CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162647 **AECOM Chemist: D. Casagrande**
Date Verified: 7/28/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)
Applicable Analytical Methods: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
G0096-22A	5/19/2022	5/21/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0296-22A	5/19/2022	5/21/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0017-22A	5/20/2022	5/21/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0078-22A	5/20/2022	5/21/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0093-22A	5/20/2022	5/21/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
Water-WC-LTM-MAY22	5/20/2022	5/21/2022	Water	Explosives (8330A), VOCs (8260B)
5-20TB	5/20/2022	5/21/2022	Water	VOCs (8260B)
G0045-22A	5/20/2022	5/21/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0094-22A	5/19/2022	5/21/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0294-22A	5/19/2022	5/21/2022	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 8260B:

The following compounds were outside control limits in the continuing calibration verification (CCV) associated with batch 280-576943: bromomethane (-24.2%D, limits of 20%D). Bromomethane is considered a poor performer. There is insufficient holding time remaining for re-analysis; therefore, the data have been reported. The associated samples were non-detect for the affected analytes. *This issue is further discussed in Section 6.0.*

The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 280-576943 recovered outside control limits for the following analytes: bromomethane (RPD of 41, limit of 20). Bromomethane was within control limits in both the LCS and LCSD, only the RPD was outside of limits. *Bromomethane was not detected in associated samples, therefore no data are considered affected or qualified. This issue is further discussed in the ADR report.*

Reanalysis of the following sample was performed outside of the analytical holding time for 1,1,2-Trichloro-1,2,2-trifluoroethane due to the initial analysis being over the calibration range for this compound: Water-WC-LTM-MAY22 (280-162647-7). *This issue is discussed further in Section 9.0.*

Method 8330A:
The %RPD between the primary and confirmation column exceeded 40% for 2-Amino-4,6-dinitrotoluene, HMX and MNX for the following samples: G0096-22A (280-162647-1), G0296-22A (280-162647-2), G0094-22A (280-162647-10) and G0294-22A (280-162647-11) in preparation batch 280-576250 and analytical batch 280-576311 for method 8330. The results from both columns have been qualified and reported in accordance with the laboratory's QAS. *This issue is discussed further in Section 9.0.*

The continuing calibration verification (CCV) associated with batch 280-576502 for method 8330 recovered above the upper control limit for 1,3,5-Trinitrobenzene (15%D) at 15.1%D. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: G0094-22A (280-162647-10) and G0294-22A (280-162647-11). *This issue is discussed further in Section 6.0.*

Method 350.1:
Ammonia was detected in method blank MB 280-577784/56 at a level that was below one half the LOQ. *This issue is discussed further in the ADR report.*

Method 353.2:
Nitrate Nitrite as N exceeded the RPD limit for the MSD of sample G0017-22AMSD (280-162647-3) in batch 280-577634. This issue is discussed further in the ADR report.

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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	

3.0 Instrument Performance Check (Tuning)

Method 8260B Instrument Tuning Criteria (Filename)	**280-573719/1**		
Instrument:	**VMS_MS11**		
Date of Tuning:	**5/3/2022**		
	Yes	**No**	**N/A**
Was instrument tuning completed prior to calibration?	X		
Were all samples analyzed under an acceptable 12 hour clock tune?	X		
Were ion relative abundances for each target mass within the required intensity limits listed in Table 4 of SW-846 Method 8260B?	X		

Method 8260B Instrument Tuning Criteria (Filename)	**280-577780/1**		
Instrument:	**VMS_MS11**		
Date of Tuning:	**6/10/2022**		
	Yes	**No**	**N/A**
Was instrument tuning completed prior to calibration?	X		
Were all samples analyzed under an acceptable 12 hour clock tune?	X		
Were ion relative abundances for each target mass within the required intensity limits listed in Table 4 of SW-846 Method 8260B?	X		

Method 8260B Instrument Tuning Criteria (Filename)	**280-574978/1**		
Instrument:	**VMS_R1**		
Date of Tuning:	**5/14/2022**		
	Yes	**No**	**N/A**
Was instrument tuning completed prior to calibration?	X		
Were all samples analyzed under an acceptable 12 hour clock tune?	X		
Were ion relative abundances for each target mass within the required intensity limits listed in Table 4 of SW-846 Method 8260B?	X		

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162647 **AECOM Chemist: D. Casagrande**
Date Verified: 7/28/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)
Applicable Analytical Methods: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 8260B Instrument Tuning Criteria (Filename)	**280-576943/1**		
Instrument:	**VMS_R1**		
Date of Tuning:	**6/2/2022**		
	Yes	**No**	**N/A**
Was instrument tuning completed prior to calibration?	X		
Were all samples analyzed under an acceptable 12 hour clock tune?	X		
Were ion relative abundances for each target mass within the required intensity limits listed in Table 4 of SW-846 Method 8260B?	X		

4.0 Initial Calibration

Method 8260B Initial Calibration Criteria			
Instrument:	**VMS_MS11**		
Date of Calibration:	**5/3/2022**		
	Yes	**No**	**N/A**
Option 1: RSD for each analyte ≤ 15%?	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

This ICAL only used for analysis of 1,1,2-Trichloro-1,2,2-trifluoroethane.

Method 8260B Initial Calibration Criteria			
Instrument:	**VMS_R1**		
Date of Calibration:	**5/14/2022**		
	Yes	**No**	**N/A**
Option 1: RSD for each analyte ≤ 15%?	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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Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)
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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 ≤ 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 ≤ 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 ≤ 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.

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Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)
Applicable Analytical Methods: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

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 ≤ 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 ≤ 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

%RSD was not provided for methane; however, the r2 was met.

Method 9056A Initial Calibration Criteria			
Instrument:	**WC_IonChrom11**		
Date of Calibration:	**6/5/2022**		
	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:	**6/10/2022**		
	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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Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)
Applicable Analytical Methods: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 353.2 Initial Calibration Criteria			
Instrument:	**WC_Alp 2**		
Date of Calibration:	**6/9/2022**		
	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:	**6/8/2022**		
	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_SHI3**		
Date of Calibration:	**5/26/2022**		
	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		

5.0 Initial Calibration Verification [(ICV) Second Source]

Method 8260B ICV Criteria (Filename)	**280-573719/23**		
Instrument:	**VMS_MS11**		
Date of Initial Calibration Verification:	**5/3/2022**		
	Yes	**No**	**N/A**
Was the ICV analyzed after each calibration?	X		
Were all reported analytes within ± 20% of true value?	X		

This ICV only used for analysis of 1,1,2-Trichloro-1,2,2-trifluoroethane.

Method 8260B ICV Criteria (Filename)	**280-574978/23**		
Instrument:	**VMS_R1**		
Date of Initial Calibration Verification:	**5/14/2022**		
	Yes	**No**	**N/A**
Was the ICV analyzed after each calibration?	X		
Were all reported analytes within ± 20% of true value?		X	

Bromomethane was recovered at 33.5% in ICV. Bromomethane was not detected in associated samples, therefore no data were affected or qualified.

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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 ± 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 ± 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 ± 15% of the true value?	X		

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 ± 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 ± 25% of the true value?	X		

Method 9056A ICV	**WC_IonChrom11**		
Date of Initial Calibration Verification:	**6/5/2022**		
	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 ± 10% of the true value?	X		

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Method 350.1 ICV Criteria	**W_SKALAR_01**		
Date of Initial Calibration Verification:	**6/10/2022**		
	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 ± 10% of the true value?	X		

Method 353.2 ICV Criteria	**WC_Alp 2**		
Date of Initial Calibration Verification:	**6/9/2022**		
	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 ± 10% of the true value?	X		

Method 351.2 ICV Criteria	**WC_GAL1**		
Date of Initial Calibration Verification:	**6/8/2022**		
	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 ± 10% of the true value?	X		

Method 9060A ICV Criteria	**WC_SHI3**		
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 ± 10% of the true value?	X		

6.0 Continuing Calibration Verification (CCV)

Method 8260B Beginning CCV Criteria (Filename)	**280-577780/2-3**		
Method 8260B Ending CCV Criteria (Filename)	**280-577780/33**		
Instrument:	**VMS_MS11**		
Date of Calibration Verification:	**6/10/2022-6/11/2022**		
	Yes	**No**	**N/A**
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 12 hours of analysis time?	X		
Were all reported analytes and surrogates within ± 20% of true value?	X		
Were all reported analytes and surrogates within ± 50% of true value for the end of analytical batch CCV?	X		

This CCV is only used for analysis of 1,1,2-Trichloro-1,2,2-trifluoroethane.

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Method 8260B Beginning CCV Criteria (Filename)	**280-576943/2**		
Method 8260B Ending CCV Criteria (Filename)	**280-576943/34**		
Instrument:	**VMS_R1**		
Date of Calibration Verification:	**6/2/2022-6/3/2022**		
	Yes	**No**	**N/A**
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 12 hours of analysis time?	X		
Were all reported analytes and surrogates within ± 20% of true value?		X	
Were all reported analytes and surrogates within ± 50% of true value for the end of analytical batch CCV?	X		

Bromomethane was recovered at -24.2%D. See table below for qualified data.

Sample ID	**Analysis**	**Analyte**	**Qualification**
Water-WC-LTM-MAY22	VOCs	Bromomethane	**UJ**
5-20TB	VOCs	Bromomethane	**UJ**

Method 8330A CCV Criteria (Filename)	**280-576311/40-41**		
Instrument:	**CHHPLC_X3**		
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 ± 15% of the true value?	X		

Method 8330A CCV Criteria (Filename)	**280-576311/52-53**		
Instrument:	**CHHPLC_X3**		
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 ± 15% of the true value?	X		

Method 8330A CCV Criteria (Filename)	**280-576311/63-64**		
Instrument:	**CHHPLC_X3**		
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 ± 15% of the true value?	X		

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Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)
Applicable Analytical Methods: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 8330A CCV Criteria (Filename)	**280-576311/69-70**		
Instrument:	**CHHPLC_X3**		
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 ± 15% of the true value?	X		

Method 8330A CCV Criteria (Filename)	**280-576502/7-8**		
Instrument:	**CHHPLC_X5**		
Date of Calibration Verification:	**5/28/2022**		
	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 ± 15% of the true value?	X		

The CCV was met for all target analytes.

Method 8330A CCV Criteria (Filename)	**280-576502/20-21**		
Instrument:	**CHHPLC_X5**		
Date of Calibration Verification:	**5/28/2022**		
	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 ± 15% of the true value?	X		

The CCV was met for all target analytes.

Method 8330A CCV Criteria (Filename)	**280-576502/30-31**		
Instrument:	**CHHPLC_X5**		
Date of Calibration Verification:	**5/29/2022**		
	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 ± 15% of the true value?		X	

The continuing calibration verification (CCV) associated with batch 280-576502 for method 8330 recovered above the upper control limit for 1,3,5-Trinitrobenzene (15%D) at 15.1%D. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: G0094-22A (280-162647-10) and G0294-22A (280-162647-11). No data were considered affected or qualified.

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162647 **AECOM Chemist: D. Casagrande**
Date Verified: 7/28/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)
Applicable Analytical Methods: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method RSK-175 CCVRT Criteria (Filename)	**280-576907/2**		
Instrument:	**VGC_J**		
Date of Calibration Verification:	**6/2/2022**		
	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 ± 25% of the true value?	X		

Method RSK-175 CCV Criteria (Filename)	**280-576907/17**		
Instrument:	**VGC_J**		
Date of Calibration Verification:	**6/2/2022**		
	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 ± 25% of the true value?	X		

Method RSK-175 CCV Criteria (Filename)	**280-576907/28**		
Instrument:	**VGC_J**		
Date of Calibration Verification:	**6/2/2022**		
	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 ± 25% of the true value?	X		

Method RSK-175 CCVRT Criteria (Filename)	**280-577032/2**		
Instrument:	**VGC_J**		
Date of Calibration Verification:	**6/2/2022**		
	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 ± 25% of the true value?	X		

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162647 **AECOM Chemist: D. Casagrande**
Date Verified: 7/28/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)
Applicable Analytical Methods: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method RSK-175 CCV Criteria (Filename)	**280-577032/28**		
Instrument:	**VGC_J**		
Date of Calibration Verification:	**6/2/2022**		
	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 ± 25% of the true value?	X		

Method RSK-175 CCV Criteria (Filename)	**280-577032/37**		
Instrument:	**VGC_J**		
Date of Calibration Verification:	**6/2/2022**		
	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 ± 25% of the true value?	X		

Method 9056A, Instrument: WC_IonChrom11, All CCVs on 6/8/2022	**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 ± 10% of the true value?	X	

Method 9056A, Instrument: WC_IonChrom11, All CCVs on 6/9/2022	**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 ± 10% of the true value?	X	

Method 350.1, Instrument: W_SKALAR_01 CCVs on 6/10/2022	**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 ± 10% of the true value?	X	

Method 353.2, Instrument: WC_Alp 2, All CCVs on 6/9/2022	**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 ± 10% of the true value?	X	

Method 351.2, Instrument: WC_GAL1, All CCVs on 6/8/2022	**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 ± 10% of the true value?	X	

Method 9060A, Instrument: WC_SHI3, 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 ± 10% of the true value?	X	

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162647 **AECOM Chemist: D. Casagrande**
Date Verified: 7/28/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)
Applicable Analytical Methods: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 2320B, Instrument: WC_AT4, All CCVs on 5/27/2022	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 ± 10% of the true value?	X	

7.0 Sensitivity

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

8.0 Internal Standard (IS) Recoveries

Method 8260B Criteria	Yes	No	N/A
Were internal standards spiked for all samples and standards?	X		
Were internal standard areas within -50% to + 100% of the ICAL midpoint standard area?	X		
Were retention time ± 30 seconds from the retention time of the midpoint standard of the ICAL?	X		

9.0 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 sample was performed outside of the analytical holding time for 1,1,2-Trichloro-1,2,2-trifluoroethane due to the initial analysis being over the calibration range for this compound: Water-WC-LTM-MAY22 (280-162647-7). The 1,1,2-Trichloro-1,2,2-trifluoroethane result is qualified (J) due to holding time exceedance.

Sample ID	Analysis	Analyte	Qualification
Water-WC-LTM-May22	VOCs	1,1,2-Trichloro-1,2,2-trifluoroethane	**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 primary column unless otherwise noted.

Sample ID	Analysis	Analyte	RPD	Qual
G0096-22A	Explosives	2-amino-4,6-dinitrotoluene	45.0	**J**
		MNX	120.4	**J**
G0296-22A	Explosives	MNX	103.9	**J**
G0094-22A	Explosives	HMX	57.0	**J**
G0294-22A	Explosives	HMX	64.7	**J**

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162647 **AECOM Chemist: D. Casagrande**
Date Verified: 7/28/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)
Applicable Analytical Methods: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

10.0 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		