

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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Tel: (330)497-9396

Laboratory Job ID: 240-111372-1
Client Project/Site: Ford LTP Livonia MI - E203631

For:
ARCADIS U.S., Inc.
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Attn: Kristoffer Hinskey



Authorized for release by:
5/7/2019 3:45:48 PM

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

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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

Qualifiers

GC/MS VOA

| Qualifier | Qualifier Description |
|-----------|--|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| 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 |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

Job ID: 240-111372-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203631

Report Number: 240-111372-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 4/23/2019 8:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-190_041919 (240-111372-1) and MW-190S_041919 (240-111372-2) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/01/2019.

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-190_041919 (240-111372-1) and MW-190S_041919 (240-111372-2) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 04/26/2019.

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

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

| Method | Method Description | Protocol | Laboratory |
|-----------|------------------------------------|----------|------------|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL CAN |
| 8260B SIM | Volatile Organic Compounds (GC/MS) | SW846 | TAL CAN |
| 5030B | Purge and Trap | SW846 | TAL CAN |

Protocol References:

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396



Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---------------|------------------|--------|----------------|----------------|
| 240-111372-1 | MW-190_041919 | Water | 04/19/19 10:52 | 04/23/19 08:30 |
| 240-111372-2 | MW-190S_041919 | Water | 04/19/19 12:03 | 04/23/19 08:30 |

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Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

Client Sample ID: MW-190_041919

Lab Sample ID: 240-111372-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|------------------------|--------|-----------|-----|------|------|---------|---|--------|-----------|
| cis-1,2-Dichloroethene | 0.74 | J | 1.0 | 0.16 | ug/L | 1 | | 8260B | Total/NA |

Client Sample ID: MW-190S_041919

Lab Sample ID: 240-111372-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|------------------------|--------|-----------|-----|------|------|---------|---|--------|-----------|
| cis-1,2-Dichloroethene | 1.0 | | 1.0 | 0.16 | ug/L | 1 | | 8260B | Total/NA |

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton



Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

Client Sample ID: MW-190_041919

Lab Sample ID: 240-111372-1

Date Collected: 04/19/19 10:52

Matrix: Water

Date Received: 04/23/19 08:30

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 2.0 | U | 2.0 | 0.86 | ug/L | | | 04/26/19 12:24 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 101 | | 63 - 125 | | 04/26/19 12:24 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-------------------------------|-------------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene | 1.0 | U | 1.0 | 0.19 | ug/L | | | 05/01/19 22:07 | 1 |
| cis-1,2-Dichloroethene | 0.74 | J | 1.0 | 0.16 | ug/L | | | 05/01/19 22:07 | 1 |
| Tetrachloroethene | 1.0 | U | 1.0 | 0.15 | ug/L | | | 05/01/19 22:07 | 1 |
| trans-1,2-Dichloroethene | 1.0 | U | 1.0 | 0.19 | ug/L | | | 05/01/19 22:07 | 1 |
| Trichloroethene | 1.0 | U | 1.0 | 0.10 | ug/L | | | 05/01/19 22:07 | 1 |
| Vinyl chloride | 1.0 | U | 1.0 | 0.20 | ug/L | | | 05/01/19 22:07 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 89 | | 70 - 121 | | 05/01/19 22:07 | 1 |
| 4-Bromofluorobenzene (Surr) | 95 | | 59 - 120 | | 05/01/19 22:07 | 1 |
| Toluene-d8 (Surr) | 98 | | 70 - 123 | | 05/01/19 22:07 | 1 |
| Dibromofluoromethane (Surr) | 98 | | 75 - 128 | | 05/01/19 22:07 | 1 |

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

Client Sample ID: MW-190S_041919

Lab Sample ID: 240-111372-2

Date Collected: 04/19/19 12:03

Matrix: Water

Date Received: 04/23/19 08:30

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 2.0 | U | 2.0 | 0.86 | ug/L | | | 04/26/19 12:50 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 1,2-Dichloroethane-d4 (Surr) | 107 | | 63 - 125 | | | | | 04/26/19 12:50 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-------------------------------|------------|-----------|----------|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene | 1.0 | U | 1.0 | 0.19 | ug/L | | | 05/01/19 22:32 | 1 |
| cis-1,2-Dichloroethene | 1.0 | | 1.0 | 0.16 | ug/L | | | 05/01/19 22:32 | 1 |
| Tetrachloroethene | 1.0 | U | 1.0 | 0.15 | ug/L | | | 05/01/19 22:32 | 1 |
| trans-1,2-Dichloroethene | 1.0 | U | 1.0 | 0.19 | ug/L | | | 05/01/19 22:32 | 1 |
| Trichloroethene | 1.0 | U | 1.0 | 0.10 | ug/L | | | 05/01/19 22:32 | 1 |
| Vinyl chloride | 1.0 | U | 1.0 | 0.20 | ug/L | | | 05/01/19 22:32 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 1,2-Dichloroethane-d4 (Surr) | 87 | | 70 - 121 | | | | | 05/01/19 22:32 | 1 |
| 4-Bromofluorobenzene (Surr) | 92 | | 59 - 120 | | | | | 05/01/19 22:32 | 1 |
| Toluene-d8 (Surr) | 95 | | 70 - 123 | | | | | 05/01/19 22:32 | 1 |
| Dibromofluoromethane (Surr) | 97 | | 75 - 128 | | | | | 05/01/19 22:32 | 1 |

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

| Lab Sample ID | Client Sample ID | DCA (70-121) | BFB (59-120) | TOL (70-123) | DBFM (75-128) |
|--------------------|------------------------|-----------------|-----------------|-----------------|------------------|
| 240-111372-1 | MW-190_041919 | 89 | 95 | 98 | 98 |
| 240-111372-2 | MW-190S_041919 | 87 | 92 | 95 | 97 |
| 680-168131-C-9 MS | Matrix Spike | 81 | 96 | 102 | 95 |
| 680-168131-C-9 MSD | Matrix Spike Duplicate | 89 | 94 | 104 | 97 |
| LCS 240-379104/4 | Lab Control Sample | 90 | 108 | 101 | 99 |
| MB 240-379104/6 | Method Blank | 90 | 105 | 99 | 92 |

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

| Lab Sample ID | Client Sample ID | DCA (63-125) |
|--------------------|------------------------|-----------------|
| 240-111372-1 | MW-190_041919 | 101 |
| 240-111372-2 | MW-190S_041919 | 107 |
| 240-111538-C-3 MS | Matrix Spike | 102 |
| 240-111538-C-3 MSD | Matrix Spike Duplicate | 105 |
| LCS 240-378426/4 | Lab Control Sample | 107 |
| MB 240-378426/5 | Method Blank | 102 |

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

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

Lab Sample ID: MB 240-379104/6
Matrix: Water
Analysis Batch: 379104

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene | 1.0 | U | 1.0 | 0.19 | ug/L | | | 05/01/19 15:30 | 1 |
| cis-1,2-Dichloroethene | 1.0 | U | 1.0 | 0.16 | ug/L | | | 05/01/19 15:30 | 1 |
| Tetrachloroethene | 1.0 | U | 1.0 | 0.15 | ug/L | | | 05/01/19 15:30 | 1 |
| trans-1,2-Dichloroethene | 1.0 | U | 1.0 | 0.19 | ug/L | | | 05/01/19 15:30 | 1 |
| Trichloroethene | 1.0 | U | 1.0 | 0.10 | ug/L | | | 05/01/19 15:30 | 1 |
| Vinyl chloride | 1.0 | U | 1.0 | 0.20 | ug/L | | | 05/01/19 15:30 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 90 | | 70 - 121 | | 05/01/19 15:30 | 1 |
| 4-Bromofluorobenzene (Surr) | 105 | | 59 - 120 | | 05/01/19 15:30 | 1 |
| Toluene-d8 (Surr) | 99 | | 70 - 123 | | 05/01/19 15:30 | 1 |
| Dibromofluoromethane (Surr) | 92 | | 75 - 128 | | 05/01/19 15:30 | 1 |

Lab Sample ID: LCS 240-379104/4
Matrix: Water
Analysis Batch: 379104

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--------------------------|-------------|------------|---------------|------|---|------|--------------|
| 1,1-Dichloroethene | 10.0 | 9.44 | | ug/L | | 94 | 65 - 139 |
| cis-1,2-Dichloroethene | 10.0 | 9.96 | | ug/L | | 100 | 76 - 128 |
| Tetrachloroethene | 10.0 | 9.79 | | ug/L | | 98 | 74 - 130 |
| trans-1,2-Dichloroethene | 10.0 | 9.62 | | ug/L | | 96 | 78 - 133 |
| Trichloroethene | 10.0 | 10.5 | | ug/L | | 105 | 76 - 125 |
| Vinyl chloride | 10.0 | 11.4 | | ug/L | | 114 | 58 - 143 |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|------------------------------|---------------|---------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 90 | | 70 - 121 |
| 4-Bromofluorobenzene (Surr) | 108 | | 59 - 120 |
| Toluene-d8 (Surr) | 101 | | 70 - 123 |
| Dibromofluoromethane (Surr) | 99 | | 75 - 128 |

Lab Sample ID: 680-168131-C-9 MS
Matrix: Water
Analysis Batch: 379104

Client Sample ID: Matrix Spike
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--------------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| 1,1-Dichloroethene | 130 | U | 1250 | 1070 | | ug/L | | 85 | 53 - 140 |
| cis-1,2-Dichloroethene | 1300 | | 1250 | 2520 | | ug/L | | 95 | 64 - 130 |
| Tetrachloroethene | 130 | U | 1250 | 1230 | | ug/L | | 99 | 51 - 136 |
| trans-1,2-Dichloroethene | 130 | U | 1250 | 1150 | | ug/L | | 92 | 68 - 133 |
| Trichloroethene | 3800 | | 1250 | 4570 | | ug/L | | 61 | 55 - 131 |
| Vinyl chloride | 130 | U | 1250 | 1160 | | ug/L | | 93 | 43 - 154 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|------------------------------|--------------|--------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 81 | | 70 - 121 |
| 4-Bromofluorobenzene (Surr) | 96 | | 59 - 120 |
| Toluene-d8 (Surr) | 102 | | 70 - 123 |

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

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

Lab Sample ID: 680-168131-C-9 MS
Matrix: Water
Analysis Batch: 379104

Client Sample ID: Matrix Spike
Prep Type: Total/NA

| Surrogate | MS MS | | Limits |
|-----------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| Dibromofluoromethane (Surr) | 95 | | 75 - 128 |

Lab Sample ID: 680-168131-C-9 MSD
Matrix: Water
Analysis Batch: 379104

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

| Analyte | Sample | Sample | Spike | MSD | MSD | Unit | D | %Rec | %Rec. | RPD | RPD |
|--------------------------|--------|-----------|-------|--------|-----------|------|---|------|----------|-----|-----|
| | Result | Qualifier | | Result | Qualifier | | | | Limits | | |
| 1,1-Dichloroethene | 130 | U | 1250 | 1280 | | ug/L | | 103 | 53 - 140 | 18 | 35 |
| cis-1,2-Dichloroethene | 1300 | | 1250 | 2500 | | ug/L | | 93 | 64 - 130 | 1 | 21 |
| Tetrachloroethene | 130 | U | 1250 | 1200 | | ug/L | | 96 | 51 - 136 | 3 | 23 |
| trans-1,2-Dichloroethene | 130 | U | 1250 | 1100 | | ug/L | | 88 | 68 - 133 | 4 | 24 |
| Trichloroethene | 3800 | | 1250 | 4820 | | ug/L | | 81 | 55 - 131 | 5 | 23 |
| Vinyl chloride | 130 | U | 1250 | 1320 | | ug/L | | 106 | 43 - 154 | 13 | 29 |

| Surrogate | MSD MSD | | Limits |
|------------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 1,2-Dichloroethane-d4 (Surr) | 89 | | 70 - 121 |
| 4-Bromofluorobenzene (Surr) | 94 | | 59 - 120 |
| Toluene-d8 (Surr) | 104 | | 70 - 123 |
| Dibromofluoromethane (Surr) | 97 | | 75 - 128 |

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

Lab Sample ID: MB 240-378426/5
Matrix: Water
Analysis Batch: 378426

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

| Analyte | MB | MB | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| | Result | Qualifier | | | | | | | |
| 1,4-Dioxane | 2.0 | U | 2.0 | 0.86 | ug/L | | | 04/26/19 11:08 | 1 |

| Surrogate | MB MB | | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| | %Recovery | Qualifier | | | | |
| 1,2-Dichloroethane-d4 (Surr) | 102 | | 63 - 125 | | 04/26/19 11:08 | 1 |

Lab Sample ID: LCS 240-378426/4
Matrix: Water
Analysis Batch: 378426

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

| Analyte | Spike | LCS | LCS | Unit | D | %Rec | %Rec. |
|-------------|-------|--------|-----------|------|---|------|----------|
| | | Result | Qualifier | | | | Limits |
| 1,4-Dioxane | 10.0 | 11.5 | | ug/L | | 115 | 59 - 131 |

| Surrogate | LCS LCS | | Limits |
|------------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 1,2-Dichloroethane-d4 (Surr) | 107 | | 63 - 125 |

Lab Sample ID: 240-111538-C-3 MS
Matrix: Water
Analysis Batch: 378426

Client Sample ID: Matrix Spike
Prep Type: Total/NA

| Analyte | Sample | Sample | Spike | MS | MS | Unit | D | %Rec | %Rec. |
|-------------|--------|-----------|-------|--------|-----------|------|---|------|----------|
| | Result | Qualifier | | Result | Qualifier | | | | Limits |
| 1,4-Dioxane | 1.9 | J | 10.0 | 12.8 | | ug/L | | 109 | 52 - 129 |

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

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

| <i>Surrogate</i> | <i>MS</i> <i>%Recovery</i> | <i>MS</i> <i>Qualifier</i> | <i>Limits</i> |
|------------------------------|-------------------------------|-------------------------------|---------------|
| 1,2-Dichloroethane-d4 (Surr) | 102 | | 63 - 125 |

Lab Sample ID: 240-111538-C-3 MSD
 Matrix: Water
 Analysis Batch: 378426

Client Sample ID: Matrix Spike Duplicate
 Prep Type: Total/NA

| <i>Analyte</i> | <i>Sample</i> <i>Result</i> | <i>Sample</i> <i>Qualifier</i> | <i>Spike</i> <i>Added</i> | <i>MSD</i> <i>Result</i> | <i>MSD</i> <i>Qualifier</i> | <i>Unit</i> | <i>D</i> | <i>%Rec</i> | <i>%Rec.</i> <i>Limits</i> | <i>RPD</i> | <i>RPD</i> <i>Limit</i> |
|----------------|--------------------------------|-----------------------------------|------------------------------|-----------------------------|--------------------------------|-------------|----------|-------------|-------------------------------|------------|----------------------------|
| 1,4-Dioxane | 1.9 | J | 10.0 | 12.9 | | ug/L | | 110 | 52 - 129 | 0 | 13 |

| <i>Surrogate</i> | <i>MSD</i> <i>%Recovery</i> | <i>MSD</i> <i>Qualifier</i> | <i>Limits</i> |
|------------------------------|--------------------------------|--------------------------------|---------------|
| 1,2-Dichloroethane-d4 (Surr) | 105 | | 63 - 125 |

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QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

GC/MS VOA

Analysis Batch: 378426

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|------------------------|-----------|--------|-----------|------------|
| 240-111372-1 | MW-190_041919 | Total/NA | Water | 8260B SIM | |
| 240-111372-2 | MW-190S_041919 | Total/NA | Water | 8260B SIM | |
| MB 240-378426/5 | Method Blank | Total/NA | Water | 8260B SIM | |
| LCS 240-378426/4 | Lab Control Sample | Total/NA | Water | 8260B SIM | |
| 240-111538-C-3 MS | Matrix Spike | Total/NA | Water | 8260B SIM | |
| 240-111538-C-3 MSD | Matrix Spike Duplicate | Total/NA | Water | 8260B SIM | |

Analysis Batch: 379104

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|------------------------|-----------|--------|--------|------------|
| 240-111372-1 | MW-190_041919 | Total/NA | Water | 8260B | |
| 240-111372-2 | MW-190S_041919 | Total/NA | Water | 8260B | |
| MB 240-379104/6 | Method Blank | Total/NA | Water | 8260B | |
| LCS 240-379104/4 | Lab Control Sample | Total/NA | Water | 8260B | |
| 680-168131-C-9 MS | Matrix Spike | Total/NA | Water | 8260B | |
| 680-168131-C-9 MSD | Matrix Spike Duplicate | Total/NA | Water | 8260B | |

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

Client Sample ID: MW-190_041919

Lab Sample ID: 240-111372-1

Date Collected: 04/19/19 10:52

Matrix: Water

Date Received: 04/23/19 08:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 8260B | | 1 | 379104 | 05/01/19 22:07 | LRW | TAL CAN |
| Total/NA | Analysis | 8260B SIM | | 1 | 378426 | 04/26/19 12:24 | SAM | TAL CAN |

Client Sample ID: MW-190S_041919

Lab Sample ID: 240-111372-2

Date Collected: 04/19/19 12:03

Matrix: Water

Date Received: 04/23/19 08:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 8260B | | 1 | 379104 | 05/01/19 22:32 | LRW | TAL CAN |
| Total/NA | Analysis | 8260B SIM | | 1 | 378426 | 04/26/19 12:50 | SAM | TAL CAN |

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-111372-1

Laboratory: Eurofins TestAmerica, Canton

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

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|-----------------------|---------------|------------|-----------------------|-----------------|
| California | State Program | 9 | 2927 | 02-23-20 |
| Connecticut | State Program | 1 | PH-0590 | 12-31-19 |
| Florida | NELAP | 4 | E87225 | 06-30-19 |
| Illinois | NELAP | 5 | 200004 | 07-31-19 |
| Kansas | NELAP | 7 | E-10336 | 04-30-19 * |
| Kentucky (UST) | State Program | 4 | 58 | 02-23-20 |
| Kentucky (WW) | State Program | 4 | 98016 | 12-31-19 |
| Minnesota | NELAP | 5 | 039-999-348 | 12-31-19 * |
| Minnesota (Petrofund) | State Program | 1 | 3506 | 07-31-19 |
| Nevada | State Program | 9 | OH00048 | 07-31-19 |
| New Jersey | NELAP | 2 | OH001 | 06-30-19 |
| New York | NELAP | 2 | 10975 | 03-31-20 |
| Ohio VAP | State Program | 5 | CL0024 | 09-06-19 |
| Oregon | NELAP | 10 | 4062 | 02-23-20 |
| Pennsylvania | NELAP | 3 | 68-00340 | 08-31-19 * |
| Texas | NELAP | 6 | T104704517-18-10 | 08-31-19 |
| USDA | Federal | | P330-16-00404 | 12-28-19 |
| Virginia | NELAP | 3 | 460175 | 09-14-19 |
| Washington | State Program | 10 | C971 | 01-12-20 * |
| West Virginia DEP | State Program | 3 | 210 | 12-31-19 |

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

TestAmerica Canton Sample Receipt Form/Narrative

Login # : 111372

Canton Facility

Client Arcadis Site Name

Cooler unpacked by: Ryan Cribler

Cooler Received on 4-23-19 Opened on 4-23-19

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # TA Foam Box Client Cooler Box Other
Packing material used: Bubble Wrap Foam Plastic Bag None Other
COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt
IR GUN# IR-8 (CF -0.2 °C) Observed Cooler Temp. 1.6 °C Corrected Cooler Temp. 1.4 °C
IR GUN #36 (CF +0.7°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
-Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC984738
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving: VOAs Oil and Grease TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: M.S.

18. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):
VOA Sample Preservation - Date/Time VOAs Frozen: