

## ANALYTICAL REPORT

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

Laboratory Job ID: 240-126099-1  
Client Project/Site: Ford LTP On Site

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

Attn: Kristoffer Hinskey



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

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



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# Definitions/Glossary

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

Job ID: 240-126099-1

## Qualifiers

### GC/MS VOA

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

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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: 240-126099-1

**Job ID: 240-126099-1**

**Laboratory: Eurofins TestAmerica, Canton**

**Narrative**

## CASE NARRATIVE

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

**Project: Ford LTP On Site**

**Report Number: 240-126099-1**

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 3.1° C.

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

Samples TRIP BLANK (240-126099-1), MW-70\_020720 (240-126099-2), MW-47\_020720 (240-126099-3), MW-33\_020720 (240-126099-4) and DUP-14 (240-126099-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/14/2020 and 02/17/2020.

Samples MW-70\_020720 (240-126099-2)[13.33X], MW-47\_020720 (240-126099-3)[2.5X] and DUP-14 (240-126099-5)[13.33X] 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-70\_020720 (240-126099-2), MW-47\_020720 (240-126099-3), MW-33\_020720 (240-126099-4) and DUP-14 (240-126099-5) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 02/13/2020.

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: 240-126099-1

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: 240-126099-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-126099-1	TRIP BLANK	Water	02/07/20 00:00	02/11/20 08:40	
240-126099-2	MW-70_020720	Water	02/07/20 11:33	02/11/20 08:40	
240-126099-3	MW-47_020720	Water	02/07/20 13:30	02/11/20 08:40	
240-126099-4	MW-33_020720	Water	02/07/20 15:05	02/11/20 08:40	
240-126099-5	DUP-14	Water	02/07/20 00:00	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: 240-126099-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126099-1

No Detections.

## Client Sample ID: MW-70\_020720

Lab Sample ID: 240-126099-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.5		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	260		13	2.1	ug/L	13.33		8260B	Total/NA
Vinyl chloride	370		13	2.7	ug/L	13.33		8260B	Total/NA

## Client Sample ID: MW-47\_020720

Lab Sample ID: 240-126099-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	22		2.5	0.40	ug/L	2.5		8260B	Total/NA
trans-1,2-Dichloroethene	4.5		2.5	0.48	ug/L	2.5		8260B	Total/NA
Vinyl chloride	74		2.5	0.50	ug/L	2.5		8260B	Total/NA

## Client Sample ID: MW-33\_020720

Lab Sample ID: 240-126099-4

No Detections.

## Client Sample ID: DUP-14

Lab Sample ID: 240-126099-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.7		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	260		13	2.1	ug/L	13.33		8260B	Total/NA
Vinyl chloride	380		13	2.7	ug/L	13.33		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

# Client Sample Results

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

Job ID: 240-126099-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-126099-1**

**Date Collected: 02/07/20 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 15:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/14/20 15:23	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/14/20 15:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/14/20 15:23	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/14/20 15:23	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/14/20 15:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130		02/14/20 15:23	1
4-Bromofluorobenzene (Surr)	69		47 - 134		02/14/20 15:23	1
Toluene-d8 (Surr)	90		69 - 122		02/14/20 15:23	1
Dibromofluoromethane (Surr)	117		78 - 129		02/14/20 15:23	1



# Client Sample Results

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

Job ID: 240-126099-1

**Client Sample ID: MW-70\_020720**

**Lab Sample ID: 240-126099-2**

Date Collected: 02/07/20 11:33

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	4.5		2.0	0.86	ug/L			02/13/20 21:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 133		02/13/20 21:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	13	U	13	2.5	ug/L			02/17/20 14:50	13.33
cis-1,2-Dichloroethene	260		13	2.1	ug/L			02/17/20 14:50	13.33
Tetrachloroethene	13	U	13	2.0	ug/L			02/17/20 14:50	13.33
trans-1,2-Dichloroethene	13	U	13	2.5	ug/L			02/17/20 14:50	13.33
Trichloroethene	13	U	13	1.3	ug/L			02/17/20 14:50	13.33
Vinyl chloride	370		13	2.7	ug/L			02/17/20 14:50	13.33

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130		02/17/20 14:50	13.33
4-Bromofluorobenzene (Surr)	68		47 - 134		02/17/20 14:50	13.33
Toluene-d8 (Surr)	88		69 - 122		02/17/20 14:50	13.33
Dibromofluoromethane (Surr)	116		78 - 129		02/17/20 14:50	13.33

# Client Sample Results

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

Job ID: 240-126099-1

**Client Sample ID: MW-47\_020720**

**Lab Sample ID: 240-126099-3**

Date Collected: 02/07/20 13:30

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			02/13/20 22:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 133		02/13/20 22:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.5	U	2.5	0.48	ug/L			02/14/20 16:11	2.5
<b>cis-1,2-Dichloroethene</b>	<b>22</b>		2.5	0.40	ug/L			02/14/20 16:11	2.5
Tetrachloroethene	2.5	U	2.5	0.38	ug/L			02/14/20 16:11	2.5
<b>trans-1,2-Dichloroethene</b>	<b>4.5</b>		2.5	0.48	ug/L			02/14/20 16:11	2.5
Trichloroethene	2.5	U	2.5	0.25	ug/L			02/14/20 16:11	2.5
<b>Vinyl chloride</b>	<b>74</b>		2.5	0.50	ug/L			02/14/20 16:11	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		75 - 130		02/14/20 16:11	2.5
4-Bromofluorobenzene (Surr)	68		47 - 134		02/14/20 16:11	2.5
Toluene-d8 (Surr)	87		69 - 122		02/14/20 16:11	2.5
Dibromofluoromethane (Surr)	120		78 - 129		02/14/20 16:11	2.5

# Client Sample Results

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

Job ID: 240-126099-1

**Client Sample ID: MW-33\_020720**

**Lab Sample ID: 240-126099-4**

Date Collected: 02/07/20 15:05

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			02/13/20 22:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 133		02/13/20 22:27	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 16:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/14/20 16:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/14/20 16:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/14/20 16:35	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/14/20 16:35	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/14/20 16:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		75 - 130		02/14/20 16:35	1
4-Bromofluorobenzene (Surr)	68		47 - 134		02/14/20 16:35	1
Toluene-d8 (Surr)	89		69 - 122		02/14/20 16:35	1
Dibromofluoromethane (Surr)	120		78 - 129		02/14/20 16:35	1

# Client Sample Results

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

Job ID: 240-126099-1

**Client Sample ID: DUP-14**

**Lab Sample ID: 240-126099-5**

Date Collected: 02/07/20 00:00

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	4.7		2.0	0.86	ug/L			02/13/20 22:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 133					02/13/20 22:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	13	U	13	2.5	ug/L			02/14/20 16:59	13.33
cis-1,2-Dichloroethene	260		13	2.1	ug/L			02/14/20 16:59	13.33
Tetrachloroethene	13	U	13	2.0	ug/L			02/14/20 16:59	13.33
trans-1,2-Dichloroethene	13	U	13	2.5	ug/L			02/14/20 16:59	13.33
Trichloroethene	13	U	13	1.3	ug/L			02/14/20 16:59	13.33
Vinyl chloride	380		13	2.7	ug/L			02/14/20 16:59	13.33
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		75 - 130					02/14/20 16:59	13.33
4-Bromofluorobenzene (Surr)	70		47 - 134					02/14/20 16:59	13.33
Toluene-d8 (Surr)	88		69 - 122					02/14/20 16:59	13.33
Dibromofluoromethane (Surr)	117		78 - 129					02/14/20 16:59	13.33

# Surrogate Summary

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

Job ID: 240-126099-1

## 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)
190-22309-G-9 MS	Matrix Spike	91	98	100	100
190-22309-G-9 MSD	Matrix Spike Duplicate	95	96	98	98
240-126099-1	TRIP BLANK	109	69	90	117
240-126099-2	MW-70_020720	109	68	88	116
240-126099-3	MW-47_020720	113	68	87	120
240-126099-4	MW-33_020720	114	68	89	120
240-126099-5	DUP-14	110	70	88	117
240-126138-E-2 MS	Matrix Spike	90	95	92	103
240-126138-F-2 MSD	Matrix Spike Duplicate	90	87	90	96
LCS 240-422859/4	Lab Control Sample	95	101	101	100
LCS 240-423054/4	Lab Control Sample	92	98	99	100
MB 240-422859/7	Method Blank	105	71	90	114
MB 240-423054/7	Method Blank	112	66	89	117

#### 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)
240-126095-G-3 MS	Matrix Spike	100
240-126095-G-3 MSD	Matrix Spike Duplicate	101
240-126099-2	MW-70_020720	102
240-126099-3	MW-47_020720	100
240-126099-4	MW-33_020720	102
240-126099-5	DUP-14	103
LCS 240-422706/4	Lab Control Sample	97
MB 240-422706/5	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: 240-126099-1

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

**Lab Sample ID: MB 240-422859/7**  
**Matrix: Water**  
**Analysis Batch: 422859**

**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			02/14/20 14:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/14/20 14:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/14/20 14:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/14/20 14:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/14/20 14:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/14/20 14:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 130		02/14/20 14:12	1
4-Bromofluorobenzene (Surr)	71		47 - 134		02/14/20 14:12	1
Toluene-d8 (Surr)	90		69 - 122		02/14/20 14:12	1
Dibromofluoromethane (Surr)	114		78 - 129		02/14/20 14:12	1

**Lab Sample ID: LCS 240-422859/4**  
**Matrix: Water**  
**Analysis Batch: 422859**

**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	10.2		ug/L		102	73 - 129
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	75 - 124
Tetrachloroethene	10.0	10.2		ug/L		102	70 - 125
trans-1,2-Dichloroethene	10.0	11.2		ug/L		112	74 - 130
Trichloroethene	10.0	10.3		ug/L		103	71 - 121
Vinyl chloride	10.0	7.32		ug/L		73	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		75 - 130
4-Bromofluorobenzene (Surr)	101		47 - 134
Toluene-d8 (Surr)	101		69 - 122
Dibromofluoromethane (Surr)	100		78 - 129

**Lab Sample ID: 240-126138-E-2 MS**  
**Matrix: Water**  
**Analysis Batch: 422859**

**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	9.22		ug/L		92	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.84		ug/L		98	68 - 121
Tetrachloroethene	1.0	U	10.0	8.79		ug/L		88	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	10.9		ug/L		109	69 - 126
Trichloroethene	1.0	U	10.0	9.51		ug/L		95	56 - 124
Vinyl chloride	1.0	U	10.0	7.92		ug/L		79	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	92		69 - 122

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-126099-1

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

**Lab Sample ID: 240-126138-E-2 MS**  
**Matrix: Water**  
**Analysis Batch: 422859**

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	103		78 - 129

**Lab Sample ID: 240-126138-F-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 422859**

**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	9.02		ug/L		90	64 - 132	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.96		ug/L		100	68 - 121	1	35
Tetrachloroethene	1.0	U	10.0	8.89		ug/L		89	52 - 129	1	35
trans-1,2-Dichloroethene	1.0	U	10.0	10.4		ug/L		104	69 - 126	5	35
Trichloroethene	1.0	U	10.0	9.30		ug/L		93	56 - 124	2	35
Vinyl chloride	1.0	U	10.0	7.07		ug/L		71	49 - 136	11	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		75 - 130
4-Bromofluorobenzene (Surr)	87		47 - 134
Toluene-d8 (Surr)	90		69 - 122
Dibromofluoromethane (Surr)	96		78 - 129

**Lab Sample ID: MB 240-423054/7**  
**Matrix: Water**  
**Analysis Batch: 423054**

**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			02/17/20 14:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/17/20 14:26	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/17/20 14:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/17/20 14:26	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/17/20 14:26	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/17/20 14:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 130		02/17/20 14:26	1
4-Bromofluorobenzene (Surr)	66		47 - 134		02/17/20 14:26	1
Toluene-d8 (Surr)	89		69 - 122		02/17/20 14:26	1
Dibromofluoromethane (Surr)	117		78 - 129		02/17/20 14:26	1

**Lab Sample ID: LCS 240-423054/4**  
**Matrix: Water**  
**Analysis Batch: 423054**

**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	73 - 129
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	75 - 124
Tetrachloroethene	10.0	10.5		ug/L		105	70 - 125
trans-1,2-Dichloroethene	10.0	11.4		ug/L		114	74 - 130
Trichloroethene	10.0	10.6		ug/L		106	71 - 121

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-126099-1

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

**Lab Sample ID: LCS 240-423054/4**  
**Matrix: Water**  
**Analysis Batch: 423054**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	7.42		ug/L		74	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		75 - 130
4-Bromofluorobenzene (Surr)	98		47 - 134
Toluene-d8 (Surr)	99		69 - 122
Dibromofluoromethane (Surr)	100		78 - 129

**Lab Sample ID: 190-22309-G-9 MS**  
**Matrix: Water**  
**Analysis Batch: 423054**

**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	10.0		ug/L		100	64 - 132
cis-1,2-Dichloroethene	2.6		10.0	12.4		ug/L		97	68 - 121
Tetrachloroethene	1.0	U	10.0	9.93		ug/L		99	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	11.4		ug/L		114	69 - 126
Trichloroethene	1.0	U	10.0	10.1		ug/L		101	56 - 124
Vinyl chloride	1.7		10.0	8.93		ug/L		73	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		75 - 130
4-Bromofluorobenzene (Surr)	98		47 - 134
Toluene-d8 (Surr)	100		69 - 122
Dibromofluoromethane (Surr)	100		78 - 129

**Lab Sample ID: 190-22309-G-9 MSD**  
**Matrix: Water**  
**Analysis Batch: 423054**

**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	10.6		ug/L		106	64 - 132	5	35
cis-1,2-Dichloroethene	2.6		10.0	13.0		ug/L		103	68 - 121	5	35
Tetrachloroethene	1.0	U	10.0	9.41		ug/L		94	52 - 129	5	35
trans-1,2-Dichloroethene	1.0	U	10.0	10.9		ug/L		109	69 - 126	5	35
Trichloroethene	1.0	U	10.0	10.2		ug/L		102	56 - 124	0	35
Vinyl chloride	1.7		10.0	8.70		ug/L		70	49 - 136	3	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		75 - 130
4-Bromofluorobenzene (Surr)	96		47 - 134
Toluene-d8 (Surr)	98		69 - 122
Dibromofluoromethane (Surr)	98		78 - 129



# QC Sample Results

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

Job ID: 240-126099-1

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

**Lab Sample ID: MB 240-422706/5**  
**Matrix: Water**  
**Analysis Batch: 422706**

**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			02/13/20 13:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 133					02/13/20 13:04	1

**Lab Sample ID: LCS 240-422706/4**  
**Matrix: Water**  
**Analysis Batch: 422706**

**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	10.1		ug/L		101	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	97		70 - 133				

**Lab Sample ID: 240-126095-G-3 MS**  
**Matrix: Water**  
**Analysis Batch: 422706**

**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	2.0	U	10.0	10.3		ug/L		103	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	100		70 - 133						

**Lab Sample ID: 240-126095-G-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 422706**

**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
1,4-Dioxane	2.0	U	10.0	10.1		ug/L		101	46 - 170	2	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	101		70 - 133								

# QC Association Summary

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

Job ID: 240-126099-1

## GC/MS VOA

### Analysis Batch: 422706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126099-2	MW-70_020720	Total/NA	Water	8260B SIM	
240-126099-3	MW-47_020720	Total/NA	Water	8260B SIM	
240-126099-4	MW-33_020720	Total/NA	Water	8260B SIM	
240-126099-5	DUP-14	Total/NA	Water	8260B SIM	
MB 240-422706/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-422706/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-126095-G-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-126095-G-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

### Analysis Batch: 422859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126099-1	TRIP BLANK	Total/NA	Water	8260B	
240-126099-3	MW-47_020720	Total/NA	Water	8260B	
240-126099-4	MW-33_020720	Total/NA	Water	8260B	
240-126099-5	DUP-14	Total/NA	Water	8260B	
MB 240-422859/7	Method Blank	Total/NA	Water	8260B	
LCS 240-422859/4	Lab Control Sample	Total/NA	Water	8260B	
240-126138-E-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-126138-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 423054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126099-2	MW-70_020720	Total/NA	Water	8260B	
MB 240-423054/7	Method Blank	Total/NA	Water	8260B	
LCS 240-423054/4	Lab Control Sample	Total/NA	Water	8260B	
190-22309-G-9 MS	Matrix Spike	Total/NA	Water	8260B	
190-22309-G-9 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

# Lab Chronicle

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

Job ID: 240-126099-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126099-1

Date Collected: 02/07/20 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	422859	02/14/20 15:23	LRW	TAL CAN

## Client Sample ID: MW-70\_020720

Lab Sample ID: 240-126099-2

Date Collected: 02/07/20 11:33

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		13.33	423054	02/17/20 14:50	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	422706	02/13/20 21:36	SAM	TAL CAN

## Client Sample ID: MW-47\_020720

Lab Sample ID: 240-126099-3

Date Collected: 02/07/20 13:30

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		2.5	422859	02/14/20 16:11	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	422706	02/13/20 22:02	SAM	TAL CAN

## Client Sample ID: MW-33\_020720

Lab Sample ID: 240-126099-4

Date Collected: 02/07/20 15:05

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	422859	02/14/20 16:35	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	422706	02/13/20 22:27	SAM	TAL CAN

## Client Sample ID: DUP-14

Lab Sample ID: 240-126099-5

Date Collected: 02/07/20 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		13.33	422859	02/14/20 16:59	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	422706	02/13/20 22:53	SAM	TAL CAN

**Laboratory References:**

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

# Accreditation/Certification Summary

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

Job ID: 240-126099-1

## 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

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

Regulatory program:  DW  NPDES  RCRA  Other

Client Contact: 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: 30942006.0401.02  
 PO # 30042006.0401.02

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

Lab Contact: Mike DelMonico  
 Telephone: 330-497-9396

TestAmerica Laboratories, Inc.  
 COC No: \_\_\_\_\_ of \_\_\_\_\_ COCs

Sampler Name: Melissa W. Davis  
 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

Sample Identification	Sample Date	Sample Time	Matrix						Filtered Sample (Y/N)	Composite C / Grab G	Analyses						Sample Specific Notes / Special Instructions									
			Air	Aqueous	Sediment	Solid	Other:	H2SO4			HNO3	HCl	NaOH	ZnAc/NaOH	Upret:	Other:		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		
TRIP BLANK																										
MW-70-020720	2/7/20	11:33	X																							1 VOA
MW-47-020720	2/7/20	13:30	X																							3 VOA for 8260B 3 VOA for 8260SM
MW-33-020720	2/7/20	15:05	X																							3 VOA for 8260B 3 VOA for 8260B SIM
DUP-14	2/7/20	---	X																							3 VOA for 8260B 3 VOA for 8260B SIM

Possible Hazard Identification  
 Non-Hazard  Flammable  Irritant  Poison B  Unknown

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

Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_

Received by: Arcadis  
 Date/Time: 2/7/20 1630  
 Company: Arcadis

Received by: Matthew Woodman  
 Date/Time: 2/7/20 1710  
 Company: Arcadis

Received by: Arcadis Cold Storage  
 Date/Time: 2/7/20 1900  
 Company: Arcadis

Received by: \_\_\_\_\_  
 Date/Time: 2/10/20 1315  
 Company: Arcadis

Received by: \_\_\_\_\_  
 Date/Time: 2/10/20 1440  
 Company: ETA

Received by: \_\_\_\_\_  
 Date/Time: 2/10/20 1320  
 Company: ETA

Received by: \_\_\_\_\_  
 Date/Time: 2/10/20 840  
 Company: TA



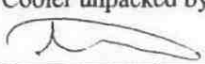

240-126099 Chain of Custody

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

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 John McClafferty





<b>Eurofins TestAmerica Canton Sample Receipt Form/Narrative</b>		Login # : <u>124099</u>
<b>Canton Facility</b>		
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 <sup>st</sup> <input checked="" type="checkbox"/> Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____		
<b>Receipt After-hours: Drop-off Date/Time</b>		<b>Storage Location</b>
TestAmerica Cooler # <u>TA</u>	Foam Box _____	Client Cooler _____
Packing material used: Bubble Wrap _____ Foam _____ Plastic Bag _____ None _____ Other _____		
COOLANT: Wet Ice _____ Blue Ice _____ Dry Ice _____ Water _____ None _____		
1. Cooler temperature upon receipt		<input type="checkbox"/> See Multiple Cooler Form
IR GUN# IR-10 (CF +0.7°C) Observed Cooler Temp. <u>24</u> °C Corrected Cooler Temp. <u>31</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

<b>17. CHAIN OF CUSTODY &amp; SAMPLE DISCREPANCIES</b>	Samples processed by: <u>AG</u>
<hr/> <hr/> <hr/> <hr/>	

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