

## ANALYTICAL REPORT

Job Number: 480-136777-1

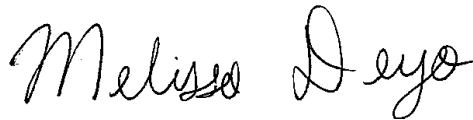
Job Description: Former Philadelphia Coke Facility

Contract Number: TAAT092507-R010110

For:

ARCADIS U.S. Inc  
One Lincoln Center  
110 West Fayette St, Suite 300  
Syracuse, NY 13202

Attention: Mr. Ian Campbell



Approved for release.  
Melissa L Deyo  
Project Manager I  
6/22/2018 2:23 PM

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Melissa L Deyo, Project Manager I  
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06/22/2018

cc: Mr. Lawrence C Healy III

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report.

TestAmerica Buffalo NELAC Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NHDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

**TestAmerica Laboratories, Inc.**

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Tel (716) 691-2600 Fax (716) 691-7991 [www.testamericainc.com](http://www.testamericainc.com)

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**Job Narrative**  
**480-136777-1**

**Receipt**

The samples were received on 6/1/2018 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.2° C.

**General Chemistry**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Sample Summary

Client: ARCADIS U.S. Inc  
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-136777-1

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| <b>Lab Sample ID</b> | <b>Client Sample ID</b> | <b>Matrix</b> | <b>Collected</b> | <b>Received</b> |
|----------------------|-------------------------|---------------|------------------|-----------------|
| 480-136777-1         | PCMW-16D                | Water         | 05/30/18 08:50   | 06/01/18 10:30  |
| 480-136777-2         | DUP-05302018            | Water         | 05/30/18 00:00   | 06/01/18 10:30  |

# Detection Summary

Client: ARCADIS U.S. Inc  
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-136777-1

## Client Sample ID: PCMW-16D

## Lab Sample ID: 480-136777-1

| Analyte       | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---------------|--------|-----------|-----|-----|------|---------|---|--------|-----------|
| Cyanide, Free | 9.1    | F1        | 5.0 | 1.5 | ug/L | 1       |   | 9016   | Total/NA  |

## Client Sample ID: DUP-05302018

## Lab Sample ID: 480-136777-2

| Analyte       | Result | Qualifier | RL  | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---------------|--------|-----------|-----|-----|------|---------|---|--------|-----------|
| Cyanide, Free | 18.0   |           | 5.0 | 1.5 | ug/L | 1       |   | 9016   | Total/NA  |

This Detection Summary does not include radiochemical test results.

# Method Summary

Client: ARCADIS U.S. Inc  
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-136777-1

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| <b>Method</b> | <b>Method Description</b> | <b>Protocol</b> | <b>Laboratory</b> |
|---------------|---------------------------|-----------------|-------------------|
| 9016          | Cyanide, Free             | SW846           | TAL EDI           |
| 9016          | Cyanide, Preparation      | SW846           | TAL EDI           |

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-136777-1

## Client Sample ID: PCMW-16D

Date Collected: 05/30/18 08:50

Date Received: 06/01/18 10:30

## Lab Sample ID: 480-136777-1

Matrix: Water

### General Chemistry

| Analyte       | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Cyanide, Free | 9.1    | F1        | 5.0 | 1.5 | ug/L |   | 06/12/18 04:43 | 06/12/18 15:30 | 1       |

## Client Sample ID: DUP-05302018

Date Collected: 05/30/18 00:00

Date Received: 06/01/18 10:30

## Lab Sample ID: 480-136777-2

Matrix: Water

### General Chemistry

| Analyte       | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| Cyanide, Free | 18.0   |           | 5.0 | 1.5 | ug/L |   | 06/12/18 04:44 | 06/12/18 15:30 | 1       |



# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-136777-1

## Method: 9016 - Cyanide, Free

**Lab Sample ID: MB 460-527010/1-A**  
**Matrix: Water**  
**Analysis Batch: 527143**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 527010**

| Analyte       | MB Result | MB Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------------|-----------|--------------|-----|-----|------|---|----------------|----------------|---------|
| Cyanide, Free | ND        |              | 5.0 | 1.5 | ug/L |   | 06/12/18 04:43 | 06/12/18 15:30 | 1       |

**Lab Sample ID: MB 460-527010/25-A**  
**Matrix: Water**  
**Analysis Batch: 527143**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 527010**

| Analyte       | MB Result | MB Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------------|-----------|--------------|-----|-----|------|---|----------------|----------------|---------|
| Cyanide, Free | ND        |              | 5.0 | 1.5 | ug/L |   | 06/12/18 04:44 | 06/12/18 15:30 | 1       |

**Lab Sample ID: LCS 460-527010/26-A**  
**Matrix: Water**  
**Analysis Batch: 527143**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 527010**

| Analyte       | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | Limits   |
|---------------|-------------|------------|---------------|------|---|------|----------|
| Cyanide, Free | 50.0        | 40.49      |               | ug/L |   | 81   | 78 - 110 |

**Lab Sample ID: LCS 460-527010/2-A**  
**Matrix: Water**  
**Analysis Batch: 527143**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 527010**

| Analyte       | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | Limits   |
|---------------|-------------|------------|---------------|------|---|------|----------|
| Cyanide, Free | 50.0        | 41.64      |               | ug/L |   | 83   | 78 - 110 |

**Lab Sample ID: 480-136777-1 MS**  
**Matrix: Water**  
**Analysis Batch: 527143**

**Client Sample ID: PCMW-16D**  
**Prep Type: Total/NA**  
**Prep Batch: 527010**

| Analyte       | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | Limits   |
|---------------|---------------|------------------|-------------|-----------|--------------|------|---|------|----------|
| Cyanide, Free | 9.1           | F1               | 50.0        | 43.47     | F1           | ug/L |   | 69   | 78 - 110 |

**Lab Sample ID: 480-136777-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 527143**

**Client Sample ID: PCMW-16D**  
**Prep Type: Total/NA**  
**Prep Batch: 527010**

| Analyte       | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | Limits   | RPD | Limit |
|---------------|---------------|------------------|-------------|------------|---------------|------|---|------|----------|-----|-------|
| Cyanide, Free | 9.1           | F1               | 50.0        | 47.83      | F1            | ug/L |   | 77   | 78 - 110 | 10  | 20    |

**Lab Sample ID: 480-136777-2 MS**  
**Matrix: Water**  
**Analysis Batch: 527143**

**Client Sample ID: DUP-05302018**  
**Prep Type: Total/NA**  
**Prep Batch: 527010**

| Analyte       | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | Limits   |
|---------------|---------------|------------------|-------------|-----------|--------------|------|---|------|----------|
| Cyanide, Free | 18.0          |                  | 50.0        | 60.21     |              | ug/L |   | 84   | 78 - 110 |

**Lab Sample ID: 480-136777-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 527143**

**Client Sample ID: DUP-05302018**  
**Prep Type: Total/NA**  
**Prep Batch: 527010**

| Analyte       | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | Limits   | RPD | Limit |
|---------------|---------------|------------------|-------------|------------|---------------|------|---|------|----------|-----|-------|
| Cyanide, Free | 18.0          |                  | 50.0        | 57.00      |               | ug/L |   | 78   | 78 - 110 | 5   | 20    |

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# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-136777-1

**Lab Sample ID: DLCK 460-527143/10**  
**Matrix: Water**  
**Analysis Batch: 527143**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

| Analyte       | Spike Added | DLCK Result | DLCK Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------------|-------------|-------------|----------------|------|---|------|--------------|
| Cyanide, Free | 2.00        | 2.46        | J              | ug/L |   | 123  | 50 - 150     |

# Definitions/Glossary

Client: ARCADIS U.S. Inc  
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-136777-1

## Qualifiers

### General Chemistry

| Qualifier | Qualifier Description  |
|-----------|--|
| F1        | MS and/or MSD Recovery is outside acceptance limits.   |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| PQL            | Practical Quantitation Limit  |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |

# QC Association Summary

Client: ARCADIS U.S. Inc  
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-136777-1

## General Chemistry

### Prep Batch: 527010

| Lab Sample ID       | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|---------------------|--------------------|-----------|--------|--------|------------|
| 480-136777-1        | PCMW-16D           | Total/NA  | Water  | 9016   |            |
| 480-136777-2        | DUP-05302018       | Total/NA  | Water  | 9016   |            |
| MB 460-527010/1-A   | Method Blank       | Total/NA  | Water  | 9016   |            |
| MB 460-527010/25-A  | Method Blank       | Total/NA  | Water  | 9016   |            |
| LCS 460-527010/26-A | Lab Control Sample | Total/NA  | Water  | 9016   |            |
| LCS 460-527010/2-A  | Lab Control Sample | Total/NA  | Water  | 9016   |            |
| 480-136777-1 MS     | PCMW-16D           | Total/NA  | Water  | 9016   |            |
| 480-136777-1 MSD    | PCMW-16D           | Total/NA  | Water  | 9016   |            |
| 480-136777-2 MS     | DUP-05302018       | Total/NA  | Water  | 9016   |            |
| 480-136777-2 MSD    | DUP-05302018       | Total/NA  | Water  | 9016   |            |

### Analysis Batch: 527143

| Lab Sample ID       | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|---------------------|--------------------|-----------|--------|--------|------------|
| 480-136777-1        | PCMW-16D           | Total/NA  | Water  | 9016   | 527010     |
| 480-136777-2        | DUP-05302018       | Total/NA  | Water  | 9016   | 527010     |
| MB 460-527010/1-A   | Method Blank       | Total/NA  | Water  | 9016   | 527010     |
| MB 460-527010/25-A  | Method Blank       | Total/NA  | Water  | 9016   | 527010     |
| DLCK 460-527143/10  | Lab Control Sample | Total/NA  | Water  | 9016   |            |
| LCS 460-527010/26-A | Lab Control Sample | Total/NA  | Water  | 9016   | 527010     |
| LCS 460-527010/2-A  | Lab Control Sample | Total/NA  | Water  | 9016   | 527010     |
| 480-136777-1 MS     | PCMW-16D           | Total/NA  | Water  | 9016   | 527010     |
| 480-136777-1 MSD    | PCMW-16D           | Total/NA  | Water  | 9016   | 527010     |
| 480-136777-2 MS     | DUP-05302018       | Total/NA  | Water  | 9016   | 527010     |
| 480-136777-2 MSD    | DUP-05302018       | Total/NA  | Water  | 9016   | 527010     |

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-136777-1

## Client Sample ID: PCMW-16D

Date Collected: 05/30/18 08:50

Date Received: 06/01/18 10:30

## Lab Sample ID: 480-136777-1

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 9016         |     |                 | 527010       | 06/12/18 04:43       | KYN     | TAL EDI |
| Total/NA  | Analysis   | 9016         |     | 1               | 527143       | 06/12/18 15:30       | JXT     | TAL EDI |

## Client Sample ID: DUP-05302018

Date Collected: 05/30/18 00:00

Date Received: 06/01/18 10:30

## Lab Sample ID: 480-136777-2

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 9016         |     |                 | 527010       | 06/12/18 04:44       | KYN     | TAL EDI |
| Total/NA  | Analysis   | 9016         |     | 1               | 527143       | 06/12/18 15:30       | JXT     | TAL EDI |

### Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

# Accreditation/Certification Summary

Client: ARCADIS U.S. Inc  
 Project/Site: Former Philadelphia Coke Facility

TestAmerica Job ID: 480-136777-1

## Laboratory: TestAmerica Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority      | Program       | EPA Region | Identification Number | Expiration Date |
|----------------|---------------|------------|-----------------------|-----------------|
| Arkansas DEQ   | State Program | 6          | 88-0686               | 07-06-18 *      |
| California     | State Program | 9          | 2931                  | 04-01-19        |
| Connecticut    | State Program | 1          | PH-0568               | 09-30-18        |
| Florida        | NELAP         | 4          | E87672                | 06-30-18 *      |
| Georgia        | State Program | 4          | 10026 (NY)            | 03-31-19        |
| Illinois       | NELAP         | 5          | 200003                | 09-30-18        |
| Iowa           | State Program | 7          | 374                   | 03-01-19        |
| Kansas         | NELAP         | 7          | E-10187               | 01-31-19        |
| Kentucky (DW)  | State Program | 4          | 90029                 | 12-31-18        |
| Kentucky (UST) | State Program | 4          | 30                    | 03-31-19        |
| Kentucky (WW)  | State Program | 4          | 90029                 | 12-31-18        |
| Louisiana      | NELAP         | 6          | 02031                 | 06-30-18 *      |
| Maine          | State Program | 1          | NY00044               | 12-04-18        |
| Maryland       | State Program | 3          | 294                   | 03-31-19        |
| Massachusetts  | State Program | 1          | M-NY044               | 06-30-18 *      |
| Michigan       | State Program | 5          | 9937                  | 03-31-19        |
| Minnesota      | NELAP         | 5          | 036-999-337           | 12-31-18        |
| New Hampshire  | NELAP         | 1          | 2337                  | 11-17-18        |
| New Jersey     | NELAP         | 2          | NY455                 | 06-30-18 *      |
| New York       | NELAP         | 2          | 10026                 | 03-31-18 *      |
| North Dakota   | State Program | 8          | R-176                 | 03-31-19        |
| Oklahoma       | State Program | 6          | 9421                  | 08-31-18        |
| Oregon         | NELAP         | 10         | NY200003              | 06-09-19        |
| Pennsylvania   | NELAP         | 3          | 68-00281              | 07-31-18 *      |
| Rhode Island   | State Program | 1          | LAO00328              | 12-30-18        |
| Tennessee      | State Program | 4          | TN02970               | 03-31-19        |
| Texas          | NELAP         | 6          | T104704412-15-6       | 07-31-18 *      |
| USDA           | Federal       |            | P330-11-00386         | 02-06-21        |
| Virginia       | NELAP         | 3          | 460185                | 09-14-18        |
| Washington     | State Program | 10         | C784                  | 02-10-19        |
| Wisconsin      | State Program | 5          | 998310390             | 08-31-18        |

## Laboratory: TestAmerica Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority                         | Program       | EPA Region | Identification Number | Expiration Date |
|-----------------------------------|---------------|------------|-----------------------|-----------------|
| Connecticut                       | State Program | 1          | PH-0200               | 09-30-18        |
| DE Haz. Subst. Cleanup Act (HSCA) | State Program | 3          | N/A                   | 12-31-18        |
| New Jersey                        | NELAP         | 2          | 12028                 | 06-30-18        |
| New York                          | NELAP         | 2          | 11452                 | 04-01-19        |
| Pennsylvania                      | NELAP         | 3          | 68-00522              | 02-28-19        |
| Rhode Island                      | State Program | 1          | LAO00132              | 12-30-18        |
| USDA                              | Federal       |            | NJCA-003-08           | 06-13-20        |

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# GENERAL CHEMISTRY

COVER PAGE  
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job Number: 480-136777-1

SDG No.: \_\_\_\_\_

Project: Former Philadelphia Coke Facility

| Client Sample ID    | Lab Sample ID       |
|---------------------|---------------------|
| <u>PCMW-16D</u>     | <u>480-136777-1</u> |
| <u>DUP-05302018</u> | <u>480-136777-2</u> |

Comments:

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1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PCMW-16D

Lab Sample ID: 480-136777-1

Lab Name: TestAmerica Edison

Job No.: 480-136777-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 05/30/2018 08:50

Reporting Basis: WET

Date Received: 06/01/2018 10:30

| CAS No. | Analyte       | Result | RL  | MDL | Units | C | Q  | DIL | Method |
|---------|---------------|--------|-----|-----|-------|---|----|-----|--------|
|         | Cyanide, Free | 9.1    | 5.0 | 1.5 | ug/L  |   | F1 | 1   | 9016   |

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: DUP-05302018

Lab Sample ID: 480-136777-2

Lab Name: TestAmerica Edison

Job No.: 480-136777-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 05/30/2018 00:00

Reporting Basis: WET

Date Received: 06/01/2018 10:30

| CAS No. | Analyte       | Result | RL  | MDL | Units | C | Q | DIL | Method |
|---------|---------------|--------|-----|-----|-------|---|---|-----|--------|
|         | Cyanide, Free | 18.0   | 5.0 | 1.5 | ug/L  |   |   | 1   | 9016   |

2-IN  
 CALIBRATION QUALITY CONTROL  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-136777-1  
 SDG No.: \_\_\_\_\_  
 Analyst: JXT Batch Start Date: 06/12/2018  
 Reporting Units: ug/L Analytical Batch No.: 527143

| Sample Number | QC Type | Time  | Analyte       | Result | Spike Amount | (%) Recovery | Limits | Qual | Reagent             |
|---------------|---------|-------|---------------|--------|--------------|--------------|--------|------|---------------------|
| 8             | ICV     | 15:30 | Cyanide, Free | 44.78  | 50.0         | 90           | 85-115 |      | WT29016-50ppb_00444 |
| 9             | ICB     | 15:30 | Cyanide, Free | ND     |              |              |        |      |                     |
| 11            | CCV     | 15:30 | Cyanide, Free | 50.59  | 50.0         | 101          | 85-115 |      | WT9016-50ppb_00427  |
| 12            | CCB     | 15:30 | Cyanide, Free | ND     |              |              |        |      |                     |
| 23            | CCV     | 15:30 | Cyanide, Free | 50.59  | 50.0         | 101          | 85-115 |      | WT9016-50ppb_00427  |
| 24            | CCB     | 15:30 | Cyanide, Free | ND     |              |              |        |      |                     |
| 35            | CCV     | 15:30 | Cyanide, Free | 50.59  | 50.0         | 101          | 85-115 |      | WT9016-50ppb_00427  |
| 36            | CCB     | 15:30 | Cyanide, Free | ND     |              |              |        |      |                     |
| 46            | CCV     | 15:30 | Cyanide, Free | 50.59  | 50.0         | 101          | 85-115 |      | WT9016-50ppb_00427  |
| 47            | CCB     | 15:30 | Cyanide, Free | ND     |              |              |        |      |                     |

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

3-IN  
METHOD BLANK  
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison

Job No.: 480-136777-1

SDG No.: \_\_\_\_\_

| Method                   | Lab Sample ID                                   | Analyte       | Result                   | Qual                   | Units | RL  | Dil |
|--------------------------|---|---------------|--------------------------|------------------------|-------|-----|-----|
| Batch ID: 527143<br>9016 | Date: 06/12/2018 15:30<br>MB 460-527010/1-A     | Cyanide, Free | Prep Batch: 527010<br>ND | Date: 06/12/2018 04:43 | ug/L  | 5.0 | 1   |
| Batch ID: 527143<br>9016 | Date: 06/12/2018 15:30<br>MB<br>460-527010/25-A | Cyanide, Free | Prep Batch: 527010<br>ND | Date: 06/12/2018 04:44 | ug/L  | 5.0 | 1   |

5-IN  
 MATRIX SPIKE SAMPLE RECOVERY  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-136777-1

SDG No.: \_\_\_\_\_

Matrix: Water

| Method  | Lab Sample ID | Analyte       | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q  |
|---|---------------|---------------|--------|---|------|--------------|-----------|--------|-----|-----------|----|
| Batch ID: 527143 Date: 06/12/2018 15:30 Prep Batch: 527010 Date: 06/12/2018 04:43 |               |               |        |   |      |              |           |        |     |           |    |
| 9016  | 480-136777-1  | Cyanide, Free | 9.1    |   | ug/L |              |           |        |     |           | F1 |
| 9016  | 480-136777-1  | Cyanide, Free | 43.47  |   | ug/L | 50.0         | 69        | 78-110 |     |           | F1 |
|   | MS            |               |        |   |      |              |           |        |     |           |    |
| Batch ID: 527143 Date: 06/12/2018 15:30 Prep Batch: 527010 Date: 06/12/2018 04:44 |               |               |        |   |      |              |           |        |     |           |    |
| 9016  | 480-136777-2  | Cyanide, Free | 18.0   |   | ug/L |              |           |        |     |           |    |
| 9016  | 480-136777-2  | Cyanide, Free | 60.21  |   | ug/L | 50.0         | 84        | 78-110 |     |           |    |
|   | MS            |               |        |   |      |              |           |        |     |           |    |

Calculations are performed before rounding to avoid round-off errors in calculated results.

5-IN  
 MATRIX SPIKE DUPLICATE SAMPLE RECOVERY  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-136777-1

SDG No.: \_\_\_\_\_

Matrix: Water

| Method  | Lab Sample ID | Analyte       | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q  |
|---|---------------|---------------|--------|---|------|--------------|-----------|--------|-----|-----------|----|
| Batch ID: 527143 Date: 06/12/2018 15:30 Prep Batch: 527010 Date: 06/12/2018 04:43 |               |               |        |   |      |              |           |        |     |           |    |
| 9016  | 480-136777-1  | Cyanide, Free | 47.83  |   | ug/L | 50.0         | 77        | 78-110 | 10  | 20        | F1 |
| MSD   |               |               |        |   |      |              |           |        |     |           |    |
| Batch ID: 527143 Date: 06/12/2018 15:30 Prep Batch: 527010 Date: 06/12/2018 04:44 |               |               |        |   |      |              |           |        |     |           |    |
| 9016  | 480-136777-2  | Cyanide, Free | 57.00  |   | ug/L | 50.0         | 78        | 78-110 | 5   | 20        |    |
| MSD   |               |               |        |   |      |              |           |        |     |           |    |

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN  
 LAB CONTROL SAMPLE  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-136777-1

SDG No.: \_\_\_\_\_

Matrix: Water

| Method  | Lab Sample ID          | Analyte       | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|---|------------------------|---------------|--------|---|------|--------------|-----------|--------|-----|-----------|---|
| Batch ID: 527143 Date: 06/12/2018 15:30 Prep Batch: 527010 Date: 06/12/2018 04:43<br>LCS Source: WT9016-2mg/l_00303 |                        |               |        |   |      |              |           |        |     |           |   |
| 9016  | LCS<br>460-527010/2-A  | Cyanide, Free | 41.64  |   | ug/L | 50.0         | 83        | 78-110 |     |           |   |
| Batch ID: 527143 Date: 06/12/2018 15:30 Prep Batch: 527010 Date: 06/12/2018 04:44<br>LCS Source: WT9016-2mg/l_00303 |                        |               |        |   |      |              |           |        |     |           |   |
| 9016  | LCS<br>460-527010/26-A | Cyanide, Free | 40.49  |   | ug/L | 50.0         | 81        | 78-110 |     |           |   |

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN  
DETECTION LIMIT CHECK STANDARD  
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-136777-1  
SDG No.: \_\_\_\_\_  
Matrix: Water

| Method                                  | Lab Sample ID         | Analyte       | Result | C | Unit | Spike Amount                   | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|---|-----------------------|---------------|--------|---|------|--------------------------------|-----------|--------|-----|-----------|---|
| Batch ID: 527143 Date: 06/12/2018 15:30 |                       |               |        |   |      |                                |           |        |     |           |   |
|   |                       |               |        |   |      | LCS Source: WT9016-2mg/l_00303 |           |        |     |           |   |
| 9016                                    | DLCK<br>460-527143/10 | Cyanide, Free | 2.46   | J | ug/L | 2.00                           | 123       | 50-150 |     |           |   |

Calculations are performed before rounding to avoid round-off errors in calculated results.



9-IN  
DETECTION LIMITS  
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison

Job Number: 480-136777-1

SDG Number: \_\_\_\_\_

Matrix: Water

Instrument ID: Wet9016

Method: 9016

MDL Date: 08/15/2016 13:13

Prep Method: 9016

| Analyte       | Wavelength/<br>Mass | RL<br>(ug/L) | MDL<br>(ug/L) |
|---------------|---------------------|--------------|---------------|
| Cyanide, Free |                     | 5            | 1.54          |

9-IN  
CALIBRATION BLANK DETECTION LIMITS  
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job Number: 480-136777-1  
SDG Number: \_\_\_\_\_  
Matrix: Water Instrument ID: Wet9016  
Method: 9016 XMDL Date: 08/15/2016 13:14

| Analyte       | Wavelength/<br>Mass | XRL<br>(ug/L) | XMDL<br>(ug/L) |
|---------------|---------------------|---------------|----------------|
| Cyanide, Free |                     | 5             | 1.54           |

12-IN  
PREPARATION LOG  
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison

Job No.: 480-136777-1

SDG No.: \_\_\_\_\_

Prep Method: 9016

| Lab Sample ID       | Preparation Date | Prep Batch | Initial Weight | Initial Volume (mL) | Final Volume (mL) |
|---------------------|------------------|------------|----------------|---------------------|-------------------|
| MB 460-527010/1-A   | 06/12/2018 04:43 | 527010     |                | 3                   | 1.3               |
| LCS 460-527010/2-A  | 06/12/2018 04:43 | 527010     |                | 3                   | 1.3               |
| 480-136777-1        | 06/12/2018 04:43 | 527010     |                | 3                   | 1.3               |
| 480-136777-1 MS     | 06/12/2018 04:43 | 527010     |                | 3                   | 1.3               |
| 480-136777-1 MSD    | 06/12/2018 04:43 | 527010     |                | 3                   | 1.3               |
| MB 460-527010/25-A  | 06/12/2018 04:44 | 527010     |                | 3                   | 1.3               |
| LCS 460-527010/26-A | 06/12/2018 04:44 | 527010     |                | 3                   | 1.3               |
| 480-136777-2        | 06/12/2018 04:44 | 527010     |                | 3                   | 1.3               |
| 480-136777-2 MS     | 06/12/2018 04:44 | 527010     |                | 3                   | 1.3               |
| 480-136777-2 MSD    | 06/12/2018 04:44 | 527010     |                | 3                   | 1.3               |

13-IN  
ANALYSIS RUN LOG  
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-136777-1

SDG No.: \_\_\_\_\_

Instrument ID: Wet9016 Method: 9016

Start Date: 06/12/2018 15:30 End Date: 06/12/2018 15:30

| Lab Sample ID       | D / F | Type | Time  | Analytes |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
|---------------------|-------|------|-------|----------|---|---|---|---|--|--|--|--|--|--|--|--|--|--|--|
|                     |       |      |       | C        | N | F | r | e |  |  |  |  |  |  |  |  |  |  |  |
| IC 460-527143/1     |       |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| IC 460-527143/2     |       |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| IC 460-527143/3     |       |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| IC 460-527143/4     |       |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| IC 460-527143/5     |       |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| IC 460-527143/6     |       |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| IC 460-527143/7     |       |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ICV 460-527143/8    | 1     |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ICB 460-527143/9    | 1     |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| DLCK 460-527143/10  | 1     | T    | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| CCV 460-527143/11   | 1     |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| CCB 460-527143/12   | 1     |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| MB 460-527010/1-A   | 1     | T    | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| LCS 460-527010/2-A  | 1     | T    | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| 480-136777-1        | 1     | T    | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| 480-136777-1 MS     | 1     | T    | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| 480-136777-1 MSD    | 1     | T    | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| CCV 460-527143/23   | 1     |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| CCB 460-527143/24   | 1     |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| CCV 460-527143/35   | 1     |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| CCB 460-527143/36   | 1     |      | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| ZZZZZZ              |       |      | 15:30 |          |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| MB 460-527010/25-A  | 1     | T    | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |
| LCS 460-527010/26-A | 1     | T    | 15:30 | X        |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |

13-IN  
ANALYSIS RUN LOG  
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 480-136777-1

SDG No.: \_\_\_\_\_

Instrument ID: Wet9016 Method: 9016

Start Date: 06/12/2018 15:30 End Date: 06/12/2018 15:30

| Lab Sample ID     | D / F | T y p e | Time  | Analytes                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------|-------|---------|-------|----------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                   |       |         |       | C<br>N<br>F<br>r<br>e<br>e |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 480-136777-2      | 1     | T       | 15:30 | X                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 480-136777-2 MS   | 1     | T       | 15:30 | X                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 480-136777-2 MSD  | 1     | T       | 15:30 | X                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CCV 460-527143/46 | 1     |         | 15:30 | X                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CCB 460-527143/47 | 1     |         | 15:30 | X                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Prep Types

T = Total/NA

| Job      | # 480-136777, 240-96436, 460-157703. |          |              |              |               |  |
|----------|--------------------------------------|----------|--------------|--------------|---------------|--|
| Batch    | # 527143                             |          |              |              |               |  |
| Sample   | Dil.                                 | Matrix   | 1st<br>[abs] | 2nd<br>[abs] | Avg.<br>[abs] |  |
| 0        |                                      |          | 0.000        | 0.000        | 0.000         |  |
| 2        |                                      |          | 0.004        | 0.005        | 0.005         |  |
| 5        |                                      |          | 0.009        | 0.011        | 0.010         |  |
| 10       |                                      |          | 0.020        | 0.020        | 0.020         |  |
| 25       |                                      |          | 0.050        | 0.050        | 0.050         |  |
| 50       |                                      |          | 0.099        | 0.096        | 0.098         |  |
| 150      |                                      |          | 0.285        | 0.282        | 0.284         |  |
| ICV      |                                      |          | 0.086        | 0.085        | 0.086         |  |
| ICB      |                                      |          | 0.001        | 0.001        | 0.001         |  |
| DLCK     |                                      |          | 0.005        | 0.006        | 0.006         |  |
| CCV      |                                      |          | 0.096        | 0.098        | 0.097         |  |
| CCB      |                                      |          | 0.000        | 0.000        | 0.000         |  |
| MB       |                                      |          | 0.005        | 0.007        | 0.006         |  |
| LCS      |                                      |          | 0.182        | 0.184        | 0.183         |  |
| 136777-1 | 1X                                   | Water    | 0.040        | 0.042        | 0.041         |  |
| ↓ -1MS   |                                      |          | 0.187        | 0.194        | 0.191         |  |
| ↓ -1MSD  |                                      |          | 0.192        | 0.228        | 0.210         |  |
| 96436-1  |                                      |          | 0.009        | 0.007        | 0.008         |  |
| ↓ -2     |                                      |          | 0.007        | 0.007        | 0.007         |  |
| ↓ -3     |                                      |          | 0.006        | 0.006        | 0.006         |  |
| 157703-1 |                                      | Filtrate | 0.013        | 0.015        | 0.014         |  |
| ↓ -1     |                                      | Water    | 0.050        | 0.042        | 0.046         |  |
| CCV      | —                                    | —        | 0.096        | 0.098        | 0.097         |  |
| CCB      | —                                    | —        | 0.000        | 0.000        | 0.000         |  |
| 157703-2 | 1X                                   | Filtrate | 0.179        | 0.181        | 0.180         |  |
| ↓ -2     |                                      | Water    | 0.148        | 0.129        | 0.139         |  |
| ↓ -3     |                                      |          | 0.069        | 0.173        | 0.121         |  |
| ↓ -4     |                                      |          | 0.159        | 0.149        | 0.154         |  |
| ↓ -5     |                                      |          | 0.114        | 0.096        | 0.105         |  |
| ↓ -6     |                                      |          | 0.006        | 0.007        | 0.007         |  |

Continued on Page 60

Read and Understood By

J.T.

06/12/18

Signed

Date

Signed

Date

| Sample    | DIL | Matrix   | 1st<br>[abs] | 2nd<br>[abs] | Avg<br>[abs] |
|-----------|-----|----------|--------------|--------------|--------------|
| 157703-7  | IX  | Water    | 0.009        | 0.007        | 0.007        |
| ↓ -8      | ↓   | ↓        | 0.009        | 0.007        | 0.008        |
| ↓ -9      | ↓   | ↓        | 0.009        | 0.009        | 0.009        |
| ↓ -10     | ↓   | ↓        | 0.007        | 0.009        | 0.008        |
| CCV       | —   | —        | 0.096        | 0.098        | 0.097        |
| CCB       | —   | —        | 0.000        | 0.000        | 0.000        |
| 157703-12 | IX  | Filtrate | 0.006        | 0.007        | 0.007        |
| ↓ -12     | ↓   | Water    | 0.008        | 0.006        | 0.007        |
| ↓ -13     | ↓   | Filtrate | 0.010        | 0.009        | 0.010        |
| ↓ -13     | ↓   | Water    | 0.006        | 0.006        | 0.006        |
| MB        | —   | —        | 0.007        | 0.005        | 0.006        |
| LCS       | —   | —        | 0.177        | 0.177        | 0.178        |
| 136777-2  | IX  | Water    | 0.076        | 0.084        | 0.080        |
| ↓ -2 MS   | ↓   | ↓        | 0.249        | 0.279        | 0.264        |
| ↓ -2 MSD  | ↓   | ↓        | 0.250        | 0.250        | 0.250        |
| CCV       | —   | —        | 0.096        | 0.098        | 0.097        |
| CCB       | —   | —        | 0.000        | 0.000        | 0.000        |

Continued on Page

J.T.

Signed

06/12/18

Date

Read and Understood By

Signed

Date

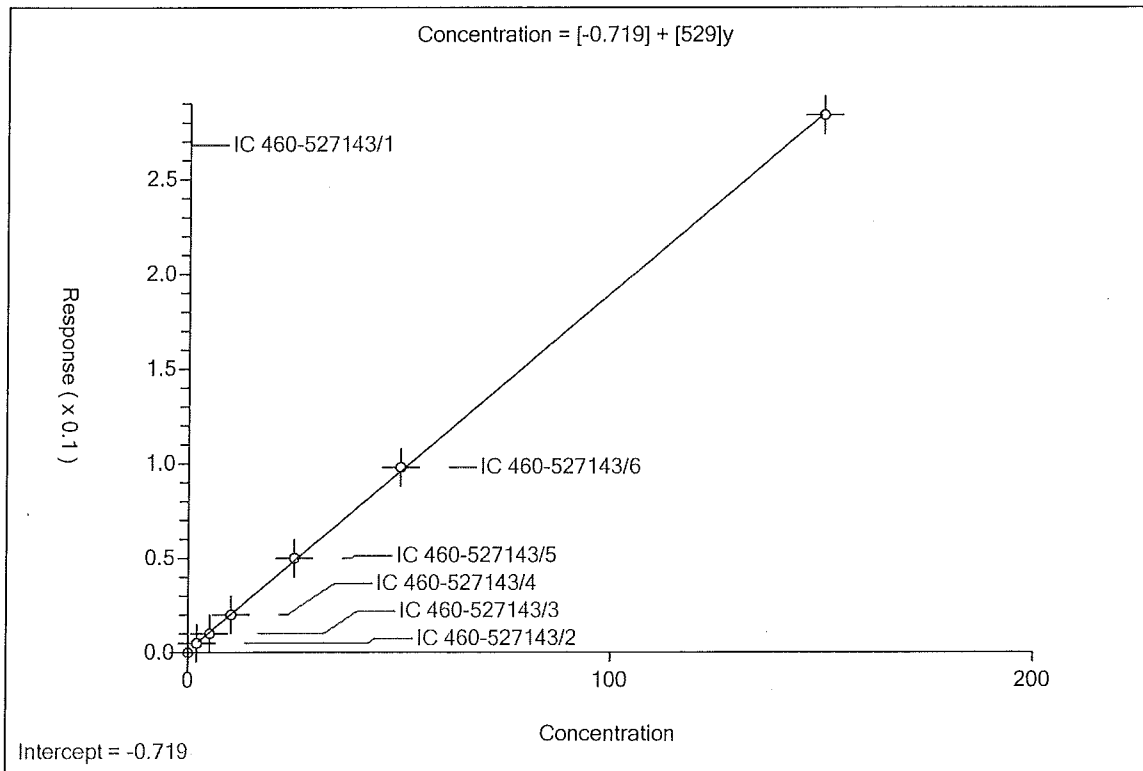
Calibration

Calib 527143-0 / Cyanide, Free

Curve Type: Linear  
 Weighting: None  
 Origin: None  
 Dependency: Concentration  
 Calib Mode: ESTD  
 Response Base: AREA  
 RF Rounding: 0

| Curve Coefficients                       |               |
|--|---------------|
| Intercept:                               | -0.719        |
| Slope:                                   | 529           |
| Error Coefficients                       |               |
| Standard Error:                          | 0.742         |
| Relative Standard Error:                 | 5.1           |
| Correlation Coefficient:                 | 1.000         |
| Coefficient of Determination (Adjusted): | 1.000 (1.000) |

| ID | Level           | Concentration | Response | IS Amount | IS Response | RF       | Used |
|----|-----------------|---------------|----------|-----------|-------------|----------|------|
| 1  | IC 460-527143/1 | 0.0           | 0.0      |           |             | NaN      | Y    |
| 2  | IC 460-527143/2 | 2.0           | 0.005    |           |             | 0.0025   | Y    |
| 3  | IC 460-527143/3 | 5.0           | 0.01     |           |             | 0.002    | Y    |
| 4  | IC 460-527143/4 | 10.0          | 0.02     |           |             | 0.002    | Y    |
| 5  | IC 460-527143/5 | 25.0          | 0.05     |           |             | 0.002    | Y    |
| 6  | IC 460-527143/6 | 50.0          | 0.098    |           |             | 0.00196  | Y    |
| 7  | IC 460-527143/7 | 150.0         | 0.284    |           |             | 0.001893 | Y    |





GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 480-136777-1

SDG No.: \_\_\_\_\_

Batch Number: 527010 Batch Start Date: 06/12/18 06:20 Batch Analyst: Njieha, Karianna Y

Batch Method: 9016 Batch End Date: 06/12/18 12:20

| Lab Sample ID         | Client Sample ID | Method Chain | Basis | InitialAmount | FinalAmount | ResidualChloChe<br>ck | SulfideCheck | WT9016-2mg/l<br>00303 | AnalysisComment |
|-----------------------|------------------|--------------|-------|---------------|-------------|-----------------------|--------------|-----------------------|-----------------|
| MB 460-527010/1       |                  | 9016, 9016   |       | 3 mL          | 1.3 mL      | N                     | N            |                       | MB              |
| LCS<br>460-527010/2   |                  | 9016, 9016   |       | 3 mL          | 1.3 mL      | N                     | N            | 0.075 mL              | LCS             |
| 480-136777-A-1        | PCMW-16D         | 9016, 9016   | T     | 3 mL          | 1.3 mL      | N                     | N            |                       | 1-1             |
| 480-136777-A-1<br>MS  | PCMW-16D         | 9016, 9016   | T     | 3 mL          | 1.3 mL      | N                     | N            | 0.075 mL              | 1-1MS           |
| 480-136777-A-1<br>MSD | PCMW-16D         | 9016, 9016   | T     | 3 mL          | 1.3 mL      | N                     | N            | 0.075 mL              | 1-1MSD          |
| MB<br>460-527010/25   |                  | 9016, 9016   |       | 3 mL          | 1.3 mL      | N                     | N            |                       | MB              |
| LCS<br>460-527010/26  |                  | 9016, 9016   |       | 3 mL          | 1.3 mL      | N                     | N            | 0.075 mL              | LCS             |
| 480-136777-A-2        | DUP-05302018     | 9016, 9016   | T     | 3 mL          | 1.3 mL      | N                     | N            |                       | 2-1             |
| 480-136777-A-2<br>MS  | DUP-05302018     | 9016, 9016   | T     | 3 mL          | 1.3 mL      | N                     | N            | 0.075 mL              | 2-1MS           |
| 480-136777-A-2<br>MSD | DUP-05302018     | 9016, 9016   | T     | 3 mL          | 1.3 mL      | N                     | N            | 0.075 mL              | 2-1MSD          |

| Batch Notes            |  |
|------------------------|--|
| Batch Comment          | 2.05 g/L NaOH C-6598-18 Exp 12/01/18     |
| Potassium Phosphate ID | 190 soln KH2PO4 C-6621-18 Exp 12/07/2018 |
| Sodium Hydroxide ID    | 4.1 g/L NaOH C-6625-18 Exp 12/07/18      |

| Basis | Basis Description |
|-------|-------------------|
| T     | Total/NA          |

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 480-136777-1

SDG No.: \_\_\_\_\_

Batch Number: 527143 Batch Start Date: 06/12/18 12:45 Batch Analyst: Tewira, Jovan X

Batch Method: 9016 Batch End Date: 06/12/18 15:30

| Lab Sample ID         | Client Sample ID | Method Chain | Basis | WT29016-50ppb<br>00444 | WT9016-2mg/l<br>00303 | WT9016-50ppb<br>00427 |  |  |  |
|-----------------------|------------------|--------------|-------|------------------------|-----------------------|-----------------------|--|--|--|
| IC 460-527143/2       |                  | 9016         |       |                        | 0.1 mL                |                       |  |  |  |
| IC 460-527143/3       |                  | 9016         |       |                        | 0.25 mL               |                       |  |  |  |
| IC 460-527143/4       |                  | 9016         |       |                        | 0.5 mL                |                       |  |  |  |
| IC 460-527143/5       |                  | 9016         |       |                        | 1.25 mL               |                       |  |  |  |
| IC 460-527143/6       |                  | 9016         |       |                        | 2.5 mL                |                       |  |  |  |
| IC 460-527143/7       |                  | 9016         |       |                        | 7.5 mL                |                       |  |  |  |
| ICV<br>460-527143/8   |                  | 9016         |       | 1 mL                   |                       |                       |  |  |  |
| DLCK<br>460-527143/10 |                  | 9016         |       |                        | 0.001 mL              |                       |  |  |  |
| CCV<br>460-527143/11  |                  | 9016         |       |                        |                       | 1 mL                  |  |  |  |
| CCV<br>460-527143/23  |                  | 9016         |       |                        |                       | 1 mL                  |  |  |  |
| CCV<br>460-527143/35  |                  | 9016         |       |                        |                       | 1 mL                  |  |  |  |
| CCV<br>460-527143/46  |                  | 9016         |       |                        |                       | 1 mL                  |  |  |  |

| Batch Notes                       |                            |
|-----------------------------------|----------------------------|
| Chloramine-T ID                   | C-6637-18 Exp.: 06/13/2018 |
| Acidified Pot Phosphate Buffer ID | C-6549-18 Exp.: 11/17/2018 |
| Pyridine-Barbituric Acid ID       | C-6636-18 Exp.: 06/19/2018 |

| Basis | Basis Description |
|-------|-------------------|
|       |                   |

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

# Subcontract Data

# Shipping and Receiving Documents

|   |  |  |                          |  |                    |   |  |
|---|--|--|--------------------------|--|--------------------|---|--|
| <b>Client Contact</b><br>Company Name: Arcadis<br>Address: 824 N. Market St., Suite 820<br>City/State/Zip: Wilmington, DE, 19801<br>Phone: 302-358-9064<br>Fax:<br>Project Name: Philly coke<br>Site: Dr. Losburg, PA<br>P O #  |  | <b>Project Manager:</b> [ ] DW [ ] NPDES [ ] RCRA [ ] Other:<br>Tell/Fax:<br>Analysis Turnaround Time<br><input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS<br>TAT if different from Below<br><input type="checkbox"/> 2 weeks<br><input type="checkbox"/> 1 week<br><input type="checkbox"/> 2 days<br><input type="checkbox"/> 1 day |                          | <b>Site Contact:</b><br>Lab Contact: Free Cyanide<br>Filtered Sample (Y/N)<br>Perform MS/MSD (Y/N)   |                    | <b>Date:</b><br>Carrier:<br>COC No: 480-136777 COC  |  |
| <b>Sample Identification</b><br>PCMW-116D<br>DUP-05302018   |  | Sample Date<br>5/30/18<br>6:45<br>→  | Sample Time<br>0850<br>— | Sample Type<br>(C=Comp, G=Grab)<br>G<br>G  | Matrix<br>GW<br>GW | # of Cont.<br>3<br>1  |  |
| <b>Sample Specific Notes:</b><br>MS/MSD   |  |  |                          |  |                    |   |  |
| <b>Preservation Used:</b> 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other  |  |  |                          |  |                    |   |  |
| <b>Possible Hazard Identification:</b><br>Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.<br><input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown |  |  |                          |  |                    |   |  |
| <b>Special Instructions/QC Requirements &amp; Comments:</b>   |  |  |                          |  |                    |   |  |
| Custody Seals Intact: [ ] Yes [ ] No<br>Relinquished by: [Signature]<br>Relinquished by: [Signature]<br>Relinquished by: [Signature]  |  | Custody Seal No.:<br>Company: Arcadis<br>Company: TA<br>Company: TA  |                          | Cooler Temp. (°C): Obs'd: 4.2 Corr'd: #1<br>Received by: [Signature]<br>Received by: [Signature]<br>Received in Laboratory by: [Signature] |                    | Therm ID No.: #1<br>Date/Time: 5/31/18 11:05<br>Date/Time: 5/31/18 15:35<br>Date/Time: 6/1/18 10:30 |  |

**TestAmerica Buffalo**

10 Hazelwood Drive  
Amherst, NY 14228-2298  
Phone (716) 691-2600 Fax (716) 691-7991

**Chain of Custody Record**



**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

**Client Information (Sub Contract Lab)**

Client Contact: Shipping/Receiving  
Company: TestAmerica Laboratories, Inc.  
Address: 777 New Durham Road, Edison, NJ, 08817  
Phone: 732-549-3900(Tel) 732-549-3679(Fax)  
Email:   
Project Name: Former Philadelphia Coke Facility  
Site:   
Lab PM: Deyo, Melissa L  
E-Mail: melissa.deyo@testamericainc.com  
Accreditations Required (See note):   
Carrier Tracking No(s):   
State of Origin: Pennsylvania  
Page: Page 1 of 1  
Job #: 480-136777-1

Due Date Requested: 6/13/2018  
TAT Requested (days):   
Analysis Requested:   
COC No: 480-42631.1  
Preservation Codes: A-HCl, B-NaOH, C-Zn Acetate, D-Nitric Acid, E-NaHSO4, F-MeOH, G-Arniclor, H-Ascorbic Acid, I-Ice, J-DI Water, K-EDTA, L-EDA, M-Hexane, N-None, O-AsH2O2, P-Na2O4S, Q-Na2SO3, R-Na2S2O3, S-H2SO4, T-TSP Dodecylhydrate, U-Acetone, V-MCAA, W-pH 4-5, Z-other (specify)

| Sample ID (Lab ID)          | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=organic, B=bitumen, A=air) | Field Filtered-Sample (Yes or No) | Retention Method | Total Number of containers | Special Instructions/Note |
|-----------------------------|-------------|-------------|------------------------------|--|-----------------------------------|------------------|----------------------------|---------------------------|
| PCMW-16D (480-136777-1)     | 5/30/18     | 08:50       | MS                           | Water  | X                                 | 9016/9016_Prep   | 1                          |                           |
| PCMW-16D (480-136777-1MS)   | 5/30/18     | 08:50       | MSD                          | Water  | X                                 |                  | 1                          |                           |
| PCMW-16D (480-136777-1MSD)  | 5/30/18     | 08:50       | MSD                          | Water  | X                                 |                  | 1                          |                           |
| DUP-05302018 (480-136777-2) | 5/30/18     | Eastern     |                              | Water  | X                                 |                  | 1                          |                           |

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out-subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
Unconfirmed  
Deliverable Requested: I, II, III, IV, Other (specify)   
Primary Deliverable Rank: 2  
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

| Empty Kit Relinquished by:  | Date:                    | Time:  | Method of Shipment: |
|---|--------------------------|--|---------------------|
| Relinquished by: <i>[Signature]</i>   | 6/1/18                   | 16:45  | UPS                 |
| Relinquished by: <i>[Signature]</i>   | 6/1/18                   | 11:20  | TR # 11             |
| Relinquished by:  | Date/Time:               | Received by: <i>[Signature]</i>                          | Date/Time:          |
| Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Custody Seal No.: N 1 CS | Cooler Temperature(s) °C and Other Remarks: 3.90 IR # 11 | Company:            |

# Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 480-136777-1

**Login Number: 136777**

**List Source: TestAmerica Buffalo**

**List Number: 1**

**Creator: Kolb, Chris M**

| Question   | Answer | Comment |
|--|--------|---------|
| Radioactivity either was not measured or, if measured, is at or below background | True   |         |
| The cooler's custody seal, if present, is intact.                                | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable.  | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.                                | True   |         |
| Is the Field Sampler's name present on COC?                                      | True   |         |
| There are no discrepancies between the sample IDs on the containers and the COC. | True   |         |
| Samples are received within Holding Time (Excluding tests with immediate HTs)..  | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.                                       | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| Sample Preservation Verified   | True   |         |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |         |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.     | N/A    |         |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True   |         |
| Multiphasic samples are not present.   | True   |         |
| Samples do not require splitting or compositing.                                 | True   |         |
| Sampling Company provided.   | True   | ARCADIS |
| Samples received within 48 hours of sampling.                                    | True   |         |
| Samples requiring field filtration have been filtered in the field.              | True   |         |
| Chlorine Residual checked.   | N/A    |         |

## Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 480-136777-1

**Login Number: 136777**  
**List Number: 2**  
**Creator: Rivera, Kenneth**

**List Source: TestAmerica Edison**  
**List Creation: 06/03/18 12:35 PM**

| Question   | Answer | Comment       |
|--|--------|---------------|
| Radioactivity wasn't checked or is <=/ background as measured by a survey meter. | N/A    |               |
| The cooler's custody seal, if present, is intact.                                | True   |               |
| Sample custody seals, if present, are intact.                                    | True   |               |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |               |
| Samples were received on ice.  | True   |               |
| Cooler Temperature is acceptable.  | True   |               |
| Cooler Temperature is recorded.  | True   | 3.9°C, IR #11 |
| COC is present.  | True   |               |
| COC is filled out in ink and legible.  | True   |               |
| COC is filled out with all pertinent information.                                | True   |               |
| Is the Field Sampler's name present on COC?                                      | True   |               |
| There are no discrepancies between the containers received and the COC.          | True   |               |
| Samples are received within Holding Time (excluding tests with immediate HTs)    | True   |               |
| Sample containers have legible labels.   | True   |               |
| Containers are not broken or leaking.  | True   |               |
| Sample collection date/times are provided.                                       | True   |               |
| Appropriate sample containers are used.  | True   |               |
| Sample bottles are completely filled.  | True   |               |
| Sample Preservation Verified.  | True   |               |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |               |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").  | True   |               |
| Multiphasic samples are not present.   | True   |               |
| Samples do not require splitting or compositing.                                 | True   |               |
| Residual Chlorine Checked.   | N/A    |               |