eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-109117-4
Client Project/Site: Red Hill Drinking Water

For:
AECOM
1001 Bishop Street
Honolulu, Hawaii 96813

Attn: Margie F Pascua

Kristine D. Allen

*Authorized for release by:*
*1/12/2022 5:56:05 PM*
Kristine Allen, Client Service Manager
(253)248-4970
Kristine.Allen@Eurofinset.com

Designee for

Elaine Walker, Project Manager II
(253)248-4972
m.elaine.walker@eurofinset.com

# Table of Contents

## Job ID: 580-109117-4

### Laboratory: Eurofins Seattle

**Narrative**

**Job Narrative**
**580-109117-4**

**Comments**
No additional comments.

**Receipt**
The samples were received on 1/10/2022 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.9º C.

**GC/MS VOA**
Method 8260D: Surrogate recovery for the following samples was outside control limits for Toluene-d8: 20220107-C2-YT02 (580-109117-8). Evidence of matrix interference is present; therefore, re-analysis 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**
Method 8270E: The following analytes have been identified, in the reference method and/or via historical data, to be poor and/or erratic performers: Hexachlorocyclopentadiene. These analytes may have a %D >60%.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 580-377974 and analytical batch 580-377989 recovered outside control limits for the following analytes: Hexachlorocyclopentadiene. Hexachlorocyclopentadiene has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8270E: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 580-377974 and analytical batch 580-377989 recovered outside control limits for the following analytes: Diethyl phthalate, Fluoranthene, Benzo[b]fluoranthene and Pyrene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8270E: Surrogate 2-Fluorophenol (Surr) and Phenol-d5 (Surr) recovery for the following samples was outside control limits: 20220107-C2-YT02 (580-109117-8). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8270E: The minimum response factor (RF) criteria for the continuing calibration verification (CCV) analyzed in batch 580-377989 was outside criteria for the following analytes: N-Nitrosodi-n-propylamine. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analytes is considered estimated.

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

**GC Semi VOA**
Method 8015D: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: 20220107-C2-YT02 (580-109117-8).

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

**Organic Prep**
Methods 3510C, CWA_Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-377974. Laboratory control sample/laboratory control sample duplicate were created and substituted for MS/MSD/DUP.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-377984. Laboratory control sample/laboratory control sample duplicate were created and substituted for MS/MSD/DUP.

## Job ID: 580-109117-4 (Continued)

### Laboratory: Eurofins Seattle (Continued)

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

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

# Definitions/Glossary

Client: AECOM
Job ID: 580-109117-4
Project/Site: Red Hill Drinking Water

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| S1- | Surrogate recovery exceeds control limits, low biased. |
| U | Indicates the analyte was analyzed for but not detected. |

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| *- | LCS and/or LCSD is outside acceptance limits, low biased. |
| *+ | LCS and/or LCSD is outside acceptance limits, high biased. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| S1- | Surrogate recovery exceeds control limits, low biased. |
| U | Indicates the analyte was analyzed for but not detected. |

### GC Semi VOA

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

## 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 |
| CFU | Colony Forming Unit |
| 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) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| 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) |
| TNTC | Too Numerous To Count |

Client: AECOM
Job ID: 580-109117-4
Project/Site: Red Hill Drinking Water

**Client Sample ID: 20220107-C2-YT02**
**Lab Sample ID: 580-109117-8**
**Date Collected: 01/07/22 15:55**
**Matrix: Water**
**Date Received: 01/10/22 09:15**

### Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (C6-C12) | 31 | U | 100 | 31 | ug/L | | | 01/11/22 17:33 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *78 - 120* | | *01/11/22 17:33* | *1* |

### Method: 8260D - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | 3.2 | U | 15 | 3.2 | ug/L | | | 01/11/22 17:33 | 1 |
| Benzene | 0.24 | U | 1.0 | 0.24 | ug/L | | | 01/11/22 17:33 | 1 |
| Bromodichloromethane | 0.29 | U | 1.0 | 0.29 | ug/L | | | 01/11/22 17:33 | 1 |
| Bromoform | 0.51 | U | 1.0 | 0.51 | ug/L | | | 01/11/22 17:33 | 1 |
| Bromomethane | 0.21 | U | 1.0 | 0.21 | ug/L | | | 01/11/22 17:33 | 1 |
| Carbon disulfide | 0.53 | U | 1.0 | 0.53 | ug/L | | | 01/11/22 17:33 | 1 |
| Carbon tetrachloride | 0.30 | U | 1.0 | 0.30 | ug/L | | | 01/11/22 17:33 | 1 |
| Chlorobenzene | 0.44 | U | 1.0 | 0.44 | ug/L | | | 01/11/22 17:33 | 1 |
| Chloroform | 0.26 | U | 1.0 | 0.26 | ug/L | | | 01/11/22 17:33 | 1 |
| Chloromethane | 0.28 | U | 1.0 | 0.28 | ug/L | | | 01/11/22 17:33 | 1 |
| cis-1,2-Dichloroethene | 0.35 | U | 1.0 | 0.35 | ug/L | | | 01/11/22 17:33 | 1 |
| cis-1,3-Dichloropropene | 0.20 | U | 1.0 | 0.20 | ug/L | | | 01/11/22 17:33 | 1 |
| Dibromochloromethane | 0.43 | U | 1.0 | 0.43 | ug/L | | | 01/11/22 17:33 | 1 |
| 1,1-Dichloroethane | 0.22 | U | 1.0 | 0.22 | ug/L | | | 01/11/22 17:33 | 1 |
| 1,2-Dichloroethane | 0.42 | U | 1.0 | 0.42 | ug/L | | | 01/11/22 17:33 | 1 |
| 1,1-Dichloroethene | 0.28 | U | 1.0 | 0.28 | ug/L | | | 01/11/22 17:33 | 1 |
| 1,2-Dichloroethene, Total | 0.39 | U | 1.0 | 0.39 | ug/L | | | 01/11/22 17:33 | 1 |
| Dichloromethane | 1.4 | U | 3.0 | 1.4 | ug/L | | | 01/11/22 17:33 | 1 |
| 1,2-Dichloropropane | 0.18 | U | 1.0 | 0.18 | ug/L | | | 01/11/22 17:33 | 1 |
| Ethylbenzene | 0.50 | U | 1.0 | 0.50 | ug/L | | | 01/11/22 17:33 | 1 |
| Ethyl Chloride | 0.35 | U | 1.0 | 0.35 | ug/L | | | 01/11/22 17:33 | 1 |
| 2-Hexanone | 4.0 | U | 15 | 4.0 | ug/L | | | 01/11/22 17:33 | 1 |
| Methyl Ethyl Ketone | 4.7 | U | 15 | 4.7 | ug/L | | | 01/11/22 17:33 | 1 |
| Methyl isobutyl ketone (MIBK) | 2.5 | U | 5.0 | 2.5 | ug/L | | | 01/11/22 17:33 | 1 |
| m-Xylene & p-Xylene | 0.53 | U | 2.0 | 0.53 | ug/L | | | 01/11/22 17:33 | 1 |
| o-Xylene | 0.39 | U | 1.0 | 0.39 | ug/L | | | 01/11/22 17:33 | 1 |
| Styrene | 0.53 | U | 1.0 | 0.53 | ug/L | | | 01/11/22 17:33 | 1 |
| 1,1,2,2-Tetrachloroethane | 0.52 | U | 1.0 | 0.52 | ug/L | | | 01/11/22 17:33 | 1 |
| Tetrachloroethene | 0.41 | U | 1.0 | 0.41 | ug/L | | | 01/11/22 17:33 | 1 |
| Toluene | 0.39 | U | 1.0 | 0.39 | ug/L | | | 01/11/22 17:33 | 1 |
| trans-1,2-Dichloroethene | 0.39 | U | 1.0 | 0.39 | ug/L | | | 01/11/22 17:33 | 1 |
| trans-1,3-Dichloropropene | 0.41 | U | 1.0 | 0.41 | ug/L | | | 01/11/22 17:33 | 1 |
| 1,1,1-Trichloroethane | 0.39 | U | 1.0 | 0.39 | ug/L | | | 01/11/22 17:33 | 1 |
| 1,1,2-Trichloroethane | 0.24 | U | 1.0 | 0.24 | ug/L | | | 01/11/22 17:33 | 1 |
| Trichloroethene | 0.26 | U | 1.0 | 0.26 | ug/L | | | 01/11/22 17:33 | 1 |
| Vinyl chloride | 0.22 | U | 1.0 | 0.22 | ug/L | | | 01/11/22 17:33 | 1 |
| Xylenes, Total | 0.53 | U | 2.0 | 0.53 | ug/L | | | 01/11/22 17:33 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *80 - 120* | | *01/11/22 17:33* | *1* |
| *Dibromofluoromethane (Surr)* | *105* | | *80 - 120* | | *01/11/22 17:33* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *104* | | *80 - 120* | | *01/11/22 17:33* | *1* |
| *Toluene-d8 (Surr)* | *0.3* | *S1-* | *80 - 120* | | *01/11/22 17:33* | *1* |

Client: AECOM
Job ID: 580-109117-4
Project/Site: Red Hill Drinking Water

**Client Sample ID: 20220107-C2-YT02**
**Lab Sample ID: 580-109117-8**
**Date Collected: 01/07/22 15:55**
**Matrix: Water**
**Date Received: 01/10/22 09:15**

**Method: 8270E - Semivolatile Organic Compounds (GC/MS)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 0.052 | U | 0.41 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Acenaphthylene | 0.062 | U | 1.0 | 0.062 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Anthracene | 0.052 | U | 1.0 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Benzo[a]anthracene | 0.052 | U | 0.26 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Benzo[a]pyrene | 0.041 | U | 0.26 | 0.041 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Benzo[b]fluoranthene | 0.041 | U *+ | 0.26 | 0.041 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Benzo[g,h,i]perylene | 0.041 | U | 0.26 | 0.041 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Benzo[k]fluoranthene | 0.052 | U | 0.26 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Bis(2-chloroethoxy)methane | 0.052 | U | 0.62 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| **Bis(2-chloroethyl)ether** | **0.76** | | 0.10 | 0.031 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Bis(2-ethylhexyl) phthalate | 0.76 | U | 3.1 | 0.76 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 4-Bromophenyl phenyl ether | 0.062 | U | 0.62 | 0.062 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Butyl benzyl phthalate | 0.28 | U | 4.1 | 0.28 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Carbazole | 0.10 | U | 0.62 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 4-Chloroaniline | 0.61 | U | 2.1 | 0.61 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 4-Chloro-3-methylphenol | 0.13 | U | 0.62 | 0.13 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2-Chloronaphthalene | 0.072 | U | 1.0 | 0.072 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2-Chlorophenol | 0.052 | U | 1.0 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 4-Chlorophenyl phenyl ether | 0.052 | U | 0.62 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Chrysene | 0.041 | U | 0.26 | 0.041 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Dibenz(a,h)anthracene | 0.072 | U | 0.26 | 0.072 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Dibenzofuran | 0.10 | U | 0.41 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 1,2-Dichlorobenzene | 0.052 | U | 0.41 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 1,3-Dichlorobenzene | 0.041 | U | 0.41 | 0.041 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 1,4-Dichlorobenzene | 0.041 | U | 0.41 | 0.041 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 3,3'-Dichlorobenzidine | 0.27 | U | 1.0 | 0.27 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2,4-Dichlorophenol | 0.21 | U | 1.0 | 0.21 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Diethyl phthalate | 0.15 | U *+ | 1.0 | 0.15 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2,4-Dimethylphenol | 0.16 | U | 4.1 | 0.16 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Dimethyl phthalate | 0.062 | U | 0.62 | 0.062 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| **Di-n-butyl phthalate** | **10** | | 3.1 | 0.20 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 4,6-Dinitro-2-methylphenol | 0.57 | U | 2.1 | 0.57 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2,4-Dinitrophenol | 1.6 | U | 5.2 | 1.6 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2,4-Dinitrotoluene | 0.10 | U | 1.0 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2,6-Dinitrotoluene | 0.10 | U | 0.41 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Di-n-octyl phthalate | 0.13 | U | 1.0 | 0.13 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Fluoranthene | 0.062 | U *+ | 0.26 | 0.062 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Fluorene | 0.052 | U | 0.26 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Hexachlorobenzene | 0.041 | U | 0.62 | 0.041 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Hexachlorobutadiene | 0.062 | U | 1.0 | 0.062 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Hexachlorocyclopentadiene | 0.14 | U *- | 1.0 | 0.14 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Hexachloroethane | 0.052 | U | 1.0 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Indeno[1,2,3-cd]pyrene | 0.13 | U | 0.41 | 0.13 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Isophorone | 0.10 | U | 0.41 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2-Methylphenol | 0.052 | U | 0.62 | 0.052 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 3 & 4 Methylphenol | 0.10 | U | 0.62 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Naphthalene | 0.16 | U | 0.41 | 0.16 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2-Nitroaniline | 0.10 | U | 1.0 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 3-Nitroaniline | 0.16 | U | 3.1 | 0.16 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |

Client: AECOM
Job ID: 580-109117-4
Project/Site: Red Hill Drinking Water

**Client Sample ID: 20220107-C2-YT02**
**Lab Sample ID: 580-109117-8**
**Date Collected: 01/07/22 15:55**
**Matrix: Water**
**Date Received: 01/10/22 09:15**

### Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4-Nitroaniline | 0.22 | U | 2.1 | 0.22 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Nitrobenzene | 0.041 | U | 1.0 | 0.041 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 4-Nitrophenol | 1.8 | U | 10 | 1.8 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| N-Nitrosodi-n-propylamine | 0.062 | U | 0.41 | 0.062 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| N-Nitrosodiphenylamine | 0.072 | U | 1.0 | 0.072 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Pentachlorophenol | 0.53 | U | 10 | 0.53 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Phenanthrene | 0.12 | U | 1.0 | 0.12 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Phenol | 0.37 | U | 1.0 | 0.37 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| Pyrene | 0.041 | U *+ | 1.0 | 0.041 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 1,2,4-Trichlorobenzene | 0.093 | U | 0.41 | 0.093 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2,4,5-Trichlorophenol | 0.10 | U | 0.41 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |
| 2,4,6-Trichlorophenol | 0.10 | U | 0.62 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 19:36 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl* | *60* | | *35 - 120* | *01/10/22 19:30* | *01/11/22 19:36* | *1* |
| *2-Fluorophenol (Surr)* | *6* | *S1-* | *21 - 120* | *01/10/22 19:30* | *01/11/22 19:36* | *1* |
| *Nitrobenzene-d5 (Surr)* | *60* | | *39 - 120* | *01/10/22 19:30* | *01/11/22 19:36* | *1* |
| *Phenol-d5 (Surr)* | *0* | *S1-* | *10 - 120* | *01/10/22 19:30* | *01/11/22 19:36* | *1* |
| *Terphenyl-d14* | *108* | | *63 - 137* | *01/10/22 19:30* | *01/11/22 19:36* | *1* |
| *2,4,6-Tribromophenol* | *75* | | *50 - 130* | *01/10/22 19:30* | *01/11/22 19:36* | *1* |

### Method: 8015D - Diesel Range Organics (DRO) (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **C9-C25** | **61** | | 59 | 48 | ug/L | | 01/11/22 09:52 | 01/11/22 21:20 | 1 |
| C24-C40 | 96 | U | 190 | 96 | ug/L | | 01/11/22 09:52 | 01/11/22 21:20 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *84* | | *53 - 120* | *01/11/22 09:52* | *01/11/22 21:20* | *1* |

## Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 580-378017/5**
**Matrix: Water**
**Analysis Batch: 378017**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (C6-C12) | 31 | U | 100 | 31 | ug/L | | | 01/11/22 08:00 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *78 - 120* | | *01/11/22 08:00* | *1* |

**Lab Sample ID: LCS 580-378017/8**
**Matrix: Water**
**Analysis Batch: 378017**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (C6-C12) | | | 1000 | 1020 | | ug/L | | 102 | 75 - 127 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *78 - 120* |

**Lab Sample ID: LCSD 580-378017/9**
**Matrix: Water**
**Analysis Batch: 378017**

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (C6-C12) | | | 1000 | 1030 | | ug/L | | 103 | 75 - 127 | 0 | 13 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *78 - 120* |

## Method: 8260D - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 580-378016/5**
**Matrix: Water**
**Analysis Batch: 378016**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | 3.2 | U | 15 | 3.2 | ug/L | | | 01/11/22 08:00 | 1 |
| Benzene | 0.24 | U | 1.0 | 0.24 | ug/L | | | 01/11/22 08:00 | 1 |
| Bromodichloromethane | 0.29 | U | 1.0 | 0.29 | ug/L | | | 01/11/22 08:00 | 1 |
| Bromoform | 0.51 | U | 1.0 | 0.51 | ug/L | | | 01/11/22 08:00 | 1 |
| Bromomethane | 0.21 | U | 1.0 | 0.21 | ug/L | | | 01/11/22 08:00 | 1 |
| Carbon disulfide | 0.53 | U | 1.0 | 0.53 | ug/L | | | 01/11/22 08:00 | 1 |
| Carbon tetrachloride | 0.30 | U | 1.0 | 0.30 | ug/L | | | 01/11/22 08:00 | 1 |
| Chlorobenzene | 0.44 | U | 1.0 | 0.44 | ug/L | | | 01/11/22 08:00 | 1 |
| Chloroform | 0.26 | U | 1.0 | 0.26 | ug/L | | | 01/11/22 08:00 | 1 |
| Chloromethane | 0.28 | U | 1.0 | 0.28 | ug/L | | | 01/11/22 08:00 | 1 |
| cis-1,2-Dichloroethene | 0.35 | U | 1.0 | 0.35 | ug/L | | | 01/11/22 08:00 | 1 |
| cis-1,3-Dichloropropene | 0.20 | U | 1.0 | 0.20 | ug/L | | | 01/11/22 08:00 | 1 |
| Dibromochloromethane | 0.43 | U | 1.0 | 0.43 | ug/L | | | 01/11/22 08:00 | 1 |
| 1,1-Dichloroethane | 0.22 | U | 1.0 | 0.22 | ug/L | | | 01/11/22 08:00 | 1 |

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

**Lab Sample ID: MB 580-378016/5**
**Matrix: Water**
**Analysis Batch: 378016**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | 0.42 | U | 1.0 | 0.42 | ug/L | | | 01/11/22 08:00 | 1 |
| 1,1-Dichloroethene | 0.28 | U | 1.0 | 0.28 | ug/L | | | 01/11/22 08:00 | 1 |
| 1,2-Dichloroethene, Total | 0.39 | U | 1.0 | 0.39 | ug/L | | | 01/11/22 08:00 | 1 |
| Dichloromethane | 1.4 | U | 3.0 | 1.4 | ug/L | | | 01/11/22 08:00 | 1 |
| 1,2-Dichloropropane | 0.18 | U | 1.0 | 0.18 | ug/L | | | 01/11/22 08:00 | 1 |
| Ethylbenzene | 0.50 | U | 1.0 | 0.50 | ug/L | | | 01/11/22 08:00 | 1 |
| Ethyl Chloride | 0.35 | U | 1.0 | 0.35 | ug/L | | | 01/11/22 08:00 | 1 |
| 2-Hexanone | 4.0 | U | 15 | 4.0 | ug/L | | | 01/11/22 08:00 | 1 |
| Methyl Ethyl Ketone | 4.7 | U | 15 | 4.7 | ug/L | | | 01/11/22 08:00 | 1 |
| Methyl isobutyl ketone (MIBK) | 2.5 | U | 5.0 | 2.5 | ug/L | | | 01/11/22 08:00 | 1 |
| m-Xylene & p-Xylene | 0.53 | U | 2.0 | 0.53 | ug/L | | | 01/11/22 08:00 | 1 |
| o-Xylene | 0.39 | U | 1.0 | 0.39 | ug/L | | | 01/11/22 08:00 | 1 |
| Styrene | 0.53 | U | 1.0 | 0.53 | ug/L | | | 01/11/22 08:00 | 1 |
| 1,1,2,2-Tetrachloroethane | 0.52 | U | 1.0 | 0.52 | ug/L | | | 01/11/22 08:00 | 1 |
| Tetrachloroethene | 0.41 | U | 1.0 | 0.41 | ug/L | | | 01/11/22 08:00 | 1 |
| Toluene | 0.39 | U | 1.0 | 0.39 | ug/L | | | 01/11/22 08:00 | 1 |
| trans-1,2-Dichloroethene | 0.39 | U | 1.0 | 0.39 | ug/L | | | 01/11/22 08:00 | 1 |
| trans-1,3-Dichloropropene | 0.41 | U | 1.0 | 0.41 | ug/L | | | 01/11/22 08:00 | 1 |
| 1,1,1-Trichloroethane | 0.39 | U | 1.0 | 0.39 | ug/L | | | 01/11/22 08:00 | 1 |
| 1,1,2-Trichloroethane | 0.24 | U | 1.0 | 0.24 | ug/L | | | 01/11/22 08:00 | 1 |
| Trichloroethene | 0.26 | U | 1.0 | 0.26 | ug/L | | | 01/11/22 08:00 | 1 |
| Vinyl chloride | 0.22 | U | 1.0 | 0.22 | ug/L | | | 01/11/22 08:00 | 1 |
| Xylenes, Total | 0.53 | U | 2.0 | 0.53 | ug/L | | | 01/11/22 08:00 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *80 - 120* | | *01/11/22 08:00* | *1* |
| *Dibromofluoromethane (Surr)* | *100* | | *80 - 120* | | *01/11/22 08:00* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *80 - 120* | | *01/11/22 08:00* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *01/11/22 08:00* | *1* |

**Lab Sample ID: LCS 580-378016/6**
**Matrix: Water**
**Analysis Batch: 378016**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Acetone | 50.0 | 44.4 | | ug/L | | 89 | 44 - 150 |
| Benzene | 10.0 | 10.5 | | ug/L | | 105 | 80 - 122 |
| Bromodichloromethane | 10.0 | 9.89 | | ug/L | | 99 | 75 - 124 |
| Bromoform | 10.0 | 9.15 | | ug/L | | 92 | 56 - 139 |
| Bromomethane | 10.0 | 8.89 | | ug/L | | 89 | 36 - 150 |
| Carbon disulfide | 10.0 | 9.71 | | ug/L | | 97 | 63 - 134 |
| Carbon tetrachloride | 10.0 | 10.2 | | ug/L | | 102 | 72 - 129 |
| Chlorobenzene | 10.0 | 9.93 | | ug/L | | 99 | 80 - 120 |
| Chloroform | 10.0 | 10.6 | | ug/L | | 106 | 78 - 127 |
| Chloromethane | 10.0 | 8.23 | | ug/L | | 82 | 25 - 150 |
| cis-1,2-Dichloroethene | 10.0 | 10.3 | | ug/L | | 103 | 76 - 120 |
| cis-1,3-Dichloropropene | 10.0 | 9.56 | | ug/L | | 96 | 77 - 120 |
| Dibromochloromethane | 10.0 | 9.35 | | ug/L | | 93 | 73 - 125 |

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

**Lab Sample ID: LCS 580-378016/6**
**Matrix: Water**
**Analysis Batch: 378016**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethane | | | 10.0 | 10.7 | | ug/L | | 107 | 80 - 120 | | |
| 1,2-Dichloroethane | | | 10.0 | 10.3 | | ug/L | | 103 | 69 - 126 | | |
| 1,1-Dichloroethene | | | 10.0 | 10.7 | | ug/L | | 107 | 70 - 129 | | |
| 1,2-Dichloroethene, Total | | | 20.0 | 20.7 | | ug/L | | 104 | 76 - 129 | | |
| Dichloromethane | | | 10.0 | 10.5 | | ug/L | | 105 | 77 - 125 | | |
| 1,2-Dichloropropane | | | 10.0 | 10.0 | | ug/L | | 100 | 80 - 120 | | |
| Ethylbenzene | | | 10.0 | 9.88 | | ug/L | | 99 | 80 - 120 | | |
| Ethyl Chloride | | | 10.0 | 8.55 | | ug/L | | 86 | 38 - 150 | | |
| 2-Hexanone | | | 50.0 | 44.9 | | ug/L | | 90 | 65 - 144 | | |
| Methyl Ethyl Ketone | | | 50.0 | 47.3 | | ug/L | | 95 | 65 - 137 | | |
| Methyl isobutyl ketone (MIBK) | | | 50.0 | 44.4 | | ug/L | | 89 | 59 - 141 | | |
| m-Xylene & p-Xylene | | | 10.0 | 9.85 | | ug/L | | 98 | 80 - 120 | | |
| o-Xylene | | | 10.0 | 9.76 | | ug/L | | 98 | 80 - 120 | | |
| Styrene | | | 10.0 | 9.77 | | ug/L | | 98 | 76 - 122 | | |
| 1,1,2,2-Tetrachloroethane | | | 10.0 | 8.25 | | ug/L | | 83 | 74 - 124 | | |
| Tetrachloroethene | | | 10.0 | 10.2 | | ug/L | | 102 | 76 - 125 | | |
| Toluene | | | 10.0 | 9.94 | | ug/L | | 99 | 80 - 120 | | |
| trans-1,2-Dichloroethene | | | 10.0 | 10.4 | | ug/L | | 104 | 75 - 120 | | |
| trans-1,3-Dichloropropene | | | 10.0 | 9.10 | | ug/L | | 91 | 76 - 122 | | |
| 1,1,1-Trichloroethane | | | 10.0 | 10.6 | | ug/L | | 106 | 74 - 130 | | |
| 1,1,2-Trichloroethane | | | 10.0 | 9.41 | | ug/L | | 94 | 80 - 121 | | |
| Trichloroethene | | | 10.0 | 11.1 | | ug/L | | 111 | 80 - 125 | | |
| Vinyl chloride | | | 10.0 | 8.65 | | ug/L | | 87 | 31 - 150 | | |
| Xylenes, Total | | | 20.0 | 19.6 | | ug/L | | 98 | 80 - 120 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *80 - 120* |
| *Dibromofluoromethane (Surr)* | *99* | | *80 - 120* |
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *80 - 120* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* |

**Lab Sample ID: LCSD 580-378016/7**
**Matrix: Water**
**Analysis Batch: 378016**

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | | | 50.0 | 46.6 | | ug/L | | 93 | 44 - 150 | 5 | 33 |
| Benzene | | | 10.0 | 10.1 | | ug/L | | 101 | 80 - 122 | 4 | 14 |
| Bromodichloromethane | | | 10.0 | 9.76 | | ug/L | | 98 | 75 - 124 | 1 | 13 |
| Bromoform | | | 10.0 | 9.28 | | ug/L | | 93 | 56 - 139 | 1 | 21 |
| Bromomethane | | | 10.0 | 10.7 | | ug/L | | 107 | 36 - 150 | 18 | 33 |
| Carbon disulfide | | | 10.0 | 8.90 | | ug/L | | 89 | 63 - 134 | 9 | 24 |
| Carbon tetrachloride | | | 10.0 | 9.77 | | ug/L | | 98 | 72 - 129 | 4 | 19 |
| Chlorobenzene | | | 10.0 | 9.91 | | ug/L | | 99 | 80 - 120 | 0 | 10 |
| Chloroform | | | 10.0 | 10.6 | | ug/L | | 106 | 78 - 127 | 0 | 14 |
| Chloromethane | | | 10.0 | 8.62 | | ug/L | | 86 | 25 - 150 | 5 | 26 |
| cis-1,2-Dichloroethene | | | 10.0 | 10.1 | | ug/L | | 101 | 76 - 120 | 2 | 20 |
| cis-1,3-Dichloropropene | | | 10.0 | 8.99 | | ug/L | | 90 | 77 - 120 | 6 | 35 |

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

**Lab Sample ID: LCSD 580-378016/7**
**Matrix: Water**
**Analysis Batch: 378016**

**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 |
|---|---|---|---|---|---|---|---|---|---|
| Dibromochloromethane | 10.0 | 9.63 | | ug/L | | 96 | 73 - 125 | 3 | 13 |
| 1,1-Dichloroethane | 10.0 | 10.4 | | ug/L | | 104 | 80 - 120 | 2 | 15 |
| 1,2-Dichloroethane | 10.0 | 10.2 | | ug/L | | 102 | 69 - 126 | 0 | 11 |
| 1,1-Dichloroethene | 10.0 | 10.2 | | ug/L | | 102 | 70 - 129 | 5 | 23 |
| 1,2-Dichloroethene, Total | 20.0 | 20.1 | | ug/L | | 100 | 76 - 129 | 3 | 21 |
| Dichloromethane | 10.0 | 11.2 | | ug/L | | 112 | 77 - 125 | 6 | 18 |
| 1,2-Dichloropropane | 10.0 | 9.95 | | ug/L | | 100 | 80 - 120 | 1 | 14 |
| Ethylbenzene | 10.0 | 9.60 | | ug/L | | 96 | 80 - 120 | 3 | 14 |
| Ethyl Chloride | 10.0 | 8.90 | | ug/L | | 89 | 38 - 150 | 4 | 28 |
| 2-Hexanone | 50.0 | 43.6 | | ug/L | | 87 | 65 - 144 | 3 | 26 |
| Methyl Ethyl Ketone | 50.0 | 48.6 | | ug/L | | 97 | 65 - 137 | 3 | 34 |
| Methyl isobutyl ketone (MIBK) | 50.0 | 44.2 | | ug/L | | 88 | 59 - 141 | 1 | 22 |
| m-Xylene & p-Xylene | 10.0 | 9.77 | | ug/L | | 98 | 80 - 120 | 1 | 14 |
| o-Xylene | 10.0 | 9.59 | | ug/L | | 96 | 80 - 120 | 2 | 16 |
| Styrene | 10.0 | 9.72 | | ug/L | | 97 | 76 - 122 | 0 | 16 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 8.33 | | ug/L | | 83 | 74 - 124 | 1 | 25 |
| Tetrachloroethene | 10.0 | 9.43 | | ug/L | | 94 | 76 - 125 | 8 | 13 |
| Toluene | 10.0 | 9.71 | | ug/L | | 97 | 80 - 120 | 2 | 13 |
| trans-1,2-Dichloroethene | 10.0 | 9.97 | | ug/L | | 100 | 75 - 120 | 4 | 21 |
| trans-1,3-Dichloropropene | 10.0 | 8.72 | | ug/L | | 87 | 76 - 122 | 4 | 20 |
| 1,1,1-Trichloroethane | 10.0 | 9.53 | | ug/L | | 95 | 74 - 130 | 11 | 19 |
| 1,1,2-Trichloroethane | 10.0 | 9.65 | | ug/L | | 97 | 80 - 121 | 3 | 14 |
| Trichloroethene | 10.0 | 10.9 | | ug/L | | 109 | 80 - 125 | 2 | 13 |
| Vinyl chloride | 10.0 | 10.1 | | ug/L | | 101 | 31 - 150 | 16 | 26 |
| Xylenes, Total | 20.0 | 19.4 | | ug/L | | 97 | 80 - 120 | 1 | 16 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *80 - 120* |
| *Dibromofluoromethane (Surr)* | *100* | | *80 - 120* |
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *80 - 120* |
| *Toluene-d8 (Surr)* | *96* | | *80 - 120* |

## Method: 8270E - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 580-377974/1-A**
**Matrix: Water**
**Analysis Batch: 377989**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 377974**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 0.050 | U | 0.40 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Acenaphthylene | 0.060 | U | 1.0 | 0.060 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Anthracene | 0.050 | U | 1.0 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Benzo[a]anthracene | 0.050 | U | 0.25 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Benzo[a]pyrene | 0.040 | U | 0.25 | 0.040 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Benzo[b]fluoranthene | 0.040 | U | 0.25 | 0.040 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Benzo[g,h,i]perylene | 0.040 | U | 0.25 | 0.040 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Benzo[k]fluoranthene | 0.050 | U | 0.25 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Bis(2-chloroethoxy)methane | 0.050 | U | 0.60 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Bis(2-chloroethyl)ether | 0.030 | U | 0.10 | 0.030 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |

## Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 580-377974/1-A**
**Matrix: Water**
**Analysis Batch: 377989**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 377974**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bis(2-ethylhexyl) phthalate | 0.74 | U | 3.0 | 0.74 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 4-Bromophenyl phenyl ether | 0.060 | U | 0.60 | 0.060 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Butyl benzyl phthalate | 0.27 | U | 4.0 | 0.27 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Carbazole | 0.10 | U | 0.60 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 4-Chloroaniline | 0.59 | U | 2.0 | 0.59 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 4-Chloro-3-methylphenol | 0.13 | U | 0.60 | 0.13 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 2-Chloronaphthalene | 0.070 | U | 1.0 | 0.070 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 2-Chlorophenol | 0.050 | U | 1.0 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 4-Chlorophenyl phenyl ether | 0.050 | U | 0.60 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Chrysene | 0.040 | U | 0.25 | 0.040 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Dibenz(a,h)anthracene | 0.070 | U | 0.25 | 0.070 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Dibenzofuran | 0.10 | U | 0.40 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 1,2-Dichlorobenzene | 0.050 | U | 0.40 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 1,3-Dichlorobenzene | 0.040 | U | 0.40 | 0.040 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 1,4-Dichlorobenzene | 0.040 | U | 0.40 | 0.040 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 3,3'-Dichlorobenzidine | 0.26 | U | 1.0 | 0.26 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 2,4-Dichlorophenol | 0.20 | U | 1.0 | 0.20 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Diethyl phthalate | 0.15 | U | 1.0 | 0.15 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 2,4-Dimethylphenol | 0.16 | U | 4.0 | 0.16 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Dimethyl phthalate | 0.060 | U | 0.60 | 0.060 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Di-n-butyl phthalate | 0.19 | U | 3.0 | 0.19 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 4,6-Dinitro-2-methylphenol | 0.55 | U | 2.0 | 0.55 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 2,4-Dinitrophenol | 1.6 | U | 5.0 | 1.6 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 2,4-Dinitrotoluene | 0.10 | U | 1.0 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 2,6-Dinitrotoluene | 0.10 | U | 0.40 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Di-n-octyl phthalate | 0.13 | U | 1.0 | 0.13 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Fluoranthene | 0.060 | U | 0.25 | 0.060 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Fluorene | 0.050 | U | 0.25 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Hexachlorobenzene | 0.040 | U | 0.60 | 0.040 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Hexachlorobutadiene | 0.060 | U | 1.0 | 0.060 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Hexachlorocyclopentadiene | 0.14 | U | 1.0 | 0.14 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Hexachloroethane | 0.050 | U | 1.0 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Indeno[1,2,3-cd]pyrene | 0.13 | U | 0.40 | 0.13 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Isophorone | 0.10 | U | 0.40 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 2-Methylphenol | 0.050 | U | 0.60 | 0.050 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 3 & 4 Methylphenol | 0.10 | U | 0.60 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Naphthalene | 0.16 | U | 0.40 | 0.16 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 2-Nitroaniline | 0.10 | U | 1.0 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 3-Nitroaniline | 0.16 | U | 3.0 | 0.16 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 4-Nitroaniline | 0.21 | U | 2.0 | 0.21 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Nitrobenzene | 0.040 | U | 1.0 | 0.040 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 4-Nitrophenol | 1.7 | U | 10 | 1.7 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| N-Nitrosodi-n-propylamine | 0.060 | U | 0.40 | 0.060 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| N-Nitrosodiphenylamine | 0.070 | U | 1.0 | 0.070 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Pentachlorophenol | 0.51 | U | 10 | 0.51 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Phenanthrene | 0.12 | U | 1.0 | 0.12 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Phenol | 0.36 | U | 1.0 | 0.36 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| Pyrene | 0.040 | U | 1.0 | 0.040 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 1,2,4-Trichlorobenzene | 0.090 | U | 0.40 | 0.090 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |

## Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 580-377974/1-A**
**Matrix: Water**
**Analysis Batch: 377989**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 377974**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-Trichlorophenol | 0.10 | U | 0.40 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |
| 2,4,6-Trichlorophenol | 0.10 | U | 0.60 | 0.10 | ug/L | | 01/10/22 19:30 | 01/11/22 16:31 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl* | *92* | | *35 - 120* | *01/10/22 19:30* | *01/11/22 16:31* | *1* |
| *2-Fluorophenol (Surr)* | *56* | | *21 - 120* | *01/10/22 19:30* | *01/11/22 16:31* | *1* |
| *Nitrobenzene-d5 (Surr)* | *98* | | *39 - 120* | *01/10/22 19:30* | *01/11/22 16:31* | *1* |
| *Phenol-d5 (Surr)* | *30* | | *10 - 120* | *01/10/22 19:30* | *01/11/22 16:31* | *1* |
| *Terphenyl-d14* | *125* | | *63 - 137* | *01/10/22 19:30* | *01/11/22 16:31* | *1* |
| *2,4,6-Tribromophenol* | *103* | | *50 - 130* | *01/10/22 19:30* | *01/11/22 16:31* | *1* |

**Lab Sample ID: LCS 580-377974/2-A**
**Matrix: Water**
**Analysis Batch: 377989**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 377974**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Acenaphthene | 2.00 | 1.68 | | ug/L | | 84 | 41 - 120 |
| Acenaphthylene | 2.00 | 1.74 | | ug/L | | 87 | 43 - 120 |
| Anthracene | 2.00 | 1.99 | | ug/L | | 100 | 58 - 120 |
| Benzo[a]anthracene | 2.00 | 2.38 | | ug/L | | 119 | 48 - 131 |
| Benzo[a]pyrene | 2.00 | 2.22 | | ug/L | | 111 | 55 - 125 |
| Benzo[b]fluoranthene | 2.00 | 2.39 | | ug/L | | 120 | 54 - 124 |
| Benzo[g,h,i]perylene | 2.00 | 1.50 | | ug/L | | 75 | 46 - 124 |
| Benzo[k]fluoranthene | 2.00 | 2.10 | | ug/L | | 105 | 52 - 132 |
| Bis(2-chloroethoxy)methane | 2.00 | 1.89 | | ug/L | | 94 | 38 - 120 |
| Bis(2-ethylhexyl) phthalate | 2.00 | 2.54 | J | ug/L | | 127 | 41 - 150 |
| 4-Bromophenyl phenyl ether | 2.00 | 1.98 | | ug/L | | 99 | 53 - 120 |
| Butyl benzyl phthalate | 2.00 | 2.48 | J | ug/L | | 124 | 40 - 150 |
| Carbazole | 2.00 | 2.28 | | ug/L | | 114 | 61 - 150 |
| 4-Chloroaniline | 2.00 | 0.814 | J | ug/L | | 41 | 10 - 150 |
| 4-Chloro-3-methylphenol | 2.00 | 1.88 | | ug/L | | 94 | 36 - 120 |
| 2-Chloronaphthalene | 2.00 | 1.77 | | ug/L | | 89 | 35 - 120 |
| 2-Chlorophenol | 2.00 | 1.65 | | ug/L | | 82 | 44 - 120 |
| 4-Chlorophenyl phenyl ether | 2.00 | 1.80 | | ug/L | | 90 | 41 - 120 |
| Chrysene | 2.00 | 2.22 | | ug/L | | 111 | 57 - 125 |
| Dibenz(a,h)anthracene | 2.00 | 1.54 | | ug/L | | 77 | 48 - 126 |
| Dibenzofuran | 2.00 | 1.75 | | ug/L | | 88 | 45 - 120 |
| 1,2-Dichlorobenzene | 2.00 | 1.64 | | ug/L | | 82 | 20 - 120 |
| 1,3-Dichlorobenzene | 2.00 | 1.68 | | ug/L | | 84 | 20 - 120 |
| 1,4-Dichlorobenzene | 2.00 | 1.66 | | ug/L | | 83 | 20 - 120 |
| 3,3'-Dichlorobenzidine | 4.00 | 4.08 | | ug/L | | 102 | 33 - 150 |
| 2,4-Dichlorophenol | 2.00 | 1.76 | | ug/L | | 88 | 45 - 120 |
| Diethyl phthalate | 2.00 | 2.39 | | ug/L | | 119 | 60 - 121 |
| 2,4-Dimethylphenol | 2.00 | 1.98 | J | ug/L | | 99 | 37 - 120 |
| Dimethyl phthalate | 2.00 | 2.18 | | ug/L | | 109 | 54 - 120 |
| Di-n-butyl phthalate | 2.00 | 2.45 | J | ug/L | | 123 | 55 - 150 |
| 4,6-Dinitro-2-methylphenol | 4.00 | 2.58 | | ug/L | | 64 | 29 - 136 |
| 2,4-Dinitrophenol | 4.00 | 1.91 | J | ug/L | | 48 | 10 - 146 |

## Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 580-377974/2-A**
**Matrix: Water**
**Analysis Batch: 377989**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 377974**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 2,4-Dinitrotoluene | 2.00 | 2.14 | | ug/L | | 107 | 51 - 120 |
| 2,6-Dinitrotoluene | 2.00 | 1.89 | | ug/L | | 95 | 52 - 120 |
| Di-n-octyl phthalate | 2.00 | 2.60 | | ug/L | | 130 | 48 - 140 |
| Fluoranthene | 2.00 | 2.30 | | ug/L | | 115 | 60 - 121 |
| Fluorene | 2.00 | 1.83 | | ug/L | | 91 | 20 - 120 |
| Hexachlorobenzene | 2.00 | 1.95 | | ug/L | | 98 | 49 - 120 |
| Hexachlorobutadiene | 2.00 | 1.68 | | ug/L | | 84 | 10 - 130 |
| Hexachlorocyclopentadiene | 2.00 | 0.164 | J *- | ug/L | | 8 | 10 - 125 |
| Hexachloroethane | 2.00 | 1.12 | | ug/L | | 56 | 10 - 130 |
| Indeno[1,2,3-cd]pyrene | 2.00 | 1.70 | | ug/L | | 85 | 39 - 124 |
| Isophorone | 2.00 | 1.85 | | ug/L | | 93 | 41 - 120 |
| 2-Methylphenol | 2.00 | 1.49 | | ug/L | | 75 | 30 - 120 |
| 3 & 4 Methylphenol | 2.00 | 1.44 | | ug/L | | 72 | 29 - 120 |
| Naphthalene | 2.00 | 1.68 | | ug/L | | 84 | 42 - 120 |
| 2-Nitroaniline | 2.00 | 2.06 | | ug/L | | 103 | 43 - 120 |
| 3-Nitroaniline | 2.00 | 1.61 | J | ug/L | | 81 | 10 - 138 |
| 4-Nitroaniline | 2.00 | 1.76 | J | ug/L | | 88 | 38 - 133 |
| Nitrobenzene | 2.00 | 1.84 | | ug/L | | 92 | 38 - 120 |
| 4-Nitrophenol | 4.00 | 2.01 | J | ug/L | | 50 | 10 - 120 |
| N-Nitrosodi-n-propylamine | 2.00 | 2.12 | | ug/L | | 106 | 39 - 120 |
| N-Nitrosodiphenylamine | 2.00 | 1.95 | | ug/L | | 97 | 52 - 120 |
| Pentachlorophenol | 4.00 | 2.31 | J | ug/L | | 58 | 18 - 135 |
| Phenanthrene | 2.00 | 2.07 | | ug/L | | 103 | 54 - 120 |
| Phenol | 2.00 | 0.758 | J | ug/L | | 38 | 13 - 120 |
| Pyrene | 2.00 | 2.35 | | ug/L | | 118 | 57 - 120 |
| 1,2,4-Trichlorobenzene | 2.00 | 1.76 | | ug/L | | 88 | 21 - 120 |
| 2,4,5-Trichlorophenol | 2.00 | 1.96 | | ug/L | | 98 | 45 - 120 |
| 2,4,6-Trichlorophenol | 2.00 | 1.85 | | ug/L | | 92 | 43 - 120 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *2-Fluorobiphenyl* | *76* | | *35 - 120* |
| *2-Fluorophenol (Surr)* | *50* | | *21 - 120* |
| *Nitrobenzene-d5 (Surr)* | *87* | | *39 - 120* |
| *Phenol-d5 (Surr)* | *32* | | *10 - 120* |
| *Terphenyl-d14* | *120* | | *63 - 137* |
| *2,4,6-Tribromophenol* | *101* | | *50 - 130* |

**Lab Sample ID: LCSD 580-377974/3-A**
**Matrix: Water**
**Analysis Batch: 377989**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 377974**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 2.00 | 1.70 | | ug/L | | 85 | 41 - 120 | 1 | 35 |
| Acenaphthylene | 2.00 | 1.76 | | ug/L | | 88 | 43 - 120 | 1 | 35 |
| Anthracene | 2.00 | 2.16 | | ug/L | | 108 | 58 - 120 | 8 | 35 |
| Benzo[a]anthracene | 2.00 | 2.51 | | ug/L | | 125 | 48 - 131 | 5 | 35 |
| Benzo[a]pyrene | 2.00 | 2.33 | | ug/L | | 117 | 55 - 125 | 5 | 35 |
| Benzo[b]fluoranthene | 2.00 | 2.54 | *+ | ug/L | | 127 | 54 - 124 | 6 | 35 |

## Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 580-377974/3-A**
**Matrix: Water**
**Analysis Batch: 377989**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 377974**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | 2.00 | 1.59 | | ug/L | | 79 | 46 - 124 | 6 | 35 |
| Benzo[k]fluoranthene | 2.00 | 2.22 | | ug/L | | 111 | 52 - 132 | 5 | 35 |
| Bis(2-chloroethoxy)methane | 2.00 | 1.88 | | ug/L | | 94 | 38 - 120 | 0 | 35 |
| Bis(2-ethylhexyl) phthalate | 2.00 | 2.67 | J | ug/L | | 134 | 41 - 150 | 5 | 35 |
| 4-Bromophenyl phenyl ether | 2.00 | 1.98 | | ug/L | | 99 | 53 - 120 | 0 | 35 |
| Butyl benzyl phthalate | 2.00 | 2.61 | J | ug/L | | 131 | 40 - 150 | 5 | 35 |
| Carbazole | 2.00 | 2.47 | | ug/L | | 124 | 61 - 150 | 8 | 35 |
| 4-Chloroaniline | 2.00 | 1.12 | J | ug/L | | 56 | 10 - 150 | 31 | 35 |
| 4-Chloro-3-methylphenol | 2.00 | 1.85 | | ug/L | | 93 | 36 - 120 | 2 | 35 |
| 2-Chloronaphthalene | 2.00 | 1.76 | | ug/L | | 88 | 35 - 120 | 0 | 35 |
| 2-Chlorophenol | 2.00 | 1.65 | | ug/L | | 83 | 44 - 120 | 0 | 35 |
| 4-Chlorophenyl phenyl ether | 2.00 | 1.85 | | ug/L | | 92 | 41 - 120 | 2 | 35 |
| Chrysene | 2.00 | 2.35 | | ug/L | | 118 | 57 - 125 | 6 | 35 |
| Dibenz(a,h)anthracene | 2.00 | 1.67 | | ug/L | | 84 | 48 - 126 | 8 | 35 |
| Dibenzofuran | 2.00 | 1.89 | | ug/L | | 95 | 45 - 120 | 8 | 35 |
| 1,2-Dichlorobenzene | 2.00 | 1.73 | | ug/L | | 86 | 20 - 120 | 5 | 35 |
| 1,3-Dichlorobenzene | 2.00 | 1.70 | | ug/L | | 85 | 20 - 120 | 2 | 35 |
| 1,4-Dichlorobenzene | 2.00 | 1.67 | | ug/L | | 84 | 20 - 120 | 1 | 35 |
| 3,3'-Dichlorobenzidine | 4.00 | 4.59 | | ug/L | | 115 | 33 - 150 | 12 | 35 |
| 2,4-Dichlorophenol | 2.00 | 1.78 | | ug/L | | 89 | 45 - 120 | 1 | 35 |
| Diethyl phthalate | 2.00 | 2.47 | *+ | ug/L | | 123 | 60 - 121 | 3 | 35 |
| 2,4-Dimethylphenol | 2.00 | 1.97 | J | ug/L | | 99 | 37 - 120 | 1 | 35 |
| Dimethyl phthalate | 2.00 | 2.25 | | ug/L | | 112 | 54 - 120 | 3 | 35 |
| Di-n-butyl phthalate | 2.00 | 2.60 | J | ug/L | | 130 | 55 - 150 | 6 | 35 |
| 4,6-Dinitro-2-methylphenol | 4.00 | 2.62 | | ug/L | | 65 | 29 - 136 | 1 | 35 |
| 2,4-Dinitrophenol | 4.00 | 2.05 | J | ug/L | | 51 | 10 - 146 | 7 | 35 |
| 2,4-Dinitrotoluene | 2.00 | 2.30 | | ug/L | | 115 | 51 - 120 | 7 | 35 |
| 2,6-Dinitrotoluene | 2.00 | 2.02 | | ug/L | | 101 | 52 - 120 | 6 | 35 |
| Di-n-octyl phthalate | 2.00 | 2.70 | | ug/L | | 135 | 48 - 140 | 4 | 35 |
| Fluoranthene | 2.00 | 2.54 | *+ | ug/L | | 127 | 60 - 121 | 10 | 35 |
| Fluorene | 2.00 | 1.95 | | ug/L | | 98 | 20 - 120 | 7 | 35 |
| Hexachlorobenzene | 2.00 | 2.05 | | ug/L | | 103 | 49 - 120 | 5 | 35 |
| Hexachlorobutadiene | 2.00 | 1.66 | | ug/L | | 83 | 10 - 130 | 1 | 35 |
| Hexachlorocyclopentadiene | 2.00 | 0.182 | J *- | ug/L | | 9 | 10 - 125 | 10 | 35 |
| Hexachloroethane | 2.00 | 1.14 | | ug/L | | 57 | 10 - 130 | 2 | 35 |
| Indeno[1,2,3-cd]pyrene | 2.00 | 1.73 | | ug/L | | 86 | 39 - 124 | 1 | 35 |
| Isophorone | 2.00 | 1.98 | | ug/L | | 99 | 41 - 120 | 7 | 35 |
| 2-Methylphenol | 2.00 | 1.51 | | ug/L | | 76 | 30 - 120 | 1 | 35 |
| 3 & 4 Methylphenol | 2.00 | 1.42 | | ug/L | | 71 | 29 - 120 | 2 | 35 |
| Naphthalene | 2.00 | 1.64 | | ug/L | | 82 | 42 - 120 | 2 | 35 |
| 2-Nitroaniline | 2.00 | 2.06 | | ug/L | | 103 | 43 - 120 | 0 | 35 |
| 3-Nitroaniline | 2.00 | 1.68 | J | ug/L | | 84 | 10 - 138 | 4 | 35 |
| 4-Nitroaniline | 2.00 | 2.13 | | ug/L | | 106 | 38 - 133 | 19 | 35 |
| Nitrobenzene | 2.00 | 1.80 | | ug/L | | 90 | 38 - 120 | 2 | 35 |
| 4-Nitrophenol | 4.00 | 2.05 | J | ug/L | | 51 | 10 - 120 | 2 | 35 |
| N-Nitrosodi-n-propylamine | 2.00 | 2.02 | | ug/L | | 101 | 39 - 120 | 5 | 35 |
| N-Nitrosodiphenylamine | 2.00 | 2.12 | | ug/L | | 106 | 52 - 120 | 8 | 35 |
| Pentachlorophenol | 4.00 | 2.04 | J | ug/L | | 51 | 18 - 135 | 13 | 35 |
| Phenanthrene | 2.00 | 2.24 | | ug/L | | 112 | 54 - 120 | 8 | 35 |

## Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 580-377974/3-A**
**Matrix: Water**
**Analysis Batch: 377989**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 377974**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | | | 2.00 | 0.762 | J | ug/L | | 38 | 13 - 120 | 1 | 35 |
| Pyrene | | | 2.00 | 2.54 | *+ | ug/L | | 127 | 57 - 120 | 8 | 35 |
| 1,2,4-Trichlorobenzene | | | 2.00 | 1.73 | | ug/L | | 87 | 21 - 120 | 2 | 35 |
| 2,4,5-Trichlorophenol | | | 2.00 | 1.96 | | ug/L | | 98 | 45 - 120 | 0 | 35 |
| 2,4,6-Trichlorophenol | | | 2.00 | 1.84 | | ug/L | | 92 | 43 - 120 | 1 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *2-Fluorobiphenyl* | *77* | | *35 - 120* |
| *2-Fluorophenol (Surr)* | *50* | | *21 - 120* |
| *Nitrobenzene-d5 (Surr)* | *82* | | *39 - 120* |
| *Phenol-d5 (Surr)* | *29* | | *10 - 120* |
| *Terphenyl-d14* | *128* | | *63 - 137* |
| *2,4,6-Tribromophenol* | *110* | | *50 - 130* |

## Method: 8015D - Diesel Range Organics (DRO) (GC)

**Lab Sample ID: MB 580-377984/1-A**
**Matrix: Water**
**Analysis Batch: 378039**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 377984**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C9-C25 | 45 | U | 55 | 45 | ug/L | | 01/11/22 09:52 | 01/11/22 20:20 | 1 |
| C24-C40 | 90 | U | 180 | 90 | ug/L | | 01/11/22 09:52 | 01/11/22 20:20 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *73* | | *53 - 120* | *01/11/22 09:52* | *01/11/22 20:20* | *1* |

**Lab Sample ID: LCS 580-377984/2-A**
**Matrix: Water**
**Analysis Batch: 378039**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 377984**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| C9-C25 | | | 4000 | 3240 | | ug/L | | 81 | 55 - 134 |
| C24-C40 | | | 4000 | 3950 | | ug/L | | 99 | 36 - 143 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *o-Terphenyl* | *72* | | *53 - 120* |

**Lab Sample ID: LCSD 580-377984/3-A**
**Matrix: Water**
**Analysis Batch: 378039**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 377984**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C9-C25 | | | 4000 | 3240 | | ug/L | | 81 | 55 - 134 | 0 | 26 |
| C24-C40 | | | 4000 | 3850 | | ug/L | | 96 | 36 - 143 | 3 | 24 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *o-Terphenyl* | *78* | | *53 - 120* |

# Lab Chronicle

Client: AECOM
Job ID: 580-109117-4
Project/Site: Red Hill Drinking Water

**Client Sample ID: 20220107-C2-YT02**
**Lab Sample ID: 580-109117-8**
**Date Collected: 01/07/22 15:55**
**Matrix: Water**
**Date Received: 01/10/22 09:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B/CA_LUFTMS | | 1 | 378017 | 01/11/22 17:33 | JSM | FGS SEA |
| Total/NA | Analysis | 8260D | | 1 | 378016 | 01/11/22 17:33 | JSM | FGS SEA |
| Total/NA | Prep | 3510C | | | 377974 | 01/10/22 19:30 | JHR | FGS SEA |
| Total/NA | Analysis | 8270E | | 1 | 377989 | 01/11/22 19:36 | T1L | FGS SEA |
| Total/NA | Prep | 3510C | | | 377984 | 01/11/22 09:52 | M1E | FGS SEA |
| Total/NA | Analysis | 8015D | | 1 | 378039 | 01/11/22 21:20 | JAE | FGS SEA |

**Laboratory References:**

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: AECOM
Job ID: 580-109117-4
Project/Site: Red Hill Drinking Water

## Laboratory: Eurofins Seattle

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| ANAB | Dept. of Defense ELAP | L2236 | 01-19-22 |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| 8260D | | Water | 1,2-Dichloroethene, Total |

# Sample Summary

Client: AECOM
Job ID: 580-109117-4
Project/Site: Red Hill Drinking Water

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 580-109117-8 | 20220107-C2-YT02 | Water | 01/07/22 15:55 | 01/10/22 09:15 |

**Eurofins FGS, Seattle**
5755 8th Street East
Tacoma, WA 98424

# Chain of Custody Record

eurofins Environment Testing America

| Client Information | Sampler: AECOM | Lab PM: Elaine Walker | Carrier Tracking No(s): FedEx | COC No: 01082022 DW-01 |
|---|---|---|---|---|
| Client Contact: Alethea Ramos (alternate: Margie Pascua) | Phone: | E-Mail: M.Elaine.Walker@EurofinsET.com | State of Origin: Hawaii | Page: Page 1 of 1 |
| Company: AECOM | PWSID: | | | Job #: |
| Address: 1001 Bishop St. Suite 1600 | Due Date Requested: see subcontract | | | |
| City: Honolulu | TAT Requested (days): 48 hrs | | | |
| State, Zip: Hawaii 96813 | Compliance Project: Δ Yes Δ No | | | |
| Phone: 808-521-3051 (direct: 808-529-7283) (alternate: 808-356-5373) | PO #: | | | |
| Email: alethea.ramos@aecom.com (alternate: margie.pascua@aecom.com) | WO #: | | | |
| Project Name: CV22F0106 | Project #: 60674414 | | | |
| Site: RHSF | 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 | 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) | EPA 8260 TPH-g (HCl) | EPA 8270 SVOCs (none) | EPA 8015 TPH-d/o | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | A | I | I | | |
| 220107-C2-YT02 | 1/7/22 | 1555 | G | W | N | N | X | X | X | 7 | |

CR 1/8/22

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

**Sample Disposal ( A fee may be assessed if**
☐ Return To Client ☐ Disposal By

Therm. ID: A2 Cor: 1.7 ° Unc: 2.4 °
Cooler Dsc: 1 DW 01/08
Packing: Bag
Cust. Seal: Yes ✓ No ____

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

Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD

Special Instructions/QC Requirements: DOD Q

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

Blue Ice, Wet, Dry, None

FedEx: ____
UPS: ____
Lab Courier: ____
Other: Client

| | Date/Time | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|
| Relinquished by: Anthony Bird | 1/7/22 | AECOM | Conner Rothe | 01/08/2022 | Aecom |
| Relinquished by: Conner Rothe | 01/08/2022 1100 | AECOM | David Behrens | 01/10/2022 0840 | AECOM |
| Relinquished by: | 01/10/2022 0915 | AECOM | Received by: | 1/10/22 0915 | ES |

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

# Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-109117-4

**Login Number: 109117**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Presley, Kim A**

| 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. | False | Refer to Job Narrative for details. |
| 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 | |

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-109117-10
Client Project/Site: Red Hill Drinking Water

For:
AECOM
1001 Bishop Street
Honolulu, Hawaii 96813

Attn: Margie F Pascua

Kristine D. Allen

*Authorized for release by:*
*1/12/2022 5:06:31 PM*
Kristine Allen, Client Service Manager
(253)248-4970
Kristine.Allen@Eurofinset.com

Designee for

Elaine Walker, Project Manager II
(253)248-4972
m.elaine.walker@eurofinset.com

# Table of Contents

## Job ID: 580-109117-10

### Laboratory: Eurofins Seattle

**Narrative**

**Job Narrative**
**580-109117-10**

**Comments**
No additional comments.

**Receipt**
The samples were received on 1/10/2022 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.9º C.

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

**GC Semi VOA**
Method 8015D: 20220108-C2-TY03 (580-109117-3) and (MB 580-378054/1-A) are associated with a method blank which recovers outside control limits, low-biased, for o-Terphenyl surrogate (47%, >53% required). Associated client samples recover within control limits for this surrogate, indicating a successful extraction, and are non-detect for C9-C25 and C24-C40 hydrocarbons, demonstrating that the extraction was free of laboratory contamination; therefore, the data has been reported.

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

**Organic Prep**
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-378054. Laboratory control sample/laboratory control sample duplicate were created and substituted for the MS/MSD/DUP.

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

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

# Definitions/Glossary

Client: AECOM
Job ID: 580-109117-10
Project/Site: Red Hill Drinking Water

## Qualifiers

### GC/MS VOA

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

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| S1- | Surrogate recovery exceeds control limits, low biased. |
| U | Indicates the analyte was analyzed for but not detected. |

## 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 |
| CFU | Colony Forming Unit |
| 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) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| 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) |
| TNTC | Too Numerous To Count |

Client: AECOM
Job ID: 580-109117-10
Project/Site: Red Hill Drinking Water

**Client Sample ID: 20220108-C2-TY03**
**Lab Sample ID: 580-109117-3**
**Date Collected: 01/08/22 15:40**
**Matrix: Water**
**Date Received: 01/10/22 09:15**

### Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (C6-C12) | 31 | U | 100 | 31 | ug/L | | | 01/11/22 14:45 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *78 - 120* | | *01/11/22 14:45* | *1* |

### Method: 8015D - Diesel Range Organics (DRO) (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C9-C25 | 0.046 | U | 0.056 | 0.046 | mg/L | | 01/11/22 17:34 | 01/12/22 06:23 | 1 |
| C24-C40 | 0.092 | U | 0.18 | 0.092 | mg/L | | 01/11/22 17:34 | 01/12/22 06:23 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *58* | | *53 - 120* | *01/11/22 17:34* | *01/12/22 06:23* | *1* |

## Method: 8260B/CA_LUFTMS - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 580-378017/5**
**Matrix: Water**
**Analysis Batch: 378017**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (C6-C12) | 31 | U | 100 | 31 | ug/L | | | 01/11/22 08:00 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *78 - 120* | | *01/11/22 08:00* | *1* |

**Lab Sample ID: LCS 580-378017/8**
**Matrix: Water**
**Analysis Batch: 378017**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (C6-C12) | 1000 | 1020 | | ug/L | | 102 | 75 - 127 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *78 - 120* |

**Lab Sample ID: LCSD 580-378017/9**
**Matrix: Water**
**Analysis Batch: 378017**

**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 |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (C6-C12) | 1000 | 1030 | | ug/L | | 103 | 75 - 127 | 0 | 13 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *78 - 120* |

## Method: 8015D - Diesel Range Organics (DRO) (GC)

**Lab Sample ID: MB 580-378054/1-A**
**Matrix: Water**
**Analysis Batch: 378039**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 378054**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C9-C25 | 0.045 | U | 0.055 | 0.045 | mg/L | | 01/11/22 17:34 | 01/12/22 03:42 | 1 |
| C24-C40 | 0.090 | U | 0.18 | 0.090 | mg/L | | 01/11/22 17:34 | 01/12/22 03:42 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *47* | *S1-* | *53 - 120* | *01/11/22 17:34* | *01/12/22 03:42* | *1* |

**Lab Sample ID: LCS 580-378054/2-A**
**Matrix: Water**
**Analysis Batch: 378039**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 378054**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| C9-C25 | 1.00 | 0.707 | | mg/L | | 71 | 55 - 134 |
| C24-C40 | 1.00 | 0.913 | | mg/L | | 91 | 36 - 143 |

## Method: 8015D - Diesel Range Organics (DRO) (GC) (Continued)

**Lab Sample ID: LCS 580-378054/2-A**
**Matrix: Water**
**Analysis Batch: 378039**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 378054**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| o-Terphenyl | 73 | | 53 - 120 |

**Lab Sample ID: LCSD 580-378054/3-A**
**Matrix: Water**
**Analysis Batch: 378039**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 378054**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C9-C25 | | | 1.00 | 0.615 | | mg/L | | 62 | 55 - 134 | 14 | 26 |
| C24-C40 | | | 1.00 | 0.839 | | mg/L | | 84 | 36 - 143 | 8 | 24 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| o-Terphenyl | 72 | | 53 - 120 |

# Lab Chronicle

Client: AECOM
Job ID: 580-109117-10
Project/Site: Red Hill Drinking Water

**Client Sample ID: 20220108-C2-TY03**
**Lab Sample ID: 580-109117-3**
**Date Collected: 01/08/22 15:40**
**Matrix: Water**
**Date Received: 01/10/22 09:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B/CA_LUFTMS | | 1 | 378017 | 01/11/22 14:45 | JSM | FGS SEA |
| Total/NA | Prep | 3510C | | | 378054 | 01/11/22 17:34 | JHR | FGS SEA |
| Total/NA | Analysis | 8015D | | 1 | 378039 | 01/12/22 06:23 | JAE | FGS SEA |

**Laboratory References:**

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: AECOM
Job ID: 580-109117-10
Project/Site: Red Hill Drinking Water

## Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| ANAB | Dept. of Defense ELAP | L2236 | 01-19-22 |

# Sample Summary

Client: AECOM
Job ID: 580-109117-10
Project/Site: Red Hill Drinking Water

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 580-109117-3 | 20220108-C2-TY03 | Water | 01/08/22 15:40 | 01/10/22 09:15 |

**Eurofins FGS, Seattle**
5755 8th Street East
Tacoma, WA 98424

# Chain of Custody Record Hydrant Compliance

eurofins | Environment Testing America

| Client Information | Sampler: AECOM | Lab PM: Elaine Walker | Carrier Tracking No(s): FedEx | COC No: 01092022DW-02 |
|---|---|---|---|---|
| Client Contact: Alethea Ramos (alternate: Margie Pascua) | Phone: 808-521-3051 | E-Mail: M.Elaine.Walker@EurofinsET.com | State of Origin: Hawaii | Page: Page 1 of 1 |
| Company: AECOM | PWSID: | | | Job #: |
| Address: 1001 Bishop St. Suite 1600 | Due Date Requested: see subcontract | | | |
| City: Honolulu | TAT Requested (days): Rush 2 day | | | |
| State, Zip: Hawaii 96813 | Compliance Project: Δ Yes Δ No | | | |
| Phone: 808-521-3051 (direct: 808-529-7283) (alternate: 808-356-5373) | PO #: | | | |
| Email: alethea.ramos@aecom.com (alternate: margie.pascua@aecom.com) | WO #: | | | |
| Project Name: CV22F0106 | Project #: 60674414 | | | |
| Site: RHSF | 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 | 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) | EPA 8260 TPH-g (HCl) | EPA 8015 TPH-d/e | SVOC BY 8270 | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Preservation Code: | | | | | | | A | I | | | |
| 20220108-G2-TY01 | 1/8/22 | 1335 | G | W | N | N | X | X | X | 7 | CR 1/9/22 |
| 20220108-C2-TY03 | 1/8/22 | 1540 | G | W | N | N | X | X | X | 7 | CR 1/9/22 |

CR 1/9/22

Therm. ID: A2 Cor: 2.9 ° Unc: 3.6 °
Cooler Dsc: DW-01/DW02 1/08/22
Packing: Bubs
Cust. Seal: Yes X No
Blue Ice, Wet, Dry, None

FedEx:
UPS:
Lab Cour:
Other: Client

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

**Sample Disposal ( A fee may be assessed**
☐ Return To Client ☑ Disposal B

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

Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD.

Special Instructions/QC Requirements: DOD

Empty Kit Relinquished by: | Date: | Time: | Method:

| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|---|
| 1 | Sam Hoggatt | 1/8/22 1836 | AECOM | | 1/8/22 1836 | AECOM |
| 2 | Connor Rythe on behalf of Rachel Tuley | 01/09/22 900 | AECOM | David Behrens | 01/10/2022 0840 | AECOM |
| 3 | | 01/10/2022 0915 | AECOM | | 1/10/22 0915 | EFGS |

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:



Ver: 01/16/2019

# Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-109117-10

**Login Number: 109117**

**List Source: Eurofins Seattle**

**List Number: 1**

**Creator: Presley, Kim A**

| 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. | False | Refer to Job Narrative for details. |
| 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 | |

WECK LABORATORIES, INC.

# Certificate of Analysis

FINAL REPORT

| | | | |
|---|---|---|---|
| **Work Orders:** | 2A10042 | **Report Date:** | 1/13/2022 |
| | | **Received Date:** | 1/10/2022 |
| **Project:** | 60674414, COC # 01092022 DW-06 | **Turnaround Time:** | 3 workdays |
| | | **Phones:** | (808) 529-7277 |
| | | **Fax:** | (808) 524-0246 |
| **Attn:** | Margie Pascua | **P.O. #:** | reference number 60571032.02.46.01 |
| **Client:** | AECOM - Honolulu<br>1001 Bishop Street Suite 1600<br>Honolulu, HI 96813 | **Billing Code:** | |

**ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH #4047 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006**

*This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.*

Dear Margie Pascua,

Enclosed are the results of analyses for samples received 1/10/22 with the Chain-of-Custody document. The samples were received in good condition, at 2.6 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

**Reviewed by:**

Brandon Gee For Kim G. Tu
Project Manager



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:**
01/13/2022 18:08

## Sample Summary

| Sample Name | Sampled By | Lab ID | Matrix | Sampled | Qualifiers |
|---|---|---|---|---|---|
| 20220108-C2-TY03 | AECOM | 2A10042-01 | Water | 01/08/22 15:40 | |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:** 01/13/2022 18:08

## Sample Results

Sample: 20220108-C2-TY03
2A10042-01 (Water)

Sampled: 01/08/22 15:40 by AECOM

| Analyte | Result | MDL | MRL | Units | Dil | Analyzed | Qualifier |
|---|---|---|---|---|---|---|---|
| **Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods** | | | | | | | |
| **Method:** SM 5310B | | | **Instr:** TOC02 | | | | |
| **Batch ID:** W2A0451 **Preparation:** _NONE (TOC/TOX) | | | **Prepared:** 01/11/22 09:24 | | | | **Analyst:** ajc |
| **Total Organic Carbon (TOC)** | **0.246** | 0.190 | 0.300 | mg/l | 1 | 01/12/22 | J |
| **Metals by EPA 200 Series Methods** | | | | | | | |
| **Method:** EPA 200.8 | | | **Instr:** ICPMS04 | | | | |
| **Batch ID:** W2A0580 **Preparation:** EPA 200.2 | | | **Prepared:** 01/10/22 14:25 | | | | **Analyst:** chc |
| Antimony, Total | ND | 0.0889 | 0.500 | ug/l | 1 | 01/11/22 | U |
| **Arsenic, Total** | **0.0868** | 0.0741 | 0.400 | ug/l | 1 | 01/11/22 | J |
| **Barium, Total** | **1.80** | 0.142 | 1.00 | ug/l | 1 | 01/11/22 | |
| Beryllium, Total | ND | 0.0624 | 0.100 | ug/l | 1 | 01/11/22 | U |
| Cadmium, Total | ND | 0.0416 | 0.200 | ug/l | 1 | 01/11/22 | U |
| **Chromium, Total** | **1.18** | 0.0887 | 0.200 | ug/l | 1 | 01/11/22 | |
| **Copper, Total** | **17.8** | 0.225 | 0.500 | ug/l | 1 | 01/11/22 | |
| **Lead, Total** | **2.53** | 0.0827 | 0.200 | ug/l | 1 | 01/11/22 | |
| **Selenium, Total** | **0.222** | 0.0666 | 0.400 | ug/l | 1 | 01/11/22 | J |
| Thallium, Total | ND | 0.0210 | 0.200 | ug/l | 1 | 01/11/22 | U |
| **Method:** EPA 245.1 | | | **Instr:** HG03 | | | | |
| **Batch ID:** W2A0582 **Preparation:** Method (Hot Block) | | | **Prepared:** 01/10/22 12:15 | | | | **Analyst:** kvm |
| Mercury, Total | ND | 0.0170 | 0.0500 | ug/l | 1 | 01/10/22 | U |
| **Semivolatile Organic Compounds by GC/MS** | | | | | | | |
| **Method:** EPA 525.2 | | | **Instr:** GCMS16 | | | | |
| **Batch ID:** W2A0581 **Preparation:** Method (SPE) | | | **Prepared:** 01/10/22 12:15 | | | | **Analyst:** rmr |
| **1-Methylnaphthalene** | **0.0113** | 0.00801 | 0.0500 | ug/l | 1 | 01/11/22 | J |
| **2-Methylnaphthalene** | **0.0130** | 0.00904 | 0.0500 | ug/l | 1 | 01/11/22 | J |
| Alachlor | ND | 0.0110 | 0.100 | ug/l | 1 | 01/11/22 | U |
| Atrazine | ND | 0.00734 | 0.100 | ug/l | 1 | 01/11/22 | U |
| Benzo (a) pyrene | ND | 0.0117 | 0.100 | ug/l | 1 | 01/11/22 | Q-02, U |
| Bis(2-ethylhexyl)adipate | ND | 0.00962 | 5.00 | ug/l | 1 | 01/11/22 | U |
| Bis(2-ethylhexyl)phthalate | ND | 0.437 | 3.00 | ug/l | 1 | 01/11/22 | U |
| Endrin | ND | 0.00991 | 0.200 | ug/l | 1 | 01/11/22 | U |
| gamma-BHC (Lindane) | ND | 0.00633 | 0.100 | ug/l | 1 | 01/11/22 | U |
| Heptachlor | ND | 0.00965 | 0.100 | ug/l | 1 | 01/11/22 | BS-04, U |
| Heptachlor epoxide | ND | 0.0122 | 0.100 | ug/l | 1 | 01/11/22 | U |
| Hexachlorobenzene | ND | 0.0980 | 0.100 | ug/l | 1 | 01/11/22 | U |
| Hexachlorocyclopentadiene | ND | 0.00594 | 1.00 | ug/l | 1 | 01/11/22 | U |
| Methoxychlor | ND | 0.00863 | 0.200 | ug/l | 1 | 01/11/22 | U |
| Naphthalene | ND | 0.0103 | 0.0500 | ug/l | 1 | 01/11/22 | U |
| Pentachlorophenol | ND | 0.0242 | 1.00 | ug/l | 1 | 01/11/22 | U |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:** 01/13/2022 18:08

## Sample Results

(Continued)

Sample: 20220108-C2-TY03
2A10042-01 (Water)

Sampled: 01/08/22 15:40 by AECOM

(Continued)

| Analyte | Result | MDL | MRL | Units | Dil | Analyzed | Qualifier |
|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Compounds by GC/MS (Continued)** | | | | | | | |
| **Method:** EPA 525.2 | | | **Instr:** GCMS16 | | | | |
| **Batch ID:** W2A0581 **Preparation:** Method (SPE) | | | **Prepared:** 01/10/22 12:15 | | | | **Analyst:** rmr |
| Simazine | ND | 0.00734 | 0.100 | ug/l | 1 | 01/11/22 | U |
| *Surrogate(s)* | | | | | | | |
| *1,3-Dimethyl-2-nitrobenzene* | *102%* | *Conc: 5.20* | *70-130* | | | *01/11/22* | |
| *Perylene-d12* | *92%* | *Conc: 4.69* | *70-130* | | | *01/11/22* | |
| *Triphenyl phosphate* | *106%* | *Conc: 5.37* | *70-130* | | | *01/11/22* | |
| **Volatile Organic Compounds by P&T and GC/MS** | | | | | | | |
| **Method:** EPA 524.2 | | | **Instr:** GCMS14 | | | | |
| **Batch ID:** W2A0576 **Preparation:** Method (P+T) | | | **Prepared:** 01/10/22 17:00 | | | | **Analyst:** cam |
| 1,1,1-Trichloroethane | ND | 0.256 | 0.500 | ug/l | 1 | 01/11/22 | U |
| 1,1,2-Trichloroethane | ND | 0.190 | 0.500 | ug/l | 1 | 01/11/22 | U |
| 1,1-Dichloroethene | ND | 0.160 | 0.500 | ug/l | 1 | 01/11/22 | U |
| 1,2,4-Trichlorobenzene | ND | 0.170 | 0.500 | ug/l | 1 | 01/11/22 | U |
| 1,2-Dichloroethane | ND | 0.243 | 0.500 | ug/l | 1 | 01/11/22 | U |
| 1,2-Dichloropropane | ND | 0.130 | 0.500 | ug/l | 1 | 01/11/22 | U |
| Benzene | ND | 0.150 | 0.500 | ug/l | 1 | 01/11/22 | U |
| Carbon tetrachloride | ND | 0.270 | 0.500 | ug/l | 1 | 01/11/22 | U |
| Chlorobenzene | ND | 0.150 | 0.500 | ug/l | 1 | 01/11/22 | U |
| cis-1,2-Dichloroethene | ND | 0.250 | 0.500 | ug/l | 1 | 01/11/22 | U |
| Ethylbenzene | ND | 0.210 | 0.500 | ug/l | 1 | 01/11/22 | U |
| m,p-Xylene | ND | 0.330 | 0.500 | ug/l | 1 | 01/11/22 | U |
| Methylene chloride | ND | 0.303 | 0.500 | ug/l | 1 | 01/11/22 | U |
| o-Dichlorobenzene | ND | 0.190 | 0.500 | ug/l | 1 | 01/11/22 | U |
| o-Xylene | ND | 0.200 | 0.500 | ug/l | 1 | 01/11/22 | U |
| p-Dichlorobenzene | ND | 0.180 | 0.500 | ug/l | 1 | 01/11/22 | U |
| Styrene | ND | 0.190 | 0.500 | ug/l | 1 | 01/11/22 | U |
| Tetrachloroethene | ND | 0.180 | 0.500 | ug/l | 1 | 01/11/22 | U |
| THMs, Total | ND | | 0.500 | ug/l | 1 | 01/11/22 | U |
| Toluene | ND | 0.294 | 0.500 | ug/l | 1 | 01/11/22 | U |
| trans-1,2-Dichloroethene | ND | 0.259 | 0.500 | ug/l | 1 | 01/11/22 | U |
| Trichloroethene | ND | 0.180 | 0.500 | ug/l | 1 | 01/11/22 | U |
| Vinyl chloride | ND | 0.180 | 0.500 | ug/l | 1 | 01/11/22 | U |
| *Surrogate(s)* | | | | | | | |
| *1,2-Dichlorobenzene-d4* | *81%* | *Conc: 8.12* | *70-130* | | | *01/11/22* | |
| *4-Bromofluorobenzene* | *81%* | *Conc: 8.14* | *70-130* | | | *01/11/22* | |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:**
01/13/2022 18:08

## Sample Results

(Continued)

Sample: 20220108-C2-TY03
2A10042-01RE1 (Water)

Sampled: 01/08/22 15:40 by AECOM

| Analyte | Result | MDL | MRL | Units | Dil | Analyzed | Qualifier |
|---|---|---|---|---|---|---|---|
| **Chlorinated Pesticides and/or PCBs by GC/ECD** | | | | | | | |
| **Method:** EPA 508.1 | | | **Instr:** GC08 | | | | |
| **Batch ID:** W2A0806 **Preparation:** Method (SPE) | | | **Prepared:** 01/12/22 14:11 | | | | **Analyst:** rjg |
| Aroclor 1016 | ND | 0.100 | 0.100 | ug/l | 1 | 01/13/22 | R-01, U |
| Aroclor 1221 | ND | 0.100 | 0.100 | ug/l | 1 | 01/13/22 | R-01, U |
| Aroclor 1232 | ND | 0.100 | 0.100 | ug/l | 1 | 01/13/22 | R-01, U |
| Aroclor 1242 | ND | 0.100 | 0.100 | ug/l | 1 | 01/13/22 | R-01, U |
| Aroclor 1248 | ND | 0.100 | 0.100 | ug/l | 1 | 01/13/22 | R-01, U |
| Aroclor 1254 | ND | 0.100 | 0.100 | ug/l | 1 | 01/13/22 | R-01, U |
| Aroclor 1260 | ND | 0.100 | 0.100 | ug/l | 1 | 01/13/22 | R-01, U |
| Chlordane (tech) | ND | 0.0669 | 0.100 | ug/l | 1 | 01/13/22 | U |
| PCBs, Total | ND | | 0.500 | ug/l | 1 | 01/13/22 | U |
| *Surrogate(s)* | | | | | | | |
| *4,4-Dibromobiphenyl* | *103%* | *Conc: 0.104* | *70-130* | | | *01/13/22* | |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:** 01/13/2022 18:08

## Quality Control Results

### Chlorinated Pesticides and/or PCBs by GC/ECD

| Analyte | Result | MDL | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: W2A0806 - EPA 508.1** | | | | | | | | | | | |
| **Blank (W2A0806-BLK1)** | | | | | **Prepared: 01/12/22 Analyzed: 01/13/22** | | | | | | |
| Aroclor 1016 | ND | 0.0157 | 0.100 | ug/l | | | | | | | U |
| Aroclor 1221 | ND | 0.0436 | 0.100 | ug/l | | | | | | | U |
| Aroclor 1232 | ND | 0.0102 | 0.100 | ug/l | | | | | | | U |
| Aroclor 1242 | ND | 0.0737 | 0.100 | ug/l | | | | | | | U |
| Aroclor 1248 | ND | 0.0941 | 0.100 | ug/l | | | | | | | U |
| Aroclor 1254 | ND | 0.0869 | 0.100 | ug/l | | | | | | | U |
| Aroclor 1260 | ND | 0.0379 | 0.100 | ug/l | | | | | | | U |
| Chlordane (tech) | ND | 0.0669 | 0.100 | ug/l | | | | | | | U |
| PCBs, Total | ND | | 0.500 | ug/l | | | | | | | U |
| *Surrogate(s)* | | | | | | | | | | | |
| *4,4-Dibromobiphenyl* | *0.0942* | | | *ug/l* | *0.100* | | *94* | *70-130* | | | |
| **LCS (W2A0806-BS1)** | | | | | **Prepared: 01/12/22 Analyzed: 01/13/22** | | | | | | |
| Aroclor 1016 | 0.425 | 0.0157 | 0.100 | ug/l | 0.500 | | 85 | 70-130 | | | |
| Aroclor 1260 | 0.443 | 0.0379 | 0.100 | ug/l | 0.500 | | 89 | 70-130 | | | |
| *Surrogate(s)* | | | | | | | | | | | |
| *4,4-Dibromobiphenyl* | *0.0934* | | | *ug/l* | *0.100* | | *93* | *70-130* | | | |
| **LCS Dup (W2A0806-BSD1)** | | | | | **Prepared: 01/12/22 Analyzed: 01/13/22** | | | | | | |
| Aroclor 1016 | 0.413 | 0.0157 | 0.100 | ug/l | 0.500 | | 83 | 70-130 | 3 | 30 | |
| Aroclor 1260 | 0.435 | 0.0379 | 0.100 | ug/l | 0.500 | | 87 | 70-130 | 2 | 30 | |
| *Surrogate(s)* | | | | | | | | | | | |
| *4,4-Dibromobiphenyl* | *0.0886* | | | *ug/l* | *0.100* | | *89* | *70-130* | | | |

## Quality Control Results

### Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods

| Analyte | Result | MDL | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: W2A0451 - SM 5310B** | | | | | | | | | | | |
| **Blank (W2A0451-BLK1)** | | | | | **Prepared: 01/07/22 Analyzed: 01/12/22** | | | | | | |
| Total Organic Carbon (TOC) | ND | 0.190 | 0.300 | mg/l | | | | | | | U |
| **LCS (W2A0451-BS1)** | | | | | **Prepared: 01/07/22 Analyzed: 01/12/22** | | | | | | |
| Total Organic Carbon (TOC) | 1.08 | 0.190 | 0.300 | mg/l | 1.00 | | 108 | 85-115 | | | |
| **Matrix Spike (W2A0451-MS1)** | **Source: 2A03057-01** | | | | **Prepared: 01/07/22 Analyzed: 01/12/22** | | | | | | |
| Total Organic Carbon (TOC) | 5.83 | 0.190 | 0.300 | mg/l | 5.00 | 1.62 | 84 | 76-115 | | | |
| **Matrix Spike Dup (W2A0451-MSD1)** | **Source: 2A03057-01** | | | | **Prepared: 01/07/22 Analyzed: 01/12/22** | | | | | | |
| Total Organic Carbon (TOC) | 5.83 | 0.190 | 0.300 | mg/l | 5.00 | 1.62 | 84 | 76-115 | 0.02 | 20 | |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:** 01/13/2022 18:08

## Quality Control Results

(Continued)

Metals by EPA 200 Series Methods

| Analyte | Result | MDL | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: W2A0580 - EPA 200.8** | | | | | | | | | | | |
| **Blank (W2A0580-BLK1)** | | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| Antimony, Total | ND | 0.0889 | 0.500 | ug/l | | | | | | | U |
| Arsenic, Total | ND | 0.0741 | 0.400 | ug/l | | | | | | | U |
| Barium, Total | ND | 0.142 | 1.00 | ug/l | | | | | | | U |
| Beryllium, Total | ND | 0.0624 | 0.100 | ug/l | | | | | | | U |
| Cadmium, Total | ND | 0.0416 | 0.200 | ug/l | | | | | | | U |
| Chromium, Total | ND | 0.0887 | 0.200 | ug/l | | | | | | | U |
| Copper, Total | ND | 0.225 | 0.500 | ug/l | | | | | | | U |
| Lead, Total | ND | 0.0827 | 0.200 | ug/l | | | | | | | U |
| Selenium, Total | ND | 0.0666 | 0.400 | ug/l | | | | | | | U |
| Thallium, Total | ND | 0.0210 | 0.200 | ug/l | | | | | | | U |
| **LCS (W2A0580-BS1)** | | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| Antimony, Total | 47.2 | 0.0889 | 0.500 | ug/l | 50.0 | | 94 | 85-115 | | | |
| Arsenic, Total | 45.6 | 0.0741 | 0.400 | ug/l | 50.0 | | 91 | 85-115 | | | |
| Barium, Total | 47.1 | 0.142 | 1.00 | ug/l | 50.0 | | 94 | 85-115 | | | |
| Beryllium, Total | 46.0 | 0.0624 | 0.100 | ug/l | 50.0 | | 92 | 85-115 | | | |
| Cadmium, Total | 43.5 | 0.0416 | 0.200 | ug/l | 50.0 | | 87 | 85-115 | | | |
| Chromium, Total | 46.1 | 0.0887 | 0.200 | ug/l | 50.0 | | 92 | 85-115 | | | |
| Copper, Total | 49.3 | 0.225 | 0.500 | ug/l | 50.0 | | 99 | 85-115 | | | |
| Lead, Total | 47.7 | 0.0827 | 0.200 | ug/l | 50.0 | | 95 | 85-115 | | | |
| Selenium, Total | 44.8 | 0.0666 | 0.400 | ug/l | 50.0 | | 90 | 85-115 | | | |
| Thallium, Total | 47.1 | 0.0210 | 0.200 | ug/l | 50.0 | | 94 | 85-115 | | | |
| **Matrix Spike (W2A0580-MS1)** | **Source: 2A10032-01** | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| Antimony, Total | 44.8 | 0.0889 | 0.500 | ug/l | 50.0 | ND | 90 | 70-130 | | | |
| Arsenic, Total | 47.7 | 0.0741 | 0.400 | ug/l | 50.0 | 0.0785 | 95 | 70-130 | | | |
| Barium, Total | 47.4 | 0.142 | 1.00 | ug/l | 50.0 | 2.89 | 89 | 70-130 | | | |
| Beryllium, Total | 44.3 | 0.0624 | 0.100 | ug/l | 50.0 | ND | 89 | 70-130 | | | |
| Cadmium, Total | 45.7 | 0.0416 | 0.200 | ug/l | 50.0 | ND | 91 | 70-130 | | | |
| Chromium, Total | 50.0 | 0.0887 | 0.200 | ug/l | 50.0 | 1.28 | 97 | 70-130 | | | |
| Copper, Total | 54.2 | 0.225 | 0.500 | ug/l | 50.0 | 10.8 | 87 | 70-130 | | | |
| Lead, Total | 45.0 | 0.0827 | 0.200 | ug/l | 50.0 | 0.812 | 88 | 70-130 | | | |
| Selenium, Total | 46.4 | 0.0666 | 0.400 | ug/l | 50.0 | 0.165 | 92 | 70-130 | | | |
| Thallium, Total | 43.3 | 0.0210 | 0.200 | ug/l | 50.0 | ND | 87 | 70-130 | | | |
| **Matrix Spike Dup (W2A0580-MSD1)** | **Source: 2A10032-01** | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| Antimony, Total | 49.2 | 0.0889 | 0.500 | ug/l | 50.0 | ND | 98 | 70-130 | 9 | 30 | |
| Arsenic, Total | 50.3 | 0.0741 | 0.400 | ug/l | 50.0 | 0.0785 | 100 | 70-130 | 5 | 30 | |
| Barium, Total | 52.4 | 0.142 | 1.00 | ug/l | 50.0 | 2.89 | 99 | 70-130 | 10 | 30 | |
| Beryllium, Total | 48.9 | 0.0624 | 0.100 | ug/l | 50.0 | ND | 98 | 70-130 | 10 | 30 | |
| Cadmium, Total | 48.5 | 0.0416 | 0.200 | ug/l | 50.0 | ND | 97 | 70-130 | 6 | 30 | |
| Chromium, Total | 51.7 | 0.0887 | 0.200 | ug/l | 50.0 | 1.28 | 101 | 70-130 | 3 | 30 | |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:** 01/13/2022 18:08

## Quality Control Results (Continued)

Metals by EPA 200 Series Methods (Continued)

| Analyte | Result | MDL | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: W2A0580 - EPA 200.8 (Continued)** | | | | | | | | | | | |
| **Matrix Spike Dup (W2A0580-MSD1)** | **Source: 2A10032-01** | | | | **Prepared: 01/10/22** | **Analyzed: 01/11/22** | | | | | |
| Copper, Total | 59.6 | 0.225 | 0.500 | ug/l | 50.0 | 10.8 | 98 | 70-130 | 10 | 30 | |
| Lead, Total | 49.2 | 0.0827 | 0.200 | ug/l | 50.0 | 0.812 | 97 | 70-130 | 9 | 30 | |
| Selenium, Total | 50.0 | 0.0666 | 0.400 | ug/l | 50.0 | 0.165 | 100 | 70-130 | 8 | 30 | |
| Thallium, Total | 47.7 | 0.0210 | 0.200 | ug/l | 50.0 | ND | 95 | 70-130 | 10 | 30 | |
| **Batch: W2A0582 - EPA 245.1** | | | | | | | | | | | |
| **Blank (W2A0582-BLK1)** | | | | | **Prepared & Analyzed: 01/10/22** | | | | | | |
| Mercury, Total | ND | 0.0170 | 0.0500 | ug/l | | | | | | | U |
| **LCS (W2A0582-BS1)** | | | | | **Prepared & Analyzed: 01/10/22** | | | | | | |
| Mercury, Total | 1.07 | 0.0170 | 0.0500 | ug/l | 1.00 | | 107 | 85-115 | | | |
| **Matrix Spike (W2A0582-MS1)** | **Source: 2A10032-01** | | | | **Prepared & Analyzed: 01/10/22** | | | | | | |
| Mercury, Total | 1.07 | 0.0170 | 0.0500 | ug/l | 1.00 | ND | 107 | 70-130 | | | |
| **Matrix Spike Dup (W2A0582-MSD1)** | **Source: 2A10032-01** | | | | **Prepared & Analyzed: 01/10/22** | | | | | | |
| Mercury, Total | 1.09 | 0.0170 | 0.0500 | ug/l | 1.00 | ND | 109 | 70-130 | 2 | 20 | |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:** 01/13/2022 18:08

## Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS

| Analyte | Result | MDL | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: W2A0581 - EPA 525.2** | | | | | | | | | | | |
| **Blank (W2A0581-BLK1)** | | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| 1-Methylnaphthalene | ND | 0.00801 | 0.0500 | ug/l | | | | | | | U |
| 2-Methylnaphthalene | 0.00987 | 0.00904 | 0.0500 | ug/l | | | | | | | J |
| Alachlor | ND | 0.0110 | 0.100 | ug/l | | | | | | | U |
| Atrazine | ND | 0.00734 | 0.100 | ug/l | | | | | | | U |
| Benzo (a) pyrene | ND | 0.0117 | 0.100 | ug/l | | | | | | | U |
| Bis(2-ethylhexyl)adipate | ND | 0.00962 | 5.00 | ug/l | | | | | | | U |
| Bis(2-ethylhexyl)phthalate | ND | 0.437 | 3.00 | ug/l | | | | | | | U |
| Endrin | ND | 0.00991 | 0.200 | ug/l | | | | | | | U |
| gamma-BHC (Lindane) | ND | 0.00633 | 0.100 | ug/l | | | | | | | U |
| Heptachlor | ND | 0.00965 | 0.100 | ug/l | | | | | | | U |
| Heptachlor epoxide | ND | 0.0122 | 0.100 | ug/l | | | | | | | U |
| Hexachlorobenzene | ND | 0.0980 | 0.100 | ug/l | | | | | | | U |
| Hexachlorocyclopentadiene | ND | 0.00594 | 1.00 | ug/l | | | | | | | U |
| Methoxychlor | ND | 0.00863 | 0.200 | ug/l | | | | | | | U |
| Naphthalene | ND | 0.0103 | 0.0500 | ug/l | | | | | | | U |
| Pentachlorophenol | ND | 0.0242 | 1.00 | ug/l | | | | | | | U |
| Simazine | ND | 0.00734 | 0.100 | ug/l | | | | | | | U |
| *Surrogate(s)* | | | | | | | | | | | |
| *1,3-Dimethyl-2-nitrobenzene* | *4.80* | | | *ug/l* | *5.00* | | *96* | *70-130* | | | |
| *Perylene-d12* | *4.44* | | | *ug/l* | *5.00* | | *89* | *70-130* | | | |
| *Triphenyl phosphate* | *4.34* | | | *ug/l* | *5.00* | | *87* | *70-130* | | | |
| **LCS (W2A0581-BS1)** | | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| 1-Methylnaphthalene | 0.211 | 0.00801 | 0.0500 | ug/l | 0.250 | | 84 | 70-130 | | | |
| 2-Methylnaphthalene | 0.207 | 0.00904 | 0.0500 | ug/l | 0.250 | | 83 | 70-130 | | | |
| Alachlor | 0.389 | 0.0110 | 0.100 | ug/l | 0.500 | | 78 | 70-130 | | | |
| Atrazine | 0.215 | 0.00734 | 0.100 | ug/l | 0.250 | | 86 | 70-130 | | | |
| Benzo (a) pyrene | 0.110 | 0.0117 | 0.100 | ug/l | 0.250 | | 44 | 60-130 | | | Q-02 |
| Bis(2-ethylhexyl)adipate | 0.153 | 0.00962 | 5.00 | ug/l | 0.250 | | 61 | 50-150 | | | J |
| Bis(2-ethylhexyl)phthalate | 0.172 | 0.00 | 3.00 | ug/l | 0.250 | | 69 | 50-150 | | | J |
| Endrin | 0.223 | 0.00991 | 0.200 | ug/l | 0.250 | | 89 | 70-130 | | | |
| gamma-BHC (Lindane) | 0.276 | 0.00633 | 0.100 | ug/l | 0.250 | | 110 | 70-130 | | | |
| Heptachlor | 0.167 | 0.00965 | 0.100 | ug/l | 0.250 | | 67 | 70-130 | | | BS-04 |
| Heptachlor epoxide | 0.219 | 0.0122 | 0.100 | ug/l | 0.250 | | 87 | 70-130 | | | |
| Hexachlorobenzene | 0.0392 | 0.00 | 0.100 | ug/l | 0.0500 | | 78 | 70-130 | | | J |
| Hexachlorocyclopentadiene | 0.154 | 0.00594 | 1.00 | ug/l | 0.250 | | 62 | 33-106 | | | J |
| Methoxychlor | 0.197 | 0.00863 | 0.200 | ug/l | 0.250 | | 79 | 70-130 | | | J |
| Naphthalene | 0.218 | 0.0103 | 0.0500 | ug/l | 0.250 | | 87 | 70-130 | | | |
| Pentachlorophenol | 0.258 | 0.0242 | 1.00 | ug/l | 0.250 | | 103 | 50-120 | | | J |
| Simazine | 0.221 | 0.00734 | 0.100 | ug/l | 0.250 | | 88 | 60-130 | | | |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:** 01/13/2022 18:08

## Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | MDL | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: W2A0581 - EPA 525.2 (Continued)** | | | | | | | | | | | |
| **LCS (W2A0581-BS1)** | | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| *Surrogate(s)* | | | | | | | | | | | |
| *1,3-Dimethyl-2-nitrobenzene* | *4.82* | | | *ug/l* | *5.00* | | *96* | *70-130* | | | |
| *Perylene-d12* | *4.66* | | | *ug/l* | *5.00* | | *93* | *70-130* | | | |
| *Triphenyl phosphate* | *4.71* | | | *ug/l* | *5.00* | | *94* | *70-130* | | | |
| **LCS (W2A0581-BS2)** | | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| 1-Methylnaphthalene | 0.0482 | 0.00801 | 0.0500 | ug/l | 0.0500 | | 96 | 50-150 | | | J |
| 2-Methylnaphthalene | 0.0490 | 0.00904 | 0.0500 | ug/l | 0.0500 | | 98 | 50-150 | | | J |
| Alachlor | 0.0858 | 0.0110 | 0.100 | ug/l | 0.100 | | 86 | 50-150 | | | J |
| Atrazine | 0.0619 | 0.00734 | 0.100 | ug/l | 0.0500 | | 124 | 50-150 | | | J |
| Benzo (a) pyrene | 0.0704 | 0.0117 | 0.100 | ug/l | 0.0500 | | 141 | 50-150 | | | J |
| Bis(2-ethylhexyl)adipate | 0.0808 | 0.00962 | 5.00 | ug/l | 0.0500 | | 162 | 50-150 | | | J |
| Bis(2-ethylhexyl)phthalate | 0.0983 | 0.00 | 3.00 | ug/l | 0.0500 | | 197 | 50-150 | | | J |
| Endrin | 0.0682 | 0.00991 | 0.200 | ug/l | 0.0500 | | 136 | 50-150 | | | J |
| gamma-BHC (Lindane) | 0.0473 | 0.00633 | 0.100 | ug/l | 0.0500 | | 95 | 50-150 | | | J |
| Heptachlor | 0.0523 | 0.00965 | 0.100 | ug/l | 0.0500 | | 105 | 50-150 | | | J |
| Heptachlor epoxide | 0.0431 | 0.0122 | 0.100 | ug/l | 0.0500 | | 86 | 50-150 | | | J |
| Hexachlorobenzene | 0.00931 | 0.00 | 0.100 | ug/l | 0.0100 | | 93 | 50-150 | | | J |
| Hexachlorocyclopentadiene | 0.129 | 0.00594 | 1.00 | ug/l | 0.0500 | | 259 | 50-150 | | | J |
| Methoxychlor | 0.0670 | 0.00863 | 0.200 | ug/l | 0.0500 | | 134 | 50-150 | | | J |
| Naphthalene | 0.0501 | 0.0103 | 0.0500 | ug/l | 0.0500 | | 100 | 50-150 | | | |
| Pentachlorophenol | 0.116 | 0.0242 | 1.00 | ug/l | 0.0500 | | 233 | 50-150 | | | J |
| Simazine | 0.0705 | 0.00734 | 0.100 | ug/l | 0.0500 | | 141 | 60-150 | | | J |
| *Surrogate(s)* | | | | | | | | | | | |
| *1,3-Dimethyl-2-nitrobenzene* | *4.93* | | | *ug/l* | *5.00* | | *99* | *70-130* | | | |
| *Perylene-d12* | *4.70* | | | *ug/l* | *5.00* | | *94* | *70-130* | | | |
| *Triphenyl phosphate* | *5.11* | | | *ug/l* | *5.00* | | *102* | *70-130* | | | |
| **LCS (W2A0581-BS3)** | | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| 1-Methylnaphthalene | 0.0483 | 0.00801 | 0.0500 | ug/l | 0.0500 | | 97 | 50-150 | | | J |
| 2-Methylnaphthalene | 0.0479 | 0.00904 | 0.0500 | ug/l | 0.0500 | | 96 | 50-150 | | | J |
| Alachlor | 0.0866 | 0.0110 | 0.100 | ug/l | 0.100 | | 87 | 50-150 | | | J |
| Atrazine | 0.0611 | 0.00734 | 0.100 | ug/l | 0.0500 | | 122 | 50-150 | | | J |
| Benzo (a) pyrene | 0.0705 | 0.0117 | 0.100 | ug/l | 0.0500 | | 141 | 50-150 | | | J |
| Bis(2-ethylhexyl)adipate | 0.0781 | 0.00962 | 5.00 | ug/l | 0.0500 | | 156 | 50-150 | | | J |
| Bis(2-ethylhexyl)phthalate | 0.0987 | 0.00 | 3.00 | ug/l | 0.0500 | | 197 | 50-150 | | | J |
| Endrin | 0.0880 | 0.00991 | 0.200 | ug/l | 0.0500 | | 176 | 50-150 | | | Q-08, J |
| gamma-BHC (Lindane) | 0.0499 | 0.00633 | 0.100 | ug/l | 0.0500 | | 100 | 50-150 | | | J |
| Heptachlor | 0.0536 | 0.00965 | 0.100 | ug/l | 0.0500 | | 107 | 50-150 | | | J |
| Heptachlor epoxide | 0.0492 | 0.0122 | 0.100 | ug/l | 0.0500 | | 98 | 50-150 | | | J |
| Hexachlorobenzene | 0.00763 | 0.00 | 0.100 | ug/l | 0.0100 | | 76 | 50-150 | | | J |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:** 01/13/2022 18:08

## Quality Control Results

(Continued)

Semivolatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | MDL | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: W2A0581 - EPA 525.2 (Continued)** | | | | | | | | | | | |
| **LCS (W2A0581-BS3)** | | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| Hexachlorocyclopentadiene | 0.120 | 0.00594 | 1.00 | ug/l | 0.0500 | | 239 | 50-150 | | | J |
| Methoxychlor | 0.0663 | 0.00863 | 0.200 | ug/l | 0.0500 | | 133 | 50-150 | | | J |
| Naphthalene | 0.0458 | 0.0103 | 0.0500 | ug/l | 0.0500 | | 92 | 50-150 | | | J |
| Pentachlorophenol | 0.117 | 0.0242 | 1.00 | ug/l | 0.0500 | | 233 | 50-150 | | | J |
| Simazine | 0.0736 | 0.00734 | 0.100 | ug/l | 0.0500 | | 147 | 50-150 | | | J |
| *Surrogate(s)* | | | | | | | | | | | |
| *1,3-Dimethyl-2-nitrobenzene* | *4.90* | | | *ug/l* | *5.00* | | *98* | *70-130* | | | |
| *Perylene-d12* | *4.92* | | | *ug/l* | *5.00* | | *98* | *70-130* | | | |
| *Triphenyl phosphate* | *5.03* | | | *ug/l* | *5.00* | | *101* | *70-130* | | | |
| **LCS Dup (W2A0581-BSD1)** | | | | | **Prepared: 01/10/22 Analyzed: 01/11/22** | | | | | | |
| 1-Methylnaphthalene | 0.216 | 0.00801 | 0.0500 | ug/l | 0.250 | | 87 | 70-130 | 3 | 30 | |
| 2-Methylnaphthalene | 0.216 | 0.00904 | 0.0500 | ug/l | 0.250 | | 86 | 70-130 | 4 | 30 | |
| Alachlor | 0.411 | 0.0110 | 0.100 | ug/l | 0.500 | | 82 | 70-130 | 6 | 30 | |
| Atrazine | 0.221 | 0.00734 | 0.100 | ug/l | 0.250 | | 88 | 70-130 | 3 | 30 | |
| Benzo (a) pyrene | 0.142 | 0.0117 | 0.100 | ug/l | 0.250 | | 57 | 60-130 | 25 | 30 | Q-02 |
| Bis(2-ethylhexyl)adipate | 0.205 | 0.00962 | 5.00 | ug/l | 0.250 | | 82 | 50-150 | 29 | 30 | J |
| Bis(2-ethylhexyl)phthalate | 0.224 | 0.00 | 3.00 | ug/l | 0.250 | | 90 | 50-150 | 26 | 30 | J |
| Endrin | 0.306 | 0.00991 | 0.200 | ug/l | 0.250 | | 122 | 70-130 | 31 | 30 | Q-12 |
| gamma-BHC (Lindane) | 0.284 | 0.00633 | 0.100 | ug/l | 0.250 | | 114 | 70-130 | 3 | 30 | |
| Heptachlor | 0.206 | 0.00965 | 0.100 | ug/l | 0.250 | | 82 | 70-130 | 21 | 30 | |
| Heptachlor epoxide | 0.238 | 0.0122 | 0.100 | ug/l | 0.250 | | 95 | 70-130 | 8 | 30 | |
| Hexachlorobenzene | 0.0439 | 0.00 | 0.100 | ug/l | 0.0500 | | 88 | 70-130 | 11 | 30 | J |
| Hexachlorocyclopentadiene | 0.181 | 0.00594 | 1.00 | ug/l | 0.250 | | 72 | 33-106 | 16 | 30 | J |
| Methoxychlor | 0.246 | 0.00863 | 0.200 | ug/l | 0.250 | | 99 | 70-130 | 22 | 30 | |
| Naphthalene | 0.224 | 0.0103 | 0.0500 | ug/l | 0.250 | | 90 | 70-130 | 3 | 30 | |
| Pentachlorophenol | 0.285 | 0.0242 | 1.00 | ug/l | 0.250 | | 114 | 50-120 | 10 | 30 | J |
| Simazine | 0.231 | 0.00734 | 0.100 | ug/l | 0.250 | | 93 | 60-130 | 5 | 30 | |
| *Surrogate(s)* | | | | | | | | | | | |
| *1,3-Dimethyl-2-nitrobenzene* | *4.86* | | | *ug/l* | *5.00* | | *97* | *70-130* | | | |
| *Perylene-d12* | *4.73* | | | *ug/l* | *5.00* | | *95* | *70-130* | | | |
| *Triphenyl phosphate* | *5.25* | | | *ug/l* | *5.00* | | *105* | *70-130* | | | |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:** 01/13/2022 18:08

## Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

| Analyte | Result | MDL | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: W2A0576 - EPA 524.2** | | | | | | | | | | | |
| **Blank (W2A0576-BLK1)** | | | | | **Prepared & Analyzed: 01/10/22** | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.256 | 0.500 | ug/l | | | | | | | U |
| 1,1,2-Trichloroethane | ND | 0.190 | 0.500 | ug/l | | | | | | | U |
| 1,1-Dichloroethene | ND | 0.160 | 0.500 | ug/l | | | | | | | U |
| 1,2,4-Trichlorobenzene | ND | 0.170 | 0.500 | ug/l | | | | | | | U |
| 1,2-Dichloroethane | ND | 0.243 | 0.500 | ug/l | | | | | | | U |
| 1,2-Dichloropropane | ND | 0.130 | 0.500 | ug/l | | | | | | | U |
| Benzene | ND | 0.150 | 0.500 | ug/l | | | | | | | U |
| Carbon tetrachloride | ND | 0.270 | 0.500 | ug/l | | | | | | | U |
| Chlorobenzene | ND | 0.150 | 0.500 | ug/l | | | | | | | U |
| cis-1,2-Dichloroethene | ND | 0.250 | 0.500 | ug/l | | | | | | | U |
| Ethylbenzene | ND | 0.210 | 0.500 | ug/l | | | | | | | U |
| m,p-Xylene | ND | 0.330 | 0.500 | ug/l | | | | | | | U |
| Methylene chloride | ND | 0.303 | 0.500 | ug/l | | | | | | | U |
| o-Dichlorobenzene | ND | 0.190 | 0.500 | ug/l | | | | | | | U |
| o-Xylene | ND | 0.200 | 0.500 | ug/l | | | | | | | U |
| p-Dichlorobenzene | ND | 0.180 | 0.500 | ug/l | | | | | | | U |
| Styrene | ND | 0.190 | 0.500 | ug/l | | | | | | | U |
| Tetrachloroethene | ND | 0.180 | 0.500 | ug/l | | | | | | | U |
| THMs, Total | ND | | 0.500 | ug/l | | | | | | | U |
| Toluene | ND | 0.294 | 0.500 | ug/l | | | | | | | U |
| trans-1,2-Dichloroethene | ND | 0.259 | 0.500 | ug/l | | | | | | | U |
| Trichloroethene | ND | 0.180 | 0.500 | ug/l | | | | | | | U |
| Vinyl chloride | ND | 0.180 | 0.500 | ug/l | | | | | | | U |
| *Surrogate(s)* | | | | | | | | | | | |
| *1,2-Dichlorobenzene-d4* | *8.16* | | | *ug/l* | *10.0* | | *82* | *70-130* | | | |
| *4-Bromofluorobenzene* | *7.95* | | | *ug/l* | *10.0* | | *80* | *70-130* | | | |
| **LCS (W2A0576-BS1)** | | | | | **Prepared & Analyzed: 01/10/22** | | | | | | |
| 1,1,1-Trichloroethane | 4.94 | 0.256 | 0.500 | ug/l | 5.00 | | 99 | 70-130 | | | |
| 1,1,2-Trichloroethane | 4.98 | 0.190 | 0.500 | ug/l | 5.00 | | 100 | 70-130 | | | |
| 1,1-Dichloroethene | 5.05 | 0.160 | 0.500 | ug/l | 5.00 | | 101 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 5.41 | 0.170 | 0.500 | ug/l | 5.00 | | 108 | 70-130 | | | |
| 1,2-Dichloroethane | 4.99 | 0.243 | 0.500 | ug/l | 5.00 | | 100 | 70-130 | | | |
| 1,2-Dichloropropane | 5.08 | 0.130 | 0.500 | ug/l | 5.00 | | 102 | 70-130 | | | |
| Benzene | 5.05 | 0.150 | 0.500 | ug/l | 5.00 | | 101 | 70-130 | | | |
| Carbon tetrachloride | 4.96 | 0.270 | 0.500 | ug/l | 5.00 | | 99 | 70-130 | | | |
| Chlorobenzene | 5.10 | 0.150 | 0.500 | ug/l | 5.00 | | 102 | 70-130 | | | |
| cis-1,2-Dichloroethene | 5.12 | 0.250 | 0.500 | ug/l | 5.00 | | 102 | 70-130 | | | |
| Ethylbenzene | 5.71 | 0.210 | 0.500 | ug/l | 5.00 | | 114 | 70-130 | | | |
| m,p-Xylene | 5.68 | 0.330 | 0.500 | ug/l | 5.00 | | 114 | 70-130 | | | |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:** 01/13/2022 18:08

## Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS (Continued)

| Analyte | Result | MDL | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch: W2A0576 - EPA 524.2 (Continued)** | | | | | | | | | | | |
| **LCS (W2A0576-BS1)** | | | | | **Prepared & Analyzed: 01/10/22** | | | | | | |
| Methylene chloride | 5.18 | 0.303 | 0.500 | ug/l | 5.00 | | 104 | 70-130 | | | |
| o-Dichlorobenzene | 5.01 | 0.190 | 0.500 | ug/l | 5.00 | | 100 | 70-130 | | | |
| o-Xylene | 5.59 | 0.200 | 0.500 | ug/l | 5.00 | | 112 | 70-130 | | | |
| p-Dichlorobenzene | 4.94 | 0.180 | 0.500 | ug/l | 5.00 | | 99 | 70-130 | | | |
| Styrene | 5.45 | 0.190 | 0.500 | ug/l | 5.00 | | 109 | 70-130 | | | |
| Tetrachloroethene | 4.80 | 0.180 | 0.500 | ug/l | 5.00 | | 96 | 70-130 | | | |
| Toluene | 5.34 | 0.294 | 0.500 | ug/l | 5.00 | | 107 | 70-130 | | | |
| trans-1,2-Dichloroethene | 5.20 | 0.259 | 0.500 | ug/l | 5.00 | | 104 | 70-130 | | | |
| Trichloroethene | 5.14 | 0.180 | 0.500 | ug/l | 5.00 | | 103 | 70-130 | | | |
| Vinyl chloride | 4.96 | 0.180 | 0.500 | ug/l | 5.00 | | 99 | 70-130 | | | |
| *Surrogate(s)* | | | | | | | | | | | |
| *1,2-Dichlorobenzene-d4* | *10.2* | | | *ug/l* | *10.0* | | *102* | *70-130* | | | |
| *4-Bromofluorobenzene* | *10.3* | | | *ug/l* | *10.0* | | *103* | *70-130* | | | |
| **LCS Dup (W2A0576-BSD1)** | | | | | **Prepared & Analyzed: 01/10/22** | | | | | | |
| 1,1,1-Trichloroethane | 4.73 | 0.256 | 0.500 | ug/l | 5.00 | | 95 | 70-130 | 4 | 30 | |
| 1,1,2-Trichloroethane | 4.80 | 0.190 | 0.500 | ug/l | 5.00 | | 96 | 70-130 | 4 | 30 | |
| 1,1-Dichloroethene | 4.73 | 0.160 | 0.500 | ug/l | 5.00 | | 95 | 70-130 | 6 | 30 | |
| 1,2,4-Trichlorobenzene | 5.20 | 0.170 | 0.500 | ug/l | 5.00 | | 104 | 70-130 | 4 | 30 | |
| 1,2-Dichloroethane | 4.78 | 0.243 | 0.500 | ug/l | 5.00 | | 96 | 70-130 | 4 | 30 | |
| 1,2-Dichloropropane | 4.87 | 0.130 | 0.500 | ug/l | 5.00 | | 97 | 70-130 | 4 | 30 | |
| Benzene | 4.82 | 0.150 | 0.500 | ug/l | 5.00 | | 96 | 70-130 | 5 | 30 | |
| Carbon tetrachloride | 4.61 | 0.270 | 0.500 | ug/l | 5.00 | | 92 | 70-130 | 7 | 30 | |
| Chlorobenzene | 4.87 | 0.150 | 0.500 | ug/l | 5.00 | | 97 | 70-130 | 5 | 30 | |
| cis-1,2-Dichloroethene | 4.88 | 0.250 | 0.500 | ug/l | 5.00 | | 98 | 70-130 | 5 | 30 | |
| Ethylbenzene | 5.40 | 0.210 | 0.500 | ug/l | 5.00 | | 108 | 70-130 | 6 | 30 | |
| m,p-Xylene | 5.41 | 0.330 | 0.500 | ug/l | 5.00 | | 108 | 70-130 | 5 | 30 | |
| Methylene chloride | 5.10 | 0.303 | 0.500 | ug/l | 5.00 | | 102 | 70-130 | 1 | 30 | |
| o-Dichlorobenzene | 4.76 | 0.190 | 0.500 | ug/l | 5.00 | | 95 | 70-130 | 5 | 30 | |
| o-Xylene | 5.29 | 0.200 | 0.500 | ug/l | 5.00 | | 106 | 70-130 | 5 | 30 | |
| p-Dichlorobenzene | 4.68 | 0.180 | 0.500 | ug/l | 5.00 | | 94 | 70-130 | 5 | 30 | |
| Styrene | 5.19 | 0.190 | 0.500 | ug/l | 5.00 | | 104 | 70-130 | 5 | 30 | |
| Tetrachloroethene | 4.55 | 0.180 | 0.500 | ug/l | 5.00 | | 91 | 70-130 | 5 | 30 | |
| Toluene | 5.08 | 0.294 | 0.500 | ug/l | 5.00 | | 102 | 70-130 | 5 | 30 | |
| trans-1,2-Dichloroethene | 4.93 | 0.259 | 0.500 | ug/l | 5.00 | | 99 | 70-130 | 5 | 30 | |
| Trichloroethene | 4.80 | 0.180 | 0.500 | ug/l | 5.00 | | 96 | 70-130 | 7 | 30 | |
| Vinyl chloride | 4.86 | 0.180 | 0.500 | ug/l | 5.00 | | 97 | 70-130 | 2 | 30 | |
| *Surrogate(s)* | | | | | | | | | | | |
| *1,2-Dichlorobenzene-d4* | *10.3* | | | *ug/l* | *10.0* | | *103* | *70-130* | | | |
| *4-Bromofluorobenzene* | *10.2* | | | *ug/l* | *10.0* | | *102* | *70-130* | | | |



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

AECOM - Honolulu
1001 Bishop Street Suite 1600
Honolulu, HI 96813

**Project Number:** 60674414, COC # 01092022 DW-06

**Project Manager:** Margie Pascua

**Reported:**
01/13/2022 18:08

## Notes and Definitions

| Item | Definition |
|---|---|
| BS-04 | The recovery of this analyte in LCS or LCSD was outside control limit. Sample was accepted based on the remaining LCS, LCSD or LCS-LL. |
| J | Estimated conc. detected <MRL and >MDL. |
| Q-02 | Low recovery of this analyte in the QC sample. The analysis of the low level standard produced acceptable recovery indicating that the sample result might be accurately reported as Not Detected. |
| Q-08 | High bias in the QC sample does not affect sample result since analyte was not detected or below the reporting limit. |
| Q-12 | The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on the percent recoveries and/or other acceptable QC data. |
| R-01 | The MDL and/or MRL for this analyte has been raised to account for matrix interference. |
| U | Analyte included in the analysis, but not detected |
| %REC | Percent Recovery |
| Dil | Dilution |
| MDL | Method Detection Limit |
| MRL | The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) |
| ND | NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL. |
| RPD | Relative Percent Difference |
| Source | Sample that was matrix spiked or duplicated. |

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.



14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

Weck Laboratories, Inc.
Analytical Laboratory Services - Since 1964

14859 Clark Avenue : Industry : CA 91745
Tel 626-336-2139 ♦ Fax 626-336-2634 ♦ www.wecklabs.com

# Standard CHAIN OF CUSTODY RECORD

Hydrant Compliant 2A10942

COC# 01092022DW-06

| CLIENT NAME: | PROJECT: |
|---|---|
| AECOM | 60674414 |
| ADDRESS: | PHONE: 808-364-8050 |
| 1001 Bishop St., Ste. 1600 | FAX: |
| Honolulu, HI 96813 | EMAIL: margie.pascua@aecom.com |
| PROJECT MANAGER | SAMPLER |
| Margie Pascua | AECOM |

| ID# (Lab Use Only) | DATE SAMPLED | TIME SAMPLED | SMPL TYPE | $Cl_2$ Y/N | SAMPLE IDENTIFICATION/SITE LOCATION | # OF CONT. | VOCs (Full Suite) Ascorbic Acid + HCl by 524.2 | SOCs (full suite) by 525.2 (sodium sulfite + HCl) | Metals/ Mercury by 200.8 (nitric acid) | TOC by 5310B (HCl) | Pesticides/ PCBs by 508 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1/8/22 | 1540 | DW | | 20220108-C2-TY03 | 9 | X | X | X | X | X |

ANALYSES REQUESTED

**SPECIAL HANDLING**

- ☐ Same Day Rush 150%
- ☐ 24 Hour Rush 100%
- ☑ 48-72 Hour Rush 75%
- ☐ 4 - 5 Day Rush 30%
- ☐ Rush Extractions 50%
- ☐ 10 - 15 Business Days
- ☐ QA/QC Data Package

Charges will apply for weekends/holidays

Method of Shipment: FedEx

COMMENTS

| RELINQUISHED BY | DATE / TIME | RECEIVED BY | DATE / TIME |
|---|---|---|---|
| Sean Haggett | 1/8/22 1836 | | 1/8/22 1836 |
| RELINQUISHED BY Conner Rothe on behalf of Rachel Tucci | DATE / TIME 1/9/22 1600 | RECEIVED BY | DATE / TIME 1/10/22 10:20 |
| RELINQUISHED BY James Boom / AECOM | DATE / TIME 1/10/22 1020 | RECEIVED BY | DATE / TIME |

**SAMPLE CONDITION:**

| Actual Temperature: | Thermometer #: |
|---|---|
| 2.6c | T-0214 |
| Received On Ice | Y / N |
| Samples Preserved | Y / N |
| Evidence Seals Present | Y / N |
| Container Attacked | Y / N |

**SAMPLE TYPE CODE:**

DW = Drinking Water
WW = Waste Water
GW = Ground Water
SF = Surface Water
SW = Sea Water
SO = Soild/Soil
SL = Sludge
OL = Oil
OT = Other Matrix

PRESCHEDULED RUSH ANALYSES WILL TAKE PRIORITY
OVER UNSCHEDULED RUSH REQUESTS
Client agrees to Terms & Conditions at: www.wecklabs.com

SPECIAL REQUIREMENTS / BILLING INFORMATION

COC version 210608

WECK LABORATORIES, INC.

# Sample Receipt Checklist

Weck WKO: 2A10042
WKO Logged by: Lester Abad
Samples Checked by: LKA

Date/Time Received: 1/10/22 @ 10:20
# of Samples: 01
Delivered by: James Booth

| | Task | Yes | No | N/A | Comments |
|---|---|---|---|---|---|
| COC | COC present at receipt? | ☒ | ☐ | | |
| | COC properly completed? | ☒ | ☐ | | |
| | COC matches sample labels? | ☒ | ☐ | | |
| | | ☒ | ☐ | | |
| | Project Manager notified? | ☐ | ☐ | ☒ | |
| Receipt Information | Sample Temperature | 2.4°C | | | |
| | Samples received on ice? | ☐ | ☒ | | |
| | Ice Type (Blue/Wet) | WET | | | |
| | All samples intact? | ☒ | ☐ | | |
| | Samples in proper containers? | ☒ | ☐ | | |
| | Sufficient sample volume? | ☒ | ☐ | | |
| | Samples intact? | ☒ | ☐ | | |
| | Received within holding time? | ☒ | ☐ | | |
| | | ☐ | ☐ | | |
| | Project Manager notified? | ☐ | ☐ | ☒ | |
| Sample Preservation Verification? | Sample labels checked for correct preservation? | ☒ | ☐ | ☐ | |
| | VOC Headspace: none, <6mm/<Pea size? 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT | ☐ | ☐ | ☒ | |
| | pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 608.3 5-9 | ☐ | ☐ | ☒ | |
| | Free Chlorine Tested <0.1 | ☐ | ☐ | ☒ | |
| | O&G pH <2 verified? | ☐ | ☐ | ☐ | pH paper Lot# |
| | | | | | pH Reading: |
| | pH adjusted for O&G | ☐ | ☐ | ☐ | Acid Lot# |
| | | | | | Amt added: |
| | Project Manager notified? | ☐ | ☐ | ☒ | |

PM Comments

Sample Receipt Checklist Prepared by:

Signature: _____ Date: 01/10/22

AECOM
250 Apollo Drive
Chelmsford, MA 01824
www.aecom.com

978 905 2100 tel
978 905 2101 fax

# Memorandum

\

| | | | |
|---|---|---|---|
| To | Karen Mixon, Data Validation Manager | Info | Completed |
| Subject | Summary Data Quality Review<br>Joint Base Pearl Harbor-Hickam, Hawaii<br>Red Hill Bulk Fuel Storage Facility | | |
| From | Kristin Rutherford, Chemist | | |
| Date | January 15, 2022 | | |

The summary data quality review of 1 water sample collected on January 7, 2022, has been completed. The sample was collected by AECOM personnel and was analyzed at Eurofins TestAmerica, in Seattle, Washington, for total petroleum hydrocarbons (TPHs) by EPA Method 8260/CALUFT (gasoline-range, C6-C12 hydrocarbons), EPA Method 8015D (diesel range, C9-C25 hydrocarbons, and motor oil range, C24-C40 hydrocarbons), volatile organic compounds (VOCs) by EPA Method 8260D, and semivolatile organic compounds (SVOCs) by EPA Method 8270E. The analyses were performed in general accordance with the methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846)*. The laboratory provided summary reports containing sample results and associated quality assurance (QA) and quality control (QC) data. The following sample is associated with Eurofins TestAmerica-Seattle laboratory group 580-109117-4:

| Sample ID | Laboratory IDs | Requested Analyses |
|---|---|---|
| 220107-C2-YT02 | 580-109117-8 | TPH (gasoline range)<br>TPH (diesel range)<br>TPH (oil range)<br>VOC<br>SVOC |

Upon receipt by the laboratory, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. The cooler temperatures were received within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C. The laboratory identified sample 220107-C2-YT02 (580-109117-8) as 20220107-C2-YT02 in the laboratory report and in the electronic data deliverable (EDD). No actions were taken except to note this discrepancy. Results for the full VOC analyte list were reported for sample 220107-C2-YT02 but were not requested on the COC. The laboratory noted that there was insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate.

Data validation is based on method performance criteria and QC criteria documented in the laboratory reports. Holding times, field/method/trip blanks, surrogate recoveries, laboratory control sample results, and reporting limits were reviewed to assess compliance with applicable methods and laboratory control criteria. If data qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA document *National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020. The following results required qualification:

- No data were qualified for TPH (gasoline range), TPH (diesel range), or TPH (oil range) in association with laboratory group 580-109117-4.

- The following percent recoveries for the VOC surrogates were below the laboratory control limits:

| Sample | Surrogate | %Recovery | Control Limits |
|---|---|---|---|
| 220107-C2-YT02 | Toluene-d8 | 0.3% | 80-120 |

The nondetect results in sample 220107-C2-YT02 were rejected and flagged 'R' based on the surrogate recoveries noted in the table above. Sample 220107-C2-YT02 was nondetect for all VOCs; therefore, all VOC results were rejected.

- The following percent recoveries for the SVOC surrogates were below the laboratory control limits:

| Sample | Surrogate | %Recovery | Control Limits |
|---|---|---|---|
| 220107-C2-YT02 | 2-Fluorophenol | 6% | 21-120 |
| 220107-C2-YT02 | Phenol-d5 | 0% | 10-120% |

The acid analytes in sample 220107-C2-YT02 noted in the table above were rejected and flagged 'R' based on the acid surrogate recoveries. The compounds are listed below:

| |
|---|
| 2,4,5-Trichlorophenol |
| 2,4,6-Trichlorophenol |
| 2,4-Dichlorophenol |
| 2,4-Dimethylphenol |
| 2,4-Dinitrophenol |
| 2-Chlorophenol |
| 2-Methylphenol |
| 3 & 4 Methylphenol |
| 4,6-Dinitro-2-methylphenol |
| 4-Chloro-3-methylphenol |
| 4-Nitrophenol |
| Pentachlorophenol |
| Phenol |

- The following percent recoveries for the SVOC laboratory control sample (LCS) were below the laboratory control limits:

| LCS | Compound | %Recovery | Control Limits |
|---|---|---|---|
| LCS 580-377974/2-A | Hexachlorocyclopentadiene | 8% | 10-125% |
| LCSD 580-377974/3-A | Hexachlorocyclopentadiene | 9% | 10-125% |

The nondetect result for hexachlorocyclopentadiene in sample 220107-C2-YT02 was rejected and flagged 'R' based on the LCS recoveries noted in the table above.

- Project screening levels were met for all non-detect SVOC results, with the exception of hexachlorobenzene (method detection limit of 0.041 ug/L) which exceeded the project screening level of 0.0003 ug/L.

AECOM
250 Apollo Drive
Chelmsford, MA 01824
www.aecom.com

978 905 2100 tel
978 905 2101 fax

# Memorandum

\

| | | | |
|---|---|---|---|
| To | Karen Mixon, Data Validation Manager | Info | Completed |
| Subject | Summary Data Quality Review<br>Joint Base Pearl Harbor-Hickam, Hawaii<br>Red Hill Bulk Fuel Storage Facility | | |
| From | Kristin Rutherford, Chemist | | |
| Date | January 15, 2022 | | |

The summary data quality review of 1 water sample collected on January 8, 2022, has been completed. The sample was collected by AECOM personnel and was analyzed at Eurofins TestAmerica, in Seattle, Washington, for total petroleum hydrocarbons (TPHs) by EPA Method 8260/CALUFT (gasoline-range, C6-C12 hydrocarbons) and EPA Method 8015D (diesel range, C9-C25 hydrocarbons, and motor oil range, C24-C40 hydrocarbons). The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data. The following sample is associated with Eurofins TestAmerica-Seattle laboratory group 580-109117-10:

| Sample ID | Laboratory IDs | Requested Analyses |
|---|---|---|
| 20220108-C2-TY03 | 580-109117-3 | TPH (gasoline range)<br>TPH (diesel range)<br>TPH (oil range) |

Upon receipt by the laboratory, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. The cooler temperatures were received within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C. Two samples were listed on the COC but only sample 20220108-C2-TY03 is reported in this SDG; sample 20220108-G1-TY01 was reported in SDG 580-109117-2.

Data validation is based on method performance criteria and QC criteria documented in the laboratory reports. Holding times, field/method/trip blanks, surrogate recoveries, laboratory control sample results, and reporting limits were reviewed to assess compliance with applicable methods and laboratory control criteria. If data qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA document *National Functional Guidelines for Organic Superfund Methods Data Review,* November 2020. The following results required qualification:

- No data were qualified in association with laboratory group 580-109117-10.

AECOM
250 Apollo Drive
Chelmsford, MA 01824
www.aecom.com

978 905 2100 tel
978 905 2101 fax

# Memorandum

\

| | | | |
|---|---|---|---|
| To | Karen Mixon, Data Validation Manager | Info | Completed |
| Subject | Summary Data Quality Review<br>Joint Base Pearl Harbor-Hickam, Hawaii<br>Red Hill Bulk Fuel Storage Facility | | |
| From | Waverly Braunstein, Chemist | | |
| Date | January 15, 2022 | | |

The summary data quality review of one water sample collected on January 8, 2022, has been completed. The samples were collected by AECOM personnel and were analyzed at WECK Laboratories, in City of Industry, California, for volatile organic compounds (VOCs) by EPA Method 524.2, semivolatile organic compounds (SVOCs) and organochlorine pesticides by EPA Method 525.2, total metals by EPA Method 200.8, total mercury by EPA Method 245.1, PCBs (Aroclors) by EPA Method 508.1, and total organic carbon (TOC) by Standard Methods 5310B. The analyses were performed in general accordance with the methods specified in EPA's drinking water program. The laboratory provided summary reports containing sample results and associated quality assurance (QA) and quality control (QC) data. The following samples are associated with WECK Laboratories group 2A10042:

| **Sample ID** | **Laboratory IDs** | **Requested Analyses** |
|---|---|---|
| 20220108-C2-TY03 | 2A10042-01 | VOC, SVOC/Pest, Metals/Mercury, TOC, PCB |

Upon receipt by the laboratory, the sample jar information was compared to the associated chain-of-custody (COC) and the cooler temperatures were recorded. The cooler temperatures were received within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C.

Data validation is based on method performance criteria and QC criteria documented in the laboratory reports. Holding times, field/method/trip blanks, surrogate recoveries, laboratory control sample results, and reporting limits were reviewed to assess compliance with applicable methods and laboratory control criteria. If data qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA documents *National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020 and *National Functional Guidelines for Inorganic Superfund Methods Data Review*, November 2020. The following results required qualification:

- No data were qualified for VOCs, Metals/Mercury, TOC or PCBs in association with laboratory group 2A10042.

- The result for 2-methylnaphthalene in sample 20220108-C2-TY03 was qualified as nondetect and flagged 'U' due to method blank contamination.

- The following percent recoveries for the SVOC/Pesticide laboratory control sample (LCS) were below the laboratory control limits:

| **LCS** | **Analyte** | **%Recovery** | **Control Limits** |
|---|---|---|---|
| LCS (W2A0581-BS1) | Benzo (a) pyrene | 44% | 60-130% |
| LCS (W2A0581-BS1D) | Benzo (a) pyrene | 57% | 60-130% |
| LCS (W2A0581-BS1) | Heptachlor | 67% | 70-130% |

The nondetect results for benzo(a)pyrene and heptachlor in sample 20220108-C2-TY03 were qualified as estimated and flagged 'J' based on the LCS recoveries noted in the table above.

- The following analytes exceeded the Incident Specific Screening Criteria:

| Sample Name | Analyte | Result | MDL | Incident Specific Screening Criteria | Units |
|---|---|---|---|---|---|
| 20220108-C2-TY03 | Endrin | ND | 0.00991 | 0.0023 | µg/L |
| 20220108-C2-TY03 | Heptachlor | ND | 0.00965 | 0.0036 | µg/L |
| 20220108-C2-TY03 | Heptachlor epoxide | ND | 0.0122 | 0.0036 | µg/L |
| 20220108-C2-TY03 | Hexachlorobenzene | ND | 0.098 | 0.0003 | µg/L |