

## ANALYTICAL REPORT

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Tel: (330)497-9396

Laboratory Job ID: 240-126094-1  
Client Project/Site: Ford LTP Off Site

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



Authorized for release by:  
2/25/2020 4:32:52 PM

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



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# Definitions/Glossary

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

Job ID: 240-126094-1

## 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 Off Site

Job ID: 240-126094-1

**Job ID: 240-126094-1**

**Laboratory: Eurofins TestAmerica, Canton**

## Narrative

### CASE NARRATIVE

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

**Project: Ford LTP Off Site**

**Report Number: 240-126094-1**

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 (240-126094-1), MW-74\_020720 (240-126094-2), MW-74S\_020720 (240-126094-3) and DUP-04 (240-126094-4) 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-74\_020720 (240-126094-2), MW-74S\_020720 (240-126094-3) and DUP-04 (240-126094-4) 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 Off Site

Job ID: 240-126094-1

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 Off Site

Job ID: 240-126094-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-126094-1	TRIP BLANK	Water	02/07/20 00:00	02/11/20 08:40	
240-126094-2	MW-74_020720	Water	02/07/20 11:32	02/11/20 08:40	
240-126094-3	MW-74S_020720	Water	02/07/20 13:47	02/11/20 08:40	
240-126094-4	DUP-04	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 Off Site

Job ID: 240-126094-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126094-1

No Detections.

## Client Sample ID: MW-74\_020720

Lab Sample ID: 240-126094-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.5		1.0	0.16	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-74S\_020720

Lab Sample ID: 240-126094-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.56	J	1.0	0.16	ug/L	1		8260B	Total/NA

## Client Sample ID: DUP-04

Lab Sample ID: 240-126094-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.3		1.0	0.16	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 240-126094-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-126094-1**

**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 03:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/14/20 03:27	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/14/20 03:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/14/20 03:27	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/14/20 03:27	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/14/20 03:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 130		02/14/20 03:27	1
4-Bromofluorobenzene (Surr)	104		47 - 134		02/14/20 03:27	1
Toluene-d8 (Surr)	95		69 - 122		02/14/20 03:27	1
Dibromofluoromethane (Surr)	86		78 - 129		02/14/20 03:27	1



# Client Sample Results

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

Job ID: 240-126094-1

**Client Sample ID: MW-74\_020720**

**Lab Sample ID: 240-126094-2**

Date Collected: 02/07/20 11:32

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 16:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 133		02/13/20 16:55	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 17:38	1
<b>cis-1,2-Dichloroethene</b>	<b>1.5</b>		1.0	0.16	ug/L			02/14/20 17:38	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/14/20 17:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/14/20 17:38	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/14/20 17:38	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/14/20 17:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		75 - 130		02/14/20 17:38	1
4-Bromofluorobenzene (Surr)	102		47 - 134		02/14/20 17:38	1
Toluene-d8 (Surr)	91		69 - 122		02/14/20 17:38	1
Dibromofluoromethane (Surr)	88		78 - 129		02/14/20 17:38	1

# Client Sample Results

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

Job ID: 240-126094-1

**Client Sample ID: MW-74S\_020720**

**Lab Sample ID: 240-126094-3**

Date Collected: 02/07/20 13:47

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 17:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 133		02/13/20 17:21	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 18:03	1
<b>cis-1,2-Dichloroethene</b>	<b>0.56</b>	<b>J</b>	1.0	0.16	ug/L			02/14/20 18:03	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/14/20 18:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/14/20 18:03	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/14/20 18:03	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/14/20 18:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130		02/14/20 18:03	1
4-Bromofluorobenzene (Surr)	109		47 - 134		02/14/20 18:03	1
Toluene-d8 (Surr)	95		69 - 122		02/14/20 18:03	1
Dibromofluoromethane (Surr)	88		78 - 129		02/14/20 18:03	1

# Client Sample Results

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

Job ID: 240-126094-1

**Client Sample ID: DUP-04**

**Lab Sample ID: 240-126094-4**

**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	2.0	U	2.0	0.86	ug/L			02/13/20 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 133		02/13/20 17:47	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 18:28	1
<b>cis-1,2-Dichloroethene</b>	<b>1.3</b>		1.0	0.16	ug/L			02/14/20 18:28	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/14/20 18:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/14/20 18:28	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/14/20 18:28	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/14/20 18:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		02/14/20 18:28	1
4-Bromofluorobenzene (Surr)	102		47 - 134		02/14/20 18:28	1
Toluene-d8 (Surr)	94		69 - 122		02/14/20 18:28	1
Dibromofluoromethane (Surr)	90		78 - 129		02/14/20 18:28	1

# Surrogate Summary

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

Job ID: 240-126094-1

## 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
240-126087-B-3 MS	Matrix Spike	92	104	93	91
240-126087-E-3 MSD	Matrix Spike Duplicate	89	103	91	89
240-126094-1	TRIP BLANK	97	104	95	86
240-126094-2	MW-74_020720	87	102	91	88
240-126094-3	MW-74S_020720	90	109	95	88
240-126094-4	DUP-04	88	102	94	90
LCS 240-422714/4	Lab Control Sample	94	104	91	90
LCS 240-422858/4	Lab Control Sample	88	103	93	90
MB 240-422714/7	Method Blank	95	107	95	91
MB 240-422858/7	Method Blank	86	104	93	89

#### 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)
240-126094-2	MW-74_020720	99
240-126094-3	MW-74S_020720	99
240-126094-4	DUP-04	100
240-126095-G-3 MS	Matrix Spike	100
240-126095-G-3 MSD	Matrix Spike Duplicate	101
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 Off Site

Job ID: 240-126094-1

## 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 Off Site

Job ID: 240-126094-1

## 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**

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Dibromofluoromethane (Surr)</i>	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**

<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>
1,1-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

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

**Lab Sample ID: MB 240-422858/7**  
**Matrix: Water**  
**Analysis Batch: 422858**

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/14/20 14:20	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/14/20 14:20	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/14/20 14:20	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/14/20 14:20	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/14/20 14:20	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/14/20 14:20	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>MB MB Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	86		75 - 130		02/14/20 14:20	1
<i>4-Bromofluorobenzene (Surr)</i>	104		47 - 134		02/14/20 14:20	1
<i>Toluene-d8 (Surr)</i>	93		69 - 122		02/14/20 14:20	1
<i>Dibromofluoromethane (Surr)</i>	89		78 - 129		02/14/20 14:20	1

**Lab Sample ID: LCS 240-422858/4**  
**Matrix: Water**  
**Analysis Batch: 422858**

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,1-Dichloroethene	10.0	10.0		ug/L		100	73 - 129
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	75 - 124
Tetrachloroethene	10.0	9.83		ug/L		98	70 - 125
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	74 - 130
Trichloroethene	10.0	9.56		ug/L		96	71 - 121

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-126094-1

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

**Lab Sample ID: LCS 240-422858/4**  
**Matrix: Water**  
**Analysis Batch: 422858**

**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	11.6		ug/L		116	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	90		78 - 129

**Lab Sample ID: 240-126087-B-3 MS**  
**Matrix: Water**  
**Analysis Batch: 422858**

**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	9.80		ug/L		98	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.59		ug/L		96	68 - 121
Tetrachloroethene	1.0	U	10.0	7.84		ug/L		78	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.67		ug/L		97	69 - 126
Trichloroethene	1.0	U	10.0	8.75		ug/L		87	56 - 124
Vinyl chloride	1.0	U	10.0	11.9		ug/L		119	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		75 - 130
4-Bromofluorobenzene (Surr)	104		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

**Lab Sample ID: 240-126087-E-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 422858**

**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	9.10		ug/L		91	64 - 132	7	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.07		ug/L		91	68 - 121	6	35
Tetrachloroethene	1.0	U	10.0	8.34		ug/L		83	52 - 129	6	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.24		ug/L		92	69 - 126	5	35
Trichloroethene	1.0	U	10.0	7.96		ug/L		80	56 - 124	9	35
Vinyl chloride	1.0	U	10.0	11.6		ug/L		116	49 - 136	2	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	89		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	91		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

# QC Sample Results

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

Job ID: 240-126094-1

## 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 Off Site

Job ID: 240-126094-1

## GC/MS VOA

### Analysis Batch: 422706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126094-2	MW-74_020720	Total/NA	Water	8260B SIM	
240-126094-3	MW-74S_020720	Total/NA	Water	8260B SIM	
240-126094-4	DUP-04	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: 422714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126094-1	TRIP BLANK	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: 422858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126094-2	MW-74_020720	Total/NA	Water	8260B	
240-126094-3	MW-74S_020720	Total/NA	Water	8260B	
240-126094-4	DUP-04	Total/NA	Water	8260B	
MB 240-422858/7	Method Blank	Total/NA	Water	8260B	
LCS 240-422858/4	Lab Control Sample	Total/NA	Water	8260B	
240-126087-B-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-126087-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

# Lab Chronicle

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

Job ID: 240-126094-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126094-1

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	422714	02/14/20 03:27	LRW	TAL CAN

## Client Sample ID: MW-74\_020720

Lab Sample ID: 240-126094-2

Date Collected: 02/07/20 11:32

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	422858	02/14/20 17:38	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	422706	02/13/20 16:55	SAM	TAL CAN

## Client Sample ID: MW-74S\_020720

Lab Sample ID: 240-126094-3

Date Collected: 02/07/20 13:47

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	422858	02/14/20 18:03	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	422706	02/13/20 17:21	SAM	TAL CAN

## Client Sample ID: DUP-04

Lab Sample ID: 240-126094-4

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	422858	02/14/20 18:28	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	422706	02/13/20 17:47	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 Off Site

Job ID: 240-126094-1

## 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.



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

Regulatory program:  DW  NPDES  RCRA  Other

Client Contact: Arcadis  
 Company Name: Arcadis  
 Address: 28550 Cabot Drive, Suite 500  
 City/State/Zip: Novi, MI, 48377  
 Phone: 248-994-2240  
 Project Name: Ford LTP Off-Site  
 Project Number: 30042006.0402.02  
 PO # 30042006.0402.02

Site Contact: Julia McClafferty  
 Telephone: 734-644-5131  
 Email: kristoffer.hinskey@arcadis.com  
 Lab Contact: Mike DeMonico  
 Telephone: 330-497-9396

Analysis Turnaround Time  
 TAT if different from below  
 10 day  
 3 weeks  
 2 weeks  
 1 week  
 2 days  
 1 day  
 Sampler Name: H. Woodrum  
 Method of Shipment/Carrier:  
 Shipping/Tracking No:

Containers & Preservatives  
 Matrix:  Solid  Sediment  Aqueous  Air  
 Other:  
 H2SO4  HNO3  HCl  NaOH  ZnOH  Other:  
 Filtered Sample (Y / N)  
 Composite=C / Grab=G

Sample Date	Sample Time	Sample Identification	Matrix	Containers & Preservatives	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												1 VOA
2/7/20	1132	MW-74-020720					X	X	X	X	X	X	X	3 VOA For 8260 3 VOA For 8260B
2/7/20	1347	MW-745-020720					X	X	X	X	X	X	X	
---	---	DUP-04					X	X	X	X	X	X	X	I

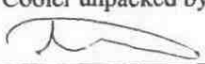



Possible Hazard Identification  
 Non-Hazard  Flammable  Irritant  Poison B  Unk.  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements & Comments:  
 Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203631  
 Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>Heather Woodrum</i>	Arcadis	2/7/20 1830	<i>Arcadis Cold Storage</i>	Arcadis	2/7/20 1830
<i>Julia McClafferty</i>	Arcadis	2/10/20 1315	<i>ETA</i>	ETA	2/10/20 1310
<i>[Signature]</i>	ETA	2/10/20 1440	<i>[Signature]</i>	TA	2-11-20 840

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<b>Eurofins TestAmerica Canton Sample Receipt Form/Narrative</b>		Login # : <u>124094</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: <u>Bubble Wrap</u> Foam Plastic Bag None Other _____		
COOLANT: <u>Wet Ice</u> 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>2.4</u> °C Corrected Cooler Temp. <u>3.1</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/>	

<b>18. SAMPLE CONDITION</b>
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)

<b>19. SAMPLE PRESERVATION</b>
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____