TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-153830-1
Client Project/Site: Sheridan Disposal Services

For:
CH2M Hill Constructors, Inc.
14701 St. Mary's Lane
Suite 300
Houston, Texas 77079-2923

Attn: Mr. John Ynfante

*Authorized for release by:*
*9/16/2017 5:08:30 PM*

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LINKS

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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## Job ID: 600-153830-1

### Laboratory: TestAmerica Houston

**Narrative**

**Job Narrative**
**600-153830-1**

**Comments**
No additional comments.

**Receipt**
The sample was received on 9/13/2017 5:10 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 8.8º C.

**Receipt Exceptions**

The sample was received at the laboratory outside the required temperature criteria of 8.8°C. The sample is considered acceptable since it was collected and submitted to the laboratory on the same day and there is evidence that the chilling process has begun.

**GC/MS VOA**
Method(s) 8260B: The method blank for analytical batch 600-221380 contained 2-Hexanone above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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

**GC/MS Semi VOA**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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

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

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

**Organic Prep**
Method(s) 3546: The following sample required a sulfuric acid clean-up, via EPA Method 3665A, to reduce matrix interferences: SDS-SS-001 (600-153830-1).

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

# Method Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sheridan Disposal Services

TestAmerica Job ID: 600-153830-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL HOU |
| 8270C LL | Semivolatile Organic Compounds by GCMS - Low Levels | SW846 | TAL HOU |
| 8082 | Polychlorinated Biphenyls (PCBs) by Gas Chromatography | SW846 | TAL HOU |
| 6020 | Metals (ICP/MS) | SW846 | TAL CC |
| 7471A | Mercury (CVAA) | SW846 | TAL CC |
| 2540B | Percent Moisture | SM20 | TAL HOU |

**Protocol References:**

SM20 = "Standard Methods For The Examination Of Water And Wastewater", 20th Edition."

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

**Laboratory References:**

TAL CC = TestAmerica Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

# Sample Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sheridan Disposal Services

TestAmerica Job ID: 600-153830-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Solid | 09/13/17 11:25 | 09/13/17 17:10 |

# Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Sheridan Disposal Services

TestAmerica Job ID: 600-153830-1

## Client Sample ID: SDS-SS-001

**Date Collected: 09/13/17 11:25**
**Date Received: 09/13/17 17:10**

## Lab Sample ID: 600-153830-1

**Matrix: Solid**
**Percent Solids: 78.7**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 0.89 | U | 6.0 | 0.89 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,1,2,2-Tetrachloroethane | 1.0 | U | 6.0 | 1.0 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.7 | U | 6.0 | 1.7 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,1,2-Trichloroethane | 0.88 | U | 48 | 0.88 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,1-Dichloroethane | 1.0 | U | 6.0 | 1.0 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,1-Dichloroethene | 1.5 | U | 6.0 | 1.5 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,2,3-Trichlorobenzene | 0.75 | U | 6.0 | 0.75 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,2,4-Trichlorobenzene | 2.4 | U | 6.0 | 2.4 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,2-Dibromo-3-Chloropropane | 2.9 | U | 6.0 | 2.9 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,2-Dibromoethane | 1.2 | U | 6.0 | 1.2 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,2-Dichlorobenzene | 0.97 | U | 6.0 | 0.97 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,2-Dichloroethane | 1.1 | U | 6.0 | 1.1 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,2-Dichloroethene, Total | 2.3 | U | 12 | 2.3 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,2-Dichloropropane | 0.86 | U | 6.0 | 0.86 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,3-Dichlorobenzene | 0.86 | U | 6.0 | 0.86 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,4-Dichlorobenzene | 0.80 | U | 6.0 | 0.80 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 1,4-Dioxane | 75 | U | 600 | 75 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 2-Butanone (MEK) | 2.3 | U | 12 | 2.3 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 2-Hexanone | 1.2 | U | 12 | 1.2 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| 4-Methyl-2-pentanone (MIBK) | 1.8 | U | 12 | 1.8 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Acetone | 2.0 | U | 12 | 2.0 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Benzene | 0.76 | U | 6.0 | 0.76 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Bromochloromethane | 2.1 | U | 6.0 | 2.1 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Bromodichloromethane | 0.80 | U | 6.0 | 0.80 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Bromoform | 1.7 | U | 6.0 | 1.7 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Bromomethane | 1.0 | U | 12 | 1.0 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Carbon disulfide | 0.66 | U | 12 | 0.66 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Carbon tetrachloride | 1.4 | U | 6.0 | 1.4 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Chlorobenzene | 1.2 | U | 6.0 | 1.2 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Chloroethane | 1.7 | U | 12 | 1.7 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Chloroform | 0.80 | U | 12 | 0.80 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Chloromethane | 2.0 | U | 12 | 2.0 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| cis-1,2-Dichloroethene | 1.0 | U | 6.0 | 1.0 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| cis-1,3-Dichloropropene | 0.65 | U | 6.0 | 0.65 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Cyclohexane | 2.3 | U | 6.0 | 2.3 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Dibromochloromethane | 1.1 | U | 6.0 | 1.1 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Dichlorodifluoromethane | 1.9 | U | 6.0 | 1.9 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Ethylbenzene | 1.2 | U | 6.0 | 1.2 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Isopropylbenzene | 1.1 | U | 6.0 | 1.1 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Methyl acetate | 3.5 | U | 6.0 | 3.5 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Methyl tert-butyl ether | 2.2 | U | 6.0 | 2.2 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Methylcyclohexane | 1.8 | U | 6.0 | 1.8 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Methylene Chloride | 2.6 | U | 12 | 2.6 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| m-Xylene & p-Xylene | 1.8 | U | 6.0 | 1.8 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| o-Xylene | 1.4 | U | 6.0 | 1.4 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Styrene | 0.86 | U | 6.0 | 0.86 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Tetrachloroethene | 0.86 | U | 6.0 | 0.86 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Toluene | 1.7 | U | 6.0 | 1.7 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| trans-1,2-Dichloroethene | 1.4 | U | 6.0 | 1.4 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |

# Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Sheridan Disposal Services

TestAmerica Job ID: 600-153830-1

## Client Sample ID: SDS-SS-001

**Date Collected: 09/13/17 11:25**
**Date Received: 09/13/17 17:10**

## Lab Sample ID: 600-153830-1

**Matrix: Solid**
**Percent Solids: 78.7**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | 0.70 | U | 6.0 | 0.70 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Trichloroethene | 1.7 | U | 6.0 | 1.7 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Trichlorofluoromethane | 0.80 | U | 12 | 0.80 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Vinyl acetate | 1.1 | U | 12 | 1.1 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Vinyl chloride | 1.1 | U | 12 | 1.1 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |
| Xylenes, Total | 1.4 | U | 6.0 | 1.4 | ug/Kg | ☼ | 09/13/17 20:00 | 09/15/17 13:40 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *104* | | *61 - 130* | *09/13/17 20:00* | *09/15/17 13:40* | *1* |
| *4-Bromofluorobenzene* | *111* | | *57 - 140* | *09/13/17 20:00* | *09/15/17 13:40* | *1* |
| *Dibromofluoromethane* | *95* | | *68 - 140* | *09/13/17 20:00* | *09/15/17 13:40* | *1* |
| *Toluene-d8 (Surr)* | *88* | | *50 - 130* | *09/13/17 20:00* | *09/15/17 13:40* | *1* |

### Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1'-Biphenyl | 5.1 | U | 42 | 5.1 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 1,2,4,5-Tetrachlorobenzene | 8.6 | U | 42 | 8.6 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2,3,4,6-Tetrachlorophenol | 21 | U | 42 | 21 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2,4,5-Trichlorophenol | 13 | U | 42 | 13 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2,4,6-Trichlorophenol | 3.4 | U | 42 | 3.4 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2,4-Dichlorophenol | 4.9 | U | 42 | 4.9 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2,4-Dimethylphenol | 11 | U | 42 | 11 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2,4-Dinitrophenol | 6.0 | U | 130 | 6.0 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2,4-Dinitrotoluene | 4.6 | U | 42 | 4.6 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2,6-Dinitrotoluene | 3.7 | U | 42 | 3.7 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2-Chloronaphthalene | 1.5 | U | 42 | 1.5 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2-Chlorophenol | 2.5 | U | 42 | 2.5 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2-Methylnaphthalene | 3.5 | U | 42 | 3.5 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2-Methylphenol | 4.1 | U | 42 | 4.1 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2-Nitroaniline | 6.2 | U | 42 | 6.2 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 2-Nitrophenol | 4.9 | U | 42 | 4.9 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 3 & 4 Methylphenol | 3.5 | U | 42 | 3.5 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 3,3'-Dichlorobenzidine | 13 | U | 42 | 13 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 3-Nitroaniline | 9.1 | U | 42 | 9.1 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 4,6-Dinitro-2-methylphenol | 6.3 | U | 220 | 6.3 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 4-Bromophenyl phenyl ether | 3.6 | U | 42 | 3.6 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 4-Chloro-3-methylphenol | 20 | U | 42 | 20 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 4-Chloroaniline | 7.4 | U | 42 | 7.4 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 4-Chlorophenyl phenyl ether | 2.3 | U | 42 | 2.3 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 4-Nitroaniline | 14 | U | 42 | 14 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| 4-Nitrophenol | 6.5 | U | 250 | 6.5 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Acenaphthene | 1.8 | U | 42 | 1.8 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Acenaphthylene | 1.3 | U | 42 | 1.3 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| **Acetophenone** | **7.2** | **J** | 42 | 4.2 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Anthracene | 1.6 | U | 42 | 1.6 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Atrazine | 6.4 | U | 42 | 6.4 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| **Benzaldehyde** | **120** | | 42 | 21 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Benzo[a]anthracene | 1.8 | U | 42 | 1.8 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Benzo[a]pyrene | 2.0 | U | 42 | 2.0 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Benzo[b]fluoranthene | 2.2 | U | 42 | 2.2 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |

# Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Sheridan Disposal Services

TestAmerica Job ID: 600-153830-1

## Client Sample ID: SDS-SS-001

**Date Collected: 09/13/17 11:25**
**Date Received: 09/13/17 17:10**

## Lab Sample ID: 600-153830-1

**Matrix: Solid**
**Percent Solids: 78.7**

### Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | 6.4 | U | 42 | 6.4 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Benzo[k]fluoranthene | 1.9 | U | 42 | 1.9 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| bis (2-Chloroisopropyl) ether | 11 | U | 42 | 11 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Bis(2-chloroethoxy)methane | 1.8 | U | 42 | 1.8 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Bis(2-chloroethyl)ether | 2.1 | U | 42 | 2.1 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Bis(2-ethylhexyl) phthalate | 6.8 | U | 42 | 6.8 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Butyl benzyl phthalate | 7.9 | U | 85 | 7.9 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Caprolactam | 21 | U | 42 | 21 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Carbazole | 4.0 | U | 42 | 4.0 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Chrysene | 1.3 | U | 42 | 1.3 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Dibenz(a,h)anthracene | 4.6 | U | 42 | 4.6 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Dibenzofuran | 2.3 | U | 42 | 2.3 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Diethyl phthalate | 11 | U | 85 | 11 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Dimethyl phthalate | 6.2 | U | 85 | 6.2 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Di-n-butyl phthalate | 3.3 | U | 85 | 3.3 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Di-n-octyl phthalate | 2.4 | U | 85 | 2.4 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Fluoranthene | 4.0 | U | 42 | 4.0 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Fluorene | 3.0 | U | 42 | 3.0 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Hexachlorobenzene | 1.9 | U | 42 | 1.9 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Hexachlorobutadiene | 2.4 | U | 42 | 2.4 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Hexachlorocyclopentadiene | 5.9 | U | 42 | 5.9 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Hexachloroethane | 2.9 | U | 42 | 2.9 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Indeno[1,2,3-cd]pyrene | 4.4 | U | 42 | 4.4 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Isophorone | 1.3 | U | 42 | 1.3 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Naphthalene | 1.7 | U | 42 | 1.7 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Nitrobenzene | 3.8 | U | 42 | 3.8 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| N-Nitrosodi-n-propylamine | 2.8 | U | 42 | 2.8 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| N-Nitrosodiphenylamine | 2.4 | U | 42 | 2.4 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Pentachlorophenol | 5.1 | U | 210 | 5.1 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Phenanthrene | 6.3 | U | 42 | 6.3 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Phenol | 5.4 | U | 42 | 5.4 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |
| Pyrene | 2.3 | U | 42 | 2.3 | ug/Kg | ☼ | 09/15/17 11:17 | 09/15/17 17:06 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *72* | | *10 - 148* | *09/15/17 11:17* | *09/15/17 17:06* | *1* |
| *2-Fluorobiphenyl* | *72* | | *38 - 130* | *09/15/17 11:17* | *09/15/17 17:06* | *1* |
| *2-Fluorophenol* | *66* | | *25 - 132* | *09/15/17 11:17* | *09/15/17 17:06* | *1* |
| *Nitrobenzene-d5* | *59* | | *10 - 155* | *09/15/17 11:17* | *09/15/17 17:06* | *1* |
| *Phenol-d5 (Surr)* | *61* | | *27 - 130* | *09/15/17 11:17* | *09/15/17 17:06* | *1* |
| *Terphenyl-d14* | *73* | | *53 - 134* | *09/15/17 11:17* | *09/15/17 17:06* | *1* |

### Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | 2.0 | U | 21 | 2.0 | ug/Kg | ☼ | 09/15/17 10:50 | 09/15/17 16:45 | 1 |
| PCB-1221 | 11 | U | 21 | 11 | ug/Kg | ☼ | 09/15/17 10:50 | 09/15/17 16:45 | 1 |
| PCB-1232 | 8.5 | U | 21 | 8.5 | ug/Kg | ☼ | 09/15/17 10:50 | 09/15/17 16:45 | 1 |
| PCB-1242 | 1.6 | U | 21 | 1.6 | ug/Kg | ☼ | 09/15/17 10:50 | 09/15/17 16:45 | 1 |
| PCB-1248 | 3.2 | U | 21 | 3.2 | ug/Kg | ☼ | 09/15/17 10:50 | 09/15/17 16:45 | 1 |
| PCB-1254 | 2.8 | U | 21 | 2.8 | ug/Kg | ☼ | 09/15/17 10:50 | 09/15/17 16:45 | 1 |
| PCB-1260 | 17 | U | 21 | 17 | ug/Kg | ☼ | 09/15/17 10:50 | 09/15/17 16:45 | 1 |

# Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Sheridan Disposal Services

TestAmerica Job ID: 600-153830-1

## Client Sample ID: SDS-SS-001

**Date Collected: 09/13/17 11:25**
**Date Received: 09/13/17 17:10**

## Lab Sample ID: 600-153830-1

**Matrix: Solid**
**Percent Solids: 78.7**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *82* | | *10 - 150* | *09/15/17 10:50* | *09/15/17 16:45* | *1* |
| *DCB Decachlorobiphenyl* | *99* | | *10 - 150* | *09/15/17 10:50* | *09/15/17 16:45* | *1* |

### Method: 6020 - Metals (ICP/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **12000** | | 28 | 14 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| Antimony | 0.53 | U | 1.4 | 0.53 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Arsenic** | **5.2** | | 1.4 | 0.27 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Barium** | **150** | | 1.4 | 0.60 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Beryllium** | **0.95** | **J** | 1.4 | 0.48 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| Cadmium | 0.40 | U | 1.4 | 0.40 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Calcium** | **25000** | | 140 | 76 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Chromium** | **15** | | 1.4 | 0.62 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Cobalt** | **7.5** | | 1.4 | 0.29 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Copper** | **11** | | 2.8 | 0.98 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Iron** | **15000** | | 140 | 30 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Lead** | **11** | | 2.8 | 1.1 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Magnesium** | **8200** | | 140 | 30 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Manganese** | **430** | | 14 | 3.3 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Nickel** | **17** | | 1.4 | 0.73 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Potassium** | **2400** | | 280 | 140 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Selenium** | **0.54** | **J** | 1.4 | 0.24 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| Silver | 0.38 | U | 1.4 | 0.38 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| Sodium | 150 | U | 280 | 150 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| Thallium | 0.38 | U | 1.4 | 0.38 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Vanadium** | **26** | | 1.4 | 0.32 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |
| **Zinc** | **34** | | 6.9 | 4.2 | mg/Kg | ☼ | 09/15/17 12:00 | 09/15/17 18:40 | 5 |

### Method: 7471A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.011 | U | 0.12 | 0.011 | mg/Kg | ☼ | 09/15/17 11:00 | 09/15/17 14:16 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Percent Moisture** | **21.3** | | 1.0 | 1.0 | % | | | 09/14/17 15:57 | 1 |
| **Percent Solids** | **78.7** | | 1.0 | 1.0 | % | | | 09/14/17 15:57 | 1 |

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |

### Metals

| Qualifier | Qualifier Description |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |
| 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. |
|---|---|
| ¤ | 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) |

# Surrogate Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sheridan Disposal Services

TestAmerica Job ID: 600-153830-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | |
|---|---|---|---|---|---|
| | | 12DCE | BFB | DBFM | TOL |
| Lab Sample ID | Client Sample ID | (61-130) | (57-140) | (68-140) | (50-130) |
| 600-153830-1 | SDS-SS-001 | 104 | 111 | 95 | 88 |
| LCS 600-221380/3 | Lab Control Sample | 109 | 122 | 106 | 100 |
| LCSD 600-221380/4 | Lab Control Sample Dup | 104 | 124 | 106 | 103 |
| MB 600-221380/6 | Method Blank | 108 | 102 | 97 | 90 |

**Surrogate Legend**

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | | | |
|---|---|---|---|---|---|---|---|
| | | TBP | FBP | 2FP | NBZ | PHL | TPH |
| Lab Sample ID | Client Sample ID | (10-148) | (38-130) | (25-132) | (10-155) | (27-130) | (53-134) |
| 600-153830-1 | SDS-SS-001 | 72 | 72 | 66 | 59 | 61 | 73 |
| LCS 600-221420/2-A | Lab Control Sample | 83 | 77 | 78 | 71 | 73 | 86 |
| MB 600-221420/1-A | Method Blank | 64 | 77 | 70 | 69 | 64 | 80 |

**Surrogate Legend**

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | TCX1 | DCB1 |
| Lab Sample ID | Client Sample ID | (10-150) | (10-150) |
| 600-153830-1 | SDS-SS-001 | 82 | 99 |
| LCS 600-221416/2-A | Lab Control Sample | 94 | 130 |
| LCSD 600-221416/3-A | Lab Control Sample Dup | 90 | 126 |
| MB 600-221416/1-A | Method Blank | 89 | 121 |

**Surrogate Legend**

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 600-221380/6**
**Matrix: Solid**
**Analysis Batch: 221380**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 0.74 | U | 5.0 | 0.74 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,1,2,2-Tetrachloroethane | 0.87 | U | 5.0 | 0.87 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.4 | U | 5.0 | 1.4 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,1,2-Trichloroethane | 0.73 | U | 40 | 0.73 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,1-Dichloroethane | 0.87 | U | 5.0 | 0.87 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,1-Dichloroethene | 1.2 | U | 5.0 | 1.2 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,2,3-Trichlorobenzene | 0.62 | U | 5.0 | 0.62 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,2,4-Trichlorobenzene | 2.0 | U | 5.0 | 2.0 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,2-Dibromo-3-Chloropropane | 2.4 | U | 5.0 | 2.4 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,2-Dibromoethane | 1.0 | U | 5.0 | 1.0 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,2-Dichlorobenzene | 0.80 | U | 5.0 | 0.80 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,2-Dichloroethane | 0.90 | U | 5.0 | 0.90 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,2-Dichloroethene, Total | 1.9 | U | 10 | 1.9 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,2-Dichloropropane | 0.71 | U | 5.0 | 0.71 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,3-Dichlorobenzene | 0.71 | U | 5.0 | 0.71 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,4-Dichlorobenzene | 0.66 | U | 5.0 | 0.66 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 1,4-Dioxane | 62 | U | 500 | 62 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 2-Butanone (MEK) | 1.9 | U | 10 | 1.9 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 2-Hexanone | 4.77 | J | 10 | 1.0 | ug/Kg | | | 09/15/17 09:58 | 1 |
| 4-Methyl-2-pentanone (MIBK) | 1.5 | U | 10 | 1.5 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Acetone | 1.7 | U | 10 | 1.7 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Benzene | 0.63 | U | 5.0 | 0.63 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Bromochloromethane | 1.8 | U | 5.0 | 1.8 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Bromodichloromethane | 0.66 | U | 5.0 | 0.66 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Bromoform | 1.4 | U | 5.0 | 1.4 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Bromomethane | 0.83 | U | 10 | 0.83 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Carbon disulfide | 0.55 | U | 10 | 0.55 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Carbon tetrachloride | 1.1 | U | 5.0 | 1.1 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Chlorobenzene | 0.96 | U | 5.0 | 0.96 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Chloroethane | 1.4 | U | 10 | 1.4 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Chloroform | 0.66 | U | 10 | 0.66 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Chloromethane | 1.7 | U | 10 | 1.7 | ug/Kg | | | 09/15/17 09:58 | 1 |
| cis-1,2-Dichloroethene | 0.83 | U | 5.0 | 0.83 | ug/Kg | | | 09/15/17 09:58 | 1 |
| cis-1,3-Dichloropropene | 0.54 | U | 5.0 | 0.54 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Cyclohexane | 1.9 | U | 5.0 | 1.9 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Dibromochloromethane | 0.94 | U | 5.0 | 0.94 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Dichlorodifluoromethane | 1.5 | U | 5.0 | 1.5 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Ethylbenzene | 1.0 | U | 5.0 | 1.0 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Isopropylbenzene | 0.92 | U | 5.0 | 0.92 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Methyl acetate | 2.9 | U | 5.0 | 2.9 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Methyl tert-butyl ether | 1.8 | U | 5.0 | 1.8 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Methylcyclohexane | 1.5 | U | 5.0 | 1.5 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Methylene Chloride | 2.2 | U | 10 | 2.2 | ug/Kg | | | 09/15/17 09:58 | 1 |
| m-Xylene & p-Xylene | 1.5 | U | 5.0 | 1.5 | ug/Kg | | | 09/15/17 09:58 | 1 |
| o-Xylene | 1.1 | U | 5.0 | 1.1 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Styrene | 0.71 | U | 5.0 | 0.71 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Tetrachloroethene | 0.71 | U | 5.0 | 0.71 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Toluene | 1.4 | U | 5.0 | 1.4 | ug/Kg | | | 09/15/17 09:58 | 1 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 600-221380/6**
**Matrix: Solid**
**Analysis Batch: 221380**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 1.1 | U | 5.0 | 1.1 | ug/Kg | | | 09/15/17 09:58 | 1 |
| trans-1,3-Dichloropropene | 0.58 | U | 5.0 | 0.58 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Trichloroethene | 1.4 | U | 5.0 | 1.4 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Trichlorofluoromethane | 0.66 | U | 10 | 0.66 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Vinyl acetate | 0.93 | U | 10 | 0.93 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Vinyl chloride | 0.90 | U | 10 | 0.90 | ug/Kg | | | 09/15/17 09:58 | 1 |
| Xylenes, Total | 1.1 | U | 5.0 | 1.1 | ug/Kg | | | 09/15/17 09:58 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *108* | | *61 - 130* | | *09/15/17 09:58* | *1* |
| *4-Bromofluorobenzene* | *102* | | *57 - 140* | | *09/15/17 09:58* | *1* |
| *Dibromofluoromethane* | *97* | | *68 - 140* | | *09/15/17 09:58* | *1* |
| *Toluene-d8 (Surr)* | *90* | | *50 - 130* | | *09/15/17 09:58* | *1* |

**Lab Sample ID: LCS 600-221380/3**
**Matrix: Solid**
**Analysis Batch: 221380**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 50.0 | 42.0 | | ug/Kg | | 84 | 59 - 130 |
| 1,1,2,2-Tetrachloroethane | 50.0 | 55.9 | | ug/Kg | | 112 | 61 - 138 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 50.0 | 43.8 | | ug/Kg | | 88 | 48 - 150 |
| 1,1,2-Trichloroethane | 50.0 | 56.1 | | ug/Kg | | 112 | 67 - 134 |
| 1,1-Dichloroethane | 50.0 | 44.0 | | ug/Kg | | 88 | 63 - 140 |
| 1,1-Dichloroethene | 50.0 | 43.3 | | ug/Kg | | 87 | 62 - 142 |
| 1,2,3-Trichlorobenzene | 50.0 | 37.1 | | ug/Kg | | 74 | 52 - 135 |
| 1,2,4-Trichlorobenzene | 50.0 | 35.7 | | ug/Kg | | 71 | 53 - 136 |
| 1,2-Dibromo-3-Chloropropane | 50.0 | 45.4 | | ug/Kg | | 91 | 29 - 150 |
| 1,2-Dibromoethane | 50.0 | 60.6 | | ug/Kg | | 121 | 65 - 136 |
| 1,2-Dichlorobenzene | 50.0 | 41.9 | | ug/Kg | | 84 | 61 - 131 |
| 1,2-Dichloroethane | 50.0 | 57.4 | | ug/Kg | | 115 | 58 - 137 |
| 1,2-Dichloroethene, Total | 100 | 92.9 | | ug/Kg | | 93 | 70 - 130 |
| 1,2-Dichloropropane | 50.0 | 56.5 | | ug/Kg | | 113 | 70 - 130 |
| 1,3-Dichlorobenzene | 50.0 | 45.5 | | ug/Kg | | 91 | 63 - 132 |
| 1,4-Dichlorobenzene | 50.0 | 46.3 | | ug/Kg | | 93 | 65 - 131 |
| 1,4-Dioxane | 1000 | 1450 | | ug/Kg | | 145 | 31 - 150 |
| 2-Butanone (MEK) | 100 | 146 | | ug/Kg | | 146 | 33 - 150 |
| 2-Hexanone | 100 | 113 | | ug/Kg | | 113 | 35 - 150 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 139 | | ug/Kg | | 139 | 21 - 150 |
| Acetone | 100 | 145 | | ug/Kg | | 145 | 13 - 150 |
| Benzene | 50.0 | 49.6 | | ug/Kg | | 99 | 70 - 131 |
| Bromochloromethane | 50.0 | 51.6 | | ug/Kg | | 103 | 70 - 132 |
| Bromodichloromethane | 50.0 | 55.1 | | ug/Kg | | 110 | 67 - 138 |
| Bromoform | 50.0 | 60.7 | | ug/Kg | | 121 | 43 - 150 |
| Bromomethane | 50.0 | 35.9 | | ug/Kg | | 72 | 37 - 147 |
| Carbon disulfide | 50.0 | 37.8 | | ug/Kg | | 76 | 51 - 141 |
| Carbon tetrachloride | 50.0 | 42.7 | | ug/Kg | | 85 | 58 - 130 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 600-221380/3**
**Matrix: Solid**
**Analysis Batch: 221380**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Chlorobenzene | 50.0 | 48.0 | | ug/Kg | | 96 | 63 - 131 |
| Chloroethane | 50.0 | 32.6 | | ug/Kg | | 65 | 40 - 150 |
| Chloroform | 50.0 | 45.9 | | ug/Kg | | 92 | 69 - 130 |
| Chloromethane | 50.0 | 41.4 | | ug/Kg | | 83 | 44 - 141 |
| cis-1,2-Dichloroethene | 50.0 | 45.6 | | ug/Kg | | 91 | 70 - 130 |
| cis-1,3-Dichloropropene | 50.0 | 52.5 | | ug/Kg | | 105 | 65 - 130 |
| Cyclohexane | 50.0 | 43.4 | | ug/Kg | | 87 | 54 - 130 |
| Dibromochloromethane | 50.0 | 51.8 | | ug/Kg | | 104 | 65 - 134 |
| Dichlorodifluoromethane | 50.0 | 32.6 | | ug/Kg | | 65 | 24 - 147 |
| Ethylbenzene | 50.0 | 44.4 | | ug/Kg | | 89 | 66 - 130 |
| Isopropylbenzene | 50.0 | 40.9 | | ug/Kg | | 82 | 64 - 131 |
| Methyl acetate | 250 | 330 | | ug/Kg | | 132 | 10 - 150 |
| Methyl tert-butyl ether | 50.0 | 48.2 | | ug/Kg | | 96 | 63 - 132 |
| Methylcyclohexane | 50.0 | 44.9 | | ug/Kg | | 90 | 51 - 137 |
| Methylene Chloride | 50.0 | 48.4 | | ug/Kg | | 97 | 61 - 150 |
| m-Xylene & p-Xylene | 50.0 | 43.1 | | ug/Kg | | 86 | 64 - 130 |
| o-Xylene | 50.0 | 38.3 | | ug/Kg | | 77 | 62 - 130 |
| Styrene | 50.0 | 48.3 | | ug/Kg | | 97 | 65 - 133 |
| Tetrachloroethene | 50.0 | 42.1 | | ug/Kg | | 84 | 43 - 143 |
| Toluene | 50.0 | 44.7 | | ug/Kg | | 89 | 67 - 130 |
| trans-1,2-Dichloroethene | 50.0 | 47.3 | | ug/Kg | | 95 | 69 - 130 |
| trans-1,3-Dichloropropene | 50.0 | 62.9 | | ug/Kg | | 126 | 70 - 130 |
| Trichloroethene | 50.0 | 50.1 | | ug/Kg | | 100 | 63 - 135 |
| Trichlorofluoromethane | 50.0 | 44.1 | | ug/Kg | | 88 | 53 - 134 |
| Vinyl acetate | 100 | 130 | | ug/Kg | | 130 | 40 - 150 |
| Vinyl chloride | 50.0 | 38.2 | | ug/Kg | | 76 | 40 - 148 |
| Xylenes, Total | 100 | 81.4 | | ug/Kg | | 81 | 63 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *109* | | *61 - 130* |
| *4-Bromofluorobenzene* | *122* | | *57 - 140* |
| *Dibromofluoromethane* | *106* | | *68 - 140* |
| *Toluene-d8 (Surr)* | *100* | | *50 - 130* |

**Lab Sample ID: LCSD 600-221380/4**
**Matrix: Solid**
**Analysis Batch: 221380**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 50.0 | 43.9 | | ug/Kg | | 88 | 59 - 130 | 4 | 30 |
| 1,1,2,2-Tetrachloroethane | 50.0 | 52.6 | | ug/Kg | | 105 | 61 - 138 | 6 | 30 |
| 1,1,2-Trichloro-1,2,2-trifluoroetha ne | 50.0 | 43.4 | | ug/Kg | | 87 | 48 - 150 | 1 | 30 |
| 1,1,2-Trichloroethane | 50.0 | 54.9 | | ug/Kg | | 110 | 67 - 134 | 2 | 30 |
| 1,1-Dichloroethane | 50.0 | 45.0 | | ug/Kg | | 90 | 63 - 140 | 2 | 30 |
| 1,1-Dichloroethene | 50.0 | 42.4 | | ug/Kg | | 85 | 62 - 142 | 2 | 30 |
| 1,2,3-Trichlorobenzene | 50.0 | 35.3 | | ug/Kg | | 71 | 52 - 135 | 5 | 30 |
| 1,2,4-Trichlorobenzene | 50.0 | 34.3 | | ug/Kg | | 69 | 53 - 136 | 4 | 30 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 600-221380/4**
**Matrix: Solid**
**Analysis Batch: 221380**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 50.0 | 39.2 | | ug/Kg | | 78 | 29 - 150 | 15 | 30 |
| 1,2-Dibromoethane | 50.0 | 57.8 | | ug/Kg | | 116 | 65 - 136 | 5 | 30 |
| 1,2-Dichlorobenzene | 50.0 | 42.1 | | ug/Kg | | 84 | 61 - 131 | 0 | 30 |
| 1,2-Dichloroethane | 50.0 | 56.4 | | ug/Kg | | 113 | 58 - 137 | 2 | 30 |
| 1,2-Dichloroethene, Total | 100 | 94.7 | | ug/Kg | | 95 | 70 - 130 | 2 | 30 |
| 1,2-Dichloropropane | 50.0 | 57.2 | | ug/Kg | | 114 | 70 - 130 | 1 | 30 |
| 1,3-Dichlorobenzene | 50.0 | 46.2 | | ug/Kg | | 92 | 63 - 132 | 2 | 30 |
| 1,4-Dichlorobenzene | 50.0 | 46.5 | | ug/Kg | | 93 | 65 - 131 | 0 | 30 |
| 1,4-Dioxane | 1000 | 1180 | | ug/Kg | | 118 | 31 - 150 | 21 | 30 |
| 2-Butanone (MEK) | 100 | 130 | | ug/Kg | | 130 | 33 - 150 | 12 | 30 |
| 2-Hexanone | 100 | 102 | | ug/Kg | | 102 | 35 - 150 | 11 | 30 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 123 | | ug/Kg | | 123 | 21 - 150 | 12 | 30 |
| Acetone | 100 | 115 | | ug/Kg | | 115 | 13 - 150 | 23 | 30 |
| Benzene | 50.0 | 50.7 | | ug/Kg | | 101 | 70 - 131 | 2 | 30 |
| Bromochloromethane | 50.0 | 51.8 | | ug/Kg | | 104 | 70 - 132 | 0 | 30 |
| Bromodichloromethane | 50.0 | 57.5 | | ug/Kg | | 115 | 67 - 138 | 4 | 30 |
| Bromoform | 50.0 | 57.8 | | ug/Kg | | 116 | 43 - 150 | 5 | 30 |
| Bromomethane | 50.0 | 35.3 | | ug/Kg | | 71 | 37 - 147 | 2 | 30 |
| Carbon disulfide | 50.0 | 38.0 | | ug/Kg | | 76 | 51 - 141 | 0 | 30 |
| Carbon tetrachloride | 50.0 | 42.8 | | ug/Kg | | 86 | 58 - 130 | 0 | 30 |
| Chlorobenzene | 50.0 | 49.1 | | ug/Kg | | 98 | 63 - 131 | 2 | 30 |
| Chloroethane | 50.0 | 33.6 | | ug/Kg | | 67 | 40 - 150 | 3 | 30 |
| Chloroform | 50.0 | 46.4 | | ug/Kg | | 93 | 69 - 130 | 1 | 30 |
| Chloromethane | 50.0 | 41.8 | | ug/Kg | | 84 | 44 - 141 | 1 | 30 |
| cis-1,2-Dichloroethene | 50.0 | 46.3 | | ug/Kg | | 93 | 70 - 130 | 2 | 30 |
| cis-1,3-Dichloropropene | 50.0 | 52.5 | | ug/Kg | | 105 | 65 - 130 | 0 | 30 |
| Cyclohexane | 50.0 | 42.5 | | ug/Kg | | 85 | 54 - 130 | 2 | 30 |
| Dibromochloromethane | 50.0 | 51.7 | | ug/Kg | | 103 | 65 - 134 | 0 | 30 |
| Dichlorodifluoromethane | 50.0 | 33.7 | | ug/Kg | | 67 | 24 - 147 | 3 | 30 |
| Ethylbenzene | 50.0 | 44.8 | | ug/Kg | | 90 | 66 - 130 | 1 | 30 |
| Isopropylbenzene | 50.0 | 41.8 | | ug/Kg | | 84 | 64 - 131 | 2 | 30 |
| Methyl acetate | 250 | 292 | | ug/Kg | | 117 | 10 - 150 | 12 | 30 |
| Methyl tert-butyl ether | 50.0 | 45.6 | | ug/Kg | | 91 | 63 - 132 | 6 | 30 |
| Methylcyclohexane | 50.0 | 45.7 | | ug/Kg | | 91 | 51 - 137 | 2 | 30 |
| Methylene Chloride | 50.0 | 48.8 | | ug/Kg | | 98 | 61 - 150 | 1 | 30 |
| m-Xylene & p-Xylene | 50.0 | 44.1 | | ug/Kg | | 88 | 64 - 130 | 2 | 30 |
| o-Xylene | 50.0 | 39.8 | | ug/Kg | | 80 | 62 - 130 | 4 | 30 |
| Styrene | 50.0 | 49.1 | | ug/Kg | | 98 | 65 - 133 | 2 | 30 |
| Tetrachloroethene | 50.0 | 43.9 | | ug/Kg | | 88 | 43 - 143 | 4 | 30 |
| Toluene | 50.0 | 45.7 | | ug/Kg | | 91 | 67 - 130 | 2 | 30 |
| trans-1,2-Dichloroethene | 50.0 | 48.4 | | ug/Kg | | 97 | 69 - 130 | 2 | 30 |
| trans-1,3-Dichloropropene | 50.0 | 61.6 | | ug/Kg | | 123 | 70 - 130 | 2 | 30 |
| Trichloroethene | 50.0 | 50.0 | | ug/Kg | | 100 | 63 - 135 | 0 | 30 |
| Trichlorofluoromethane | 50.0 | 46.6 | | ug/Kg | | 93 | 53 - 134 | 6 | 30 |
| Vinyl acetate | 100 | 120 | | ug/Kg | | 120 | 40 - 150 | 8 | 30 |
| Vinyl chloride | 50.0 | 39.2 | | ug/Kg | | 78 | 40 - 148 | 3 | 30 |
| Xylenes, Total | 100 | 83.9 | | ug/Kg | | 84 | 63 - 130 | 3 | 30 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 600-221380/4**
**Matrix: Solid**
**Analysis Batch: 221380**

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

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *104* | | *61 - 130* |
| *4-Bromofluorobenzene* | *124* | | *57 - 140* |
| *Dibromofluoromethane* | *106* | | *68 - 140* |
| *Toluene-d8 (Surr)* | *103* | | *50 - 130* |

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

**Lab Sample ID: MB 600-221420/1-A**
**Matrix: Solid**
**Analysis Batch: 221418**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 221420**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1'-Biphenyl | 4.0 | U | 33 | 4.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 1,2,4,5-Tetrachlorobenzene | 6.8 | U | 33 | 6.8 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2,3,4,6-Tetrachlorophenol | 17 | U | 33 | 17 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2,4,5-Trichlorophenol | 10 | U | 33 | 10 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2,4,6-Trichlorophenol | 2.7 | U | 33 | 2.7 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2,4-Dichlorophenol | 3.9 | U | 33 | 3.9 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2,4-Dimethylphenol | 8.6 | U | 33 | 8.6 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2,4-Dinitrophenol | 4.7 | U | 100 | 4.7 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2,4-Dinitrotoluene | 3.6 | U | 33 | 3.6 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2,6-Dinitrotoluene | 3.0 | U | 33 | 3.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2-Chloronaphthalene | 1.2 | U | 33 | 1.2 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2-Chlorophenol | 2.0 | U | 33 | 2.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2-Methylnaphthalene | 2.7 | U | 33 | 2.7 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2-Methylphenol | 3.2 | U | 33 | 3.2 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2-Nitroaniline | 4.9 | U | 33 | 4.9 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 2-Nitrophenol | 3.9 | U | 33 | 3.9 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 3 & 4 Methylphenol | 2.8 | U | 33 | 2.8 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 3,3'-Dichlorobenzidine | 10 | U | 33 | 10 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 3-Nitroaniline | 7.2 | U | 33 | 7.2 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 4,6-Dinitro-2-methylphenol | 5.0 | U | 170 | 5.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 4-Bromophenyl phenyl ether | 2.8 | U | 33 | 2.8 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 4-Chloro-3-methylphenol | 16 | U | 33 | 16 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 4-Chloroaniline | 5.8 | U | 33 | 5.8 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 4-Chlorophenyl phenyl ether | 1.8 | U | 33 | 1.8 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 4-Nitroaniline | 11 | U | 33 | 11 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| 4-Nitrophenol | 5.1 | U | 200 | 5.1 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Acenaphthene | 1.4 | U | 33 | 1.4 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Acenaphthylene | 1.0 | U | 33 | 1.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Acetophenone | 3.3 | U | 33 | 3.3 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Anthracene | 1.3 | U | 33 | 1.3 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Atrazine | 5.0 | U | 33 | 5.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Benzaldehyde | 17 | U | 33 | 17 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Benzo[a]anthracene | 1.4 | U | 33 | 1.4 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Benzo[a]pyrene | 1.6 | U | 33 | 1.6 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Benzo[b]fluoranthene | 1.7 | U | 33 | 1.7 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Benzo[g,h,i]perylene | 5.1 | U | 33 | 5.1 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

**Lab Sample ID: MB 600-221420/1-A**
**Matrix: Solid**
**Analysis Batch: 221418**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 221420**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzo[k]fluoranthene | 1.5 | U | 33 | 1.5 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| bis (2-Chloroisopropyl) ether | 8.8 | U | 33 | 8.8 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Bis(2-chloroethoxy)methane | 1.4 | U | 33 | 1.4 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Bis(2-chloroethyl)ether | 1.7 | U | 33 | 1.7 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Bis(2-ethylhexyl) phthalate | 5.4 | U | 33 | 5.4 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Butyl benzyl phthalate | 6.2 | U | 67 | 6.2 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Caprolactam | 17 | U | 33 | 17 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Carbazole | 3.1 | U | 33 | 3.1 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Chrysene | 1.0 | U | 33 | 1.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Dibenz(a,h)anthracene | 3.6 | U | 33 | 3.6 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Dibenzofuran | 1.8 | U | 33 | 1.8 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Diethyl phthalate | 8.4 | U | 67 | 8.4 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Dimethyl phthalate | 4.9 | U | 67 | 4.9 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Di-n-butyl phthalate | 2.6 | U | 67 | 2.6 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Di-n-octyl phthalate | 1.9 | U | 67 | 1.9 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Fluoranthene | 3.1 | U | 33 | 3.1 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Fluorene | 2.4 | U | 33 | 2.4 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Hexachlorobenzene | 1.5 | U | 33 | 1.5 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Hexachlorobutadiene | 1.9 | U | 33 | 1.9 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Hexachlorocyclopentadiene | 4.6 | U | 33 | 4.6 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Hexachloroethane | 2.3 | U | 33 | 2.3 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Indeno[1,2,3-cd]pyrene | 3.5 | U | 33 | 3.5 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Isophorone | 1.0 | U | 33 | 1.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Naphthalene | 1.4 | U | 33 | 1.4 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Nitrobenzene | 3.0 | U | 33 | 3.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| N-Nitrosodi-n-propylamine | 2.2 | U | 33 | 2.2 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| N-Nitrosodiphenylamine | 1.9 | U | 33 | 1.9 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Pentachlorophenol | 4.0 | U | 170 | 4.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Phenanthrene | 5.0 | U | 33 | 5.0 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Phenol | 4.2 | U | 33 | 4.2 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |
| Pyrene | 1.8 | U | 33 | 1.8 | ug/Kg | | 09/15/17 11:17 | 09/15/17 12:57 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *64* | | *10 - 148* | *09/15/17 11:17* | *09/15/17 12:57* | *1* |
| *2-Fluorobiphenyl* | *77* | | *38 - 130* | *09/15/17 11:17* | *09/15/17 12:57* | *1* |
| *2-Fluorophenol* | *70* | | *25 - 132* | *09/15/17 11:17* | *09/15/17 12:57* | *1* |
| *Nitrobenzene-d5* | *69* | | *10 - 155* | *09/15/17 11:17* | *09/15/17 12:57* | *1* |
| *Phenol-d5 (Surr)* | *64* | | *27 - 130* | *09/15/17 11:17* | *09/15/17 12:57* | *1* |
| *Terphenyl-d14* | *80* | | *53 - 134* | *09/15/17 11:17* | *09/15/17 12:57* | *1* |

**Lab Sample ID: LCS 600-221420/2-A**
**Matrix: Solid**
**Analysis Batch: 221418**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 221420**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,1'-Biphenyl | 667 | 471 | | ug/Kg | | 71 | 40 - 130 |
| 1,2,4,5-Tetrachlorobenzene | 667 | 534 | | ug/Kg | | 80 | 37 - 130 |
| 2,3,4,6-Tetrachlorophenol | 667 | 496 | | ug/Kg | | 74 | 44 - 130 |

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

**Lab Sample ID: LCS 600-221420/2-A**
**Matrix: Solid**
**Analysis Batch: 221418**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 221420**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 2,4,5-Trichlorophenol | 667 | 493 | | ug/Kg | | 74 | 41 - 130 |
| 2,4,6-Trichlorophenol | 667 | 485 | | ug/Kg | | 73 | 39 - 130 |
| 2,4-Dichlorophenol | 667 | 495 | | ug/Kg | | 74 | 38 - 130 |
| 2,4-Dimethylphenol | 667 | 424 | | ug/Kg | | 64 | 32 - 139 |
| 2,4-Dinitrophenol | 1330 | 946 | | ug/Kg | | 71 | 15 - 130 |
| 2,4-Dinitrotoluene | 667 | 515 | | ug/Kg | | 77 | 45 - 130 |
| 2,6-Dinitrotoluene | 667 | 511 | | ug/Kg | | 77 | 44 - 130 |
| 2-Chloronaphthalene | 667 | 482 | | ug/Kg | | 72 | 41 - 130 |
| 2-Chlorophenol | 667 | 503 | | ug/Kg | | 75 | 37 - 130 |
| 2-Methylnaphthalene | 667 | 475 | | ug/Kg | | 71 | 43 - 130 |
| 2-Methylphenol | 667 | 516 | | ug/Kg | | 77 | 30 - 130 |
| 2-Nitroaniline | 667 | 389 | | ug/Kg | | 58 | 42 - 130 |
| 2-Nitrophenol | 667 | 525 | | ug/Kg | | 79 | 38 - 130 |
| 3 & 4 Methylphenol | 667 | 479 | | ug/Kg | | 72 | 28 - 133 |
| 3,3'-Dichlorobenzidine | 667 | 559 | | ug/Kg | | 84 | 13 - 146 |
| 3-Nitroaniline | 667 | 596 | | ug/Kg | | 89 | 41 - 130 |
| 4,6-Dinitro-2-methylphenol | 1330 | 1030 | | ug/Kg | | 77 | 38 - 130 |
| 4-Bromophenyl phenyl ether | 667 | 552 | | ug/Kg | | 83 | 46 - 130 |
| 4-Chloro-3-methylphenol | 667 | 492 | | ug/Kg | | 74 | 43 - 130 |
| 4-Chloroaniline | 667 | 506 | | ug/Kg | | 76 | 32 - 130 |
| 4-Chlorophenyl phenyl ether | 667 | 544 | | ug/Kg | | 82 | 44 - 130 |
| 4-Nitroaniline | 667 | 737 | | ug/Kg | | 111 | 46 - 130 |
| 4-Nitrophenol | 1330 | 702 | | ug/Kg | | 53 | 42 - 130 |
| Acenaphthene | 667 | 506 | | ug/Kg | | 76 | 42 - 130 |
| Acenaphthylene | 667 | 495 | | ug/Kg | | 74 | 39 - 130 |
| Acetophenone | 667 | 386 | | ug/Kg | | 58 | 36 - 130 |
| Anthracene | 667 | 520 | | ug/Kg | | 78 | 51 - 130 |
| Atrazine | 667 | 194 | | ug/Kg | | 29 | 10 - 140 |
| Benzaldehyde | 667 | 231 | | ug/Kg | | 35 | 10 - 130 |
| Benzo[a]anthracene | 667 | 534 | | ug/Kg | | 80 | 54 - 130 |
| Benzo[a]pyrene | 667 | 605 | | ug/Kg | | 91 | 44 - 131 |
| Benzo[b]fluoranthene | 667 | 619 | | ug/Kg | | 93 | 41 - 139 |
| Benzo[g,h,i]perylene | 667 | 728 | | ug/Kg | | 109 | 38 - 142 |
| Benzo[k]fluoranthene | 667 | 569 | | ug/Kg | | 85 | 42 - 134 |
| bis (2-Chloroisopropyl) ether | 667 | 387 | | ug/Kg | | 58 | 38 - 130 |
| Bis(2-chloroethoxy)methane | 667 | 451 | | ug/Kg | | 68 | 39 - 130 |
| Bis(2-chloroethyl)ether | 667 | 444 | | ug/Kg | | 67 | 40 - 130 |
| Bis(2-ethylhexyl) phthalate | 667 | 462 | | ug/Kg | | 69 | 41 - 145 |
| Butyl benzyl phthalate | 667 | 464 | | ug/Kg | | 70 | 48 - 141 |
| Caprolactam | 667 | 383 | | ug/Kg | | 57 | 41 - 130 |
| Carbazole | 667 | 708 | | ug/Kg | | 106 | 49 - 131 |
| Chrysene | 667 | 520 | | ug/Kg | | 78 | 52 - 130 |
| Dibenz(a,h)anthracene | 667 | 652 | | ug/Kg | | 98 | 40 - 137 |
| Dibenzofuran | 667 | 511 | | ug/Kg | | 77 | 43 - 130 |
| Diethyl phthalate | 667 | 503 | | ug/Kg | | 75 | 50 - 130 |
| Dimethyl phthalate | 667 | 514 | | ug/Kg | | 77 | 40 - 130 |
| Di-n-butyl phthalate | 667 | 498 | | ug/Kg | | 75 | 51 - 135 |
| Di-n-octyl phthalate | 667 | 490 | | ug/Kg | | 74 | 38 - 153 |

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

**Lab Sample ID: LCS 600-221420/2-A**
**Matrix: Solid**
**Analysis Batch: 221418**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 221420**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Fluoranthene | 667 | 563 | | ug/Kg | | 85 | 53 - 130 |
| Fluorene | 667 | 516 | | ug/Kg | | 77 | 46 - 130 |
| Hexachlorobenzene | 667 | 564 | | ug/Kg | | 85 | 44 - 130 |
| Hexachlorobutadiene | 667 | 564 | | ug/Kg | | 85 | 36 - 130 |
| Hexachlorocyclopentadiene | 667 | 100 | | ug/Kg | | 15 | 10 - 130 |
| Hexachloroethane | 667 | 473 | | ug/Kg | | 71 | 37 - 130 |
| Indeno[1,2,3-cd]pyrene | 667 | 657 | | ug/Kg | | 98 | 35 - 146 |
| Isophorone | 667 | 370 | | ug/Kg | | 55 | 39 - 130 |
| Naphthalene | 667 | 497 | | ug/Kg | | 75 | 40 - 130 |
| Nitrobenzene | 667 | 426 | | ug/Kg | | 64 | 42 - 130 |
| N-Nitrosodi-n-propylamine | 667 | 439 | | ug/Kg | | 66 | 36 - 130 |
| N-Nitrosodiphenylamine | 667 | 524 | | ug/Kg | | 79 | 48 - 130 |
| Pentachlorophenol | 1330 | 797 | | ug/Kg | | 60 | 40 - 130 |
| Phenanthrene | 667 | 529 | | ug/Kg | | 79 | 51 - 130 |
| Phenol | 667 | 476 | | ug/Kg | | 71 | 30 - 130 |
| Pyrene | 667 | 525 | | ug/Kg | | 79 | 53 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *2,4,6-Tribromophenol* | *83* | | *10 - 148* |
| *2-Fluorobiphenyl* | *77* | | *38 - 130* |
| *2-Fluorophenol* | *78* | | *25 - 132* |
| *Nitrobenzene-d5* | *71* | | *10 - 155* |
| *Phenol-d5 (Surr)* | *73* | | *27 - 130* |
| *Terphenyl-d14* | *86* | | *53 - 134* |

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

**Lab Sample ID: MB 600-221416/1-A**
**Matrix: Solid**
**Analysis Batch: 221448**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 221416**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | 1.6 | U | 17 | 1.6 | ug/Kg | | 09/15/17 10:50 | 09/15/17 15:37 | 1 |
| PCB-1221 | 8.6 | U | 17 | 8.6 | ug/Kg | | 09/15/17 10:50 | 09/15/17 15:37 | 1 |
| PCB-1232 | 6.7 | U | 17 | 6.7 | ug/Kg | | 09/15/17 10:50 | 09/15/17 15:37 | 1 |
| PCB-1242 | 1.2 | U | 17 | 1.2 | ug/Kg | | 09/15/17 10:50 | 09/15/17 15:37 | 1 |
| PCB-1248 | 2.5 | U | 17 | 2.5 | ug/Kg | | 09/15/17 10:50 | 09/15/17 15:37 | 1 |
| PCB-1254 | 2.2 | U | 17 | 2.2 | ug/Kg | | 09/15/17 10:50 | 09/15/17 15:37 | 1 |
| PCB-1260 | 14 | U | 17 | 14 | ug/Kg | | 09/15/17 10:50 | 09/15/17 15:37 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *89* | | *10 - 150* | *09/15/17 10:50* | *09/15/17 15:37* | *1* |
| *DCB Decachlorobiphenyl* | *121* | | *10 - 150* | *09/15/17 10:50* | *09/15/17 15:37* | *1* |

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

**Lab Sample ID: LCS 600-221416/2-A**
**Matrix: Solid**
**Analysis Batch: 221448**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 221416**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | | | 167 | 160 | | ug/Kg | | 96 | 42 - 130 | | |
| PCB-1260 | | | 167 | 163 | | ug/Kg | | 98 | 59 - 135 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *Tetrachloro-m-xylene* | *94* | | *10 - 150* |
| *DCB Decachlorobiphenyl* | *130* | | *10 - 150* |

**Lab Sample ID: LCSD 600-221416/3-A**
**Matrix: Solid**
**Analysis Batch: 221448**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 221416**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | | | 167 | 154 | | ug/Kg | | 93 | 42 - 130 | 4 | 30 |
| PCB-1260 | | | 167 | 157 | | ug/Kg | | 94 | 59 - 135 | 4 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *Tetrachloro-m-xylene* | *90* | | *10 - 150* |
| *DCB Decachlorobiphenyl* | *126* | | *10 - 150* |

## Method: 6020 - Metals (ICP/MS)

**Lab Sample ID: MB 560-143263/1-A**
**Matrix: Solid**
**Analysis Batch: 143293**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 143263**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 2.5 | U | 5.0 | 2.5 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Antimony | 0.096 | U | 0.25 | 0.096 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Arsenic | 0.050 | U | 0.25 | 0.050 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Barium | 0.11 | U | 0.25 | 0.11 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Beryllium | 0.088 | U | 0.25 | 0.088 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Cadmium | 0.072 | U | 0.25 | 0.072 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Calcium | 14 | U | 25 | 14 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Chromium | 0.11 | U | 0.25 | 0.11 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Cobalt | 0.053 | U | 0.25 | 0.053 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Copper | 0.18 | U | 0.50 | 0.18 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Iron | 5.5 | U | 25 | 5.5 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Lead | 0.21 | U | 0.50 | 0.21 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Magnesium | 5.5 | U | 25 | 5.5 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Manganese | 0.60 | U | 2.5 | 0.60 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Nickel | 0.13 | U | 0.25 | 0.13 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Potassium | 25 | U | 50 | 25 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Selenium | 0.044 | U | 0.25 | 0.044 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Silver | 0.069 | U | 0.25 | 0.069 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Sodium | 28 | U | 50 | 28 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Thallium | 0.069 | U | 0.25 | 0.069 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |
| Vanadium | 0.057 | U | 0.25 | 0.057 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |

## Method: 6020 - Metals (ICP/MS) (Continued)

**Lab Sample ID: MB 560-143263/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 143293** — **Prep Batch: 143263**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Zinc | 0.77 | U | 1.3 | 0.77 | mg/Kg | | 09/15/17 12:00 | 09/15/17 17:28 | 1 |

**Lab Sample ID: LCS 560-143263/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 143293** — **Prep Batch: 143263**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Aluminum | 1250 | 1320 | | mg/Kg | | 106 | 80 - 120 |
| Antimony | 12.5 | 12.6 | | mg/Kg | | 101 | 80 - 120 |
| Arsenic | 12.5 | 12.9 | | mg/Kg | | 103 | 80 - 120 |
| Barium | 12.5 | 12.8 | | mg/Kg | | 102 | 80 - 120 |
| Beryllium | 12.5 | 12.6 | | mg/Kg | | 101 | 80 - 120 |
| Cadmium | 12.5 | 12.1 | | mg/Kg | | 97 | 80 - 120 |
| Calcium | 1250 | 1330 | | mg/Kg | | 107 | 80 - 120 |
| Chromium | 12.5 | 12.9 | | mg/Kg | | 103 | 80 - 120 |
| Cobalt | 12.5 | 12.7 | | mg/Kg | | 102 | 80 - 120 |
| Copper | 12.5 | 12.7 | | mg/Kg | | 101 | 80 - 120 |
| Iron | 1250 | 1240 | | mg/Kg | | 99 | 80 - 120 |
| Lead | 12.5 | 12.7 | | mg/Kg | | 102 | 80 - 120 |
| Magnesium | 1250 | 1350 | | mg/Kg | | 108 | 80 - 120 |
| Manganese | 125 | 133 | | mg/Kg | | 107 | 80 - 120 |
| Nickel | 12.5 | 13.0 | | mg/Kg | | 104 | 80 - 120 |
| Potassium | 1250 | 1330 | | mg/Kg | | 106 | 80 - 120 |
| Selenium | 12.5 | 12.3 | | mg/Kg | | 98 | 80 - 120 |
| Silver | 12.5 | 12.9 | | mg/Kg | | 103 | 80 - 120 |
| Sodium | 1250 | 1260 | | mg/Kg | | 100 | 80 - 120 |
| Thallium | 5.00 | 5.18 | | mg/Kg | | 104 | 80 - 120 |
| Vanadium | 12.5 | 12.5 | | mg/Kg | | 100 | 80 - 120 |
| Zinc | 12.5 | 13.5 | | mg/Kg | | 108 | 80 - 120 |

## Method: 7471A - Mercury (CVAA)

**Lab Sample ID: MB 560-143282/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 143280** — **Prep Batch: 143282**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.011 | U | 0.12 | 0.011 | mg/Kg | | 09/15/17 11:00 | 09/15/17 14:03 | 1 |

**Lab Sample ID: LCS 560-143282/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 143280** — **Prep Batch: 143282**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Mercury | 0.250 | 0.264 | | mg/Kg | | 105 | 80 - 120 |

# QC Association Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sheridan Disposal Services

TestAmerica Job ID: 600-153830-1

## GC/MS VOA

### Prep Batch: 221313

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 5035 | |

### Analysis Batch: 221380

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 8260B | 221313 |
| MB 600-221380/6 | Method Blank | Total/NA | Solid | 8260B | |
| LCS 600-221380/3 | Lab Control Sample | Total/NA | Solid | 8260B | |
| LCSD 600-221380/4 | Lab Control Sample Dup | Total/NA | Solid | 8260B | |

## GC/MS Semi VOA

### Analysis Batch: 221418

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 8270C LL | 221420 |
| MB 600-221420/1-A | Method Blank | Total/NA | Solid | 8270C LL | 221420 |
| LCS 600-221420/2-A | Lab Control Sample | Total/NA | Solid | 8270C LL | 221420 |

### Prep Batch: 221420

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 3546 | |
| MB 600-221420/1-A | Method Blank | Total/NA | Solid | 3546 | |
| LCS 600-221420/2-A | Lab Control Sample | Total/NA | Solid | 3546 | |

## GC Semi VOA

### Prep Batch: 221416

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 3546 | |
| MB 600-221416/1-A | Method Blank | Total/NA | Solid | 3546 | |
| LCS 600-221416/2-A | Lab Control Sample | Total/NA | Solid | 3546 | |
| LCSD 600-221416/3-A | Lab Control Sample Dup | Total/NA | Solid | 3546 | |

### Analysis Batch: 221448

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 8082 | 221416 |
| MB 600-221416/1-A | Method Blank | Total/NA | Solid | 8082 | 221416 |
| LCS 600-221416/2-A | Lab Control Sample | Total/NA | Solid | 8082 | 221416 |
| LCSD 600-221416/3-A | Lab Control Sample Dup | Total/NA | Solid | 8082 | 221416 |

## Metals

### Prep Batch: 143263

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 3050B | |
| MB 560-143263/1-A | Method Blank | Total/NA | Solid | 3050B | |
| LCS 560-143263/2-A | Lab Control Sample | Total/NA | Solid | 3050B | |

### Analysis Batch: 143280

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 7471A | 143282 |

## Metals (Continued)

### Analysis Batch: 143280 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 560-143282/1-A | Method Blank | Total/NA | Solid | 7471A | 143282 |
| LCS 560-143282/2-A | Lab Control Sample | Total/NA | Solid | 7471A | 143282 |

### Prep Batch: 143282

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 7471A | |
| MB 560-143282/1-A | Method Blank | Total/NA | Solid | 7471A | |
| LCS 560-143282/2-A | Lab Control Sample | Total/NA | Solid | 7471A | |

### Analysis Batch: 143293

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 6020 | 143263 |
| MB 560-143263/1-A | Method Blank | Total/NA | Solid | 6020 | 143263 |
| LCS 560-143263/2-A | Lab Control Sample | Total/NA | Solid | 6020 | 143263 |

## General Chemistry

### Analysis Batch: 221355

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 600-153830-1 | SDS-SS-001 | Total/NA | Solid | 2540B | |

# Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Sheridan Disposal Services

TestAmerica Job ID: 600-153830-1

## Client Sample ID: SDS-SS-001 — Lab Sample ID: 600-153830-1

**Date Collected: 09/13/17 11:25** — **Matrix: Solid**
**Date Received: 09/13/17 17:10**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 2540B | | 1 | | | 221355 | 09/14/17 15:57 | B1K | TAL HOU |

## Client Sample ID: SDS-SS-001 — Lab Sample ID: 600-153830-1

**Date Collected: 09/13/17 11:25** — **Matrix: Solid**
**Date Received: 09/13/17 17:10** — **Percent Solids: 78.7**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.266 g | 5 mL | 221313 | 09/13/17 20:00 | WS1 | TAL HOU |
| Total/NA | Analysis | 8260B | | 1 | 5 g | 5 g | 221380 | 09/15/17 13:40 | WS1 | TAL HOU |
| Total/NA | Prep | 3546 | | | 15.00 g | 1.0 mL | 221420 | 09/15/17 11:17 | EAT | TAL HOU |
| Total/NA | Analysis | 8270C LL | | 1 | | | 221418 | 09/15/17 17:06 | TTD | TAL HOU |
| Total/NA | Prep | 3546 | | | 15.06 g | 5.0 mL | 221416 | 09/15/17 10:50 | RLK | TAL HOU |
| Total/NA | Analysis | 8082 | | 1 | | | 221448 | 09/15/17 16:45 | JAL | TAL HOU |
| Total/NA | Prep | 3050B | | | 1.153 g | 50 mL | 143263 | 09/15/17 12:00 | AKM | TAL CC |
| Total/NA | Analysis | 6020 | | 5 | | | 143293 | 09/15/17 18:40 | JEM | TAL CC |
| Total/NA | Prep | 7471A | | | 1.230 g | 50 mL | 143282 | 09/15/17 11:00 | JEM | TAL CC |
| Total/NA | Analysis | 7471A | | 1 | | | 143280 | 09/15/17 14:16 | JEM | TAL CC |

**Laboratory References:**

TAL CC = TestAmerica Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

# Accreditation/Certification Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sheridan Disposal Services

TestAmerica Job ID: 600-153830-1

## Laboratory: TestAmerica Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| Texas | NELAP | 6 | T104704223-17-21 | 10-31-17 |

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| 8260B | 5035 | Solid | Methyl acetate |

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| 2540B | | Solid | Percent Moisture |
| 2540B | | Solid | Percent Solids |
| 8260B | 5035 | Solid | 1,2-Dichloroethene, Total |
| 8260B | 5035 | Solid | Cyclohexane |
| 8270C LL | 3546 | Solid | Atrazine |
| 8270C LL | 3546 | Solid | Benzaldehyde |

## Laboratory: TestAmerica Corpus Christi

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| Texas | NELAP | 6 | T104704210-17-20 | 03-31-18 |

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|

**TestAmerica Houston**
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

# Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

| Client Information | Sampler: Arreca Forsberg | Lab PM: Upton, Cathy L | Carrier Tracking No(s): | COC No: 600-54931-16099.30 |
|---|---|---|---|---|
| Client Contact: Mr. John Ynfante | Phone: 505 918 1800 | E-Mail: cathy.upton@testamericainc.com | | Page: Page 30 of 32 |
| Company: CH2M Hill Constructors, Inc. | | | | Job #: |
| Address: 14701 St. Mary's Lane Suite 300 | Due Date Requested: | | | |
| City: Houston | TAT Requested (days): | | | |
| State, Zip: TX, 77079-2923 | | | | |
| Phone: 281-721-8546(Tel) | PO #: Purchase Order not required | | | |
| Email: john.ynfante@ch2m.com | WO #: | | | |
| Project Name: Hurricane Harvey Environmental Response | Project #: 60008995 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 6020, 7471A | 8260B - TCL Volatiles TX - default | 8270C_LL - TCL 4.2 Default List | 8082 - PCBs | 300_ORGFM_28D, 9045C | 6020, 7470A | 8260B_LL - TCL Volatiles TX - default | 9040B - pH | 300_ORGFM_28D, SM2310B | | | | | Total Number of containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | N | N | N | N | N | D | A | N | N | | | | | |
| SDS-SS-001 | 9/13/17 | 1125 | C/G | ~~Water~~ S | N | N | X | X | X | X | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |
| | | | | Water | | | | | | | | | | | | | | | | |

**Preservation Codes:**

| | |
|---|---|
| A - HCL | M - Hexane |
| B - NaOH | N - None |
| C - Zn Acetate | O - AsNaO2 |
| D - Nitric Acid | P - Na2O4S |
| E - NaHSO4 | Q - Na2SO3 |
| F - MeOH | R - Na2S2O3 |
| G - Amchlor | S - H2SO4 |
| H - Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice | U - Acetone |
| J - DI Water | V - MCAA |
| K - EDTA | W - pH 4-5 |
| L - EDA | Z - other (specify) |

Other:

**Special Instructions/Note:**

600-153830 Chain of Custody

***Possible Hazard Identification***
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

***Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)***
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|
| A Forsberg | 9/13/17 1710 | CH2M | [signature] | 9-13-17 1710 | [illegible] |
| | | | | | |
| | | | | | |

| Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 9.1 CF -0.3 8.8 18549 |
|---|---|---|

RW

TestAmerica Houston

Loc: 600
153830

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

# Sample Receipt Checklist

Date/Time Received: _____

**JOB NUMBER**: _____

CLIENT: CHZM '17 SEP 13 17:10

UNPACKED BY: _____

CARRIER/DRIVER: Chad

Custody Seal Present: ☐ YES ☒ NO

Number of Coolers Received: 1

| Cooler ID | Temp Blank | Trip Blank | Observed Temp (°C) | Therm ID | Them CF | Corrected Temp (°C) |
|---|---|---|---|---|---|---|
| Cu | Y / N | Y / N | 9.1 | 549 | -3 | 8.8 |
| | Y / N | Y / N | | | | |
| | Y / N | Y / N | | | | |
| | Y / N | Y / N | | | | |
| | Y / N | Y / N | | | | |
| | Y / N | Y / N | | | | |
| | Y / N | Y / N | | | | |
| | Y / N | Y / N | | | | |
| | Y / N | Y / N | | | | |

CF = correction factor

Samples received on ice? ☐ YES ☐ NO

**LABORATORY PRESERVATION OF SAMPLES REQUIRED**: ☐ NO ☐ YES

Base samples are>pH 12: ☐ YES ☐ NO Acid preserved are<pH 2: ☐ YES ☐ NO

pH paper Lot #_____

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☒ NA

| | YES | NO |
|---|---|---|
| Did samples meet the laboratory's standard conditions of sample acceptability upon receipt? | ☒ | |

**COMMENTS:** Chill in progress

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# Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Upton, Cathy L. | Carrier Tracking No(s): | COC No 600-28422.1 |
|---|---|---|---|---|
| Client Contact Shipping/Receiving | Phone: | E-Mail: cathy.upton@testamericainc.com | State of Origin: Texas | Page: Page 1 of 1 |
| Company TestAmerica Laboratories, Inc. | | Accreditations Required (See note): NELAP - Texas | | Job #: 600-153830-1 |
| Address 1733 N. Padre Island Drive, , | Due Date Requested: 9/18/2017 | | | |
| City Corpus Christi | TAT Requested (days): | | | |
| State, Zip TX, 78408 | | | | |
| Phone: 361-289-2673(Tel) 361-289-2471(Fax) | PO #: | | | |
| Email | WO #: | | | |
| Project Name Hurricane Harvey Environmental Response | Project #: 60008995 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - Di Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 6020/3050B Target Analyte List | 7471A/7471A_Prep | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | |
| SDS-SS-001 (600-153830-1) | 9/13/17 | 11:25 Central | | Solid | | | X | 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/tests/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 said complicance to TestAmerica Laboratories, Inc.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2 | Special Instructions/QC Requirements: |

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment |
|---|---|---|---|

| Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|
| | 9/13/17 1700 | | | 9/14/17 0945 | |
| Relinquished by | Date/Time: | Company | Received by: | Date/Time. | Company |
| Relinquished by | Date/Time | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks |
|---|---|---|
| Δ Yes Δ No | | 0.5 27 (17.8 C[5]) |

# Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 600-153830-1

**Login Number: 153830**
**List Number: 1**
**Creator: Kovitch, Christina M**

**List Source: TestAmerica Houston**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | Lab does not accept radioactive samples. |
| 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 | Received same day of collection; chilling process has begun. |
| Cooler Temperature is recorded. | True | 9.1°C IR 549 |
| 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 | Check done at department level as required. |

# Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 600-153830-1

**Login Number: 153830**
**List Number: 2**
**Creator: Escalona-Garcia, Jose A**

**List Source: TestAmerica Corpus Christi**
**List Creation: 09/14/17 10:07 AM**

| 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 | |
| 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"). | N/A | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |