# CHAAP Data Verification

**Laboratory and SDG#: TADenver 280-137549** **AECOM Chemist: Jared DeSadier**
**Date Verified: 7/6/2020** **AECOM ITR: Jeff Aust**
**Guidance: DoD QSM Version 5.1 (January 2017)**
**Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)**
**Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034**

| Sample Identification # | Date Collected | Date Received | Matrix | Analysis |
|---|---|---|---|---|
| NW051-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |
| PZ011-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |
| NW050-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |
| PZ010-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |
| PZ009-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |
| NW062-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |
| PZ004-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |
| NW061-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |
| G0044-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |
| NW060-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |
| PZ001-20A | 6/10/2020 | 6/11/2020 | 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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**Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034**

| Sample Identification # | Date Collected | Date Received | Matrix | Analysis |
|---|---|---|---|---|
| CA213-20A | 6/10/2020 | 6/11/2020 | Water | Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034) |

## 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 | | |

The case narrative indicated that some surrogate and MS/MSD recoveries were outside evaluation criteria and some analytes were detected in blank samples. These issues are discussed further in the ADR report.

The RPD between the primary and confirmation column for some explosives samples was above evaluation criteria. This issue is discussed further in Section 7.0.

The cooler receipt form indicated some discrepancies between the collection times listed on the COC and sample label IDs. Per the chemist, samples were logged via the labels and no qualification of data was required.

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

## 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 | |

See Section 1.0.

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## 3.0 Initial Calibration

| **Method 8330A Initial Calibration Criteria** | | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_X3** | | |
| **Date of Calibration:** | **3/4/2020** | | |
| | **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_X3** | | |
| **Date of Calibration:** | **3/4/2020** | | |
| | **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_X3** | | |
| **Date of Calibration:** | **3/18/2020** | | |
| | **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 |

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

| **Method 8330A Initial Calibration Criteria** | | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_G2_LUNA** | | |
| **Date of Calibration:** | **5/14/2020** | | |
| | **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_G2_LUNA** | | |
| **Date of Calibration:** | **5/14/2020** | | |
| | **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:** | **5/16/2020** | | |
| | **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 |

| **Method 9056A Initial Calibration Criteria** | | | |
|---|---|---|---|
| **Instrument:** | **WC_IonChrom11** | | |
| **Date of Calibration:** | **6/9/2020** | | |
| | **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: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034**

| **Method 9056A Initial Calibration Criteria** | | | |
|---|---|---|---|
| **Instrument:** | **WC_IonChrom11** | | |
| **Date of Calibration:** | **6/24/2020** | | |
| | **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 9056A Initial Calibration Criteria** | | | |
|---|---|---|---|
| **Instrument:** | **WC_IonChrom7** | | |
| **Date of Calibration:** | **6/3/2020** | | |
| | **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 9056A Initial Calibration Criteria** | | | |
|---|---|---|---|
| **Instrument:** | **WC_IonChrom7** | | |
| **Date of Calibration:** | **6/29/2020** | | |
| | **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_Alp 4** | | |
| **Date of Calibration:** | **6/16/2020** | | |
| | **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 353.2 Initial Calibration Criteria** | | | |
|---|---|---|---|
| **Instrument:** | **WC_Alp 2** | | |
| **Date of Calibration:** | **6/16/2020** | | |
| | **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_Astoria** | | |
| **Date of Calibration:** | **6/17/2020** | | |
| | **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: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034**

| **Method 9060A Initial Calibration Criteria** | | | |
|---|---|---|---|
| **Instrument:** | **WC_SHI2** | | |
| **Date of Calibration:** | **6/26/2020** | | |
| | **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)** | **03040015.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_X3** | | |
| **Date of Initial Calibration Verification:** | **3/4/2020** | | |
| | **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)** | **03040033.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_X3** | | |
| **Date of Initial Calibration Verification:** | **3/5/2020** | | |
| | **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)** | **03180016.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_X3** | | |
| **Date of Initial Calibration Verification:** | **3/18/2020** | | |
| | **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)** | **05140016.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_G2-LUNA** | | |
| **Date of Initial Calibration Verification:** | **5/14/2020** | | |
| | **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 | | |

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

| Method 8330A ICV Criteria (Filename) | 05140026.D | | |
|---|---|---|---|
| Instrument: | CHHPLC_G2-LUNA | | |
| Date of Initial Calibration Verification: | 5/15/2020 | | |
| | 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) | 010F1001.D | | |
|---|---|---|---|
| Instrument: | VGC_J | | |
| Date of Initial Calibration Verification: | 5/16/2020 | | |
| | 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: | 6/9/2020 | | |
| | 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 9056A ICV | WC_IonChrom11 | | |
|---|---|---|---|
| Date of Initial Calibration Verification: | 6/24/2020 | | |
| | 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 9056A ICV | WC_IonChrom7 | | |
|---|---|---|---|
| Date of Initial Calibration Verification: | 6/3/2020 | | |
| | 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 9056A ICV | WC_IonChrom7 | | |
|---|---|---|---|
| Date of Initial Calibration Verification: | 6/29/2020 | | |
| | 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** | **WC_Alp 4** | | |
|---|---|---|---|
| **Date of Initial Calibration Verification:** | **6/16/2020** | | |
| | **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:** | **6/16/2020** | | |
| | **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_Astoria** | | |
|---|---|---|---|
| **Date of Initial Calibration Verification:** | **6/17/2020** | | |
| | **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_SHI2** | | |
|---|---|---|---|
| **Date of Initial Calibration Verification:** | **6/26/2020** | | |
| | **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 | | |

## 5.0 Continuing Calibration Verification (CCV)

| **Method 8330A CCV Criteria (Filename)** | **06170026-7.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_X3** | | |
| **Date of Calibration Verification:** | **6/18/2020** | | |
| | **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 Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034**

| **Method 8330A CCV Criteria (Filename)** | **06170038-9.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_X3** | | |
| **Date of Calibration Verification:** | **6/18/2020** | | |
| | **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)** | **06170050-1.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_X3** | | |
| **Date of Calibration Verification:** | **6/18/2020** | | |
| | **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)** | **06170059-60.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_X3** | | |
| **Date of Calibration Verification:** | **6/18/2020** | | |
| | **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)** | **007-8201.D<br>008-8301.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_G2_LUNA** | | |
| **Date of Calibration Verification:** | **6/19/2020** | | |
| | **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 Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034**

| **Method 8330A CCV Criteria (Filename)** | **007-9401.D 008-9501.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_G2_LUNA** | | |
| **Date of Calibration Verification:** | **6/19/2020** | | |
| | **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)** | **007-A601.D 008-A701.D** | | |
|---|---|---|---|
| **Instrument:** | **CHHPLC_G2_LUNA** | | |
| **Date of Calibration Verification:** | **6/20/2020** | | |
| | **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 RSK-175 CCVRT Criteria (Filename)** | **001F0101.D** | | |
|---|---|---|---|
| **Instrument:** | **VGC_J** | | |
| **Date of Calibration Verification:** | **6/18/2020** | | |
| | **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)** | **019F1901.D** | | |
|---|---|---|---|
| **Instrument:** | **VGC_J** | | |
| **Date of Calibration Verification:** | **6/18/2020** | | |
| | **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#: TADenver 280-137549** **AECOM Chemist: Jared DeSadier**
**Date Verified: 7/6/2020** **AECOM ITR: Jeff Aust**
**Guidance: DoD QSM Version 5.1 (January 2017)**
**Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)**
**Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034**

| **Method RSK-175 CCV Criteria (Filename)** | **031F3101.D** | | |
|---|---|---|---|
| **Instrument:** | **VGC_J** | | |
| **Date of Calibration Verification:** | **6/18/2020** | | |
| | **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 6/9/2020** | **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 6/24/2020** | **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_IonChrom7, All CCVs on 6/3/2020** | **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_IonChrom7, All CCVs on 6/29/2020** | **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: WC_Alp 4, All CCVs on 6/16/2020** | **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 6/16/2020** | **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_Astoria, All CCVs on 6/17/2020** | **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_SHI2, All CCVs on 6/26/2020** | **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#: TADenver 280-137549** **AECOM Chemist: Jared DeSadier**
**Date Verified: 7/6/2020** **AECOM ITR: Jeff Aust**
**Guidance: DoD QSM Version 5.1 (January 2017)**
**Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)**
**Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034**

## 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 | | |

The RPD between the primary and confirmation column for some explosives samples was 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 |
|---|---|---|---|---|
| PZ010-20A | Explosives | 2-amino-4,6-dinitrotoluene | **92.4** | **J** |
| PZ011-20A | Explosives | 2-amino-4,6-dinitrotoluene | **149.7** | **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 | | |