

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162553

AECOM Chemist: D. Casagrande

Date Verified: 7/20/2022

AECOM ITR: S. Louie

Guidance: DoD QSM Version 5.1 (January 2017)

Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)

Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
PZ019-22A	5/17/2022	5/19/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0102-22A	5/17/2022	5/19/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0103-22A	5/17/2022	5/19/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0104-22A	5/17/2022	5/19/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
PZ010-22A	5/17/2022	5/19/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
PZ011-22A	5/17/2022	5/19/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
PZ012-22A	5/17/2022	5/19/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0086-22A	5/18/2022	5/19/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
PZ017R-22A	5/18/2022	5/19/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
PZ021-22A	5/18/2022	5/19/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)

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1.0 Laboratory Case Narrative \ Cooler Receipt Form

Verification Criteria	Yes	No	N/A
Were any DoD QSM deviations noted in the laboratory case narrative?	X		
Were DoD QSM corrective actions followed if deviations were noted?	X		
Were any issues noted in the cooler receipt form?		X	

Validator comments in italics.

Method RSK-175:

Reanalysis of the following samples were performed outside of the analytical holding time due to high concentrations of target analyte being greater than the upper limit of the calibration: PZ011-22A (280-162553-6) and (280-162553-G-6 DU). *This issue is further discussed in Section 7.0.*

Method 8330A:

The laboratory control sample (LCS) for preparation batch 280-575961 and analytical batch 280-576173 for method 8330 recovered outside control limits for the following analytes: 1,2-Dinitrobenzene(83-119%R) at 72%R, 1,3,5-Trinitrobenzene(73-125%R) at 67%R, 1,3-Dinitrobenzene(78-120%R) at 64%R, 2,4,6-Trinitrotoluene(71-123%R) at 63%R, 2,4-Dinitrotoluene(78-120%R) at 60%R, 2,6-Dinitrotoluene(77-127%R) at 63%R, Nitrobenzene(65-134%R) at 58%R, 2-Amino-4,6-dinitrotoluene(79-120%R) at 60%R, 4-Amino-2,6-dinitrotoluene(76-125%R) at 50%R, m-Nitrotoluene(73-125%R) at 46%R, o-Nitrotoluene(70-127%R) at 53%R, and p-Nitrotoluene(71-127%R) at 54%R. The associated samples are impacted: PZ019-22A (280-162553-1), PZ019-22A (280-162553-1[MS]), PZ019-22A (280-162553-1[MSD]), G0102-22A (280-162553-2), G0103-22A (280-162553-3), G0104-22A (280-162553-4), PZ010-22A (280-162553-5), PZ011-22A (280-162553-6), PZ012-22A (280-162553-7), G0086-22A (280-162553-8), PZ017R-22A (280-162553-9) and PZ021-22A (280-162553-10). All analytes recovered within control limit in the MS/MSD. The client was notified and instructed the laboratory to report and narrate the anomaly. *This issue is further discussed in the ADR Report.*

The surrogate recovery for the blank associated with preparation batch 280-575961 and analytical batch 280-576173 for method 8330 was outside the lower control limits. Surrogate recovered within control limit in the sample or NCM is generated for matrix interference. The following samples are impacted: PZ019-22A (280-162553-1), PZ019-22A (280-162553-1[MS]), PZ019-22A (280-162553-1[MSD]), G0102-22A (280-162553-2), G0103-22A (280-162553-3), G0104-22A (280-162553-4), PZ010-22A (280-162553-5), PZ011-22A (280-162553-6), PZ012-22A (280-162553-7), G0086-22A (280-162553-8), PZ017R-22A (280-162553-9) and PZ021-22A (280-162553-10). Surrogate recovery for the following sample in preparation batch 280-575961 and analytical batch 280-576173 for method 8330 was outside the upper control limit: G0104-22A (280-162553-4). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed. Surrogate recovery for the following sample in preparation batch 280-575961 and analytical batch 280-576173 for method 8330 was outside control limits: G0103-22A (280-162553-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed. *These issues are further discussed in the ADR Report.*

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The %RPD between the primary and confirmation column exceeded 40% for RDX for the following samples: PZ010-22A (280-162553-5), G0086-22A (280-162553-8) and PZ021-22A (280-162553-10) in preparation batch 280-575961 and analytical batch 280-576173 for method 8330. The results from both columns has been qualified and reported in accordance with the laboratory's QAS. *This issue is further discussed in Section 7.0.*

The volume of the method blank corresponding to samples PZ019-22A (280-162553-1), PZ019-22A (280-162553-1[MS]), PZ019-22A (280-162553-1[MSD]), G0102-22A (280-162553-2), G0103-22A (280-162553-3), G0104-22A (280-162553-4), PZ010-22A (280-162553-5), PZ011-22A (280-162553-6), PZ012-22A (280-162553-7), G0086-22A (280-162553-8), PZ017R-22A (280-162553-9) and PZ021-22A (280-162553-10) in preparation batch 280-575961 after elution was about 40 percent less than that of the other samples. Presumably, not all of the elution solution was pulled through the cartridge. *This could result in potential false negative results in the method blank.*

SM2320B:

Total Alkalinity as CaCO₃ was detected in method blank MB 280-576247/58 at a level that was below one half the LOQ. *No data are considered affected or qualified.*

Method 351.2:

Nitrogen, Total Kjeldahl failed the recovery criteria low for the MS of sample PZ019-22AMS (280-162553-1) in batch 280-577123. Nitrogen, Total Kjeldahl failed the recovery criteria low for the MSD of sample PZ019-22AMSD (280-162553-1) in batch 280-577123. *TKN was not detected in sample NW020-22A, therefore result qualified (UJ). This issue is further discussed in the ADR report.*

Method 353.2:

Nitrate Nitrite as N failed the recovery criteria low for the MS of sample PZ019-22AMS (280-162553-1) in batch 280-577122. Nitrate Nitrite as N failed the recovery criteria low for the MSD of sample PZ019-22AMSD (280-162553-1) in batch 280-577122. *Nitrate Nitrite as N was detected in sample PZ019-22A, therefore result qualified (J). This issue is further discussed in the ADR report.*

Batch QC matrix spike and matrix spike duplicate recovery is over the calibration range of 50mg/L. The sample was not rerun as the parent sample was within range. G0103-22A (280-162553-3), (280-162553-D-3-C MS) and (280-162553-D-3-D MSD). *No data are considered affected or qualified.*

No other issues were noted in the case narrative or cooler receipt form for all other methods.

2.0 Sample Documentation

Verification Criteria	Yes	No
Were all samples documented correctly on the chain-of-custody (COC) and samples labels?	X	
Were all sample identifications (IDs) documented correctly on sample labels?	X	
Did samples listed on COCs match the sample labels?	X	
Were samples relinquished properly on the COC?	X	

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3.0 Initial Calibration

Method 8330A Initial Calibration Criteria			
Instrument:	CHHPLC X3		
Date of Calibration:	1/4/2022		
	Yes	No	N/A
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X		
Option 1: RSD for each analyte $\leq 20\%$?	X		
Option 2: If linear least squares regression was used was the $r^2 \geq 0.99$?			X
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			X
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X

The %RSD was met for all target analytes.

Method 8330A Initial Calibration Criteria			
Instrument:	CHHPLC X3		
Date of Calibration:	1/5/2022		
	Yes	No	N/A
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X		
Option 1: RSD for each analyte $\leq 20\%$?	X		
Option 2: If linear least squares regression was used was the $r^2 \geq 0.99$?			X
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			X
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X

Method 8330A Initial Calibration Criteria			
Instrument:	CHHPLC X5		
Date of Calibration:	3/2/2022		
	Yes	No	N/A
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X		
Option 1: RSD for each analyte $\leq 20\%$?	X		
Option 2: If linear least squares regression was used was the $r^2 \geq 0.99$?	X		
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			X
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X

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Method 8330A Initial Calibration Criteria			
Instrument:	CHHPLC_X5		
Date of Calibration:	3/3/2022		
	Yes	No	N/A
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X		
Option 1: RSD for each analyte $\leq 20\%$?	X		
Option 2: If linear least squares regression was used was the $r^2 \geq 0.99$?			X
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			X
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X

Method RSK-175 Initial Calibration Criteria			
Instrument:	VGC_J		
Date of Calibration:	9/24/2021		
	Yes	No	N/A
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X		
Option 1: RSD for each analyte $\leq 25\%$?			X
Option 2: If linear least squares regression was used was the $r^2 \geq 0.99$?	X		
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			X
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X

A %RSD was not provided for methane; however, methane met the r^2 .

Method 9056A Initial Calibration Criteria			
Instrument:	WC IonChrom13		
Date of Calibration:	5/16/2022		
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \geq 0.99$?	X		

Method 350.1 Initial Calibration Criteria			
Instrument:	WC_SKALAR_01		
Date of Calibration:	6/3/2022		
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \geq 0.99$?	X		

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Method 353.2 Initial Calibration Criteria			
Instrument:	WC_Alp 2		
Date of Calibration:	6/3/2022		
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \geq 0.99$?	X		

Method 351.2 Initial Calibration Criteria			
Instrument:	WC_GAL1		
Date of Calibration:	6/1/2022		
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \geq 0.99$?	X		

Method 9060A Initial Calibration Criteria			
Instrument:	WC_SHI5		
Date of Calibration:	12/10/2021		
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \geq 0.99$?	X		

4.0 Initial Calibration Verification [(ICV) Second Source]

Method 8330A ICV Criteria (Filename)	280-562503/20		
Instrument:	CHHPLC_X3		
Date of Initial Calibration Verification:	1/4/2022		
	Yes	No	N/A
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within $\pm 15\%$ of the true value?	X		

Method 8330A ICV Criteria (Filename)	280-562503/38		
Instrument:	CHHPLC_X3		
Date of Initial Calibration Verification:	1/5/2022		
	Yes	No	N/A
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within $\pm 15\%$ of the true value?	X		

Method 8330A ICV Criteria (Filename)	280-567560/19		
Instrument:	CHHPLC_X5		
Date of Initial Calibration Verification:	3/3/2022		
	Yes	No	N/A
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within $\pm 15\%$ of the true value?	X		

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Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 8330A ICV Criteria (Filename)	280-567560/28		
Instrument:	CHHPLC_X5		
Date of Initial Calibration Verification:	3/3/2022		
	Yes	No	N/A
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within $\pm 15\%$ of the true value?	X		

Method RSK-175 ICV Criteria (Filename)	280-550959/13		
Instrument:	VGC_J		
Date of Initial Calibration Verification:	9/24/2021		
	Yes	No	N/A
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within $\pm 25\%$ of the true value?	X		

Method 9056A ICV	WC IonChrom13		
Date of Initial Calibration Verification:	5/16/2022		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within $\pm 10\%$ of the true value?	X		

Method 350.1 ICV Criteria	WC SKALAR_01		
Date of Initial Calibration Verification:	6/3/2022		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within $\pm 10\%$ of the true value?	X		

Method 353.2 ICV Criteria	WC Alp 2		
Date of Initial Calibration Verification:	6/3/2022		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within $\pm 10\%$ of the true value?	X		

Method 351.2 ICV Criteria	WC GAL1		
Date of Initial Calibration Verification:	6/1/2022		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within $\pm 10\%$ of the true value?	X		

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Method 9060A ICV Criteria	WC SHI5		
Date of Initial Calibration Verification:	5/31/2022		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within $\pm 10\%$ of the true value?	X		

Method 9060A ICV Criteria	WC SHI5		
Date of Initial Calibration Verification:	6/2/2022		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within $\pm 10\%$ of the true value?	X		

5.0 Continuing Calibration Verification (CCV)

Method 8330A CCV Criteria (Filename)	280-576308/7-8		
Instrument:	CHHPLC_X5		
Date of Calibration Verification:	5/26/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 15\%$ of the true value?	X		

Method 8330A CCV Criteria (Filename)	280-576308/20-21		
Instrument:	CHHPLC_X5		
Date of Calibration Verification:	5/26-27/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 15\%$ of the true value?	X		

The CCV was met for all target analytes.

Method 8330A CCV Criteria (Filename)	280-576173/7,9		
Instrument:	CHHPLC_X3		
Date of Calibration Verification:	5/25/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 15\%$ of the true value?	X		

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Method 8330A CCV Criteria (Filename)	280-576173/21-22		
Instrument:	CHHPLC X3		
Date of Calibration Verification:	5/25/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 15\%$ of the true value?	X		

Method 8330A CCV Criteria (Filename)	280-576173/33-34		
Instrument:	CHHPLC X3		
Date of Calibration Verification:	5/26/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 15\%$ of the true value?	X		

Method RSK-175 CCVRT Criteria (Filename)	280-576446/2		
Instrument:	VGC J		
Date of Calibration Verification:	5/27/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X		

Method RSK-175 CCV Criteria (Filename)	280-576446/19		
Instrument:	VGC J		
Date of Calibration Verification:	5/27/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X		

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Method RSK-175 CCV Criteria (Filename)	280-576446/33		
Instrument:	VGC J		
Date of Calibration Verification:	5/27/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X		

Method RSK-175 CCVRT Criteria (Filename)	280-576768/2		
Instrument:	VGC J		
Date of Calibration Verification:	6/1/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X		

Method RSK-175 CCV Criteria (Filename)	280-576768/58		
Instrument:	VGC J		
Date of Calibration Verification:	6/1/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X		

Method RSK-175 CCV Criteria (Filename)	280-576768/75		
Instrument:	VGC J		
Date of Calibration Verification:	6/1/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X		

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162553

AECOM Chemist: D. Casagrande

Date Verified: 7/20/2022

AECOM ITR: S. Louie

Guidance: DoD QSM Version 5.1 (January 2017)

Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)

Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method RSK-175 CCV Criteria (Filename)	280-576768/87		
Instrument:	VGC J		
Date of Calibration Verification:	6/1/2022		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X		

Method 9056A, Instrument: WC_IonChrom13, All CCVs on 6/1/2022	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within $\pm 10\%$ of the true value?	X	

Method 9056A, Instrument: WC_IonChrom13, All CCVs on 6/2/2022	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within $\pm 10\%$ of the true value?	X	

Method 350.1, Instrument: WC_SKALAR_01, All CCVs on 6/3/2022	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within $\pm 10\%$ of the true value?	X	

Method 353.2, Instrument: WC_Alp_2, All CCVs on 6/3/2022	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within $\pm 10\%$ of the true value?	X	

Method 351.2, Instrument: WC_GAL1, All CCVs on 6/1/2022	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within $\pm 10\%$ of the true value?	X	

Method 9060A, Instrument: WC_SHI5, All CCVs on 5/31/2022- 6/1/2022	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within $\pm 10\%$ of the true value?	X	

Method 9060A, Instrument: WC_SHI5, All CCVs on 6/2/2022	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within $\pm 10\%$ of the true value?	X	

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162553

AECOM Chemist: D. Casagrande

Date Verified: 7/20/2022

AECOM ITR: S. Louie

Guidance: DoD QSM Version 5.1 (January 2017)

Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)

Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 2320B, Instrument: WC AT4, All CCVs on 5/25/2022	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within $\pm 10\%$ of the true value?	X	

6.0 Sensitivity

Sensitivity Criteria	Yes	No	N/A
Was the laboratory sensitivity consistent with project (QAPP) requirements?	X		
Did all analytes meet sensitivity requirements?	X		

7.0 Additional Qualifications

Additional Qualification Criteria	Yes	No	N/A
Were common laboratory contaminants detected?		X	
Was professional judgment used to qualify data (if yes, list below)?	X		

Reanalysis of the following samples were performed outside of the analytical holding time due to high concentrations of target analyte being greater than the upper limit of the calibration: PZ011-22A (280-162553-6) and (280-162553-G-6 DU). The methane result is qualified as estimated due to holding time exceedance.

Sample ID	Analysis	Analyte	Qualification
PZ011-22A	RSK-175	Methane	J

The RPD between the primary and confirmation column for some explosives were above evaluation criteria. Qualification of data is shown in the table below; results were reported from the primary column unless otherwise noted.

Sample ID	Analysis	Analyte	RPD	Qual
PZ010-22A	Explosives	4-amino-2,6-dinitrotoluene	54.9	J
PZ021-22A	Explosives	RDX	53.8	J
G0086-22A	Explosives	RDX	63.0	J

8.0 Completeness

Completeness Criteria	Yes	No	N/A
Were any data rejected during the verification process?		X	
Were any samples lost, broken, or in any other manner in not verified?		X	
Were requested sample analyses performed, the correct analyte lists used, and correct sample preparation and analyses methods and units utilized?	X		