1.14	2000.	
56 Fe	237.75	47.55	ppb	7.15	#VALUE!	
57 Fe	192.6	38.52	ppb	6.36	100000.	
59 Co	0.1469	0.0294	ppb	6.05	1000.	
60 Ni	0.596	0.1192	ppb	7.45	1000.	
63 Cu	12.195	2.439	ppb	1.63	#VALUE!	
65 Cu	12.185	2.437	ppb	1.77	2000.	
66 Zn	123.1	24.62	ppb	1.17	2000.	
68 Zn	116.6	23.32	ppb	1.66	#VALUE!	
75 As	0.682	0.1364	ppb	15.54	1000.	
82 Se	3.4565	0.6913	ppb	11.25	1000.	
88 Sr	3.2525	0.6505	ppb	1.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1351	0.027	ppb	29.42	1000.	
107 Ag	0.0098	0.002	ppb	87.96	100.	
109 Ag	0.0075	0.0015	ppb	49.49	#VALUE!	
111 Cd	-0.325	-0.065	ppb	41.06	#VALUE!	
114 Cd	-0.071	-0.0142	ppb	26.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.64	9.128	ppb	1.68	1000.	
120 Sn	46.105	9.221	ppb	0.87	#VALUE!	
121 Sb	0.0127	0.0025	ppb	99.73	#VALUE!	
123 Sb	0.0048	0.001	ppb	639.74	1000.	
135 Ba	0.6525	0.1305	ppb	2.58	2000.	
137 Ba	0.5915	0.1183	ppb	10.75	#VALUE!	
182 W	0.0369	0.0074	ppb	27.73	1000.	
203 Tl	0.122	0.0244	ppb	23.77	1000.	
205 Tl	0.0903	0.0181	ppb	4.52	#VALUE!	
208 Pb	0.6375	0.1275	ppb	6.08	2000.	
232 Th	0.1268	0.0254	ppb	31.64	1000.	
238 U	0.0046	0.0009	ppb	56.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5065483.00	4.01	4492941.00	112.7	69.5 - 120	
45 Sc	3341659.00	0.74	3094960.50	108.0	69.5 - 120	
72 Ge	640523.63	0.91	631723.63	101.4	69.5 - 120	
159 Tb	6002289.50	0.87	6220065.50	96.5	69.5 - 120	
209 Bi	3010510.00	1.68	3318256.50	90.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\060SMPL.D\060SMPL.D#
Date Acquired: May 14 2018 05:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE09IMS1
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0032	0.0006	ppb	141.55	100.	
11 B	3.765	0.753	ppb	5.20	1000.	
23 Na	35.	7.	ppb	8.04	200000.	
25 Mg	23.72	4.744	ppb	4.47	200000.	
27 Al	16.925	3.385	ppb	9.08	200000.	
28 Si	-21.055	-4.211	ppb	80.91	#VALUE!	
29 Si	-145.85	-29.17	ppb	22.67	10000.	
39 K	26.965	5.393	ppb	29.93	200000.	
43 Ca	91.2	18.24	ppb	6.22	#VALUE!	
44 Ca	94.25	18.85	ppb	2.03	200000.	
51 V	-0.2115	-0.0423	ppb	222.63	1000.	
52 Cr	1.6215	0.3243	ppb	4.43	2000.	
53 Cr	46.075	9.215	ppb	8.51	#VALUE!	
55 Mn	0.4651	0.093	ppb	4.18	2000.	
56 Fe	40.085	8.017	ppb	34.49	#VALUE!	
57 Fe	20.8	4.16	ppb	53.27	100000.	
59 Co	0.0002	0.	ppb	4737.80	1000.	
60 Ni	0.4061	0.0812	ppb	9.54	1000.	
63 Cu	0.812	0.1624	ppb	2.25	#VALUE!	
65 Cu	0.839	0.1678	ppb	16.98	2000.	
66 Zn	0.908	0.1816	ppb	24.91	2000.	
68 Zn	0.599	0.1198	ppb	96.58	#VALUE!	
75 As	0.0205	0.0041	ppb	2920.20	1000.	
82 Se	0.6565	0.1313	ppb	233.82	1000.	
88 Sr	0.2948	0.059	ppb	10.67	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0956	0.0191	ppb	30.57	1000.	
107 Ag	0.009	0.0018	ppb	47.51	100.	
109 Ag	0.0064	0.0013	ppb	68.54	#VALUE!	
111 Cd	-0.1608	-0.0322	ppb	44.01	#VALUE!	
114 Cd	-0.0483	-0.0097	ppb	79.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.675	8.935	ppb	3.74	1000.	
120 Sn	44.965	8.993	ppb	3.60	#VALUE!	
121 Sb	0.0376	0.0075	ppb	34.60	#VALUE!	
123 Sb	0.0149	0.003	ppb	196.04	1000.	
135 Ba	0.618	0.1236	ppb	13.75	2000.	
137 Ba	0.588	0.1176	ppb	7.48	#VALUE!	
182 W	0.0286	0.0057	ppb	40.52	1000.	
203 Tl	-0.0186	-0.0037	ppb	93.14	1000.	
205 Tl	-0.0455	-0.0091	ppb	36.50	#VALUE!	
208 Pb	0.2136	0.0427	ppb	38.27	2000.	
232 Th	0.0143	0.0029	ppb	6.40	1000.	
238 U	0.0029	0.0006	ppb	79.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4666603.00	6.51	4492941.00	103.9	69.5 - 120	
45 Sc	3141422.50	1.40	3094960.50	101.5	69.5 - 120	
72 Ge	628539.63	1.47	631723.63	99.5	69.5 - 120	
159 Tb	6217767.00	2.22	6220065.50	100.0	69.5 - 120	
209 Bi	3298955.30	1.44	3318256.50	99.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\061SMPL.D\061SMPL.D#
Date Acquired: May 14 2018 06:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE09IMS1
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	44.455	8.891	ppb	4.03	100.	
11 B	492.15	98.43	ppb	2.22	1000.	
23 Na	8,130.	1,626.	ppb	2.23	200000.	
25 Mg	5,555.	1,111.	ppb	3.25	200000.	
27 Al	2,175.5	435.1	ppb	0.84	200000.	
28 Si	1,034.	206.8	ppb	2.20	#VALUE!	
29 Si	922.5	184.5	ppb	2.21	10000.	
39 K	10,485.	2,097.	ppb	0.87	200000.	
43 Ca	3,031.	606.2	ppb	2.97	#VALUE!	
44 Ca	2,624.	524.8	ppb	1.19	200000.	
51 V	536.5	107.3	ppb	0.67	1000.	
52 Cr	208.5	41.7	ppb	1.06	2000.	
53 Cr	245.55	49.11	ppb	0.97	#VALUE!	
55 Mn	520.5	104.1	ppb	1.16	2000.	
56 Fe	1,104.	220.8	ppb	1.77	#VALUE!	
57 Fe	1,079.	215.8	ppb	0.28	100000.	
59 Co	537.5	107.5	ppb	0.84	1000.	
60 Ni	520.	104.	ppb	0.44	1000.	
63 Cu	259.4	51.88	ppb	0.02	#VALUE!	
65 Cu	265.5	53.1	ppb	0.68	2000.	
66 Zn	513.	102.6	ppb	1.01	2000.	
68 Zn	570.5	114.1	ppb	1.85	#VALUE!	
75 As	103.95	20.79	ppb	1.02	1000.	
82 Se	101.45	20.29	ppb	1.77	1000.	
88 Sr	516.	103.2	ppb	0.70	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	103.35	20.67	ppb	1.46	1000.	
107 Ag	53.	10.6	ppb	1.13	100.	
109 Ag	53.3	10.66	ppb	1.41	#VALUE!	
111 Cd	260.25	52.05	ppb	0.88	#VALUE!	
114 Cd	258.7	51.74	ppb	1.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	567.	113.4	ppb	1.55	1000.	
120 Sn	572.	114.4	ppb	1.50	#VALUE!	
121 Sb	105.4	21.08	ppb	1.66	#VALUE!	
123 Sb	106.3	21.26	ppb	0.99	1000.	
135 Ba	2,122.5	424.5	ppb	1.41	2000.	
137 Ba	2,127.	425.4	ppb	1.11	#VALUE!	
182 W	104.75	20.95	ppb	1.95	1000.	
203 Tl	106.1	21.22	ppb	0.35	1000.	
205 Tl	106.2	21.24	ppb	0.50	#VALUE!	
208 Pb	106.35	21.27	ppb	0.70	2000.	
232 Th	100.4	20.08	ppb	1.88	1000.	
238 U	100.6	20.12	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4745652.00	4.36	4492941.00	105.6	69.5 - 120	
45 Sc	3089190.50	0.56	3094960.50	99.8	69.5 - 120	
72 Ge	612543.19	0.49	631723.63	97.0	69.5 - 120	
159 Tb	6202784.50	1.40	6220065.50	99.7	69.5 - 120	
209 Bi	3247426.50	0.18	3318256.50	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\062SMPL.D\062SMPL.D#
Date Acquired: May 14 2018 06:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-048
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	7.855	0.7855	ppb	9.47	100.	
11 B	166.1	16.61	ppb	8.33	1000.	
23 Na	5,834.	583.4	ppb	2.26	200000.	
25 Mg	129,100.	12,910.	ppb	2.48	200000.	
27 Al	169,600.	16,960.	ppb	2.18	200000.	
28 Si	2,586.	258.6	ppb	1.77	#VALUE!	
29 Si	2,224.	222.4	ppb	2.74	10000.	
39 K	45,950.	4,595.	ppb	1.36	200000.	
43 Ca	1,492,000.	149,200.	ppb	1.44	#VALUE!	
44 Ca	1,442,000.	144,200.	ppb	1.15	200000.	
51 V	371.6	37.16	ppb	1.36	1000.	
52 Cr	155.7	15.57	ppb	1.48	2000.	
53 Cr	162.3	16.23	ppb	1.24	#VALUE!	
55 Mn	5,608.	560.8	ppb	0.64	2000.	
56 Fe	151,700.	15,170.	ppb	1.46	#VALUE!	
57 Fe	150,800.	15,080.	ppb	2.06	100000.	
59 Co	88.08	8.808	ppb	2.29	1000.	
60 Ni	161.5	16.15	ppb	1.22	1000.	
63 Cu	111.5	11.15	ppb	1.19	#VALUE!	
65 Cu	118.9	11.89	ppb	1.30	2000.	
66 Zn	404.6	40.46	ppb	1.09	2000.	
68 Zn	822.	82.2	ppb	1.89	#VALUE!	
75 As	75.88	7.588	ppb	1.24	1000.	
82 Se	7.183	0.7183	ppb	16.92	1000.	
88 Sr	4,075.	407.5	ppb	1.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.298	0.9298	ppb	2.20	1000.	
107 Ag	0.73	0.073	ppb	3.76	100.	
109 Ag	0.5946	0.0595	ppb	6.47	#VALUE!	
111 Cd	4.202	0.4202	ppb	2.42	#VALUE!	
114 Cd	1.61	0.161	ppb	6.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.88	5.188	ppb	2.21	1000.	
120 Sn	51.17	5.117	ppb	0.63	#VALUE!	
121 Sb	2.083	0.2083	ppb	2.94	#VALUE!	
123 Sb	2.164	0.2164	ppb	1.78	1000.	
135 Ba	11,690.	1,169.	ppb	0.86	2000.	
137 Ba	11,340.	1,134.	ppb	0.52	#VALUE!	
182 W	1.43	0.143	ppb	5.20	1000.	
203 Tl	4.128	0.4128	ppb	5.05	1000.	
205 Tl	4.03	0.403	ppb	3.32	#VALUE!	
208 Pb	113.5	11.35	ppb	0.90	2000.	
232 Th	69.13	6.913	ppb	1.53	1000.	
238 U	17.63	1.763	ppb	1.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4436251.00	8.08	4492941.00	98.7	69.5 - 120	
45 Sc	3098032.30	1.83	3094960.50	100.1	69.5 - 120	
72 Ge	596840.63	0.78	631723.63	94.5	69.5 - 120	
159 Tb	6137460.50	0.68	6220065.50	98.7	69.5 - 120	
209 Bi	3113396.30	0.96	3318256.50	93.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\063SMPL.D\063SMPL.D#
Date Acquired: May 14 2018 06:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	13.96	1.396	ppb	3.80	100.	
11 B	49.62	4.962	ppb	6.18	1000.	
23 Na	1,061.	106.1	ppb	1.64	200000.	
25 Mg	19,040.	1,904.	ppb	2.32	200000.	
27 Al	321,400.	32,140.	ppb	4.58	200000.	
28 Si	4,160.	416.	ppb	3.40	#VALUE!	
29 Si	3,720.	372.	ppb	1.92	10000.	
39 K	5,540.	554.	ppb	2.95	200000.	
43 Ca	33,840.	3,384.	ppb	3.82	#VALUE!	
44 Ca	34,200.	3,420.	ppb	2.72	200000.	
51 V	943.7	94.37	ppb	3.42	1000.	
52 Cr	514.4	51.44	ppb	1.37	2000.	
53 Cr	539.4	53.94	ppb	1.53	#VALUE!	
55 Mn	2,567.	256.7	ppb	1.87	2000.	
56 Fe	481,900.	48,190.	ppb	1.86	#VALUE!	
57 Fe	463,700.	46,370.	ppb	1.02	100000.	
59 Co	72.86	7.286	ppb	1.24	1000.	
60 Ni	159.2	15.92	ppb	0.88	1000.	
63 Cu	117.8	11.78	ppb	1.94	#VALUE!	
65 Cu	121.5	12.15	ppb	1.23	2000.	
66 Zn	548.3	54.83	ppb	1.85	2000.	
68 Zn	579.5	57.95	ppb	2.50	#VALUE!	
75 As	170.7	17.07	ppb	1.01	1000.	
82 Se	7.333	0.7333	ppb	21.38	1000.	
88 Sr	368.9	36.89	ppb	1.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.466	0.5466	ppb	4.65	1000.	
107 Ag	0.4941	0.0494	ppb	3.53	100.	
109 Ag	0.3942	0.0394	ppb	12.06	#VALUE!	
111 Cd	2.573	0.2573	ppb	5.46	#VALUE!	
114 Cd	1.27	0.127	ppb	11.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	67.92	6.792	ppb	1.79	1000.	
120 Sn	69.08	6.908	ppb	0.91	#VALUE!	
121 Sb	4.047	0.4047	ppb	4.11	#VALUE!	
123 Sb	4.151	0.4151	ppb	12.34	1000.	
135 Ba	1,277.	127.7	ppb	1.09	2000.	
137 Ba	1,265.	126.5	ppb	1.13	#VALUE!	
182 W	45.79	4.579	ppb	1.39	1000.	
203 Tl	2.688	0.2688	ppb	8.29	1000.	
205 Tl	2.523	0.2523	ppb	1.83	#VALUE!	
208 Pb	200.3	20.03	ppb	0.47	2000.	
232 Th	73.62	7.362	ppb	1.71	1000.	
238 U	24.21	2.421	ppb	1.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4610228.00	1.68	4492941.00	102.6	69.5 - 120	
45 Sc	3233919.00	0.91	3094960.50	104.5	69.5 - 120	
72 Ge	618804.44	0.73	631723.63	98.0	69.5 - 120	
159 Tb	6119949.00	0.53	6220065.50	98.4	69.5 - 120	
209 Bi	3104354.00	1.42	3318256.50	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\064SMPL.D\064SMPL.D#
Date Acquired: May 14 2018 06:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001L
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 50.00
Autodil Factor: Undiluted
Final Dil Factor: 50.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	14.61	0.2922	ppb	9.09	100.	
11 B	91.25	1.825	ppb	10.00	1000.	
23 Na	1,100.	22.	ppb	1.14	200000.	
25 Mg	18,350.	367.	ppb	2.23	200000.	
27 Al	331,700.	6,634.	ppb	2.28	200000.	
28 Si	5,295.	105.9	ppb	5.67	#VALUE!	
29 Si	3,030.	60.6	ppb	10.38	10000.	
39 K	5,735.	114.7	ppb	1.12	200000.	
43 Ca	34,110.	682.2	ppb	4.02	#VALUE!	
44 Ca	33,915.	678.3	ppb	0.69	200000.	
51 V	901.5	18.03	ppb	2.36	1000.	
52 Cr	515.	10.3	ppb	1.40	2000.	
53 Cr	469.3	9.386	ppb	3.29	#VALUE!	
55 Mn	2,675.	53.5	ppb	0.93	2000.	
56 Fe	487,650.	9,753.	ppb	0.58	#VALUE!	
57 Fe	484,200.	9,684.	ppb	1.04	100000.	
59 Co	74.35	1.487	ppb	1.60	1000.	
60 Ni	160.05	3.201	ppb	2.38	1000.	
63 Cu	126.9	2.538	ppb	2.10	#VALUE!	
65 Cu	132.75	2.655	ppb	2.59	2000.	
66 Zn	583.	11.66	ppb	1.19	2000.	
68 Zn	600.	12.	ppb	0.32	#VALUE!	
75 As	175.7	3.514	ppb	3.75	1000.	
82 Se	9.815	0.1963	ppb	65.05	1000.	
88 Sr	369.8	7.396	ppb	0.70	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.93	0.1386	ppb	4.39	1000.	
107 Ag	0.4188	0.0084	ppb	40.66	100.	
109 Ag	0.4328	0.0087	ppb	20.76	#VALUE!	
111 Cd	1.0755	0.0215	ppb	59.93	#VALUE!	
114 Cd	1.3265	0.0265	ppb	8.74	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	68.3	1.366	ppb	3.91	1000.	
120 Sn	69.7	1.394	ppb	2.20	#VALUE!	
121 Sb	4.0705	0.0814	ppb	1.96	#VALUE!	
123 Sb	4.1695	0.0834	ppb	5.94	1000.	
135 Ba	1,309.	26.18	ppb	1.71	2000.	
137 Ba	1,295.	25.9	ppb	1.47	#VALUE!	
182 W	46.33	0.9266	ppb	2.23	1000.	
203 Tl	2.1065	0.0421	ppb	22.10	1000.	
205 Tl	2.114	0.0423	ppb	19.87	#VALUE!	
208 Pb	199.2	3.984	ppb	0.56	2000.	
232 Th	67.65	1.353	ppb	1.55	1000.	
238 U	23.355	0.4671	ppb	2.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4549312.00	5.10	4492941.00	101.3	69.5 - 120	
45 Sc	3193412.80	0.93	3094960.50	103.2	69.5 - 120	
72 Ge	634414.69	0.54	631723.63	100.4	69.5 - 120	
159 Tb	6117158.00	0.48	6220065.50	98.3	69.5 - 120	
209 Bi	3185645.30	0.80	3318256.50	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\065SMPL.D\065SMPL.D#
Date Acquired: May 14 2018 06:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001A
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	32.63	3.263	ppb	5.16	100.	
11 B	450.7	45.07	ppb	1.92	1000.	
23 Na	21,170.	2,117.	ppb	0.36	200000.	
25 Mg	20,010.	2,001.	ppb	1.85	200000.	
27 Al	325,300.	32,530.	ppb	2.34	200000.	
28 Si	14,550.	1,455.	ppb	1.38	#VALUE!	
29 Si	13,850.	1,385.	ppb	1.49	10000.	
39 K	25,080.	2,508.	ppb	1.60	200000.	
43 Ca	34,980.	3,498.	ppb	1.97	#VALUE!	
44 Ca	35,300.	3,530.	ppb	1.68	200000.	
51 V	1,016.	101.6	ppb	0.91	1000.	
52 Cr	597.9	59.79	ppb	0.90	2000.	
53 Cr	620.4	62.04	ppb	0.56	#VALUE!	
55 Mn	2,549.	254.9	ppb	0.22	2000.	
56 Fe	471,400.	47,140.	ppb	1.16	#VALUE!	
57 Fe	459,400.	45,940.	ppb	0.23	100000.	
59 Co	90.65	9.065	ppb	1.24	1000.	
60 Ni	189.9	18.99	ppb	0.27	1000.	
63 Cu	176.1	17.61	ppb	1.64	#VALUE!	
65 Cu	180.1	18.01	ppb	0.38	2000.	
66 Zn	734.8	73.48	ppb	0.45	2000.	
68 Zn	744.8	74.48	ppb	1.95	#VALUE!	
75 As	264.5	26.45	ppb	0.31	1000.	
82 Se	102.9	10.29	ppb	2.93	1000.	
88 Sr	459.2	45.92	ppb	1.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.8	10.18	ppb	1.56	1000.	
107 Ag	20.63	2.063	ppb	2.35	100.	
109 Ag	20.3	2.03	ppb	0.35	#VALUE!	
111 Cd	21.83	2.183	ppb	1.42	#VALUE!	
114 Cd	20.9	2.09	ppb	1.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	169.5	16.95	ppb	2.02	1000.	
120 Sn	170.7	17.07	ppb	1.63	#VALUE!	
121 Sb	24.91	2.491	ppb	2.84	#VALUE!	
123 Sb	25.05	2.505	ppb	1.46	1000.	
135 Ba	1,301.	130.1	ppb	2.62	2000.	
137 Ba	1,287.	128.7	ppb	1.96	#VALUE!	
182 W	147.	14.7	ppb	2.58	1000.	
203 Tl	23.29	2.329	ppb	2.84	1000.	
205 Tl	23.01	2.301	ppb	1.93	#VALUE!	
208 Pb	215.8	21.58	ppb	1.70	2000.	
232 Th	91.48	9.148	ppb	1.59	1000.	
238 U	42.64	4.264	ppb	1.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4639344.50	4.07	4492941.00	103.3	69.5 - 120	
45 Sc	3232229.80	1.90	3094960.50	104.4	69.5 - 120	
72 Ge	624590.00	0.70	631723.63	98.9	69.5 - 120	
159 Tb	6073507.00	1.39	6220065.50	97.6	69.5 - 120	
209 Bi	3054589.50	0.83	3318256.50	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\066_CCV.D\066_CCV.D#
Date Acquired: May 14 2018 06:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.38	ppb	2.95	25	89.52	
11 B	25.3	ppb	2.60	25	101.2	
23 Na	5,178.	ppb	2.02	5,000	103.56	
25 Mg	5,172.	ppb	0.65	5,000	103.44	
27 Al	494.3	ppb	2.47	500	98.86	
28 Si	523.3	ppb	2.47	500	104.66	
29 Si	474.7	ppb	2.73	500	94.94	
39 K	4,926.	ppb	0.91	5,000	98.52	
43 Ca	4,923.	ppb	1.50	5,000	98.46	
44 Ca	4,984.	ppb	2.35	5,000	99.68	
51 V	25.	ppb	0.84	25	100	
52 Cr	24.54	ppb	1.32	25	98.16	
53 Cr	24.54	ppb	2.23	25	98.16	
55 Mn	24.19	ppb	0.99	25	96.76	
56 Fe	4,872.	ppb	1.09	5,000	97.44	
57 Fe	4,996.	ppb	1.07	5,000	99.92	
59 Co	24.85	ppb	1.29	25	99.4	
60 Ni	24.28	ppb	0.51	25	97.12	
63 Cu	24.54	ppb	1.39	25	98.16	
65 Cu	25.29	ppb	1.45	25	101.16	
66 Zn	24.73	ppb	1.77	25	98.92	
68 Zn	24.22	ppb	0.48	25	96.88	
75 As	24.7	ppb	1.44	25	98.8	
82 Se	24.99	ppb	1.46	25	99.96	
88 Sr	24.34	ppb	0.85	25	97.36	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.03	ppb	0.26	25	96.12	
107 Ag	24.33	ppb	0.25	25	97.32	
109 Ag	24.52	ppb	0.72	25	98.08	
111 Cd	24.25	ppb	0.80	25	97	
114 Cd	24.39	ppb	0.42	25	97.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.71	ppb	0.55	25	98.84	
120 Sn	24.81	ppb	1.46	25	99.24	
121 Sb	25.52	ppb	0.97	25	102.08	
123 Sb	25.61	ppb	1.46	25	102.44	
135 Ba	25.53	ppb	0.77	25	102.12	
137 Ba	25.06	ppb	2.38	25	100.24	
182 W	23.98	ppb	0.43	25	95.92	
203 Tl	24.63	ppb	1.64	25	98.52	
205 Tl	24.72	ppb	1.07	25	98.88	
208 Pb	24.71	ppb	1.32	25	98.84	
232 Th	23.4	ppb	1.25	25	93.6	
238 U	22.53	ppb	1.53	25	90.12	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4650662.00	1.68	4492941.00	103.5	80 - 120.4	
45 Sc	3151690.00	1.10	3094960.50	101.8	80 - 120.4	
72 Ge	626580.44	1.11	631723.63	99.2	80 - 120.4	
159 Tb	6128292.00	0.18	6220065.50	98.5	80 - 120.4	
209 Bi	3098257.30	0.80	3318256.50	93.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000158

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\067_CCB.D\067_CCB.D#
Date Acquired: May 14 2018 06:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	18.17	1.00	
11 B	1.828	ppb	19.63	1.00	
23 Na	0.7569	ppb	50.96	1.00	
25 Mg	0.18	ppb	159.83	1.00	
27 Al	0.6479	ppb	109.03	1.00	
28 Si	15.47	ppb	71.04	1.00	
29 Si	-17.2	ppb	70.58	1.00	
39 K	-0.2356	ppb	1279.70	1.00	
43 Ca	-3.679	ppb	56.16	1.00	
44 Ca	1.689	ppb	69.98	1.00	
51 V	-0.0509	ppb	196.58	1.00	
52 Cr	-0.0528	ppb	0.39	1.00	
53 Cr	1.131	ppb	28.13	1.00	
55 Mn	0.0101	ppb	143.18	1.00	
56 Fe	5.933	ppb	45.29	1.00	
57 Fe	3.492	ppb	90.35	1.00	
59 Co	0.0002	ppb	893.49	1.00	
60 Ni	0.0063	ppb	38.71	1.00	
63 Cu	0.0063	ppb	70.16	1.00	
65 Cu	0.0057	ppb	174.97	1.00	
66 Zn	0.0457	ppb	86.77	1.00	
68 Zn	0.0084	ppb	729.37	1.00	
75 As	-0.038	ppb	233.83	1.00	
82 Se	0.0368	ppb	481.64	1.00	
88 Sr	0.0054	ppb	126.48	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0312	ppb	29.07	1.00	
107 Ag	0.0068	ppb	25.95	1.00	
109 Ag	0.0037	ppb	51.39	1.00	
111 Cd	-0.0766	ppb	27.67	1.00	
114 Cd	-0.0005	ppb	758.58	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0348	ppb	34.57	1.00	
120 Sn	0.0229	ppb	38.38	1.00	
121 Sb	0.0014	ppb	321.56	1.00	
123 Sb	-0.0012	ppb	312.91	1.00	
135 Ba	0.0122	ppb	114.64	1.00	
137 Ba	0.0109	ppb	116.59	1.00	
182 W	0.0483	ppb	45.46	1.00	
203 Tl	0.005	ppb	94.51	1.00	
205 Tl	-0.0052	ppb	22.91	1.00	
208 Pb	-0.0216	ppb	63.63	1.00	
232 Th	0.048	ppb	9.41	1.00	
238 U	0.0032	ppb	26.98	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4589229.00	1.22	4492941.00	102.1	79.5 - 120	
45 Sc	3167953.00	3.20	3094960.50	102.4	79.5 - 120	
72 Ge	631406.25	0.78	631723.63	99.9	79.5 - 120	
159 Tb	5984270.00	1.16	6220065.50	96.2	79.5 - 120	
209 Bi	3129493.50	1.11	3318256.50	94.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\068SMPL.D\068SMPL.D#
Date Acquired: May 14 2018 06:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001S
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	63.36	6.336	ppb	0.83	100.	
11 B	398.2	39.82	ppb	1.67	1000.	
23 Na	9,040.	904.	ppb	1.11	200000.	
25 Mg	26,910.	2,691.	ppb	2.15	200000.	
27 Al	389,500.	38,950.	ppb	0.60	200000.	
28 Si	3,768.	376.8	ppb	1.03	#VALUE!	
29 Si	3,260.	326.	ppb	2.74	10000.	
39 K	16,140.	1,614.	ppb	1.53	200000.	
43 Ca	39,960.	3,996.	ppb	1.62	#VALUE!	
44 Ca	39,840.	3,984.	ppb	1.19	200000.	
51 V	1,715.	171.5	ppb	1.89	1000.	
52 Cr	821.8	82.18	ppb	2.35	2000.	
53 Cr	818.5	81.85	ppb	0.48	#VALUE!	
55 Mn	3,235.	323.5	ppb	0.43	2000.	
56 Fe	643,700.	64,370.	ppb	1.31	#VALUE!	
57 Fe	621,900.	62,190.	ppb	0.84	100000.	
59 Co	600.5	60.05	ppb	1.48	1000.	
60 Ni	690.1	69.01	ppb	0.71	1000.	
63 Cu	370.3	37.03	ppb	0.07	#VALUE!	
65 Cu	386.4	38.64	ppb	1.27	2000.	
66 Zn	1,106.	110.6	ppb	1.02	2000.	
68 Zn	1,179.	117.9	ppb	0.65	#VALUE!	
75 As	348.5	34.85	ppb	0.58	1000.	
82 Se	98.67	9.867	ppb	4.15	1000.	
88 Sr	903.7	90.37	ppb	0.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.9	10.09	ppb	0.99	1000.	
107 Ag	49.55	4.955	ppb	0.35	100.	
109 Ag	50.43	5.043	ppb	1.86	#VALUE!	
111 Cd	251.5	25.15	ppb	0.69	#VALUE!	
114 Cd	246.1	24.61	ppb	1.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	564.3	56.43	ppb	1.62	1000.	
120 Sn	563.4	56.34	ppb	2.28	#VALUE!	
121 Sb	59.31	5.931	ppb	2.59	#VALUE!	
123 Sb	60.03	6.003	ppb	0.90	1000.	
135 Ba	3,535.	353.5	ppb	2.26	2000.	
137 Ba	3,504.	350.4	ppb	1.81	#VALUE!	
182 W	102.2	10.22	ppb	1.91	1000.	
203 Tl	107.3	10.73	ppb	1.16	1000.	
205 Tl	108.	10.8	ppb	1.52	#VALUE!	
208 Pb	337.5	33.75	ppb	1.42	2000.	
232 Th	176.3	17.63	ppb	1.65	1000.	
238 U	120.7	12.07	ppb	2.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4810907.50	0.92	4492941.00	107.1	69.5 - 120	
45 Sc	3289377.30	0.88	3094960.50	106.3	69.5 - 120	
72 Ge	627645.81	1.05	631723.63	99.4	69.5 - 120	
159 Tb	6071033.50	1.18	6220065.50	97.6	69.5 - 120	
209 Bi	3025366.50	1.41	3318256.50	91.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000160

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\069SMPL.D\069SMPL.D#
Date Acquired: May 14 2018 06:32 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001P
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	59.05	5.905	ppb	5.66	100.	
11 B	443.6	44.36	ppb	6.53	1000.	
23 Na	8,701.	870.1	ppb	2.31	200000.	
25 Mg	25,030.	2,503.	ppb	0.84	200000.	
27 Al	361,900.	36,190.	ppb	2.55	200000.	
28 Si	3,577.	357.7	ppb	10.06	#VALUE!	
29 Si	2,956.	295.6	ppb	5.12	10000.	
39 K	15,650.	1,565.	ppb	0.41	200000.	
43 Ca	36,290.	3,629.	ppb	3.20	#VALUE!	
44 Ca	36,390.	3,639.	ppb	3.95	200000.	
51 V	1,466.	146.6	ppb	0.50	1000.	
52 Cr	718.6	71.86	ppb	0.58	2000.	
53 Cr	749.	74.9	ppb	1.83	#VALUE!	
55 Mn	2,640.	264.	ppb	1.79	2000.	
56 Fe	464,000.	46,400.	ppb	1.08	#VALUE!	
57 Fe	448,700.	44,870.	ppb	1.62	100000.	
59 Co	572.3	57.23	ppb	1.04	1000.	
60 Ni	661.8	66.18	ppb	1.63	1000.	
63 Cu	364.6	36.46	ppb	0.19	#VALUE!	
65 Cu	373.1	37.31	ppb	0.61	2000.	
66 Zn	1,015.	101.5	ppb	0.74	2000.	
68 Zn	1,090.	109.	ppb	0.97	#VALUE!	
75 As	266.1	26.61	ppb	2.33	1000.	
82 Se	100.3	10.03	ppb	0.82	1000.	
88 Sr	861.6	86.16	ppb	0.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	94.48	9.448	ppb	1.24	1000.	
107 Ag	49.37	4.937	ppb	0.67	100.	
109 Ag	49.78	4.978	ppb	0.40	#VALUE!	
111 Cd	246.	24.6	ppb	1.47	#VALUE!	
114 Cd	244.4	24.44	ppb	0.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	547.8	54.78	ppb	1.56	1000.	
120 Sn	551.8	55.18	ppb	1.57	#VALUE!	
121 Sb	54.63	5.463	ppb	2.04	#VALUE!	
123 Sb	55.05	5.505	ppb	0.86	1000.	
135 Ba	3,376.	337.6	ppb	1.28	2000.	
137 Ba	3,350.	335.	ppb	1.03	#VALUE!	
182 W	97.2	9.72	ppb	1.62	1000.	
203 Tl	106.7	10.67	ppb	2.04	1000.	
205 Tl	105.3	10.53	ppb	1.70	#VALUE!	
208 Pb	295.2	29.52	ppb	1.45	2000.	
232 Th	167.1	16.71	ppb	2.00	1000.	
238 U	114.5	11.45	ppb	1.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4794359.50	5.53	4492941.00	106.7	69.5 - 120	
45 Sc	3338444.80	2.01	3094960.50	107.9	69.5 - 120	
72 Ge	626923.31	0.85	631723.63	99.2	69.5 - 120	
159 Tb	6076492.00	1.03	6220065.50	97.7	69.5 - 120	
209 Bi	3021072.30	0.88	3318256.50	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\070SMPL.D\070SMPL.D#
Date Acquired: May 14 2018 06:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-020
Misc Info: LE07IMS1
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	8.945	0.8945	ppb	1.64	100.	
11 B	215.3	21.53	ppb	2.90	1000.	
23 Na	4,913.	491.3	ppb	0.94	200000.	
25 Mg	106,600.	10,660.	ppb	0.32	200000.	
27 Al	216,400.	21,640.	ppb	3.24	200000.	
28 Si	3,598.	359.8	ppb	5.09	#VALUE!	
29 Si	3,102.	310.2	ppb	4.92	10000.	
39 K	60,310.	6,031.	ppb	1.05	200000.	
43 Ca	1,202,000.	120,200.	ppb	1.20	#VALUE!	
44 Ca	1,168,000.	116,800.	ppb	0.56	200000.	
51 V	427.4	42.74	ppb	2.30	1000.	
52 Cr	180.3	18.03	ppb	0.38	2000.	
53 Cr	186.7	18.67	ppb	2.03	#VALUE!	
55 Mn	4,748.	474.8	ppb	0.46	2000.	
56 Fe	170,500.	17,050.	ppb	1.23	#VALUE!	
57 Fe	168,500.	16,850.	ppb	1.66	100000.	
59 Co	98.62	9.862	ppb	1.86	1000.	
60 Ni	165.9	16.59	ppb	0.87	1000.	
63 Cu	113.4	11.34	ppb	1.51	#VALUE!	
65 Cu	119.7	11.97	ppb	1.03	2000.	
66 Zn	450.	45.	ppb	0.79	2000.	
68 Zn	614.5	61.45	ppb	0.98	#VALUE!	
75 As	113.5	11.35	ppb	2.66	1000.	
82 Se	9.29	0.929	ppb	36.37	1000.	
88 Sr	2,898.	289.8	ppb	0.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.962	0.8962	ppb	1.40	1000.	
107 Ag	0.9791	0.0979	ppb	5.97	100.	
109 Ag	0.858	0.0858	ppb	3.49	#VALUE!	
111 Cd	4.628	0.4628	ppb	5.14	#VALUE!	
114 Cd	1.897	0.1897	ppb	4.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.46	4.946	ppb	1.11	1000.	
120 Sn	49.04	4.904	ppb	2.04	#VALUE!	
121 Sb	2.33	0.233	ppb	6.46	#VALUE!	
123 Sb	2.278	0.2278	ppb	6.23	1000.	
135 Ba	5,005.	500.5	ppb	0.55	2000.	
137 Ba	4,966.	496.6	ppb	0.34	#VALUE!	
182 W	1.368	0.1368	ppb	6.88	1000.	
203 Tl	4.148	0.4148	ppb	1.86	1000.	
205 Tl	3.976	0.3976	ppb	5.84	#VALUE!	
208 Pb	157.1	15.71	ppb	0.75	2000.	
232 Th	87.93	8.793	ppb	1.24	1000.	
238 U	18.51	1.851	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4494317.00	0.45	4492941.00	100.0	69.5 - 120	
45 Sc	3112446.50	1.09	3094960.50	100.6	69.5 - 120	
72 Ge	591221.44	1.04	631723.63	93.6	69.5 - 120	
159 Tb	6055446.00	0.17	6220065.50	97.4	69.5 - 120	
209 Bi	3034548.80	1.52	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\071SMPL.D\071SMPL.D#
Date Acquired: May 14 2018 06:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0144	0.0144	ppb	1.96	100.	
11 B	1.832	1.832	ppb	10.77	1000.	
23 Na	501.3	501.3	ppb	3.44	200000.	
25 Mg	169.7	169.7	ppb	2.59	200000.	
27 Al	5.938	5.938	ppb	5.84	200000.	
28 Si	35.27	35.27	ppb	49.42	#VALUE!	
29 Si	2.001	2.001	ppb	455.02	10000.	
39 K	10.14	10.14	ppb	26.31	200000.	
43 Ca	48.41	48.41	ppb	8.19	#VALUE!	
44 Ca	44.64	44.64	ppb	1.26	200000.	
51 V	-0.0184	-0.0184	ppb	306.14	1000.	
52 Cr	-0.0482	-0.0482	ppb	66.32	2000.	
53 Cr	-1.274	-1.274	ppb	15.63	#VALUE!	
55 Mn	0.2704	0.2704	ppb	6.34	2000.	
56 Fe	11.24	11.24	ppb	6.01	#VALUE!	
57 Fe	8.417	8.417	ppb	27.75	100000.	
59 Co	0.0323	0.0323	ppb	22.38	1000.	
60 Ni	0.1056	0.1056	ppb	16.79	1000.	
63 Cu	0.4101	0.4101	ppb	6.09	#VALUE!	
65 Cu	0.401	0.401	ppb	3.04	2000.	
66 Zn	1.058	1.058	ppb	7.17	2000.	
68 Zn	0.8155	0.8155	ppb	4.03	#VALUE!	
75 As	0.0515	0.0515	ppb	168.23	1000.	
82 Se	0.0305	0.0305	ppb	289.68	1000.	
88 Sr	0.1622	0.1622	ppb	2.71	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0146	0.0146	ppb	20.23	1000.	
107 Ag	0.0021	0.0021	ppb	132.82	100.	
109 Ag	0.0022	0.0022	ppb	82.51	#VALUE!	
111 Cd	-0.0834	-0.0834	ppb	25.90	#VALUE!	
114 Cd	-0.0005	-0.0005	ppb	462.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0468	0.0468	ppb	9.11	1000.	
120 Sn	0.0381	0.0381	ppb	49.95	#VALUE!	
121 Sb	0.0001	0.0001	ppb	4322.80	#VALUE!	
123 Sb	0.0003	0.0003	ppb	961.88	1000.	
135 Ba	0.5953	0.5953	ppb	8.61	2000.	
137 Ba	0.586	0.586	ppb	4.85	#VALUE!	
182 W	0.0105	0.0105	ppb	11.61	1000.	
203 Tl	-0.0005	-0.0005	ppb	272.53	1000.	
205 Tl	-0.0036	-0.0036	ppb	28.30	#VALUE!	
208 Pb	0.1593	0.1593	ppb	8.74	2000.	
232 Th	0.0139	0.0139	ppb	9.99	1000.	
238 U	0.0046	0.0046	ppb	18.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4505489.00	1.97	4492941.00	100.3	69.5 - 120	
45 Sc	3073679.00	2.05	3094960.50	99.3	69.5 - 120	
72 Ge	616712.63	0.46	631723.63	97.6	69.5 - 120	
159 Tb	5984129.00	0.44	6220065.50	96.2	69.5 - 120	
209 Bi	3161658.00	1.44	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\072SMPL.D\072SMPL.D#
Date Acquired: May 14 2018 06:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE14IMW1
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	80.63	100.	
11 B	1.089	1.089	ppb	8.97	1000.	
23 Na	7.449	7.449	ppb	0.89	200000.	
25 Mg	8.002	8.002	ppb	0.32	200000.	
27 Al	4.314	4.314	ppb	1.51	200000.	
28 Si	23.17	23.17	ppb	27.13	#VALUE!	
29 Si	-2.478	-2.478	ppb	285.51	10000.	
39 K	-0.8603	-0.8603	ppb	143.44	200000.	
43 Ca	-2.495	-2.495	ppb	67.82	#VALUE!	
44 Ca	2.381	2.381	ppb	11.03	200000.	
51 V	-0.0959	-0.0959	ppb	80.54	1000.	
52 Cr	-0.0233	-0.0233	ppb	29.59	2000.	
53 Cr	0.0342	0.0342	ppb	428.15	#VALUE!	
55 Mn	0.0629	0.0629	ppb	9.64	2000.	
56 Fe	1.976	1.976	ppb	178.95	#VALUE!	
57 Fe	2.415	2.415	ppb	100.12	100000.	
59 Co	-0.0008	-0.0008	ppb	768.44	1000.	
60 Ni	0.0137	0.0137	ppb	11.61	1000.	
63 Cu	0.0273	0.0273	ppb	12.88	#VALUE!	
65 Cu	0.019	0.019	ppb	33.41	2000.	
66 Zn	0.0766	0.0766	ppb	40.59	2000.	
68 Zn	0.0994	0.0994	ppb	24.30	#VALUE!	
75 As	-0.0585	-0.0585	ppb	109.04	1000.	
82 Se	-0.0378	-0.0378	ppb	330.60	1000.	
88 Sr	0.0107	0.0107	ppb	22.28	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0055	0.0055	ppb	41.05	1000.	
107 Ag	0.0016	0.0016	ppb	217.73	100.	
109 Ag	-0.0002	-0.0002	ppb	623.73	#VALUE!	
111 Cd	-0.0528	-0.0528	ppb	21.71	#VALUE!	
114 Cd	-0.0051	-0.0051	ppb	18.20	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0136	0.0136	ppb	41.50	1000.	
120 Sn	-0.0031	-0.0031	ppb	38.35	#VALUE!	
121 Sb	-0.0034	-0.0034	ppb	29.88	#VALUE!	
123 Sb	-0.0004	-0.0004	ppb	368.58	1000.	
135 Ba	0.0065	0.0065	ppb	164.32	2000.	
137 Ba	0.012	0.012	ppb	18.70	#VALUE!	
182 W	0.0048	0.0048	ppb	62.68	1000.	
203 Tl	-0.0054	-0.0054	ppb	222.06	1000.	
205 Tl	-0.0069	-0.0069	ppb	79.90	#VALUE!	
208 Pb	-0.0143	-0.0143	ppb	19.60	2000.	
232 Th	0.0133	0.0133	ppb	36.79	1000.	
238 U	0.	0.	ppb	1530.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4728968.50	2.15	4492941.00	105.3	69.5 - 120	
45 Sc	3113878.80	0.67	3094960.50	100.6	69.5 - 120	
72 Ge	620768.13	0.61	631723.63	98.3	69.5 - 120	
159 Tb	6058288.00	0.29	6220065.50	97.4	69.5 - 120	
209 Bi	3187547.00	1.07	3318256.50	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\073SMPL.D\073SMPL.D#
Date Acquired: May 14 2018 06:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE14IMW1
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	43.74	8.748	ppb	2.01	100.	
11 B	461.8	92.36	ppb	4.19	1000.	
23 Na	8,000.	1,600.	ppb	2.20	200000.	
25 Mg	5,405.	1,081.	ppb	2.32	200000.	
27 Al	2,085.	417.	ppb	3.02	200000.	
28 Si	1,127.5	225.5	ppb	5.06	#VALUE!	
29 Si	940.	188.	ppb	3.47	10000.	
39 K	9,965.	1,993.	ppb	0.79	200000.	
43 Ca	2,779.	555.8	ppb	6.08	#VALUE!	
44 Ca	2,467.	493.4	ppb	3.36	200000.	
51 V	518.5	103.7	ppb	1.52	1000.	
52 Cr	195.55	39.11	ppb	1.24	2000.	
53 Cr	194.75	38.95	ppb	1.52	#VALUE!	
55 Mn	500.5	100.1	ppb	1.96	2000.	
56 Fe	1,020.5	204.1	ppb	3.35	#VALUE!	
57 Fe	1,002.5	200.5	ppb	0.88	100000.	
59 Co	508.5	101.7	ppb	1.14	1000.	
60 Ni	497.25	99.45	ppb	1.37	1000.	
63 Cu	250.9	50.18	ppb	1.49	#VALUE!	
65 Cu	254.8	50.96	ppb	1.89	2000.	
66 Zn	519.5	103.9	ppb	2.26	2000.	
68 Zn	576.5	115.3	ppb	1.66	#VALUE!	
75 As	101.8	20.36	ppb	1.00	1000.	
82 Se	103.3	20.66	ppb	1.28	1000.	
88 Sr	494.4	98.88	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	98.55	19.71	ppb	2.83	1000.	
107 Ag	50.2	10.04	ppb	2.80	100.	
109 Ag	50.	10.	ppb	2.01	#VALUE!	
111 Cd	253.35	50.67	ppb	1.43	#VALUE!	
114 Cd	251.15	50.23	ppb	1.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	510.5	102.1	ppb	2.57	1000.	
120 Sn	512.5	102.5	ppb	3.06	#VALUE!	
121 Sb	105.1	21.02	ppb	3.64	#VALUE!	
123 Sb	104.85	20.97	ppb	2.14	1000.	
135 Ba	2,073.5	414.7	ppb	2.51	2000.	
137 Ba	2,087.	417.4	ppb	3.05	#VALUE!	
182 W	97.95	19.59	ppb	3.48	1000.	
203 Tl	99.85	19.97	ppb	2.80	1000.	
205 Tl	100.05	20.01	ppb	2.54	#VALUE!	
208 Pb	100.65	20.13	ppb	2.60	2000.	
232 Th	92.15	18.43	ppb	2.11	1000.	
238 U	89.05	17.81	ppb	1.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4797498.50	0.49	4492941.00	106.8	69.5 - 120	
45 Sc	3133794.00	2.91	3094960.50	101.3	69.5 - 120	
72 Ge	616491.44	1.29	631723.63	97.6	69.5 - 120	
159 Tb	6076067.00	1.74	6220065.50	97.7	69.5 - 120	
209 Bi	3165794.80	0.70	3318256.50	95.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\074SMPL.D\074SMPL.D#
Date Acquired: May 14 2018 06:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4085-001
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0992	0.0992	ppb	5.88	100.	
11 B	15.51	15.51	ppb	5.23	1000.	
23 Na	42,830.	42,830.	ppb	2.27	200000.	
25 Mg	1,039.	1,039.	ppb	3.41	200000.	
27 Al	52.52	52.52	ppb	4.27	200000.	
28 Si	4,399.	4,399.	ppb	1.12	#VALUE!	
29 Si	4,628.	4,628.	ppb	1.40	10000.	
39 K	1,163.	1,163.	ppb	1.45	200000.	
43 Ca	6,598.	6,598.	ppb	2.16	#VALUE!	
44 Ca	6,609.	6,609.	ppb	3.17	200000.	
51 V	-0.0333	-0.0333	ppb	87.43	1000.	
52 Cr	0.2307	0.2307	ppb	6.05	2000.	
53 Cr	5.056	5.056	ppb	44.03	#VALUE!	
55 Mn	23.17	23.17	ppb	0.58	2000.	
56 Fe	442.9	442.9	ppb	2.91	#VALUE!	
57 Fe	459.1	459.1	ppb	2.12	100000.	
59 Co	0.0655	0.0655	ppb	17.49	1000.	
60 Ni	0.6381	0.6381	ppb	8.41	1000.	
63 Cu	72.2	72.2	ppb	1.33	#VALUE!	
65 Cu	73.01	73.01	ppb	1.88	2000.	
66 Zn	36.46	36.46	ppb	1.50	2000.	
68 Zn	35.57	35.57	ppb	1.52	#VALUE!	
75 As	0.1034	0.1034	ppb	192.65	1000.	
82 Se	0.054	0.054	ppb	658.22	1000.	
88 Sr	75.43	75.43	ppb	0.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1201	0.1201	ppb	17.04	1000.	
107 Ag	0.0149	0.0149	ppb	16.03	100.	
109 Ag	0.0199	0.0199	ppb	13.38	#VALUE!	
111 Cd	0.0082	0.0082	ppb	221.08	#VALUE!	
114 Cd	0.0708	0.0708	ppb	10.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3673	0.3673	ppb	6.17	1000.	
120 Sn	0.3496	0.3496	ppb	15.02	#VALUE!	
121 Sb	0.0151	0.0151	ppb	19.55	#VALUE!	
123 Sb	0.0142	0.0142	ppb	28.89	1000.	
135 Ba	7.08	7.08	ppb	2.18	2000.	
137 Ba	6.99	6.99	ppb	1.72	#VALUE!	
182 W	0.0492	0.0492	ppb	22.32	1000.	
203 Tl	0.0181	0.0181	ppb	8.55	1000.	
205 Tl	0.014	0.014	ppb	19.54	#VALUE!	
208 Pb	0.9994	0.9994	ppb	1.53	2000.	
232 Th	0.1044	0.1044	ppb	36.30	1000.	
238 U	4.711	4.711	ppb	1.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4613041.50	4.17	4492941.00	102.7	69.5 - 120	
45 Sc	3083742.50	2.42	3094960.50	99.6	69.5 - 120	
72 Ge	619889.88	1.45	631723.63	98.1	69.5 - 120	
159 Tb	6009094.50	2.41	6220065.50	96.6	69.5 - 120	
209 Bi	3013064.50	1.62	3318256.50	90.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\075SMPL.D\075SMPL.D#
Date Acquired: May 14 2018 06:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4085-002
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.1067	0.1067	ppb	1.57	100.	
11 B	15.12	15.12	ppb	2.51	1000.	
23 Na	40,090.	40,090.	ppb	3.12	200000.	
25 Mg	1,008.	1,008.	ppb	1.44	200000.	
27 Al	65.41	65.41	ppb	1.56	200000.	
28 Si	4,304.	4,304.	ppb	0.74	#VALUE!	
29 Si	4,536.	4,536.	ppb	0.04	10000.	
39 K	1,118.	1,118.	ppb	2.20	200000.	
43 Ca	6,336.	6,336.	ppb	1.69	#VALUE!	
44 Ca	6,397.	6,397.	ppb	1.11	200000.	
51 V	-0.0396	-0.0396	ppb	175.78	1000.	
52 Cr	0.2006	0.2006	ppb	6.81	2000.	
53 Cr	9.198	9.198	ppb	12.06	#VALUE!	
55 Mn	22.21	22.21	ppb	0.37	2000.	
56 Fe	285.7	285.7	ppb	0.94	#VALUE!	
57 Fe	289.8	289.8	ppb	1.58	100000.	
59 Co	0.0524	0.0524	ppb	7.33	1000.	
60 Ni	1.371	1.371	ppb	2.09	1000.	
63 Cu	60.25	60.25	ppb	0.85	#VALUE!	
65 Cu	60.71	60.71	ppb	0.20	2000.	
66 Zn	62.62	62.62	ppb	0.51	2000.	
68 Zn	59.54	59.54	ppb	0.92	#VALUE!	
75 As	0.1816	0.1816	ppb	110.85	1000.	
82 Se	0.1242	0.1242	ppb	202.58	1000.	
88 Sr	75.48	75.48	ppb	1.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0955	0.0955	ppb	9.79	1000.	
107 Ag	0.0104	0.0104	ppb	28.97	100.	
109 Ag	0.0145	0.0145	ppb	26.17	#VALUE!	
111 Cd	0.0116	0.0116	ppb	124.27	#VALUE!	
114 Cd	0.0673	0.0673	ppb	10.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1007	0.1007	ppb	2.50	1000.	
120 Sn	0.1024	0.1024	ppb	10.85	#VALUE!	
121 Sb	0.0076	0.0076	ppb	27.81	#VALUE!	
123 Sb	0.011	0.011	ppb	9.33	1000.	
135 Ba	6.689	6.689	ppb	2.53	2000.	
137 Ba	6.611	6.611	ppb	0.07	#VALUE!	
182 W	0.0119	0.0119	ppb	42.45	1000.	
203 Tl	0.0217	0.0217	ppb	22.24	1000.	
205 Tl	0.0133	0.0133	ppb	43.96	#VALUE!	
208 Pb	0.7667	0.7667	ppb	2.60	2000.	
232 Th	0.037	0.037	ppb	24.40	1000.	
238 U	4.583	4.583	ppb	0.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4488597.00	5.04	4492941.00	99.9	69.5 - 120	
45 Sc	3149376.30	0.40	3094960.50	101.8	69.5 - 120	
72 Ge	625313.38	0.39	631723.63	99.0	69.5 - 120	
159 Tb	6060413.00	0.67	6220065.50	97.4	69.5 - 120	
209 Bi	3037660.30	0.51	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\076SMPL.D\076SMPL.D#
Date Acquired: May 14 2018 07:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4096-002
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0092	0.0092	ppb	19.35	100.	
11 B	17.48	17.48	ppb	3.63	1000.	
23 Na	24,640.	24,640.	ppb	4.55	200000.	
25 Mg	4,191.	4,191.	ppb	4.10	200000.	
27 Al	10.96	10.96	ppb	6.09	200000.	
28 Si	3,323.	3,323.	ppb	5.97	#VALUE!	
29 Si	3,467.	3,467.	ppb	6.48	10000.	
39 K	857.9	857.9	ppb	4.65	200000.	
43 Ca	32,380.	32,380.	ppb	2.67	#VALUE!	
44 Ca	31,650.	31,650.	ppb	1.06	200000.	
51 V	-0.0262	-0.0262	ppb	252.33	1000.	
52 Cr	0.3836	0.3836	ppb	11.55	2000.	
53 Cr	3.082	3.082	ppb	9.18	#VALUE!	
55 Mn	9.288	9.288	ppb	1.17	2000.	
56 Fe	71.04	71.04	ppb	6.80	#VALUE!	
57 Fe	87.48	87.48	ppb	3.97	100000.	
59 Co	0.4114	0.4114	ppb	5.79	1000.	
60 Ni	4.069	4.069	ppb	2.66	1000.	
63 Cu	140.	140.	ppb	1.90	#VALUE!	
65 Cu	144.9	144.9	ppb	0.45	2000.	
66 Zn	1,434.	1,434.	ppb	1.38	2000.	
68 Zn	1,369.	1,369.	ppb	1.49	#VALUE!	
75 As	0.2318	0.2318	ppb	28.16	1000.	
82 Se	0.1683	0.1683	ppb	27.55	1000.	
88 Sr	215.3	215.3	ppb	0.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0383	0.0383	ppb	17.24	1000.	
107 Ag	0.0328	0.0328	ppb	18.57	100.	
109 Ag	0.027	0.027	ppb	11.33	#VALUE!	
111 Cd	0.0447	0.0447	ppb	140.17	#VALUE!	
114 Cd	0.0471	0.0471	ppb	27.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.06	0.06	ppb	36.95	1000.	
120 Sn	0.0397	0.0397	ppb	25.62	#VALUE!	
121 Sb	0.055	0.055	ppb	20.07	#VALUE!	
123 Sb	0.0613	0.0613	ppb	2.27	1000.	
135 Ba	5.154	5.154	ppb	2.89	2000.	
137 Ba	5.002	5.002	ppb	2.04	#VALUE!	
182 W	0.0071	0.0071	ppb	21.30	1000.	
203 Tl	0.0064	0.0064	ppb	142.14	1000.	
205 Tl	-0.003	-0.003	ppb	223.21	#VALUE!	
208 Pb	4.027	4.027	ppb	1.90	2000.	
232 Th	0.0107	0.0107	ppb	38.36	1000.	
238 U	0.0302	0.0302	ppb	3.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4335981.50	1.63	4492941.00	96.5	69.5 - 120	
45 Sc	3113030.30	3.40	3094960.50	100.6	69.5 - 120	
72 Ge	613751.31	0.55	631723.63	97.2	69.5 - 120	
159 Tb	6036798.00	1.67	6220065.50	97.1	69.5 - 120	
209 Bi	3029982.80	1.15	3318256.50	91.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000168

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\077SMPL.D\077SMPL.D#
Date Acquired: May 14 2018 07:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4105-001
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0981	0.0981	ppb	6.66	100.	
11 B	81.85	81.85	ppb	2.64	1000.	
23 Na	148,200.	148,200.	ppb	3.48	200000.	
25 Mg	9,823.	9,823.	ppb	4.07	200000.	
27 Al	794.5	794.5	ppb	1.38	200000.	
28 Si	4,950.	4,950.	ppb	1.60	#VALUE!	
29 Si	5,201.	5,201.	ppb	1.77	10000.	
39 K	8,935.	8,935.	ppb	0.96	200000.	
43 Ca	51,840.	51,840.	ppb	1.53	#VALUE!	
44 Ca	49,730.	49,730.	ppb	0.93	200000.	
51 V	1.724	1.724	ppb	3.91	1000.	
52 Cr	3.937	3.937	ppb	0.83	2000.	
53 Cr	7.452	7.452	ppb	11.31	#VALUE!	
55 Mn	195.8	195.8	ppb	1.22	2000.	
56 Fe	1,895.	1,895.	ppb	2.04	#VALUE!	
57 Fe	1,949.	1,949.	ppb	1.16	100000.	
59 Co	0.8396	0.8396	ppb	1.88	1000.	
60 Ni	4.555	4.555	ppb	24.61	1000.	
63 Cu	41.75	41.75	ppb	1.26	#VALUE!	
65 Cu	37.37	37.37	ppb	0.76	2000.	
66 Zn	112.9	112.9	ppb	0.22	2000.	
68 Zn	107.2	107.2	ppb	1.66	#VALUE!	
75 As	1.893	1.893	ppb	7.71	1000.	
82 Se	0.7692	0.7692	ppb	9.17	1000.	
88 Sr	297.9	297.9	ppb	0.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.371	1.371	ppb	5.11	1000.	
107 Ag	0.1328	0.1328	ppb	3.08	100.	
109 Ag	0.1358	0.1358	ppb	3.42	#VALUE!	
111 Cd	0.1317	0.1317	ppb	20.74	#VALUE!	
114 Cd	0.157	0.157	ppb	5.72	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.803	1.803	ppb	2.95	1000.	
120 Sn	1.824	1.824	ppb	1.22	#VALUE!	
121 Sb	0.688	0.688	ppb	5.91	#VALUE!	
123 Sb	0.7054	0.7054	ppb	5.11	1000.	
135 Ba	30.22	30.22	ppb	2.82	2000.	
137 Ba	30.1	30.1	ppb	2.02	#VALUE!	
182 W	0.426	0.426	ppb	0.50	1000.	
203 Tl	0.0158	0.0158	ppb	30.34	1000.	
205 Tl	0.0095	0.0095	ppb	47.65	#VALUE!	
208 Pb	4.783	4.783	ppb	1.80	2000.	
232 Th	0.0536	0.0536	ppb	30.05	1000.	
238 U	0.9769	0.9769	ppb	0.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4067831.30	2.20	4492941.00	90.5	69.5 - 120	
45 Sc	3080052.80	0.99	3094960.50	99.5	69.5 - 120	
72 Ge	612254.50	0.99	631723.63	96.9	69.5 - 120	
159 Tb	5980093.00	1.93	6220065.50	96.1	69.5 - 120	
209 Bi	2849963.50	0.53	3318256.50	85.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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\JLE14A.B\078_CCV.D\078_CCV.D#
Date Acquired: May 14 2018 07:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.43	ppb	2.59	25	89.72	
11 B	26.32	ppb	2.12	25	105.28	
23 Na	5,316.	ppb	1.74	5,000	106.32	
25 Mg	5,289.	ppb	1.16	5,000	105.78	
27 Al	510.5	ppb	1.99	500	102.1	
28 Si	507.4	ppb	1.93	500	101.48	
29 Si	487.4	ppb	3.57	500	97.48	
39 K	4,923.	ppb	3.09	5,000	98.46	
43 Ca	4,938.	ppb	1.89	5,000	98.76	
44 Ca	5,012.	ppb	0.77	5,000	100.24	
51 V	25.7	ppb	1.10	25	102.8	
52 Cr	24.73	ppb	1.16	25	98.92	
53 Cr	24.12	ppb	4.71	25	96.48	
55 Mn	24.55	ppb	0.82	25	98.2	
56 Fe	4,891.	ppb	1.22	5,000	97.82	
57 Fe	4,965.	ppb	1.44	5,000	99.3	
59 Co	24.72	ppb	0.73	25	98.88	
60 Ni	24.43	ppb	0.41	25	97.72	
63 Cu	24.53	ppb	0.89	25	98.12	
65 Cu	25.06	ppb	0.32	25	100.24	
66 Zn	24.98	ppb	0.22	25	99.92	
68 Zn	24.17	ppb	1.55	25	96.68	
75 As	24.83	ppb	0.40	25	99.32	
82 Se	25.02	ppb	1.75	25	100.08	
88 Sr	24.05	ppb	0.78	25	96.2	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.71	ppb	0.82	25	94.84	
107 Ag	24.03	ppb	0.72	25	96.12	
109 Ag	24.26	ppb	1.10	25	97.04	
111 Cd	24.06	ppb	0.93	25	96.24	
114 Cd	24.24	ppb	0.94	25	96.96	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.7	ppb	0.48	25	98.8	
120 Sn	25.14	ppb	0.87	25	100.56	
121 Sb	25.39	ppb	0.53	25	101.56	
123 Sb	25.5	ppb	0.08	25	102	
135 Ba	25.5	ppb	0.72	25	102	
137 Ba	25.22	ppb	0.32	25	100.88	
182 W	24.33	ppb	0.47	25	97.32	
203 Tl	24.93	ppb	1.68	25	99.72	
205 Tl	24.79	ppb	0.93	25	99.16	
208 Pb	24.89	ppb	1.00	25	99.56	
232 Th	23.34	ppb	0.38	25	93.36	
238 U	22.16	ppb	1.11	25	88.64	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5214757.50	2.26	4492941.00	116.1	80 - 120.4	
45 Sc	3361544.50	1.57	3094960.50	108.6	80 - 120.4	
72 Ge	650007.19	1.26	631723.63	102.9	80 - 120.4	
159 Tb	6287265.50	1.06	6220065.50	101.1	80 - 120.4	
209 Bi	3227602.80	0.31	3318256.50	97.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000170

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\079_CCB.D\079_CCB.D#
Date Acquired: May 14 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0007	ppb	163.59	1.00	
11 B	2.69	ppb	14.57	1.00	
23 Na	2.162	ppb	9.08	1.00	
25 Mg	0.0253	ppb	140.02	1.00	
27 Al	0.0768	ppb	64.40	1.00	
28 Si	45.98	ppb	52.70	1.00	
29 Si	3.041	ppb	546.53	1.00	
39 K	0.7882	ppb	266.30	1.00	
43 Ca	-1.904	ppb	119.38	1.00	
44 Ca	0.4627	ppb	96.15	1.00	
51 V	-0.1033	ppb	47.14	1.00	
52 Cr	0.0829	ppb	40.59	1.00	
53 Cr	-1.199	ppb	18.19	1.00	
55 Mn	0.0107	ppb	69.19	1.00	
56 Fe	2.337	ppb	97.52	1.00	
57 Fe	0.6332	ppb	224.10	1.00	
59 Co	-0.0009	ppb	180.19	1.00	
60 Ni	-0.0038	ppb	16.60	1.00	
63 Cu	0.0082	ppb	27.79	1.00	
65 Cu	0.007	ppb	181.66	1.00	
66 Zn	0.0473	ppb	93.65	1.00	
68 Zn	0.0874	ppb	76.59	1.00	
75 As	-0.0688	ppb	214.02	1.00	
82 Se	-0.0393	ppb	606.66	1.00	
88 Sr	0.0008	ppb	425.00	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0314	ppb	24.29	1.00	
107 Ag	0.0039	ppb	31.29	1.00	
109 Ag	0.0039	ppb	55.70	1.00	
111 Cd	-0.0651	ppb	4.01	1.00	
114 Cd	-0.0026	ppb	84.17	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0746	ppb	11.27	1.00	
120 Sn	0.0563	ppb	19.47	1.00	
121 Sb	0.0055	ppb	48.48	1.00	
123 Sb	0.006	ppb	17.73	1.00	
135 Ba	0.0025	ppb	330.80	1.00	
137 Ba	0.003	ppb	79.71	1.00	
182 W	0.0508	ppb	32.86	1.00	
203 Tl	0.0081	ppb	111.74	1.00	
205 Tl	0.0057	ppb	155.96	1.00	
208 Pb	0.1162	ppb	19.37	1.00	
232 Th	0.0579	ppb	4.46	1.00	
238 U	0.0031	ppb	40.82	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3329280.30	9.86	4492941.00	74.1	79.5 - 120	ISFail
45 Sc	2675130.80	7.22	3094960.50	86.4	79.5 - 120	
72 Ge	549782.13	5.82	631723.63	87.0	79.5 - 120	
159 Tb	5891358.00	1.43	6220065.50	94.7	79.5 - 120	
209 Bi	3287457.30	2.27	3318256.50	99.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000171

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\080SMPL.D\080SMPL.D#
Date Acquired: May 14 2018 07:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4105-003
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0211	0.0211	ppb	18.18	100.	
11 B	104.5	104.5	ppb	3.98	1000.	
23 Na	133,100.	133,100.	ppb	2.31	200000.	
25 Mg	8,573.	8,573.	ppb	0.50	200000.	
27 Al	49.16	49.16	ppb	2.58	200000.	
28 Si	3,952.	3,952.	ppb	2.47	#VALUE!	
29 Si	4,176.	4,176.	ppb	3.01	10000.	
39 K	9,927.	9,927.	ppb	1.43	200000.	
43 Ca	49,790.	49,790.	ppb	2.15	#VALUE!	
44 Ca	47,130.	47,130.	ppb	1.19	200000.	
51 V	0.4432	0.4432	ppb	2.40	1000.	
52 Cr	0.7493	0.7493	ppb	0.99	2000.	
53 Cr	1.186	1.186	ppb	76.80	#VALUE!	
55 Mn	138.	138.	ppb	1.23	2000.	
56 Fe	158.	158.	ppb	3.20	#VALUE!	
57 Fe	177.9	177.9	ppb	1.37	100000.	
59 Co	0.4672	0.4672	ppb	6.52	1000.	
60 Ni	2.016	2.016	ppb	2.73	1000.	
63 Cu	10.75	10.75	ppb	1.67	#VALUE!	
65 Cu	5.93	5.93	ppb	0.63	2000.	
66 Zn	36.59	36.59	ppb	0.48	2000.	
68 Zn	35.7	35.7	ppb	1.35	#VALUE!	
75 As	1.859	1.859	ppb	10.21	1000.	
82 Se	0.841	0.841	ppb	14.79	1000.	
88 Sr	290.9	290.9	ppb	0.92	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.9564	0.9564	ppb	4.44	1000.	
107 Ag	0.0116	0.0116	ppb	23.57	100.	
109 Ag	0.0092	0.0092	ppb	2.59	#VALUE!	
111 Cd	-0.0342	-0.0342	ppb	18.47	#VALUE!	
114 Cd	0.0219	0.0219	ppb	19.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2814	0.2814	ppb	1.77	1000.	
120 Sn	0.2528	0.2528	ppb	8.49	#VALUE!	
121 Sb	0.4791	0.4791	ppb	3.58	#VALUE!	
123 Sb	0.4888	0.4888	ppb	4.72	1000.	
135 Ba	13.78	13.78	ppb	1.20	2000.	
137 Ba	13.51	13.51	ppb	1.25	#VALUE!	
182 W	0.1405	0.1405	ppb	7.55	1000.	
203 Tl	0.0378	0.0378	ppb	30.72	1000.	
205 Tl	0.0228	0.0228	ppb	15.74	#VALUE!	
208 Pb	0.7772	0.7772	ppb	3.15	2000.	
232 Th	0.0633	0.0633	ppb	7.18	1000.	
238 U	0.5376	0.5376	ppb	4.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3389023.00	3.88	4492941.00	75.4	69.5 - 120	
45 Sc	2719890.30	1.28	3094960.50	87.9	69.5 - 120	
72 Ge	554804.38	1.08	631723.63	87.8	69.5 - 120	
159 Tb	5912811.00	0.46	6220065.50	95.1	69.5 - 120	
209 Bi	2900397.50	0.72	3318256.50	87.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000172

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\081SMPL.D\081SMPL.D#
Date Acquired: May 14 2018 07:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4096-001
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	26.85	100.	
11 B	19.92	19.92	ppb	1.86	1000.	
23 Na	23,610.	23,610.	ppb	3.47	200000.	
25 Mg	4,056.	4,056.	ppb	3.12	200000.	
27 Al	14.62	14.62	ppb	3.55	200000.	
28 Si	3,159.	3,159.	ppb	7.03	#VALUE!	
29 Si	3,176.	3,176.	ppb	4.36	10000.	
39 K	855.7	855.7	ppb	2.09	200000.	
43 Ca	32,620.	32,620.	ppb	0.81	#VALUE!	
44 Ca	32,040.	32,040.	ppb	1.97	200000.	
51 V	-0.024	-0.024	ppb	333.11	1000.	
52 Cr	0.501	0.501	ppb	2.21	2000.	
53 Cr	3.003	3.003	ppb	7.61	#VALUE!	
55 Mn	9.733	9.733	ppb	3.20	2000.	
56 Fe	96.17	96.17	ppb	9.04	#VALUE!	
57 Fe	109.7	109.7	ppb	2.66	100000.	
59 Co	0.3784	0.3784	ppb	5.49	1000.	
60 Ni	1.566	1.566	ppb	2.63	1000.	
63 Cu	21.01	21.01	ppb	3.73	#VALUE!	
65 Cu	20.73	20.73	ppb	2.54	2000.	
66 Zn	10.37	10.37	ppb	1.14	2000.	
68 Zn	10.08	10.08	ppb	2.73	#VALUE!	
75 As	0.0054	0.0054	ppb	3615.50	1000.	
82 Se	0.1153	0.1153	ppb	142.32	1000.	
88 Sr	217.8	217.8	ppb	2.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0374	0.0374	ppb	4.47	1000.	
107 Ag	0.0167	0.0167	ppb	14.58	100.	
109 Ag	0.0154	0.0154	ppb	21.01	#VALUE!	
111 Cd	-0.0189	-0.0189	ppb	164.29	#VALUE!	
114 Cd	0.0383	0.0383	ppb	26.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.92	1.92	ppb	3.98	1000.	
120 Sn	1.875	1.875	ppb	3.14	#VALUE!	
121 Sb	0.0398	0.0398	ppb	3.82	#VALUE!	
123 Sb	0.0415	0.0415	ppb	36.70	1000.	
135 Ba	4.92	4.92	ppb	5.22	2000.	
137 Ba	4.926	4.926	ppb	3.20	#VALUE!	
182 W	0.0085	0.0085	ppb	30.40	1000.	
203 Tl	0.0235	0.0235	ppb	22.84	1000.	
205 Tl	0.0173	0.0173	ppb	15.47	#VALUE!	
208 Pb	0.8884	0.8884	ppb	4.54	2000.	
232 Th	0.0231	0.0231	ppb	35.77	1000.	
238 U	0.0287	0.0287	ppb	8.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3657597.50	4.70	4492941.00	81.4	69.5 - 120	
45 Sc	2701940.50	3.16	3094960.50	87.3	69.5 - 120	
72 Ge	553168.13	2.44	631723.63	87.6	69.5 - 120	
159 Tb	5817492.00	2.49	6220065.50	93.5	69.5 - 120	
209 Bi	3050229.30	2.22	3318256.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000173

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\082SMPL.D\082SMPL.D#
Date Acquired: May 14 2018 07:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW1
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0081	0.0016	ppb	158.36	100.	
11 B	13.14	2.628	ppb	8.34	1000.	
23 Na	40.59	8.118	ppb	13.88	200000.	
25 Mg	10.64	2.128	ppb	6.82	200000.	
27 Al	7.005	1.401	ppb	6.85	200000.	
28 Si	195.5	39.1	ppb	34.27	#VALUE!	
29 Si	111.1	22.22	ppb	97.57	10000.	
39 K	39.2	7.84	ppb	71.31	200000.	
43 Ca	-9.33	-1.866	ppb	236.01	#VALUE!	
44 Ca	17.46	3.492	ppb	29.50	200000.	
51 V	0.2981	0.0596	ppb	52.73	1000.	
52 Cr	2.733	0.5466	ppb	19.34	2000.	
53 Cr	47.185	9.437	ppb	5.48	#VALUE!	
55 Mn	0.1945	0.0389	ppb	21.09	2000.	
56 Fe	47.13	9.426	ppb	39.90	#VALUE!	
57 Fe	5.	1.	ppb	212.70	100000.	
59 Co	0.006	0.0012	ppb	137.64	1000.	
60 Ni	0.1112	0.0222	ppb	28.92	1000.	
63 Cu	0.0914	0.0183	ppb	42.61	#VALUE!	
65 Cu	0.0769	0.0154	ppb	12.53	2000.	
66 Zn	-0.0387	-0.0077	ppb	296.71	2000.	
68 Zn	0.0602	0.012	ppb	333.80	#VALUE!	
75 As	0.884	0.1768	ppb	29.23	1000.	
82 Se	0.732	0.1464	ppb	85.11	1000.	
88 Sr	0.0553	0.0111	ppb	57.49	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0225	0.0045	ppb	22.11	1000.	
107 Ag	0.0091	0.0018	ppb	89.60	100.	
109 Ag	0.0037	0.0007	ppb	163.68	#VALUE!	
111 Cd	-0.129	-0.0258	ppb	93.84	#VALUE!	
114 Cd	-0.032	-0.0064	ppb	51.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.579	0.3158	ppb	6.41	1000.	
120 Sn	1.538	0.3076	ppb	8.04	#VALUE!	
121 Sb	0.0723	0.0145	ppb	41.18	#VALUE!	
123 Sb	0.0466	0.0093	ppb	49.76	1000.	
135 Ba	0.041	0.0082	ppb	219.46	2000.	
137 Ba	0.0239	0.0048	ppb	91.23	#VALUE!	
182 W	0.0529	0.0106	ppb	10.27	1000.	
203 Tl	0.0627	0.0125	ppb	40.43	1000.	
205 Tl	0.0453	0.0091	ppb	119.34	#VALUE!	
208 Pb	0.239	0.0478	ppb	46.43	2000.	
232 Th	0.1211	0.0242	ppb	22.88	1000.	
238 U	0.0001	0.	ppb	3165.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3308219.80	2.71	4492941.00	73.6	69.5 - 120	
45 Sc	2456814.30	4.66	3094960.50	79.4	69.5 - 120	
72 Ge	521848.59	1.86	631723.63	82.6	69.5 - 120	
159 Tb	5813783.00	1.39	6220065.50	93.5	69.5 - 120	
209 Bi	3252740.80	1.65	3318256.50	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000174

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\083SMPL.D\083SMPL.D#
Date Acquired: May 14 2018 07:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW1
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	45.875	9.175	ppb	1.07	100.	
11 B	449.45	89.89	ppb	6.40	1000.	
23 Na	7,300.	1,460.	ppb	0.98	200000.	
25 Mg	4,862.5	972.5	ppb	0.59	200000.	
27 Al	2,061.	412.2	ppb	0.67	200000.	
28 Si	1,208.5	241.7	ppb	1.84	#VALUE!	
29 Si	1,047.	209.4	ppb	5.98	10000.	
39 K	10,105.	2,021.	ppb	0.75	200000.	
43 Ca	2,899.	579.8	ppb	0.98	#VALUE!	
44 Ca	2,558.5	511.7	ppb	2.13	200000.	
51 V	527.5	105.5	ppb	3.68	1000.	
52 Cr	204.2	40.84	ppb	2.77	2000.	
53 Cr	248.7	49.74	ppb	1.96	#VALUE!	
55 Mn	522.5	104.5	ppb	3.45	2000.	
56 Fe	1,092.5	218.5	ppb	6.27	#VALUE!	
57 Fe	1,054.5	210.9	ppb	2.76	100000.	
59 Co	525.	105.	ppb	3.47	1000.	
60 Ni	507.	101.4	ppb	1.93	1000.	
63 Cu	249.35	49.87	ppb	2.42	#VALUE!	
65 Cu	258.	51.6	ppb	2.49	2000.	
66 Zn	518.	103.6	ppb	1.40	2000.	
68 Zn	567.	113.4	ppb	3.12	#VALUE!	
75 As	104.65	20.93	ppb	2.25	1000.	
82 Se	104.	20.8	ppb	2.97	1000.	
88 Sr	529.	105.8	ppb	3.46	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	106.75	21.35	ppb	2.72	1000.	
107 Ag	54.6	10.92	ppb	2.68	100.	
109 Ag	54.9	10.98	ppb	2.81	#VALUE!	
111 Cd	270.85	54.17	ppb	2.70	#VALUE!	
114 Cd	270.35	54.07	ppb	2.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	485.85	97.17	ppb	1.67	1000.	
120 Sn	489.2	97.84	ppb	1.89	#VALUE!	
121 Sb	100.25	20.05	ppb	2.36	#VALUE!	
123 Sb	101.35	20.27	ppb	1.79	1000.	
135 Ba	2,028.5	405.7	ppb	2.28	2000.	
137 Ba	2,041.	408.2	ppb	2.84	#VALUE!	
182 W	108.3	21.66	ppb	2.44	1000.	
203 Tl	104.45	20.89	ppb	1.96	1000.	
205 Tl	105.15	21.03	ppb	2.33	#VALUE!	
208 Pb	106.05	21.21	ppb	2.34	2000.	
232 Th	105.55	21.11	ppb	2.70	1000.	
238 U	110.05	22.01	ppb	3.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3430846.80	0.82	4492941.00	76.4	69.5 - 120	
45 Sc	2430781.30	1.53	3094960.50	78.5	69.5 - 120	
72 Ge	503465.00	2.29	631723.63	79.7	69.5 - 120	
159 Tb	5713001.00	1.67	6220065.50	91.8	69.5 - 120	
209 Bi	3214687.80	1.29	3318256.50	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000175

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\084SMPL.D\084SMPL.D#
Date Acquired: May 14 2018 07:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-002
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.56	0.112	ppb	3.43	100.	
11 B	271.1	54.22	ppb	7.73	1000.	
23 Na	273,250.	54,650.	ppb	5.45	200000.	
25 Mg	67,900.	13,580.	ppb	3.17	200000.	
27 Al	10,470.	2,094.	ppb	1.68	200000.	
28 Si	35,130.	7,026.	ppb	1.83	#VALUE!	
29 Si	36,755.	7,351.	ppb	1.75	10000.	
39 K	20,370.	4,074.	ppb	0.48	200000.	
43 Ca	363,650.	72,730.	ppb	1.69	#VALUE!	
44 Ca	345,250.	69,050.	ppb	2.15	200000.	
51 V	34.88	6.976	ppb	2.35	1000.	
52 Cr	42.2	8.44	ppb	1.21	2000.	
53 Cr	79.1	15.82	ppb	1.93	#VALUE!	
55 Mn	1,485.	297.	ppb	0.73	2000.	
56 Fe	15,275.	3,055.	ppb	0.56	#VALUE!	
57 Fe	15,615.	3,123.	ppb	0.55	100000.	
59 Co	6.26	1.252	ppb	0.46	1000.	
60 Ni	20.185	4.037	ppb	1.84	1000.	
63 Cu	24.87	4.974	ppb	0.67	#VALUE!	
65 Cu	15.415	3.083	ppb	2.37	2000.	
66 Zn	141.85	28.37	ppb	1.31	2000.	
68 Zn	142.1	28.42	ppb	2.31	#VALUE!	
75 As	19.88	3.976	ppb	4.28	1000.	
82 Se	1.354	0.2708	ppb	128.40	1000.	
88 Sr	1,551.	310.2	ppb	1.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	23.035	4.607	ppb	3.86	1000.	
107 Ag	0.048	0.0096	ppb	11.33	100.	
109 Ag	0.041	0.0082	ppb	32.83	#VALUE!	
111 Cd	-0.165	-0.033	ppb	66.79	#VALUE!	
114 Cd	0.0058	0.0012	ppb	360.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.8415	0.5683	ppb	5.70	1000.	
120 Sn	2.758	0.5516	ppb	6.82	#VALUE!	
121 Sb	0.933	0.1866	ppb	2.89	#VALUE!	
123 Sb	0.9735	0.1947	ppb	6.78	1000.	
135 Ba	245.5	49.1	ppb	1.27	2000.	
137 Ba	245.1	49.02	ppb	1.80	#VALUE!	
182 W	0.485	0.097	ppb	7.65	1000.	
203 Tl	0.2482	0.0496	ppb	16.91	1000.	
205 Tl	0.1614	0.0323	ppb	12.68	#VALUE!	
208 Pb	11.585	2.317	ppb	0.60	2000.	
232 Th	7.915	1.583	ppb	3.38	1000.	
238 U	5.495	1.099	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3257057.50	10.47	4492941.00	72.5	69.5 - 120	
45 Sc	2527017.80	2.83	3094960.50	81.6	69.5 - 120	
72 Ge	524791.88	1.81	631723.63	83.1	69.5 - 120	
159 Tb	5863706.50	1.05	6220065.50	94.3	69.5 - 120	
209 Bi	3167876.80	1.47	3318256.50	95.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000176

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\085SMPL.D\085SMPL.D#
Date Acquired: May 14 2018 07:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-003
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0066	0.0013	ppb	52.88	100.	
11 B	253.05	50.61	ppb	8.36	1000.	
23 Na	301,700.	60,340.	ppb	3.97	200000.	
25 Mg	71,150.	14,230.	ppb	1.38	200000.	
27 Al	9.425	1.885	ppb	1.07	200000.	
28 Si	14,245.	2,849.	ppb	5.62	#VALUE!	
29 Si	14,030.	2,806.	ppb	5.94	10000.	
39 K	18,755.	3,751.	ppb	1.82	200000.	
43 Ca	350,700.	70,140.	ppb	2.47	#VALUE!	
44 Ca	339,000.	67,800.	ppb	2.08	200000.	
51 V	1.418	0.2836	ppb	18.00	1000.	
52 Cr	2.402	0.4804	ppb	12.37	2000.	
53 Cr	64.7	12.94	ppb	16.74	#VALUE!	
55 Mn	1,407.5	281.5	ppb	1.32	2000.	
56 Fe	1,531.5	306.3	ppb	1.60	#VALUE!	
57 Fe	1,777.	355.4	ppb	1.24	100000.	
59 Co	1.553	0.3106	ppb	5.21	1000.	
60 Ni	5.685	1.137	ppb	5.03	1000.	
63 Cu	14.675	2.935	ppb	1.16	#VALUE!	
65 Cu	5.285	1.057	ppb	3.67	2000.	
66 Zn	27.3	5.46	ppb	5.10	2000.	
68 Zn	26.435	5.287	ppb	2.31	#VALUE!	
75 As	12.61	2.522	ppb	1.96	1000.	
82 Se	1.4435	0.2887	ppb	71.60	1000.	
88 Sr	1,471.	294.2	ppb	0.81	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.4	2.88	ppb	1.01	1000.	
107 Ag	0.0043	0.0009	ppb	162.24	100.	
109 Ag	0.0143	0.0029	ppb	8.98	#VALUE!	
111 Cd	-0.1218	-0.0244	ppb	34.86	#VALUE!	
114 Cd	-0.0177	-0.0035	ppb	136.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.699	0.3398	ppb	1.72	1000.	
120 Sn	1.7725	0.3545	ppb	3.81	#VALUE!	
121 Sb	0.8315	0.1663	ppb	3.18	#VALUE!	
123 Sb	0.764	0.1528	ppb	2.72	1000.	
135 Ba	38.31	7.662	ppb	2.28	2000.	
137 Ba	38.305	7.661	ppb	0.94	#VALUE!	
182 W	0.1975	0.0395	ppb	2.55	1000.	
203 Tl	0.0765	0.0153	ppb	35.46	1000.	
205 Tl	0.0427	0.0085	ppb	94.95	#VALUE!	
208 Pb	0.2731	0.0546	ppb	29.65	2000.	
232 Th	0.2892	0.0578	ppb	9.94	1000.	
238 U	4.3405	0.8681	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4195414.00	6.25	4492941.00	93.4	69.5 - 120	
45 Sc	2891243.00	2.38	3094960.50	93.4	69.5 - 120	
72 Ge	580090.50	0.91	631723.63	91.8	69.5 - 120	
159 Tb	6038897.50	1.62	6220065.50	97.1	69.5 - 120	
209 Bi	3144354.50	2.27	3318256.50	94.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000177

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\086SMPL.D\086SMPL.D#
Date Acquired: May 14 2018 07:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.1348	0.027	ppb	7.50	100.	
11 B	216.2	43.24	ppb	4.64	1000.	
23 Na	302,850.	60,570.	ppb	2.27	200000.	
25 Mg	77,150.	15,430.	ppb	3.25	200000.	
27 Al	3,024.	604.8	ppb	2.26	200000.	
28 Si	23,080.	4,616.	ppb	2.15	#VALUE!	
29 Si	24,520.	4,904.	ppb	2.00	10000.	
39 K	18,870.	3,774.	ppb	2.78	200000.	
43 Ca	389,300.	77,860.	ppb	0.39	#VALUE!	
44 Ca	370,450.	74,090.	ppb	0.24	200000.	
51 V	7.285	1.457	ppb	9.44	1000.	
52 Cr	28.495	5.699	ppb	1.10	2000.	
53 Cr	80.05	16.01	ppb	1.17	#VALUE!	
55 Mn	1,373.	274.6	ppb	1.91	2000.	
56 Fe	10,930.	2,186.	ppb	1.75	#VALUE!	
57 Fe	11,245.	2,249.	ppb	0.64	100000.	
59 Co	1.961	0.3922	ppb	6.18	1000.	
60 Ni	10.865	2.173	ppb	0.58	1000.	
63 Cu	22.9	4.58	ppb	1.19	#VALUE!	
65 Cu	12.595	2.519	ppb	1.31	2000.	
66 Zn	142.3	28.46	ppb	0.10	2000.	
68 Zn	141.1	28.22	ppb	1.05	#VALUE!	
75 As	11.945	2.389	ppb	10.39	1000.	
82 Se	2.122	0.4244	ppb	40.58	1000.	
88 Sr	1,745.5	349.1	ppb	0.59	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.67	3.534	ppb	0.67	1000.	
107 Ag	0.0258	0.0052	ppb	54.72	100.	
109 Ag	0.0161	0.0032	ppb	85.79	#VALUE!	
111 Cd	-0.2778	-0.0556	ppb	19.46	#VALUE!	
114 Cd	-0.0065	-0.0013	ppb	305.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.3375	0.6675	ppb	7.15	1000.	
120 Sn	3.2035	0.6407	ppb	6.07	#VALUE!	
121 Sb	0.3801	0.076	ppb	9.25	#VALUE!	
123 Sb	0.3059	0.0612	ppb	1.93	1000.	
135 Ba	96.8	19.36	ppb	1.70	2000.	
137 Ba	95.5	19.1	ppb	2.01	#VALUE!	
182 W	0.3847	0.0769	ppb	12.52	1000.	
203 Tl	0.1113	0.0223	ppb	19.95	1000.	
205 Tl	0.1347	0.0269	ppb	38.32	#VALUE!	
208 Pb	3.8995	0.7799	ppb	0.84	2000.	
232 Th	2.572	0.5144	ppb	2.62	1000.	
238 U	2.278	0.4556	ppb	3.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3266187.30	3.04	4492941.00	72.7	69.5 - 120	
45 Sc	2539251.50	2.33	3094960.50	82.0	69.5 - 120	
72 Ge	516386.19	1.15	631723.63	81.7	69.5 - 120	
159 Tb	5788549.00	0.23	6220065.50	93.1	69.5 - 120	
209 Bi	3100065.30	0.73	3318256.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000178

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\087SMPL.D\087SMPL.D#
Date Acquired: May 14 2018 07:47 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004L
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.1436	0.0057	ppb	19.12	100.	
11 B	266.25	10.65	ppb	5.20	1000.	
23 Na	303,500.	12,140.	ppb	1.28	200000.	
25 Mg	80,125.	3,205.	ppb	3.36	200000.	
27 Al	3,267.5	130.7	ppb	1.54	200000.	
28 Si	24,240.	969.6	ppb	3.04	#VALUE!	
29 Si	23,727.5	949.1	ppb	1.99	10000.	
39 K	19,567.5	782.7	ppb	0.90	200000.	
43 Ca	384,250.	15,370.	ppb	2.90	#VALUE!	
44 Ca	383,250.	15,330.	ppb	1.56	200000.	
51 V	5.5275	0.2211	ppb	43.40	1000.	
52 Cr	31.325	1.253	ppb	2.72	2000.	
53 Cr	108.475	4.339	ppb	2.76	#VALUE!	
55 Mn	1,476.5	59.06	ppb	1.14	2000.	
56 Fe	11,157.5	446.3	ppb	2.51	#VALUE!	
57 Fe	11,475.	459.	ppb	0.95	100000.	
59 Co	2.0993	0.084	ppb	4.86	1000.	
60 Ni	10.9925	0.4397	ppb	15.55	1000.	
63 Cu	24.1825	0.9673	ppb	5.59	#VALUE!	
65 Cu	13.6825	0.5473	ppb	2.20	2000.	
66 Zn	163.025	6.521	ppb	3.06	2000.	
68 Zn	156.825	6.273	ppb	3.41	#VALUE!	
75 As	10.17	0.4068	ppb	24.78	1000.	
82 Se	0.3218	0.0129	ppb	1006.20	1000.	
88 Sr	1,882.25	75.29	ppb	0.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	18.295	0.7318	ppb	0.65	1000.	
107 Ag	-0.0091	-0.0004	ppb	168.70	100.	
109 Ag	0.008	0.0003	ppb	214.29	#VALUE!	
111 Cd	-1.6083	-0.0643	ppb	60.36	#VALUE!	
114 Cd	-0.102	-0.0041	ppb	34.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.335	0.1734	ppb	9.58	1000.	
120 Sn	4.37	0.1748	ppb	8.26	#VALUE!	
121 Sb	0.3135	0.0125	ppb	48.07	#VALUE!	
123 Sb	0.397	0.0159	ppb	32.09	1000.	
135 Ba	99.9	3.996	ppb	4.57	2000.	
137 Ba	97.6	3.904	ppb	1.71	#VALUE!	
182 W	0.4753	0.019	ppb	39.58	1000.	
203 Tl	0.3613	0.0145	ppb	4.85	1000.	
205 Tl	0.1717	0.0069	ppb	90.01	#VALUE!	
208 Pb	6.2925	0.2517	ppb	6.55	2000.	
232 Th	2.1993	0.088	ppb	7.83	1000.	
238 U	2.2473	0.0899	ppb	4.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3240715.30	4.36	4492941.00	72.1	69.5 - 120	
45 Sc	2574308.00	1.01	3094960.50	83.2	69.5 - 120	
72 Ge	526949.31	1.03	631723.63	83.4	69.5 - 120	
159 Tb	5876490.50	1.02	6220065.50	94.5	69.5 - 120	
209 Bi	3325495.30	1.47	3318256.50	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000179

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\088SMPL.D\088SMPL.D#
Date Acquired: May 14 2018 07:51 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004A
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	9.925	1.985	ppb	5.20	100.	
11 B	409.75	81.95	ppb	5.43	1000.	
23 Na	294,600.	58,920.	ppb	3.03	200000.	
25 Mg	74,500.	14,900.	ppb	4.54	200000.	
27 Al	3,842.	768.4	ppb	0.92	200000.	
28 Si	27,230.	5,446.	ppb	2.31	#VALUE!	
29 Si	29,175.	5,835.	ppb	6.20	10000.	
39 K	28,980.	5,796.	ppb	5.33	200000.	
43 Ca	402,100.	80,420.	ppb	6.44	#VALUE!	
44 Ca	376,800.	75,360.	ppb	2.66	200000.	
51 V	57.1	11.42	ppb	3.29	1000.	
52 Cr	77.4	15.48	ppb	3.65	2000.	
53 Cr	122.25	24.45	ppb	0.86	#VALUE!	
55 Mn	1,376.5	275.3	ppb	2.11	2000.	
56 Fe	11,890.	2,378.	ppb	2.87	#VALUE!	
57 Fe	12,160.	2,432.	ppb	4.60	100000.	
59 Co	11.78	2.356	ppb	1.33	1000.	
60 Ni	28.72	5.744	ppb	1.62	1000.	
63 Cu	52.05	10.41	ppb	1.73	#VALUE!	
65 Cu	42.125	8.425	ppb	3.13	2000.	
66 Zn	235.65	47.13	ppb	1.61	2000.	
68 Zn	226.7	45.34	ppb	2.93	#VALUE!	
75 As	63.75	12.75	ppb	1.52	1000.	
82 Se	51.35	10.27	ppb	0.42	1000.	
88 Sr	1,809.5	361.9	ppb	2.15	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	71.25	14.25	ppb	2.77	1000.	
107 Ag	10.15	2.03	ppb	5.21	100.	
109 Ag	10.385	2.077	ppb	2.99	#VALUE!	
111 Cd	10.02	2.004	ppb	3.98	#VALUE!	
114 Cd	10.29	2.058	ppb	1.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.8	10.16	ppb	3.18	1000.	
120 Sn	50.7	10.14	ppb	3.68	#VALUE!	
121 Sb	10.07	2.014	ppb	4.87	#VALUE!	
123 Sb	10.2	2.04	ppb	2.62	1000.	
135 Ba	114.5	22.9	ppb	2.21	2000.	
137 Ba	115.45	23.09	ppb	3.96	#VALUE!	
182 W	55.7	11.14	ppb	2.95	1000.	
203 Tl	10.625	2.125	ppb	4.49	1000.	
205 Tl	10.505	2.101	ppb	2.08	#VALUE!	
208 Pb	14.11	2.822	ppb	3.14	2000.	
232 Th	13.815	2.763	ppb	1.08	1000.	
238 U	13.935	2.787	ppb	1.32	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2965903.30	6.62	4492941.00	66.0	69.5 - 120	IS Fai
45 Sc	2391856.80	3.67	3094960.50	77.3	69.5 - 120	
72 Ge	497286.34	2.16	631723.63	78.7	69.5 - 120	
159 Tb	5686794.00	2.21	6220065.50	91.4	69.5 - 120	
209 Bi	3079620.00	2.28	3318256.50	92.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000180

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\089SMPL.D\089SMPL.D#
Date Acquired: May 14 2018 07:55 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004S
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	49.28	9.856	ppb	0.88	100.	
11 B	711.5	142.3	ppb	2.05	1000.	
23 Na	319,850.	63,970.	ppb	8.15	200000.	
25 Mg	81,050.	16,210.	ppb	4.05	200000.	
27 Al	5,025.	1,005.	ppb	4.65	200000.	
28 Si	25,930.	5,186.	ppb	5.04	#VALUE!	
29 Si	28,520.	5,704.	ppb	5.89	10000.	
39 K	30,475.	6,095.	ppb	3.60	200000.	
43 Ca	414,350.	82,870.	ppb	2.75	#VALUE!	
44 Ca	391,500.	78,300.	ppb	2.61	200000.	
51 V	553.5	110.7	ppb	1.22	1000.	
52 Cr	230.8	46.16	ppb	3.89	2000.	
53 Cr	270.4	54.08	ppb	3.38	#VALUE!	
55 Mn	1,946.	389.2	ppb	2.23	2000.	
56 Fe	12,485.	2,497.	ppb	1.90	#VALUE!	
57 Fe	12,610.	2,522.	ppb	2.21	100000.	
59 Co	533.	106.6	ppb	3.21	1000.	
60 Ni	505.5	101.1	ppb	3.55	1000.	
63 Cu	267.5	53.5	ppb	2.91	#VALUE!	
65 Cu	264.75	52.95	ppb	2.59	2000.	
66 Zn	638.	127.6	ppb	3.15	2000.	
68 Zn	685.	137.	ppb	2.84	#VALUE!	
75 As	120.3	24.06	ppb	3.72	1000.	
82 Se	106.95	21.39	ppb	5.54	1000.	
88 Sr	2,437.5	487.5	ppb	3.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	134.8	26.96	ppb	2.77	1000.	
107 Ag	53.9	10.78	ppb	2.06	100.	
109 Ag	54.15	10.83	ppb	2.56	#VALUE!	
111 Cd	271.35	54.27	ppb	2.85	#VALUE!	
114 Cd	270.3	54.06	ppb	2.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	492.15	98.43	ppb	4.75	1000.	
120 Sn	502.5	100.5	ppb	3.84	#VALUE!	
121 Sb	99.45	19.89	ppb	3.78	#VALUE!	
123 Sb	101.05	20.21	ppb	3.76	1000.	
135 Ba	2,166.	433.2	ppb	3.46	2000.	
137 Ba	2,184.5	436.9	ppb	3.95	#VALUE!	
182 W	113.65	22.73	ppb	4.35	1000.	
203 Tl	109.7	21.94	ppb	4.17	1000.	
205 Tl	110.	22.	ppb	4.31	#VALUE!	
208 Pb	114.95	22.99	ppb	3.93	2000.	
232 Th	121.4	24.28	ppb	4.51	1000.	
238 U	125.	25.	ppb	3.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2876826.50	1.33	4492941.00	64.0	69.5 - 120	IS Fai
45 Sc	2271124.00	5.22	3094960.50	73.4	69.5 - 120	
72 Ge	473315.34	2.95	631723.63	74.9	69.5 - 120	
159 Tb	5570517.50	3.90	6220065.50	89.6	69.5 - 120	
209 Bi	3000176.30	4.02	3318256.50	90.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000181

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\090_CCV.D\090_CCV.D#
Date Acquired: May 14 2018 07:59 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.05	ppb	3.19	25	96.2	
11 B	28.75	ppb	2.98	25	115	Fail
23 Na	4,536.	ppb	4.16	5,000	90.72	
25 Mg	4,572.	ppb	3.66	5,000	91.44	
27 Al	454.7	ppb	2.39	500	90.94	
28 Si	506.9	ppb	3.94	500	101.38	
29 Si	455.7	ppb	6.25	500	91.14	
39 K	4,776.	ppb	1.22	5,000	95.52	
43 Ca	4,869.	ppb	1.56	5,000	97.38	
44 Ca	5,001.	ppb	1.89	5,000	100.02	
51 V	24.41	ppb	1.91	25	97.64	
52 Cr	24.3	ppb	1.46	25	97.2	
53 Cr	24.13	ppb	5.40	25	96.52	
55 Mn	24.81	ppb	1.22	25	99.24	
56 Fe	4,874.	ppb	1.17	5,000	97.48	
57 Fe	5,021.	ppb	0.81	5,000	100.42	
59 Co	24.42	ppb	2.53	25	97.68	
60 Ni	23.77	ppb	0.58	25	95.08	
63 Cu	24.27	ppb	0.97	25	97.08	
65 Cu	24.68	ppb	1.85	25	98.72	
66 Zn	25.44	ppb	0.83	25	101.76	
68 Zn	25.25	ppb	0.95	25	101	
75 As	24.8	ppb	1.11	25	99.2	
82 Se	25.8	ppb	0.78	25	103.2	
88 Sr	25.77	ppb	0.30	25	103.08	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.79	ppb	0.18	25	103.16	
107 Ag	26.14	ppb	0.18	25	104.56	
109 Ag	26.14	ppb	0.61	25	104.56	
111 Cd	26.46	ppb	1.06	25	105.84	
114 Cd	26.34	ppb	0.42	25	105.36	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.29	ppb	0.78	25	93.16	
120 Sn	23.32	ppb	0.99	25	93.28	
121 Sb	24.08	ppb	1.00	25	96.32	
123 Sb	24.19	ppb	0.94	25	96.76	
135 Ba	24.39	ppb	2.14	25	97.56	
137 Ba	24.36	ppb	1.09	25	97.44	
182 W	25.32	ppb	1.37	25	101.28	
203 Tl	24.49	ppb	1.10	25	97.96	
205 Tl	24.66	ppb	0.68	25	98.64	
208 Pb	24.89	ppb	0.67	25	99.56	
232 Th	25.13	ppb	0.59	25	100.52	
238 U	26.37	ppb	1.24	25	105.48	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3070284.50	2.74	4492941.00	68.3	80 - 120.4	ISFail
45 Sc	2462531.80	2.13	3094960.50	79.6	80 - 120.4	
72 Ge	503741.63	1.12	631723.63	79.7	80 - 120.4	
159 Tb	5766978.00	0.37	6220065.50	92.7	80 - 120.4	
209 Bi	3227761.50	0.53	3318256.50	97.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000182

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\091_CCB.D\091_CCB.D#
Date Acquired: May 14 2018 08:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	31.45	1.00	
11 B	3.56	ppb	15.02	1.00	
23 Na	3.125	ppb	3.40	1.00	
25 Mg	-0.0525	ppb	106.81	1.00	
27 Al	-0.0765	ppb	52.86	1.00	
28 Si	51.91	ppb	14.00	1.00	
29 Si	5.611	ppb	175.83	1.00	
39 K	3.597	ppb	75.12	1.00	
43 Ca	-2.959	ppb	73.47	1.00	
44 Ca	0.7479	ppb	115.46	1.00	
51 V	-0.1144	ppb	34.41	1.00	
52 Cr	0.0629	ppb	63.75	1.00	
53 Cr	-0.9009	ppb	20.68	1.00	
55 Mn	0.015	ppb	24.27	1.00	
56 Fe	1.425	ppb	129.96	1.00	
57 Fe	1.948	ppb	62.12	1.00	
59 Co	0.004	ppb	26.29	1.00	
60 Ni	0.0075	ppb	45.16	1.00	
63 Cu	0.0045	ppb	229.58	1.00	
65 Cu	0.0087	ppb	243.02	1.00	
66 Zn	0.0307	ppb	144.55	1.00	
68 Zn	0.048	ppb	58.37	1.00	
75 As	-0.1013	ppb	107.01	1.00	
82 Se	0.0316	ppb	590.89	1.00	
88 Sr	0.0023	ppb	99.47	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0391	ppb	38.60	1.00	
107 Ag	0.0037	ppb	31.22	1.00	
109 Ag	0.0032	ppb	25.59	1.00	
111 Cd	-0.0561	ppb	39.97	1.00	
114 Cd	-0.0039	ppb	16.39	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0623	ppb	15.41	1.00	
120 Sn	0.0551	ppb	5.72	1.00	
121 Sb	0.0051	ppb	35.17	1.00	
123 Sb	0.0074	ppb	32.32	1.00	
135 Ba	0.0076	ppb	127.40	1.00	
137 Ba	-0.0002	ppb	2198.10	1.00	
182 W	0.0514	ppb	19.38	1.00	
203 Tl	0.0072	ppb	62.37	1.00	
205 Tl	0.0018	ppb	127.41	1.00	
208 Pb	0.0803	ppb	1.18	1.00	
232 Th	0.0679	ppb	4.29	1.00	
238 U	0.0036	ppb	54.00	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3067449.30	1.67	4492941.00	68.3	79.5 - 120	ISFail
45 Sc	2424041.50	1.97	3094960.50	78.3	79.5 - 120	ISFail
72 Ge	505036.53	1.08	631723.63	79.9	79.5 - 120	
159 Tb	5727870.00	0.72	6220065.50	92.1	79.5 - 120	
209 Bi	3269967.30	0.60	3318256.50	98.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.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 4000183

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\092SMPL.D\092SMPL.D#
Date Acquired: May 14 2018 08:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004P
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	48.02	9.604	ppb	2.75	100.	
11 B	700.	140.	ppb	3.16	1000.	
23 Na	299,500.	59,900.	ppb	0.53	200000.	
25 Mg	79,100.	15,820.	ppb	1.12	200000.	
27 Al	5,060.	1,012.	ppb	0.78	200000.	
28 Si	24,935.	4,987.	ppb	2.30	#VALUE!	
29 Si	26,560.	5,312.	ppb	2.41	10000.	
39 K	29,175.	5,835.	ppb	1.95	200000.	
43 Ca	404,250.	80,850.	ppb	2.11	#VALUE!	
44 Ca	380,400.	76,080.	ppb	2.20	200000.	
51 V	538.	107.6	ppb	1.62	1000.	
52 Cr	221.25	44.25	ppb	0.26	2000.	
53 Cr	255.1	51.02	ppb	3.29	#VALUE!	
55 Mn	1,892.	378.4	ppb	1.67	2000.	
56 Fe	12,305.	2,461.	ppb	1.37	#VALUE!	
57 Fe	12,175.	2,435.	ppb	1.13	100000.	
59 Co	505.	101.	ppb	1.27	1000.	
60 Ni	480.55	96.11	ppb	1.17	1000.	
63 Cu	257.6	51.52	ppb	0.54	#VALUE!	
65 Cu	253.	50.6	ppb	0.76	2000.	
66 Zn	609.5	121.9	ppb	1.28	2000.	
68 Zn	652.	130.4	ppb	0.65	#VALUE!	
75 As	113.4	22.68	ppb	1.99	1000.	
82 Se	100.35	20.07	ppb	0.78	1000.	
88 Sr	2,327.5	465.5	ppb	0.98	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	126.75	25.35	ppb	0.45	1000.	
107 Ag	51.45	10.29	ppb	0.61	100.	
109 Ag	51.05	10.21	ppb	0.55	#VALUE!	
111 Cd	258.55	51.71	ppb	1.10	#VALUE!	
114 Cd	257.75	51.55	ppb	0.41	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	471.4	94.28	ppb	0.95	1000.	
120 Sn	476.7	95.34	ppb	1.16	#VALUE!	
121 Sb	96.05	19.21	ppb	1.35	#VALUE!	
123 Sb	96.	19.2	ppb	0.74	1000.	
135 Ba	2,073.	414.6	ppb	0.90	2000.	
137 Ba	2,070.	414.	ppb	1.49	#VALUE!	
182 W	107.95	21.59	ppb	1.45	1000.	
203 Tl	104.4	20.88	ppb	1.18	1000.	
205 Tl	104.15	20.83	ppb	0.35	#VALUE!	
208 Pb	108.15	21.63	ppb	0.25	2000.	
232 Th	113.25	22.65	ppb	1.09	1000.	
238 U	117.3	23.46	ppb	0.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2872195.30	2.00	4492941.00	63.9	69.5 - 120	IS Fai
45 Sc	2295654.30	1.58	3094960.50	74.2	69.5 - 120	
72 Ge	477851.72	0.49	631723.63	75.6	69.5 - 120	
159 Tb	5582497.00	0.63	6220065.50	89.7	69.5 - 120	
209 Bi	3027193.30	0.98	3318256.50	91.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000184

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\093SMPL.D\093SMPL.D#
Date Acquired: May 14 2018 08:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0121	0.0024	ppb	29.33	100.	
11 B	227.15	45.43	ppb	3.92	1000.	
23 Na	300,350.	60,070.	ppb	3.93	200000.	
25 Mg	74,700.	14,940.	ppb	2.97	200000.	
27 Al	8.13	1.626	ppb	7.58	200000.	
28 Si	16,435.	3,287.	ppb	1.06	#VALUE!	
29 Si	16,515.	3,303.	ppb	0.51	10000.	
39 K	18,030.	3,606.	ppb	1.98	200000.	
43 Ca	400,550.	80,110.	ppb	2.32	#VALUE!	
44 Ca	379,500.	75,900.	ppb	0.80	200000.	
51 V	-0.3629	-0.0726	ppb	78.60	1000.	
52 Cr	2.071	0.4142	ppb	8.69	2000.	
53 Cr	53.35	10.67	ppb	10.33	#VALUE!	
55 Mn	1,366.	273.2	ppb	0.50	2000.	
56 Fe	6,785.	1,357.	ppb	1.00	#VALUE!	
57 Fe	6,940.	1,388.	ppb	1.09	100000.	
59 Co	0.639	0.1278	ppb	4.67	1000.	
60 Ni	3.404	0.6808	ppb	3.96	1000.	
63 Cu	12.	2.4	ppb	2.25	#VALUE!	
65 Cu	1.105	0.221	ppb	6.83	2000.	
66 Zn	48.645	9.729	ppb	0.27	2000.	
68 Zn	47.28	9.456	ppb	1.95	#VALUE!	
75 As	10.86	2.172	ppb	17.09	1000.	
82 Se	1.892	0.3784	ppb	28.54	1000.	
88 Sr	1,785.	357.	ppb	0.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.725	2.745	ppb	2.11	1000.	
107 Ag	0.0214	0.0043	ppb	54.72	100.	
109 Ag	0.0158	0.0032	ppb	74.55	#VALUE!	
111 Cd	-0.347	-0.0694	ppb	19.73	#VALUE!	
114 Cd	-0.0071	-0.0014	ppb	174.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.3655	0.2731	ppb	4.78	1000.	
120 Sn	1.2715	0.2543	ppb	8.42	#VALUE!	
121 Sb	0.2729	0.0546	ppb	5.43	#VALUE!	
123 Sb	0.2575	0.0515	ppb	17.50	1000.	
135 Ba	30.585	6.117	ppb	1.58	2000.	
137 Ba	30.055	6.011	ppb	2.21	#VALUE!	
182 W	0.3893	0.0779	ppb	2.64	1000.	
203 Tl	0.0092	0.0018	ppb	95.76	1000.	
205 Tl	-0.0016	-0.0003	ppb	799.20	#VALUE!	
208 Pb	0.0339	0.0068	ppb	240.67	2000.	
232 Th	0.711	0.1422	ppb	25.71	1000.	
238 U	1.876	0.3752	ppb	5.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2983989.80	2.11	4492941.00	66.4	69.5 - 120	IS Fai
45 Sc	2385113.50	0.61	3094960.50	77.1	69.5 - 120	
72 Ge	492744.22	0.60	631723.63	78.0	69.5 - 120	
159 Tb	5578590.50	1.12	6220065.50	89.7	69.5 - 120	
209 Bi	3009941.30	2.45	3318256.50	90.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000185

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\094SMPL.D\094SMPL.D#
Date Acquired: May 14 2018 08:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005L
Misc Info:
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0044	0.0002	ppb	321.08	100.	
11 B	289.75	11.59	ppb	6.54	1000.	
23 Na	317,000.	12,680.	ppb	2.61	200000.	
25 Mg	80,800.	3,232.	ppb	1.27	200000.	
27 Al	19.145	0.7658	ppb	10.09	200000.	
28 Si	18,152.5	726.1	ppb	2.26	#VALUE!	
29 Si	17,527.5	701.1	ppb	3.46	10000.	
39 K	19,130.	765.2	ppb	2.17	200000.	
43 Ca	395,250.	15,810.	ppb	1.14	#VALUE!	
44 Ca	385,000.	15,400.	ppb	1.32	200000.	
51 V	-2.5825	-0.1033	ppb	40.72	1000.	
52 Cr	2.354	0.0942	ppb	28.43	2000.	
53 Cr	91.425	3.657	ppb	15.84	#VALUE!	
55 Mn	1,416.75	56.67	ppb	1.82	2000.	
56 Fe	6,702.5	268.1	ppb	1.15	#VALUE!	
57 Fe	7,080.	283.2	ppb	2.89	100000.	
59 Co	0.633	0.0253	ppb	7.17	1000.	
60 Ni	4.0925	0.1637	ppb	10.02	1000.	
63 Cu	12.075	0.483	ppb	2.97	#VALUE!	
65 Cu	0.874	0.035	ppb	47.74	2000.	
66 Zn	53.675	2.147	ppb	1.63	2000.	
68 Zn	48.75	1.95	ppb	6.97	#VALUE!	
75 As	9.7675	0.3907	ppb	35.94	1000.	
82 Se	0.9163	0.0367	ppb	66.00	1000.	
88 Sr	1,875.5	75.02	ppb	1.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.0075	0.5603	ppb	1.58	1000.	
107 Ag	-0.0246	-0.001	ppb	134.28	100.	
109 Ag	0.0442	0.0018	ppb	116.36	#VALUE!	
111 Cd	-1.198	-0.0479	ppb	26.36	#VALUE!	
114 Cd	-0.1225	-0.0049	ppb	75.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.1695	0.0868	ppb	14.08	1000.	
120 Sn	1.866	0.0746	ppb	11.06	#VALUE!	
121 Sb	0.2145	0.0086	ppb	47.15	#VALUE!	
123 Sb	0.3448	0.0138	ppb	31.76	1000.	
135 Ba	30.325	1.213	ppb	4.15	2000.	
137 Ba	29.95	1.198	ppb	3.49	#VALUE!	
182 W	0.5633	0.0225	ppb	44.61	1000.	
203 Tl	0.2435	0.0097	ppb	97.56	1000.	
205 Tl	-0.0725	-0.0029	ppb	100.14	#VALUE!	
208 Pb	1.0898	0.0436	ppb	8.90	2000.	
232 Th	0.457	0.0183	ppb	32.94	1000.	
238 U	1.7798	0.0712	ppb	5.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3118443.30	2.43	4492941.00	69.4	69.5 - 120	IS Fai
45 Sc	2399691.00	2.09	3094960.50	77.5	69.5 - 120	
72 Ge	511254.66	1.72	631723.63	80.9	69.5 - 120	
159 Tb	5701737.00	0.60	6220065.50	91.7	69.5 - 120	
209 Bi	3201827.00	1.28	3318256.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000186

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\095SMPL.D\095SMPL.D#
Date Acquired: May 14 2018 08:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005A
Misc Info:
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	9.48	1.896	ppb	4.66	100.	
11 B	417.1	83.42	ppb	7.33	1000.	
23 Na	305,450.	61,090.	ppb	7.33	200000.	
25 Mg	78,600.	15,720.	ppb	4.23	200000.	
27 Al	924.5	184.9	ppb	1.85	200000.	
28 Si	21,485.	4,297.	ppb	2.14	#VALUE!	
29 Si	22,560.	4,512.	ppb	3.35	10000.	
39 K	28,075.	5,615.	ppb	3.46	200000.	
43 Ca	406,500.	81,300.	ppb	4.14	#VALUE!	
44 Ca	387,900.	77,580.	ppb	3.14	200000.	
51 V	48.555	9.711	ppb	1.68	1000.	
52 Cr	48.105	9.621	ppb	2.12	2000.	
53 Cr	95.15	19.03	ppb	3.44	#VALUE!	
55 Mn	1,407.	281.4	ppb	2.39	2000.	
56 Fe	7,690.	1,538.	ppb	3.23	#VALUE!	
57 Fe	7,975.	1,595.	ppb	3.10	100000.	
59 Co	9.795	1.959	ppb	2.14	1000.	
60 Ni	20.95	4.19	ppb	1.43	1000.	
63 Cu	38.79	7.758	ppb	2.74	#VALUE!	
65 Cu	28.21	5.642	ppb	3.01	2000.	
66 Zn	139.55	27.91	ppb	1.95	2000.	
68 Zn	130.8	26.16	ppb	2.30	#VALUE!	
75 As	57.3	11.46	ppb	4.65	1000.	
82 Se	47.055	9.411	ppb	4.02	1000.	
88 Sr	1,876.	375.2	ppb	3.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	63.25	12.65	ppb	1.64	1000.	
107 Ag	9.63	1.926	ppb	2.93	100.	
109 Ag	9.425	1.885	ppb	2.66	#VALUE!	
111 Cd	8.94	1.788	ppb	1.04	#VALUE!	
114 Cd	9.085	1.817	ppb	1.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.835	8.967	ppb	0.32	1000.	
120 Sn	45.6	9.12	ppb	0.93	#VALUE!	
121 Sb	9.26	1.852	ppb	3.36	#VALUE!	
123 Sb	9.13	1.826	ppb	0.42	1000.	
135 Ba	49.515	9.903	ppb	2.65	2000.	
137 Ba	48.885	9.777	ppb	2.36	#VALUE!	
182 W	50.95	10.19	ppb	2.16	1000.	
203 Tl	9.665	1.933	ppb	0.53	1000.	
205 Tl	9.615	1.923	ppb	0.86	#VALUE!	
208 Pb	9.725	1.945	ppb	1.94	2000.	
232 Th	10.595	2.119	ppb	1.40	1000.	
238 U	12.705	2.541	ppb	0.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2833683.00	6.44	4492941.00	63.1	69.5 - 120	IS Fai
45 Sc	2344565.50	2.60	3094960.50	75.8	69.5 - 120	
72 Ge	486333.63	1.99	631723.63	77.0	69.5 - 120	
159 Tb	5579703.00	0.88	6220065.50	89.7	69.5 - 120	
209 Bi	3003866.00	1.00	3318256.50	90.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000187

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\096SMPL.D\096SMPL.D#
Date Acquired: May 14 2018 08:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005S
Misc Info:
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	48.155	9.631	ppb	1.11	100.	
11 B	723.	144.6	ppb	6.12	1000.	
23 Na	309,700.	61,940.	ppb	5.65	200000.	
25 Mg	80,500.	16,100.	ppb	1.70	200000.	
27 Al	1,988.5	397.7	ppb	3.93	200000.	
28 Si	18,540.	3,708.	ppb	2.25	#VALUE!	
29 Si	19,350.	3,870.	ppb	7.73	10000.	
39 K	28,985.	5,797.	ppb	2.78	200000.	
43 Ca	417,500.	83,500.	ppb	3.09	#VALUE!	
44 Ca	392,750.	78,550.	ppb	2.13	200000.	
51 V	529.5	105.9	ppb	1.09	1000.	
52 Cr	196.95	39.39	ppb	0.80	2000.	
53 Cr	249.55	49.91	ppb	1.56	#VALUE!	
55 Mn	1,896.	379.2	ppb	0.79	2000.	
56 Fe	8,015.	1,603.	ppb	1.19	#VALUE!	
57 Fe	8,210.	1,642.	ppb	0.67	100000.	
59 Co	513.	102.6	ppb	1.25	1000.	
60 Ni	477.	95.4	ppb	0.57	1000.	
63 Cu	245.55	49.11	ppb	0.84	#VALUE!	
65 Cu	243.75	48.75	ppb	0.51	2000.	
66 Zn	518.	103.6	ppb	1.57	2000.	
68 Zn	563.5	112.7	ppb	0.90	#VALUE!	
75 As	112.8	22.56	ppb	0.42	1000.	
82 Se	96.6	19.32	ppb	1.64	1000.	
88 Sr	2,357.5	471.5	ppb	1.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	122.2	24.44	ppb	1.68	1000.	
107 Ag	51.15	10.23	ppb	0.69	100.	
109 Ag	50.25	10.05	ppb	1.75	#VALUE!	
111 Cd	256.15	51.23	ppb	1.05	#VALUE!	
114 Cd	253.65	50.73	ppb	1.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	477.25	95.45	ppb	1.31	1000.	
120 Sn	483.05	96.61	ppb	1.13	#VALUE!	
121 Sb	97.35	19.47	ppb	1.43	#VALUE!	
123 Sb	98.4	19.68	ppb	1.23	1000.	
135 Ba	2,020.5	404.1	ppb	0.34	2000.	
137 Ba	2,005.5	401.1	ppb	0.90	#VALUE!	
182 W	108.75	21.75	ppb	0.59	1000.	
203 Tl	102.4	20.48	ppb	1.02	1000.	
205 Tl	102.8	20.56	ppb	1.02	#VALUE!	
208 Pb	103.	20.6	ppb	1.04	2000.	
232 Th	109.3	21.86	ppb	1.26	1000.	
238 U	115.95	23.19	ppb	0.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2922913.80	4.11	4492941.00	65.1	69.5 - 120	IS Fai
45 Sc	2350122.30	4.35	3094960.50	75.9	69.5 - 120	
72 Ge	488471.63	1.88	631723.63	77.3	69.5 - 120	
159 Tb	5649850.50	0.20	6220065.50	90.8	69.5 - 120	
209 Bi	3053947.30	1.47	3318256.50	92.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000188

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\097SMPL.D\097SMPL.D#
Date Acquired: May 14 2018 08:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005P
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	47.96	9.592	ppb	5.00	100.	
11 B	715.	143.	ppb	5.97	1000.	
23 Na	302,750.	60,550.	ppb	4.09	200000.	
25 Mg	80,000.	16,000.	ppb	2.80	200000.	
27 Al	1,910.	382.	ppb	3.41	200000.	
28 Si	17,785.	3,557.	ppb	2.62	#VALUE!	
29 Si	17,445.	3,489.	ppb	1.82	10000.	
39 K	28,030.	5,606.	ppb	3.54	200000.	
43 Ca	395,850.	79,170.	ppb	2.92	#VALUE!	
44 Ca	378,950.	75,790.	ppb	0.93	200000.	
51 V	523.	104.6	ppb	1.92	1000.	
52 Cr	194.15	38.83	ppb	0.46	2000.	
53 Cr	242.25	48.45	ppb	1.37	#VALUE!	
55 Mn	1,866.5	373.3	ppb	0.41	2000.	
56 Fe	7,865.	1,573.	ppb	0.22	#VALUE!	
57 Fe	7,925.	1,585.	ppb	1.09	100000.	
59 Co	498.9	99.78	ppb	1.31	1000.	
60 Ni	465.15	93.03	ppb	0.14	1000.	
63 Cu	243.	48.6	ppb	1.68	#VALUE!	
65 Cu	239.1	47.82	ppb	1.51	2000.	
66 Zn	510.5	102.1	ppb	0.44	2000.	
68 Zn	558.5	111.7	ppb	0.69	#VALUE!	
75 As	111.05	22.21	ppb	0.38	1000.	
82 Se	97.85	19.57	ppb	2.02	1000.	
88 Sr	2,308.5	461.7	ppb	1.34	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	121.9	24.38	ppb	0.94	1000.	
107 Ag	50.55	10.11	ppb	1.26	100.	
109 Ag	50.4	10.08	ppb	1.37	#VALUE!	
111 Cd	252.3	50.46	ppb	0.76	#VALUE!	
114 Cd	251.3	50.26	ppb	0.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	463.15	92.63	ppb	0.78	1000.	
120 Sn	467.15	93.43	ppb	1.03	#VALUE!	
121 Sb	95.5	19.1	ppb	1.16	#VALUE!	
123 Sb	95.4	19.08	ppb	0.74	1000.	
135 Ba	1,967.5	393.5	ppb	1.24	2000.	
137 Ba	1,959.5	391.9	ppb	0.69	#VALUE!	
182 W	106.65	21.33	ppb	1.75	1000.	
203 Tl	101.75	20.35	ppb	1.13	1000.	
205 Tl	101.85	20.37	ppb	0.87	#VALUE!	
208 Pb	101.9	20.38	ppb	1.30	2000.	
232 Th	109.25	21.85	ppb	1.75	1000.	
238 U	114.8	22.96	ppb	0.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2846462.80	6.76	4492941.00	63.4	69.5 - 120	IS Fai
45 Sc	2325001.80	1.11	3094960.50	75.1	69.5 - 120	
72 Ge	475063.66	0.35	631723.63	75.2	69.5 - 120	
159 Tb	5590576.50	0.76	6220065.50	89.9	69.5 - 120	
209 Bi	3033688.50	1.01	3318256.50	91.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000189

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\098SMPL.D\098SMPL.D#
Date Acquired: May 14 2018 08:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-006
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	1.658	0.3316	ppb	5.53	100.	
11 B	247.85	49.57	ppb	5.19	1000.	
23 Na	264,200.	52,840.	ppb	0.65	200000.	
25 Mg	70,750.	14,150.	ppb	1.77	200000.	
27 Al	30,625.	6,125.	ppb	3.62	200000.	
28 Si	61,500.	12,300.	ppb	2.20	#VALUE!	
29 Si	65,650.	13,130.	ppb	1.10	10000.	>LDR
39 K	24,105.	4,821.	ppb	1.80	200000.	
43 Ca	401,650.	80,330.	ppb	2.19	#VALUE!	
44 Ca	379,250.	75,850.	ppb	1.60	200000.	
51 V	79.85	15.97	ppb	1.24	1000.	
52 Cr	114.25	22.85	ppb	0.96	2000.	
53 Cr	135.4	27.08	ppb	2.44	#VALUE!	
55 Mn	1,774.5	354.9	ppb	1.75	2000.	
56 Fe	44,445.	8,889.	ppb	1.02	#VALUE!	
57 Fe	44,770.	8,954.	ppb	0.99	100000.	
59 Co	17.71	3.542	ppb	1.47	1000.	
60 Ni	52.8	10.56	ppb	1.37	1000.	
63 Cu	56.45	11.29	ppb	0.26	#VALUE!	
65 Cu	47.41	9.482	ppb	1.77	2000.	
66 Zn	198.6	39.72	ppb	1.22	2000.	
68 Zn	202.8	40.56	ppb	1.32	#VALUE!	
75 As	14.97	2.994	ppb	4.84	1000.	
82 Se	2.441	0.4882	ppb	35.42	1000.	
88 Sr	1,809.5	361.9	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	26.62	5.324	ppb	0.95	1000.	
107 Ag	0.1235	0.0247	ppb	16.03	100.	
109 Ag	0.1052	0.021	ppb	11.38	#VALUE!	
111 Cd	0.1766	0.0353	ppb	37.40	#VALUE!	
114 Cd	0.3444	0.0689	ppb	29.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.3275	0.6655	ppb	4.61	1000.	
120 Sn	3.149	0.6298	ppb	4.36	#VALUE!	
121 Sb	0.676	0.1352	ppb	7.59	#VALUE!	
123 Sb	0.6675	0.1335	ppb	10.80	1000.	
135 Ba	364.35	72.87	ppb	1.52	2000.	
137 Ba	365.05	73.01	ppb	0.52	#VALUE!	
182 W	0.4975	0.0995	ppb	9.04	1000.	
203 Tl	0.5025	0.1005	ppb	11.17	1000.	
205 Tl	0.4493	0.0899	ppb	4.55	#VALUE!	
208 Pb	35.47	7.094	ppb	0.93	2000.	
232 Th	24.56	4.912	ppb	0.61	1000.	
238 U	11.66	2.332	ppb	0.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2717256.50	2.02	4492941.00	60.5	69.5 - 120	IS Fai
45 Sc	2283744.30	0.76	3094960.50	73.8	69.5 - 120	
72 Ge	474062.66	0.37	631723.63	75.0	69.5 - 120	
159 Tb	5613869.00	0.99	6220065.50	90.3	69.5 - 120	
209 Bi	3052770.50	0.99	3318256.50	92.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000190

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\099SMPL.D\099SMPL.D#
Date Acquired: May 14 2018 08:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-007
Misc Info:
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0131	0.0026	ppb	11.99	100.	
11 B	206.55	41.31	ppb	2.04	1000.	
23 Na	253,650.	50,730.	ppb	2.37	200000.	
25 Mg	63,500.	12,700.	ppb	1.72	200000.	
27 Al	8.175	1.635	ppb	2.42	200000.	
28 Si	17,320.	3,464.	ppb	0.72	#VALUE!	
29 Si	17,390.	3,478.	ppb	1.10	10000.	
39 K	16,860.	3,372.	ppb	2.90	200000.	
43 Ca	366,100.	73,220.	ppb	1.64	#VALUE!	
44 Ca	347,900.	69,580.	ppb	1.66	200000.	
51 V	0.1382	0.0276	ppb	63.63	1000.	
52 Cr	2.259	0.4518	ppb	8.12	2000.	
53 Cr	45.92	9.184	ppb	22.90	#VALUE!	
55 Mn	1,368.5	273.7	ppb	0.70	2000.	
56 Fe	6,445.	1,289.	ppb	1.96	#VALUE!	
57 Fe	6,560.	1,312.	ppb	0.14	100000.	
59 Co	0.595	0.119	ppb	7.98	1000.	
60 Ni	3.908	0.7816	ppb	9.70	1000.	
63 Cu	10.66	2.132	ppb	1.82	#VALUE!	
65 Cu	1.095	0.219	ppb	7.34	2000.	
66 Zn	17.88	3.576	ppb	4.02	2000.	
68 Zn	16.15	3.23	ppb	2.87	#VALUE!	
75 As	9.685	1.937	ppb	14.47	1000.	
82 Se	1.8455	0.3691	ppb	47.44	1000.	
88 Sr	1,562.	312.4	ppb	1.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.465	2.693	ppb	1.35	1000.	
107 Ag	0.0037	0.0007	ppb	212.43	100.	
109 Ag	0.0041	0.0008	ppb	191.95	#VALUE!	
111 Cd	-0.3227	-0.0645	ppb	35.50	#VALUE!	
114 Cd	-0.0238	-0.0048	ppb	35.25	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.1675	0.2335	ppb	4.78	1000.	
120 Sn	1.185	0.237	ppb	8.63	#VALUE!	
121 Sb	0.1293	0.0259	ppb	22.42	#VALUE!	
123 Sb	0.1003	0.0201	ppb	45.86	1000.	
135 Ba	32.44	6.488	ppb	3.29	2000.	
137 Ba	32.505	6.501	ppb	3.50	#VALUE!	
182 W	0.262	0.0524	ppb	10.04	1000.	
203 Tl	0.0074	0.0015	ppb	191.69	1000.	
205 Tl	-0.0215	-0.0043	ppb	111.07	#VALUE!	
208 Pb	-0.0125	-0.0025	ppb	755.88	2000.	
232 Th	0.3238	0.0648	ppb	25.22	1000.	
238 U	0.82	0.164	ppb	10.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2863333.50	0.75	4492941.00	63.7	69.5 - 120	IS Fai
45 Sc	2343089.80	1.32	3094960.50	75.7	69.5 - 120	
72 Ge	487270.88	1.16	631723.63	77.1	69.5 - 120	
159 Tb	5628208.00	2.60	6220065.50	90.5	69.5 - 120	
209 Bi	3054094.50	1.06	3318256.50	92.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000191

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\100SMPL.D\100SMPL.D#
Date Acquired: May 14 2018 08:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-008
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	1.6335	0.3267	ppb	5.79	100.	
11 B	187.35	37.47	ppb	5.48	1000.	
23 Na	246,850.	49,370.	ppb	0.55	200000.	
25 Mg	71,500.	14,300.	ppb	2.21	200000.	
27 Al	24,320.	4,864.	ppb	4.79	200000.	
28 Si	56,450.	11,290.	ppb	5.78	#VALUE!	
29 Si	60,150.	12,030.	ppb	4.46	10000.	>LDR
39 K	23,460.	4,692.	ppb	5.28	200000.	
43 Ca	436,750.	87,350.	ppb	2.45	#VALUE!	
44 Ca	421,750.	84,350.	ppb	0.85	200000.	
51 V	77.5	15.5	ppb	1.99	1000.	
52 Cr	93.5	18.7	ppb	1.91	2000.	
53 Cr	116.3	23.26	ppb	1.50	#VALUE!	
55 Mn	1,971.	394.2	ppb	1.84	2000.	
56 Fe	44,465.	8,893.	ppb	1.58	#VALUE!	
57 Fe	44,625.	8,925.	ppb	1.76	100000.	
59 Co	10.63	2.126	ppb	0.75	1000.	
60 Ni	47.06	9.412	ppb	1.58	1000.	
63 Cu	51.05	10.21	ppb	1.79	#VALUE!	
65 Cu	43.48	8.696	ppb	2.82	2000.	
66 Zn	216.85	43.37	ppb	0.35	2000.	
68 Zn	230.05	46.01	ppb	0.84	#VALUE!	
75 As	47.51	9.502	ppb	2.52	1000.	
82 Se	5.56	1.112	ppb	12.70	1000.	
88 Sr	1,916.5	383.3	ppb	1.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	23.945	4.789	ppb	1.57	1000.	
107 Ag	0.1253	0.0251	ppb	19.39	100.	
109 Ag	0.0741	0.0148	ppb	29.37	#VALUE!	
111 Cd	0.0105	0.0021	ppb	192.36	#VALUE!	
114 Cd	0.1987	0.0397	ppb	8.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.9005	0.5801	ppb	4.91	1000.	
120 Sn	2.841	0.5682	ppb	5.81	#VALUE!	
121 Sb	0.4948	0.099	ppb	8.15	#VALUE!	
123 Sb	0.487	0.0974	ppb	5.34	1000.	
135 Ba	704.5	140.9	ppb	1.29	2000.	
137 Ba	702.5	140.5	ppb	1.13	#VALUE!	
182 W	0.524	0.1048	ppb	8.43	1000.	
203 Tl	0.3834	0.0767	ppb	29.13	1000.	
205 Tl	0.3875	0.0775	ppb	3.39	#VALUE!	
208 Pb	24.875	4.975	ppb	0.70	2000.	
232 Th	20.77	4.154	ppb	0.53	1000.	
238 U	6.425	1.285	ppb	2.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2752984.00	0.94	4492941.00	61.3	69.5 - 120	IS Fai
45 Sc	2279668.00	2.53	3094960.50	73.7	69.5 - 120	
72 Ge	468598.22	0.64	631723.63	74.2	69.5 - 120	
159 Tb	5566950.50	1.03	6220065.50	89.5	69.5 - 120	
209 Bi	3056277.50	1.02	3318256.50	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000192

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\101SMPL.D\101SMPL.D#
Date Acquired: May 14 2018 08:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-009
Misc Info:
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0158	0.0032	ppb	46.81	100.	
11 B	181.95	36.39	ppb	3.93	1000.	
23 Na	259,950.	51,990.	ppb	3.63	200000.	
25 Mg	66,850.	13,370.	ppb	2.18	200000.	
27 Al	12.995	2.599	ppb	5.33	200000.	
28 Si	16,260.	3,252.	ppb	2.25	#VALUE!	
29 Si	16,235.	3,247.	ppb	1.72	10000.	
39 K	18,995.	3,799.	ppb	2.42	200000.	
43 Ca	410,350.	82,070.	ppb	3.39	#VALUE!	
44 Ca	389,650.	77,930.	ppb	1.49	200000.	
51 V	0.0646	0.0129	ppb	784.83	1000.	
52 Cr	2.2385	0.4477	ppb	12.35	2000.	
53 Cr	53.	10.6	ppb	22.06	#VALUE!	
55 Mn	1,334.	266.8	ppb	2.62	2000.	
56 Fe	3,899.	779.8	ppb	0.41	#VALUE!	
57 Fe	4,105.	821.	ppb	0.10	100000.	
59 Co	0.974	0.1948	ppb	6.81	1000.	
60 Ni	20.755	4.151	ppb	0.88	1000.	
63 Cu	10.635	2.127	ppb	2.67	#VALUE!	
65 Cu	1.1985	0.2397	ppb	10.45	2000.	
66 Zn	54.65	10.93	ppb	2.83	2000.	
68 Zn	51.5	10.3	ppb	1.92	#VALUE!	
75 As	27.46	5.492	ppb	3.02	1000.	
82 Se	0.797	0.1594	ppb	73.09	1000.	
88 Sr	1,738.	347.6	ppb	0.29	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.47	2.694	ppb	2.31	1000.	
107 Ag	0.013	0.0026	ppb	27.58	100.	
109 Ag	0.0002	0.	ppb	5437.90	#VALUE!	
111 Cd	-0.3245	-0.0649	ppb	16.10	#VALUE!	
114 Cd	-0.0024	-0.0005	ppb	656.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.247	0.2494	ppb	5.24	1000.	
120 Sn	1.2855	0.2571	ppb	7.12	#VALUE!	
121 Sb	0.173	0.0346	ppb	14.08	#VALUE!	
123 Sb	0.1528	0.0306	ppb	32.95	1000.	
135 Ba	40.73	8.146	ppb	3.78	2000.	
137 Ba	40.45	8.09	ppb	1.52	#VALUE!	
182 W	0.325	0.065	ppb	8.32	1000.	
203 Tl	0.0146	0.0029	ppb	159.99	1000.	
205 Tl	-0.0126	-0.0025	ppb	253.06	#VALUE!	
208 Pb	0.0679	0.0136	ppb	99.93	2000.	
232 Th	0.2153	0.0431	ppb	18.59	1000.	
238 U	2.594	0.5188	ppb	3.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2752526.30	5.14	4492941.00	61.3	69.5 - 120	IS Fai
45 Sc	2242063.50	1.67	3094960.50	72.4	69.5 - 120	
72 Ge	478063.31	2.15	631723.63	75.7	69.5 - 120	
159 Tb	5588661.50	2.49	6220065.50	89.8	69.5 - 120	
209 Bi	3018627.00	2.84	3318256.50	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000193

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\102_CCV.D\102_CCV.D#
Date Acquired: May 14 2018 08:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.22	ppb	4.82	25	96.88	
11 B	24.96	ppb	3.10	25	99.84	
23 Na	4,412.	ppb	0.57	5,000	88.24	Fail
25 Mg	4,604.	ppb	3.20	5,000	92.08	
27 Al	462.6	ppb	2.07	500	92.52	
28 Si	511.9	ppb	4.20	500	102.38	
29 Si	442.5	ppb	2.24	500	88.5	Fail
39 K	4,649.	ppb	0.87	5,000	92.98	
43 Ca	4,852.	ppb	1.62	5,000	97.04	
44 Ca	5,012.	ppb	1.06	5,000	100.24	
51 V	24.3	ppb	0.77	25	97.2	
52 Cr	24.5	ppb	1.44	25	98	
53 Cr	24.1	ppb	2.07	25	96.4	
55 Mn	24.57	ppb	0.78	25	98.28	
56 Fe	4,868.	ppb	1.08	5,000	97.36	
57 Fe	4,952.	ppb	1.73	5,000	99.04	
59 Co	24.29	ppb	1.58	25	97.16	
60 Ni	23.99	ppb	1.72	25	95.96	
63 Cu	24.29	ppb	1.82	25	97.16	
65 Cu	24.69	ppb	0.58	25	98.76	
66 Zn	25.25	ppb	1.78	25	101	
68 Zn	25.2	ppb	0.96	25	100.8	
75 As	25.07	ppb	0.50	25	100.28	
82 Se	26.09	ppb	0.55	25	104.36	
88 Sr	25.71	ppb	0.35	25	102.84	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	26.1	ppb	0.63	25	104.4	
107 Ag	26.37	ppb	1.07	25	105.48	
109 Ag	26.27	ppb	1.23	25	105.08	
111 Cd	26.83	ppb	1.17	25	107.32	
114 Cd	26.62	ppb	0.59	25	106.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.71	ppb	1.11	25	90.84	
120 Sn	23.	ppb	1.46	25	92	
121 Sb	23.42	ppb	1.28	25	93.68	
123 Sb	23.87	ppb	1.62	25	95.48	
135 Ba	24.17	ppb	1.09	25	96.68	
137 Ba	24.01	ppb	0.92	25	96.04	
182 W	25.44	ppb	1.15	25	101.76	
203 Tl	24.81	ppb	1.83	25	99.24	
205 Tl	24.83	ppb	1.45	25	99.32	
208 Pb	25.06	ppb	1.63	25	100.24	
232 Th	25.46	ppb	1.23	25	101.84	
238 U	26.91	ppb	1.86	25	107.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2895494.30	5.86	4492941.00	64.4	80 - 120.4	ISFail
45 Sc	2374235.00	0.19	3094960.50	76.7	80 - 120.4	ISFail
72 Ge	481094.22	0.37	631723.63	76.2	80 - 120.4	ISFail
159 Tb	5658302.00	0.37	6220065.50	91.0	80 - 120.4	
209 Bi	3203317.80	1.38	3318256.50	96.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

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

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\103_CCB.D\103_CCB.D#
Date Acquired: May 14 2018 08:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	207.25	1.00	
11 B	3.039	ppb	5.53	1.00	
23 Na	8.908	ppb	93.13	1.00	
25 Mg	1.509	ppb	161.96	1.00	
27 Al	0.2536	ppb	117.63	1.00	
28 Si	56.94	ppb	10.32	1.00	
29 Si	7.246	ppb	55.51	1.00	
39 K	4.4	ppb	6.47	1.00	
43 Ca	3.049	ppb	179.01	1.00	
44 Ca	7.151	ppb	147.25	1.00	
51 V	-0.0336	ppb	291.29	1.00	
52 Cr	0.0654	ppb	74.61	1.00	
53 Cr	-1.271	ppb	8.25	1.00	
55 Mn	0.0434	ppb	89.64	1.00	
56 Fe	-2.588	ppb	93.47	1.00	
57 Fe	-0.3323	ppb	640.08	1.00	
59 Co	0.0051	ppb	100.88	1.00	
60 Ni	0.0053	ppb	184.30	1.00	
63 Cu	0.0045	ppb	82.12	1.00	
65 Cu	0.0033	ppb	362.16	1.00	
66 Zn	0.0684	ppb	24.60	1.00	
68 Zn	0.1134	ppb	48.97	1.00	
75 As	-0.089	ppb	188.09	1.00	
82 Se	-0.1771	ppb	114.06	1.00	
88 Sr	0.0332	ppb	147.24	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0361	ppb	17.97	1.00	
107 Ag	0.0044	ppb	89.70	1.00	
109 Ag	0.0043	ppb	107.45	1.00	
111 Cd	-0.0635	ppb	50.42	1.00	
114 Cd	-0.0037	ppb	79.15	1.00	
115 In	--------	---	--------	---	
118 Sn	0.054	ppb	12.86	1.00	
120 Sn	0.0514	ppb	18.86	1.00	
121 Sb	0.0094	ppb	12.26	1.00	
123 Sb	0.0104	ppb	50.10	1.00	
135 Ba	0.0182	ppb	45.39	1.00	
137 Ba	0.0129	ppb	110.03	1.00	
182 W	0.047	ppb	34.77	1.00	
203 Tl	0.0069	ppb	110.97	1.00	
205 Tl	0.0049	ppb	91.49	1.00	
208 Pb	0.0936	ppb	8.56	1.00	
232 Th	0.0578	ppb	6.04	1.00	
238 U	0.006	ppb	46.68	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3001778.00	2.77	4492941.00	66.8	79.5 - 120	ISFail
45 Sc	2361159.50	0.56	3094960.50	76.3	79.5 - 120	ISFail
72 Ge	494357.59	0.12	631723.63	78.3	79.5 - 120	ISFail
159 Tb	5665034.50	0.74	6220065.50	91.1	79.5 - 120	
209 Bi	3238481.00	0.48	3318256.50	97.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :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\JLE14A.B\104SMPL.D\104SMPL.D#
Date Acquired: May 14 2018 08:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-010
Misc Info:
Vial Number: 3101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	2.007	0.4014	ppb	5.24	100.	
11 B	217.4	43.48	ppb	5.03	1000.	
23 Na	269,100.	53,820.	ppb	3.15	200000.	
25 Mg	73,450.	14,690.	ppb	4.55	200000.	
27 Al	39,620.	7,924.	ppb	6.51	200000.	
28 Si	62,100.	12,420.	ppb	4.51	#VALUE!	
29 Si	65,200.	13,040.	ppb	4.78	10000.	>LDR
39 K	25,510.	5,102.	ppb	1.92	200000.	
43 Ca	393,600.	78,720.	ppb	2.70	#VALUE!	
44 Ca	375,950.	75,190.	ppb	1.87	200000.	
51 V	106.15	21.23	ppb	5.66	1000.	
52 Cr	150.75	30.15	ppb	4.01	2000.	
53 Cr	166.65	33.33	ppb	4.25	#VALUE!	
55 Mn	1,842.	368.4	ppb	5.40	2000.	
56 Fe	55,150.	11,030.	ppb	5.75	#VALUE!	
57 Fe	54,800.	10,960.	ppb	5.38	100000.	
59 Co	22.685	4.537	ppb	3.54	1000.	
60 Ni	71.3	14.26	ppb	2.19	1000.	
63 Cu	64.75	12.95	ppb	3.93	#VALUE!	
65 Cu	56.4	11.28	ppb	5.48	2000.	
66 Zn	236.75	47.35	ppb	2.64	2000.	
68 Zn	243.55	48.71	ppb	4.69	#VALUE!	
75 As	16.745	3.349	ppb	1.01	1000.	
82 Se	2.369	0.4738	ppb	48.35	1000.	
88 Sr	1,776.	355.2	ppb	4.18	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	29.645	5.929	ppb	3.50	1000.	
107 Ag	0.1462	0.0292	ppb	16.04	100.	
109 Ag	0.1059	0.0212	ppb	9.47	#VALUE!	
111 Cd	0.2865	0.0573	ppb	70.47	#VALUE!	
114 Cd	0.4147	0.0829	ppb	19.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.749	0.7498	ppb	3.54	1000.	
120 Sn	3.835	0.767	ppb	5.35	#VALUE!	
121 Sb	0.674	0.1348	ppb	1.73	#VALUE!	
123 Sb	0.779	0.1558	ppb	7.42	1000.	
135 Ba	448.4	89.68	ppb	2.73	2000.	
137 Ba	449.1	89.82	ppb	3.48	#VALUE!	
182 W	0.5285	0.1057	ppb	5.61	1000.	
203 Tl	0.587	0.1174	ppb	4.76	1000.	
205 Tl	0.5685	0.1137	ppb	5.72	#VALUE!	
208 Pb	43.935	8.787	ppb	3.39	2000.	
232 Th	33.645	6.729	ppb	3.82	1000.	
238 U	15.195	3.039	ppb	4.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2825346.00	3.68	4492941.00	62.9	69.5 - 120	IS Fai
45 Sc	2268363.00	3.45	3094960.50	73.3	69.5 - 120	
72 Ge	466447.44	3.21	631723.63	73.8	69.5 - 120	
159 Tb	5456861.50	2.43	6220065.50	87.7	69.5 - 120	
209 Bi	2958361.50	2.34	3318256.50	89.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000196

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\105SMPL.D\105SMPL.D#
Date Acquired: May 14 2018 09:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-011
Misc Info:
Vial Number: 3102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.011	0.0022	ppb	72.75	100.	
11 B	193.05	38.61	ppb	4.23	1000.	
23 Na	248,900.	49,780.	ppb	0.75	200000.	
25 Mg	60,550.	12,110.	ppb	0.22	200000.	
27 Al	156.6	31.32	ppb	3.02	200000.	
28 Si	16,670.	3,334.	ppb	1.83	#VALUE!	
29 Si	16,335.	3,267.	ppb	1.15	10000.	
39 K	15,790.	3,158.	ppb	1.38	200000.	
43 Ca	351,850.	70,370.	ppb	3.02	#VALUE!	
44 Ca	335,200.	67,040.	ppb	2.02	200000.	
51 V	0.7265	0.1453	ppb	80.11	1000.	
52 Cr	2.623	0.5246	ppb	8.07	2000.	
53 Cr	45.625	9.125	ppb	21.15	#VALUE!	
55 Mn	1,290.	258.	ppb	0.66	2000.	
56 Fe	5,970.	1,194.	ppb	2.29	#VALUE!	
57 Fe	6,190.	1,238.	ppb	2.08	100000.	
59 Co	0.4976	0.0995	ppb	14.18	1000.	
60 Ni	3.465	0.693	ppb	8.64	1000.	
63 Cu	11.155	2.231	ppb	3.04	#VALUE!	
65 Cu	1.7825	0.3565	ppb	1.11	2000.	
66 Zn	18.43	3.686	ppb	2.23	2000.	
68 Zn	16.915	3.383	ppb	1.94	#VALUE!	
75 As	9.705	1.941	ppb	12.37	1000.	
82 Se	1.4855	0.2971	ppb	62.30	1000.	
88 Sr	1,492.5	298.5	ppb	1.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.86	2.572	ppb	1.78	1000.	
107 Ag	0.0084	0.0017	ppb	50.42	100.	
109 Ag	0.0151	0.003	ppb	29.50	#VALUE!	
111 Cd	-0.4082	-0.0816	ppb	20.47	#VALUE!	
114 Cd	-0.0082	-0.0016	ppb	107.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.129	0.2258	ppb	13.33	1000.	
120 Sn	1.2055	0.2411	ppb	11.43	#VALUE!	
121 Sb	0.1347	0.0269	ppb	9.50	#VALUE!	
123 Sb	0.1414	0.0283	ppb	13.62	1000.	
135 Ba	32.265	6.453	ppb	2.58	2000.	
137 Ba	32.67	6.534	ppb	2.14	#VALUE!	
182 W	0.2645	0.0529	ppb	16.23	1000.	
203 Tl	0.0021	0.0004	ppb	737.83	1000.	
205 Tl	-0.0329	-0.0066	ppb	55.23	#VALUE!	
208 Pb	0.5105	0.1021	ppb	22.74	2000.	
232 Th	0.2811	0.0562	ppb	23.70	1000.	
238 U	0.791	0.1582	ppb	4.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2901192.00	2.69	4492941.00	64.6	69.5 - 120	IS Fai
45 Sc	2351906.50	0.86	3094960.50	76.0	69.5 - 120	
72 Ge	487884.25	1.30	631723.63	77.2	69.5 - 120	
159 Tb	5606830.50	2.26	6220065.50	90.1	69.5 - 120	
209 Bi	3098214.80	2.02	3318256.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000197

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\106SMPL.D\106SMPL.D#
Date Acquired: May 14 2018 09:06 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-012
Misc Info:
Vial Number: 3103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	1.3445	0.2689	ppb	2.28	100.	
11 B	187.25	37.45	ppb	4.55	1000.	
23 Na	266,400.	53,280.	ppb	2.56	200000.	
25 Mg	73,550.	14,710.	ppb	1.25	200000.	
27 Al	21,875.	4,375.	ppb	1.46	200000.	
28 Si	44,555.	8,911.	ppb	1.59	#VALUE!	
29 Si	47,510.	9,502.	ppb	1.05	10000.	
39 K	22,635.	4,527.	ppb	0.85	200000.	
43 Ca	424,450.	84,890.	ppb	1.17	#VALUE!	
44 Ca	409,550.	81,910.	ppb	2.59	200000.	
51 V	61.05	12.21	ppb	3.24	1000.	
52 Cr	107.65	21.53	ppb	0.84	2000.	
53 Cr	132.6	26.52	ppb	1.11	#VALUE!	
55 Mn	2,044.	408.8	ppb	1.41	2000.	
56 Fe	35,545.	7,109.	ppb	1.36	#VALUE!	
57 Fe	36,050.	7,210.	ppb	2.20	100000.	
59 Co	12.27	2.454	ppb	1.32	1000.	
60 Ni	61.3	12.26	ppb	2.30	1000.	
63 Cu	40.755	8.151	ppb	0.97	#VALUE!	
65 Cu	31.585	6.317	ppb	1.05	2000.	
66 Zn	145.2	29.04	ppb	1.26	2000.	
68 Zn	150.95	30.19	ppb	1.40	#VALUE!	
75 As	30.745	6.149	ppb	1.24	1000.	
82 Se	6.38	1.276	ppb	7.64	1000.	
88 Sr	1,869.5	373.9	ppb	1.68	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	24.235	4.847	ppb	1.20	1000.	
107 Ag	0.1217	0.0243	ppb	11.19	100.	
109 Ag	0.0951	0.019	ppb	9.73	#VALUE!	
111 Cd	0.3825	0.0765	ppb	6.99	#VALUE!	
114 Cd	0.4604	0.0921	ppb	7.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.502	0.5004	ppb	2.79	1000.	
120 Sn	2.3615	0.4723	ppb	3.67	#VALUE!	
121 Sb	0.4246	0.0849	ppb	9.47	#VALUE!	
123 Sb	0.4129	0.0826	ppb	7.46	1000.	
135 Ba	330.15	66.03	ppb	0.70	2000.	
137 Ba	327.35	65.47	ppb	1.00	#VALUE!	
182 W	0.4644	0.0929	ppb	12.79	1000.	
203 Tl	0.4346	0.0869	ppb	6.91	1000.	
205 Tl	0.3887	0.0777	ppb	4.83	#VALUE!	
208 Pb	23.3	4.66	ppb	0.90	2000.	
232 Th	15.405	3.081	ppb	1.37	1000.	
238 U	6.8	1.36	ppb	2.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2900531.00	3.99	4492941.00	64.6	69.5 - 120	IS Fai
45 Sc	2361496.00	0.87	3094960.50	76.3	69.5 - 120	
72 Ge	476924.66	0.74	631723.63	75.5	69.5 - 120	
159 Tb	5600110.00	0.69	6220065.50	90.0	69.5 - 120	
209 Bi	3071349.80	1.10	3318256.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000198

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\107SMPL.D\107SMPL.D#
Date Acquired: May 14 2018 09:10 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-013
Misc Info:
Vial Number: 3104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0125	0.0025	ppb	129.36	100.	
11 B	185.9	37.18	ppb	4.60	1000.	
23 Na	278,550.	55,710.	ppb	2.95	200000.	
25 Mg	71,350.	14,270.	ppb	1.30	200000.	
27 Al	11.36	2.272	ppb	33.05	200000.	
28 Si	18,755.	3,751.	ppb	1.04	#VALUE!	
29 Si	18,900.	3,780.	ppb	3.90	10000.	
39 K	19,130.	3,826.	ppb	2.67	200000.	
43 Ca	415,800.	83,160.	ppb	3.44	#VALUE!	
44 Ca	395,500.	79,100.	ppb	2.54	200000.	
51 V	0.1922	0.0384	ppb	396.30	1000.	
52 Cr	1.9035	0.3807	ppb	1.48	2000.	
53 Cr	53.75	10.75	ppb	16.47	#VALUE!	
55 Mn	1,393.5	278.7	ppb	1.62	2000.	
56 Fe	4,764.	952.8	ppb	3.55	#VALUE!	
57 Fe	4,970.	994.	ppb	3.51	100000.	
59 Co	0.4955	0.0991	ppb	16.49	1000.	
60 Ni	1.58	0.316	ppb	8.47	1000.	
63 Cu	11.61	2.322	ppb	1.99	#VALUE!	
65 Cu	1.147	0.2294	ppb	29.14	2000.	
66 Zn	21.065	4.213	ppb	7.71	2000.	
68 Zn	20.815	4.163	ppb	4.03	#VALUE!	
75 As	7.84	1.568	ppb	3.61	1000.	
82 Se	1.247	0.2494	ppb	113.39	1000.	
88 Sr	1,794.5	358.9	ppb	2.16	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.645	2.329	ppb	3.84	1000.	
107 Ag	0.0017	0.0003	ppb	126.31	100.	
109 Ag	0.005	0.001	ppb	99.31	#VALUE!	
111 Cd	-0.3119	-0.0624	ppb	27.29	#VALUE!	
114 Cd	-0.0221	-0.0044	ppb	102.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.2665	0.2533	ppb	10.91	1000.	
120 Sn	1.148	0.2296	ppb	12.25	#VALUE!	
121 Sb	0.0871	0.0174	ppb	33.79	#VALUE!	
123 Sb	0.0954	0.0191	ppb	31.87	1000.	
135 Ba	41.76	8.352	ppb	4.64	2000.	
137 Ba	41.735	8.347	ppb	1.08	#VALUE!	
182 W	0.2363	0.0473	ppb	7.38	1000.	
203 Tl	-0.0477	-0.0095	ppb	83.02	1000.	
205 Tl	-0.0436	-0.0087	ppb	107.53	#VALUE!	
208 Pb	-0.0393	-0.0079	ppb	199.31	2000.	
232 Th	0.1719	0.0344	ppb	20.42	1000.	
238 U	0.881	0.1762	ppb	0.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2922627.80	1.37	4492941.00	65.0	69.5 - 120	IS Fai
45 Sc	2319177.30	2.92	3094960.50	74.9	69.5 - 120	
72 Ge	489974.25	1.76	631723.63	77.6	69.5 - 120	
159 Tb	5598735.50	1.93	6220065.50	90.0	69.5 - 120	
209 Bi	3036808.30	1.13	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000199

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\108SMPL.D\108SMPL.D#
Date Acquired: May 14 2018 09:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-014
Misc Info:
Vial Number: 3105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0026	0.0005	ppb	253.43	100.	
11 B	16.11	3.222	ppb	14.94	1000.	
23 Na	45.295	9.059	ppb	10.50	200000.	
25 Mg	15.22	3.044	ppb	13.16	200000.	
27 Al	8.255	1.651	ppb	5.50	200000.	
28 Si	316.2	63.24	ppb	7.22	#VALUE!	
29 Si	133.35	26.67	ppb	6.99	10000.	
39 K	24.725	4.945	ppb	53.04	200000.	
43 Ca	40.	8.	ppb	77.76	#VALUE!	
44 Ca	41.065	8.213	ppb	14.88	200000.	
51 V	0.2932	0.0586	ppb	108.37	1000.	
52 Cr	1.2995	0.2599	ppb	31.02	2000.	
53 Cr	42.895	8.579	ppb	1.62	#VALUE!	
55 Mn	0.6155	0.1231	ppb	12.68	2000.	
56 Fe	47.535	9.507	ppb	21.09	#VALUE!	
57 Fe	32.	6.4	ppb	25.50	100000.	
59 Co	0.0028	0.0006	ppb	346.35	1000.	
60 Ni	0.08	0.016	ppb	89.13	1000.	
63 Cu	0.6575	0.1315	ppb	4.69	#VALUE!	
65 Cu	0.7345	0.1469	ppb	13.53	2000.	
66 Zn	0.671	0.1342	ppb	32.56	2000.	
68 Zn	0.2537	0.0507	ppb	88.17	#VALUE!	
75 As	-0.87	-0.174	ppb	31.83	1000.	
82 Se	0.4069	0.0814	ppb	163.31	1000.	
88 Sr	0.2354	0.0471	ppb	8.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1909	0.0382	ppb	7.83	1000.	
107 Ag	0.0041	0.0008	ppb	338.38	100.	
109 Ag	0.0076	0.0015	ppb	135.35	#VALUE!	
111 Cd	-0.1414	-0.0283	ppb	112.62	#VALUE!	
114 Cd	-0.0106	-0.0021	ppb	44.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.127	0.2254	ppb	11.22	1000.	
120 Sn	1.1705	0.2341	ppb	7.10	#VALUE!	
121 Sb	0.0358	0.0072	ppb	29.25	#VALUE!	
123 Sb	0.0392	0.0078	ppb	39.54	1000.	
135 Ba	0.2175	0.0435	ppb	11.60	2000.	
137 Ba	0.2119	0.0424	ppb	31.56	#VALUE!	
182 W	0.0331	0.0066	ppb	20.49	1000.	
203 Tl	-0.0039	-0.0008	ppb	699.85	1000.	
205 Tl	-0.0623	-0.0125	ppb	28.84	#VALUE!	
208 Pb	0.0047	0.0009	ppb	1278.70	2000.	
232 Th	0.0719	0.0144	ppb	36.32	1000.	
238 U	0.0007	0.0001	ppb	164.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3121443.50	1.85	4492941.00	69.5	69.5 - 120	IS Fai
45 Sc	2356889.00	1.44	3094960.50	76.2	69.5 - 120	
72 Ge	497181.50	0.52	631723.63	78.7	69.5 - 120	
159 Tb	5685343.00	1.84	6220065.50	91.4	69.5 - 120	
209 Bi	3285800.50	1.42	3318256.50	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000200

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\109SMPL.D\109SMPL.D#
Date Acquired: May 14 2018 09:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-015
Misc Info:
Vial Number: 3106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.4859	0.0972	ppb	7.80	100.	
11 B	190.8	38.16	ppb	9.86	1000.	
23 Na	254,850.	50,970.	ppb	2.54	200000.	
25 Mg	60,400.	12,080.	ppb	6.41	200000.	
27 Al	9,435.	1,887.	ppb	7.97	200000.	
28 Si	37,915.	7,583.	ppb	6.01	#VALUE!	
29 Si	40,470.	8,094.	ppb	2.99	10000.	
39 K	20,315.	4,063.	ppb	5.08	200000.	
43 Ca	393,200.	78,640.	ppb	4.84	#VALUE!	
44 Ca	368,700.	73,740.	ppb	4.39	200000.	
51 V	33.525	6.705	ppb	2.61	1000.	
52 Cr	55.7	11.14	ppb	2.19	2000.	
53 Cr	84.95	16.99	ppb	3.37	#VALUE!	
55 Mn	1,429.	285.8	ppb	1.33	2000.	
56 Fe	20,790.	4,158.	ppb	1.76	#VALUE!	
57 Fe	21,425.	4,285.	ppb	2.16	100000.	
59 Co	5.36	1.072	ppb	3.14	1000.	
60 Ni	27.21	5.442	ppb	1.17	1000.	
63 Cu	33.92	6.784	ppb	1.03	#VALUE!	
65 Cu	25.855	5.171	ppb	1.07	2000.	
66 Zn	90.85	18.17	ppb	1.92	2000.	
68 Zn	95.2	19.04	ppb	3.39	#VALUE!	
75 As	10.3	2.06	ppb	11.27	1000.	
82 Se	2.04	0.408	ppb	48.43	1000.	
88 Sr	1,645.	329.	ppb	2.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.695	4.339	ppb	3.66	1000.	
107 Ag	0.0617	0.0123	ppb	4.13	100.	
109 Ag	0.0568	0.0114	ppb	23.21	#VALUE!	
111 Cd	-0.3199	-0.064	ppb	29.87	#VALUE!	
114 Cd	0.0051	0.001	ppb	548.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.891	0.3782	ppb	4.27	1000.	
120 Sn	1.9055	0.3811	ppb	8.54	#VALUE!	
121 Sb	0.3154	0.0631	ppb	2.36	#VALUE!	
123 Sb	0.3198	0.064	ppb	22.81	1000.	
135 Ba	223.7	44.74	ppb	1.04	2000.	
137 Ba	224.2	44.84	ppb	2.23	#VALUE!	
182 W	0.582	0.1164	ppb	14.05	1000.	
203 Tl	0.1591	0.0318	ppb	14.95	1000.	
205 Tl	0.126	0.0252	ppb	20.79	#VALUE!	
208 Pb	11.015	2.203	ppb	1.78	2000.	
232 Th	8.7	1.74	ppb	2.85	1000.	
238 U	2.263	0.4526	ppb	4.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2842781.50	8.02	4492941.00	63.3	69.5 - 120	IS Fai
45 Sc	2281118.00	5.35	3094960.50	73.7	69.5 - 120	
72 Ge	478900.16	2.05	631723.63	75.8	69.5 - 120	
159 Tb	5586951.00	1.36	6220065.50	89.8	69.5 - 120	
209 Bi	3050850.00	1.57	3318256.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000201

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\110SMPL.D\110SMPL.D#
Date Acquired: May 14 2018 09:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-016
Misc Info:
Vial Number: 3107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0172	0.0034	ppb	60.78	100.	
11 B	206.	41.2	ppb	2.39	1000.	
23 Na	271,450.	54,290.	ppb	0.85	200000.	
25 Mg	63,650.	12,730.	ppb	2.18	200000.	
27 Al	9.735	1.947	ppb	7.10	200000.	
28 Si	18,675.	3,735.	ppb	1.53	#VALUE!	
29 Si	19,040.	3,808.	ppb	2.12	10000.	
39 K	18,645.	3,729.	ppb	2.55	200000.	
43 Ca	407,100.	81,420.	ppb	1.43	#VALUE!	
44 Ca	385,200.	77,040.	ppb	0.80	200000.	
51 V	0.3304	0.0661	ppb	179.20	1000.	
52 Cr	2.487	0.4974	ppb	6.90	2000.	
53 Cr	44.49	8.898	ppb	12.72	#VALUE!	
55 Mn	1,423.5	284.7	ppb	1.00	2000.	
56 Fe	6,410.	1,282.	ppb	1.09	#VALUE!	
57 Fe	6,640.	1,328.	ppb	0.82	100000.	
59 Co	0.778	0.1556	ppb	2.34	1000.	
60 Ni	7.385	1.477	ppb	8.90	1000.	
63 Cu	11.635	2.327	ppb	1.52	#VALUE!	
65 Cu	1.5225	0.3045	ppb	3.33	2000.	
66 Zn	28.41	5.682	ppb	1.65	2000.	
68 Zn	27.335	5.467	ppb	4.28	#VALUE!	
75 As	9.925	1.985	ppb	16.81	1000.	
82 Se	1.8335	0.3667	ppb	28.17	1000.	
88 Sr	1,683.5	336.7	ppb	1.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.65	2.93	ppb	1.61	1000.	
107 Ag	0.0054	0.0011	ppb	80.88	100.	
109 Ag	0.0047	0.0009	ppb	131.03	#VALUE!	
111 Cd	-0.3411	-0.0682	ppb	36.67	#VALUE!	
114 Cd	-0.0226	-0.0045	ppb	63.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.32	0.264	ppb	9.69	1000.	
120 Sn	1.3285	0.2657	ppb	14.28	#VALUE!	
121 Sb	0.1189	0.0238	ppb	23.61	#VALUE!	
123 Sb	0.1155	0.0231	ppb	9.97	1000.	
135 Ba	36.595	7.319	ppb	1.07	2000.	
137 Ba	36.32	7.264	ppb	1.71	#VALUE!	
182 W	0.3252	0.065	ppb	23.48	1000.	
203 Tl	-0.0107	-0.0021	ppb	636.62	1000.	
205 Tl	-0.0356	-0.0071	ppb	22.69	#VALUE!	
208 Pb	0.0133	0.0027	ppb	282.30	2000.	
232 Th	0.1028	0.0206	ppb	16.11	1000.	
238 U	1.1215	0.2243	ppb	5.16	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2827935.30	1.97	4492941.00	62.9	69.5 - 120	IS Fai
45 Sc	2268252.00	1.26	3094960.50	73.3	69.5 - 120	
72 Ge	474097.34	0.61	631723.63	75.0	69.5 - 120	
159 Tb	5507047.00	0.55	6220065.50	88.5	69.5 - 120	
209 Bi	3067445.30	0.66	3318256.50	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000202

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\111SMPL.D\111SMPL.D#
Date Acquired: May 14 2018 09:27 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-017
Misc Info:
Vial Number: 3108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.5035	0.1007	ppb	7.03	100.	
11 B	190.9	38.18	ppb	5.92	1000.	
23 Na	209,350.	41,870.	ppb	2.25	200000.	
25 Mg	54,550.	10,910.	ppb	0.56	200000.	
27 Al	7,700.	1,540.	ppb	3.20	200000.	
28 Si	33,225.	6,645.	ppb	2.58	#VALUE!	
29 Si	35,390.	7,078.	ppb	0.35	10000.	
39 K	19,440.	3,888.	ppb	1.56	200000.	
43 Ca	383,550.	76,710.	ppb	2.08	#VALUE!	
44 Ca	365,400.	73,080.	ppb	0.94	200000.	
51 V	24.735	4.947	ppb	3.35	1000.	
52 Cr	33.895	6.779	ppb	0.47	2000.	
53 Cr	62.4	12.48	ppb	3.51	#VALUE!	
55 Mn	1,426.	285.2	ppb	2.81	2000.	
56 Fe	15,930.	3,186.	ppb	0.91	#VALUE!	
57 Fe	16,160.	3,232.	ppb	0.69	100000.	
59 Co	3.9695	0.7939	ppb	3.52	1000.	
60 Ni	13.385	2.677	ppb	3.87	1000.	
63 Cu	25.255	5.051	ppb	2.20	#VALUE!	
65 Cu	17.485	3.497	ppb	2.56	2000.	
66 Zn	60.35	12.07	ppb	1.07	2000.	
68 Zn	64.65	12.93	ppb	4.28	#VALUE!	
75 As	29.36	5.872	ppb	2.64	1000.	
82 Se	2.385	0.477	ppb	38.03	1000.	
88 Sr	1,545.	309.	ppb	0.36	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.185	3.237	ppb	3.78	1000.	
107 Ag	0.0417	0.0083	ppb	46.74	100.	
109 Ag	0.0449	0.009	ppb	42.84	#VALUE!	
111 Cd	-0.1313	-0.0263	ppb	182.83	#VALUE!	
114 Cd	0.1494	0.0299	ppb	8.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.6405	0.3281	ppb	8.80	1000.	
120 Sn	1.569	0.3138	ppb	10.73	#VALUE!	
121 Sb	0.4128	0.0826	ppb	15.76	#VALUE!	
123 Sb	0.4299	0.086	ppb	4.77	1000.	
135 Ba	198.55	39.71	ppb	1.41	2000.	
137 Ba	198.95	39.79	ppb	2.17	#VALUE!	
182 W	0.3648	0.073	ppb	7.61	1000.	
203 Tl	0.1118	0.0224	ppb	31.67	1000.	
205 Tl	0.1015	0.0203	ppb	13.48	#VALUE!	
208 Pb	12.94	2.588	ppb	0.99	2000.	
232 Th	6.06	1.212	ppb	1.32	1000.	
238 U	3.906	0.7812	ppb	0.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2738996.30	2.20	4492941.00	61.0	69.5 - 120	IS Fai
45 Sc	2295861.80	1.56	3094960.50	74.2	69.5 - 120	
72 Ge	475625.13	0.56	631723.63	75.3	69.5 - 120	
159 Tb	5570014.50	1.44	6220065.50	89.5	69.5 - 120	
209 Bi	3066523.50	1.05	3318256.50	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000203

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\112SMPL.D\112SMPL.D#
Date Acquired: May 14 2018 09:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-018
Misc Info:
Vial Number: 3109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	0.0058	0.0012	ppb	74.50	100.	
11 B	185.1	37.02	ppb	7.07	1000.	
23 Na	225,100.	45,020.	ppb	3.36	200000.	
25 Mg	55,150.	11,030.	ppb	0.22	200000.	
27 Al	8.735	1.747	ppb	6.93	200000.	
28 Si	16,660.	3,332.	ppb	2.75	#VALUE!	
29 Si	16,450.	3,290.	ppb	1.37	10000.	
39 K	17,695.	3,539.	ppb	1.76	200000.	
43 Ca	368,550.	73,710.	ppb	0.53	#VALUE!	
44 Ca	355,900.	71,180.	ppb	0.18	200000.	
51 V	-0.3855	-0.0771	ppb	108.46	1000.	
52 Cr	1.769	0.3538	ppb	21.83	2000.	
53 Cr	41.825	8.365	ppb	14.47	#VALUE!	
55 Mn	1,322.5	264.5	ppb	3.28	2000.	
56 Fe	2,023.	404.6	ppb	1.63	#VALUE!	
57 Fe	2,210.5	442.1	ppb	3.24	100000.	
59 Co	0.4202	0.084	ppb	18.78	1000.	
60 Ni	1.2205	0.2441	ppb	15.34	1000.	
63 Cu	9.655	1.931	ppb	1.90	#VALUE!	
65 Cu	1.0855	0.2171	ppb	5.56	2000.	
66 Zn	13.265	2.653	ppb	3.47	2000.	
68 Zn	13.29	2.658	ppb	3.45	#VALUE!	
75 As	21.65	4.33	ppb	2.44	1000.	
82 Se	2.1935	0.4387	ppb	34.22	1000.	
88 Sr	1,546.	309.2	ppb	0.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.185	2.437	ppb	2.86	1000.	
107 Ag	0.0044	0.0009	ppb	174.78	100.	
109 Ag	-0.0004	-0.0001	ppb	421.90	#VALUE!	
111 Cd	-0.3109	-0.0622	ppb	25.65	#VALUE!	
114 Cd	0.0112	0.0022	ppb	101.48	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.2755	0.2551	ppb	8.00	1000.	
120 Sn	1.3015	0.2603	ppb	6.04	#VALUE!	
121 Sb	0.1872	0.0374	ppb	2.70	#VALUE!	
123 Sb	0.1911	0.0382	ppb	25.62	1000.	
135 Ba	30.05	6.01	ppb	2.46	2000.	
137 Ba	30.63	6.126	ppb	2.27	#VALUE!	
182 W	0.2333	0.0467	ppb	4.77	1000.	
203 Tl	0.0102	0.002	ppb	381.16	1000.	
205 Tl	-0.0132	-0.0026	ppb	323.34	#VALUE!	
208 Pb	0.0504	0.0101	ppb	169.64	2000.	
232 Th	0.0902	0.018	ppb	19.64	1000.	
238 U	2.7535	0.5507	ppb	1.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2861321.50	2.19	4492941.00	63.7	69.5 - 120	IS Fai
45 Sc	2308340.50	0.74	3094960.50	74.6	69.5 - 120	
72 Ge	472902.38	0.58	631723.63	74.9	69.5 - 120	
159 Tb	5543571.50	0.63	6220065.50	89.1	69.5 - 120	
209 Bi	3037423.00	1.55	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000204

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\113SMPL.D\113SMPL.D#
Date Acquired: May 14 2018 09:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 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	295.98	100.	
11 B	2.672	2.672	ppb	4.26	1000.	
23 Na	15.99	15.99	ppb	3.98	200000.	
25 Mg	4.985	4.985	ppb	8.15	200000.	
27 Al	2.911	2.911	ppb	2.48	200000.	
28 Si	56.38	56.38	ppb	14.83	#VALUE!	
29 Si	8.835	8.835	ppb	76.40	10000.	
39 K	3.143	3.143	ppb	91.54	200000.	
43 Ca	10.09	10.09	ppb	11.11	#VALUE!	
44 Ca	15.27	15.27	ppb	14.45	200000.	
51 V	-0.0981	-0.0981	ppb	66.92	1000.	
52 Cr	0.0124	0.0124	ppb	219.95	2000.	
53 Cr	0.3402	0.3402	ppb	96.09	#VALUE!	
55 Mn	0.1256	0.1256	ppb	5.99	2000.	
56 Fe	0.2315	0.2315	ppb	355.38	#VALUE!	
57 Fe	5.182	5.182	ppb	16.91	100000.	
59 Co	0.0091	0.0091	ppb	91.43	1000.	
60 Ni	0.0266	0.0266	ppb	18.62	1000.	
63 Cu	0.1714	0.1714	ppb	6.14	#VALUE!	
65 Cu	0.2093	0.2093	ppb	12.50	2000.	
66 Zn	0.2832	0.2832	ppb	23.57	2000.	
68 Zn	0.3136	0.3136	ppb	28.78	#VALUE!	
75 As	0.0414	0.0414	ppb	255.56	1000.	
82 Se	0.0033	0.0033	ppb	1410.50	1000.	
88 Sr	0.0218	0.0218	ppb	29.15	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3179	0.3179	ppb	7.82	1000.	
107 Ag	0.0005	0.0005	ppb	65.16	100.	
109 Ag	0.0022	0.0022	ppb	31.31	#VALUE!	
111 Cd	-0.0358	-0.0358	ppb	40.46	#VALUE!	
114 Cd	-0.003	-0.003	ppb	100.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0485	0.0485	ppb	25.07	1000.	
120 Sn	0.0387	0.0387	ppb	18.21	#VALUE!	
121 Sb	0.0029	0.0029	ppb	140.66	#VALUE!	
123 Sb	0.0009	0.0009	ppb	495.37	1000.	
135 Ba	0.0804	0.0804	ppb	22.48	2000.	
137 Ba	0.0646	0.0646	ppb	12.62	#VALUE!	
182 W	0.0042	0.0042	ppb	33.57	1000.	
203 Tl	-0.0041	-0.0041	ppb	278.88	1000.	
205 Tl	-0.005	-0.005	ppb	69.89	#VALUE!	
208 Pb	0.2903	0.2903	ppb	7.34	2000.	
232 Th	0.0018	0.0018	ppb	50.75	1000.	
238 U	0.0004	0.0004	ppb	138.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2962880.00	2.41	4492941.00	65.9	69.5 - 120	IS Fai
45 Sc	2380699.30	2.94	3094960.50	76.9	69.5 - 120	
72 Ge	492739.19	0.84	631723.63	78.0	69.5 - 120	
159 Tb	5681238.00	0.96	6220065.50	91.3	69.5 - 120	
209 Bi	3324629.80	0.53	3318256.50	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.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 4000205

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\114_CCV.D\114_CCV.D#
Date Acquired: May 14 2018 09:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.99	ppb	1.77	25	95.96	
11 B	23.91	ppb	4.04	25	95.64	
23 Na	4,447.	ppb	4.88	5,000	88.94	Fail
25 Mg	4,663.	ppb	1.81	5,000	93.26	
27 Al	469.4	ppb	0.91	500	93.88	
28 Si	532.4	ppb	3.96	500	106.48	
29 Si	471.2	ppb	5.98	500	94.24	
39 K	4,803.	ppb	0.64	5,000	96.06	
43 Ca	4,869.	ppb	3.69	5,000	97.38	
44 Ca	5,035.	ppb	4.04	5,000	100.7	
51 V	24.57	ppb	1.10	25	98.28	
52 Cr	24.5	ppb	1.70	25	98	
53 Cr	24.09	ppb	3.01	25	96.36	
55 Mn	24.53	ppb	1.70	25	98.12	
56 Fe	4,890.	ppb	1.65	5,000	97.8	
57 Fe	5,023.	ppb	1.86	5,000	100.46	
59 Co	24.31	ppb	0.55	25	97.24	
60 Ni	23.97	ppb	2.09	25	95.88	
63 Cu	23.81	ppb	2.73	25	95.24	
65 Cu	24.54	ppb	2.15	25	98.16	
66 Zn	25.03	ppb	2.06	25	100.12	
68 Zn	24.64	ppb	1.22	25	98.56	
75 As	24.63	ppb	1.20	25	98.52	
82 Se	25.43	ppb	3.18	25	101.72	
88 Sr	25.49	ppb	1.62	25	101.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.76	ppb	2.19	25	103.04	
107 Ag	26.04	ppb	1.32	25	104.16	
109 Ag	26.31	ppb	1.06	25	105.24	
111 Cd	26.38	ppb	1.39	25	105.52	
114 Cd	26.24	ppb	1.50	25	104.96	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.9	ppb	3.44	25	91.6	
120 Sn	22.88	ppb	2.74	25	91.52	
121 Sb	23.55	ppb	2.61	25	94.2	
123 Sb	23.62	ppb	3.01	25	94.48	
135 Ba	24.17	ppb	3.27	25	96.68	
137 Ba	23.97	ppb	4.10	25	95.88	
182 W	25.4	ppb	3.51	25	101.6	
203 Tl	24.53	ppb	2.91	25	98.12	
205 Tl	24.59	ppb	2.47	25	98.36	
208 Pb	24.99	ppb	2.26	25	99.96	
232 Th	25.22	ppb	3.29	25	100.88	
238 U	26.52	ppb	3.02	25	106.08	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2975111.50	0.77	4492941.00	66.2	80 - 120.4	ISFail
45 Sc	2326776.50	1.98	3094960.50	75.2	80 - 120.4	ISFail
72 Ge	480648.19	1.28	631723.63	76.1	80 - 120.4	ISFail
159 Tb	5598800.50	2.73	6220065.50	90.0	80 - 120.4	
209 Bi	3198996.50	2.23	3318256.50	96.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

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

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\115_CCB.D\115_CCB.D#
Date Acquired: May 14 2018 09:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0017	ppb	266.14	1.00	
11 B	2.329	ppb	5.50	1.00	
23 Na	3.414	ppb	9.49	1.00	
25 Mg	0.1114	ppb	81.74	1.00	
27 Al	0.1035	ppb	66.22	1.00	
28 Si	46.81	ppb	7.58	1.00	
29 Si	-1.526	ppb	430.21	1.00	
39 K	-0.539	ppb	780.15	1.00	
43 Ca	0.5856	ppb	327.36	1.00	
44 Ca	0.5789	ppb	217.83	1.00	
51 V	-0.1327	ppb	86.89	1.00	
52 Cr	0.0123	ppb	148.73	1.00	
53 Cr	-0.7921	ppb	40.07	1.00	
55 Mn	0.0249	ppb	30.00	1.00	
56 Fe	-4.969	ppb	50.92	1.00	
57 Fe	2.461	ppb	27.01	1.00	
59 Co	0.0025	ppb	183.40	1.00	
60 Ni	0.	ppb	47872.00	1.00	
63 Cu	0.0117	ppb	72.34	1.00	
65 Cu	0.0109	ppb	80.17	1.00	
66 Zn	0.0412	ppb	57.31	1.00	
68 Zn	0.1187	ppb	62.32	1.00	
75 As	-0.0984	ppb	16.67	1.00	
82 Se	0.0406	ppb	388.67	1.00	
88 Sr	0.0029	ppb	106.73	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0325	ppb	35.28	1.00	
107 Ag	0.0046	ppb	50.15	1.00	
109 Ag	0.0043	ppb	80.09	1.00	
111 Cd	-0.0468	ppb	24.02	1.00	
114 Cd	-0.0009	ppb	209.91	1.00	
115 In	--------	---	--------	---	
118 Sn	0.057	ppb	9.38	1.00	
120 Sn	0.0707	ppb	55.22	1.00	
121 Sb	0.008	ppb	19.92	1.00	
123 Sb	0.0085	ppb	16.52	1.00	
135 Ba	0.0083	ppb	82.71	1.00	
137 Ba	-0.0008	ppb	322.87	1.00	
182 W	0.0404	ppb	36.73	1.00	
203 Tl	0.0019	ppb	395.46	1.00	
205 Tl	-0.0015	ppb	284.52	1.00	
208 Pb	0.0819	ppb	13.78	1.00	
232 Th	0.0555	ppb	3.94	1.00	
238 U	0.0032	ppb	36.48	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3031881.50	2.82	4492941.00	67.5	79.5 - 120	ISFail
45 Sc	2391291.50	1.64	3094960.50	77.3	79.5 - 120	ISFail
72 Ge	484841.84	0.55	631723.63	76.7	79.5 - 120	ISFail
159 Tb	5564623.50	0.87	6220065.50	89.5	79.5 - 120	
209 Bi	3272420.50	0.26	3318256.50	98.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000207

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: JS

ANALYSIS DATE: 05/15/2018

REVIEWED
MD 5/16/18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE15C

METHOD: ICP-MS
- ☑ 200.8
- ☐ 6020
- ☑ DOD

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	MW17761	05/14/2018	05/14/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17763	05/14/2018	05/20/2018	Varies by Element
ICSAB	MW17764	05/14/2018	05/20/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17762	05/14/2018	08/142018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

MD 5/16/18

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 MW17761 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

Post Spike: 0.08mL of MW17698 (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	JLE15C	5/15/2018	6:36:00 14:18	JS
200.8 TUNE	1	JLE15C	5/15/2018	6:36:00 14:21	JS
Cal Blank	1	JLE15C	5/15/2018	6:36:00 18:36	JS
Cal Std	1	JLE15C	5/15/2018	6:40:00 18:40	JS
ICV	1	JLE15C	5/15/2018	6:44:00 18:44	JS
ICB	1	JLE15C	5/15/2018	6:48:00 18:48	JS
PQL	1	JLE15C	5/15/2018	6:52:00 18:52	JS
RINSE	1	JLE15C	5/15/2018	6:56:00 18:56	JS
ICSA	1	JLE15C	5/15/2018	7:00:00 19:00	JS
ICSAB	1	JLE15C	5/15/2018	7:04:00 19:04	JS
RINSE	1	JLE15C	5/15/2018	7:08:00 19:08	JS
LRS1	1	JLE15C	5/15/2018	7:13:00 19:13	JS
LRS2	1	JLE15C	5/15/2018	7:16:00 19:16	JS
RINSE	1	JLE15C	5/15/2018	7:21:00 19:21	JS
RINSE	1	JLE15C	5/15/2018	7:25:00 19:25	JS
CCV	1	JLE15C	5/15/2018	7:29:00 19:29	JS
CCB	1	JLE15C	5/15/2018	7:33:00 19:33	JS
PBWLE14IMW1	1	JLE15C	5/15/2018	7:37:00 19:37	JS
LCSWLE14IMW1	5	JLE15C	5/15/2018	7:41:00 19:41	JS
SL4085-001	1	JLE15C	5/15/2018	7:45:00 19:45	JS
SL4096-001	1	JLE15C	5/15/2018	7:50:00 19:50	JS
SL3807-001	5	JLE15C	5/15/2018	7:54:00 19:54	JS
SL3807-002	5	JLE15C	5/15/2018	7:58:00 19:58	JS
RINSE	1	JLE15C	5/15/2018	8:02:00 20:02	JS
PBWLE07IMW1	5	JLE15C	5/15/2018	8:07:00 20:07	JS
LCSWLE07IMW1	5	JLE15C	5/15/2018	8:11:00 20:11	JS
SL3808-002	5	JLE15C	5/15/2018	8:15:00 20:15	JS
CCV	1	JLE15C	5/15/2018	8:19:00 20:19	JS
CCB	1	JLE15C	5/15/2018	8:23:00 20:23	JS
SL3808-003	5	JLE15C	5/15/2018	8:27:00 20:27	JS
SL3808-004	5	JLE15C	5/15/2018	8:31:00 20:31	JS
SL3808-004L	25	JLE15C	5/15/2018	8:36:00 20:36	JS
SL3808-004A	5	JLE15C	5/15/2018	8:40:00 20:40	JS
SL3808-004S	5	JLE15C	5/15/2018	8:44:00 20:44	JS
SL3808-004P	5	JLE15C	5/15/2018	8:48:00 20:48	JS
SL3808-005	5	JLE15C	5/15/2018	8:52:00 20:52	JS
SL3808-005L	25	JLE15C	5/15/2018	8:56:00 20:56	JS
SL3808-005A	5	JLE15C	5/15/2018	9:01:00 21:01	JS
RINSE	5	JLE15C	5/15/2018	9:05:00 21:05	JS
CCV	1	JLE15C	5/15/2018	9:09:00 21:09	JS
CCB	1	JLE15C	5/15/2018	9:13:00 21:13	JS
SL3808-005S	5	JLE15C	5/15/2018	9:17:00 21:17	JS
SL3808-005P	5	JLE15C	5/15/2018	9:21:00 21:21	JS
SL3808-006	5	JLE15C	5/15/2018	9:25:00 21:25	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3808-007	5	JLE15C	5/15/2018	9:30:00 21:30	JS
SL3808-008	5	JLE15C	5/15/2018	9:34:00 21:34	JS
SL3808-009	5	JLE15C	5/15/2018	9:38:00 21:38	JS
SL3808-010	5	JLE15C	5/15/2018	9:42:00 21:42	JS
SL3808-011	5	JLE15C	5/15/2018	9:47:00 21:47	JS
SL3808-012	5	JLE15C	5/15/2018	9:51:00 21:51	JS
RINSE	1	JLE15C	5/15/2018	9:55:00 21:55	JS
CCV	1	JLE15C	5/15/2018	9:59:00 21:59	JS
CCB	1	JLE15C	5/15/2018	10:03:0 22:03	JS
SL3808-013	5	JLE15C	5/15/2018	10:07:0 22:07	JS
SL3808-014	5	JLE15C	5/15/2018	10:12:0 22:12	JS
SL3808-015	5	JLE15C	5/15/2018	10:16:0 22:16	JS
SL3808-016	5	JLE15C	5/15/2018	10:20:0 22:20	JS
SL3808-017	5	JLE15C	5/15/2018	10:24:0 22:24	JS
SL3808-018	5	JLE15C	5/15/2018	10:28:0 22:28	JS
RINSE	1	JLE15C	5/15/2018	10:33:0 22:33	JS
RINSE	1	JLE15C	5/15/2018	10:37:0 22:37	JS
PBSLE08IMS2	5	JLE15C	5/15/2018	10:41:0 22:41	JS
LCSOLE08IMS2	5	JLE15C	5/15/2018	10:45:0 22:45	JS
CCV	1	JLE15C	5/15/2018	10:49:0 22:49	JS
CCB	1	JLE15C	5/15/2018	10:53:0 22:53	JS
SL3809-024	5	JLE15C	5/15/2018	10:58:0 22:58	JS
SL3809-024L	25	JLE15C	5/15/2018	11:02:0 23:02	JS
SL3809-024A	5	JLE15C	5/15/2018	11:06:0 23:06	JS
SL3809-024S	5	JLE15C	5/15/2018	11:10:0 23:10	JS
SL3809-024P	5	JLE15C	5/15/2018	11:15:0 23:15	JS
SL3809-041	5	JLE15C	5/15/2018	11:19:0 23:19	JS
SL3809-042	5	JLE15C	5/15/2018	11:23:0 23:23	JS
SL3809-043	5	JLE15C	5/15/2018	11:28:0 23:28	JS
SL3809-044	5	JLE15C	5/15/2018	11:32:0 23:32	JS
RINSE	5	JLE15C	5/15/2018	11:36:0 23:36	JS
CCV	1	JLE15C	5/15/2018	11:41:0 23:41	JS
CCB	1	JLE15C	5/15/2018	11:45:0 23:45	JS
SL3809-046	5	JLE15C	5/15/2018	11:49:0 23:49	JS
SL3809-047	5	JLE15C	5/15/2018	11:53:0 23:53	JS
RINSE	1	JLE15C	5/15/2018	11:57:0 23:57	JS
PBWLE07IMW2	5	JLE15C	5/16/2018	12:02:0 0:02	JS
LCSWLE07IMW2	5	JLE15C	5/16/2018	12:06:0 0:06	JS
SL3841-002	5	JLE15C	5/16/2018	12:10:0 0:10	JS
SL3841-003	5	JLE15C	5/16/2018	12:14:0 0:14	JS
SL3841-004	5	JLE15C	5/16/2018	12:18:0 0:18	JS
SL3841-005	5	JLE15C	5/16/2018	12:23:0 0:23	JS
RINSE	1	JLE15C	5/16/2018	12:27:0 0:27	JS
CCV	1	JLE15C	5/16/2018	12:31:0 0:31	JS
CCB	1	JLE15C	5/16/2018	12:35:0 0:35	JS
SL3841-006	5	JLE15C	5/16/2018	12:39:0 0:39	JS
SL3841-008	5	JLE15C	5/16/2018	12:43:0 0:43	JS

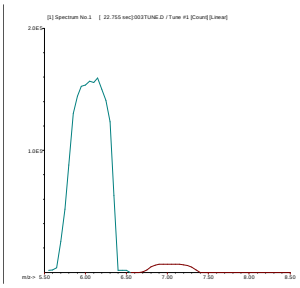
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-009	5	JLE15C	5/16/2018	12:48:0 0:48	JS
SL3841-010	5	JLE15C	5/16/2018	12:52:0 0:52	JS
SL3841-011	5	JLE15C	5/16/2018	12:56:0 0:56	JS
SL3841-011L	25	JLE15C	5/16/2018	1:00:00 1:00	JS
SL3841-011A	5	JLE15C	5/16/2018	1:05:00 1:05	JS
SL3841-011S	5	JLE15C	5/16/2018	1:09:00 1:09	JS
SL3841-011P	5	JLE15C	5/16/2018	1:13:00 1:13	JS
RINSE	1	JLE15C	5/16/2018	1:17:00 1:17	JS
CCV	1	JLE15C	5/16/2018	1:21:00 1:21	JS
CCB	1	JLE15C	5/16/2018	1:25:00 1:25	JS
SL3841-012	5	JLE15C	5/16/2018	1:30:00 1:30	JS
SL3841-013	5	JLE15C	5/16/2018	1:34:00 1:34	JS
SL3841-014	5	JLE15C	5/16/2018	1:38:00 1:38	JS
SL3841-015	5	JLE15C	5/16/2018	1:42:00 1:42	JS
SL3841-016	5	JLE15C	5/16/2018	1:47:00 1:47	JS
SL3841-017	5	JLE15C	5/16/2018	1:51:00 1:51	JS
SL3841-018	5	JLE15C	5/16/2018	1:55:00 1:55	JS
SL3841-019	5	JLE15C	5/16/2018	1:59:00 1:59	JS
SL3841-020	5	JLE15C	5/16/2018	2:04:00 2:04	JS
RINSE	1	JLE15C	5/16/2018	2:08:00 2:08	JS
CCV	1	JLE15C	5/16/2018	2:12:00 2:12	JS
CCB	1	JLE15C	5/16/2018	2:16:00 2:16	JS
PQL	1	JLE15C	5/16/2018	2:20:00 2:20	JS
CCV	1	JLE15C	5/16/2018	2:25:00 2:25	JS
CCB	1	JLE15C	5/16/2018	2:29:00 2:29	JS

6020 QC Tune Report

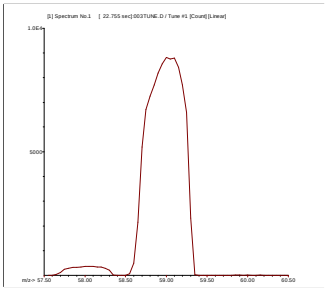
Data File: C:\ICPCHEM\1\DATA\JLE15A.B\003TUNE.D
Date Acquired: May 15 2018 02:18 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

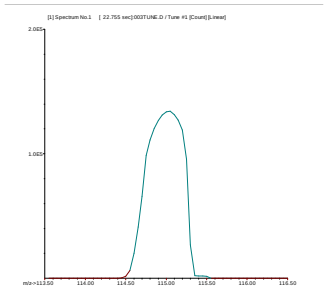
Element	Actual	Required	Flag
7 Li	2.80	5.00	
59 Co	3.05	5.00	
115 In	2.19	5.00	
205 Tl	2.14	5.00	



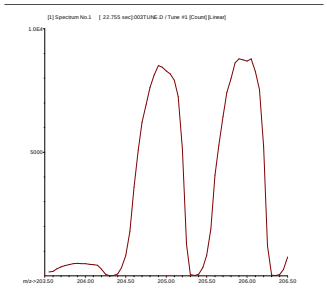
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



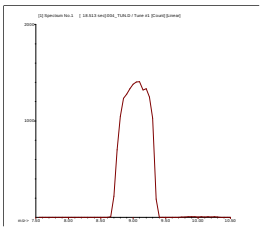
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

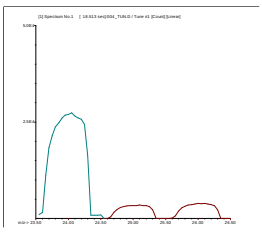
Data File: C:\ICPCHEM\1\DATA\JLE15A.B\004_TUN.D
Date Acquired: May 15 2018 02:21 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

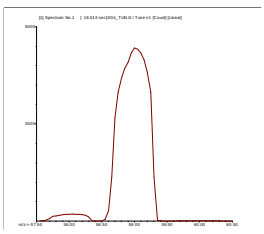
Element	Actual	Required	Flag
9 Be	3.38	5.00	
24 Mg	2.20	5.00	
59 Co	2.04	5.00	
115 In	0.74	5.00	
208 Pb	1.15	5.00	



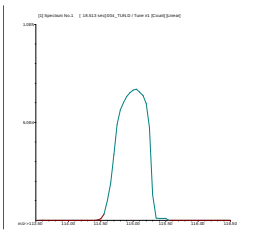
9 Be
Mass Calib.
Actual: 9.10
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



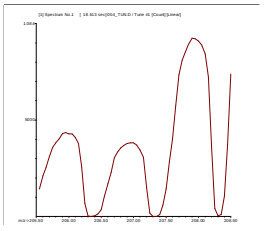
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
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\JLE15C.B\013CALB.I
Date Acquired: May 15 2018 06:36 pm
Operator: JS
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: May 15 2018 06:38 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3927739.00	A	92700.00	2.36
9	Be	10.74	P	2.80	26.03
11	B	405.58	P	32.89	8.11
23	Na	30975.03	P	2124.00	6.86
25	Mg	184.46	P	33.56	18.19
27	Al	3168.05	P	290.60	9.17
28	Si	1223969.00	A	8813.00	0.72
29	Si	95690.43	P	1045.00	1.09
39	K	954149.81	A	8107.00	0.85
43	Ca	144.46	P	29.40	20.35
44	Ca	2918.57	P	257.80	8.83
45	Sc	2572659.00	A	24100.00	0.94
51	V	2300.28	P	462.20	20.09
52	Cr	7842.30	P	290.00	3.70
53	Cr	9658.94	P	273.70	2.83
55	Mn	1123.41	P	36.06	3.21
56	Fe	1591633.00	A	6934.00	0.44
57	Fe	10218.73	P	118.10	1.16
59	Co	100.01	P	17.64	17.64
60	Ni	50.77	P	16.76	33.01
63	Cu	604.48	P	90.34	14.95
65	Cu	272.23	P	41.14	15.11
66	Zn	694.48	P	35.64	5.13
68	Zn	1134.52	P	91.56	8.07
72	Ge	510197.59	P	9729.00	1.91
75	As	-130.50	P	112.20	85.98
82	Se	-13.96	P	5.73	41.03
88	Sr	77.79	P	22.22	28.57
89	Y	3568781.00	A	19720.00	0.55
98	Mo	33.96	P	12.62	37.16
107	Ag	28.89	P	10.71	37.07
109	Ag	18.89	P	5.09	26.96
111	Cd	732.00	P	25.56	3.49
114	Cd	-5.19	P	5.21	100.30
115	In	3455556.00	A	37390.00	1.08
118	Sn	375.57	P	38.49	10.25
120	Sn	544.47	P	40.74	7.48
121	Sb	34.45	P	13.47	39.11
123	Sb	17.78	P	8.39	47.19
135	Ba	16.67	P	6.67	40.00
137	Ba	33.33	P	12.02	36.06
159	Tb	4617151.00	A	98870.00	2.14
182	W	43.34	P	6.67	15.39
203	Tl	143.34	P	18.56	12.95
205	Tl	352.24	P	50.92	14.46
208	Pb	1785.67	P	28.35	1.59
209	Bi	2380666.00	A	19250.00	0.81
232	Th	30.00	P	3.33	11.11
238	U	14.44	P	5.09	35.25

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\014CALI.D\014CALI.D#
Date Acquired: May 15 2018 06:40 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 15 2018 06:38 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	4228799.00	A	216000.00	5.11
9 Be	152613.70	P	1257.00	0.82
11 B	78814.19	P	2795.00	3.55
23 Na	92552320.00	A	2234000.00	2.41
25 Mg	7688719.00	A	205000.00	2.67
27 Al	6962852.00	A	258300.00	3.71
28 Si	5154026.00	A	16410.00	0.32
29 Si	301817.31	P	4024.00	1.33
39 K	93881152.00	A	829600.00	0.88
43 Ca	164702.80	P	1280.00	0.78
44 Ca	2657397.00	A	32810.00	1.23
45 Sc	2724980.00	A	49510.00	1.82
51 V	532087.31	P	7822.00	1.47
52 Cr	449933.50	P	6031.00	1.34
53 Cr	58155.10	P	1043.00	1.79
55 Mn	560630.38	P	3608.00	0.64
56 Fe	93014160.00	A	539800.00	0.58
57 Fe	2275517.00	A	26380.00	1.16
59 Co	487875.50	P	4335.00	0.89
60 Ni	108787.00	P	970.10	0.89
63 Cu	264713.59	P	3171.00	1.20
65 Cu	124439.90	P	825.20	0.66
66 Zn	62862.39	P	434.80	0.69
68 Zn	46481.72	P	291.00	0.63
72 Ge	527192.69	P	2630.00	0.50
75 As	64053.79	P	208.10	0.32
82 Se	4956.27	P	61.62	1.24
88 Sr	692280.50	P	4563.00	0.66
89 Y	3815167.00	A	16830.00	0.44
98 Mo	205716.41	P	1796.00	0.87
107 Ag	326894.00	P	286.90	0.09
109 Ag	312567.50	P	646.30	0.21
111 Cd	66605.33	P	284.30	0.43
114 Cd	145799.09	P	1159.00	0.79
115 In	3594212.00	A	35680.00	0.99
118 Sn	199929.80	P	240.40	0.12
120 Sn	276795.50	P	2570.00	0.93
121 Sb	242972.80	P	1593.00	0.66
123 Sb	185082.41	P	671.20	0.36
135 Ba	60633.48	P	631.40	1.04
137 Ba	105096.90	P	686.10	0.65
159 Tb	4910357.00	A	33770.00	0.69
182 W	242783.30	P	1990.00	0.82
203 Tl	202711.30	P	1717.00	0.85
205 Tl	476911.81	P	5110.00	1.07
208 Pb	649529.81	P	7484.00	1.15
209 Bi	2415771.00	A	34190.00	1.42
232 Th	673026.19	P	5913.00	0.88
238 U	651473.31	P	9462.00	1.45

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4228798.50	5.11	3927738.80	107.7	79.5 - 120.4	
45 Sc	2724980.30	1.82	2572658.80	105.9	79.5 - 120.4	
72 Ge	527192.63	0.50	510197.59	103.3	79.5 - 120.4	
159 Tb	4910357.00	0.69	4617151.00	106.4	79.5 - 120.4	
209 Bi	2415771.30	1.42	2380666.00	101.5	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.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 4000215

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\015_ICV.D\015_ICV.D#
Date Acquired: May 15 2018 06:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	20.02	ppb	3.34	20	100.1	
11 B	21.56	ppb	2.89	20	107.8	
23 Na	3,902.	ppb	2.48	4,000	97.55	
25 Mg	3,846.	ppb	2.73	4,000	96.15	
27 Al	400.1	ppb	2.32	400	100.025	
28 Si	385.8	ppb	6.25	400	96.45	
29 Si	373.7	ppb	8.35	400	93.425	
39 K	3,913.	ppb	1.05	4,000	97.825	
43 Ca	3,960.	ppb	1.85	4,000	99	
44 Ca	4,046.	ppb	1.08	4,000	101.15	
51 V	19.62	ppb	1.68	20	98.1	
52 Cr	19.51	ppb	1.03	20	97.55	
53 Cr	15.59	ppb	2.14	20	77.95	
55 Mn	19.59	ppb	2.82	20	97.95	
56 Fe	3,904.	ppb	2.20	4,000	97.6	
57 Fe	3,993.	ppb	1.58	4,000	99.825	
59 Co	20.05	ppb	1.29	20	100.25	
60 Ni	20.07	ppb	1.29	20	100.35	
63 Cu	19.71	ppb	1.71	20	98.55	
65 Cu	19.96	ppb	1.52	20	99.8	
66 Zn	20.48	ppb	2.54	20	102.4	
68 Zn	20.45	ppb	1.29	20	102.25	
75 As	20.14	ppb	0.75	20	100.7	
82 Se	20.39	ppb	1.50	20	101.95	
88 Sr	19.31	ppb	1.65	20	96.55	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.8	ppb	1.31	40	97	
107 Ag	19.93	ppb	0.43	20	99.65	
109 Ag	19.91	ppb	1.21	20	99.55	
111 Cd	19.97	ppb	1.48	20	99.85	
114 Cd	20.08	ppb	0.60	20	100.4	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.24	ppb	1.13	20	101.2	
120 Sn	19.95	ppb	2.66	20	99.75	
121 Sb	20.33	ppb	1.38	20	101.65	
123 Sb	20.22	ppb	2.59	20	101.1	
135 Ba	20.41	ppb	2.42	20	102.05	
137 Ba	20.03	ppb	0.80	20	100.15	
182 W	19.59	ppb	0.89	20	97.95	
203 Tl	19.91	ppb	1.02	20	99.55	
205 Tl	20.23	ppb	0.59	20	101.15	
208 Pb	19.62	ppb	0.65	20	98.1	
232 Th	19.47	ppb	0.36	20	97.35	
238 U	19.29	ppb	0.67	20	96.45	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4194787.00	3.80	3927738.80	106.8	80 - 120.4	
45 Sc	2776944.30	1.30	2572658.80	107.9	80 - 120.4	
72 Ge	533205.75	0.34	510197.59	104.5	80 - 120.4	
159 Tb	4802040.00	1.02	4617151.00	104.0	80 - 120.4	
209 Bi	2413266.30	1.97	2380666.00	101.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\016_ICB.D\016_ICB.D#
Date Acquired: May 15 2018 06:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0019	ppb	93.34	1.00	
11 B	1.377	ppb	23.18	1.00	
23 Na	0.019	ppb	602.31	1.00	
25 Mg	0.1288	ppb	99.85	1.00	
27 Al	0.0246	ppb	271.67	1.00	
28 Si	-5.674	ppb	115.05	1.00	
29 Si	-6.3	ppb	53.00	1.00	
39 K	-2.315	ppb	21.32	1.00	
43 Ca	-1.577	ppb	90.36	1.00	
44 Ca	0.5523	ppb	115.14	1.00	
51 V	0.1102	ppb	35.61	1.00	
52 Cr	-0.037	ppb	48.53	1.00	
53 Cr	-3.395	ppb	5.08	1.00	
55 Mn	-0.0013	ppb	12.22	1.00	
56 Fe	-0.576	ppb	526.56	1.00	
57 Fe	0.0172	ppb	17237.00	1.00	
59 Co	-0.003	ppb	24.23	1.00	
60 Ni	0.0042	ppb	431.72	1.00	
63 Cu	-0.0026	ppb	423.66	1.00	
65 Cu	0.0091	ppb	63.27	1.00	
66 Zn	0.0665	ppb	100.05	1.00	
68 Zn	-0.1183	ppb	48.17	1.00	
75 As	-0.1336	ppb	22.11	1.00	
82 Se	0.2507	ppb	33.83	1.00	
88 Sr	0.0015	ppb	215.59	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0558	ppb	32.22	1.00	
107 Ag	0.0037	ppb	25.72	1.00	
109 Ag	0.005	ppb	51.07	1.00	
111 Cd	0.0229	ppb	64.04	1.00	
114 Cd	0.002	ppb	182.28	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0403	ppb	5.05	1.00	
120 Sn	0.0333	ppb	26.67	1.00	
121 Sb	0.0065	ppb	36.28	1.00	
123 Sb	0.0095	ppb	20.32	1.00	
135 Ba	0.0039	ppb	213.29	1.00	
137 Ba	-0.0039	ppb	101.64	1.00	
182 W	0.0542	ppb	33.09	1.00	
203 Tl	0.0069	ppb	134.58	1.00	
205 Tl	0.0053	ppb	41.78	1.00	
208 Pb	-0.0054	ppb	103.41	1.00	
232 Th	0.0438	ppb	18.17	1.00	
238 U	0.003	ppb	17.33	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4027835.80	6.79	3927738.80	102.5	79.5 - 120	
45 Sc	2697291.80	0.24	2572658.80	104.8	79.5 - 120	
72 Ge	521111.94	0.99	510197.59	102.1	79.5 - 120	
159 Tb	4620834.50	0.79	4617151.00	100.1	79.5 - 120	
209 Bi	2369894.50	0.72	2380666.00	99.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\017_PQL.D\017_PQL.D#
Date Acquired: May 15 2018 06:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2069	ppb	2.39	0.20	103.45	
11 B	4.574	ppb	1.07	4.00	114.35	
23 Na	194.1	ppb	3.70	200.00	97.05	
25 Mg	19.19	ppb	1.14	20.00	95.95	
27 Al	19.29	ppb	1.73	20.00	96.45	
28 Si	103.1	ppb	5.60	100.00	103.1	
29 Si	102.2	ppb	7.95	100.00	102.2	
39 K	191.1	ppb	2.61	200.00	95.55	
43 Ca	21.83	ppb	11.57	20.00	109.15	
44 Ca	19.83	ppb	6.17	20.00	99.15	
51 V	1.026	ppb	8.88	1.00	102.6	
52 Cr	0.9205	ppb	2.17	1.00	92.05	
53 Cr	-2.266	ppb	11.92	---	#VALUE!	
55 Mn	0.3835	ppb	3.89	0.40	95.875	
56 Fe	15.59	ppb	11.31	20.00	77.95	
57 Fe	19.56	ppb	3.58	20.00	97.8	
59 Co	0.1932	ppb	9.96	0.20	96.6	
60 Ni	0.3786	ppb	4.21	0.40	94.65	
63 Cu	0.592	ppb	6.70	0.60	98.6667	
65 Cu	0.6034	ppb	4.42	0.60	100.567	
66 Zn	2.125	ppb	4.44	2.00	106.25	
68 Zn	1.979	ppb	9.78	2.00	98.95	
75 As	0.9864	ppb	5.23	1.00	98.64	
82 Se	1.156	ppb	20.13	1.00	115.6	
88 Sr	0.961	ppb	0.93	1.00	96.1	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9695	ppb	2.20	1.00	96.95	
107 Ag	0.1977	ppb	5.51	0.20	98.85	
109 Ag	0.206	ppb	7.78	0.20	103	
111 Cd	0.2027	ppb	15.68	0.20	101.35	
114 Cd	0.2031	ppb	2.72	0.20	101.55	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.041	ppb	3.72	1.00	104.1	
120 Sn	1.	ppb	3.13	1.00	100	
121 Sb	0.2042	ppb	7.95	0.20	102.1	
123 Sb	0.2088	ppb	1.39	0.20	104.4	
135 Ba	0.4338	ppb	1.64	0.40	108.45	
137 Ba	0.4102	ppb	10.54	0.40	102.55	
182 W	0.9796	ppb	1.14	1.00	97.96	
203 Tl	0.2056	ppb	8.81	0.20	102.8	
205 Tl	0.1977	ppb	5.54	0.20	98.85	
208 Pb	0.1988	ppb	3.89	0.20	99.4	
232 Th	0.2053	ppb	2.42	0.20	102.65	
238 U	0.1855	ppb	1.14	0.20	92.75	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4007850.30	2.47	3927738.80	102.0	80 - 120.4	
45 Sc	2636955.80	1.28	2572658.80	102.5	80 - 120.4	
72 Ge	518486.31	0.50	510197.59	101.6	80 - 120.4	
159 Tb	4636618.00	1.27	4617151.00	100.4	80 - 120.4	
209 Bi	2377560.50	1.27	2380666.00	99.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000218

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\018SMPL.D\018SMPL.D#
Date Acquired: May 15 2018 06:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	280.24	100.	
11 B	0.3801	0.3801	ppb	20.93	1000.	
23 Na	0.7564	0.7564	ppb	19.61	200000.	
25 Mg	0.0737	0.0737	ppb	83.74	200000.	
27 Al	0.4611	0.4611	ppb	16.48	200000.	
28 Si	7.501	7.501	ppb	101.99	#VALUE!	
29 Si	1.871	1.871	ppb	210.15	10000.	
39 K	0.0609	0.0609	ppb	1292.60	200000.	
43 Ca	2.427	2.427	ppb	95.01	#VALUE!	
44 Ca	0.755	0.755	ppb	78.12	200000.	
51 V	0.0287	0.0287	ppb	218.15	1000.	
52 Cr	-0.0265	-0.0265	ppb	64.66	2000.	
53 Cr	-3.643	-3.643	ppb	9.13	#VALUE!	
55 Mn	0.0029	0.0029	ppb	393.23	2000.	
56 Fe	0.8661	0.8661	ppb	242.47	#VALUE!	
57 Fe	3.266	3.266	ppb	23.52	100000.	
59 Co	0.0007	0.0007	ppb	250.22	1000.	
60 Ni	0.0139	0.0139	ppb	47.32	1000.	
63 Cu	0.1533	0.1533	ppb	11.58	#VALUE!	
65 Cu	0.1408	0.1408	ppb	10.03	2000.	
66 Zn	0.0623	0.0623	ppb	40.34	2000.	
68 Zn	-0.1005	-0.1005	ppb	78.43	#VALUE!	
75 As	0.2061	0.2061	ppb	45.43	1000.	
82 Se	0.3767	0.3767	ppb	30.21	1000.	
88 Sr	0.0023	0.0023	ppb	90.76	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0099	0.0099	ppb	23.56	1000.	
107 Ag	-0.0003	-0.0003	ppb	621.03	100.	
109 Ag	-0.0001	-0.0001	ppb	1862.70	#VALUE!	
111 Cd	0.0268	0.0268	ppb	30.56	#VALUE!	
114 Cd	0.0031	0.0031	ppb	94.74	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.022	0.022	ppb	32.72	1000.	
120 Sn	0.0057	0.0057	ppb	150.83	#VALUE!	
121 Sb	0.0001	0.0001	ppb	371.89	#VALUE!	
123 Sb	0.0002	0.0002	ppb	618.01	1000.	
135 Ba	-0.001	-0.001	ppb	1001.00	2000.	
137 Ba	0.006	0.006	ppb	130.28	#VALUE!	
182 W	0.0127	0.0127	ppb	31.93	1000.	
203 Tl	0.0016	0.0016	ppb	170.09	1000.	
205 Tl	0.004	0.004	ppb	59.74	#VALUE!	
208 Pb	0.1351	0.1351	ppb	9.65	2000.	
232 Th	0.0103	0.0103	ppb	29.53	1000.	
238 U	0.0002	0.0002	ppb	141.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4023215.00	0.34	3927738.80	102.4	69.5 - 120	
45 Sc	2616969.30	1.28	2572658.80	101.7	69.5 - 120	
72 Ge	521151.63	0.95	510197.59	102.1	69.5 - 120	
159 Tb	4666094.00	0.50	4617151.00	101.1	69.5 - 120	
209 Bi	2350265.50	0.59	2380666.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\019ICSA.D\019ICSA.D#
Date Acquired: May 15 2018 07:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	27.91		
11 B	0.712	ppb	4.07		
23 Na	92,410.	ppb	1.45		
25 Mg	89,100.	ppb	1.78		
27 Al	91,500.	ppb	0.87		
28 Si	5.718	ppb	107.69		
29 Si	22.94	ppb	22.37		
39 K	95,450.	ppb	1.80		
43 Ca	100,400.	ppb	1.59		
44 Ca	95,500.	ppb	1.95		
51 V	0.2248	ppb	17.08		
52 Cr	0.9327	ppb	5.69		
53 Cr	-1.512	ppb	16.28		
55 Mn	0.3839	ppb	6.31		
56 Fe	93,270.	ppb	0.69		
57 Fe	90,640.	ppb	0.89		
59 Co	0.102	ppb	14.38		
60 Ni	-0.3109	ppb	10.65		
63 Cu	3.713	ppb	2.67		
65 Cu	1.001	ppb	6.41		
66 Zn	2.485	ppb	2.69		
68 Zn	0.3877	ppb	38.41		
75 As	0.2878	ppb	38.08		
82 Se	0.2531	ppb	39.71		
88 Sr	0.8955	ppb	2.13		
89 Y	--------	---	--------		
98 Mo	1,911.	ppb	1.33		
107 Ag	0.0211	ppb	18.21		
109 Ag	0.0217	ppb	8.03		
111 Cd	0.0629	ppb	50.54		
114 Cd	0.0374	ppb	59.40		
115 In	--------	---	--------		
118 Sn	0.0586	ppb	5.87		
120 Sn	0.0568	ppb	10.22		
121 Sb	0.0408	ppb	9.81		
123 Sb	0.0503	ppb	5.31		
135 Ba	0.0954	ppb	17.52		
137 Ba	0.0867	ppb	14.49		
182 W	0.2285	ppb	4.39		
203 Tl	0.0049	ppb	86.14		
205 Tl	0.0054	ppb	122.31		
208 Pb	0.0583	ppb	6.57		
232 Th	0.0589	ppb	16.21		
238 U	0.0002	ppb	287.77		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3656458.80	2.00	3927738.80	93.1	69.5 - 120.4	
45 Sc	2738870.50	0.42	2572658.80	106.5	69.5 - 120.4	
72 Ge	532628.50	1.10	510197.59	104.4	69.5 - 120.4	
159 Tb	4788053.50	1.01	4617151.00	103.7	69.5 - 120.4	
209 Bi	2163522.80	1.25	2380666.00	90.9	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\020ICSB.D\020ICSB.D#
Date Acquired: May 15 2018 07:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	21.05	ppb	1.21	20.00	79.5 - 120	
11 B	22.67	ppb	3.10	20.00	79.5 - 120	
23 Na	94,170.	ppb	3.08	#########	79.5 - 120	
25 Mg	91,850.	ppb	6.27	#########	79.5 - 120	
27 Al	93,940.	ppb	4.47	#########	79.5 - 120	
28 Si	491.5	ppb	6.43	---	##### - #####	
29 Si	513.3	ppb	6.89	---	##### - #####	
39 K	97,210.	ppb	3.26	#########	79.5 - 120	
43 Ca	102,000.	ppb	4.71	#########	79.5 - 120	
44 Ca	96,200.	ppb	2.57	#########	79.5 - 120	
51 V	19.81	ppb	2.04	20.00	79.5 - 120	
52 Cr	20.13	ppb	1.70	20.00	79.5 - 120	
53 Cr	19.85	ppb	1.44	---	##### - #####	
55 Mn	19.54	ppb	1.23	20.00	79.5 - 120	
56 Fe	94,150.	ppb	1.62	#########	79.5 - 120	
57 Fe	91,150.	ppb	1.14	#########	79.5 - 120	
59 Co	19.25	ppb	0.83	20.00	79.5 - 120	
60 Ni	18.31	ppb	1.12	20.00	79.5 - 120	
63 Cu	21.72	ppb	0.97	20.00	79.5 - 120	
65 Cu	19.39	ppb	1.38	20.00	79.5 - 120	
66 Zn	20.19	ppb	2.02	20.00	79.5 - 120	
68 Zn	18.2	ppb	0.81	20.00	79.5 - 120	
75 As	19.62	ppb	0.38	20.00	79.5 - 120	
82 Se	19.32	ppb	2.20	20.00	79.5 - 120	
88 Sr	20.65	ppb	1.44	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,960.	ppb	1.27	2000.00	79.5 - 120	
107 Ag	18.35	ppb	1.18	20.00	79.5 - 120	
109 Ag	18.31	ppb	1.37	20.00	79.5 - 120	
111 Cd	18.45	ppb	1.24	20.00	79.5 - 120	
114 Cd	18.49	ppb	1.43	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	20.3	ppb	2.74	20.00	79.5 - 120	
120 Sn	20.09	ppb	1.46	20.00	79.5 - 120	
121 Sb	20.11	ppb	1.32	20.00	79.5 - 120	
123 Sb	20.	ppb	2.28	20.00	79.5 - 120	
135 Ba	20.62	ppb	1.15	20.00	79.5 - 120	
137 Ba	20.31	ppb	1.83	20.00	79.5 - 120	
182 W	20.4	ppb	2.30	20.00	79.5 - 120	
203 Tl	20.88	ppb	2.29	20.00	79.5 - 120	
205 Tl	20.86	ppb	2.06	20.00	79.5 - 120	
208 Pb	20.8	ppb	2.40	20.00	79.5 - 120	
232 Th	22.	ppb	2.16	20.00	79.5 - 120	
238 U	21.27	ppb	3.12	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3673971.30	0.44	3927738.80	93.5	69.5 - 120	
45 Sc	2730908.80	2.94	2572658.80	106.2	69.5 - 120	
72 Ge	532965.44	0.39	510197.59	104.5	69.5 - 120	
159 Tb	4854034.00	1.28	4617151.00	105.1	69.5 - 120	
209 Bi	2181126.50	2.02	2380666.00	91.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\021SMPL.D\021SMPL.D#
Date Acquired: May 15 2018 07:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	85.96	100.	
11 B	0.4679	0.4679	ppb	22.36	1000.	
23 Na	3.994	3.994	ppb	2.06	200000.	
25 Mg	0.5611	0.5611	ppb	27.62	200000.	
27 Al	0.8498	0.8498	ppb	8.44	200000.	
28 Si	8.632	8.632	ppb	167.28	#VALUE!	
29 Si	-13.32	-13.32	ppb	77.40	10000.	
39 K	-2.2	-2.2	ppb	150.73	200000.	
43 Ca	-0.4594	-0.4594	ppb	333.48	#VALUE!	
44 Ca	2.567	2.567	ppb	29.74	200000.	
51 V	-0.0025	-0.0025	ppb	1716.40	1000.	
52 Cr	0.0551	0.0551	ppb	46.79	2000.	
53 Cr	-0.5508	-0.5508	ppb	47.22	#VALUE!	
55 Mn	0.077	0.077	ppb	10.30	2000.	
56 Fe	2.44	2.44	ppb	137.05	#VALUE!	
57 Fe	4.926	4.926	ppb	20.52	100000.	
59 Co	-0.0004	-0.0004	ppb	886.64	1000.	
60 Ni	0.0084	0.0084	ppb	119.41	1000.	
63 Cu	0.1961	0.1961	ppb	8.80	#VALUE!	
65 Cu	0.2026	0.2026	ppb	7.52	2000.	
66 Zn	0.1233	0.1233	ppb	52.00	2000.	
68 Zn	0.0909	0.0909	ppb	73.82	#VALUE!	
75 As	0.1111	0.1111	ppb	146.44	1000.	
82 Se	0.0108	0.0108	ppb	157.47	1000.	
88 Sr	0.0007	0.0007	ppb	295.56	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.031	1.031	ppb	37.41	1000.	
107 Ag	0.0013	0.0013	ppb	133.48	100.	
109 Ag	0.0036	0.0036	ppb	38.21	#VALUE!	
111 Cd	-0.0179	-0.0179	ppb	246.88	#VALUE!	
114 Cd	0.0004	0.0004	ppb	701.98	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0158	0.0158	ppb	30.69	1000.	
120 Sn	0.0202	0.0202	ppb	21.01	#VALUE!	
121 Sb	-0.0007	-0.0007	ppb	70.86	#VALUE!	
123 Sb	0.0051	0.0051	ppb	95.87	1000.	
135 Ba	0.0573	0.0573	ppb	27.16	2000.	
137 Ba	0.0336	0.0336	ppb	41.79	#VALUE!	
182 W	0.0094	0.0094	ppb	48.14	1000.	
203 Tl	0.0072	0.0072	ppb	139.60	1000.	
205 Tl	0.0078	0.0078	ppb	15.42	#VALUE!	
208 Pb	0.115	0.115	ppb	3.95	2000.	
232 Th	0.0101	0.0101	ppb	10.39	1000.	
238 U	0.0014	0.0014	ppb	17.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3877507.00	2.57	3927738.80	98.7	69.5 - 120	
45 Sc	2636587.00	2.04	2572658.80	102.5	69.5 - 120	
72 Ge	517748.88	1.00	510197.59	101.5	69.5 - 120	
159 Tb	4583198.00	1.51	4617151.00	99.3	69.5 - 120	
209 Bi	2337929.80	2.18	2380666.00	98.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000222

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\022SMPL.D\022SMPL.D#
Date Acquired: May 15 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	100.8	100.8	ppb	2.27	100.	>LDR
11 B	0.2195	0.2195	ppb	6.38	1000.	
23 Na	11.36	11.36	ppb	123.94	200000.	
25 Mg	8.451	8.451	ppb	153.00	200000.	
27 Al	10.02	10.02	ppb	136.93	200000.	
28 Si	-11.74	-11.74	ppb	54.42	#VALUE!	
29 Si	-13.3	-13.3	ppb	103.38	10000.	
39 K	4.706	4.706	ppb	293.03	200000.	
43 Ca	1,468.	1,468.	ppb	1.49	#VALUE!	
44 Ca	117.1	117.1	ppb	6.56	200000.	
51 V	1,019.	1,019.	ppb	2.23	1000.	>LDR
52 Cr	2,021.	2,021.	ppb	1.74	2000.	>LDR
53 Cr	2,215.	2,215.	ppb	1.47	#VALUE!	
55 Mn	1,962.	1,962.	ppb	0.64	2000.	
56 Fe	2.243	2.243	ppb	638.88	#VALUE!	
57 Fe	2.776	2.776	ppb	381.48	100000.	
59 Co	1,010.	1,010.	ppb	2.67	1000.	>LDR
60 Ni	1,027.	1,027.	ppb	2.19	1000.	>LDR
63 Cu	1,964.	1,964.	ppb	1.28	#VALUE!	
65 Cu	2,002.	2,002.	ppb	1.62	2000.	>LDR
66 Zn	2,051.	2,051.	ppb	1.56	2000.	>LDR
68 Zn	2,058.	2,058.	ppb	1.76	#VALUE!	
75 As	1,042.	1,042.	ppb	2.49	1000.	>LDR
82 Se	1,071.	1,071.	ppb	0.85	1000.	>LDR
88 Sr	1,926.	1,926.	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,004.	1,004.	ppb	1.27	1000.	>LDR
107 Ag	106.7	106.7	ppb	1.11	100.	>LDR
109 Ag	106.7	106.7	ppb	0.06	#VALUE!	
111 Cd	1,041.	1,041.	ppb	0.90	#VALUE!	
114 Cd	1,012.	1,012.	ppb	1.19	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,003.	1,003.	ppb	1.61	1000.	>LDR
120 Sn	992.	992.	ppb	1.09	#VALUE!	
121 Sb	1,011.	1,011.	ppb	0.93	#VALUE!	
123 Sb	1,023.	1,023.	ppb	0.45	1000.	>LDR
135 Ba	2,046.	2,046.	ppb	0.78	2000.	>LDR
137 Ba	2,011.	2,011.	ppb	1.67	#VALUE!	
182 W	987.7	987.7	ppb	0.62	1000.	
203 Tl	976.3	976.3	ppb	0.73	1000.	
205 Tl	971.6	971.6	ppb	0.44	#VALUE!	
208 Pb	1,925.	1,925.	ppb	0.33	2000.	
232 Th	954.	954.	ppb	0.37	1000.	
238 U	944.5	944.5	ppb	0.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065653.30	1.26	3927738.80	103.5	69.5 - 120	
45 Sc	2626603.30	2.57	2572658.80	102.1	69.5 - 120	
72 Ge	504165.38	2.93	510197.59	98.8	69.5 - 120	
159 Tb	4681912.50	1.99	4617151.00	101.4	69.5 - 120	
209 Bi	2434879.30	1.09	2380666.00	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

15 :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 4000223

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\023SMPL.D\023SMPL.D#
Date Acquired: May 15 2018 07:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	0.0078	0.0078	ppb	40.27	100.	
11 B	0.587	0.587	ppb	5.08	1000.	
23 Na	185,300.	185,300.	ppb	2.58	200000.	
25 Mg	180,600.	180,600.	ppb	1.22	200000.	
27 Al	188,400.	188,400.	ppb	1.12	200000.	
28 Si	9,750.	9,750.	ppb	0.61	#VALUE!	
29 Si	10,270.	10,270.	ppb	1.10	10000.	>LDR
39 K	185,900.	185,900.	ppb	1.19	200000.	
43 Ca	190,600.	190,600.	ppb	0.61	#VALUE!	
44 Ca	187,800.	187,800.	ppb	0.95	200000.	
51 V	0.2079	0.2079	ppb	27.21	1000.	
52 Cr	2.884	2.884	ppb	1.65	2000.	
53 Cr	-1.937	-1.937	ppb	23.20	#VALUE!	
55 Mn	7.344	7.344	ppb	1.21	2000.	
56 Fe	92,580.	92,580.	ppb	1.02	#VALUE!	
57 Fe	89,580.	89,580.	ppb	0.98	100000.	
59 Co	2.682	2.682	ppb	1.06	1000.	
60 Ni	2.983	2.983	ppb	3.88	1000.	
63 Cu	9.04	9.04	ppb	1.13	#VALUE!	
65 Cu	2.837	2.837	ppb	1.67	2000.	
66 Zn	3.443	3.443	ppb	2.33	2000.	
68 Zn	1.031	1.031	ppb	13.18	#VALUE!	
75 As	0.3915	0.3915	ppb	37.42	1000.	
82 Se	0.727	0.727	ppb	15.59	1000.	
88 Sr	6.685	6.685	ppb	1.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.423	1.423	ppb	30.59	1000.	
107 Ag	0.3459	0.3459	ppb	3.06	100.	
109 Ag	0.3428	0.3428	ppb	4.29	#VALUE!	
111 Cd	0.0489	0.0489	ppb	34.39	#VALUE!	
114 Cd	0.0038	0.0038	ppb	150.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.7044	0.7044	ppb	9.76	1000.	
120 Sn	0.7106	0.7106	ppb	6.46	#VALUE!	
121 Sb	0.2144	0.2144	ppb	7.82	#VALUE!	
123 Sb	0.2205	0.2205	ppb	11.74	1000.	
135 Ba	0.2637	0.2637	ppb	17.07	2000.	
137 Ba	0.2318	0.2318	ppb	10.24	#VALUE!	
182 W	1.383	1.383	ppb	31.83	1000.	
203 Tl	0.0382	0.0382	ppb	16.66	1000.	
205 Tl	0.0341	0.0341	ppb	16.80	#VALUE!	
208 Pb	0.4741	0.4741	ppb	4.05	2000.	
232 Th	1.481	1.481	ppb	35.79	1000.	
238 U	0.1043	0.1043	ppb	9.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3663938.30	4.80	3927738.80	93.3	69.5 - 120	
45 Sc	2800012.80	3.57	2572658.80	108.8	69.5 - 120	
72 Ge	521149.97	2.05	510197.59	102.1	69.5 - 120	
159 Tb	4434250.50	1.54	4617151.00	96.0	69.5 - 120	
209 Bi	1849094.40	1.90	2380666.00	77.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.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 4000224

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\024SMPL.D\024SMPL.D#
Date Acquired: May 15 2018 07:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	54.23	100.	
11 B	0.1518	0.1518	ppb	15.90	1000.	
23 Na	19.35	19.35	ppb	64.44	200000.	
25 Mg	10.08	10.08	ppb	111.11	200000.	
27 Al	10.01	10.01	ppb	107.59	200000.	
28 Si	23.15	23.15	ppb	45.01	#VALUE!	
29 Si	-0.6374	-0.6374	ppb	2414.50	10000.	
39 K	10.1	10.1	ppb	143.17	200000.	
43 Ca	6.926	6.926	ppb	117.46	#VALUE!	
44 Ca	10.81	10.81	ppb	110.64	200000.	
51 V	0.0198	0.0198	ppb	186.13	1000.	
52 Cr	0.0884	0.0884	ppb	42.14	2000.	
53 Cr	2.746	2.746	ppb	12.92	#VALUE!	
55 Mn	0.0814	0.0814	ppb	2.70	2000.	
56 Fe	14.01	14.01	ppb	63.31	#VALUE!	
57 Fe	11.27	11.27	ppb	62.43	100000.	
59 Co	0.0038	0.0038	ppb	21.45	1000.	
60 Ni	0.0237	0.0237	ppb	26.10	1000.	
63 Cu	0.238	0.238	ppb	11.23	#VALUE!	
65 Cu	0.2157	0.2157	ppb	8.17	2000.	
66 Zn	0.2182	0.2182	ppb	11.52	2000.	
68 Zn	0.12	0.12	ppb	101.58	#VALUE!	
75 As	0.0314	0.0314	ppb	219.20	1000.	
82 Se	0.0859	0.0859	ppb	157.36	1000.	
88 Sr	0.0073	0.0073	ppb	46.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.201	0.201	ppb	42.56	1000.	
107 Ag	0.0035	0.0035	ppb	71.72	100.	
109 Ag	0.0029	0.0029	ppb	24.36	#VALUE!	
111 Cd	-0.0076	-0.0076	ppb	255.91	#VALUE!	
114 Cd	0.0025	0.0025	ppb	148.82	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1086	0.1086	ppb	11.54	1000.	
120 Sn	0.109	0.109	ppb	14.85	#VALUE!	
121 Sb	0.0355	0.0355	ppb	17.18	#VALUE!	
123 Sb	0.0372	0.0372	ppb	13.32	1000.	
135 Ba	0.0459	0.0459	ppb	38.60	2000.	
137 Ba	0.0462	0.0462	ppb	17.98	#VALUE!	
182 W	0.237	0.237	ppb	34.55	1000.	
203 Tl	0.0151	0.0151	ppb	71.93	1000.	
205 Tl	0.0106	0.0106	ppb	28.20	#VALUE!	
208 Pb	0.1204	0.1204	ppb	10.76	2000.	
232 Th	0.067	0.067	ppb	41.51	1000.	
238 U	0.0056	0.0056	ppb	49.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065809.50	3.56	3927738.80	103.5	69.5 - 120	
45 Sc	2737375.50	1.91	2572658.80	106.4	69.5 - 120	
72 Ge	531000.00	1.62	510197.59	104.1	69.5 - 120	
159 Tb	4532983.50	0.78	4617151.00	98.2	69.5 - 120	
209 Bi	2228511.50	1.56	2380666.00	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\025SMPL.D\025SMPL.D#
Date Acquired: May 15 2018 07:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	385.86	100.	
11 B	0.1135	0.1135	ppb	22.78	1000.	
23 Na	5.058	5.058	ppb	12.95	200000.	
25 Mg	0.6796	0.6796	ppb	12.39	200000.	
27 Al	0.9582	0.9582	ppb	4.51	200000.	
28 Si	15.17	15.17	ppb	24.00	#VALUE!	
29 Si	-6.024	-6.024	ppb	181.94	10000.	
39 K	-1.02	-1.02	ppb	226.67	200000.	
43 Ca	0.4981	0.4981	ppb	498.49	#VALUE!	
44 Ca	2.123	2.123	ppb	41.75	200000.	
51 V	0.1367	0.1367	ppb	52.36	1000.	
52 Cr	0.0763	0.0763	ppb	15.89	2000.	
53 Cr	2.089	2.089	ppb	2.67	#VALUE!	
55 Mn	0.0763	0.0763	ppb	13.19	2000.	
56 Fe	2.257	2.257	ppb	186.00	#VALUE!	
57 Fe	2.905	2.905	ppb	71.02	100000.	
59 Co	0.005	0.005	ppb	8.91	1000.	
60 Ni	0.0173	0.0173	ppb	119.57	1000.	
63 Cu	0.1703	0.1703	ppb	2.40	#VALUE!	
65 Cu	0.2131	0.2131	ppb	10.14	2000.	
66 Zn	0.1996	0.1996	ppb	23.12	2000.	
68 Zn	0.0702	0.0702	ppb	98.66	#VALUE!	
75 As	0.1714	0.1714	ppb	112.37	1000.	
82 Se	0.1946	0.1946	ppb	134.02	1000.	
88 Sr	0.0007	0.0007	ppb	248.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0716	0.0716	ppb	27.42	1000.	
107 Ag	0.0025	0.0025	ppb	52.30	100.	
109 Ag	0.0017	0.0017	ppb	144.07	#VALUE!	
111 Cd	-0.0211	-0.0211	ppb	194.25	#VALUE!	
114 Cd	0.0032	0.0032	ppb	55.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.05	0.05	ppb	8.75	1000.	
120 Sn	0.0602	0.0602	ppb	22.18	#VALUE!	
121 Sb	0.0158	0.0158	ppb	48.58	#VALUE!	
123 Sb	0.0214	0.0214	ppb	20.04	1000.	
135 Ba	0.0476	0.0476	ppb	34.20	2000.	
137 Ba	0.0458	0.0458	ppb	18.78	#VALUE!	
182 W	0.0933	0.0933	ppb	29.06	1000.	
203 Tl	0.0117	0.0117	ppb	65.94	1000.	
205 Tl	0.0059	0.0059	ppb	87.85	#VALUE!	
208 Pb	0.1249	0.1249	ppb	4.24	2000.	
232 Th	0.0501	0.0501	ppb	27.72	1000.	
238 U	0.001	0.001	ppb	132.54	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4143091.50	2.40	3927738.80	105.5	69.5 - 120	
45 Sc	2683343.00	1.83	2572658.80	104.3	69.5 - 120	
72 Ge	524120.78	0.64	510197.59	102.7	69.5 - 120	
159 Tb	4561281.50	0.38	4617151.00	98.8	69.5 - 120	
209 Bi	2310591.30	0.90	2380666.00	97.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\026_CCV.D\026_CCV.D#
Date Acquired: May 15 2018 07:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.37	ppb	1.18	25	101.48	
11 B	24.91	ppb	3.35	25	99.64	
23 Na	4,828.	ppb	0.96	5,000	96.56	
25 Mg	4,845.	ppb	0.31	5,000	96.9	
27 Al	490.7	ppb	1.09	500	98.14	
28 Si	477.5	ppb	1.89	500	95.5	
29 Si	464.1	ppb	2.61	500	92.82	
39 K	4,833.	ppb	1.29	5,000	96.66	
43 Ca	4,876.	ppb	0.88	5,000	97.52	
44 Ca	4,941.	ppb	1.36	5,000	98.82	
51 V	24.51	ppb	0.52	25	98.04	
52 Cr	24.81	ppb	0.68	25	99.24	
53 Cr	24.81	ppb	4.33	25	99.24	
55 Mn	24.52	ppb	1.34	25	98.08	
56 Fe	4,816.	ppb	0.79	5,000	96.32	
57 Fe	4,942.	ppb	0.58	5,000	98.84	
59 Co	24.93	ppb	0.78	25	99.72	
60 Ni	24.56	ppb	0.81	25	98.24	
63 Cu	24.74	ppb	1.02	25	98.96	
65 Cu	24.93	ppb	2.15	25	99.72	
66 Zn	24.6	ppb	0.35	25	98.4	
68 Zn	24.54	ppb	2.24	25	98.16	
75 As	24.92	ppb	0.33	25	99.68	
82 Se	25.33	ppb	1.20	25	101.32	
88 Sr	24.37	ppb	0.89	25	97.48	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.72	ppb	0.29	25	98.88	
107 Ag	24.8	ppb	0.53	25	99.2	
109 Ag	24.88	ppb	0.74	25	99.52	
111 Cd	24.64	ppb	1.17	25	98.56	
114 Cd	24.93	ppb	0.57	25	99.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.89	ppb	1.35	25	99.56	
120 Sn	24.84	ppb	1.92	25	99.36	
121 Sb	25.27	ppb	1.81	25	101.08	
123 Sb	25.35	ppb	1.24	25	101.4	
135 Ba	25.44	ppb	0.99	25	101.76	
137 Ba	25.29	ppb	1.79	25	101.16	
182 W	24.44	ppb	2.32	25	97.76	
203 Tl	24.23	ppb	0.44	25	96.92	
205 Tl	24.26	ppb	0.78	25	97.04	
208 Pb	24.35	ppb	0.35	25	97.4	
232 Th	23.63	ppb	1.55	25	94.52	
238 U	23.69	ppb	0.66	25	94.76	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4096449.00	1.77	3927738.80	104.3	80 - 120.4	
45 Sc	2740937.00	1.28	2572658.80	106.5	80 - 120.4	
72 Ge	520514.56	0.41	510197.59	102.0	80 - 120.4	
159 Tb	4732701.50	0.56	4617151.00	102.5	80 - 120.4	
209 Bi	2416532.30	0.56	2380666.00	101.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\027_CCB.D\027_CCB.D#
Date Acquired: May 15 2018 07:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0011	ppb	213.05	1.00	
11 B	0.965	ppb	25.54	1.00	
23 Na	3.869	ppb	10.12	1.00	
25 Mg	0.5357	ppb	80.66	1.00	
27 Al	0.1798	ppb	74.53	1.00	
28 Si	7.003	ppb	32.63	1.00	
29 Si	-5.388	ppb	9.42	1.00	
39 K	-0.1349	ppb	1570.10	1.00	
43 Ca	-0.0073	ppb	21779.00	1.00	
44 Ca	2.206	ppb	8.73	1.00	
51 V	0.0672	ppb	74.14	1.00	
52 Cr	-0.036	ppb	14.04	1.00	
53 Cr	-1.145	ppb	18.93	1.00	
55 Mn	0.0044	ppb	81.19	1.00	
56 Fe	-3.265	ppb	40.06	1.00	
57 Fe	0.1393	ppb	1117.70	1.00	
59 Co	-0.0001	ppb	1988.70	1.00	
60 Ni	0.0061	ppb	188.86	1.00	
63 Cu	0.0201	ppb	49.32	1.00	
65 Cu	0.0245	ppb	36.03	1.00	
66 Zn	0.1076	ppb	51.39	1.00	
68 Zn	-0.0771	ppb	121.94	1.00	
75 As	0.2815	ppb	44.73	1.00	
82 Se	0.2666	ppb	101.76	1.00	
88 Sr	0.0019	ppb	165.64	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0513	ppb	37.49	1.00	
107 Ag	0.0033	ppb	27.01	1.00	
109 Ag	0.0032	ppb	107.70	1.00	
111 Cd	0.0092	ppb	105.82	1.00	
114 Cd	0.0002	ppb	1746.70	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0506	ppb	15.98	1.00	
120 Sn	0.0518	ppb	17.63	1.00	
121 Sb	0.0172	ppb	31.07	1.00	
123 Sb	0.0152	ppb	45.79	1.00	
135 Ba	0.0327	ppb	15.69	1.00	
137 Ba	0.0139	ppb	43.52	1.00	
182 W	0.0687	ppb	42.36	1.00	
203 Tl	0.0049	ppb	195.59	1.00	
205 Tl	0.0024	ppb	135.25	1.00	
208 Pb	-0.0218	ppb	10.92	1.00	
232 Th	0.0766	ppb	21.18	1.00	
238 U	0.0032	ppb	40.96	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4060173.80	1.80	3927738.80	103.4	79.5 - 120	
45 Sc	2641437.00	2.03	2572658.80	102.7	79.5 - 120	
72 Ge	514198.72	0.24	510197.59	100.8	79.5 - 120	
159 Tb	4567900.50	0.40	4617151.00	98.9	79.5 - 120	
209 Bi	2342393.50	0.69	2380666.00	98.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\028SMPL.D\028SMPL.D#
Date Acquired: May 15 2018 07:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE14IMW1
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	1063.80	100.	
11 B	0.452	0.452	ppb	7.04	1000.	
23 Na	9.306	9.306	ppb	1.40	200000.	
25 Mg	8.295	8.295	ppb	6.49	200000.	
27 Al	4.447	4.447	ppb	5.53	200000.	
28 Si	30.35	30.35	ppb	33.61	#VALUE!	
29 Si	20.66	20.66	ppb	30.06	10000.	
39 K	2.143	2.143	ppb	33.54	200000.	
43 Ca	1.724	1.724	ppb	82.48	#VALUE!	
44 Ca	3.39	3.39	ppb	31.24	200000.	
51 V	0.0761	0.0761	ppb	55.57	1000.	
52 Cr	0.0368	0.0368	ppb	29.17	2000.	
53 Cr	-0.747	-0.747	ppb	18.59	#VALUE!	
55 Mn	0.0414	0.0414	ppb	11.16	2000.	
56 Fe	-1.418	-1.418	ppb	120.59	#VALUE!	
57 Fe	1.524	1.524	ppb	106.50	100000.	
59 Co	0.0048	0.0048	ppb	19.23	1000.	
60 Ni	0.0151	0.0151	ppb	19.91	1000.	
63 Cu	0.0381	0.0381	ppb	11.59	#VALUE!	
65 Cu	0.0137	0.0137	ppb	119.02	2000.	
66 Zn	0.1297	0.1297	ppb	36.45	2000.	
68 Zn	-0.0711	-0.0711	ppb	79.76	#VALUE!	
75 As	-0.0295	-0.0295	ppb	26.44	1000.	
82 Se	0.0152	0.0152	ppb	938.61	1000.	
88 Sr	0.0076	0.0076	ppb	37.81	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0188	0.0188	ppb	34.51	1000.	
107 Ag	0.0008	0.0008	ppb	77.32	100.	
109 Ag	0.0015	0.0015	ppb	204.05	#VALUE!	
111 Cd	0.0148	0.0148	ppb	184.37	#VALUE!	
114 Cd	0.0014	0.0014	ppb	279.38	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0593	0.0593	ppb	25.67	1000.	
120 Sn	0.0526	0.0526	ppb	6.35	#VALUE!	
121 Sb	0.0081	0.0081	ppb	16.68	#VALUE!	
123 Sb	0.0106	0.0106	ppb	49.46	1000.	
135 Ba	0.0234	0.0234	ppb	36.24	2000.	
137 Ba	0.0172	0.0172	ppb	10.82	#VALUE!	
182 W	0.029	0.029	ppb	30.82	1000.	
203 Tl	0.0056	0.0056	ppb	117.96	1000.	
205 Tl	0.0053	0.0053	ppb	68.33	#VALUE!	
208 Pb	-0.0182	-0.0182	ppb	21.90	2000.	
232 Th	0.043	0.043	ppb	24.31	1000.	
238 U	0.0001	0.0001	ppb	462.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3923622.00	3.77	3927738.80	99.9	69.5 - 120	
45 Sc	2555535.30	1.18	2572658.80	99.3	69.5 - 120	
72 Ge	506190.56	1.49	510197.59	99.2	69.5 - 120	
159 Tb	4500283.50	0.45	4617151.00	97.5	69.5 - 120	
209 Bi	2313382.30	1.08	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000229

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\029SMPL.D\029SMPL.D#
Date Acquired: May 15 2018 07:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE14IMW1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	49.775	9.955	ppb	0.97	100.	
11 B	522.	104.4	ppb	1.84	1000.	
23 Na	7,425.	1,485.	ppb	3.37	200000.	
25 Mg	5,065.	1,013.	ppb	2.19	200000.	
27 Al	2,055.5	411.1	ppb	3.21	200000.	
28 Si	1,060.	212.	ppb	2.40	#VALUE!	
29 Si	955.5	191.1	ppb	5.34	10000.	
39 K	10,020.	2,004.	ppb	2.00	200000.	
43 Ca	2,945.5	589.1	ppb	3.91	#VALUE!	
44 Ca	2,519.	503.8	ppb	2.02	200000.	
51 V	503.5	100.7	ppb	1.21	1000.	
52 Cr	196.65	39.33	ppb	0.68	2000.	
53 Cr	212.5	42.5	ppb	1.38	#VALUE!	
55 Mn	507.	101.4	ppb	1.50	2000.	
56 Fe	977.5	195.5	ppb	3.09	#VALUE!	
57 Fe	972.5	194.5	ppb	1.43	100000.	
59 Co	517.5	103.5	ppb	0.81	1000.	
60 Ni	512.5	102.5	ppb	0.71	1000.	
63 Cu	248.7	49.74	ppb	1.83	#VALUE!	
65 Cu	253.95	50.79	ppb	0.34	2000.	
66 Zn	522.	104.4	ppb	0.58	2000.	
68 Zn	577.5	115.5	ppb	0.98	#VALUE!	
75 As	104.35	20.87	ppb	0.44	1000.	
82 Se	104.3	20.86	ppb	2.96	1000.	
88 Sr	489.9	97.98	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.1	20.02	ppb	0.92	1000.	
107 Ag	50.95	10.19	ppb	0.31	100.	
109 Ag	51.2	10.24	ppb	1.58	#VALUE!	
111 Cd	254.1	50.82	ppb	0.54	#VALUE!	
114 Cd	255.2	51.04	ppb	1.23	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	506.	101.2	ppb	1.18	1000.	
120 Sn	508.5	101.7	ppb	1.33	#VALUE!	
121 Sb	104.65	20.93	ppb	1.65	#VALUE!	
123 Sb	103.2	20.64	ppb	1.69	1000.	
135 Ba	2,045.5	409.1	ppb	1.50	2000.	
137 Ba	2,049.5	409.9	ppb	1.20	#VALUE!	
182 W	98.8	19.76	ppb	1.41	1000.	
203 Tl	99.1	19.82	ppb	2.38	1000.	
205 Tl	99.6	19.92	ppb	1.74	#VALUE!	
208 Pb	100.15	20.03	ppb	1.44	2000.	
232 Th	93.4	18.68	ppb	1.90	1000.	
238 U	96.8	19.36	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4120364.50	3.12	3927738.80	104.9	69.5 - 120	
45 Sc	2650621.80	2.66	2572658.80	103.0	69.5 - 120	
72 Ge	509866.78	2.02	510197.59	99.9	69.5 - 120	
159 Tb	4653340.00	2.06	4617151.00	100.8	69.5 - 120	
209 Bi	2394147.80	1.71	2380666.00	100.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\030SMPL.D\030SMPL.D#
Date Acquired: May 15 2018 07:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4085-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.1175	0.1175	ppb	15.15	100.	
11 B	15.69	15.69	ppb	3.80	1000.	
23 Na	39,940.	39,940.	ppb	1.87	200000.	
25 Mg	962.9	962.9	ppb	0.60	200000.	
27 Al	49.07	49.07	ppb	2.78	200000.	
28 Si	4,228.	4,228.	ppb	2.80	#VALUE!	
29 Si	4,548.	4,548.	ppb	2.10	10000.	
39 K	1,113.	1,113.	ppb	1.45	200000.	
43 Ca	6,408.	6,408.	ppb	1.36	#VALUE!	
44 Ca	6,454.	6,454.	ppb	0.45	200000.	
51 V	0.1515	0.1515	ppb	34.49	1000.	
52 Cr	0.2455	0.2455	ppb	6.71	2000.	
53 Cr	2.601	2.601	ppb	99.92	#VALUE!	
55 Mn	23.02	23.02	ppb	0.51	2000.	
56 Fe	419.3	419.3	ppb	2.33	#VALUE!	
57 Fe	434.7	434.7	ppb	1.50	100000.	
59 Co	0.0608	0.0608	ppb	15.02	1000.	
60 Ni	0.6908	0.6908	ppb	3.18	1000.	
63 Cu	71.28	71.28	ppb	0.47	#VALUE!	
65 Cu	70.51	70.51	ppb	1.25	2000.	
66 Zn	36.63	36.63	ppb	0.64	2000.	
68 Zn	35.58	35.58	ppb	0.97	#VALUE!	
75 As	0.0923	0.0923	ppb	178.01	1000.	
82 Se	0.0632	0.0632	ppb	403.20	1000.	
88 Sr	73.15	73.15	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1159	0.1159	ppb	13.62	1000.	
107 Ag	0.0144	0.0144	ppb	14.83	100.	
109 Ag	0.0161	0.0161	ppb	10.08	#VALUE!	
111 Cd	0.0471	0.0471	ppb	35.95	#VALUE!	
114 Cd	0.0656	0.0656	ppb	6.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3867	0.3867	ppb	4.91	1000.	
120 Sn	0.3872	0.3872	ppb	4.50	#VALUE!	
121 Sb	0.0279	0.0279	ppb	17.94	#VALUE!	
123 Sb	0.0383	0.0383	ppb	15.61	1000.	
135 Ba	6.841	6.841	ppb	1.68	2000.	
137 Ba	6.941	6.941	ppb	0.31	#VALUE!	
182 W	0.0556	0.0556	ppb	17.32	1000.	
203 Tl	0.0221	0.0221	ppb	31.92	1000.	
205 Tl	0.0243	0.0243	ppb	12.24	#VALUE!	
208 Pb	0.9841	0.9841	ppb	3.95	2000.	
232 Th	0.2131	0.2131	ppb	14.67	1000.	
238 U	5.175	5.175	ppb	1.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3996066.30	1.24	3927738.80	101.7	69.5 - 120	
45 Sc	2687386.30	0.35	2572658.80	104.5	69.5 - 120	
72 Ge	521394.69	0.60	510197.59	102.2	69.5 - 120	
159 Tb	4748174.50	0.18	4617151.00	102.8	69.5 - 120	
209 Bi	2321555.30	1.60	2380666.00	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\031SMPL.D\031SMPL.D#
Date Acquired: May 15 2018 07:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4096-001
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.0111	0.0111	ppb	15.21	100.	
11 B	17.97	17.97	ppb	2.80	1000.	
23 Na	23,120.	23,120.	ppb	2.21	200000.	
25 Mg	3,894.	3,894.	ppb	2.53	200000.	
27 Al	15.15	15.15	ppb	4.08	200000.	
28 Si	3,109.	3,109.	ppb	2.91	#VALUE!	
29 Si	3,403.	3,403.	ppb	3.06	10000.	
39 K	828.3	828.3	ppb	1.40	200000.	
43 Ca	32,370.	32,370.	ppb	0.89	#VALUE!	
44 Ca	31,370.	31,370.	ppb	1.29	200000.	
51 V	0.1255	0.1255	ppb	65.67	1000.	
52 Cr	0.381	0.381	ppb	12.58	2000.	
53 Cr	-0.8406	-0.8406	ppb	153.46	#VALUE!	
55 Mn	9.425	9.425	ppb	1.33	2000.	
56 Fe	82.31	82.31	ppb	4.13	#VALUE!	
57 Fe	114.5	114.5	ppb	5.28	100000.	
59 Co	0.3615	0.3615	ppb	3.31	1000.	
60 Ni	1.558	1.558	ppb	2.03	1000.	
63 Cu	20.92	20.92	ppb	1.31	#VALUE!	
65 Cu	20.39	20.39	ppb	0.83	2000.	
66 Zn	9.926	9.926	ppb	0.38	2000.	
68 Zn	9.511	9.511	ppb	2.83	#VALUE!	
75 As	0.286	0.286	ppb	28.61	1000.	
82 Se	0.0606	0.0606	ppb	211.68	1000.	
88 Sr	207.5	207.5	ppb	1.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.036	0.036	ppb	9.79	1000.	
107 Ag	0.0159	0.0159	ppb	29.66	100.	
109 Ag	0.0125	0.0125	ppb	18.44	#VALUE!	
111 Cd	0.0342	0.0342	ppb	80.82	#VALUE!	
114 Cd	0.0381	0.0381	ppb	19.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.885	1.885	ppb	2.27	1000.	
120 Sn	1.888	1.888	ppb	2.28	#VALUE!	
121 Sb	0.0434	0.0434	ppb	14.45	#VALUE!	
123 Sb	0.0484	0.0484	ppb	5.26	1000.	
135 Ba	4.922	4.922	ppb	3.79	2000.	
137 Ba	4.974	4.974	ppb	3.41	#VALUE!	
182 W	0.0182	0.0182	ppb	48.36	1000.	
203 Tl	0.0134	0.0134	ppb	49.49	1000.	
205 Tl	0.005	0.005	ppb	77.95	#VALUE!	
208 Pb	0.6766	0.6766	ppb	1.94	2000.	
232 Th	0.0669	0.0669	ppb	28.58	1000.	
238 U	0.0313	0.0313	ppb	13.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4112162.80	1.37	3927738.80	104.7	69.5 - 120	
45 Sc	2705097.80	0.61	2572658.80	105.1	69.5 - 120	
72 Ge	529560.50	0.67	510197.59	103.8	69.5 - 120	
159 Tb	4786442.50	0.46	4617151.00	103.7	69.5 - 120	
209 Bi	2410667.00	0.62	2380666.00	101.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\032SMPL.D\032SMPL.D#
Date Acquired: May 15 2018 07:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info: LE04IMS1
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	5.665	1.133	ppb	2.63	100.	
11 B	61.65	12.33	ppb	2.46	1000.	
23 Na	1,124.	224.8	ppb	1.82	200000.	
25 Mg	23,615.	4,723.	ppb	3.40	200000.	
27 Al	98,300.	19,660.	ppb	2.66	200000.	
28 Si	3,178.	635.6	ppb	2.06	#VALUE!	
29 Si	3,164.5	632.9	ppb	1.93	10000.	
39 K	33,880.	6,776.	ppb	0.76	200000.	
43 Ca	25,265.	5,053.	ppb	2.20	#VALUE!	
44 Ca	25,445.	5,089.	ppb	2.10	200000.	
51 V	210.5	42.1	ppb	0.82	1000.	
52 Cr	107.3	21.46	ppb	0.54	2000.	
53 Cr	143.8	28.76	ppb	4.85	#VALUE!	
55 Mn	2,838.5	567.7	ppb	1.22	2000.	
56 Fe	93,950.	18,790.	ppb	0.21	#VALUE!	
57 Fe	91,700.	18,340.	ppb	0.47	100000.	
59 Co	53.1	10.62	ppb	1.06	1000.	
60 Ni	84.75	16.95	ppb	1.39	1000.	
63 Cu	92.85	18.57	ppb	1.25	#VALUE!	
65 Cu	95.2	19.04	ppb	0.97	2000.	
66 Zn	320.5	64.1	ppb	0.94	2000.	
68 Zn	368.35	73.67	ppb	0.74	#VALUE!	
75 As	25.71	5.142	ppb	3.52	1000.	
82 Se	5.905	1.181	ppb	23.64	1000.	
88 Sr	332.15	66.43	ppb	1.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.77	2.354	ppb	1.13	1000.	
107 Ag	0.587	0.1174	ppb	5.71	100.	
109 Ag	0.545	0.109	ppb	5.83	#VALUE!	
111 Cd	3.9155	0.7831	ppb	4.13	#VALUE!	
114 Cd	1.9825	0.3965	ppb	2.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.605	9.121	ppb	2.18	1000.	
120 Sn	45.345	9.069	ppb	0.45	#VALUE!	
121 Sb	1.3815	0.2763	ppb	1.12	#VALUE!	
123 Sb	1.3885	0.2777	ppb	1.77	1000.	
135 Ba	1,590.5	318.1	ppb	1.71	2000.	
137 Ba	1,602.5	320.5	ppb	1.35	#VALUE!	
182 W	0.8605	0.1721	ppb	2.61	1000.	
203 Tl	2.2645	0.4529	ppb	5.03	1000.	
205 Tl	2.2215	0.4443	ppb	4.94	#VALUE!	
208 Pb	130.55	26.11	ppb	0.86	2000.	
232 Th	79.1	15.82	ppb	0.54	1000.	
238 U	18.015	3.603	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4100547.00	1.42	3927738.80	104.4	69.5 - 120	
45 Sc	2680447.30	1.31	2572658.80	104.2	69.5 - 120	
72 Ge	517377.25	0.53	510197.59	101.4	69.5 - 120	
159 Tb	4881977.00	1.27	4617151.00	105.7	69.5 - 120	
209 Bi	2507848.30	0.82	2380666.00	105.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\033SMPL.D\033SMPL.D#
Date Acquired: May 15 2018 07:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	7.855	1.571	ppb	2.39	100.	
11 B	138.8	27.76	ppb	3.54	1000.	
23 Na	2,017.5	403.5	ppb	5.59	200000.	
25 Mg	89,750.	17,950.	ppb	3.87	200000.	
27 Al	171,200.	34,240.	ppb	3.33	200000.	
28 Si	4,025.	805.	ppb	3.46	#VALUE!	
29 Si	3,970.5	794.1	ppb	4.69	10000.	
39 K	46,935.	9,387.	ppb	2.82	200000.	
43 Ca	336,050.	67,210.	ppb	1.98	#VALUE!	
44 Ca	316,850.	63,370.	ppb	2.23	200000.	
51 V	441.85	88.37	ppb	1.30	1000.	
52 Cr	167.85	33.57	ppb	1.81	2000.	
53 Cr	200.4	40.08	ppb	1.72	#VALUE!	
55 Mn	2,977.	595.4	ppb	1.02	2000.	
56 Fe	163,800.	32,760.	ppb	0.65	#VALUE!	
57 Fe	161,050.	32,210.	ppb	1.80	100000.	
59 Co	65.2	13.04	ppb	2.94	1000.	
60 Ni	150.3	30.06	ppb	1.53	1000.	
63 Cu	111.2	22.24	ppb	0.06	#VALUE!	
65 Cu	112.85	22.57	ppb	1.17	2000.	
66 Zn	425.75	85.15	ppb	2.43	2000.	
68 Zn	487.75	97.55	ppb	0.99	#VALUE!	
75 As	113.05	22.61	ppb	1.02	1000.	
82 Se	3.7585	0.7517	ppb	17.25	1000.	
88 Sr	1,356.	271.2	ppb	0.59	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.695	2.139	ppb	0.84	1000.	
107 Ag	0.7635	0.1527	ppb	8.09	100.	
109 Ag	0.6355	0.1271	ppb	8.25	#VALUE!	
111 Cd	2.7505	0.5501	ppb	4.52	#VALUE!	
114 Cd	-0.0084	-0.0017	ppb	343.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.3	10.06	ppb	1.62	1000.	
120 Sn	50.7	10.14	ppb	2.37	#VALUE!	
121 Sb	2.48	0.496	ppb	2.93	#VALUE!	
123 Sb	2.4245	0.4849	ppb	1.49	1000.	
135 Ba	2,297.5	459.5	ppb	1.69	2000.	
137 Ba	2,288.5	457.7	ppb	1.61	#VALUE!	
182 W	0.821	0.1642	ppb	8.48	1000.	
203 Tl	2.8515	0.5703	ppb	3.51	1000.	
205 Tl	2.8775	0.5755	ppb	3.04	#VALUE!	
208 Pb	109.9	21.98	ppb	2.45	2000.	
232 Th	76.15	15.23	ppb	2.76	1000.	
238 U	16.255	3.251	ppb	3.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4018657.00	3.16	3927738.80	102.3	69.5 - 120	
45 Sc	2614905.30	1.71	2572658.80	101.6	69.5 - 120	
72 Ge	505923.63	0.42	510197.59	99.2	69.5 - 120	
159 Tb	4816300.50	1.40	4617151.00	104.3	69.5 - 120	
209 Bi	2442884.30	3.00	2380666.00	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000234

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\034SMPL.D\034SMPL.D#
Date Acquired: May 15 2018 08:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	226.97	100.	
11 B	1.369	1.369	ppb	13.66	1000.	
23 Na	16.46	16.46	ppb	2.47	200000.	
25 Mg	1.985	1.985	ppb	62.72	200000.	
27 Al	3.419	3.419	ppb	74.93	200000.	
28 Si	6.281	6.281	ppb	164.46	#VALUE!	
29 Si	-13.93	-13.93	ppb	81.48	10000.	
39 K	-1.439	-1.439	ppb	123.56	200000.	
43 Ca	44.78	44.78	ppb	15.11	#VALUE!	
44 Ca	37.67	37.67	ppb	9.58	200000.	
51 V	0.0834	0.0834	ppb	41.97	1000.	
52 Cr	-0.0404	-0.0404	ppb	56.58	2000.	
53 Cr	-4.345	-4.345	ppb	0.37	#VALUE!	
55 Mn	0.0833	0.0833	ppb	60.63	2000.	
56 Fe	2.037	2.037	ppb	285.52	#VALUE!	
57 Fe	2.956	2.956	ppb	46.58	100000.	
59 Co	0.0045	0.0045	ppb	99.73	1000.	
60 Ni	0.0348	0.0348	ppb	23.95	1000.	
63 Cu	0.2209	0.2209	ppb	7.21	#VALUE!	
65 Cu	0.234	0.234	ppb	10.47	2000.	
66 Zn	0.6397	0.6397	ppb	8.23	2000.	
68 Zn	0.415	0.415	ppb	5.15	#VALUE!	
75 As	0.0047	0.0047	ppb	4236.90	1000.	
82 Se	0.1101	0.1101	ppb	67.48	1000.	
88 Sr	0.0483	0.0483	ppb	40.56	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0118	0.0118	ppb	27.29	1000.	
107 Ag	0.001	0.001	ppb	165.83	100.	
109 Ag	0.0012	0.0012	ppb	192.54	#VALUE!	
111 Cd	0.0001	0.0001	ppb	6639.10	#VALUE!	
114 Cd	0.0016	0.0016	ppb	52.71	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0613	0.0613	ppb	25.29	1000.	
120 Sn	0.0357	0.0357	ppb	38.76	#VALUE!	
121 Sb	0.0012	0.0012	ppb	159.63	#VALUE!	
123 Sb	0.0051	0.0051	ppb	92.45	1000.	
135 Ba	0.1388	0.1388	ppb	15.95	2000.	
137 Ba	0.1252	0.1252	ppb	12.68	#VALUE!	
182 W	0.0061	0.0061	ppb	39.75	1000.	
203 Tl	0.0097	0.0097	ppb	96.96	1000.	
205 Tl	0.0039	0.0039	ppb	38.20	#VALUE!	
208 Pb	0.1189	0.1189	ppb	10.72	2000.	
232 Th	0.0186	0.0186	ppb	44.47	1000.	
238 U	0.0007	0.0007	ppb	136.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3954243.30	0.87	3927738.80	100.7	69.5 - 120	
45 Sc	2540530.50	0.79	2572658.80	98.8	69.5 - 120	
72 Ge	502235.00	0.90	510197.59	98.4	69.5 - 120	
159 Tb	4602784.00	1.62	4617151.00	99.7	69.5 - 120	
209 Bi	2371603.30	1.39	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000235

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\035SMPL.D\035SMPL.D#
Date Acquired: May 15 2018 08:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW1
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	1144.80	100.	
11 B	3.2275	0.6455	ppb	8.17	1000.	
23 Na	15.32	3.064	ppb	11.14	200000.	
25 Mg	9.73	1.946	ppb	7.28	200000.	
27 Al	7.385	1.477	ppb	13.01	200000.	
28 Si	41.275	8.255	ppb	138.95	#VALUE!	
29 Si	-42.75	-8.55	ppb	82.41	10000.	
39 K	-9.28	-1.856	ppb	103.56	200000.	
43 Ca	3.5895	0.7179	ppb	534.34	#VALUE!	
44 Ca	12.675	2.535	ppb	37.94	200000.	
51 V	0.0058	0.0012	ppb	5462.70	1000.	
52 Cr	-0.2075	-0.0415	ppb	46.43	2000.	
53 Cr	-8.63	-1.726	ppb	19.22	#VALUE!	
55 Mn	0.079	0.0158	ppb	22.24	2000.	
56 Fe	-13.51	-2.702	ppb	46.78	#VALUE!	
57 Fe	-0.5155	-0.1031	ppb	2183.30	100000.	
59 Co	-0.0039	-0.0008	ppb	304.24	1000.	
60 Ni	-0.008	-0.0016	ppb	484.06	1000.	
63 Cu	0.086	0.0172	ppb	78.94	#VALUE!	
65 Cu	0.1503	0.0301	ppb	15.06	2000.	
66 Zn	0.5215	0.1043	ppb	14.92	2000.	
68 Zn	0.1087	0.0217	ppb	482.28	#VALUE!	
75 As	0.8845	0.1769	ppb	49.84	1000.	
82 Se	0.998	0.1996	ppb	46.39	1000.	
88 Sr	0.0105	0.0021	ppb	118.26	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0157	0.0031	ppb	81.79	1000.	
107 Ag	0.0023	0.0005	ppb	428.94	100.	
109 Ag	-0.0015	-0.0003	ppb	837.87	#VALUE!	
111 Cd	-0.0551	-0.011	ppb	66.57	#VALUE!	
114 Cd	0.01	0.002	ppb	168.35	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1209	0.0242	ppb	50.95	1000.	
120 Sn	0.0797	0.0159	ppb	95.17	#VALUE!	
121 Sb	0.0027	0.0005	ppb	514.26	#VALUE!	
123 Sb	0.0226	0.0045	ppb	2.70	1000.	
135 Ba	0.0549	0.011	ppb	40.29	2000.	
137 Ba	0.0323	0.0065	ppb	138.31	#VALUE!	
182 W	0.031	0.0062	ppb	28.66	1000.	
203 Tl	0.0109	0.0022	ppb	373.78	1000.	
205 Tl	0.0045	0.0009	ppb	532.52	#VALUE!	
208 Pb	-0.106	-0.0212	ppb	40.14	2000.	
232 Th	0.1015	0.0203	ppb	50.91	1000.	
238 U	-0.0017	-0.0003	ppb	76.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3902003.80	1.95	3927738.80	99.3	69.5 - 120	
45 Sc	2518454.30	1.96	2572658.80	97.9	69.5 - 120	
72 Ge	498793.03	2.06	510197.59	97.8	69.5 - 120	
159 Tb	4580423.50	1.27	4617151.00	99.2	69.5 - 120	
209 Bi	2383297.50	0.73	2380666.00	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\036SMPL.D\036SMPL.D#
Date Acquired: May 15 2018 08:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW1
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	48.89	9.778	ppb	2.28	100.	
11 B	497.2	99.44	ppb	3.34	1000.	
23 Na	7,435.	1,487.	ppb	1.90	200000.	
25 Mg	5,020.	1,004.	ppb	1.97	200000.	
27 Al	2,034.5	406.9	ppb	0.49	200000.	
28 Si	1,032.	206.4	ppb	3.58	#VALUE!	
29 Si	909.	181.8	ppb	5.24	10000.	
39 K	9,920.	1,984.	ppb	0.47	200000.	
43 Ca	2,882.	576.4	ppb	3.58	#VALUE!	
44 Ca	2,512.5	502.5	ppb	0.28	200000.	
51 V	503.	100.6	ppb	1.59	1000.	
52 Cr	196.75	39.35	ppb	0.98	2000.	
53 Cr	204.3	40.86	ppb	2.09	#VALUE!	
55 Mn	502.	100.4	ppb	1.34	2000.	
56 Fe	981.5	196.3	ppb	3.08	#VALUE!	
57 Fe	983.	196.6	ppb	4.09	100000.	
59 Co	518.	103.6	ppb	1.98	1000.	
60 Ni	505.5	101.1	ppb	1.04	1000.	
63 Cu	247.9	49.58	ppb	0.12	#VALUE!	
65 Cu	253.65	50.73	ppb	0.40	2000.	
66 Zn	517.	103.4	ppb	0.92	2000.	
68 Zn	578.5	115.7	ppb	1.39	#VALUE!	
75 As	104.2	20.84	ppb	0.70	1000.	
82 Se	104.15	20.83	ppb	3.65	1000.	
88 Sr	493.15	98.63	ppb	0.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.15	20.23	ppb	0.47	1000.	
107 Ag	51.2	10.24	ppb	0.90	100.	
109 Ag	50.85	10.17	ppb	0.59	#VALUE!	
111 Cd	255.85	51.17	ppb	0.92	#VALUE!	
114 Cd	255.55	51.11	ppb	0.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	503.5	100.7	ppb	1.45	1000.	
120 Sn	501.	100.2	ppb	1.74	#VALUE!	
121 Sb	102.95	20.59	ppb	2.01	#VALUE!	
123 Sb	102.85	20.57	ppb	2.60	1000.	
135 Ba	2,023.	404.6	ppb	1.40	2000.	
137 Ba	2,003.	400.6	ppb	1.26	#VALUE!	
182 W	101.25	20.25	ppb	2.49	1000.	
203 Tl	98.9	19.78	ppb	0.22	1000.	
205 Tl	99.4	19.88	ppb	1.63	#VALUE!	
208 Pb	100.1	20.02	ppb	1.10	2000.	
232 Th	95.7	19.14	ppb	1.00	1000.	
238 U	97.9	19.58	ppb	1.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4077643.30	2.03	3927738.80	103.8	69.5 - 120	
45 Sc	2589261.00	1.20	2572658.80	100.6	69.5 - 120	
72 Ge	504378.34	0.91	510197.59	98.9	69.5 - 120	
159 Tb	4679568.50	1.53	4617151.00	101.4	69.5 - 120	
209 Bi	2421956.80	0.21	2380666.00	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\037SMPL.D\037SMPL.D#
Date Acquired: May 15 2018 08:15 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-002
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.565	0.113	ppb	8.41	100.	
11 B	270.9	54.18	ppb	5.28	1000.	
23 Na	281,450.	56,290.	ppb	2.79	200000.	
25 Mg	66,350.	13,270.	ppb	1.16	200000.	
27 Al	10,425.	2,085.	ppb	2.21	200000.	
28 Si	36,865.	7,373.	ppb	0.68	#VALUE!	
29 Si	39,630.	7,926.	ppb	1.36	10000.	
39 K	20,310.	4,062.	ppb	1.69	200000.	
43 Ca	354,100.	70,820.	ppb	2.05	#VALUE!	
44 Ca	331,150.	66,230.	ppb	1.00	200000.	
51 V	34.26	6.852	ppb	2.68	1000.	
52 Cr	41.56	8.312	ppb	1.28	2000.	
53 Cr	77.25	15.45	ppb	13.81	#VALUE!	
55 Mn	1,451.5	290.3	ppb	1.17	2000.	
56 Fe	14,625.	2,925.	ppb	1.72	#VALUE!	
57 Fe	15,345.	3,069.	ppb	1.17	100000.	
59 Co	6.085	1.217	ppb	3.17	1000.	
60 Ni	21.22	4.244	ppb	2.30	1000.	
63 Cu	23.38	4.676	ppb	2.23	#VALUE!	
65 Cu	15.735	3.147	ppb	3.16	2000.	
66 Zn	140.85	28.17	ppb	3.21	2000.	
68 Zn	139.95	27.99	ppb	2.15	#VALUE!	
75 As	20.38	4.076	ppb	4.63	1000.	
82 Se	1.724	0.3448	ppb	71.11	1000.	
88 Sr	1,422.	284.4	ppb	0.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.97	4.394	ppb	2.38	1000.	
107 Ag	0.0407	0.0081	ppb	31.68	100.	
109 Ag	0.0271	0.0054	ppb	31.30	#VALUE!	
111 Cd	0.0545	0.0109	ppb	198.81	#VALUE!	
114 Cd	0.0201	0.004	ppb	248.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.48	0.496	ppb	0.50	1000.	
120 Sn	2.537	0.5074	ppb	2.84	#VALUE!	
121 Sb	0.922	0.1844	ppb	2.61	#VALUE!	
123 Sb	0.9775	0.1955	ppb	3.55	1000.	
135 Ba	243.45	48.69	ppb	0.75	2000.	
137 Ba	245.65	49.13	ppb	1.19	#VALUE!	
182 W	0.5595	0.1119	ppb	16.59	1000.	
203 Tl	0.1717	0.0343	ppb	31.36	1000.	
205 Tl	0.1416	0.0283	ppb	13.29	#VALUE!	
208 Pb	10.725	2.145	ppb	1.47	2000.	
232 Th	7.525	1.505	ppb	3.38	1000.	
238 U	4.9885	0.9977	ppb	2.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4012288.30	3.19	3927738.80	102.2	69.5 - 120	
45 Sc	2587933.00	2.15	2572658.80	100.6	69.5 - 120	
72 Ge	514773.69	0.82	510197.59	100.9	69.5 - 120	
159 Tb	4848173.50	1.33	4617151.00	105.0	69.5 - 120	
209 Bi	2408503.00	1.63	2380666.00	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\038_CCV.D\038_CCV.D#
Date Acquired: May 15 2018 08:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.66	ppb	0.94	25	98.64	
11 B	26.34	ppb	2.74	25	105.36	
23 Na	4,618.	ppb	3.62	5,000	92.36	
25 Mg	4,686.	ppb	1.60	5,000	93.72	
27 Al	479.7	ppb	1.29	500	95.94	
28 Si	466.9	ppb	0.76	500	93.38	
29 Si	454.	ppb	2.23	500	90.8	
39 K	4,757.	ppb	0.42	5,000	95.14	
43 Ca	4,844.	ppb	1.11	5,000	96.88	
44 Ca	4,918.	ppb	2.07	5,000	98.36	
51 V	24.04	ppb	1.79	25	96.16	
52 Cr	24.45	ppb	0.63	25	97.8	
53 Cr	23.17	ppb	8.70	25	92.68	
55 Mn	24.21	ppb	1.28	25	96.84	
56 Fe	4,774.	ppb	0.61	5,000	95.48	
57 Fe	4,875.	ppb	0.34	5,000	97.5	
59 Co	24.49	ppb	1.48	25	97.96	
60 Ni	24.6	ppb	0.87	25	98.4	
63 Cu	24.61	ppb	0.77	25	98.44	
65 Cu	24.5	ppb	1.15	25	98	
66 Zn	24.97	ppb	2.04	25	99.88	
68 Zn	24.63	ppb	1.10	25	98.52	
75 As	24.72	ppb	0.59	25	98.88	
82 Se	25.41	ppb	0.62	25	101.64	
88 Sr	23.93	ppb	0.92	25	95.72	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.66	ppb	1.01	25	98.64	
107 Ag	24.95	ppb	1.37	25	99.8	
109 Ag	24.86	ppb	0.76	25	99.44	
111 Cd	24.92	ppb	1.49	25	99.68	
114 Cd	24.98	ppb	1.15	25	99.92	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.16	ppb	1.43	25	96.64	
120 Sn	24.04	ppb	2.89	25	96.16	
121 Sb	24.57	ppb	1.69	25	98.28	
123 Sb	24.58	ppb	1.92	25	98.32	
135 Ba	25.06	ppb	2.64	25	100.24	
137 Ba	24.58	ppb	3.28	25	98.32	
182 W	24.52	ppb	3.07	25	98.08	
203 Tl	24.	ppb	2.37	25	96	
205 Tl	24.2	ppb	2.32	25	96.8	
208 Pb	24.23	ppb	1.89	25	96.92	
232 Th	23.78	ppb	2.92	25	95.12	
238 U	23.88	ppb	1.95	25	95.52	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4016574.50	0.62	3927738.80	102.3	80 - 120.4	
45 Sc	2682869.80	1.41	2572658.80	104.3	80 - 120.4	
72 Ge	512815.84	0.70	510197.59	100.5	80 - 120.4	
159 Tb	4822348.00	1.80	4617151.00	104.4	80 - 120.4	
209 Bi	2488946.80	1.42	2380666.00	104.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\039_CCB.D\039_CCB.D#
Date Acquired: May 15 2018 08:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	166.59	1.00	
11 B	2.18	ppb	9.85	1.00	
23 Na	3.602	ppb	60.05	1.00	
25 Mg	0.7431	ppb	127.01	1.00	
27 Al	0.2165	ppb	89.70	1.00	
28 Si	10.97	ppb	16.45	1.00	
29 Si	3.096	ppb	150.32	1.00	
39 K	1.707	ppb	141.07	1.00	
43 Ca	5.974	ppb	112.69	1.00	
44 Ca	2.844	ppb	72.08	1.00	
51 V	0.0613	ppb	73.32	1.00	
52 Cr	-0.0046	ppb	347.31	1.00	
53 Cr	-3.014	ppb	7.23	1.00	
55 Mn	0.0084	ppb	196.07	1.00	
56 Fe	3.556	ppb	114.06	1.00	
57 Fe	0.5631	ppb	162.56	1.00	
59 Co	0.0046	ppb	112.92	1.00	
60 Ni	0.0083	ppb	91.24	1.00	
63 Cu	0.0178	ppb	39.05	1.00	
65 Cu	0.0209	ppb	12.50	1.00	
66 Zn	0.0659	ppb	135.88	1.00	
68 Zn	-0.1338	ppb	14.48	1.00	
75 As	0.1143	ppb	63.07	1.00	
82 Se	0.1674	ppb	170.79	1.00	
88 Sr	0.0093	ppb	156.50	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0311	ppb	15.59	1.00	
107 Ag	0.0036	ppb	102.78	1.00	
109 Ag	0.0026	ppb	162.63	1.00	
111 Cd	0.038	ppb	26.44	1.00	
114 Cd	0.0046	ppb	118.29	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0577	ppb	20.32	1.00	
120 Sn	0.0524	ppb	19.21	1.00	
121 Sb	0.0074	ppb	32.47	1.00	
123 Sb	0.0091	ppb	15.92	1.00	
135 Ba	0.017	ppb	61.72	1.00	
137 Ba	0.0133	ppb	83.11	1.00	
182 W	0.0513	ppb	22.58	1.00	
203 Tl	0.0106	ppb	85.40	1.00	
205 Tl	0.0039	ppb	27.82	1.00	
208 Pb	-0.0135	ppb	81.05	1.00	
232 Th	0.0606	ppb	8.96	1.00	
238 U	0.0023	ppb	85.16	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3855350.00	4.90	3927738.80	98.2	79.5 - 120	
45 Sc	2535912.00	1.46	2572658.80	98.6	79.5 - 120	
72 Ge	503141.22	1.14	510197.59	98.6	79.5 - 120	
159 Tb	4563850.00	0.42	4617151.00	98.8	79.5 - 120	
209 Bi	2369504.00	1.12	2380666.00	99.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\040SMPL.D\040SMPL.D#
Date Acquired: May 15 2018 08:27 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-003
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.0126	0.0025	ppb	48.18	100.	
11 B	273.	54.6	ppb	3.85	1000.	
23 Na	305,000.	61,000.	ppb	0.95	200000.	
25 Mg	71,150.	14,230.	ppb	1.19	200000.	
27 Al	9.925	1.985	ppb	3.48	200000.	
28 Si	14,335.	2,867.	ppb	0.97	#VALUE!	
29 Si	15,225.	3,045.	ppb	4.55	10000.	
39 K	19,070.	3,814.	ppb	0.50	200000.	
43 Ca	371,750.	74,350.	ppb	0.95	#VALUE!	
44 Ca	354,600.	70,920.	ppb	1.17	200000.	
51 V	1.3985	0.2797	ppb	16.60	1000.	
52 Cr	2.24	0.448	ppb	9.19	2000.	
53 Cr	77.5	15.5	ppb	31.92	#VALUE!	
55 Mn	1,442.	288.4	ppb	1.49	2000.	
56 Fe	1,524.	304.8	ppb	1.14	#VALUE!	
57 Fe	1,893.5	378.7	ppb	1.42	100000.	
59 Co	1.7355	0.3471	ppb	4.47	1000.	
60 Ni	6.02	1.204	ppb	6.06	1000.	
63 Cu	14.31	2.862	ppb	1.68	#VALUE!	
65 Cu	5.47	1.094	ppb	5.23	2000.	
66 Zn	29.255	5.851	ppb	2.15	2000.	
68 Zn	26.145	5.229	ppb	3.13	#VALUE!	
75 As	14.57	2.914	ppb	5.66	1000.	
82 Se	1.3745	0.2749	ppb	34.63	1000.	
88 Sr	1,485.	297.	ppb	0.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	15.175	3.035	ppb	1.23	1000.	
107 Ag	0.0197	0.0039	ppb	19.61	100.	
109 Ag	0.0119	0.0024	ppb	69.31	#VALUE!	
111 Cd	0.0839	0.0168	ppb	87.06	#VALUE!	
114 Cd	0.0125	0.0025	ppb	229.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.0405	0.2081	ppb	12.89	1000.	
120 Sn	1.0075	0.2015	ppb	5.49	#VALUE!	
121 Sb	0.8245	0.1649	ppb	10.89	#VALUE!	
123 Sb	0.87	0.174	ppb	8.86	1000.	
135 Ba	41.17	8.234	ppb	1.44	2000.	
137 Ba	40.555	8.111	ppb	1.02	#VALUE!	
182 W	0.2407	0.0481	ppb	9.67	1000.	
203 Tl	0.0231	0.0046	ppb	157.01	1000.	
205 Tl	-0.0041	-0.0008	ppb	724.06	#VALUE!	
208 Pb	-0.0233	-0.0047	ppb	117.66	2000.	
232 Th	0.4747	0.0949	ppb	20.14	1000.	
238 U	4.1975	0.8395	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3922212.00	3.83	3927738.80	99.9	69.5 - 120	
45 Sc	2669194.00	1.05	2572658.80	103.8	69.5 - 120	
72 Ge	527739.19	1.61	510197.59	103.4	69.5 - 120	
159 Tb	4851172.00	1.82	4617151.00	105.1	69.5 - 120	
209 Bi	2389735.50	0.85	2380666.00	100.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\041SMPL.D\041SMPL.D#
Date Acquired: May 15 2018 08:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.1595	0.0319	ppb	5.06	100.	
11 B	227.45	45.49	ppb	0.73	1000.	
23 Na	318,900.	63,780.	ppb	2.08	200000.	
25 Mg	79,150.	15,830.	ppb	2.85	200000.	
27 Al	3,138.5	627.7	ppb	1.63	200000.	
28 Si	24,430.	4,886.	ppb	0.63	#VALUE!	
29 Si	26,640.	5,328.	ppb	1.06	10000.	
39 K	19,600.	3,920.	ppb	1.85	200000.	
43 Ca	394,500.	78,900.	ppb	0.92	#VALUE!	
44 Ca	372,250.	74,450.	ppb	0.34	200000.	
51 V	7.6	1.52	ppb	7.45	1000.	
52 Cr	27.755	5.551	ppb	1.40	2000.	
53 Cr	104.65	20.93	ppb	3.57	#VALUE!	
55 Mn	1,357.5	271.5	ppb	0.59	2000.	
56 Fe	10,615.	2,123.	ppb	0.61	#VALUE!	
57 Fe	11,010.	2,202.	ppb	0.09	100000.	
59 Co	2.026	0.4052	ppb	4.58	1000.	
60 Ni	11.155	2.231	ppb	2.52	1000.	
63 Cu	22.105	4.421	ppb	0.22	#VALUE!	
65 Cu	12.915	2.583	ppb	1.54	2000.	
66 Zn	143.4	28.68	ppb	0.63	2000.	
68 Zn	138.25	27.65	ppb	2.13	#VALUE!	
75 As	13.885	2.777	ppb	6.02	1000.	
82 Se	3.5235	0.7047	ppb	5.47	1000.	
88 Sr	1,645.	329.	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.455	3.491	ppb	3.31	1000.	
107 Ag	0.0177	0.0035	ppb	67.36	100.	
109 Ag	0.0168	0.0034	ppb	112.43	#VALUE!	
111 Cd	0.1835	0.0367	ppb	74.44	#VALUE!	
114 Cd	0.0327	0.0065	ppb	59.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.5255	0.5051	ppb	4.45	1000.	
120 Sn	2.47	0.494	ppb	2.98	#VALUE!	
121 Sb	0.2651	0.053	ppb	20.16	#VALUE!	
123 Sb	0.3426	0.0685	ppb	12.02	1000.	
135 Ba	96.5	19.3	ppb	2.93	2000.	
137 Ba	97.2	19.44	ppb	1.52	#VALUE!	
182 W	0.3587	0.0717	ppb	19.86	1000.	
203 Tl	0.0819	0.0164	ppb	23.66	1000.	
205 Tl	0.0621	0.0124	ppb	33.85	#VALUE!	
208 Pb	3.401	0.6802	ppb	2.07	2000.	
232 Th	2.475	0.495	ppb	7.68	1000.	
238 U	2.074	0.4148	ppb	0.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3761706.30	0.93	3927738.80	95.8	69.5 - 120	
45 Sc	2630217.30	0.98	2572658.80	102.2	69.5 - 120	
72 Ge	520460.09	0.22	510197.59	102.0	69.5 - 120	
159 Tb	4803478.50	0.71	4617151.00	104.0	69.5 - 120	
209 Bi	2372049.80	1.26	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\042SMPL.D\042SMPL.D#
Date Acquired: May 15 2018 08:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004L
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.1301	0.0052	ppb	47.83	100.	
11 B	272.25	10.89	ppb	1.46	1000.	
23 Na	323,500.	12,940.	ppb	1.70	200000.	
25 Mg	80,700.	3,228.	ppb	0.26	200000.	
27 Al	3,342.5	133.7	ppb	3.55	200000.	
28 Si	23,890.	955.6	ppb	1.38	#VALUE!	
29 Si	24,085.	963.4	ppb	1.64	10000.	
39 K	19,195.	767.8	ppb	0.90	200000.	
43 Ca	387,500.	15,500.	ppb	0.80	#VALUE!	
44 Ca	377,250.	15,090.	ppb	0.97	200000.	
51 V	6.6275	0.2651	ppb	35.81	1000.	
52 Cr	27.775	1.111	ppb	2.76	2000.	
53 Cr	160.4	6.416	ppb	3.33	#VALUE!	
55 Mn	1,418.25	56.73	ppb	0.69	2000.	
56 Fe	10,665.	426.6	ppb	0.49	#VALUE!	
57 Fe	11,350.	454.	ppb	2.21	100000.	
59 Co	2.071	0.0828	ppb	5.76	1000.	
60 Ni	11.62	0.4648	ppb	9.35	1000.	
63 Cu	22.8925	0.9157	ppb	4.26	#VALUE!	
65 Cu	13.63	0.5452	ppb	3.79	2000.	
66 Zn	157.25	6.29	ppb	3.32	2000.	
68 Zn	146.125	5.845	ppb	4.09	#VALUE!	
75 As	16.2825	0.6513	ppb	25.84	1000.	
82 Se	2.505	0.1002	ppb	152.30	1000.	
88 Sr	1,719.75	68.79	ppb	0.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.36	0.6944	ppb	3.76	1000.	
107 Ag	0.0652	0.0026	ppb	38.75	100.	
109 Ag	0.0023	0.0001	ppb	1209.80	#VALUE!	
111 Cd	0.8203	0.0328	ppb	46.11	#VALUE!	
114 Cd	0.063	0.0025	ppb	68.59	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.0875	0.1235	ppb	8.49	1000.	
120 Sn	2.7525	0.1101	ppb	13.72	#VALUE!	
121 Sb	0.3068	0.0123	ppb	9.92	#VALUE!	
123 Sb	0.5538	0.0222	ppb	9.28	1000.	
135 Ba	98.325	3.933	ppb	2.79	2000.	
137 Ba	100.275	4.011	ppb	3.75	#VALUE!	
182 W	0.4108	0.0164	ppb	13.59	1000.	
203 Tl	0.085	0.0034	ppb	126.68	1000.	
205 Tl	-0.0314	-0.0013	ppb	51.93	#VALUE!	
208 Pb	2.5325	0.1013	ppb	15.81	2000.	
232 Th	2.2078	0.0883	ppb	7.36	1000.	
238 U	1.8965	0.0759	ppb	3.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3991227.80	0.78	3927738.80	101.6	69.5 - 120	
45 Sc	2673605.30	1.11	2572658.80	103.9	69.5 - 120	
72 Ge	525500.75	1.02	510197.59	103.0	69.5 - 120	
159 Tb	4809825.00	0.79	4617151.00	104.2	69.5 - 120	
209 Bi	2480411.30	0.94	2380666.00	104.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\043SMPL.D\043SMPL.D#
Date Acquired: May 15 2018 08:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004A
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	10.675	2.135	ppb	6.26	100.	
11 B	424.05	84.81	ppb	2.43	1000.	
23 Na	323,600.	64,720.	ppb	2.31	200000.	
25 Mg	78,800.	15,760.	ppb	2.24	200000.	
27 Al	4,029.5	805.9	ppb	1.58	200000.	
28 Si	29,100.	5,820.	ppb	1.07	#VALUE!	
29 Si	31,470.	6,294.	ppb	2.08	10000.	
39 K	29,095.	5,819.	ppb	0.57	200000.	
43 Ca	384,500.	76,900.	ppb	1.09	#VALUE!	
44 Ca	363,400.	72,680.	ppb	1.25	200000.	
51 V	57.7	11.54	ppb	1.73	1000.	
52 Cr	76.5	15.3	ppb	0.88	2000.	
53 Cr	143.85	28.77	ppb	1.57	#VALUE!	
55 Mn	1,356.5	271.3	ppb	1.03	2000.	
56 Fe	11,375.	2,275.	ppb	0.02	#VALUE!	
57 Fe	11,740.	2,348.	ppb	1.00	100000.	
59 Co	11.9	2.38	ppb	1.44	1000.	
60 Ni	30.345	6.069	ppb	1.78	1000.	
63 Cu	51.05	10.21	ppb	1.79	#VALUE!	
65 Cu	41.31	8.262	ppb	1.78	2000.	
66 Zn	232.2	46.44	ppb	0.87	2000.	
68 Zn	230.1	46.02	ppb	1.71	#VALUE!	
75 As	61.15	12.23	ppb	1.53	1000.	
82 Se	49.595	9.919	ppb	1.10	1000.	
88 Sr	1,671.5	334.3	ppb	0.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	67.7	13.54	ppb	0.87	1000.	
107 Ag	9.675	1.935	ppb	0.78	100.	
109 Ag	9.705	1.941	ppb	1.93	#VALUE!	
111 Cd	9.775	1.955	ppb	3.17	#VALUE!	
114 Cd	9.775	1.955	ppb	2.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.35	10.47	ppb	1.15	1000.	
120 Sn	52.2	10.44	ppb	1.01	#VALUE!	
121 Sb	10.135	2.027	ppb	1.62	#VALUE!	
123 Sb	10.34	2.068	ppb	4.67	1000.	
135 Ba	115.9	23.18	ppb	2.14	2000.	
137 Ba	115.3	23.06	ppb	1.10	#VALUE!	
182 W	53.25	10.65	ppb	1.36	1000.	
203 Tl	10.635	2.127	ppb	1.75	1000.	
205 Tl	10.475	2.095	ppb	0.50	#VALUE!	
208 Pb	13.87	2.774	ppb	1.24	2000.	
232 Th	13.18	2.636	ppb	0.94	1000.	
238 U	13.03	2.606	ppb	1.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3962230.80	3.94	3927738.80	100.9	69.5 - 120	
45 Sc	2669154.00	0.73	2572658.80	103.8	69.5 - 120	
72 Ge	522555.25	1.02	510197.59	102.4	69.5 - 120	
159 Tb	4847288.50	1.72	4617151.00	105.0	69.5 - 120	
209 Bi	2373576.80	1.34	2380666.00	99.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\044SMPL.D\044SMPL.D#
Date Acquired: May 15 2018 08:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004S
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	56.05	11.21	ppb	2.73	100.	
11 B	820.	164.	ppb	2.33	1000.	
23 Na	357,250.	71,450.	ppb	1.04	200000.	
25 Mg	94,200.	18,840.	ppb	3.87	200000.	
27 Al	5,830.	1,166.	ppb	2.57	200000.	
28 Si	28,810.	5,762.	ppb	3.56	#VALUE!	
29 Si	31,215.	6,243.	ppb	2.43	10000.	
39 K	31,925.	6,385.	ppb	2.30	200000.	
43 Ca	438,950.	87,790.	ppb	0.96	#VALUE!	
44 Ca	418,250.	83,650.	ppb	1.60	200000.	
51 V	578.5	115.7	ppb	0.58	1000.	
52 Cr	245.95	49.19	ppb	1.76	2000.	
53 Cr	331.8	66.36	ppb	0.77	#VALUE!	
55 Mn	2,027.	405.4	ppb	0.48	2000.	
56 Fe	12,935.	2,587.	ppb	1.14	#VALUE!	
57 Fe	13,160.	2,632.	ppb	1.42	100000.	
59 Co	561.5	112.3	ppb	0.09	1000.	
60 Ni	550.	110.	ppb	0.43	1000.	
63 Cu	286.	57.2	ppb	0.68	#VALUE!	
65 Cu	278.85	55.77	ppb	1.22	2000.	
66 Zn	669.5	133.9	ppb	1.35	2000.	
68 Zn	729.5	145.9	ppb	1.27	#VALUE!	
75 As	124.45	24.89	ppb	3.33	1000.	
82 Se	108.15	21.63	ppb	2.15	1000.	
88 Sr	2,369.	473.8	ppb	0.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	133.15	26.63	ppb	1.31	1000.	
107 Ag	52.5	10.5	ppb	1.29	100.	
109 Ag	52.55	10.51	ppb	1.73	#VALUE!	
111 Cd	263.35	52.67	ppb	1.40	#VALUE!	
114 Cd	265.6	53.12	ppb	1.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	550.5	110.1	ppb	1.98	1000.	
120 Sn	549.5	109.9	ppb	1.21	#VALUE!	
121 Sb	109.65	21.93	ppb	1.58	#VALUE!	
123 Sb	110.25	22.05	ppb	2.36	1000.	
135 Ba	2,338.	467.6	ppb	1.69	2000.	
137 Ba	2,366.	473.2	ppb	0.91	#VALUE!	
182 W	116.1	23.22	ppb	0.59	1000.	
203 Tl	114.9	22.98	ppb	1.33	1000.	
205 Tl	115.2	23.04	ppb	2.10	#VALUE!	
208 Pb	119.1	23.82	ppb	1.33	2000.	
232 Th	122.9	24.58	ppb	1.28	1000.	
238 U	124.3	24.86	ppb	1.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4030679.50	3.28	3927738.80	102.6	69.5 - 120	
45 Sc	2672440.00	1.89	2572658.80	103.9	69.5 - 120	
72 Ge	511634.94	0.82	510197.59	100.3	69.5 - 120	
159 Tb	4784838.50	1.14	4617151.00	103.6	69.5 - 120	
209 Bi	2347763.50	1.44	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\045SMPL.D\045SMPL.D#
Date Acquired: May 15 2018 08:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004P
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	49.4	9.88	ppb	2.13	100.	
11 B	743.5	148.7	ppb	3.57	1000.	
23 Na	336,950.	67,390.	ppb	2.01	200000.	
25 Mg	86,600.	17,320.	ppb	2.19	200000.	
27 Al	5,490.	1,098.	ppb	1.87	200000.	
28 Si	26,070.	5,214.	ppb	1.68	#VALUE!	
29 Si	28,425.	5,685.	ppb	1.87	10000.	
39 K	29,220.	5,844.	ppb	2.05	200000.	
43 Ca	399,050.	79,810.	ppb	1.71	#VALUE!	
44 Ca	374,400.	74,880.	ppb	1.17	200000.	
51 V	516.	103.2	ppb	1.54	1000.	
52 Cr	219.9	43.98	ppb	1.40	2000.	
53 Cr	298.1	59.62	ppb	0.55	#VALUE!	
55 Mn	1,817.	363.4	ppb	0.64	2000.	
56 Fe	11,565.	2,313.	ppb	1.24	#VALUE!	
57 Fe	11,890.	2,378.	ppb	1.48	100000.	
59 Co	504.5	100.9	ppb	0.87	1000.	
60 Ni	489.15	97.83	ppb	0.75	1000.	
63 Cu	253.2	50.64	ppb	0.22	#VALUE!	
65 Cu	248.2	49.64	ppb	1.21	2000.	
66 Zn	593.5	118.7	ppb	1.17	2000.	
68 Zn	645.	129.	ppb	0.54	#VALUE!	
75 As	111.25	22.25	ppb	1.53	1000.	
82 Se	96.4	19.28	ppb	0.96	1000.	
88 Sr	2,107.5	421.5	ppb	1.02	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	116.15	23.23	ppb	0.30	1000.	
107 Ag	46.11	9.222	ppb	0.30	100.	
109 Ag	46.235	9.247	ppb	0.82	#VALUE!	
111 Cd	230.	46.	ppb	0.52	#VALUE!	
114 Cd	230.65	46.13	ppb	0.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	495.05	99.01	ppb	0.92	1000.	
120 Sn	495.5	99.1	ppb	0.57	#VALUE!	
121 Sb	98.25	19.65	ppb	1.23	#VALUE!	
123 Sb	97.75	19.55	ppb	0.57	1000.	
135 Ba	2,098.5	419.7	ppb	0.68	2000.	
137 Ba	2,131.5	426.3	ppb	0.33	#VALUE!	
182 W	99.55	19.91	ppb	0.98	1000.	
203 Tl	101.7	20.34	ppb	0.61	1000.	
205 Tl	101.25	20.25	ppb	0.85	#VALUE!	
208 Pb	103.85	20.77	ppb	0.98	2000.	
232 Th	107.3	21.46	ppb	0.97	1000.	
238 U	108.3	21.66	ppb	0.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4674846.00	1.78	3927738.80	119.0	69.5 - 120	
45 Sc	2917644.80	0.97	2572658.80	113.4	69.5 - 120	
72 Ge	555517.94	0.20	510197.59	108.9	69.5 - 120	
159 Tb	4989005.00	0.83	4617151.00	108.1	69.5 - 120	
209 Bi	2417636.50	1.11	2380666.00	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\046SMPL.D\046SMPL.D#
Date Acquired: May 15 2018 08:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.0102	0.002	ppb	122.87	100.	
11 B	246.75	49.35	ppb	4.81	1000.	
23 Na	329,850.	65,970.	ppb	1.07	200000.	
25 Mg	81,900.	16,380.	ppb	2.15	200000.	
27 Al	9.795	1.959	ppb	6.90	200000.	
28 Si	17,715.	3,543.	ppb	2.70	#VALUE!	
29 Si	19,395.	3,879.	ppb	2.16	10000.	
39 K	19,120.	3,824.	ppb	2.56	200000.	
43 Ca	403,300.	80,660.	ppb	1.02	#VALUE!	
44 Ca	380,750.	76,150.	ppb	0.29	200000.	
51 V	0.82	0.164	ppb	10.18	1000.	
52 Cr	1.881	0.3762	ppb	1.76	2000.	
53 Cr	75.65	15.13	ppb	11.42	#VALUE!	
55 Mn	1,341.	268.2	ppb	0.95	2000.	
56 Fe	6,455.	1,291.	ppb	1.45	#VALUE!	
57 Fe	6,960.	1,392.	ppb	1.11	100000.	
59 Co	0.805	0.161	ppb	7.88	1000.	
60 Ni	4.2375	0.8475	ppb	4.48	1000.	
63 Cu	10.625	2.125	ppb	0.99	#VALUE!	
65 Cu	1.5145	0.3029	ppb	9.05	2000.	
66 Zn	49.07	9.814	ppb	0.28	2000.	
68 Zn	45.69	9.138	ppb	1.34	#VALUE!	
75 As	11.89	2.378	ppb	14.60	1000.	
82 Se	2.3125	0.4625	ppb	32.07	1000.	
88 Sr	1,657.5	331.5	ppb	0.29	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	13.115	2.623	ppb	1.39	1000.	
107 Ag	0.0091	0.0018	ppb	105.12	100.	
109 Ag	0.0019	0.0004	ppb	74.79	#VALUE!	
111 Cd	0.1372	0.0274	ppb	9.32	#VALUE!	
114 Cd	-0.0025	-0.0005	ppb	1300.70	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.022	0.2044	ppb	5.02	1000.	
120 Sn	1.0115	0.2023	ppb	10.81	#VALUE!	
121 Sb	0.2524	0.0505	ppb	12.26	#VALUE!	
123 Sb	0.2842	0.0568	ppb	10.27	1000.	
135 Ba	31.405	6.281	ppb	2.92	2000.	
137 Ba	31.985	6.397	ppb	0.71	#VALUE!	
182 W	0.4194	0.0839	ppb	19.27	1000.	
203 Tl	0.04	0.008	ppb	74.42	1000.	
205 Tl	-0.0013	-0.0003	ppb	2563.70	#VALUE!	
208 Pb	-0.2657	-0.0531	ppb	2.78	2000.	
232 Th	0.6755	0.1351	ppb	14.49	1000.	
238 U	1.7865	0.3573	ppb	2.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4197086.00	5.26	3927738.80	106.9	69.5 - 120	
45 Sc	2733665.50	0.31	2572658.80	106.3	69.5 - 120	
72 Ge	534922.94	0.77	510197.59	104.8	69.5 - 120	
159 Tb	4831836.00	1.31	4617151.00	104.6	69.5 - 120	
209 Bi	2358338.00	1.46	2380666.00	99.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\047SMPL.D\047SMPL.D#
Date Acquired: May 15 2018 08:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005L
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.0368	0.0015	ppb	50.58	100.	
11 B	328.25	13.13	ppb	1.58	1000.	
23 Na	340,750.	13,630.	ppb	1.87	200000.	
25 Mg	86,250.	3,450.	ppb	1.50	200000.	
27 Al	22.81	0.9124	ppb	10.26	200000.	
28 Si	17,702.5	708.1	ppb	3.81	#VALUE!	
29 Si	17,947.5	717.9	ppb	2.74	10000.	
39 K	19,700.	788.	ppb	2.07	200000.	
43 Ca	406,250.	16,250.	ppb	2.12	#VALUE!	
44 Ca	393,750.	15,750.	ppb	1.98	200000.	
51 V	1.8275	0.0731	ppb	70.94	1000.	
52 Cr	2.965	0.1186	ppb	14.13	2000.	
53 Cr	127.25	5.09	ppb	8.16	#VALUE!	
55 Mn	1,459.75	58.39	ppb	1.16	2000.	
56 Fe	6,855.	274.2	ppb	0.73	#VALUE!	
57 Fe	7,532.5	301.3	ppb	1.08	100000.	
59 Co	0.7193	0.0288	ppb	30.21	1000.	
60 Ni	4.4475	0.1779	ppb	3.39	1000.	
63 Cu	11.4875	0.4595	ppb	3.79	#VALUE!	
65 Cu	2.81	0.1124	ppb	22.91	2000.	
66 Zn	59.5	2.38	ppb	2.38	2000.	
68 Zn	50.4	2.016	ppb	4.82	#VALUE!	
75 As	14.775	0.591	ppb	14.92	1000.	
82 Se	0.4998	0.02	ppb	580.29	1000.	
88 Sr	1,811.25	72.45	ppb	1.03	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.8675	0.5147	ppb	2.40	1000.	
107 Ag	0.0078	0.0003	ppb	489.23	100.	
109 Ag	-0.0211	-0.0008	ppb	94.17	#VALUE!	
111 Cd	1.7068	0.0683	ppb	35.20	#VALUE!	
114 Cd	0.0379	0.0015	ppb	166.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.5413	0.0617	ppb	2.51	1000.	
120 Sn	1.5095	0.0604	ppb	42.20	#VALUE!	
121 Sb	0.1619	0.0065	ppb	57.94	#VALUE!	
123 Sb	0.3705	0.0148	ppb	28.72	1000.	
135 Ba	33.	1.32	ppb	0.78	2000.	
137 Ba	33.	1.32	ppb	8.98	#VALUE!	
182 W	0.4355	0.0174	ppb	17.98	1000.	
203 Tl	0.1218	0.0049	ppb	174.69	1000.	
205 Tl	-0.0046	-0.0002	ppb	1814.10	#VALUE!	
208 Pb	-0.8763	-0.0351	ppb	5.63	2000.	
232 Th	0.4873	0.0195	ppb	40.82	1000.	
238 U	1.7308	0.0692	ppb	0.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4104332.50	0.70	3927738.80	104.5	69.5 - 120	
45 Sc	2753865.30	1.68	2572658.80	107.0	69.5 - 120	
72 Ge	534089.00	0.65	510197.59	104.7	69.5 - 120	
159 Tb	4798278.50	0.65	4617151.00	103.9	69.5 - 120	
209 Bi	2453695.30	0.70	2380666.00	103.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000248

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\048SMPL.D\048SMPL.D#
Date Acquired: May 15 2018 09:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005A
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	10.475	2.095	ppb	3.25	100.	
11 B	453.85	90.77	ppb	3.36	1000.	
23 Na	341,850.	68,370.	ppb	4.69	200000.	
25 Mg	82,050.	16,410.	ppb	1.55	200000.	
27 Al	1,057.5	211.5	ppb	1.70	200000.	
28 Si	22,405.	4,481.	ppb	2.14	#VALUE!	
29 Si	24,370.	4,874.	ppb	4.81	10000.	
39 K	28,760.	5,752.	ppb	2.63	200000.	
43 Ca	404,650.	80,930.	ppb	1.45	#VALUE!	
44 Ca	378,950.	75,790.	ppb	0.88	200000.	
51 V	51.8	10.36	ppb	1.45	1000.	
52 Cr	52.5	10.5	ppb	2.35	2000.	
53 Cr	124.65	24.93	ppb	2.99	#VALUE!	
55 Mn	1,347.	269.4	ppb	1.35	2000.	
56 Fe	7,450.	1,490.	ppb	2.03	#VALUE!	
57 Fe	7,960.	1,592.	ppb	2.04	100000.	
59 Co	10.535	2.107	ppb	1.97	1000.	
60 Ni	23.68	4.736	ppb	1.98	1000.	
63 Cu	39.22	7.844	ppb	1.32	#VALUE!	
65 Cu	30.305	6.061	ppb	0.73	2000.	
66 Zn	142.1	28.42	ppb	0.31	2000.	
68 Zn	135.2	27.04	ppb	2.34	#VALUE!	
75 As	62.85	12.57	ppb	1.57	1000.	
82 Se	49.76	9.952	ppb	1.98	1000.	
88 Sr	1,681.	336.2	ppb	1.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	63.3	12.66	ppb	1.66	1000.	
107 Ag	9.455	1.891	ppb	1.46	100.	
109 Ag	9.61	1.922	ppb	1.60	#VALUE!	
111 Cd	9.805	1.961	ppb	2.80	#VALUE!	
114 Cd	9.405	1.881	ppb	1.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.4	10.28	ppb	3.71	1000.	
120 Sn	50.95	10.19	ppb	3.17	#VALUE!	
121 Sb	10.29	2.058	ppb	4.94	#VALUE!	
123 Sb	10.375	2.075	ppb	1.59	1000.	
135 Ba	51.45	10.29	ppb	1.56	2000.	
137 Ba	52.3	10.46	ppb	3.00	#VALUE!	
182 W	52.85	10.57	ppb	2.06	1000.	
203 Tl	10.33	2.066	ppb	0.23	1000.	
205 Tl	10.235	2.047	ppb	1.98	#VALUE!	
208 Pb	10.025	2.005	ppb	3.92	2000.	
232 Th	10.955	2.191	ppb	1.24	1000.	
238 U	12.485	2.497	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4166964.00	6.12	3927738.80	106.1	69.5 - 120	
45 Sc	2713133.00	2.09	2572658.80	105.5	69.5 - 120	
72 Ge	530580.25	1.18	510197.59	104.0	69.5 - 120	
159 Tb	4806113.50	1.56	4617151.00	104.1	69.5 - 120	
209 Bi	2365146.80	0.98	2380666.00	99.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\049SMPL.D\049SMPL.D#
Date Acquired: May 15 2018 09:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	-0.0054	-0.0011	ppb	1.67	100.	
11 B	20.665	4.133	ppb	14.82	1000.	
23 Na	54.95	10.99	ppb	46.75	200000.	
25 Mg	13.16	2.632	ppb	47.23	200000.	
27 Al	7.305	1.461	ppb	6.12	200000.	
28 Si	43.25	8.65	ppb	24.24	#VALUE!	
29 Si	90.7	18.14	ppb	14.53	10000.	
39 K	19.79	3.958	ppb	60.23	200000.	
43 Ca	42.53	8.506	ppb	73.21	#VALUE!	
44 Ca	41.5	8.3	ppb	71.11	200000.	
51 V	0.588	0.1176	ppb	112.50	1000.	
52 Cr	0.828	0.1656	ppb	23.06	2000.	
53 Cr	22.185	4.437	ppb	3.75	#VALUE!	
55 Mn	0.538	0.1076	ppb	18.61	2000.	
56 Fe	46.34	9.268	ppb	38.09	#VALUE!	
57 Fe	26.02	5.204	ppb	13.59	100000.	
59 Co	0.0023	0.0005	ppb	583.41	1000.	
60 Ni	0.1897	0.0379	ppb	16.56	1000.	
63 Cu	1.0575	0.2115	ppb	8.68	#VALUE!	
65 Cu	1.076	0.2152	ppb	12.60	2000.	
66 Zn	1.1935	0.2387	ppb	14.61	2000.	
68 Zn	-0.0524	-0.0105	ppb	262.12	#VALUE!	
75 As	0.3365	0.0673	ppb	105.74	1000.	
82 Se	0.0906	0.0181	ppb	900.66	1000.	
88 Sr	0.1344	0.0269	ppb	71.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0729	0.0146	ppb	39.12	1000.	
107 Ag	0.0072	0.0014	ppb	132.52	100.	
109 Ag	0.0166	0.0033	ppb	26.94	#VALUE!	
111 Cd	0.3276	0.0655	ppb	41.35	#VALUE!	
114 Cd	-0.0122	-0.0024	ppb	379.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	13.93	2.786	ppb	4.62	1000.	
120 Sn	13.945	2.789	ppb	3.91	#VALUE!	
121 Sb	0.0065	0.0013	ppb	198.00	#VALUE!	
123 Sb	0.0134	0.0027	ppb	161.46	1000.	
135 Ba	0.1444	0.0289	ppb	45.01	2000.	
137 Ba	0.1412	0.0282	ppb	22.74	#VALUE!	
182 W	0.0621	0.0124	ppb	27.38	1000.	
203 Tl	0.0116	0.0023	ppb	137.77	1000.	
205 Tl	0.023	0.0046	ppb	68.37	#VALUE!	
208 Pb	0.3768	0.0754	ppb	5.24	2000.	
232 Th	0.0347	0.0069	ppb	16.27	1000.	
238 U	0.0027	0.0005	ppb	26.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4000313.80	0.67	3927738.80	101.8	69.5 - 120	
45 Sc	2608051.00	1.52	2572658.80	101.4	69.5 - 120	
72 Ge	509603.56	0.82	510197.59	99.9	69.5 - 120	
159 Tb	4553705.50	1.42	4617151.00	98.6	69.5 - 120	
209 Bi	2342422.80	0.35	2380666.00	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000250

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\050_CCV.D\050_CCV.D#
Date Acquired: May 15 2018 09:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.11	ppb	5.21	25	100.44	
11 B	26.12	ppb	3.92	25	104.48	
23 Na	4,816.	ppb	2.19	5,000	96.32	
25 Mg	4,897.	ppb	2.60	5,000	97.94	
27 Al	498.7	ppb	4.17	500	99.74	
28 Si	481.	ppb	1.87	500	96.2	
29 Si	463.8	ppb	1.89	500	92.76	
39 K	4,848.	ppb	1.82	5,000	96.96	
43 Ca	4,907.	ppb	1.39	5,000	98.14	
44 Ca	4,924.	ppb	0.81	5,000	98.48	
51 V	24.16	ppb	0.12	25	96.64	
52 Cr	24.44	ppb	0.94	25	97.76	
53 Cr	24.41	ppb	2.34	25	97.64	
55 Mn	24.44	ppb	0.50	25	97.76	
56 Fe	4,817.	ppb	0.49	5,000	96.34	
57 Fe	4,884.	ppb	0.95	5,000	97.68	
59 Co	24.2	ppb	0.36	25	96.8	
60 Ni	24.7	ppb	2.62	25	98.8	
63 Cu	24.55	ppb	0.45	25	98.2	
65 Cu	24.54	ppb	1.48	25	98.16	
66 Zn	24.76	ppb	1.50	25	99.04	
68 Zn	24.77	ppb	1.81	25	99.08	
75 As	24.61	ppb	0.71	25	98.44	
82 Se	25.19	ppb	0.63	25	100.76	
88 Sr	23.99	ppb	0.68	25	95.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.22	ppb	0.46	25	96.88	
107 Ag	24.61	ppb	0.55	25	98.44	
109 Ag	24.66	ppb	0.27	25	98.64	
111 Cd	24.67	ppb	0.47	25	98.68	
114 Cd	24.53	ppb	0.88	25	98.12	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.08	ppb	0.72	25	96.32	
120 Sn	24.03	ppb	0.87	25	96.12	
121 Sb	24.55	ppb	0.93	25	98.2	
123 Sb	24.41	ppb	1.35	25	97.64	
135 Ba	24.82	ppb	1.04	25	99.28	
137 Ba	24.58	ppb	0.54	25	98.32	
182 W	23.98	ppb	1.73	25	95.92	
203 Tl	24.14	ppb	2.28	25	96.56	
205 Tl	24.07	ppb	1.30	25	96.28	
208 Pb	24.22	ppb	1.15	25	96.88	
232 Th	23.76	ppb	1.26	25	95.04	
238 U	24.39	ppb	2.29	25	97.56	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4136729.00	1.58	3927738.80	105.3	80 - 120.4	
45 Sc	2714310.80	1.77	2572658.80	105.5	80 - 120.4	
72 Ge	516181.22	2.08	510197.59	101.2	80 - 120.4	
159 Tb	4799252.00	2.03	4617151.00	103.9	80 - 120.4	
209 Bi	2442106.00	0.05	2380666.00	102.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\051_CCB.D\051_CCB.D#
Date Acquired: May 15 2018 09:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0001	ppb	3053.90	1.00	
11 B	2.529	ppb	7.56	1.00	
23 Na	4.937	ppb	38.97	1.00	
25 Mg	0.5382	ppb	127.59	1.00	
27 Al	0.1463	ppb	73.82	1.00	
28 Si	18.24	ppb	69.85	1.00	
29 Si	15.16	ppb	109.10	1.00	
39 K	2.95	ppb	141.19	1.00	
43 Ca	1.41	ppb	219.57	1.00	
44 Ca	3.349	ppb	84.98	1.00	
51 V	0.0204	ppb	362.75	1.00	
52 Cr	-0.0362	ppb	60.56	1.00	
53 Cr	-2.215	ppb	9.65	1.00	
55 Mn	0.0116	ppb	66.29	1.00	
56 Fe	1.735	ppb	337.12	1.00	
57 Fe	3.239	ppb	66.47	1.00	
59 Co	0.0008	ppb	186.65	1.00	
60 Ni	0.0007	ppb	717.61	1.00	
63 Cu	0.0429	ppb	29.72	1.00	
65 Cu	0.0407	ppb	43.50	1.00	
66 Zn	0.1032	ppb	14.05	1.00	
68 Zn	-0.0387	ppb	28.70	1.00	
75 As	0.0019	ppb	11410.00	1.00	
82 Se	0.0548	ppb	335.28	1.00	
88 Sr	0.0094	ppb	154.78	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0272	ppb	41.93	1.00	
107 Ag	0.002	ppb	155.32	1.00	
109 Ag	0.0033	ppb	70.25	1.00	
111 Cd	0.0646	ppb	41.05	1.00	
114 Cd	0.0027	ppb	22.08	1.00	
115 In	--------	---	--------	---	
118 Sn	0.044	ppb	31.25	1.00	
120 Sn	0.047	ppb	36.41	1.00	
121 Sb	0.0071	ppb	66.73	1.00	
123 Sb	0.0095	ppb	17.74	1.00	
135 Ba	0.02	ppb	69.95	1.00	
137 Ba	0.0119	ppb	49.33	1.00	
182 W	0.05	ppb	17.10	1.00	
203 Tl	0.0082	ppb	125.44	1.00	
205 Tl	0.0042	ppb	146.90	1.00	
208 Pb	-0.0053	ppb	51.83	1.00	
232 Th	0.0604	ppb	10.87	1.00	
238 U	0.0028	ppb	39.12	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3871903.30	1.76	3927738.80	98.6	79.5 - 120	
45 Sc	2525691.50	2.66	2572658.80	98.2	79.5 - 120	
72 Ge	495311.94	0.75	510197.59	97.1	79.5 - 120	
159 Tb	4436158.50	1.32	4617151.00	96.1	79.5 - 120	
209 Bi	2330879.30	0.39	2380666.00	97.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :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\JLE15C.B\052SMPL.D\052SMPL.D#
Date Acquired: May 15 2018 09:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005S
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	49.9	9.98	ppb	2.34	100.	
11 B	746.	149.2	ppb	4.51	1000.	
23 Na	346,900.	69,380.	ppb	2.08	200000.	
25 Mg	88,500.	17,700.	ppb	2.05	200000.	
27 Al	2,048.	409.6	ppb	3.66	200000.	
28 Si	19,185.	3,837.	ppb	1.99	#VALUE!	
29 Si	21,195.	4,239.	ppb	2.35	10000.	
39 K	29,635.	5,927.	ppb	1.57	200000.	
43 Ca	416,300.	83,260.	ppb	2.36	#VALUE!	
44 Ca	390,150.	78,030.	ppb	1.66	200000.	
51 V	503.5	100.7	ppb	1.51	1000.	
52 Cr	195.25	39.05	ppb	1.63	2000.	
53 Cr	271.3	54.26	ppb	2.32	#VALUE!	
55 Mn	1,850.5	370.1	ppb	2.30	2000.	
56 Fe	7,695.	1,539.	ppb	1.14	#VALUE!	
57 Fe	8,020.	1,604.	ppb	1.32	100000.	
59 Co	500.	100.	ppb	1.21	1000.	
60 Ni	486.75	97.35	ppb	1.47	1000.	
63 Cu	246.9	49.38	ppb	0.46	#VALUE!	
65 Cu	238.9	47.78	ppb	1.85	2000.	
66 Zn	508.	101.6	ppb	1.87	2000.	
68 Zn	566.	113.2	ppb	2.12	#VALUE!	
75 As	110.95	22.19	ppb	2.86	1000.	
82 Se	96.15	19.23	ppb	3.88	1000.	
88 Sr	2,169.5	433.9	ppb	1.05	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	113.4	22.68	ppb	1.11	1000.	
107 Ag	47.175	9.435	ppb	2.06	100.	
109 Ag	46.78	9.356	ppb	1.98	#VALUE!	
111 Cd	232.6	46.52	ppb	1.19	#VALUE!	
114 Cd	233.8	46.76	ppb	1.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	497.75	99.55	ppb	1.20	1000.	
120 Sn	497.8	99.56	ppb	0.68	#VALUE!	
121 Sb	99.35	19.87	ppb	0.99	#VALUE!	
123 Sb	99.6	19.92	ppb	1.30	1000.	
135 Ba	2,033.	406.6	ppb	1.33	2000.	
137 Ba	2,031.	406.2	ppb	1.92	#VALUE!	
182 W	103.25	20.65	ppb	0.91	1000.	
203 Tl	102.55	20.51	ppb	1.30	1000.	
205 Tl	102.15	20.43	ppb	0.46	#VALUE!	
208 Pb	101.55	20.31	ppb	0.79	2000.	
232 Th	106.35	21.27	ppb	1.00	1000.	
238 U	108.7	21.74	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4196586.00	2.22	3927738.80	106.8	69.5 - 120	
45 Sc	2681217.80	2.83	2572658.80	104.2	69.5 - 120	
72 Ge	518473.81	1.49	510197.59	101.6	69.5 - 120	
159 Tb	4762145.50	1.00	4617151.00	103.1	69.5 - 120	
209 Bi	2308454.50	1.20	2380666.00	97.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000253

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\053SMPL.D\053SMPL.D#
Date Acquired: May 15 2018 09:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005P
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	50.9	10.18	ppb	4.43	100.	
11 B	779.	155.8	ppb	4.50	1000.	
23 Na	352,200.	70,440.	ppb	0.39	200000.	
25 Mg	87,750.	17,550.	ppb	1.47	200000.	
27 Al	2,092.	418.4	ppb	3.02	200000.	
28 Si	19,285.	3,857.	ppb	1.43	#VALUE!	
29 Si	20,970.	4,194.	ppb	0.75	10000.	
39 K	29,080.	5,816.	ppb	0.48	200000.	
43 Ca	413,700.	82,740.	ppb	1.15	#VALUE!	
44 Ca	387,050.	77,410.	ppb	0.46	200000.	
51 V	516.5	103.3	ppb	2.12	1000.	
52 Cr	198.35	39.67	ppb	1.96	2000.	
53 Cr	282.6	56.52	ppb	1.48	#VALUE!	
55 Mn	1,870.5	374.1	ppb	1.49	2000.	
56 Fe	7,715.	1,543.	ppb	1.58	#VALUE!	
57 Fe	8,135.	1,627.	ppb	2.16	100000.	
59 Co	511.	102.2	ppb	0.13	1000.	
60 Ni	487.8	97.56	ppb	1.32	1000.	
63 Cu	246.	49.2	ppb	2.16	#VALUE!	
65 Cu	242.85	48.57	ppb	0.58	2000.	
66 Zn	513.5	102.7	ppb	1.86	2000.	
68 Zn	564.5	112.9	ppb	2.07	#VALUE!	
75 As	112.85	22.57	ppb	1.93	1000.	
82 Se	97.5	19.5	ppb	2.19	1000.	
88 Sr	2,173.5	434.7	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	113.4	22.68	ppb	1.48	1000.	
107 Ag	47.19	9.438	ppb	0.83	100.	
109 Ag	46.98	9.396	ppb	0.71	#VALUE!	
111 Cd	232.85	46.57	ppb	0.87	#VALUE!	
114 Cd	234.95	46.99	ppb	1.18	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	504.	100.8	ppb	1.94	1000.	
120 Sn	504.	100.8	ppb	2.12	#VALUE!	
121 Sb	101.55	20.31	ppb	1.89	#VALUE!	
123 Sb	101.6	20.32	ppb	2.39	1000.	
135 Ba	2,079.	415.8	ppb	2.05	2000.	
137 Ba	2,051.5	410.3	ppb	0.73	#VALUE!	
182 W	104.15	20.83	ppb	2.59	1000.	
203 Tl	101.3	20.26	ppb	2.10	1000.	
205 Tl	102.25	20.45	ppb	1.87	#VALUE!	
208 Pb	101.85	20.37	ppb	1.99	2000.	
232 Th	105.35	21.07	ppb	2.17	1000.	
238 U	108.1	21.62	ppb	1.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4199603.00	4.24	3927738.80	106.9	69.5 - 120	
45 Sc	2715271.00	0.27	2572658.80	105.5	69.5 - 120	
72 Ge	522342.50	0.72	510197.59	102.4	69.5 - 120	
159 Tb	4727914.50	1.73	4617151.00	102.4	69.5 - 120	
209 Bi	2318426.50	1.99	2380666.00	97.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000254

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\054SMPL.D\054SMPL.D#
Date Acquired: May 15 2018 09:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-006
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	1.726	0.3452	ppb	2.79	100.	
11 B	260.5	52.1	ppb	3.35	1000.	
23 Na	297,050.	59,410.	ppb	1.26	200000.	
25 Mg	77,100.	15,420.	ppb	4.49	200000.	
27 Al	34,015.	6,803.	ppb	2.71	200000.	
28 Si	70,250.	14,050.	ppb	3.18	#VALUE!	
29 Si	71,650.	14,330.	ppb	2.64	10000.	>LDR
39 K	24,750.	4,950.	ppb	2.04	200000.	
43 Ca	409,450.	81,890.	ppb	3.04	#VALUE!	
44 Ca	377,800.	75,560.	ppb	1.17	200000.	
51 V	78.85	15.77	ppb	2.74	1000.	
52 Cr	114.2	22.84	ppb	0.68	2000.	
53 Cr	150.35	30.07	ppb	0.90	#VALUE!	
55 Mn	1,719.	343.8	ppb	2.42	2000.	
56 Fe	43,195.	8,639.	ppb	1.55	#VALUE!	
57 Fe	43,595.	8,719.	ppb	1.38	100000.	
59 Co	17.835	3.567	ppb	0.72	1000.	
60 Ni	55.85	11.17	ppb	1.24	1000.	
63 Cu	55.35	11.07	ppb	1.03	#VALUE!	
65 Cu	47.855	9.571	ppb	1.93	2000.	
66 Zn	196.65	39.33	ppb	0.27	2000.	
68 Zn	201.	40.2	ppb	0.85	#VALUE!	
75 As	15.455	3.091	ppb	5.49	1000.	
82 Se	4.2445	0.8489	ppb	22.16	1000.	
88 Sr	1,608.	321.6	ppb	1.76	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	24.785	4.957	ppb	2.27	1000.	
107 Ag	0.1132	0.0226	ppb	10.18	100.	
109 Ag	0.104	0.0208	ppb	13.42	#VALUE!	
111 Cd	0.6245	0.1249	ppb	8.17	#VALUE!	
114 Cd	0.3274	0.0655	ppb	11.46	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.1995	0.6399	ppb	0.86	1000.	
120 Sn	3.115	0.623	ppb	3.14	#VALUE!	
121 Sb	0.7125	0.1425	ppb	9.80	#VALUE!	
123 Sb	0.753	0.1506	ppb	5.24	1000.	
135 Ba	370.5	74.1	ppb	0.99	2000.	
137 Ba	370.6	74.12	ppb	0.75	#VALUE!	
182 W	0.4852	0.097	ppb	10.52	1000.	
203 Tl	0.503	0.1006	ppb	19.51	1000.	
205 Tl	0.4639	0.0928	ppb	4.09	#VALUE!	
208 Pb	34.48	6.896	ppb	0.65	2000.	
232 Th	23.14	4.628	ppb	1.84	1000.	
238 U	10.825	2.165	ppb	0.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3982417.50	3.13	3927738.80	101.4	69.5 - 120	
45 Sc	2671777.00	2.84	2572658.80	103.9	69.5 - 120	
72 Ge	517128.06	1.23	510197.59	101.4	69.5 - 120	
159 Tb	4788531.50	0.09	4617151.00	103.7	69.5 - 120	
209 Bi	2360853.80	1.41	2380666.00	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.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 4000255

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\055SMPL.D\055SMPL.D#
Date Acquired: May 15 2018 09:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-007
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.0063	0.0013	ppb	181.92	100.	
11 B	223.45	44.69	ppb	3.59	1000.	
23 Na	288,350.	57,670.	ppb	2.36	200000.	
25 Mg	68,650.	13,730.	ppb	1.41	200000.	
27 Al	20.465	4.093	ppb	6.28	200000.	
28 Si	18,310.	3,662.	ppb	2.18	#VALUE!	
29 Si	20,125.	4,025.	ppb	2.41	10000.	
39 K	17,250.	3,450.	ppb	2.32	200000.	
43 Ca	372,350.	74,470.	ppb	2.87	#VALUE!	
44 Ca	350,550.	70,110.	ppb	2.35	200000.	
51 V	1.2115	0.2423	ppb	32.49	1000.	
52 Cr	2.4385	0.4877	ppb	7.82	2000.	
53 Cr	65.85	13.17	ppb	16.06	#VALUE!	
55 Mn	1,334.	266.8	ppb	1.88	2000.	
56 Fe	6,240.	1,248.	ppb	1.99	#VALUE!	
57 Fe	6,580.	1,316.	ppb	0.91	100000.	
59 Co	0.6225	0.1245	ppb	6.62	1000.	
60 Ni	4.239	0.8478	ppb	1.23	1000.	
63 Cu	9.435	1.887	ppb	4.40	#VALUE!	
65 Cu	1.384	0.2768	ppb	5.01	2000.	
66 Zn	18.4	3.68	ppb	0.70	2000.	
68 Zn	15.835	3.167	ppb	3.12	#VALUE!	
75 As	9.785	1.957	ppb	4.88	1000.	
82 Se	1.863	0.3726	ppb	16.39	1000.	
88 Sr	1,448.	289.6	ppb	1.26	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	12.555	2.511	ppb	1.93	1000.	
107 Ag	0.0008	0.0002	ppb	1410.90	100.	
109 Ag	0.0026	0.0005	ppb	322.13	#VALUE!	
111 Cd	0.1602	0.032	ppb	65.78	#VALUE!	
114 Cd	-0.0102	-0.002	ppb	67.86	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.023	0.2046	ppb	11.07	1000.	
120 Sn	1.022	0.2044	ppb	4.56	#VALUE!	
121 Sb	0.1442	0.0288	ppb	25.42	#VALUE!	
123 Sb	0.1722	0.0344	ppb	14.84	1000.	
135 Ba	33.975	6.795	ppb	2.01	2000.	
137 Ba	33.69	6.738	ppb	4.30	#VALUE!	
182 W	0.2745	0.0549	ppb	16.33	1000.	
203 Tl	0.0658	0.0132	ppb	67.08	1000.	
205 Tl	0.0265	0.0053	ppb	66.54	#VALUE!	
208 Pb	-0.2518	-0.0504	ppb	3.46	2000.	
232 Th	0.4051	0.081	ppb	25.12	1000.	
238 U	0.765	0.153	ppb	1.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3962612.00	3.01	3927738.80	100.9	69.5 - 120	
45 Sc	2623350.50	3.10	2572658.80	102.0	69.5 - 120	
72 Ge	513744.88	1.26	510197.59	100.7	69.5 - 120	
159 Tb	4687806.00	2.11	4617151.00	101.5	69.5 - 120	
209 Bi	2349893.50	0.64	2380666.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000256

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\056SMPL.D\056SMPL.D#
Date Acquired: May 15 2018 09:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-008
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	1.761	0.3522	ppb	3.33	100.	
11 B	203.35	40.67	ppb	1.06	1000.	
23 Na	273,500.	54,700.	ppb	2.27	200000.	
25 Mg	77,100.	15,420.	ppb	2.10	200000.	
27 Al	26,645.	5,329.	ppb	4.34	200000.	
28 Si	62,050.	12,410.	ppb	4.43	#VALUE!	
29 Si	64,450.	12,890.	ppb	2.31	10000.	>LDR
39 K	24,095.	4,819.	ppb	2.62	200000.	
43 Ca	441,250.	88,250.	ppb	2.28	#VALUE!	
44 Ca	418,650.	83,730.	ppb	2.37	200000.	
51 V	75.65	15.13	ppb	1.81	1000.	
52 Cr	92.1	18.42	ppb	1.26	2000.	
53 Cr	125.1	25.02	ppb	3.65	#VALUE!	
55 Mn	1,870.5	374.1	ppb	1.05	2000.	
56 Fe	42,240.	8,448.	ppb	1.14	#VALUE!	
57 Fe	43,015.	8,603.	ppb	1.17	100000.	
59 Co	10.325	2.065	ppb	0.94	1000.	
60 Ni	47.21	9.442	ppb	2.13	1000.	
63 Cu	48.935	9.787	ppb	2.23	#VALUE!	
65 Cu	42.38	8.476	ppb	2.64	2000.	
66 Zn	207.05	41.41	ppb	1.76	2000.	
68 Zn	224.2	44.84	ppb	2.52	#VALUE!	
75 As	45.52	9.104	ppb	4.69	1000.	
82 Se	4.802	0.9604	ppb	34.63	1000.	
88 Sr	1,681.	336.2	ppb	0.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.475	4.295	ppb	3.14	1000.	
107 Ag	0.1411	0.0282	ppb	22.70	100.	
109 Ag	0.0883	0.0177	ppb	13.42	#VALUE!	
111 Cd	0.5205	0.1041	ppb	11.17	#VALUE!	
114 Cd	0.1436	0.0287	ppb	34.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.5275	0.5055	ppb	6.47	1000.	
120 Sn	2.49	0.498	ppb	4.44	#VALUE!	
121 Sb	0.4929	0.0986	ppb	7.60	#VALUE!	
123 Sb	0.474	0.0948	ppb	10.71	1000.	
135 Ba	702.	140.4	ppb	1.81	2000.	
137 Ba	701.5	140.3	ppb	1.37	#VALUE!	
182 W	0.4942	0.0988	ppb	5.69	1000.	
203 Tl	0.37	0.074	ppb	15.48	1000.	
205 Tl	0.3824	0.0765	ppb	0.83	#VALUE!	
208 Pb	23.43	4.686	ppb	3.28	2000.	
232 Th	19.275	3.855	ppb	3.21	1000.	
238 U	5.875	1.175	ppb	4.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3874035.00	2.60	3927738.80	98.6	69.5 - 120	
45 Sc	2629377.00	1.46	2572658.80	102.2	69.5 - 120	
72 Ge	509218.34	0.94	510197.59	99.8	69.5 - 120	
159 Tb	4761461.50	0.97	4617151.00	103.1	69.5 - 120	
209 Bi	2380346.50	3.12	2380666.00	100.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.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 4000257

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\057SMPL.D\057SMPL.D#
Date Acquired: May 15 2018 09:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-009
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.0114	0.0023	ppb	41.96	100.	
11 B	190.8	38.16	ppb	1.64	1000.	
23 Na	271,550.	54,310.	ppb	1.84	200000.	
25 Mg	69,250.	13,850.	ppb	1.06	200000.	
27 Al	16.915	3.383	ppb	9.70	200000.	
28 Si	16,235.	3,247.	ppb	2.36	#VALUE!	
29 Si	17,715.	3,543.	ppb	0.73	10000.	
39 K	18,410.	3,682.	ppb	1.07	200000.	
43 Ca	403,450.	80,690.	ppb	0.33	#VALUE!	
44 Ca	377,300.	75,460.	ppb	0.47	200000.	
51 V	1.331	0.2662	ppb	69.91	1000.	
52 Cr	1.9125	0.3825	ppb	4.88	2000.	
53 Cr	71.75	14.35	ppb	18.47	#VALUE!	
55 Mn	1,277.5	255.5	ppb	0.38	2000.	
56 Fe	3,709.	741.8	ppb	1.75	#VALUE!	
57 Fe	4,094.	818.8	ppb	2.01	100000.	
59 Co	1.0875	0.2175	ppb	6.86	1000.	
60 Ni	20.35	4.07	ppb	2.78	1000.	
63 Cu	9.275	1.855	ppb	2.93	#VALUE!	
65 Cu	1.582	0.3164	ppb	4.85	2000.	
66 Zn	52.4	10.48	ppb	1.00	2000.	
68 Zn	49.04	9.808	ppb	2.09	#VALUE!	
75 As	26.555	5.311	ppb	6.57	1000.	
82 Se	2.633	0.5266	ppb	10.67	1000.	
88 Sr	1,525.	305.	ppb	2.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.285	2.457	ppb	1.09	1000.	
107 Ag	-0.0004	-0.0001	ppb	971.30	100.	
109 Ag	0.0015	0.0003	ppb	292.17	#VALUE!	
111 Cd	0.2428	0.0486	ppb	32.17	#VALUE!	
114 Cd	0.0005	0.0001	ppb	4432.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.861	0.1722	ppb	16.30	1000.	
120 Sn	0.931	0.1862	ppb	11.27	#VALUE!	
121 Sb	0.1714	0.0343	ppb	14.18	#VALUE!	
123 Sb	0.2074	0.0415	ppb	22.67	1000.	
135 Ba	40.72	8.144	ppb	2.56	2000.	
137 Ba	40.4	8.08	ppb	2.34	#VALUE!	
182 W	0.3052	0.061	ppb	4.06	1000.	
203 Tl	-0.0064	-0.0013	ppb	557.40	1000.	
205 Tl	0.0022	0.0004	ppb	1272.60	#VALUE!	
208 Pb	-0.2006	-0.0401	ppb	23.83	2000.	
232 Th	0.2337	0.0467	ppb	29.30	1000.	
238 U	2.343	0.4686	ppb	1.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4057630.00	0.82	3927738.80	103.3	69.5 - 120	
45 Sc	2674540.30	1.22	2572658.80	104.0	69.5 - 120	
72 Ge	521810.75	0.73	510197.59	102.3	69.5 - 120	
159 Tb	4747509.00	0.53	4617151.00	102.8	69.5 - 120	
209 Bi	2359705.30	1.26	2380666.00	99.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000258

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\058SMPL.D\058SMPL.D#
Date Acquired: May 15 2018 09:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-010
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	2.0955	0.4191	ppb	7.87	100.	
11 B	230.	46.	ppb	5.84	1000.	
23 Na	282,250.	56,450.	ppb	4.22	200000.	
25 Mg	74,850.	14,970.	ppb	4.03	200000.	
27 Al	40,905.	8,181.	ppb	2.77	200000.	
28 Si	67,650.	13,530.	ppb	4.32	#VALUE!	
29 Si	69,650.	13,930.	ppb	3.03	10000.	>LDR
39 K	25,095.	5,019.	ppb	1.95	200000.	
43 Ca	389,000.	77,800.	ppb	1.81	#VALUE!	
44 Ca	365,500.	73,100.	ppb	1.45	200000.	
51 V	99.85	19.97	ppb	3.90	1000.	
52 Cr	144.8	28.96	ppb	0.52	2000.	
53 Cr	183.15	36.63	ppb	1.25	#VALUE!	
55 Mn	1,745.	349.	ppb	1.22	2000.	
56 Fe	52,000.	10,400.	ppb	2.01	#VALUE!	
57 Fe	52,000.	10,400.	ppb	1.90	100000.	
59 Co	22.71	4.542	ppb	1.94	1000.	
60 Ni	71.65	14.33	ppb	1.21	1000.	
63 Cu	61.7	12.34	ppb	2.30	#VALUE!	
65 Cu	54.5	10.9	ppb	1.15	2000.	
66 Zn	225.05	45.01	ppb	0.47	2000.	
68 Zn	233.3	46.66	ppb	2.42	#VALUE!	
75 As	15.995	3.199	ppb	4.06	1000.	
82 Se	3.877	0.7754	ppb	7.56	1000.	
88 Sr	1,573.	314.6	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	26.715	5.343	ppb	1.18	1000.	
107 Ag	0.1117	0.0223	ppb	8.57	100.	
109 Ag	0.092	0.0184	ppb	31.68	#VALUE!	
111 Cd	0.801	0.1602	ppb	12.20	#VALUE!	
114 Cd	0.3909	0.0782	ppb	10.64	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.381	0.6762	ppb	4.61	1000.	
120 Sn	3.299	0.6598	ppb	5.30	#VALUE!	
121 Sb	0.7195	0.1439	ppb	3.46	#VALUE!	
123 Sb	0.752	0.1504	ppb	12.89	1000.	
135 Ba	446.65	89.33	ppb	2.74	2000.	
137 Ba	444.75	88.95	ppb	2.48	#VALUE!	
182 W	0.4398	0.088	ppb	6.27	1000.	
203 Tl	0.595	0.119	ppb	4.17	1000.	
205 Tl	0.5035	0.1007	ppb	10.47	#VALUE!	
208 Pb	41.225	8.245	ppb	1.86	2000.	
232 Th	30.335	6.067	ppb	1.79	1000.	
238 U	13.515	2.703	ppb	1.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3956793.80	5.73	3927738.80	100.7	69.5 - 120	
45 Sc	2652608.00	1.83	2572658.80	103.1	69.5 - 120	
72 Ge	509845.38	0.80	510197.59	99.9	69.5 - 120	
159 Tb	4764786.00	2.01	4617151.00	103.2	69.5 - 120	
209 Bi	2370220.30	1.95	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\059SMPL.D\059SMPL.D#
Date Acquired: May 15 2018 09:47 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-011
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.0053	0.0011	ppb	63.77	100.	
11 B	215.8	43.16	ppb	4.08	1000.	
23 Na	279,850.	55,970.	ppb	3.59	200000.	
25 Mg	68,800.	13,760.	ppb	2.64	200000.	
27 Al	11.08	2.216	ppb	4.06	200000.	
28 Si	18,600.	3,720.	ppb	4.33	#VALUE!	
29 Si	20,200.	4,040.	ppb	3.60	10000.	
39 K	17,205.	3,441.	ppb	2.69	200000.	
43 Ca	371,750.	74,350.	ppb	1.09	#VALUE!	
44 Ca	348,650.	69,730.	ppb	1.95	200000.	
51 V	1.1495	0.2299	ppb	57.76	1000.	
52 Cr	2.3195	0.4639	ppb	4.67	2000.	
53 Cr	66.25	13.25	ppb	14.95	#VALUE!	
55 Mn	1,304.5	260.9	ppb	3.18	2000.	
56 Fe	5,960.	1,192.	ppb	2.06	#VALUE!	
57 Fe	6,375.	1,275.	ppb	1.78	100000.	
59 Co	0.605	0.121	ppb	8.97	1000.	
60 Ni	3.639	0.7278	ppb	2.21	1000.	
63 Cu	9.8	1.96	ppb	1.79	#VALUE!	
65 Cu	1.4545	0.2909	ppb	7.70	2000.	
66 Zn	15.38	3.076	ppb	3.25	2000.	
68 Zn	13.33	2.666	ppb	2.43	#VALUE!	
75 As	9.45	1.89	ppb	11.31	1000.	
82 Se	1.962	0.3924	ppb	34.12	1000.	
88 Sr	1,413.5	282.7	ppb	1.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.54	2.508	ppb	2.08	1000.	
107 Ag	0.0077	0.0015	ppb	44.24	100.	
109 Ag	0.0053	0.0011	ppb	74.68	#VALUE!	
111 Cd	0.1638	0.0328	ppb	102.32	#VALUE!	
114 Cd	-0.0045	-0.0009	ppb	541.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.004	0.2008	ppb	11.46	1000.	
120 Sn	0.99	0.198	ppb	10.81	#VALUE!	
121 Sb	0.1142	0.0228	ppb	19.61	#VALUE!	
123 Sb	0.1422	0.0284	ppb	26.63	1000.	
135 Ba	32.01	6.402	ppb	1.81	2000.	
137 Ba	32.27	6.454	ppb	2.06	#VALUE!	
182 W	0.2188	0.0438	ppb	24.70	1000.	
203 Tl	0.0114	0.0023	ppb	113.77	1000.	
205 Tl	0.0042	0.0008	ppb	429.19	#VALUE!	
208 Pb	-0.2477	-0.0495	ppb	20.35	2000.	
232 Th	0.2019	0.0404	ppb	26.33	1000.	
238 U	0.7735	0.1547	ppb	1.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4044604.00	3.68	3927738.80	103.0	69.5 - 120	
45 Sc	2627561.50	0.92	2572658.80	102.1	69.5 - 120	
72 Ge	515163.50	1.24	510197.59	101.0	69.5 - 120	
159 Tb	4717266.50	2.83	4617151.00	102.2	69.5 - 120	
209 Bi	2346511.50	2.43	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\060SMPL.D\060SMPL.D#
Date Acquired: May 15 2018 09:51 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-012
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	1.4825	0.2965	ppb	6.32	100.	
11 B	208.85	41.77	ppb	4.90	1000.	
23 Na	296,300.	59,260.	ppb	2.70	200000.	
25 Mg	81,400.	16,280.	ppb	0.36	200000.	
27 Al	24,445.	4,889.	ppb	4.98	200000.	
28 Si	50,100.	10,020.	ppb	4.64	#VALUE!	
29 Si	52,800.	10,560.	ppb	2.59	10000.	>LDR
39 K	23,750.	4,750.	ppb	3.05	200000.	
43 Ca	447,700.	89,540.	ppb	1.81	#VALUE!	
44 Ca	419,300.	83,860.	ppb	1.50	200000.	
51 V	60.	12.	ppb	1.67	1000.	
52 Cr	106.3	21.26	ppb	1.77	2000.	
53 Cr	145.95	29.19	ppb	2.39	#VALUE!	
55 Mn	1,986.	397.2	ppb	0.74	2000.	
56 Fe	34,750.	6,950.	ppb	1.05	#VALUE!	
57 Fe	35,420.	7,084.	ppb	1.43	100000.	
59 Co	12.345	2.469	ppb	1.24	1000.	
60 Ni	63.75	12.75	ppb	0.37	1000.	
63 Cu	39.575	7.915	ppb	1.48	#VALUE!	
65 Cu	31.76	6.352	ppb	1.32	2000.	
66 Zn	143.05	28.61	ppb	0.63	2000.	
68 Zn	147.75	29.55	ppb	1.01	#VALUE!	
75 As	31.23	6.246	ppb	4.51	1000.	
82 Se	6.9	1.38	ppb	6.54	1000.	
88 Sr	1,689.	337.8	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	22.69	4.538	ppb	1.03	1000.	
107 Ag	0.1168	0.0234	ppb	8.77	100.	
109 Ag	0.1174	0.0235	ppb	13.06	#VALUE!	
111 Cd	0.8075	0.1615	ppb	1.23	#VALUE!	
114 Cd	0.478	0.0956	ppb	7.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.1125	0.4225	ppb	3.14	1000.	
120 Sn	2.232	0.4464	ppb	2.43	#VALUE!	
121 Sb	0.4845	0.0969	ppb	5.12	#VALUE!	
123 Sb	0.4543	0.0909	ppb	7.91	1000.	
135 Ba	333.15	66.63	ppb	1.67	2000.	
137 Ba	334.1	66.82	ppb	1.34	#VALUE!	
182 W	0.4376	0.0875	ppb	6.52	1000.	
203 Tl	0.4159	0.0832	ppb	12.42	1000.	
205 Tl	0.4128	0.0826	ppb	0.67	#VALUE!	
208 Pb	22.79	4.558	ppb	1.67	2000.	
232 Th	14.52	2.904	ppb	1.09	1000.	
238 U	6.37	1.274	ppb	1.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3949935.00	3.98	3927738.80	100.6	69.5 - 120	
45 Sc	2636380.00	1.91	2572658.80	102.5	69.5 - 120	
72 Ge	510580.84	0.58	510197.59	100.1	69.5 - 120	
159 Tb	4760118.50	0.76	4617151.00	103.1	69.5 - 120	
209 Bi	2376653.50	0.21	2380666.00	99.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.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 4000261

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\061SMPL.D\061SMPL.D#
Date Acquired: May 15 2018 09:55 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 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	311.54	100.	
11 B	2.908	2.908	ppb	9.27	1000.	
23 Na	15.52	15.52	ppb	40.50	200000.	
25 Mg	4.142	4.142	ppb	39.81	200000.	
27 Al	3.202	3.202	ppb	13.12	200000.	
28 Si	40.19	40.19	ppb	12.96	#VALUE!	
29 Si	33.17	33.17	ppb	29.98	10000.	
39 K	0.0796	0.0796	ppb	2854.80	200000.	
43 Ca	10.49	10.49	ppb	100.38	#VALUE!	
44 Ca	14.56	14.56	ppb	61.01	200000.	
51 V	0.0267	0.0267	ppb	280.37	1000.	
52 Cr	0.0141	0.0141	ppb	92.18	2000.	
53 Cr	-1.227	-1.227	ppb	2.00	#VALUE!	
55 Mn	0.1019	0.1019	ppb	57.74	2000.	
56 Fe	10.73	10.73	ppb	30.05	#VALUE!	
57 Fe	7.468	7.468	ppb	12.78	100000.	
59 Co	0.0076	0.0076	ppb	58.23	1000.	
60 Ni	0.0202	0.0202	ppb	39.87	1000.	
63 Cu	0.2076	0.2076	ppb	1.36	#VALUE!	
65 Cu	0.245	0.245	ppb	7.09	2000.	
66 Zn	0.2752	0.2752	ppb	15.15	2000.	
68 Zn	0.0315	0.0315	ppb	425.30	#VALUE!	
75 As	0.149	0.149	ppb	94.16	1000.	
82 Se	0.1758	0.1758	ppb	136.01	1000.	
88 Sr	0.0427	0.0427	ppb	107.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1617	0.1617	ppb	3.93	1000.	
107 Ag	0.0007	0.0007	ppb	198.43	100.	
109 Ag	-0.0003	-0.0003	ppb	175.03	#VALUE!	
111 Cd	0.0613	0.0613	ppb	29.29	#VALUE!	
114 Cd	0.0049	0.0049	ppb	17.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.048	0.048	ppb	10.21	1000.	
120 Sn	0.045	0.045	ppb	12.70	#VALUE!	
121 Sb	-0.0003	-0.0003	ppb	264.58	#VALUE!	
123 Sb	0.0005	0.0005	ppb	418.87	1000.	
135 Ba	0.0794	0.0794	ppb	17.07	2000.	
137 Ba	0.0759	0.0759	ppb	6.18	#VALUE!	
182 W	0.0011	0.0011	ppb	188.15	1000.	
203 Tl	0.009	0.009	ppb	52.06	1000.	
205 Tl	0.0002	0.0002	ppb	555.35	#VALUE!	
208 Pb	0.1438	0.1438	ppb	13.49	2000.	
232 Th	0.0047	0.0047	ppb	56.44	1000.	
238 U	0.0005	0.0005	ppb	98.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4029455.80	3.02	3927738.80	102.6	69.5 - 120	
45 Sc	2582611.30	1.47	2572658.80	100.4	69.5 - 120	
72 Ge	495729.56	2.07	510197.59	97.2	69.5 - 120	
159 Tb	4455480.00	1.97	4617151.00	96.5	69.5 - 120	
209 Bi	2346931.00	2.11	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\062_CCV.D\062_CCV.D#
Date Acquired: May 15 2018 09:59 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.84	ppb	1.56	25	99.36	
11 B	25.61	ppb	6.05	25	102.44	
23 Na	4,835.	ppb	0.89	5,000	96.7	
25 Mg	4,900.	ppb	1.40	5,000	98	
27 Al	494.3	ppb	2.09	500	98.86	
28 Si	477.4	ppb	1.13	500	95.48	
29 Si	456.	ppb	0.57	500	91.2	
39 K	4,812.	ppb	0.73	5,000	96.24	
43 Ca	4,803.	ppb	0.78	5,000	96.06	
44 Ca	4,870.	ppb	1.17	5,000	97.4	
51 V	24.27	ppb	0.96	25	97.08	
52 Cr	24.43	ppb	1.11	25	97.72	
53 Cr	23.15	ppb	1.83	25	92.6	
55 Mn	24.2	ppb	0.94	25	96.8	
56 Fe	4,784.	ppb	1.27	5,000	95.68	
57 Fe	4,840.	ppb	0.63	5,000	96.8	
59 Co	24.26	ppb	0.77	25	97.04	
60 Ni	24.47	ppb	0.50	25	97.88	
63 Cu	24.36	ppb	1.10	25	97.44	
65 Cu	24.18	ppb	1.16	25	96.72	
66 Zn	24.6	ppb	0.82	25	98.4	
68 Zn	23.76	ppb	0.31	25	95.04	
75 As	24.69	ppb	0.41	25	98.76	
82 Se	24.95	ppb	1.36	25	99.8	
88 Sr	23.88	ppb	0.43	25	95.52	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.17	ppb	0.27	25	96.68	
107 Ag	24.49	ppb	0.69	25	97.96	
109 Ag	24.31	ppb	0.26	25	97.24	
111 Cd	24.29	ppb	0.56	25	97.16	
114 Cd	24.33	ppb	0.24	25	97.32	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.78	ppb	0.78	25	95.12	
120 Sn	23.75	ppb	1.15	25	95	
121 Sb	24.25	ppb	0.99	25	97	
123 Sb	24.26	ppb	1.37	25	97.04	
135 Ba	24.34	ppb	0.76	25	97.36	
137 Ba	24.46	ppb	0.88	25	97.84	
182 W	23.79	ppb	0.66	25	95.16	
203 Tl	23.94	ppb	1.98	25	95.76	
205 Tl	23.99	ppb	1.24	25	95.96	
208 Pb	24.02	ppb	1.30	25	96.08	
232 Th	23.78	ppb	1.51	25	95.12	
238 U	24.42	ppb	1.44	25	97.68	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4222635.50	2.21	3927738.80	107.5	80 - 120.4	
45 Sc	2737753.50	0.77	2572658.80	106.4	80 - 120.4	
72 Ge	512067.59	0.97	510197.59	100.4	80 - 120.4	
159 Tb	4765422.50	0.43	4617151.00	103.2	80 - 120.4	
209 Bi	2437298.30	0.21	2380666.00	102.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\063_CCB.D\063_CCB.D#
Date Acquired: May 15 2018 10:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.002	ppb	40.95	1.00	
11 B	2.408	ppb	10.62	1.00	
23 Na	4.364	ppb	7.91	1.00	
25 Mg	0.2018	ppb	59.32	1.00	
27 Al	0.1232	ppb	22.47	1.00	
28 Si	22.32	ppb	25.73	1.00	
29 Si	16.22	ppb	24.43	1.00	
39 K	1.081	ppb	139.96	1.00	
43 Ca	1.275	ppb	154.35	1.00	
44 Ca	1.211	ppb	27.84	1.00	
51 V	0.0156	ppb	686.98	1.00	
52 Cr	-0.0047	ppb	565.61	1.00	
53 Cr	-2.746	ppb	9.79	1.00	
55 Mn	0.0046	ppb	146.94	1.00	
56 Fe	4.711	ppb	55.51	1.00	
57 Fe	1.957	ppb	47.93	1.00	
59 Co	0.0029	ppb	55.18	1.00	
60 Ni	0.0014	ppb	985.42	1.00	
63 Cu	0.0672	ppb	16.16	1.00	
65 Cu	0.0415	ppb	81.77	1.00	
66 Zn	0.1181	ppb	51.59	1.00	
68 Zn	-0.1219	ppb	57.15	1.00	
75 As	-0.0239	ppb	226.27	1.00	
82 Se	0.1574	ppb	15.14	1.00	
88 Sr	-0.0002	ppb	231.49	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0233	ppb	36.50	1.00	
107 Ag	0.0031	ppb	53.69	1.00	
109 Ag	0.0028	ppb	95.13	1.00	
111 Cd	0.0341	ppb	36.95	1.00	
114 Cd	0.0056	ppb	83.21	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0657	ppb	20.09	1.00	
120 Sn	0.0516	ppb	12.22	1.00	
121 Sb	0.0078	ppb	19.88	1.00	
123 Sb	0.012	ppb	49.98	1.00	
135 Ba	0.0245	ppb	14.77	1.00	
137 Ba	0.0086	ppb	124.77	1.00	
182 W	0.0476	ppb	35.96	1.00	
203 Tl	0.0128	ppb	10.89	1.00	
205 Tl	0.0081	ppb	52.01	1.00	
208 Pb	0.0007	ppb	669.58	1.00	
232 Th	0.0533	ppb	5.58	1.00	
238 U	0.0027	ppb	35.89	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3905871.50	5.78	3927738.80	99.4	79.5 - 120	
45 Sc	2494548.80	1.31	2572658.80	97.0	79.5 - 120	
72 Ge	479379.31	0.85	510197.59	94.0	79.5 - 120	
159 Tb	4384390.50	0.35	4617151.00	95.0	79.5 - 120	
209 Bi	2285738.50	1.06	2380666.00	96.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :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\JLE15C.B\064SMPL.D\064SMPL.D#
Date Acquired: May 15 2018 10:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-013
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.0067	0.0013	ppb	155.65	100.	
11 B	188.25	37.65	ppb	6.59	1000.	
23 Na	308,300.	61,660.	ppb	4.50	200000.	
25 Mg	76,250.	15,250.	ppb	3.80	200000.	
27 Al	9.86	1.972	ppb	6.86	200000.	
28 Si	19,745.	3,949.	ppb	3.70	#VALUE!	
29 Si	21,440.	4,288.	ppb	3.28	10000.	
39 K	18,675.	3,735.	ppb	2.69	200000.	
43 Ca	411,350.	82,270.	ppb	1.84	#VALUE!	
44 Ca	389,700.	77,940.	ppb	0.14	200000.	
51 V	1.336	0.2672	ppb	26.23	1000.	
52 Cr	2.296	0.4592	ppb	10.59	2000.	
53 Cr	64.85	12.97	ppb	28.17	#VALUE!	
55 Mn	1,375.5	275.1	ppb	0.49	2000.	
56 Fe	4,637.5	927.5	ppb	0.88	#VALUE!	
57 Fe	5,115.	1,023.	ppb	0.79	100000.	
59 Co	0.4899	0.098	ppb	6.15	1000.	
60 Ni	1.901	0.3802	ppb	2.46	1000.	
63 Cu	10.35	2.07	ppb	0.95	#VALUE!	
65 Cu	1.611	0.3222	ppb	4.94	2000.	
66 Zn	21.19	4.238	ppb	0.32	2000.	
68 Zn	19.61	3.922	ppb	5.02	#VALUE!	
75 As	10.13	2.026	ppb	7.93	1000.	
82 Se	2.943	0.5886	ppb	27.95	1000.	
88 Sr	1,622.	324.4	ppb	0.86	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.61	2.122	ppb	1.40	1000.	
107 Ag	0.0028	0.0006	ppb	179.58	100.	
109 Ag	0.002	0.0004	ppb	244.55	#VALUE!	
111 Cd	0.2633	0.0527	ppb	46.72	#VALUE!	
114 Cd	0.001	0.0002	ppb	792.09	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.99	0.198	ppb	4.95	1000.	
120 Sn	0.9345	0.1869	ppb	5.08	#VALUE!	
121 Sb	0.1259	0.0252	ppb	13.86	#VALUE!	
123 Sb	0.1489	0.0298	ppb	18.67	1000.	
135 Ba	43.06	8.612	ppb	2.92	2000.	
137 Ba	43.215	8.643	ppb	0.19	#VALUE!	
182 W	0.2946	0.0589	ppb	11.90	1000.	
203 Tl	0.0256	0.0051	ppb	135.85	1000.	
205 Tl	-0.023	-0.0046	ppb	91.31	#VALUE!	
208 Pb	-0.2361	-0.0472	ppb	28.42	2000.	
232 Th	0.4151	0.083	ppb	17.37	1000.	
238 U	0.8315	0.1663	ppb	3.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4367482.00	4.24	3927738.80	111.2	69.5 - 120	
45 Sc	2762253.00	2.21	2572658.80	107.4	69.5 - 120	
72 Ge	527626.06	3.04	510197.59	103.4	69.5 - 120	
159 Tb	4732993.00	2.13	4617151.00	102.5	69.5 - 120	
209 Bi	2314200.30	1.71	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\065SMPL.D\065SMPL.D#
Date Acquired: May 15 2018 10:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-014
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	198.87	100.	
11 B	12.76	2.552	ppb	10.74	1000.	
23 Na	48.95	9.79	ppb	15.99	200000.	
25 Mg	18.5	3.7	ppb	10.97	200000.	
27 Al	9.51	1.902	ppb	4.88	200000.	
28 Si	63.1	12.62	ppb	36.12	#VALUE!	
29 Si	129.5	25.9	ppb	59.58	10000.	
39 K	12.705	2.541	ppb	115.27	200000.	
43 Ca	45.5	9.1	ppb	47.31	#VALUE!	
44 Ca	53.8	10.76	ppb	12.71	200000.	
51 V	1.636	0.3272	ppb	15.92	1000.	
52 Cr	1.924	0.3848	ppb	4.58	2000.	
53 Cr	74.4	14.88	ppb	2.24	#VALUE!	
55 Mn	0.5925	0.1185	ppb	5.42	2000.	
56 Fe	94.35	18.87	ppb	22.95	#VALUE!	
57 Fe	31.07	6.214	ppb	19.09	100000.	
59 Co	-0.0142	-0.0028	ppb	84.28	1000.	
60 Ni	0.1308	0.0262	ppb	12.74	1000.	
63 Cu	1.041	0.2082	ppb	3.57	#VALUE!	
65 Cu	1.0225	0.2045	ppb	6.17	2000.	
66 Zn	1.135	0.227	ppb	5.95	2000.	
68 Zn	-0.0091	-0.0018	ppb	1858.00	#VALUE!	
75 As	0.4816	0.0963	ppb	92.30	1000.	
82 Se	0.653	0.1306	ppb	160.64	1000.	
88 Sr	0.2002	0.04	ppb	12.85	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1707	0.0341	ppb	2.68	1000.	
107 Ag	0.008	0.0016	ppb	71.63	100.	
109 Ag	0.0108	0.0022	ppb	63.77	#VALUE!	
111 Cd	0.3667	0.0733	ppb	32.63	#VALUE!	
114 Cd	-0.007	-0.0014	ppb	172.83	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.024	0.2048	ppb	15.23	1000.	
120 Sn	1.0315	0.2063	ppb	5.40	#VALUE!	
121 Sb	0.0153	0.0031	ppb	134.95	#VALUE!	
123 Sb	0.0456	0.0091	ppb	23.94	1000.	
135 Ba	0.2969	0.0594	ppb	9.46	2000.	
137 Ba	0.2682	0.0536	ppb	33.38	#VALUE!	
182 W	0.0221	0.0044	ppb	65.17	1000.	
203 Tl	-0.0154	-0.0031	ppb	161.68	1000.	
205 Tl	0.0071	0.0014	ppb	391.58	#VALUE!	
208 Pb	-0.1827	-0.0365	ppb	36.00	2000.	
232 Th	0.1122	0.0224	ppb	45.79	1000.	
238 U	-0.0012	-0.0002	ppb	222.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3950290.00	0.40	3927738.80	100.6	69.5 - 120	
45 Sc	2530694.00	2.62	2572658.80	98.4	69.5 - 120	
72 Ge	495171.31	1.18	510197.59	97.1	69.5 - 120	
159 Tb	4447220.00	1.48	4617151.00	96.3	69.5 - 120	
209 Bi	2322021.00	2.06	2380666.00	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\066SMPL.D\066SMPL.D#
Date Acquired: May 15 2018 10:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-015
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.5085	0.1017	ppb	4.64	100.	
11 B	199.45	39.89	ppb	3.80	1000.	
23 Na	279,950.	55,990.	ppb	2.50	200000.	
25 Mg	66,850.	13,370.	ppb	0.96	200000.	
27 Al	10,330.	2,066.	ppb	0.62	200000.	
28 Si	41,630.	8,326.	ppb	1.83	#VALUE!	
29 Si	43,790.	8,758.	ppb	2.46	10000.	
39 K	20,505.	4,101.	ppb	1.50	200000.	
43 Ca	386,450.	77,290.	ppb	0.54	#VALUE!	
44 Ca	361,250.	72,250.	ppb	0.63	200000.	
51 V	34.625	6.925	ppb	3.37	1000.	
52 Cr	56.15	11.23	ppb	0.50	2000.	
53 Cr	95.9	19.18	ppb	2.64	#VALUE!	
55 Mn	1,414.5	282.9	ppb	0.79	2000.	
56 Fe	20,340.	4,068.	ppb	0.57	#VALUE!	
57 Fe	21,035.	4,207.	ppb	1.35	100000.	
59 Co	5.53	1.106	ppb	1.10	1000.	
60 Ni	28.4	5.68	ppb	2.77	1000.	
63 Cu	33.11	6.622	ppb	1.28	#VALUE!	
65 Cu	25.985	5.197	ppb	1.66	2000.	
66 Zn	90.3	18.06	ppb	0.57	2000.	
68 Zn	94.55	18.91	ppb	1.66	#VALUE!	
75 As	12.695	2.539	ppb	17.02	1000.	
82 Se	2.7885	0.5577	ppb	58.97	1000.	
88 Sr	1,501.	300.2	ppb	0.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	20.64	4.128	ppb	1.92	1000.	
107 Ag	0.0369	0.0074	ppb	14.47	100.	
109 Ag	0.0459	0.0092	ppb	21.57	#VALUE!	
111 Cd	0.2777	0.0555	ppb	58.11	#VALUE!	
114 Cd	-0.011	-0.0022	ppb	133.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.7615	0.3523	ppb	3.85	1000.	
120 Sn	1.8025	0.3605	ppb	3.46	#VALUE!	
121 Sb	0.3356	0.0671	ppb	26.15	#VALUE!	
123 Sb	0.37	0.074	ppb	12.79	1000.	
135 Ba	225.35	45.07	ppb	1.50	2000.	
137 Ba	225.5	45.1	ppb	0.89	#VALUE!	
182 W	0.518	0.1036	ppb	7.84	1000.	
203 Tl	0.1847	0.0369	ppb	7.74	1000.	
205 Tl	0.1515	0.0303	ppb	13.22	#VALUE!	
208 Pb	10.305	2.061	ppb	1.55	2000.	
232 Th	8.255	1.651	ppb	1.83	1000.	
238 U	2.043	0.4086	ppb	0.64	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4178981.30	0.92	3927738.80	106.4	69.5 - 120	
45 Sc	2650893.00	0.89	2572658.80	103.0	69.5 - 120	
72 Ge	510203.59	0.36	510197.59	100.0	69.5 - 120	
159 Tb	4729541.00	1.31	4617151.00	102.4	69.5 - 120	
209 Bi	2347590.00	0.66	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000267

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\067SMPL.D\067SMPL.D#
Date Acquired: May 15 2018 10:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-016
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.0046	0.0009	ppb	118.61	100.	
11 B	203.65	40.73	ppb	4.65	1000.	
23 Na	280,950.	56,190.	ppb	1.02	200000.	
25 Mg	64,250.	12,850.	ppb	2.89	200000.	
27 Al	10.34	2.068	ppb	5.21	200000.	
28 Si	19,050.	3,810.	ppb	2.19	#VALUE!	
29 Si	20,795.	4,159.	ppb	0.41	10000.	
39 K	17,845.	3,569.	ppb	1.65	200000.	
43 Ca	381,000.	76,200.	ppb	0.66	#VALUE!	
44 Ca	362,350.	72,470.	ppb	1.19	200000.	
51 V	0.4242	0.0848	ppb	156.06	1000.	
52 Cr	2.1565	0.4313	ppb	7.74	2000.	
53 Cr	58.7	11.74	ppb	11.70	#VALUE!	
55 Mn	1,321.5	264.3	ppb	1.49	2000.	
56 Fe	5,785.	1,157.	ppb	2.30	#VALUE!	
57 Fe	6,240.	1,248.	ppb	2.42	100000.	
59 Co	0.736	0.1472	ppb	6.48	1000.	
60 Ni	7.23	1.446	ppb	1.51	1000.	
63 Cu	9.77	1.954	ppb	2.67	#VALUE!	
65 Cu	1.944	0.3888	ppb	7.91	2000.	
66 Zn	26.915	5.383	ppb	2.85	2000.	
68 Zn	24.72	4.944	ppb	1.29	#VALUE!	
75 As	9.245	1.849	ppb	13.45	1000.	
82 Se	1.4295	0.2859	ppb	54.70	1000.	
88 Sr	1,466.5	293.3	ppb	0.37	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	12.875	2.575	ppb	1.35	1000.	
107 Ag	0.0007	0.0001	ppb	923.23	100.	
109 Ag	0.0035	0.0007	ppb	78.28	#VALUE!	
111 Cd	0.1301	0.026	ppb	57.11	#VALUE!	
114 Cd	0.007	0.0014	ppb	285.25	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.949	0.1898	ppb	6.12	1000.	
120 Sn	0.958	0.1916	ppb	5.31	#VALUE!	
121 Sb	0.1349	0.027	ppb	15.95	#VALUE!	
123 Sb	0.1428	0.0286	ppb	37.58	1000.	
135 Ba	35.865	7.173	ppb	0.27	2000.	
137 Ba	36.42	7.284	ppb	1.16	#VALUE!	
182 W	0.3226	0.0645	ppb	3.76	1000.	
203 Tl	0.0277	0.0055	ppb	197.76	1000.	
205 Tl	-0.0176	-0.0035	ppb	96.71	#VALUE!	
208 Pb	-0.2209	-0.0442	ppb	12.45	2000.	
232 Th	0.1228	0.0246	ppb	15.76	1000.	
238 U	1.0025	0.2005	ppb	6.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065115.00	2.88	3927738.80	103.5	69.5 - 120	
45 Sc	2657548.00	0.71	2572658.80	103.3	69.5 - 120	
72 Ge	514546.00	0.02	510197.59	100.9	69.5 - 120	
159 Tb	4676124.50	0.95	4617151.00	101.3	69.5 - 120	
209 Bi	2348305.50	0.99	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\068SMPL.D\068SMPL.D#
Date Acquired: May 15 2018 10:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-017
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	0.509	0.1018	ppb	6.32	100.	
11 B	196.1	39.22	ppb	1.14	1000.	
23 Na	238,450.	47,690.	ppb	3.30	200000.	
25 Mg	59,100.	11,820.	ppb	2.47	200000.	
27 Al	8,650.	1,730.	ppb	1.47	200000.	
28 Si	35,560.	7,112.	ppb	0.75	#VALUE!	
29 Si	37,800.	7,560.	ppb	1.99	10000.	
39 K	19,425.	3,885.	ppb	3.28	200000.	
43 Ca	384,550.	76,910.	ppb	2.65	#VALUE!	
44 Ca	360,800.	72,160.	ppb	2.49	200000.	
51 V	26.09	5.218	ppb	1.35	1000.	
52 Cr	33.615	6.723	ppb	1.58	2000.	
53 Cr	72.45	14.49	ppb	4.08	#VALUE!	
55 Mn	1,396.	279.2	ppb	3.07	2000.	
56 Fe	15,735.	3,147.	ppb	2.43	#VALUE!	
57 Fe	16,145.	3,229.	ppb	2.68	100000.	
59 Co	4.0725	0.8145	ppb	4.65	1000.	
60 Ni	13.785	2.757	ppb	2.88	1000.	
63 Cu	24.505	4.901	ppb	1.36	#VALUE!	
65 Cu	17.635	3.527	ppb	3.23	2000.	
66 Zn	60.5	12.1	ppb	2.10	2000.	
68 Zn	62.85	12.57	ppb	3.09	#VALUE!	
75 As	28.255	5.651	ppb	7.53	1000.	
82 Se	2.625	0.525	ppb	49.73	1000.	
88 Sr	1,416.	283.2	ppb	0.83	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.94	2.988	ppb	1.96	1000.	
107 Ag	0.0422	0.0084	ppb	35.79	100.	
109 Ag	0.0393	0.0079	ppb	46.49	#VALUE!	
111 Cd	0.3983	0.0797	ppb	41.04	#VALUE!	
114 Cd	0.118	0.0236	ppb	22.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.5675	0.3135	ppb	3.04	1000.	
120 Sn	1.4675	0.2935	ppb	1.60	#VALUE!	
121 Sb	0.4122	0.0824	ppb	1.00	#VALUE!	
123 Sb	0.4383	0.0877	ppb	9.30	1000.	
135 Ba	203.3	40.66	ppb	1.20	2000.	
137 Ba	204.25	40.85	ppb	0.92	#VALUE!	
182 W	0.309	0.0618	ppb	14.82	1000.	
203 Tl	0.1679	0.0336	ppb	19.51	1000.	
205 Tl	0.1308	0.0262	ppb	27.43	#VALUE!	
208 Pb	12.15	2.43	ppb	2.90	2000.	
232 Th	5.65	1.13	ppb	4.40	1000.	
238 U	3.624	0.7248	ppb	4.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3952377.00	2.13	3927738.80	100.6	69.5 - 120	
45 Sc	2592497.00	1.25	2572658.80	100.8	69.5 - 120	
72 Ge	503000.25	1.01	510197.59	98.6	69.5 - 120	
159 Tb	4652936.00	0.91	4617151.00	100.8	69.5 - 120	
209 Bi	2357018.00	1.45	2380666.00	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000269

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\069SMPL.D\069SMPL.D#
Date Acquired: May 15 2018 10:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-018
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	267.18	100.	
11 B	192.15	38.43	ppb	4.15	1000.	
23 Na	240,300.	48,060.	ppb	0.65	200000.	
25 Mg	58,050.	11,610.	ppb	2.60	200000.	
27 Al	9.06	1.812	ppb	0.07	200000.	
28 Si	16,785.	3,357.	ppb	3.23	#VALUE!	
29 Si	18,345.	3,669.	ppb	2.68	10000.	
39 K	17,760.	3,552.	ppb	4.06	200000.	
43 Ca	368,550.	73,710.	ppb	2.64	#VALUE!	
44 Ca	348,900.	69,780.	ppb	3.12	200000.	
51 V	0.74	0.148	ppb	163.04	1000.	
52 Cr	1.645	0.329	ppb	6.50	2000.	
53 Cr	57.5	11.5	ppb	16.82	#VALUE!	
55 Mn	1,236.5	247.3	ppb	0.39	2000.	
56 Fe	1,862.	372.4	ppb	1.73	#VALUE!	
57 Fe	2,298.	459.6	ppb	1.39	100000.	
59 Co	0.5135	0.1027	ppb	3.80	1000.	
60 Ni	1.667	0.3334	ppb	12.21	1000.	
63 Cu	8.17	1.634	ppb	2.52	#VALUE!	
65 Cu	1.459	0.2918	ppb	16.03	2000.	
66 Zn	13.195	2.639	ppb	1.52	2000.	
68 Zn	11.56	2.312	ppb	6.84	#VALUE!	
75 As	22.155	4.431	ppb	2.96	1000.	
82 Se	1.6735	0.3347	ppb	60.77	1000.	
88 Sr	1,373.5	274.7	ppb	1.08	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.655	2.131	ppb	0.61	1000.	
107 Ag	-0.0054	-0.0011	ppb	73.07	100.	
109 Ag	0.0043	0.0009	ppb	130.28	#VALUE!	
111 Cd	0.1976	0.0395	ppb	47.93	#VALUE!	
114 Cd	0.0204	0.0041	ppb	81.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9485	0.1897	ppb	9.47	1000.	
120 Sn	1.007	0.2014	ppb	7.07	#VALUE!	
121 Sb	0.1623	0.0325	ppb	4.70	#VALUE!	
123 Sb	0.1842	0.0368	ppb	6.35	1000.	
135 Ba	30.185	6.037	ppb	3.46	2000.	
137 Ba	30.155	6.031	ppb	3.49	#VALUE!	
182 W	0.2308	0.0462	ppb	8.81	1000.	
203 Tl	0.0295	0.0059	ppb	101.36	1000.	
205 Tl	-0.0167	-0.0033	ppb	146.44	#VALUE!	
208 Pb	-0.2411	-0.0482	ppb	21.30	2000.	
232 Th	0.0972	0.0194	ppb	2.27	1000.	
238 U	2.548	0.5096	ppb	3.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4050708.30	2.34	3927738.80	103.1	69.5 - 120	
45 Sc	2680928.00	1.68	2572658.80	104.2	69.5 - 120	
72 Ge	516162.78	0.17	510197.59	101.2	69.5 - 120	
159 Tb	4740578.00	1.44	4617151.00	102.7	69.5 - 120	
209 Bi	2344643.50	1.27	2380666.00	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000270

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\070SMPL.D\070SMPL.D#
Date Acquired: May 15 2018 10:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	361.50	100.	
11 B	2.519	2.519	ppb	11.37	1000.	
23 Na	34.05	34.05	ppb	14.17	200000.	
25 Mg	2.323	2.323	ppb	27.26	200000.	
27 Al	2.521	2.521	ppb	9.88	200000.	
28 Si	4.037	4.037	ppb	250.93	#VALUE!	
29 Si	9.417	9.417	ppb	111.82	10000.	
39 K	1.882	1.882	ppb	144.95	200000.	
43 Ca	9.973	9.973	ppb	52.56	#VALUE!	
44 Ca	10.09	10.09	ppb	49.79	200000.	
51 V	0.0688	0.0688	ppb	94.96	1000.	
52 Cr	0.0686	0.0686	ppb	5.14	2000.	
53 Cr	0.2139	0.2139	ppb	247.83	#VALUE!	
55 Mn	0.2416	0.2416	ppb	4.07	2000.	
56 Fe	10.79	10.79	ppb	49.06	#VALUE!	
57 Fe	8.464	8.464	ppb	13.13	100000.	
59 Co	0.0047	0.0047	ppb	96.61	1000.	
60 Ni	0.0375	0.0375	ppb	38.65	1000.	
63 Cu	0.3244	0.3244	ppb	7.14	#VALUE!	
65 Cu	0.3274	0.3274	ppb	4.80	2000.	
66 Zn	4.827	4.827	ppb	2.47	2000.	
68 Zn	4.49	4.49	ppb	1.52	#VALUE!	
75 As	0.094	0.094	ppb	135.06	1000.	
82 Se	0.1077	0.1077	ppb	215.78	1000.	
88 Sr	0.0278	0.0278	ppb	71.83	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0062	0.0062	ppb	33.17	1000.	
107 Ag	0.0007	0.0007	ppb	280.90	100.	
109 Ag	0.0012	0.0012	ppb	70.62	#VALUE!	
111 Cd	0.0644	0.0644	ppb	34.16	#VALUE!	
114 Cd	-0.0044	-0.0044	ppb	83.84	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0589	0.0589	ppb	36.48	1000.	
120 Sn	0.0611	0.0611	ppb	22.95	#VALUE!	
121 Sb	-0.0005	-0.0005	ppb	308.38	#VALUE!	
123 Sb	0.0038	0.0038	ppb	50.82	1000.	
135 Ba	0.1468	0.1468	ppb	24.69	2000.	
137 Ba	0.1511	0.1511	ppb	1.50	#VALUE!	
182 W	0.0031	0.0031	ppb	34.51	1000.	
203 Tl	0.0083	0.0083	ppb	97.07	1000.	
205 Tl	0.0084	0.0084	ppb	37.83	#VALUE!	
208 Pb	0.131	0.131	ppb	5.28	2000.	
232 Th	0.0005	0.0005	ppb	171.23	1000.	
238 U	-0.0002	-0.0002	ppb	328.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4060592.80	2.70	3927738.80	103.4	69.5 - 120	
45 Sc	2612022.00	1.40	2572658.80	101.5	69.5 - 120	
72 Ge	496454.91	1.29	510197.59	97.3	69.5 - 120	
159 Tb	4467283.50	0.79	4617151.00	96.8	69.5 - 120	
209 Bi	2350894.30	1.30	2380666.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000271

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\071SMPL.D\071SMPL.D#
Date Acquired: May 15 2018 10:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	134.57	100.	
11 B	1.349	1.349	ppb	1.70	1000.	
23 Na	14.29	14.29	ppb	2.41	200000.	
25 Mg	3.556	3.556	ppb	2.77	200000.	
27 Al	1.827	1.827	ppb	2.48	200000.	
28 Si	22.74	22.74	ppb	40.29	#VALUE!	
29 Si	29.26	29.26	ppb	49.73	10000.	
39 K	4.521	4.521	ppb	57.00	200000.	
43 Ca	8.995	8.995	ppb	47.05	#VALUE!	
44 Ca	8.053	8.053	ppb	6.66	200000.	
51 V	0.0572	0.0572	ppb	154.63	1000.	
52 Cr	0.0432	0.0432	ppb	32.14	2000.	
53 Cr	-0.5855	-0.5855	ppb	38.41	#VALUE!	
55 Mn	0.0444	0.0444	ppb	18.39	2000.	
56 Fe	11.43	11.43	ppb	35.81	#VALUE!	
57 Fe	6.797	6.797	ppb	25.66	100000.	
59 Co	0.0027	0.0027	ppb	61.22	1000.	
60 Ni	0.0247	0.0247	ppb	39.20	1000.	
63 Cu	0.2289	0.2289	ppb	8.44	#VALUE!	
65 Cu	0.2375	0.2375	ppb	2.54	2000.	
66 Zn	0.4771	0.4771	ppb	4.59	2000.	
68 Zn	0.2475	0.2475	ppb	18.14	#VALUE!	
75 As	0.1278	0.1278	ppb	118.23	1000.	
82 Se	0.2755	0.2755	ppb	111.62	1000.	
88 Sr	0.0116	0.0116	ppb	24.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0017	0.0017	ppb	113.91	1000.	
107 Ag	0.0003	0.0003	ppb	372.01	100.	
109 Ag	0.0014	0.0014	ppb	57.83	#VALUE!	
111 Cd	0.1138	0.1138	ppb	2.90	#VALUE!	
114 Cd	0.0011	0.0011	ppb	422.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0372	0.0372	ppb	40.62	1000.	
120 Sn	0.027	0.027	ppb	19.42	#VALUE!	
121 Sb	0.0004	0.0004	ppb	553.64	#VALUE!	
123 Sb	0.003	0.003	ppb	90.85	1000.	
135 Ba	0.1288	0.1288	ppb	8.11	2000.	
137 Ba	0.1078	0.1078	ppb	13.29	#VALUE!	
182 W	-0.0007	-0.0007	ppb	557.74	1000.	
203 Tl	0.0089	0.0089	ppb	56.33	1000.	
205 Tl	0.0083	0.0083	ppb	81.60	#VALUE!	
208 Pb	0.166	0.166	ppb	8.97	2000.	
232 Th	0.0004	0.0004	ppb	122.98	1000.	
238 U	-0.0002	-0.0002	ppb	277.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3843981.30	3.19	3927738.80	97.9	69.5 - 120	
45 Sc	2471715.50	2.48	2572658.80	96.1	69.5 - 120	
72 Ge	477561.91	2.89	510197.59	93.6	69.5 - 120	
159 Tb	4333664.00	1.63	4617151.00	93.9	69.5 - 120	
209 Bi	2266850.30	2.17	2380666.00	95.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000272

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\072SMPL.D\072SMPL.D#
Date Acquired: May 15 2018 10:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE08IMS2
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	-0.0041	-0.0008	ppb	144.07	100.	
11 B	7.135	1.427	ppb	9.26	1000.	
23 Na	44.46	8.892	ppb	1.72	200000.	
25 Mg	15.81	3.162	ppb	6.70	200000.	
27 Al	7.37	1.474	ppb	4.09	200000.	
28 Si	-0.1153	-0.0231	ppb	19172.00	#VALUE!	
29 Si	137.05	27.41	ppb	18.66	10000.	
39 K	51.65	10.33	ppb	22.18	200000.	
43 Ca	14.77	2.954	ppb	102.30	#VALUE!	
44 Ca	51.4	10.28	ppb	14.56	200000.	
51 V	1.071	0.2142	ppb	34.83	1000.	
52 Cr	2.6315	0.5263	ppb	7.62	2000.	
53 Cr	61.3	12.26	ppb	7.78	#VALUE!	
55 Mn	0.3983	0.0797	ppb	6.21	2000.	
56 Fe	69.35	13.87	ppb	25.62	#VALUE!	
57 Fe	20.065	4.013	ppb	44.98	100000.	
59 Co	0.0024	0.0005	ppb	229.30	1000.	
60 Ni	0.3782	0.0756	ppb	22.44	1000.	
63 Cu	0.904	0.1808	ppb	6.03	#VALUE!	
65 Cu	0.9145	0.1829	ppb	19.52	2000.	
66 Zn	1.1395	0.2279	ppb	5.13	2000.	
68 Zn	0.1656	0.0331	ppb	232.43	#VALUE!	
75 As	0.7615	0.1523	ppb	150.82	1000.	
82 Se	0.3815	0.0763	ppb	244.69	1000.	
88 Sr	0.1697	0.0339	ppb	19.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0622	0.0124	ppb	7.45	1000.	
107 Ag	0.0027	0.0005	ppb	221.13	100.	
109 Ag	-0.0029	-0.0006	ppb	152.45	#VALUE!	
111 Cd	0.4942	0.0988	ppb	34.55	#VALUE!	
114 Cd	-0.0615	-0.0123	ppb	104.48	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	41.44	8.288	ppb	2.60	1000.	
120 Sn	42.09	8.418	ppb	2.41	#VALUE!	
121 Sb	0.0165	0.0033	ppb	39.33	#VALUE!	
123 Sb	0.0356	0.0071	ppb	52.55	1000.	
135 Ba	0.2181	0.0436	ppb	3.59	2000.	
137 Ba	0.1136	0.0227	ppb	29.16	#VALUE!	
182 W	0.0197	0.0039	ppb	135.94	1000.	
203 Tl	-0.0011	-0.0002	ppb	3170.00	1000.	
205 Tl	-0.0028	-0.0006	ppb	196.66	#VALUE!	
208 Pb	-0.0584	-0.0117	ppb	112.25	2000.	
232 Th	0.0323	0.0065	ppb	10.65	1000.	
238 U	0.0007	0.0001	ppb	108.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3816472.00	1.74	3927738.80	97.2	69.5 - 120	
45 Sc	2449404.30	1.38	2572658.80	95.2	69.5 - 120	
72 Ge	475983.28	1.35	510197.59	93.3	69.5 - 120	
159 Tb	4332031.50	1.13	4617151.00	93.8	69.5 - 120	
209 Bi	2265095.50	0.74	2380666.00	95.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :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\JLE15C.B\073SMPL.D\073SMPL.D#
Date Acquired: May 15 2018 10:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE08IMS2
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 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	47.47	9.494	ppb	2.71	100.	
11 B	511.	102.2	ppb	2.17	1000.	
23 Na	7,870.	1,574.	ppb	2.33	200000.	
25 Mg	5,385.	1,077.	ppb	3.25	200000.	
27 Al	2,106.	421.2	ppb	1.33	200000.	
28 Si	899.	179.8	ppb	4.16	#VALUE!	
29 Si	961.	192.2	ppb	4.81	10000.	
39 K	9,910.	1,982.	ppb	2.63	200000.	
43 Ca	2,897.	579.4	ppb	2.91	#VALUE!	
44 Ca	2,513.5	502.7	ppb	1.86	200000.	
51 V	497.35	99.47	ppb	3.29	1000.	
52 Cr	196.55	39.31	ppb	2.44	2000.	
53 Cr	268.15	53.63	ppb	1.51	#VALUE!	
55 Mn	489.8	97.96	ppb	1.83	2000.	
56 Fe	964.5	192.9	ppb	2.55	#VALUE!	
57 Fe	951.	190.2	ppb	1.52	100000.	
59 Co	497.25	99.45	ppb	0.90	1000.	
60 Ni	490.	98.	ppb	1.52	1000.	
63 Cu	239.05	47.81	ppb	0.40	#VALUE!	
65 Cu	241.8	48.36	ppb	2.12	2000.	
66 Zn	461.2	92.24	ppb	0.75	2000.	
68 Zn	520.5	104.1	ppb	1.14	#VALUE!	
75 As	94.7	18.94	ppb	1.36	1000.	
82 Se	92.8	18.56	ppb	0.70	1000.	
88 Sr	473.05	94.61	ppb	0.56	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	94.95	18.99	ppb	1.84	1000.	
107 Ag	48.16	9.632	ppb	1.17	100.	
109 Ag	48.255	9.651	ppb	1.26	#VALUE!	
111 Cd	231.75	46.35	ppb	1.52	#VALUE!	
114 Cd	233.4	46.68	ppb	1.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	530.5	106.1	ppb	1.19	1000.	
120 Sn	529.5	105.9	ppb	1.99	#VALUE!	
121 Sb	98.4	19.68	ppb	2.16	#VALUE!	
123 Sb	99.05	19.81	ppb	1.64	1000.	
135 Ba	2,003.5	400.7	ppb	1.72	2000.	
137 Ba	2,010.5	402.1	ppb	2.94	#VALUE!	
182 W	101.45	20.29	ppb	0.38	1000.	
203 Tl	100.4	20.08	ppb	2.13	1000.	
205 Tl	100.85	20.17	ppb	1.04	#VALUE!	
208 Pb	101.4	20.28	ppb	1.38	2000.	
232 Th	100.8	20.16	ppb	1.83	1000.	
238 U	102.15	20.43	ppb	1.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4672298.50	2.86	3927738.80	119.0	69.5 - 120	
45 Sc	2700036.80	2.98	2572658.80	105.0	69.5 - 120	
72 Ge	520871.31	2.43	510197.59	102.1	69.5 - 120	
159 Tb	4626069.00	0.88	4617151.00	100.2	69.5 - 120	
209 Bi	2398915.50	1.06	2380666.00	100.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000274

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\074_CCV.D\074_CCV.D#
Date Acquired: May 15 2018 10:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.94	ppb	0.90	25	99.76	
11 B	28.7	ppb	1.78	25	114.8	Fail
23 Na	4,891.	ppb	2.12	5,000	97.82	
25 Mg	4,900.	ppb	1.61	5,000	98	
27 Al	488.7	ppb	0.36	500	97.74	
28 Si	472.9	ppb	4.10	500	94.58	
29 Si	466.7	ppb	3.58	500	93.34	
39 K	4,846.	ppb	0.14	5,000	96.92	
43 Ca	4,897.	ppb	1.84	5,000	97.94	
44 Ca	4,898.	ppb	1.46	5,000	97.96	
51 V	24.14	ppb	0.78	25	96.56	
52 Cr	24.5	ppb	0.89	25	98	
53 Cr	24.12	ppb	3.33	25	96.48	
55 Mn	24.05	ppb	1.15	25	96.2	
56 Fe	4,763.	ppb	0.57	5,000	95.26	
57 Fe	4,806.	ppb	0.57	5,000	96.12	
59 Co	24.11	ppb	0.56	25	96.44	
60 Ni	24.46	ppb	1.57	25	97.84	
63 Cu	24.18	ppb	0.61	25	96.72	
65 Cu	24.27	ppb	1.67	25	97.08	
66 Zn	24.4	ppb	1.30	25	97.6	
68 Zn	24.09	ppb	0.88	25	96.36	
75 As	24.31	ppb	1.20	25	97.24	
82 Se	24.99	ppb	1.77	25	99.96	
88 Sr	23.73	ppb	1.05	25	94.92	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.96	ppb	0.39	25	95.84	
107 Ag	24.21	ppb	0.26	25	96.84	
109 Ag	24.32	ppb	0.55	25	97.28	
111 Cd	24.29	ppb	0.68	25	97.16	
114 Cd	24.29	ppb	1.08	25	97.16	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.45	ppb	0.78	25	93.8	
120 Sn	23.42	ppb	0.66	25	93.68	
121 Sb	23.82	ppb	0.77	25	95.28	
123 Sb	23.87	ppb	0.13	25	95.48	
135 Ba	24.46	ppb	1.05	25	97.84	
137 Ba	24.2	ppb	0.92	25	96.8	
182 W	24.	ppb	1.00	25	96	
203 Tl	23.4	ppb	2.27	25	93.6	
205 Tl	23.68	ppb	1.75	25	94.72	
208 Pb	23.81	ppb	1.61	25	95.24	
232 Th	23.59	ppb	2.19	25	94.36	
238 U	24.32	ppb	1.63	25	97.28	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4036640.80	0.92	3927738.80	102.8	80 - 120.4	
45 Sc	2592441.80	2.32	2572658.80	100.8	80 - 120.4	
72 Ge	487523.50	1.35	510197.59	95.6	80 - 120.4	
159 Tb	4592434.50	0.55	4617151.00	99.5	80 - 120.4	
209 Bi	2413533.00	1.42	2380666.00	101.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.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 4000275

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\075_CCB.D\075_CCB.D#
Date Acquired: May 15 2018 10:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
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: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0009	ppb	23.18	1.00	
11 B	2.725	ppb	15.37	1.00	
23 Na	3.268	ppb	4.74	1.00	
25 Mg	0.2017	ppb	28.16	1.00	
27 Al	0.1304	ppb	30.19	1.00	
28 Si	19.59	ppb	29.11	1.00	
29 Si	28.6	ppb	46.99	1.00	
39 K	6.403	ppb	7.06	1.00	
43 Ca	-5.477	ppb	14.25	1.00	
44 Ca	1.151	ppb	69.48	1.00	
51 V	0.0294	ppb	277.84	1.00	
52 Cr	0.0123	ppb	241.30	1.00	
53 Cr	-2.185	ppb	5.94	1.00	
55 Mn	0.008	ppb	35.07	1.00	
56 Fe	2.604	ppb	68.24	1.00	
57 Fe	2.686	ppb	52.12	1.00	
59 Co	-0.0001	ppb	5645.20	1.00	
60 Ni	0.0045	ppb	46.34	1.00	
63 Cu	0.0524	ppb	42.80	1.00	
65 Cu	0.0601	ppb	0.88	1.00	
66 Zn	0.0807	ppb	53.75	1.00	
68 Zn	-0.0984	ppb	100.26	1.00	
75 As	0.0617	ppb	67.39	1.00	
82 Se	0.2786	ppb	52.73	1.00	
88 Sr	0.0008	ppb	162.92	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0277	ppb	29.40	1.00	
107 Ag	0.0012	ppb	252.67	1.00	
109 Ag	0.0017	ppb	94.50	1.00	
111 Cd	0.0731	ppb	24.16	1.00	
114 Cd	-0.0001	ppb	214.51	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0623	ppb	10.78	1.00	
120 Sn	0.0635	ppb	28.10	1.00	
121 Sb	0.0093	ppb	39.79	1.00	
123 Sb	0.0143	ppb	29.47	1.00	
135 Ba	0.0161	ppb	50.33	1.00	
137 Ba	0.0082	ppb	48.70	1.00	
182 W	0.0454	ppb	21.75	1.00	
203 Tl	0.0067	ppb	77.07	1.00	
205 Tl	0.0112	ppb	21.80	1.00	
208 Pb	0.0156	ppb	29.20	1.00	
232 Th	0.0713	ppb	9.09	1.00	
238 U	0.0029	ppb	13.05	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3815086.30	0.71	3927738.80	97.1	79.5 - 120	
45 Sc	2402736.50	1.06	2572658.80	93.4	79.5 - 120	
72 Ge	467004.03	0.31	510197.59	91.5	79.5 - 120	
159 Tb	4258601.00	0.81	4617151.00	92.2	79.5 - 120	
209 Bi	2267539.30	1.43	2380666.00	95.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000276

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information: **Method:** 7470

HNO3: MS198 H2SO4: MSR43

KMNO4: MR2002 K2S2O8: MR1963 NH2OH-HCl: MR1994

REVIEWED
amJ 5/7/18
KATAHDIN ANALYTICAL
METALS SECTION

Standards/Spiking Information:

1ppm A : MW17721
1ppm B : MW17722
LCSW = 125uL of 1ppm A to 25mL
Spike(S/P) = 25uL of 1ppm A to 25mL
ICV = 600uL of 1ppm B to 100 mL
S10.0 = 1000uL of 1ppm A to 100 mL

Pipet
M11
2
M15
2

Heat Source ID : A
Start Time: 0924 /Temp. 94 °C
End Time: 1124 /Temp. 93 °C
Thermometer ID/Pos: ~~ALC~~ Dig81 1213
JS 5.7.18

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLE07HGW3	LE07HGW3	0.025	L	0.025	L	AQ	HG	JS	05/07/2018	
PBWLE07HGW3	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	
SL3808-002	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	D
SL3808-003	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	A
SL3808-004	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	L
SL3808-004P	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	
SL3808-004S	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	
SL3808-005	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	A
SL3808-005P	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	
SL3808-005S	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	
SL3808-006	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	D
SL3808-007	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	A
SL3808-008	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	D
SL3808-009	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	A
SL3808-010	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	D
SL3808-011	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	A
SL3808-012	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	D
SL3808-013	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	A
SL3808-014	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	D
SL3808-015	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	D
SL3808-016	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	A
SL3808-017	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	D
SL3808-018	LE07HGW3		L		L	AQ	HG	JS	05/07/2018	A

amJ
5/7/18

QA-066-Revision 3 - 06/01/2017 Digestion performed by: JS On: 5.7.18 Page: LE043 Revision: 00

Katahdin Analytical Services, Inc.

Metals Preparation Benchsheet

Reagent Information:

Method: 3010-MS

HNO3: MSR298 HCL: MSR96

REVIEWED
JS 5.7.18
KATAHDIN ANALYTICAL
METALS SECTION

Pipet **LCS/Spiking Information:**

M11 **CLPP-SPK-1 (ID/Vol):** MS2124 / 0.05 mL
M15 **CLPP-SPK-INT1 (ID/Vol):** MW17723 / 0.5 mL
M15 **CLPP-SPK-INT2 (ID/Vol):** MW17724 / 0.5 mL
____ _____ **Spike (ID/Vol):** NA / _____ mL

Heat Source ID : E
Start Time: 0758 **/Temp.** 94 °C
End Time: 1624 **/Temp.** 91 °C
Thermometer ID/Pos: AC24 / 6:1

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLE07IMW1	LE07IMW1	0.05	L	0.05	L	AQ	IM	AMJ	05/07/2018	
PBWLE07IMW1	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	
SL3808-002	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	E
SL3808-003	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	A
SL3808-004	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	J
SL3808-004P	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	J
SL3808-004S	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	J
SL3808-005	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	AC
SL3808-005P	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	AC
SL3808-005S	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	AC
SL3808-006	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	D
SL3808-007	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	A
SL3808-008	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	D
SL3808-009	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	A
SL3808-010	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	D
SL3808-011	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	A
SL3808-012	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	D
SL3808-013	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	A
SL3808-014	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	D
SL3808-015	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	D
SL3808-016	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	A
SL3808-017	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	D
SL3808-018	LE07IMW1		L		L	AQ	IM	AMJ	05/07/2018	A

AMJ 5/7/18

JS 5.7.18

Digestion performed by: AMJ **On:** 5/7/18

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

QC Summary Section

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Blank Sample Summary Report

Chromium, Hexavalent

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG227686	SW846 7196A	03-MAY-18	N/A	J 0.0010 mg/L	0.025 mg/L	.0125

Katahdin Analytical Services 5000003

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH
nelac
Cert No E87604

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
WG227686-2	LCS	WG227686	03-MAY-18	N/A	mg/L	.5	0.51	103	85-115	

Katahdin Analytical Services 5000004

Katahdin
ANALYTICAL SERVICES

Cert No E87604

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
WG227686-5	MS	SL3808-5	WG227686	03-MAY-18	mg/L	2.5	J 0.0077	1.3	53*	85 - 115
WG227686-4	MSD	SL3808-4	WG227686	03-MAY-18	mg/L	2.5	U 0.062	1.0	41*	85 - 115
WG227686-6	MSD	SL3808-5	WG227686	03-MAY-18	mg/L	2.5	J 0.0077	1.3	52*	85 - 115
WG227686-3	MS	SL3808-4	WG227686	03-MAY-18	mg/L	2.5	U 0.062	1.0	41*	85 - 115

Katahdin Analytical Services 5000005

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: SL3808-2
Report Date: 21-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3808

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-UGIA-DPT17	AQ	02-MAY-18 14:35:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U.0125 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227686	03-MAY-18 13:15:02	N/A	N/A	

Katahdin Analytical Services 5000008

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3808-3
Report Date: 21-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3808

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-UGIA-DPT17-FF	AQ	02-MAY-18 14:35:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0034 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227686	03-MAY-18 13:15:03	N/A	N/A	

Katahdin Analytical Services 500009

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3808-4
Report Date: 21-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3808

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT18	AQ	02-MAY-18 14:40:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.062 mg/L	0.12	0.0038	0.062	SW846 7196A	WG227686	03-MAY-18 13:39:01	N/A	N/A	M1

Katahdin Analytical Services 500010

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3808-5
Report Date: 21-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3808

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT18-FF	AQ	02-MAY-18 14:40:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0077 mg/L	0.12	0.0038	0.062	SW846 7196A	WG227686	03-MAY-18 13:39:04	N/A	N/A	M1

Katahdin Analytical Services 500011

Raw Data Section

WET CHEMISTRY BATCH REPORT
May 10 2018, 03:03 pm
Batch: WG227686

Parameter: Chromium, Hexavalent

Prep Date: N/A

Date Analyzed: 03-MAY-18

Prep Method: N/A

Analyst Initials: ZF

Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL3808-2	SAMP	SW846 7196A	95.000mL	95.000mL	1	-.00197	U0.0125 mg/L	NA	.025	0.00076	0.025		
SL3808-3	SAMP	SW846 7196A	95.000mL	95.000mL	1	.00344	J0.0034 mg/L	NA	.025	0.00076	0.025		
SL3808-4	SAMP	SW846 7196A	95.000mL	95.000mL	5	.00215	U0.062 mg/L	NA	.025	0.0038	0.12		
SL3808-5	SAMP	SW846 7196A	95.000mL	95.000mL	5	.00774	J0.0077 mg/L	NA	.025	0.0038	0.12		
WG227686-1	MBLANK	SW846 7196A	95.000mL	95.000mL	1	.00103	J0.0010 mg/L	NA	.025	0.00076	0.025		
WG227686-2	LCS	SW846 7196A	95.000mL	95.000mL	1	.5137	0.51 mg/L	NA	.025	0.00076	0.025		103
WG227686-3	MS	SW846 7196A	95.000mL	95.000mL	5	1.02009	1.0 mg/L	NA	.025	0.0038	0.12		41
WG227686-4	MSD	SW846 7196A	95.000mL	95.000mL	5	1.02313	1.0 mg/L	NA	.025	0.0038	0.12	0	41
WG227686-5	MS	SW846 7196A	95.000mL	95.000mL	5	1.34023	1.3 mg/L	NA	.025	0.0038	0.12		53
WG227686-6	MSD	SW846 7196A	95.000mL	95.000mL	5	1.30078	1.3 mg/L	NA	.025	0.0038	0.12	3	52

Comments:

SL3808-3	Filtered sample of SL3808-2
SL3808-4	MS/MSD
SL3808-5	MS/MSD
WG227686-1	SL3808-4
WG227686-2	SL3808-4
WG227686-3	SL3808-4
WG227686-4	SL3808-4
WG227686-5	SL3808-5
WG227686-6	SL3808-5

Entered by: ZF Date: 5/10/18 Accepted by: [signature] Date: 05/13/18

Katahdin Analytical Services 5000013

KATAHDIN ANALYTICAL SERVICES, LLC
Wet Chemistry Analysis Run Information Sheet

Analyte: HEXAVALENT CHROMIUM	**Analyst:** ZF
Instrument: KONELAB 20	**Analysis Date:** 5/3/18

Analytical Method (Check all that apply):

☑ SW846 7196 ☐ SM 3500-Cr B ☐ Other (list): _____

WG227686 2 ms+msd #473035

Reagent Information:

Reagent Name	Reagent ID	Expiration Date
Diphenylcarbazide Solution	**W16304**	**6/21/2018**
10% v/v Sulfuric Acid	**W15878**	**11/2/2018**

Standards Information:

Standard Name	Concentration (mg/L as Cr^6)	ID	Expiration Date
Cal. Standard / CCV Stock	1000.0	**SWL 4271**	**1/31/2019**
Cal. Std. / CCV Intermediate	25.0	**W16186**	**5/15/2018**
1.0 mg/L Calibration Standard - (1.00 mL / 25.0 mL dilution of Cal. Standard / CCV Intermediate)	1.00	HC_Cal050318	Day of use only
CCV - (0.50 mL / 25.0 mL dilution of Cal. Standard / CCV Intermediate)	0.50	HC_CCV050318	Day of use only
LCS / MS Stock	1000.0	**SWL4101**	**6/20/2018**
LCS / MS Intermediate	25.0	**W16187**	**5/15/2018**
LCS - (0.50 mL / 25.0 mL dilution of LCS / MS Intermediate)	0.50	HC_LCS050318	Day of use only

Notes:

1) Additional calibration standards (0.50, 0.10, 0.050, 0.020, 0.010 mg/L) are automatically prepared by the instrument during analysis through dilution of the 1.0 mg/L Calibration Standard.
2) Matrix spikes are prepared prior to analysis by adding 0.5 mL of LCS / MS Intermediate to 25 mL of sample. Matrix spike added = 0.50 mg/L as Cr6.

Comments:

Aquakem v. 7.2									
Results from time period:									
Thu May 03 11:01:00 2018									
Thu May 03 17:54:53 2018									
Sample Id	Test short name	Result	Result unit	Result date and time	Dil. Factor	Response	Blank init abs. (A)	Main abs. 1	Comments
CRVI-0	Chromium	0.0020571	mg/l	5/3/18 11:11:16	1	0.00153	-0.00024	0.00129	CAL POINT
CRVI-1.0	Chromium	0.0105336	mg/l	5/3/18 11:11:17	100	0.00683	-0.00003	0.0068	CAL POINT
CRVI-1.0	Chromium	0.0200792	mg/l	5/3/18 11:11:18	50	0.0128	-0.00002	0.01279	CAL POINT
CRVI-1.0	Chromium	0.0498171	mg/l	5/3/18 11:11:19	20	0.0314	-0.00004	0.03136	CAL POINT
CRVI-1.0	Chromium	0.0996151	mg/l	5/3/18 11:11:20	10	0.06254	-0.0001	0.06244	CAL POINT
CRVI-1.0	Chromium	0.4957144	mg/l	5/3/18 11:11:21	2	0.31024	0.00006	0.3103	CAL POINT
CRVI-1.0	Chromium	1.0021836	mg/l	5/3/18 11:11:22	1	0.62696	0.00013	0.62709	CAL POINT
CRVI-CCV	Chromium	0.5032482	mg/l	5/3/18 13:14:59	1	0.31495	0.00006	0.31501	100.65%
CRVI-CCB	Chromium	0.0010335	mg/l	5/3/18 13:15:00	1	0.00089	0.00019	0.00108	
CRVI LCS	Chromium	0.5137009	mg/l	5/3/18 13:15:01	1	0.32149	0.0002	0.32169	MA
SL3808-2	Chromium	-0.0019681	mg/l	5/3/18 13:15:02	1	-0.00098	0.0127	0.01172	MA
SL3808-3	Chromium	0.0034481	mg/l	5/3/18 13:15:03	1	0.0024	0.00012	0.00253	MA
SL3808-4	Chromium	-0.0071821	mg/l	5/3/18 13:15:04	1	-0.00424	0.04412	0.03988	MA
SL3808-4 MS	Chromium	-0.0091226	mg/l	5/3/18 13:15:05	1	-0.00546	0.05693	0.05148	MA
SL3808-4 MSD	Chromium	-0.0048798	mg/l	5/3/18 13:15:06	1	-0.0028	0.06311	0.06031	MA
SL3808-5	Chromium	0.0071778	mg/l	5/3/18 13:15:07	1	0.00474	0.00001	0.00475	MA
SL3808-5 MS	Chromium	0.0082248	mg/l	5/3/18 13:15:08	1	0.00539	0	0.00539	MA
SL3808-5 MSD	Chromium	0.0080223	mg/l	5/3/18 13:15:09	1	0.00526	-0.00019	0.00507	MA
CRVI-CCV	Chromium	0.505773	mg/l	5/3/18 13:17:39	1	0.31653	-0.0001	0.31643	101.15%
CRVI-CCB	Chromium	-0.0000609	mg/l	5/3/18 13:17:40	1	0.00021	-0.00034	-0.00013	
CRVI-CCV	Chromium	0.5075753	mg/l	5/3/18 13:38:59	1	0.31766	-0.00022	0.31744	101.52%
CRVI-CCB	Chromium	0.0009503	mg/l	5/3/18 13:39:00	1	0.00084	-0.00008	0.00076	
SL3808-4 1/5	Chromium	0.0021558	mg/l	5/3/18 13:39:01	5	0.00052	0.00783	0.00834	MA
SL3808-4 1/5 MS	Chromium	1.0200931	mg/l	5/3/18 13:39:02	5	0.12783	0.00857	0.1364	MA
SL3808-4 1/5 MSD	Chromium	1.0231297	mg/l	5/3/18 13:39:03	5	0.12821	0.00889	0.13709	MA
SL3808-5 1/5	Chromium	0.007741	mg/l	5/3/18 13:39:04	5	0.00122	0.00024	0.00145	MA
SL3808-5 1/5 MS	Chromium	1.3402359	mg/l	5/3/18 13:39:05	5	0.16787	0.00011	0.16798	MA
SL3808-5 1/5 MSD	Chromium	1.3007857	mg/l	5/3/18 13:39:06	5	0.16294	-0.00001	0.16293	MA
CRVI-CCV	Chromium	0.5086614	mg/l	5/3/18 13:40:13	1	0.31834	-0.00004	0.3183	101.73%
CRVI-CCB	Chromium	0.0007461	mg/l	5/3/18 13:40:14	1	0.00071	-0.0001	0.00061	

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Laboratory
Analyzer User

Date : 5/3/2018
Time : 13:40

Test Chromium
Unit mg/l

Sample ID:	Result	Date and Time	Note
CRVI-CCV	0.503248	5/3/2018 13:14	
CRVI-CCB	0.001033	5/3/2018 13:15	
CRVI LCS	0.513701	5/3/2018 13:15	
UGIA-DPT17	-0.002	5/3/2018 13:15	
UGIA-DPT17-FF	0.003448	5/3/2018 13:15	
LGIA-DPT18	-0.007	5/3/2018 13:15	
LGIA-DPT18 MS	-0.009	5/3/2018 13:15	
LGIA-DPT18 MSD	-0.005	5/3/2018 13:15	
LGIA-DPT FF	0.007178	5/3/2018 13:15	
LGIA-DPT FF MS	0.008225	5/3/2018 13:15	
LGIA-DPT FF MSD	0.008022	5/3/2018 13:15	
CRVI-CCV	0.505773	5/3/2018 13:17	
CRVI-CCB	-6e-005	5/3/2018 13:17	
CRVI-CCV	0.507575	5/3/2018 13:38	
CRVI-CCB	0.000950	5/3/2018 13:39	
LGIA 1/5	0.002156	5/3/2018 13:39	
LGIA 1/5 MS	1.020093	5/3/2018 13:39	
LGIA 1/5 MSD	1.023130	5/3/2018 13:39	
LGIA FF 1/5	0.007741	5/3/2018 13:39	
LGIA FF 1/5 MS	1.340236	5/3/2018 13:39	
LGIA FF 1/5 MSD	1.300786	5/3/2018 13:39	
CRVI-CCV	0.508661	5/3/2018 13:40	
CRVI-CCB	0.000746	5/3/2018 13:40	

Laboratory
Analyzer User

5/3/2018 15:26

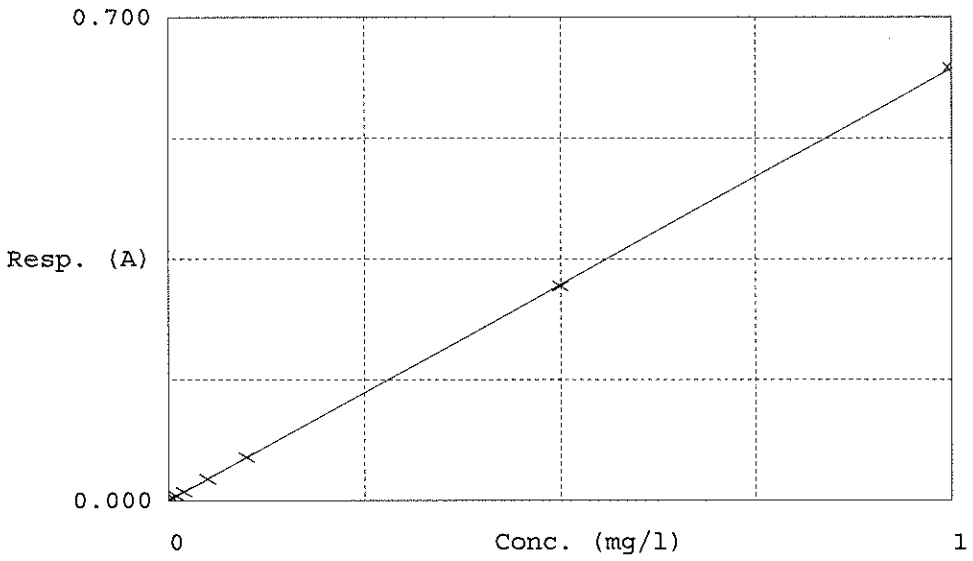
Test Chromium

Accepted 5/3/2018 11:14

Factor 1.599
Bias 0

Coeff. of det. 0.999968

Errors



	Calibrator	Response	Calc. con.	Conc.	Errors
1	CRVI-0	0.002	0.0020571	0.0000000	
2	CRVI-1.0	0.007	0.0105336	0.0100000	
3	CRVI-1.0	0.013	0.0200792	0.0200000	
4	CRVI-1.0	0.031	0.0498171	0.0500000	
5	CRVI-1.0	0.063	0.0996151	0.1000000	
6	CRVI-1.0	0.310	0.4957144	0.5000000	
7	CRVI-1.0	0.627	1.0021836	1.0000000	

ATI, INC.
CORNHUSKER
ARMY AMMUNITION PLANT
SL3809

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
SL3809

Sample Receipt

The following samples were received on May 03, 2018 and were logged in under Katahdin Analytical Services work order number SL3809 for a hardcopy due date of May 15, 2018.

KATAHDIN Sample No.	ATI Sample Identification
SL3809-1	CHAAP-EB-050118
SL3809-2	CHAAP-19C-SS03H
SL3809-3	CHAAP-19C-SS07I
SL3809-4	CHAAP-19C-SS10G
SL3809-5	CHAAP-19C-SS11G
SL3809-6	CHAAP-19C-SS08F
SL3809-7	CHAAP-19C-SS02E
SL3809-8	CHAAP-19C-SS10E
SL3809-9	CHAAP-19C-SS02D
SL3809-10	CHAAP-19C-SS04D
SL3809-11	CHAAP-19C-SS06D
SL3809-12	CHAAP-19C-SS04I
SL3809-13	CHAAP-19C-SS09G
SL3809-14	CHAAP-19C-SS08G
SL3809-15	CHAAP-19C-SS09F
SL3809-16	CHAAP-19C-SS09D
SL3809-17	CHAAP-19C-SS102D
SL3809-18	CHAAP-19C-SS08I
SL3809-19	CHAAP-19C-SS09I
SL3809-20	CHAAP-19C-SS10I
SL3809-21	CHAAP-19C-SS11I
SL3809-22	CHAAP-19C-SS09H
SL3809-23	CHAAP-19C-SS10H
SL3809-24	CHAAP-19C-SS06F
SL3809-25	CHAAP-19C-SS07F
SL3809-26	CHAAP-19C-SS02F
SL3809-27	CHAAP-19C-SS03F
SL3809-28	CHAAP-19C-SS05F
SL3809-29	CHAAP-19C-SS04F
SL3809-30	CHAAP-19C-SS104F
SL3809-31	CHAAP-19C-SS08E
SL3809-32	CHAAP-19C-SS09E
SL3809-33	CHAAP-19C-SS06E
SL3809-34	CHAAP-19C-SS07E
SL3809-35	CHAAP-19C-SS04E
SL3809-36	CHAAP-19C-SS03E

KATAHDIN Sample No.	ATI Sample Identification
SL3809-37	CHAAP-19C-SS11E
SL3809-38	CHAAP-19C-SS07D
SL3809-39	CHAAP-19C-SS11D
SL3809-40	CHAAP-19C-SS10D
SL3809-41	CHAAP-19C-SS03D
SL3809-42	CHAAP-19C-SS10F
SL3809-43	CHAAP-19C-SS11F
SL3809-44	CHAAP-19C-SS05E
SL3809-46	CHAAP-19C-SS07G
SL3809-47	CHAAP-19C-SS06G
SL3809-48	CHAAP-19C-SS106G
SL3809-49	CHAAP-19C-SS05I
SL3809-50	CHAAP-19C-SS06H
SL3809-51	CHAAP-19C-SS07H
SL3809-52	CHAAP-19C-SS05H
SL3809-53	CHAAP-19C-SS03I
SL3809-54	CHAAP-19C-SS05G
SL3809-55	CHAAP-19C-SS04H
SL3809-56	CHAAP-19C-SS104H
SL3809-57	CHAAP-19C-SS03G
SL3809-58	CHAAP-19C-SS04G
SL3809-59	CHAAP-19C-SS01G
SL3809-60	CHAAP-19C-SS02G
SL3809-61	CHAAP-19C-SS06I
SL3809-62	CHAAP-19C-SS110G
SL3809-63	CHAAP-19C-SS105E
SL3809-64	CHAAP-19C-SS08H
SL3809-65	CHAAP-19C-SS11H

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 NELAP standards unless otherwise noted in this narrative or in the Report of Analysis.

We certify that the test results provided in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation L2223.

Analytes which are reported but not listed on our ANAB scope of accreditation will be "^" flagged and the following language will be included in the case narrative for all DoD compliant work: "^" Indicates this analyte is not included on Katahdin Analytical Services DoD-ELAP Scope of Accreditation.

Sample analyses have been performed by the methods as noted herein.