

## ANALYTICAL REPORT

Eurofins TestAmerica, Canton  
4101 Shuffel Street NW  
North Canton, OH 44720  
Tel: (330)497-9396

Laboratory Job ID: 240-114331-1  
Client Project/Site: Ford LTP Livonia MI - E203728

For:  
ARCADIS U.S., Inc.  
28550 Cabot Drive  
Suite 500  
Novi, Michigan 48377

Attn: Kristoffer Hinskey



Authorized for release by:  
6/27/2019 10:32:42 AM

Michael DelMonico, Project Manager I  
(330)497-9396  
[michael.delmonico@testamericainc.com](mailto:michael.delmonico@testamericainc.com)

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

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



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# Definitions/Glossary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

## 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 - E203728

Job ID: 240-114331-1

**Job ID: 240-114331-1**

**Laboratory: Eurofins TestAmerica, Canton**

**Narrative**

## CASE NARRATIVE

**Client: ARCADIS U.S., Inc.**

**Project: Ford LTP Livonia MI - E203728**

**Report Number: 240-114331-1**

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 6/13/2019 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.5° C, 2.7° C and 4.1° C.

### **VOLATILE ORGANIC COMPOUNDS (GCMS)**

Samples MW-46\_06112019 (240-114331-1), MW-70\_06112019 (240-114331-2), MW-71\_06112019 (240-114331-3), MW-45\_06112019 (240-114331-4) and TRIP BLANK (240-114331-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 06/23/2019 and 06/24/2019.

Samples MW-46\_06112019 (240-114331-1)[3.33X], MW-70\_06112019 (240-114331-2)[10X] and MW-45\_06112019 (240-114331-4) [25X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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-46\_06112019 (240-114331-1), MW-70\_06112019 (240-114331-2), MW-71\_06112019 (240-114331-3) and MW-45\_06112019 (240-114331-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 06/17/2019.

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 - E203728

Job ID: 240-114331-1

| 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 - E203728

Job ID: 240-114331-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       | Asset ID |
|---------------|------------------|--------|----------------|----------------|----------|
| 240-114331-1  | MW-46_06112019   | Water  | 06/11/19 18:12 | 06/13/19 09:40 |          |
| 240-114331-2  | MW-70_06112019   | Water  | 06/11/19 16:06 | 06/13/19 09:40 |          |
| 240-114331-3  | MW-71_06112019   | Water  | 06/11/19 10:19 | 06/13/19 09:40 |          |
| 240-114331-4  | MW-45_06112019   | Water  | 06/11/19 13:14 | 06/13/19 09:40 |          |
| 240-114331-5  | TRIP BLANK       | Water  | 06/11/19 00:00 | 06/13/19 09:40 |          |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Detection Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

## Client Sample ID: MW-46\_06112019

## Lab Sample ID: 240-114331-1

| Analyte                | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method    | Prep Type |
|------------------------|--------|-----------|-----|------|------|---------|---|-----------|-----------|
| 1,4-Dioxane            | 11     |           | 2.0 | 0.86 | ug/L | 1       |   | 8260B SIM | Total/NA  |
| cis-1,2-Dichloroethene | 4.0    |           | 3.3 | 0.53 | ug/L | 3.33    |   | 8260B     | Total/NA  |
| Vinyl chloride         | 87     |           | 3.3 | 0.67 | ug/L | 3.33    |   | 8260B     | Total/NA  |

## Client Sample ID: MW-70\_06112019

## Lab Sample ID: 240-114331-2

| Analyte                  | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method    | Prep Type |
|--------------------------|--------|-----------|-----|------|------|---------|---|-----------|-----------|
| 1,4-Dioxane              | 3.9    |           | 2.0 | 0.86 | ug/L | 1       |   | 8260B SIM | Total/NA  |
| cis-1,2-Dichloroethene   | 150    |           | 10  | 1.6  | ug/L | 10      |   | 8260B     | Total/NA  |
| trans-1,2-Dichloroethene | 2.4    | J         | 10  | 1.9  | ug/L | 10      |   | 8260B     | Total/NA  |
| Vinyl chloride           | 230    |           | 10  | 2.0  | ug/L | 10      |   | 8260B     | Total/NA  |

## Client Sample ID: MW-71\_06112019

## Lab Sample ID: 240-114331-3

| Analyte                | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method    | Prep Type |
|------------------------|--------|-----------|-----|------|------|---------|---|-----------|-----------|
| 1,4-Dioxane            | 1.6    | J         | 2.0 | 0.86 | ug/L | 1       |   | 8260B SIM | Total/NA  |
| cis-1,2-Dichloroethene | 0.42   | J         | 1.0 | 0.16 | ug/L | 1       |   | 8260B     | Total/NA  |
| Vinyl chloride         | 0.77   | J         | 1.0 | 0.20 | ug/L | 1       |   | 8260B     | Total/NA  |

## Client Sample ID: MW-45\_06112019

## Lab Sample ID: 240-114331-4

| Analyte                | Result | Qualifier | RL  | MDL  | Unit | Dil Fac | D | Method    | Prep Type |
|------------------------|--------|-----------|-----|------|------|---------|---|-----------|-----------|
| 1,4-Dioxane            | 0.94   | J         | 2.0 | 0.86 | ug/L | 1       |   | 8260B SIM | Total/NA  |
| cis-1,2-Dichloroethene | 310    |           | 25  | 4.0  | ug/L | 25      |   | 8260B     | Total/NA  |
| Vinyl chloride         | 540    |           | 25  | 5.0  | ug/L | 25      |   | 8260B     | Total/NA  |

## Client Sample ID: TRIP BLANK

## Lab Sample ID: 240-114331-5

No Detections.

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 - E203728

Job ID: 240-114331-1

**Client Sample ID: MW-46\_06112019**

**Lab Sample ID: 240-114331-1**

Date Collected: 06/11/19 18:12

Matrix: Water

Date Received: 06/13/19 09:40

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

| Analyte     | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 11     |           | 2.0 | 0.86 | ug/L |   |          | 06/17/19 15:04 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 89        |           | 63 - 125 |          | 06/17/19 15:04 | 1       |

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

| Analyte                  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1-Dichloroethene       | 3.3    | U         | 3.3 | 0.63 | ug/L |   |          | 06/24/19 12:23 | 3.33    |
| cis-1,2-Dichloroethene   | 4.0    |           | 3.3 | 0.53 | ug/L |   |          | 06/24/19 12:23 | 3.33    |
| Tetrachloroethene        | 3.3    | U         | 3.3 | 0.50 | ug/L |   |          | 06/24/19 12:23 | 3.33    |
| trans-1,2-Dichloroethene | 3.3    | U         | 3.3 | 0.63 | ug/L |   |          | 06/24/19 12:23 | 3.33    |
| Trichloroethene          | 3.3    | U         | 3.3 | 0.33 | ug/L |   |          | 06/24/19 12:23 | 3.33    |
| Vinyl chloride           | 87     |           | 3.3 | 0.67 | ug/L |   |          | 06/24/19 12:23 | 3.33    |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 95        |           | 70 - 121 |          | 06/24/19 12:23 | 3.33    |
| 4-Bromofluorobenzene (Surr)  | 64        |           | 59 - 120 |          | 06/24/19 12:23 | 3.33    |
| Toluene-d8 (Surr)            | 80        |           | 70 - 123 |          | 06/24/19 12:23 | 3.33    |
| Dibromofluoromethane (Surr)  | 90        |           | 75 - 128 |          | 06/24/19 12:23 | 3.33    |



# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

**Client Sample ID: MW-70\_06112019**

**Lab Sample ID: 240-114331-2**

Date Collected: 06/11/19 16:06

Matrix: Water

Date Received: 06/13/19 09:40

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

| Analyte     | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 3.9    |           | 2.0 | 0.86 | ug/L |   |          | 06/17/19 15:29 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 85        |           | 63 - 125 |          | 06/17/19 15:29 | 1       |

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

| Analyte                  | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------------|--------|-----------|----|-----|------|---|----------|----------------|---------|
| 1,1-Dichloroethene       | 10     | U         | 10 | 1.9 | ug/L |   |          | 06/24/19 12:45 | 10      |
| cis-1,2-Dichloroethene   | 150    |           | 10 | 1.6 | ug/L |   |          | 06/24/19 12:45 | 10      |
| Tetrachloroethene        | 10     | U         | 10 | 1.5 | ug/L |   |          | 06/24/19 12:45 | 10      |
| trans-1,2-Dichloroethene | 2.4    | J         | 10 | 1.9 | ug/L |   |          | 06/24/19 12:45 | 10      |
| Trichloroethene          | 10     | U         | 10 | 1.0 | ug/L |   |          | 06/24/19 12:45 | 10      |
| Vinyl chloride           | 230    |           | 10 | 2.0 | ug/L |   |          | 06/24/19 12:45 | 10      |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 99        |           | 70 - 121 |          | 06/24/19 12:45 | 10      |
| 4-Bromofluorobenzene (Surr)  | 65        |           | 59 - 120 |          | 06/24/19 12:45 | 10      |
| Toluene-d8 (Surr)            | 80        |           | 70 - 123 |          | 06/24/19 12:45 | 10      |
| Dibromofluoromethane (Surr)  | 94        |           | 75 - 128 |          | 06/24/19 12:45 | 10      |

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

**Client Sample ID: MW-71\_06112019**

**Lab Sample ID: 240-114331-3**

Date Collected: 06/11/19 10:19

Matrix: Water

Date Received: 06/13/19 09:40

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

| Analyte     | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 1.6    | J         | 2.0 | 0.86 | ug/L | - |          | 06/17/19 15:54 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 89        |           | 63 - 125 |          | 06/17/19 15:54 | 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 | - |          | 06/24/19 13:07 | 1       |
| cis-1,2-Dichloroethene   | 0.42   | J         | 1.0 | 0.16 | ug/L | - |          | 06/24/19 13:07 | 1       |
| Tetrachloroethene        | 1.0    | U         | 1.0 | 0.15 | ug/L | - |          | 06/24/19 13:07 | 1       |
| trans-1,2-Dichloroethene | 1.0    | U         | 1.0 | 0.19 | ug/L | - |          | 06/24/19 13:07 | 1       |
| Trichloroethene          | 1.0    | U         | 1.0 | 0.10 | ug/L | - |          | 06/24/19 13:07 | 1       |
| Vinyl chloride           | 0.77   | J         | 1.0 | 0.20 | ug/L | - |          | 06/24/19 13:07 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104       |           | 70 - 121 |          | 06/24/19 13:07 | 1       |
| 4-Bromofluorobenzene (Surr)  | 67        |           | 59 - 120 |          | 06/24/19 13:07 | 1       |
| Toluene-d8 (Surr)            | 78        |           | 70 - 123 |          | 06/24/19 13:07 | 1       |
| Dibromofluoromethane (Surr)  | 101       |           | 75 - 128 |          | 06/24/19 13:07 | 1       |

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

**Client Sample ID: MW-45\_061112019**

**Lab Sample ID: 240-114331-4**

Date Collected: 06/11/19 13:14

Matrix: Water

Date Received: 06/13/19 09:40

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

| Analyte     | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,4-Dioxane | 0.94   | J         | 2.0 | 0.86 | ug/L | - |          | 06/17/19 16:19 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 89        |           | 63 - 125 |          | 06/17/19 16:19 | 1       |

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

| Analyte                  | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------------|--------|-----------|----|-----|------|---|----------|----------------|---------|
| 1,1-Dichloroethene       | 25     | U         | 25 | 4.8 | ug/L | - |          | 06/23/19 17:48 | 25      |
| cis-1,2-Dichloroethene   | 310    |           | 25 | 4.0 | ug/L |   |          | 06/23/19 17:48 | 25      |
| Tetrachloroethene        | 25     | U         | 25 | 3.8 | ug/L |   |          | 06/23/19 17:48 | 25      |
| trans-1,2-Dichloroethene | 25     | U         | 25 | 4.8 | ug/L |   |          | 06/23/19 17:48 | 25      |
| Trichloroethene          | 25     | U         | 25 | 2.5 | ug/L |   |          | 06/23/19 17:48 | 25      |
| Vinyl chloride           | 540    |           | 25 | 5.0 | ug/L |   |          | 06/23/19 17:48 | 25      |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104       |           | 70 - 121 |          | 06/23/19 17:48 | 25      |
| 4-Bromofluorobenzene (Surr)  | 83        |           | 59 - 120 |          | 06/23/19 17:48 | 25      |
| Toluene-d8 (Surr)            | 100       |           | 70 - 123 |          | 06/23/19 17:48 | 25      |
| Dibromofluoromethane (Surr)  | 107       |           | 75 - 128 |          | 06/23/19 17:48 | 25      |

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-114331-5**

**Date Collected: 06/11/19 00:00**

**Matrix: Water**

**Date Received: 06/13/19 09:40**

**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 |   |          | 06/23/19 18:10 | 1       |
| cis-1,2-Dichloroethene   | 1.0    | U         | 1.0 | 0.16 | ug/L |   |          | 06/23/19 18:10 | 1       |
| Tetrachloroethene        | 1.0    | U         | 1.0 | 0.15 | ug/L |   |          | 06/23/19 18:10 | 1       |
| trans-1,2-Dichloroethene | 1.0    | U         | 1.0 | 0.19 | ug/L |   |          | 06/23/19 18:10 | 1       |
| Trichloroethene          | 1.0    | U         | 1.0 | 0.10 | ug/L |   |          | 06/23/19 18:10 | 1       |
| Vinyl chloride           | 1.0    | U         | 1.0 | 0.20 | ug/L |   |          | 06/23/19 18:10 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 97        |           | 70 - 121 |          | 06/23/19 18:10 | 1       |
| 4-Bromofluorobenzene (Surr)  | 78        |           | 59 - 120 |          | 06/23/19 18:10 | 1       |
| Toluene-d8 (Surr)            | 91        |           | 70 - 123 |          | 06/23/19 18:10 | 1       |
| Dibromofluoromethane (Surr)  | 99        |           | 75 - 128 |          | 06/23/19 18:10 | 1       |

# Surrogate Summary

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

| Lab Sample ID      | Client Sample ID       | Percent Surrogate Recovery (Acceptance Limits) |                 |                 |                  |
|--------------------|------------------------|--|-----------------|-----------------|------------------|
|                    |                        | DCA<br>(70-121)                                | BFB<br>(59-120) | TOL<br>(70-123) | DBFM<br>(75-128) |
| 240-114282-A-3 MSD | Matrix Spike Duplicate | 83   | 93              | 92              | 79               |
| 240-114282-C-3 MS  | Matrix Spike           | 85   | 95              | 96              | 82               |
| 240-114331-1       | MW-46_06112019         | 95   | 64              | 80              | 90               |
| 240-114331-2       | MW-70_06112019         | 99   | 65              | 80              | 94               |
| 240-114331-3       | MW-71_06112019         | 104  | 67              | 78              | 101              |
| 240-114331-4       | MW-45_061112019        | 104  | 83              | 100             | 107              |
| 240-114331-5       | TRIP BLANK             | 97   | 78              | 91              | 99               |
| 240-114608-B-3 MS  | Matrix Spike           | 104  | 89              | 97              | 106              |
| 240-114608-B-3 MSD | Matrix Spike Duplicate | 100  | 84              | 94              | 103              |
| LCS 240-387734/6   | Lab Control Sample     | 105  | 92              | 101             | 108              |
| LCS 240-387799/4   | Lab Control Sample     | 82   | 92              | 88              | 80               |
| MB 240-387734/9    | Method Blank           | 105  | 88              | 103             | 108              |
| MB 240-387799/6    | Method Blank           | 97   | 70              | 82              | 91               |

#### 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) |
| 240-114331-1     | MW-46_06112019     | 89       |
| 240-114331-2     | MW-70_06112019     | 85       |
| 240-114331-3     | MW-71_06112019     | 89       |
| 240-114331-4     | MW-45_061112019    | 89       |
| 240-114331-4 MS  | MW-45_061112019    | 90       |
| 240-114331-4 MSD | MW-45_061112019    | 88       |
| LCS 240-386516/4 | Lab Control Sample | 86       |
| MB 240-386516/5  | Method Blank       | 86       |

#### Surrogate Legend

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

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

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

**Lab Sample ID: MB 240-387734/9**  
**Matrix: Water**  
**Analysis Batch: 387734**

**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 |   |          | 06/23/19 13:15 | 1       |
| cis-1,2-Dichloroethene   | 1.0       | U            | 1.0 | 0.16 | ug/L |   |          | 06/23/19 13:15 | 1       |
| Tetrachloroethene        | 1.0       | U            | 1.0 | 0.15 | ug/L |   |          | 06/23/19 13:15 | 1       |
| trans-1,2-Dichloroethene | 1.0       | U            | 1.0 | 0.19 | ug/L |   |          | 06/23/19 13:15 | 1       |
| Trichloroethene          | 1.0       | U            | 1.0 | 0.10 | ug/L |   |          | 06/23/19 13:15 | 1       |
| Vinyl chloride           | 1.0       | U            | 1.0 | 0.20 | ug/L |   |          | 06/23/19 13:15 | 1       |

| Surrogate                    | MB %Recovery | MB Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 105          |              | 70 - 121 |          | 06/23/19 13:15 | 1       |
| 4-Bromofluorobenzene (Surr)  | 88           |              | 59 - 120 |          | 06/23/19 13:15 | 1       |
| Toluene-d8 (Surr)            | 103          |              | 70 - 123 |          | 06/23/19 13:15 | 1       |
| Dibromofluoromethane (Surr)  | 108          |              | 75 - 128 |          | 06/23/19 13:15 | 1       |

**Lab Sample ID: LCS 240-387734/6**  
**Matrix: Water**  
**Analysis Batch: 387734**

**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       | 20.0        | 22.3       |               | ug/L |   | 111  | 65 - 139     |
| cis-1,2-Dichloroethene   | 20.0        | 19.8       |               | ug/L |   | 99   | 76 - 128     |
| Tetrachloroethene        | 20.0        | 17.7       |               | ug/L |   | 88   | 74 - 130     |
| trans-1,2-Dichloroethene | 20.0        | 21.5       |               | ug/L |   | 108  | 78 - 133     |
| Trichloroethene          | 20.0        | 18.9       |               | ug/L |   | 95   | 76 - 125     |
| Vinyl chloride           | 20.0        | 23.0       |               | ug/L |   | 115  | 58 - 143     |

| Surrogate                    | LCS %Recovery | LCS Qualifier | Limits   |
|------------------------------|---------------|---------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 105           |               | 70 - 121 |
| 4-Bromofluorobenzene (Surr)  | 92            |               | 59 - 120 |
| Toluene-d8 (Surr)            | 101           |               | 70 - 123 |
| Dibromofluoromethane (Surr)  | 108           |               | 75 - 128 |

**Lab Sample ID: 240-114608-B-3 MS**  
**Matrix: Water**  
**Analysis Batch: 387734**

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

| Surrogate                    | MS %Recovery | MS Qualifier | Limits   |
|------------------------------|--------------|--------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 104          |              | 70 - 121 |
| 4-Bromofluorobenzene (Surr)  | 89           |              | 59 - 120 |
| Toluene-d8 (Surr)            | 97           |              | 70 - 123 |
| Dibromofluoromethane (Surr)  | 106          |              | 75 - 128 |

**Lab Sample ID: 240-114608-B-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 387734**

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

| Surrogate                    | MSD %Recovery | MSD Qualifier | Limits   |
|------------------------------|---------------|---------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 100           |               | 70 - 121 |

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# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

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

**Lab Sample ID: 240-114608-B-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 387734**

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

| Surrogate                   | MSD %Recovery | MSD Qualifier | Limits   |
|-----------------------------|---------------|---------------|----------|
| 4-Bromofluorobenzene (Surr) | 84            |               | 59 - 120 |
| Toluene-d8 (Surr)           | 94            |               | 70 - 123 |
| Dibromofluoromethane (Surr) | 103           |               | 75 - 128 |

**Lab Sample ID: MB 240-387799/6**  
**Matrix: Water**  
**Analysis Batch: 387799**

**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 |   |          | 06/24/19 11:09 | 1       |
| cis-1,2-Dichloroethene   | 1.0       | U            | 1.0 | 0.16 | ug/L |   |          | 06/24/19 11:09 | 1       |
| Tetrachloroethene        | 1.0       | U            | 1.0 | 0.15 | ug/L |   |          | 06/24/19 11:09 | 1       |
| trans-1,2-Dichloroethene | 1.0       | U            | 1.0 | 0.19 | ug/L |   |          | 06/24/19 11:09 | 1       |
| Trichloroethene          | 1.0       | U            | 1.0 | 0.10 | ug/L |   |          | 06/24/19 11:09 | 1       |
| Vinyl chloride           | 1.0       | U            | 1.0 | 0.20 | ug/L |   |          | 06/24/19 11:09 | 1       |

  

| Surrogate                    | MB %Recovery | MB Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 97           |              | 70 - 121 |          | 06/24/19 11:09 | 1       |
| 4-Bromofluorobenzene (Surr)  | 70           |              | 59 - 120 |          | 06/24/19 11:09 | 1       |
| Toluene-d8 (Surr)            | 82           |              | 70 - 123 |          | 06/24/19 11:09 | 1       |
| Dibromofluoromethane (Surr)  | 91           |              | 75 - 128 |          | 06/24/19 11:09 | 1       |

**Lab Sample ID: LCS 240-387799/4**  
**Matrix: Water**  
**Analysis Batch: 387799**

**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        | 10.4       |               | ug/L |   | 104  | 65 - 139     |
| cis-1,2-Dichloroethene   | 10.0        | 8.72       |               | ug/L |   | 87   | 76 - 128     |
| Tetrachloroethene        | 10.0        | 9.28       |               | ug/L |   | 93   | 74 - 130     |
| trans-1,2-Dichloroethene | 10.0        | 10.0       |               | ug/L |   | 100  | 78 - 133     |
| Trichloroethene          | 10.0        | 8.62       |               | ug/L |   | 86   | 76 - 125     |
| Vinyl chloride           | 10.0        | 10.6       |               | ug/L |   | 106  | 58 - 143     |

  

| Surrogate                    | LCS %Recovery | LCS Qualifier | Limits   |
|------------------------------|---------------|---------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 82            |               | 70 - 121 |
| 4-Bromofluorobenzene (Surr)  | 92            |               | 59 - 120 |
| Toluene-d8 (Surr)            | 88            |               | 70 - 123 |
| Dibromofluoromethane (Surr)  | 80            |               | 75 - 128 |

**Lab Sample ID: 240-114282-A-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 387799**

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

| Analyte                | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|------------------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| 1,1-Dichloroethene     | 1.0           | U                | 10.0        | 8.66       |               | ug/L |   | 87   | 53 - 140     | 6   | 35        |
| cis-1,2-Dichloroethene | 1.0           | U                | 10.0        | 7.88       |               | ug/L |   | 79   | 64 - 130     | 6   | 21        |
| Tetrachloroethene      | 1.0           | U                | 10.0        | 8.62       |               | ug/L |   | 86   | 51 - 136     | 1   | 23        |

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# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

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

Lab Sample ID: 240-114282-A-3 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 387799

| Analyte                      | Sample Result    | Sample Qualifier | Spike Added      | MSD Result    | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|------------------------------|------------------|------------------|------------------|---------------|---------------|------|---|------|--------------|-----|-----------|
| trans-1,2-Dichloroethene     | 1.0              | U                | 10.0             | 8.61          |               | ug/L |   | 86   | 68 - 133     | 3   | 24        |
| Trichloroethene              | 1.7              |                  | 10.0             | 9.25          |               | ug/L |   | 76   | 55 - 131     | 4   | 23        |
| Vinyl chloride               | 1.0              | U                | 10.0             | 8.72          |               | ug/L |   | 87   | 43 - 154     | 26  | 29        |
| <b>MSD MSD</b>               |                  |                  |                  |               |               |      |   |      |              |     |           |
| <b>Surrogate</b>             | <b>%Recovery</b> |                  | <b>Qualifier</b> | <b>Limits</b> |               |      |   |      |              |     |           |
| 1,2-Dichloroethane-d4 (Surr) | 83               |                  |                  | 70 - 121      |               |      |   |      |              |     |           |
| 4-Bromofluorobenzene (Surr)  | 93               |                  |                  | 59 - 120      |               |      |   |      |              |     |           |
| Toluene-d8 (Surr)            | 92               |                  |                  | 70 - 123      |               |      |   |      |              |     |           |
| Dibromofluoromethane (Surr)  | 79               |                  |                  | 75 - 128      |               |      |   |      |              |     |           |

Lab Sample ID: 240-114282-C-3 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 387799

| Analyte                      | Sample Result    | Sample Qualifier | Spike Added      | MS Result     | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------------|------------------|------------------|------------------|---------------|--------------|------|---|------|--------------|
| 1,1-Dichloroethene           | 1.0              | U                | 10.0             | 8.15          |              | ug/L |   | 81   | 53 - 140     |
| cis-1,2-Dichloroethene       | 1.0              | U                | 10.0             | 8.37          |              | ug/L |   | 84   | 64 - 130     |
| Tetrachloroethene            | 1.0              | U                | 10.0             | 8.74          |              | ug/L |   | 87   | 51 - 136     |
| trans-1,2-Dichloroethene     | 1.0              | U                | 10.0             | 8.89          |              | ug/L |   | 89   | 68 - 133     |
| Trichloroethene              | 1.7              |                  | 10.0             | 9.59          |              | ug/L |   | 79   | 55 - 131     |
| Vinyl chloride               | 1.0              | U                | 10.0             | 6.69          |              | ug/L |   | 67   | 43 - 154     |
| <b>MS MS</b>                 |                  |                  |                  |               |              |      |   |      |              |
| <b>Surrogate</b>             | <b>%Recovery</b> |                  | <b>Qualifier</b> | <b>Limits</b> |              |      |   |      |              |
| 1,2-Dichloroethane-d4 (Surr) | 85               |                  |                  | 70 - 121      |              |      |   |      |              |
| 4-Bromofluorobenzene (Surr)  | 95               |                  |                  | 59 - 120      |              |      |   |      |              |
| Toluene-d8 (Surr)            | 96               |                  |                  | 70 - 123      |              |      |   |      |              |
| Dibromofluoromethane (Surr)  | 82               |                  |                  | 75 - 128      |              |      |   |      |              |

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

Lab Sample ID: MB 240-386516/5

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 386516

| Analyte                      | MB Result        | MB Qualifier | RL               | MDL           | Unit | D               | Prepared | Analyzed        | Dil Fac        |
|------------------------------|------------------|--------------|------------------|---------------|------|-----------------|----------|-----------------|----------------|
| 1,4-Dioxane                  | 2.0              | U            | 2.0              | 0.86          | ug/L |                 |          | 06/17/19 11:17  | 1              |
| <b>MB MB</b>                 |                  |              |                  |               |      |                 |          |                 |                |
| <b>Surrogate</b>             | <b>%Recovery</b> |              | <b>Qualifier</b> | <b>Limits</b> |      | <b>Prepared</b> |          | <b>Analyzed</b> | <b>Dil Fac</b> |
| 1,2-Dichloroethane-d4 (Surr) | 86               |              |                  | 63 - 125      |      |                 |          | 06/17/19 11:17  | 1              |

Lab Sample ID: LCS 240-386516/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 386516

| Analyte     | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------|-------------|------------|---------------|------|---|------|--------------|
| 1,4-Dioxane | 10.0        | 12.3       |               | ug/L |   | 123  | 59 - 131     |

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# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

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

**Lab Sample ID: LCS 240-386516/4**  
**Matrix: Water**  
**Analysis Batch: 386516**

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

|                              | LCS              | LCS              |               |
|------------------------------|------------------|------------------|---------------|
| <i>Surrogate</i>             | <i>%Recovery</i> | <i>Qualifier</i> | <i>Limits</i> |
| 1,2-Dichloroethane-d4 (Surr) | 86               |                  | 63 - 125      |

**Lab Sample ID: 240-114331-4 MS**  
**Matrix: Water**  
**Analysis Batch: 386516**

**Client Sample ID: MW-45\_061112019**  
**Prep Type: Total/NA**

| <i>Analyte</i>               | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MS<br>Result | MS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------------|------------------|---------------------|----------------|--------------|-----------------|------|---|------|-----------------|
| 1,4-Dioxane                  | 0.94             | J                   | 10.0           | 12.2         |                 | ug/L |   | 113  | 52 - 129        |
| <i>Surrogate</i>             | <i>MS</i>        | <i>MS</i>           |                |              |                 |      |   |      |                 |
| 1,2-Dichloroethane-d4 (Surr) | 90               |                     | 63 - 125       |              |                 |      |   |      |                 |

**Lab Sample ID: 240-114331-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 386516**

**Client Sample ID: MW-45\_061112019**  
**Prep Type: Total/NA**

| <i>Analyte</i>               | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MSD<br>Result | MSD<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits | RPD | RPD<br>Limit |
|------------------------------|------------------|---------------------|----------------|---------------|------------------|------|---|------|-----------------|-----|--------------|
| 1,4-Dioxane                  | 0.94             | J                   | 10.0           | 12.3          |                  | ug/L |   | 113  | 52 - 129        | 1   | 13           |
| <i>Surrogate</i>             | <i>MSD</i>       | <i>MSD</i>          |                |               |                  |      |   |      |                 |     |              |
| 1,2-Dichloroethane-d4 (Surr) | 88               |                     | 63 - 125       |               |                  |      |   |      |                 |     |              |

# QC Association Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

## GC/MS VOA

### Analysis Batch: 386516

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method    | Prep Batch |
|------------------|--------------------|-----------|--------|-----------|------------|
| 240-114331-1     | MW-46_06112019     | Total/NA  | Water  | 8260B SIM |            |
| 240-114331-2     | MW-70_06112019     | Total/NA  | Water  | 8260B SIM |            |
| 240-114331-3     | MW-71_06112019     | Total/NA  | Water  | 8260B SIM |            |
| 240-114331-4     | MW-45_06112019     | Total/NA  | Water  | 8260B SIM |            |
| MB 240-386516/5  | Method Blank       | Total/NA  | Water  | 8260B SIM |            |
| LCS 240-386516/4 | Lab Control Sample | Total/NA  | Water  | 8260B SIM |            |
| 240-114331-4 MS  | MW-45_06112019     | Total/NA  | Water  | 8260B SIM |            |
| 240-114331-4 MSD | MW-45_06112019     | Total/NA  | Water  | 8260B SIM |            |

### Analysis Batch: 387734

| Lab Sample ID      | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|--------------------|------------------------|-----------|--------|--------|------------|
| 240-114331-4       | MW-45_06112019         | Total/NA  | Water  | 8260B  |            |
| 240-114331-5       | TRIP BLANK             | Total/NA  | Water  | 8260B  |            |
| MB 240-387734/9    | Method Blank           | Total/NA  | Water  | 8260B  |            |
| LCS 240-387734/6   | Lab Control Sample     | Total/NA  | Water  | 8260B  |            |
| 240-114608-B-3 MS  | Matrix Spike           | Total/NA  | Water  | 8260B  |            |
| 240-114608-B-3 MSD | Matrix Spike Duplicate | Total/NA  | Water  | 8260B  |            |

### Analysis Batch: 387799

| Lab Sample ID      | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|--------------------|------------------------|-----------|--------|--------|------------|
| 240-114331-1       | MW-46_06112019         | Total/NA  | Water  | 8260B  |            |
| 240-114331-2       | MW-70_06112019         | Total/NA  | Water  | 8260B  |            |
| 240-114331-3       | MW-71_06112019         | Total/NA  | Water  | 8260B  |            |
| MB 240-387799/6    | Method Blank           | Total/NA  | Water  | 8260B  |            |
| LCS 240-387799/4   | Lab Control Sample     | Total/NA  | Water  | 8260B  |            |
| 240-114282-A-3 MSD | Matrix Spike Duplicate | Total/NA  | Water  | 8260B  |            |
| 240-114282-C-3 MS  | Matrix Spike           | Total/NA  | Water  | 8260B  |            |

# Lab Chronicle

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114331-1

**Client Sample ID: MW-46\_06112019**

**Lab Sample ID: 240-114331-1**

**Date Collected: 06/11/19 18:12**

**Matrix: Water**

**Date Received: 06/13/19 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 8260B        |     | 3.33            | 387799       | 06/24/19 12:23       | LEE     | TAL CAN |
| Total/NA  | Analysis   | 8260B SIM    |     | 1               | 386516       | 06/17/19 15:04       | SAM     | TAL CAN |

**Client Sample ID: MW-70\_06112019**

**Lab Sample ID: 240-114331-2**

**Date Collected: 06/11/19 16:06**

**Matrix: Water**

**Date Received: 06/13/19 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 8260B        |     | 10              | 387799       | 06/24/19 12:45       | LEE     | TAL CAN |
| Total/NA  | Analysis   | 8260B SIM    |     | 1               | 386516       | 06/17/19 15:29       | SAM     | TAL CAN |

**Client Sample ID: MW-71\_06112019**

**Lab Sample ID: 240-114331-3**

**Date Collected: 06/11/19 10:19**

**Matrix: Water**

**Date Received: 06/13/19 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 8260B        |     | 1               | 387799       | 06/24/19 13:07       | LEE     | TAL CAN |
| Total/NA  | Analysis   | 8260B SIM    |     | 1               | 386516       | 06/17/19 15:54       | SAM     | TAL CAN |

**Client Sample ID: MW-45\_061112019**

**Lab Sample ID: 240-114331-4**

**Date Collected: 06/11/19 13:14**

**Matrix: Water**

**Date Received: 06/13/19 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 8260B        |     | 25              | 387734       | 06/23/19 17:48       | HMB     | TAL CAN |
| Total/NA  | Analysis   | 8260B SIM    |     | 1               | 386516       | 06/17/19 16:19       | SAM     | TAL CAN |

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-114331-5**

**Date Collected: 06/11/19 00:00**

**Matrix: Water**

**Date Received: 06/13/19 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 8260B        |     | 1               | 387734       | 06/23/19 18:10       | HMB     | 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 - E203728

Job ID: 240-114331-1

## 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         |            | 2927                  | 02-23-20        |
| California            | State Program | 9          | 2927                  | 02-23-20        |
| Connecticut           | State Program | 1          | PH-0590               | 12-31-19        |
| Florida               | NELAP         | 4          | E87225                | 06-30-19 *      |
| Florida               | NELAP         |            | E87225                | 06-30-19        |
| Illinois              | NELAP         | 5          | 200004                | 07-31-19 *      |
| Illinois              | NELAP         |            | 004498                | 07-31-19        |
| Iowa                  | State Program | 7          | 421                   | 06-01-21        |
| Kansas                | NELAP         | 7          | E-10336               | 04-30-20        |
| 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 Jersey            | NELAP         |            | OH001                 | 06-30-19        |
| New York              | NELAP         | 2          | 10975                 | 03-31-20        |
| New York              | NELAP         |            | 10975                 | 03-31-20        |
| Ohio VAP              | State Program | 5          | CL0024                | 06-05-21        |
| Oregon                | NELAP         | 10         | 4062                  | 02-23-20        |
| Oregon                | NELAP         |            | 4062                  | 02-23-20        |
| Pennsylvania          | NELAP         | 3          | 68-00340              | 08-31-19 *      |
| Pennsylvania          | NELAP         |            | 68-00340              | 08-31-19        |
| Texas                 | NELAP         | 6          | T104704517-18-10      | 08-31-19 *      |
| Texas                 | NELAP         |            | T104704517-18-10      | 08-31-19        |
| USDA                  | Federal       |            | P330-16-00404         | 12-28-19        |
| Virginia              | NELAP         | 3          | 460175                | 09-14-19 *      |
| Virginia              | NELAP         |            | 010101                | 09-14-19        |
| Washington            | State         |            | C971                  | 01-12-20        |
| 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.

|   |  |  |  |   |  |                                    |  |
|---|--|--|--|---|--|------------------------------------|--|
| <b>Client Information</b>                             |  | Lab PM: DelMonico, Michael                   |  | Carrier Tracking No(s):                     |  | COC No: 240-61361-26116.10         |  |
| Client Contact: Caitlin O'Neill                       |  | E-Mail: michael.delmonico@testamericainc.com |  | Page: Page 10 of 10                         |  | Job #:                             |  |
| Company: ARCADIS U.S. Inc                             |  | Address: 28550 Cabot Drive Suite 500         |  | City: Novi                                  |  | State, Zip: MI, 48377              |  |
| Phone: 330-497-9396                                   |  | PO #: 0604 0601B                             |  | MID: 1454,0066-00064                        |  | WO #:                              |  |
| Project Name: Ford LTP Livonia MI - E203691 728       |  | Cadema #: E203634 728                        |  | Project #: 24015353                         |  | SSOW #:                            |  |
| Site: LTP   |  | Due Date Requested:                          |  | TAT Requested (days): 10 day / standard     |  | Preservation Codes:                |  |
| Sample Identification                                 |  | Sample Date                                  |  | Sample Time                                 |  | Sample Type (C=Comp, G=grab)       |  |
| Matrix (Water, Solid, On-site, Lab)                   |  | Preservation Code                            |  | Field Filtered Sample (Yes or No)           |  | Perform MS/MSD (Yes or No)         |  |
| 8260B - VOCs (Short List)                             |  | 8260B - VOCs (Short List)                    |  | 8260B - VOCs (Short List)                   |  | Total Number of Containers         |  |
| MW-46-061119  |  | 06/11/19 18:12                               |  | G   |  | Water                              |  |
| MW-70-061119  |  | 06/11/19 16:06                               |  | G   |  | Water                              |  |
| MW-71-061119  |  | 06/11/19 10:19                               |  | G   |  | Water                              |  |
| MW-45-061119  |  | 06/11/19 13:14                               |  | G   |  | Water                              |  |
| Trip Blank  |  | ---  |  | ---   |  | Water                              |  |
| Possible Hazard Identification                        |  | Poison B <input type="checkbox"/>            |  | Skin Irritant <input type="checkbox"/>      |  | Flammable <input type="checkbox"/> |  |
| Deliverable Requested: I, II, III, V, Other (specify) |  | Unknown <input type="checkbox"/>             |  | Radiological <input type="checkbox"/>       |  | Other (specify)                    |  |
| Empty Kit Relinquished by:                            |  | Date:  |  | Time:                                       |  | Method of Shipment:                |  |
| Relinquished by: Mary Catherine Gattard               |  | Date/Time: 06/11/19 19:05                    |  | Company: Arcadis                            |  | Received by: Novic Cold Storage    |  |
| Relinquished by: PACHEL BIELAK Phil Bielek            |  | Date/Time: 6/12/19 10:20                     |  | Company: ARCADIS                            |  | Received by: [Signature]           |  |
| Relinquished by: [Signature]                          |  | Date/Time: 6-12-19 13:40                     |  | Company: ETA                                |  | Received by: [Signature]           |  |
| Custody Seal Intact <input type="checkbox"/>          |  | Custody Seal No.:                            |  | Cooler Temperature(s): C and Other Remarks: |  | 0830                               |  |



**Eurofins TestAmerica Canton Sample Receipt Form/Narrative**  
**Canton Facility**

Login # : 114331

Client ARCADIS Site Name \_\_\_\_\_

Cooler unpacked by:

Cooler Received on 6/13/19 Opened on 6/14/19

Amant

FedEx: 1<sup>st</sup>  Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

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

TestAmerica Cooler # CANTON 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  See Multiple Cooler Form  
 IR GUN# IR-8 (CF +0.1 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  
 IR GUN #36 (CF +0.6 °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 ea  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 NA  
 -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?  
 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?  Yes  No NA  
 Larger than this. ←
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B904401NB  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:

AMM

**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: \_\_\_\_\_

