

ANALYTICAL REPORT

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

Laboratory Job ID: 240-126093-1
Client Project/Site: Ford LTP On Site

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

Attn: Kristoffer Hinskey



Authorized for release by:
2/25/2020 4:31:35 PM

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

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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.



Table of Contents

| | |
|----------------------------------|----|
| Cover Page | 1 |
| Table of Contents | 2 |
| Definitions/Glossary | 3 |
| Case Narrative | 4 |
| Method Summary | 5 |
| Sample Summary | 6 |
| Detection Summary | 7 |
| Client Sample Results | 8 |
| Surrogate Summary | 11 |
| QC Sample Results | 12 |
| QC Association Summary | 15 |
| Lab Chronicle | 16 |
| Certification Summary | 17 |
| Chain of Custody | 18 |

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP On Site

Job ID: 240-126093-1

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 On Site

Job ID: 240-126093-1

Job ID: 240-126093-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP On Site

Report Number: 240-126093-1

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 2/11/2020 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-126093-1), MW-40_020820 (240-126093-2) and MW-31_020820 (240-126093-3) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/14/2020.

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-40_020820 (240-126093-2) and MW-31_020820 (240-126093-3) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 02/14/2020.

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 On Site

Job ID: 240-126093-1

| 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 On Site

Job ID: 240-126093-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Asset ID |
|---------------|------------------|--------|----------------|----------------|----------|
| 240-126093-1 | TRIP BLANK | Water | 02/08/20 00:00 | 02/11/20 08:40 | |
| 240-126093-2 | MW-40_020820 | Water | 02/08/20 10:50 | 02/11/20 08:40 | |
| 240-126093-3 | MW-31_020820 | Water | 02/08/20 12:20 | 02/11/20 08:40 | |

- 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 On Site

Job ID: 240-126093-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126093-1

No Detections.

Client Sample ID: MW-40_020820

Lab Sample ID: 240-126093-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------------------|--------|-----------|-----|------|------|---------|---|--------|-----------|
| cis-1,2-Dichloroethene | 2.5 | | 1.0 | 0.16 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 0.30 | J | 1.0 | 0.19 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 0.28 | J | 1.0 | 0.20 | ug/L | 1 | | 8260B | Total/NA |

Client Sample ID: MW-31_020820

Lab Sample ID: 240-126093-3

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 On Site

Job ID: 240-126093-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126093-1

Date Collected: 02/08/20 00:00

Matrix: Water

Date Received: 02/11/20 08:40

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 | | | 02/14/20 02:06 | 1 |
| cis-1,2-Dichloroethene | 1.0 | U | 1.0 | 0.16 | ug/L | | | 02/14/20 02:06 | 1 |
| Tetrachloroethene | 1.0 | U | 1.0 | 0.15 | ug/L | | | 02/14/20 02:06 | 1 |
| trans-1,2-Dichloroethene | 1.0 | U | 1.0 | 0.19 | ug/L | | | 02/14/20 02:06 | 1 |
| Trichloroethene | 1.0 | U | 1.0 | 0.10 | ug/L | | | 02/14/20 02:06 | 1 |
| Vinyl chloride | 1.0 | U | 1.0 | 0.20 | ug/L | | | 02/14/20 02:06 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 97 | | 75 - 130 | | 02/14/20 02:06 | 1 |
| 4-Bromofluorobenzene (Surr) | 104 | | 47 - 134 | | 02/14/20 02:06 | 1 |
| Toluene-d8 (Surr) | 94 | | 69 - 122 | | 02/14/20 02:06 | 1 |
| Dibromofluoromethane (Surr) | 90 | | 78 - 129 | | 02/14/20 02:06 | 1 |

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP On Site

Job ID: 240-126093-1

Client Sample ID: MW-40_020820

Lab Sample ID: 240-126093-2

Date Collected: 02/08/20 10:50

Matrix: Water

Date Received: 02/11/20 08:40

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 | - | | 02/14/20 15:06 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 101 | | 70 - 133 | | 02/14/20 15:06 | 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 | - | | 02/14/20 02:31 | 1 |
| cis-1,2-Dichloroethene | 2.5 | | 1.0 | 0.16 | ug/L | | | 02/14/20 02:31 | 1 |
| Tetrachloroethene | 1.0 | U | 1.0 | 0.15 | ug/L | - | | 02/14/20 02:31 | 1 |
| trans-1,2-Dichloroethene | 0.30 | J | 1.0 | 0.19 | ug/L | | | 02/14/20 02:31 | 1 |
| Trichloroethene | 1.0 | U | 1.0 | 0.10 | ug/L | - | | 02/14/20 02:31 | 1 |
| Vinyl chloride | 0.28 | J | 1.0 | 0.20 | ug/L | | | 02/14/20 02:31 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 98 | | 75 - 130 | | 02/14/20 02:31 | 1 |
| 4-Bromofluorobenzene (Surr) | 105 | | 47 - 134 | | 02/14/20 02:31 | 1 |
| Toluene-d8 (Surr) | 93 | | 69 - 122 | | 02/14/20 02:31 | 1 |
| Dibromofluoromethane (Surr) | 87 | | 78 - 129 | | 02/14/20 02:31 | 1 |

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP On Site

Job ID: 240-126093-1

Client Sample ID: MW-31_020820

Lab Sample ID: 240-126093-3

Date Collected: 02/08/20 12:20

Matrix: Water

Date Received: 02/11/20 08:40

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 | | | 02/14/20 15:31 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 101 | | 70 - 133 | | 02/14/20 15:31 | 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 | | | 02/14/20 03:01 | 1 |
| cis-1,2-Dichloroethene | 1.0 | U | 1.0 | 0.16 | ug/L | | | 02/14/20 03:01 | 1 |
| Tetrachloroethene | 1.0 | U | 1.0 | 0.15 | ug/L | | | 02/14/20 03:01 | 1 |
| trans-1,2-Dichloroethene | 1.0 | U | 1.0 | 0.19 | ug/L | | | 02/14/20 03:01 | 1 |
| Trichloroethene | 1.0 | U | 1.0 | 0.10 | ug/L | | | 02/14/20 03:01 | 1 |
| Vinyl chloride | 1.0 | U | 1.0 | 0.20 | ug/L | | | 02/14/20 03:01 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 94 | | 75 - 130 | | 02/14/20 03:01 | 1 |
| 4-Bromofluorobenzene (Surr) | 107 | | 47 - 134 | | 02/14/20 03:01 | 1 |
| Toluene-d8 (Surr) | 96 | | 69 - 122 | | 02/14/20 03:01 | 1 |
| Dibromofluoromethane (Surr) | 89 | | 78 - 129 | | 02/14/20 03:01 | 1 |

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP On Site

Job ID: 240-126093-1

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 (75-130) | BFB (47-134) | TOL (69-122) | DBFM (78-129) |
| 240-126004-A-4 MS | Matrix Spike | 92 | 110 | 93 | 83 |
| 240-126004-D-4 MSD | Matrix Spike Duplicate | 87 | 103 | 93 | 88 |
| 240-126093-1 | TRIP BLANK | 97 | 104 | 94 | 90 |
| 240-126093-2 | MW-40_020820 | 98 | 105 | 93 | 87 |
| 240-126093-3 | MW-31_020820 | 94 | 107 | 96 | 89 |
| LCS 240-422714/4 | Lab Control Sample | 94 | 104 | 91 | 90 |
| MB 240-422714/7 | Method Blank | 95 | 107 | 95 | 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 |
|--------------------|------------------------|----------|
| | | (70-133) |
| 240-126093-2 | MW-40_020820 | 101 |
| 240-126093-3 | MW-31_020820 | 101 |
| 240-126097-C-5 MS | Matrix Spike | 102 |
| 240-126097-C-5 MSD | Matrix Spike Duplicate | 101 |
| LCS 240-422866/4 | Lab Control Sample | 97 |
| MB 240-422866/5 | Method Blank | 98 |

Surrogate Legend

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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP On Site

Job ID: 240-126093-1

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

Lab Sample ID: MB 240-422714/7
Matrix: Water
Analysis Batch: 422714

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 | | | 02/13/20 19:01 | 1 |
| cis-1,2-Dichloroethene | 1.0 | U | 1.0 | 0.16 | ug/L | | | 02/13/20 19:01 | 1 |
| Tetrachloroethene | 1.0 | U | 1.0 | 0.15 | ug/L | | | 02/13/20 19:01 | 1 |
| trans-1,2-Dichloroethene | 1.0 | U | 1.0 | 0.19 | ug/L | | | 02/13/20 19:01 | 1 |
| Trichloroethene | 1.0 | U | 1.0 | 0.10 | ug/L | | | 02/13/20 19:01 | 1 |
| Vinyl chloride | 1.0 | U | 1.0 | 0.20 | ug/L | | | 02/13/20 19:01 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 95 | | 75 - 130 | | 02/13/20 19:01 | 1 |
| 4-Bromofluorobenzene (Surr) | 107 | | 47 - 134 | | 02/13/20 19:01 | 1 |
| Toluene-d8 (Surr) | 95 | | 69 - 122 | | 02/13/20 19:01 | 1 |
| Dibromofluoromethane (Surr) | 91 | | 78 - 129 | | 02/13/20 19:01 | 1 |

Lab Sample ID: LCS 240-422714/4
Matrix: Water
Analysis Batch: 422714

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 | 10.9 | | ug/L | | 109 | 73 - 129 |
| cis-1,2-Dichloroethene | 10.0 | 10.3 | | ug/L | | 103 | 75 - 124 |
| Tetrachloroethene | 10.0 | 9.81 | | ug/L | | 98 | 70 - 125 |
| trans-1,2-Dichloroethene | 10.0 | 10.6 | | ug/L | | 106 | 74 - 130 |
| Trichloroethene | 10.0 | 9.46 | | ug/L | | 95 | 71 - 121 |
| Vinyl chloride | 10.0 | 9.91 | | ug/L | | 99 | 61 - 134 |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|------------------------------|---------------|---------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 94 | | 75 - 130 |
| 4-Bromofluorobenzene (Surr) | 104 | | 47 - 134 |
| Toluene-d8 (Surr) | 91 | | 69 - 122 |
| Dibromofluoromethane (Surr) | 90 | | 78 - 129 |

Lab Sample ID: 240-126004-A-4 MS
Matrix: Water
Analysis Batch: 422714

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 | 1.0 | U | 10.0 | 9.64 | | ug/L | | 96 | 64 - 132 |
| cis-1,2-Dichloroethene | 1.0 | U | 10.0 | 9.89 | | ug/L | | 99 | 68 - 121 |
| Tetrachloroethene | 1.0 | U | 10.0 | 9.52 | | ug/L | | 95 | 52 - 129 |
| trans-1,2-Dichloroethene | 1.0 | U | 10.0 | 9.90 | | ug/L | | 99 | 69 - 126 |
| Trichloroethene | 1.0 | U | 10.0 | 8.96 | | ug/L | | 90 | 56 - 124 |
| Vinyl chloride | 1.0 | U | 10.0 | 11.3 | | ug/L | | 113 | 49 - 136 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|------------------------------|--------------|--------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 92 | | 75 - 130 |
| 4-Bromofluorobenzene (Surr) | 110 | | 47 - 134 |
| Toluene-d8 (Surr) | 93 | | 69 - 122 |

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP On Site

Job ID: 240-126093-1

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

Lab Sample ID: 240-126004-A-4 MS
Matrix: Water
Analysis Batch: 422714

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

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|-----------------------------|-----------------|-----------------|----------|
| Dibromofluoromethane (Surr) | 83 | | 78 - 129 |

Lab Sample ID: 240-126004-D-4 MSD
Matrix: Water
Analysis Batch: 422714

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 | 9.41 | | ug/L | | 94 | 64 - 132 | 2 | 35 |
| cis-1,2-Dichloroethene | 1.0 | U | 10.0 | 9.94 | | ug/L | | 99 | 68 - 121 | 0 | 35 |
| Tetrachloroethene | 1.0 | U | 10.0 | 8.31 | | ug/L | | 83 | 52 - 129 | 14 | 35 |
| trans-1,2-Dichloroethene | 1.0 | U | 10.0 | 9.91 | | ug/L | | 99 | 69 - 126 | 0 | 35 |
| Trichloroethene | 1.0 | U | 10.0 | 8.73 | | ug/L | | 87 | 56 - 124 | 3 | 35 |
| Vinyl chloride | 1.0 | U | 10.0 | 11.9 | | ug/L | | 119 | 49 - 136 | 5 | 35 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|------------------------------|------------------|------------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 87 | | 75 - 130 |
| 4-Bromofluorobenzene (Surr) | 103 | | 47 - 134 |
| Toluene-d8 (Surr) | 93 | | 69 - 122 |
| Dibromofluoromethane (Surr) | 88 | | 78 - 129 |

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

Lab Sample ID: MB 240-422866/5
Matrix: Water
Analysis Batch: 422866

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

| 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 | | | 02/14/20 12:34 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------------|-----------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 98 | | 70 - 133 | | 02/14/20 12:34 | 1 |

Lab Sample ID: LCS 240-422866/4
Matrix: Water
Analysis Batch: 422866

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------|----------------|---------------|------------------|------|---|------|-----------------|
| 1,4-Dioxane | 10.0 | 11.2 | | ug/L | | 112 | 80 - 135 |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|------------------------------|------------------|------------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 97 | | 70 - 133 |

Lab Sample ID: 240-126097-C-5 MS
Matrix: Water
Analysis Batch: 422866

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 |
|-------------|------------------|---------------------|----------------|--------------|-----------------|------|---|------|-----------------|
| 1,4-Dioxane | 1.5 | J | 10.0 | 9.37 | | ug/L | | 78 | 46 - 170 |

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP On Site

Job ID: 240-126093-1

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

| <i>Surrogate</i> | <i>%Recovery</i> | <i>MS MS Qualifier</i> | <i>Limits</i> |
|------------------------------|------------------|----------------------------|---------------|
| 1,2-Dichloroethane-d4 (Surr) | 102 | | 70 - 133 |

Lab Sample ID: 240-126097-C-5 MSD
Matrix: Water
Analysis Batch: 422866

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

| <i>Analyte</i> | <i>Sample Result</i> | <i>Sample Qualifier</i> | <i>Spike Added</i> | <i>MSD Result</i> | <i>MSD Qualifier</i> | <i>Unit</i> | <i>D</i> | <i>%Rec</i> | <i>%Rec. Limits</i> | <i>RPD</i> | <i>RPD Limit</i> |
|----------------|--------------------------|-----------------------------|------------------------|-----------------------|--------------------------|-------------|----------|-------------|-------------------------|------------|----------------------|
| 1,4-Dioxane | 1.5 | J | 10.0 | 9.08 | | ug/L | | 75 | 46 - 170 | 3 | 26 |

| <i>Surrogate</i> | <i>%Recovery</i> | <i>MSD MSD Qualifier</i> | <i>Limits</i> |
|------------------------------|------------------|------------------------------|---------------|
| 1,2-Dichloroethane-d4 (Surr) | 101 | | 70 - 133 |



QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP On Site

Job ID: 240-126093-1

GC/MS VOA

Analysis Batch: 422714

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|------------------------|-----------|--------|--------|------------|
| 240-126093-1 | TRIP BLANK | Total/NA | Water | 8260B | |
| 240-126093-2 | MW-40_020820 | Total/NA | Water | 8260B | |
| 240-126093-3 | MW-31_020820 | Total/NA | Water | 8260B | |
| MB 240-422714/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 240-422714/4 | Lab Control Sample | Total/NA | Water | 8260B | |
| 240-126004-A-4 MS | Matrix Spike | Total/NA | Water | 8260B | |
| 240-126004-D-4 MSD | Matrix Spike Duplicate | Total/NA | Water | 8260B | |

Analysis Batch: 422866

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|------------------------|-----------|--------|-----------|------------|
| 240-126093-2 | MW-40_020820 | Total/NA | Water | 8260B SIM | |
| 240-126093-3 | MW-31_020820 | Total/NA | Water | 8260B SIM | |
| MB 240-422866/5 | Method Blank | Total/NA | Water | 8260B SIM | |
| LCS 240-422866/4 | Lab Control Sample | Total/NA | Water | 8260B SIM | |
| 240-126097-C-5 MS | Matrix Spike | Total/NA | Water | 8260B SIM | |
| 240-126097-C-5 MSD | Matrix Spike Duplicate | Total/NA | Water | 8260B SIM | |

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP On Site

Job ID: 240-126093-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126093-1

Date Collected: 02/08/20 00:00

Matrix: Water

Date Received: 02/11/20 08:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 8260B | | 1 | 422714 | 02/14/20 02:06 | LRW | TAL CAN |

Client Sample ID: MW-40_020820

Lab Sample ID: 240-126093-2

Date Collected: 02/08/20 10:50

Matrix: Water

Date Received: 02/11/20 08:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 8260B | | 1 | 422714 | 02/14/20 02:31 | LRW | TAL CAN |
| Total/NA | Analysis | 8260B SIM | | 1 | 422866 | 02/14/20 15:06 | TJL2 | TAL CAN |

Client Sample ID: MW-31_020820

Lab Sample ID: 240-126093-3

Date Collected: 02/08/20 12:20

Matrix: Water

Date Received: 02/11/20 08:40

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 8260B | | 1 | 422714 | 02/14/20 03:01 | LRW | TAL CAN |
| Total/NA | Analysis | 8260B SIM | | 1 | 422866 | 02/14/20 15:31 | TJL2 | 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 On Site

Job ID: 240-126093-1

Laboratory: Eurofins TestAmerica, Canton

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

| Authority | Program | Identification Number | Expiration Date |
|-----------------------|---------------------|-----------------------|-----------------|
| California | State | 2927 | 02-23-20 * |
| Connecticut | State | PH-0590 | 12-31-19 * |
| Florida | NELAP | E87225 | 06-30-20 |
| Georgia | State | 4062 | 02-23-20 * |
| Illinois | NELAP | 004498 | 07-31-20 |
| Iowa | State | 421 | 06-01-21 |
| Kansas | NELAP | E-10336 | 04-30-20 |
| Kentucky (UST) | State | 112225 | 02-23-20 |
| Kentucky (WW) | State | KY98016 | 12-31-20 |
| Minnesota | NELAP | OH00048 | 12-31-20 |
| Minnesota (Petrofund) | State | 3506 | 08-01-21 |
| New Jersey | NELAP | OH001 | 06-30-20 |
| New York | NELAP | 10975 | 03-31-20 |
| Ohio VAP | State | CL0024 | 06-05-21 |
| Oregon | NELAP | 4062 | 02-23-20 * |
| Pennsylvania | NELAP | 68-00340 | 08-31-20 |
| Texas | NELAP | T104704517-18-10 | 08-31-20 |
| USDA | US Federal Programs | P330-16-00404 | 12-28-19 * |
| Virginia | NELAP | 010101 | 09-14-20 |
| Washington | State | C971 | 01-12-21 |
| West Virginia DEP | State | 210 | 12-31-20 |

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

Eurofins TestAmerica, Canton

0.3/1.0

TestAmerica Laboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Regulatory program: DW NPDES RCRA Other

Client Contact
 Company Name: Arcadis
 Address: 28550 Cabot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377
 Phone: 248-994-2240
 Project Name: Ford LTP On-Site
 Project Number: 30042006.0401.02
 PO # 30042006.0401.02

Client Project Manager: Kris Hinskey
 Site Contact: Julia McClafferty
 Telephone: 248-994-2240
 Telephone: 734-644-5131

Sampler Name: Melissa Weaver
 Method of Shipment/Carrier:
 Shipping/Tracking No:

Analysis Turnaround Time
 TAT if different from below
 10 day
 3 weeks
 2 weeks
 1 week
 2 days
 1 day

Containers & Preservatives
 Matrix: Aqueous, Solid, Other
 H2SO4, HNO3, HCl, NaOH, ZnAc, NaOH, Others

| Sample Identification | Sample Date | Sample Time | Filtered Sample (Y/N) | Composite C/Grab/G | 1,1-DCE 8260B | cis-1,2-DCE 8260B | Trans-1,2-DCE 8260B | PCE 8260B | TCE 8260B | Vinyl Chloride 8260B | 1,4-Dioxane 8260B SIM | Sample Specific Notes / Special Instructions: |
|-----------------------|-------------|-------------|-----------------------|--------------------|---------------|-------------------|---------------------|-----------|-----------|----------------------|-----------------------|---|
| TRIP BLANK | | | N | | X | X | X | X | X | X | X | 100A |
| MW-40-620820 | 2/8/20 | 1050 | N | | X | X | X | X | X | X | X | 3 Vials for 8260BIS 3 Vials for 8260B2A |
| MW-31-020820 | 2/8/20 | 1220 | N | | X | X | X | X | X | X | X | ↓ |





Possible Hazard Identification
 Non-Hazard Irritant Poison B Unknown
 Flammable Corrosive

Special Instructions/OC Requirements & Comments:
 Submit all results through Cadena at jtomalia@cadenasco.com. Cadena #E203728
 Level IV Reporting requested.

| Relinquished by: | Date/Time: | Company: | Received by: | Date/Time: | Company: |
|------------------------|--------------|----------|----------------------------|--------------|----------|
| M. Weaver | 2/8/20 1450 | Arcadis | Arcadis Taylor | 2/16/20 1450 | Arcadis |
| KACHEL BELAK and Brian | 2/8/20 1616 | Arcadis | NOVI COLD STORAGE | 2/16/20 1616 | Arcadis |
| Julia Mulford | 2/10/20 1315 | Arcadis | Received in Laboratory by: | 2/10/20 1320 | ETA |

ETA 2/10/20 1440
 T+ 2-11-20 840

| | | |
|--|---|---|
| Eurofins TestAmerica Canton Sample Receipt Form/Narrative | | Login # : <u>126093</u> |
| Canton Facility | | |
| Client <u>Arcadis</u> | Site Name _____ | Cooler unpacked by:  |
| Cooler Received on <u>2-11-20</u> | Opened on <u>2-11-20</u> | |
| FedEx: 1 st <input checked="" type="checkbox"/> Exp <input type="checkbox"/> UPS <input type="checkbox"/> FAS <input type="checkbox"/> Clipper <input type="checkbox"/> Client Drop Off <input type="checkbox"/> TestAmerica Courier <input type="checkbox"/> Other _____ | | |
| Receipt After-hours: Drop-off Date/Time | | Storage Location |
| TestAmerica Cooler # <u>TA</u> | Foam Box <input type="checkbox"/> Client Cooler <input type="checkbox"/> Box <input type="checkbox"/> Other _____ | |
| Packing material used: <u>Bubble Wrap</u> | Foam <input type="checkbox"/> Plastic Bag <input type="checkbox"/> None <input type="checkbox"/> Other _____ | |
| COOLANT: <u>Wet Ice</u> | Blue Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> Water <input type="checkbox"/> None <input type="checkbox"/> | |
| 1. Cooler temperature upon receipt | <input type="checkbox"/> See Multiple Cooler Form | |
| IR GUN# IR-10 (CF +0.7°C) Observed Cooler Temp. <u>6.3</u> °C Corrected Cooler Temp. <u>1.0</u> °C | | |
| IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C | | |
| 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u> | 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 <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/> NA | pH Strip Lot# <u>HC995364</u> |
| 13. Were VOAs on the COC? | <input checked="" type="checkbox"/> Yes No | |
| 14. Were air bubbles >6 mm in any VOA vials?  Larger than this. | Yes <input checked="" type="checkbox"/> No NA | |
| 15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ | <input checked="" type="checkbox"/> Yes No | |
| 16. Was a LL Hg or Me Hg trip blank present? | Yes <input checked="" type="checkbox"/> No | |
| Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____ | | |
| Concerning _____ | | |

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

| | |
|---|---------------------------------|
| 17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES | Samples processed by: <u>Ag</u> |
| _____ | |
| _____ | |
| _____ | |
| _____ | |
| 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: _____ | |