

## ANALYTICAL REPORT

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

Laboratory Job ID: 240-149637-1  
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:  
6/1/2021 11:45:29 AM

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

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

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# Definitions/Glossary

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

Job ID: 240-149637-1

## 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.
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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

# Case Narrative

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

Job ID: 240-149637-1

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## Job ID: 240-149637-1

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Laboratory: Eurofins TestAmerica, Canton

### Narrative

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#### Job Narrative 240-149637-1

### Comments

No additional comments.

### Receipt

The samples were received on 5/18/2021 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.7° C, 3.9° C and 4.5° C.

### GC/MS VOA

Method 8260B: The matrix spike/matrix spike duplicate (MS/MSD) for samples TRIP BLANK\_57 (240-149637-1), MW-35\_051521 (240-149637-4) and MW-211S\_051521 (240-149637-5) was not reported, because the analyte list for these samples did not match the analyte list for the MS/MSD parent sample.

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

### VOA Prep

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

# Method Summary

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

Job ID: 240-149637-1

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: 240-149637-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-149637-1	TRIP BLANK_57	Water	05/15/21 00:00	05/18/21 10:00	
240-149637-2	MW-213S_051521	Water	05/15/21 08:35	05/18/21 10:00	
240-149637-3	MW-212S_051521	Water	05/15/21 09:55	05/18/21 10:00	
240-149637-4	MW-35_051521	Water	05/15/21 11:17	05/18/21 10:00	
240-149637-5	MW-211S_051521	Water	05/15/21 12:27	05/18/21 10:00	

- 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: 240-149637-1

## Client Sample ID: TRIP BLANK\_57

Lab Sample ID: 240-149637-1

No Detections.

## Client Sample ID: MW-213S\_051521

Lab Sample ID: 240-149637-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.71	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.86	J	1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-212S\_051521

Lab Sample ID: 240-149637-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.8		1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.53	J	1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-35\_051521

Lab Sample ID: 240-149637-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.0		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	4.3		1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-211S\_051521

Lab Sample ID: 240-149637-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	0.24	J	1.0	0.10	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

# Client Sample Results

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

Job ID: 240-149637-1

**Client Sample ID: TRIP BLANK\_57**

**Lab Sample ID: 240-149637-1**

**Date Collected: 05/15/21 00:00**

**Matrix: Water**

**Date Received: 05/18/21 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 21:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 21:47	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 21:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 21:47	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 21:47	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 21:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		75 - 130		05/27/21 21:47	1
4-Bromofluorobenzene (Surr)	91		47 - 134		05/27/21 21:47	1
Toluene-d8 (Surr)	96		69 - 122		05/27/21 21:47	1
Dibromofluoromethane (Surr)	86		78 - 129		05/27/21 21:47	1



# Client Sample Results

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

Job ID: 240-149637-1

**Client Sample ID: MW-213S\_051521**

**Lab Sample ID: 240-149637-2**

Date Collected: 05/15/21 08:35

Matrix: Water

Date Received: 05/18/21 10:00

**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			05/24/21 15:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133		05/24/21 15:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 12:10	1
<b>cis-1,2-Dichloroethene</b>	<b>0.71</b>	<b>J</b>	1.0	0.16	ug/L			05/27/21 12:10	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 12:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 12:10	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 12:10	1
<b>Vinyl chloride</b>	<b>0.86</b>	<b>J</b>	1.0	0.20	ug/L			05/27/21 12:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		75 - 130		05/27/21 12:10	1
4-Bromofluorobenzene (Surr)	91		47 - 134		05/27/21 12:10	1
Toluene-d8 (Surr)	101		69 - 122		05/27/21 12:10	1
Dibromofluoromethane (Surr)	89		78 - 129		05/27/21 12:10	1

# Client Sample Results

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

Job ID: 240-149637-1

**Client Sample ID: MW-212S\_051521**

**Lab Sample ID: 240-149637-3**

Date Collected: 05/15/21 09:55

Matrix: Water

Date Received: 05/18/21 10:00

**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			05/24/21 15:50	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	85		70 - 133					05/24/21 15:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 12:35	1
<b>cis-1,2-Dichloroethene</b>	<b>1.8</b>		1.0	0.16	ug/L			05/27/21 12:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 12:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 12:35	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 12:35	1
<b>Vinyl chloride</b>	<b>0.53</b>	<b>J</b>	1.0	0.20	ug/L			05/27/21 12:35	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	79		75 - 130					05/27/21 12:35	1
4-Bromofluorobenzene (Surr)	90		47 - 134					05/27/21 12:35	1
Toluene-d8 (Surr)	97		69 - 122					05/27/21 12:35	1
Dibromofluoromethane (Surr)	84		78 - 129					05/27/21 12:35	1

# Client Sample Results

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

Job ID: 240-149637-1

**Client Sample ID: MW-35\_051521**

**Lab Sample ID: 240-149637-4**

Date Collected: 05/15/21 11:17

Matrix: Water

Date Received: 05/18/21 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.0		2.0	0.86	ug/L			05/24/21 16:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133					05/24/21 16:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 22:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 22:13	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 22:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 22:13	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 22:13	1
Vinyl chloride	4.3		1.0	0.20	ug/L			05/27/21 22:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 130					05/27/21 22:13	1
4-Bromofluorobenzene (Surr)	92		47 - 134					05/27/21 22:13	1
Toluene-d8 (Surr)	102		69 - 122					05/27/21 22:13	1
Dibromofluoromethane (Surr)	89		78 - 129					05/27/21 22:13	1

# Client Sample Results

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

Job ID: 240-149637-1

**Client Sample ID: MW-211S\_051521**

**Lab Sample ID: 240-149637-5**

Date Collected: 05/15/21 12:27

Matrix: Water

Date Received: 05/18/21 10:00

**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			05/24/21 17:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133		05/24/21 17:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 22:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 22:38	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 22:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 22:38	1
<b>Trichloroethene</b>	<b>0.24</b>	<b>J</b>	1.0	0.10	ug/L			05/27/21 22:38	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 22:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		75 - 130		05/27/21 22:38	1
4-Bromofluorobenzene (Surr)	90		47 - 134		05/27/21 22:38	1
Toluene-d8 (Surr)	96		69 - 122		05/27/21 22:38	1
Dibromofluoromethane (Surr)	84		78 - 129		05/27/21 22:38	1

# Surrogate Summary

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

Job ID: 240-149637-1

## 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)
240-149630-K-3 MS	Matrix Spike	82	95	97	87
240-149630-L-3 MSD	Matrix Spike Duplicate	78	96	97	86
240-149637-1	TRIP BLANK_57	78	91	96	86
240-149637-2	MW-213S_051521	82	91	101	89
240-149637-3	MW-212S_051521	79	90	97	84
240-149637-4	MW-35_051521	85	92	102	89
240-149637-5	MW-211S_051521	80	90	96	84
LCS 240-487706/4	Lab Control Sample	79	94	98	86
LCS 240-487870/4	Lab Control Sample	77	94	96	89
MB 240-487706/7	Method Blank	80	91	98	85
MB 240-487870/7	Method Blank	78	92	97	87

#### 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)
240-149637-2	MW-213S_051521	81
240-149637-3	MW-212S_051521	85
240-149637-4	MW-35_051521	87
240-149637-5	MW-211S_051521	89
LCS 240-487235/4	Lab Control Sample	81
MB 240-487235/5	Method Blank	82

#### Surrogate Legend

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

# QC Sample Results

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

Job ID: 240-149637-1

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

**Lab Sample ID: MB 240-487706/7**  
**Matrix: Water**  
**Analysis Batch: 487706**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 03:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 03:24	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 03:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 03:24	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 03:24	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 03:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		75 - 130		05/27/21 03:24	1
4-Bromofluorobenzene (Surr)	91		47 - 134		05/27/21 03:24	1
Toluene-d8 (Surr)	98		69 - 122		05/27/21 03:24	1
Dibromofluoromethane (Surr)	85		78 - 129		05/27/21 03:24	1

**Lab Sample ID: LCS 240-487706/4**  
**Matrix: Water**  
**Analysis Batch: 487706**

**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	8.40		ug/L		84	73 - 129
cis-1,2-Dichloroethene	10.0	8.78		ug/L		88	75 - 124
Tetrachloroethene	10.0	9.43		ug/L		94	70 - 125
trans-1,2-Dichloroethene	10.0	8.65		ug/L		87	74 - 130
Trichloroethene	10.0	8.56		ug/L		86	71 - 121
Vinyl chloride	10.0	10.8		ug/L		108	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	79		75 - 130
4-Bromofluorobenzene (Surr)	94		47 - 134
Toluene-d8 (Surr)	98		69 - 122
Dibromofluoromethane (Surr)	86		78 - 129

**Lab Sample ID: 240-149630-K-3 MS**  
**Matrix: Water**  
**Analysis Batch: 487706**

**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	7.72		ug/L		77	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.30		ug/L		83	68 - 121
Tetrachloroethene	1.0	U	10.0	8.39		ug/L		84	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.06		ug/L		81	69 - 126
Trichloroethene	1.0	U	10.0	7.58		ug/L		76	56 - 124
Vinyl chloride	0.24	J	10.0	10.1		ug/L		98	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	82		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	97		69 - 122

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# QC Sample Results

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

Job ID: 240-149637-1

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

**Lab Sample ID: 240-149630-K-3 MS**  
**Matrix: Water**  
**Analysis Batch: 487706**

**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>	87		78 - 129

**Lab Sample ID: 240-149630-L-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 487706**

**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	8.34		ug/L		83	64 - 132	8	35
cis-1,2-Dichloroethene	1.0	U	10.0	8.51		ug/L		85	68 - 121	2	35
Tetrachloroethene	1.0	U	10.0	9.16		ug/L		92	52 - 129	9	35
trans-1,2-Dichloroethene	1.0	U	10.0	8.57		ug/L		86	69 - 126	6	35
Trichloroethene	1.0	U	10.0	8.07		ug/L		81	56 - 124	6	35
Vinyl chloride	0.24	J	10.0	10.2		ug/L		99	49 - 136	1	35

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	78		75 - 130
<i>4-Bromofluorobenzene (Surr)</i>	96		47 - 134
<i>Toluene-d8 (Surr)</i>	97		69 - 122
<i>Dibromofluoromethane (Surr)</i>	86		78 - 129

**Lab Sample ID: MB 240-487870/7**  
**Matrix: Water**  
**Analysis Batch: 487870**

**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			05/27/21 16:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 16:17	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 16:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 16:17	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 16:17	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 16:17	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>	78		75 - 130		05/27/21 16:17	1
<i>4-Bromofluorobenzene (Surr)</i>	92		47 - 134		05/27/21 16:17	1
<i>Toluene-d8 (Surr)</i>	97		69 - 122		05/27/21 16:17	1
<i>Dibromofluoromethane (Surr)</i>	87		78 - 129		05/27/21 16:17	1

**Lab Sample ID: LCS 240-487870/4**  
**Matrix: Water**  
**Analysis Batch: 487870**

**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	8.40		ug/L		84	73 - 129
cis-1,2-Dichloroethene	10.0	8.72		ug/L		87	75 - 124
Tetrachloroethene	10.0	9.34		ug/L		93	70 - 125
trans-1,2-Dichloroethene	10.0	8.39		ug/L		84	74 - 130
Trichloroethene	10.0	8.26		ug/L		83	71 - 121

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-149637-1

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

**Lab Sample ID: LCS 240-487870/4**  
**Matrix: Water**  
**Analysis Batch: 487870**

**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
<b>Surrogate</b>							
	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	77		75 - 130				
4-Bromofluorobenzene (Surr)	94		47 - 134				
Toluene-d8 (Surr)	96		69 - 122				
Dibromofluoromethane (Surr)	89		78 - 129				

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

**Lab Sample ID: MB 240-487235/5**  
**Matrix: Water**  
**Analysis Batch: 487235**

**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			05/24/21 14:36	1
<b>Surrogate</b>									
	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	82		70 - 133					05/24/21 14:36	1

**Lab Sample ID: LCS 240-487235/4**  
**Matrix: Water**  
**Analysis Batch: 487235**

**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	10.5		ug/L		105	80 - 135
<b>Surrogate</b>							
	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	81		70 - 133				



# QC Association Summary

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

Job ID: 240-149637-1

## GC/MS VOA

### Analysis Batch: 487235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149637-2	MW-213S_051521	Total/NA	Water	8260B SIM	
240-149637-3	MW-212S_051521	Total/NA	Water	8260B SIM	
240-149637-4	MW-35_051521	Total/NA	Water	8260B SIM	
240-149637-5	MW-211S_051521	Total/NA	Water	8260B SIM	
MB 240-487235/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-487235/4	Lab Control Sample	Total/NA	Water	8260B SIM	

### Analysis Batch: 487706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149637-2	MW-213S_051521	Total/NA	Water	8260B	
240-149637-3	MW-212S_051521	Total/NA	Water	8260B	
MB 240-487706/7	Method Blank	Total/NA	Water	8260B	
LCS 240-487706/4	Lab Control Sample	Total/NA	Water	8260B	
240-149630-K-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-149630-L-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 487870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149637-1	TRIP BLANK_57	Total/NA	Water	8260B	
240-149637-4	MW-35_051521	Total/NA	Water	8260B	
240-149637-5	MW-211S_051521	Total/NA	Water	8260B	
MB 240-487870/7	Method Blank	Total/NA	Water	8260B	
LCS 240-487870/4	Lab Control Sample	Total/NA	Water	8260B	

# Lab Chronicle

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

Job ID: 240-149637-1

**Client Sample ID: TRIP BLANK\_57**

**Lab Sample ID: 240-149637-1**

Date Collected: 05/15/21 00:00

Matrix: Water

Date Received: 05/18/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487870	05/27/21 21:47	LRW	TAL CAN

**Client Sample ID: MW-213S\_051521**

**Lab Sample ID: 240-149637-2**

Date Collected: 05/15/21 08:35

Matrix: Water

Date Received: 05/18/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487706	05/27/21 12:10	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	487235	05/24/21 15:26	CS	TAL CAN

**Client Sample ID: MW-212S\_051521**

**Lab Sample ID: 240-149637-3**

Date Collected: 05/15/21 09:55

Matrix: Water

Date Received: 05/18/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487706	05/27/21 12:35	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	487235	05/24/21 15:50	CS	TAL CAN

**Client Sample ID: MW-35\_051521**

**Lab Sample ID: 240-149637-4**

Date Collected: 05/15/21 11:17

Matrix: Water

Date Received: 05/18/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487870	05/27/21 22:13	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	487235	05/24/21 16:15	CS	TAL CAN

**Client Sample ID: MW-211S\_051521**

**Lab Sample ID: 240-149637-5**

Date Collected: 05/15/21 12:27

Matrix: Water

Date Received: 05/18/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487870	05/27/21 22:38	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	487235	05/24/21 17:54	CS	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: 240-149637-1

## 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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21 *
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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

Eurofins TestAmerica, Canton

# Chain of Custody Record

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

**MICHIGAN**

**190**

TestAmerica Laboratories, Inc.

COC No: \_\_\_\_\_

1 of 1 COCs

For lab use only

Walk-in client  
Lab sampling

Job/SDG No: \_\_\_\_\_

Sample Specific Notes /  
Special Instructions:

1 Trip Blank

3 VOAs for 8260B  
3 VOAs for 8260B SIM

// // // //

// //

// //

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

Site Contact: Julia McClafferty  
Telephone: 734-644-5131

Client Project Manager: Kris Hinsky  
Telephone: 248-994-2240

Email: kristoffer.hinsky@arcadis.com

Sampler Name:  
**CHRISTINA WEAVER**

Method of Shipment/Carrier:

Shipping/Tracking No:

Analysis Turnaround Time

TAT if different from below

10 day

Containers & Preservatives

Matrix

Sample Date

Sample Time

Sample Identification

Filtered Sample (Y/N)

Composite=C / Grab=G

Analyses

1,4-Dioxane 8260B SIM

Vinyl Chloride 8260B

TCE 8260B

PCE 8260B

Trans-1,2-DCE 8260B

cis-1,2-DCE 8260B

1,1-DCE 8260B

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Possible Hazard Identification

Non-Hazard

Irritant

Poison B

Unknown

Special Instructions/QC Requirements & Comments:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client

Disposal By Lab

Received by: *Christina Weaver*

Received by: *Christina Weaver*

Received in Laboratory by: *Christina Weaver*

Company: ARCADIS

Company: ARCADIS

Company: EPA

Company: ARCADIS

Company: ARCADIS

Company: EPA

Company: ARCADIS

Date/Time: 5/15/21 / 1410

Date/Time: 5/17/21

Date/Time: 5/17/21

Date/Time: 5/18-21/2020

Date/Time: 5/15/21 / 0835

Date/Time: 5/15/21 / 0955

Date/Time: 5/15/21 / 1117

Date/Time: 5/15/21 / 1227

Date/Time: 5/15/21 / 1410

Date/Time: 5/15/21 / 1410

Company: ARCADIS

Company: ARCADIS

Company: EPA

Company: ARCADIS

Company: ARCADIS

Company: EPA

Company: ARCADIS

Company: ARCADIS

Company: EPA

Company: ARCADIS

Received by: *Christina Weaver*

Received by: *Christina Weaver*

Received in Laboratory by: *Christina Weaver*

Company: ARCADIS

Company: ARCADIS

Company: EPA

Company: ARCADIS

Company: ARCADIS

Company: EPA

Company: ARCADIS

Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728

Level IV Reporting requested.

Level IV Reporting requested.

Level IV Reporting requested.

Level IV Reporting requested.

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Level IV Reporting requested.



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

Login # : 149637

Client Arcadis Site Name Ford LTP

Cooler unpacked by:

Cooler Received on 5-18-21 Opened on 5-18-21

PHW

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

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

TestAmerica Cooler # TIA Foam Box  Client Cooler  Box  Other \_\_\_\_\_

Packing material used:  Bubble Wrap  Foam  Plastic Bag  None  Other \_\_\_\_\_


COOLANT:  Wet Ice  Blue Ice  Dry Ice  Water  None

1. Cooler temperature upon receipt  See Multiple Cooler Form  
 IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  
 IR GUN #IR-12 (CF +0.2°C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 3  Yes  No  
 -Were the seals on the outside of the cooler(s) signed & dated? 1 on each  Yes  No NA  
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?  Yes  No NA  
 -Were tamper/custody seals intact and uncompromised?  Yes  No NA

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

3. Shippers' packing slip attached to the cooler(s)?  Yes  No  
 4. Did custody papers accompany the sample(s)?  Yes  No  
 5. Were the custody papers relinquished & signed in the appropriate place?  Yes  No  
 6. Was/were the person(s) who collected the samples clearly identified on the COC?  Yes  No  
 7. Did all bottles arrive in good condition (Unbroken)?  Yes  No  
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?  Yes  No  
 9. For each sample, does the COC specify preservatives  (Y/N), # of containers  (Y/N), and sample type of grab/comp  (Y/N)?  
 10. Were correct bottle(s) used for the test(s) indicated?  Yes  No  
 11. Sufficient quantity received to perform indicated analyses?  Yes  No  
 12. Are these work share samples and all listed on the COC?  Yes  No

- If yes, Questions 13-17 have been checked at the originating laboratory.  
 13. Were all preserved sample(s) at the correct pH upon receipt?  Yes  No  NA pH Strip Lot# HC022887  
 14. Were VOAs on the COC?  Yes  No  NA  
 15. Were air bubbles >6 mm in any VOA vials?  Yes  No  NA  ← Larger than this.  
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Covered  Yes  No  
 17. Was a LL Hg or Me Hg trip blank present?  Yes  No

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_

Concerning \_\_\_\_\_

**18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES**  additional next page

Samples processed by:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**19. 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)

**20. 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: \_\_\_\_\_

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)				IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)		
TA	Client	Box	Other	IR-11 IR-12	3.8	3.9	Wet Ice	Blue Ice	Dry Ice
TA	Client	Box	Other	IR-11 IR-12	2.6	2.7	Water	None	
TA	Client	Box	Other	IR-11 IR-12	4.4	4.5	Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	
TA	Client	Box	Other	IR-11 IR-12			Wet Ice	Blue Ice	Dry Ice
				IR-11 IR-12			Water	None	

See Temperature Excursion Form