

## ANALYTICAL REPORT

Eurofins TestAmerica, Canton  
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North Canton, OH 44720  
Tel: (330)497-9396

Laboratory Job ID: 240-159536-1  
Client Project/Site: Ford LTP - Off-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:  
11/22/2021 10:20:22 AM

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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: 240-159536-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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 - Off-Site

Job ID: 240-159536-1

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## Job ID: 240-159536-1

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Laboratory: Eurofins TestAmerica, Canton

### Narrative

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Job Narrative  
240-159536-1

### Comments

No additional comments.

### Receipt

The samples were received on 11/6/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0° C.

### GC/MS VOA

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

### VOA Prep

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

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# Method Summary

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

Job ID: 240-159536-1

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: 240-159536-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-159536-1	TRIP BLANK_40	Water	11/04/21 00:00	11/06/21 08:00
240-159536-2	MW-77_110421	Water	11/04/21 11:05	11/06/21 08:00
240-159536-3	MW-77S_110421	Water	11/04/21 12:00	11/06/21 08:00

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- 7
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- 9
- 10
- 11
- 12
- 13
- 14

# Detection Summary

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

Job ID: 240-159536-1

**Client Sample ID: TRIP BLANK\_40**

**Lab Sample ID: 240-159536-1**

No Detections.

**Client Sample ID: MW-77\_110421**

**Lab Sample ID: 240-159536-2**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.3		1.0	0.46	ug/L	1		8260B	Total/NA

**Client Sample ID: MW-77S\_110421**

**Lab Sample ID: 240-159536-3**

No Detections.

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: 240-159536-1

**Client Sample ID: TRIP BLANK\_40**

**Lab Sample ID: 240-159536-1**

**Date Collected: 11/04/21 00:00**

**Matrix: Water**

**Date Received: 11/06/21 08:00**

**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	0.49	ug/L			11/12/21 04:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/12/21 04:17	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/12/21 04:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/12/21 04:17	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/12/21 04:17	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/12/21 04:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		62 - 137		11/12/21 04:17	1
4-Bromofluorobenzene (Surr)	72		56 - 136		11/12/21 04:17	1
Toluene-d8 (Surr)	104		78 - 122		11/12/21 04:17	1
Dibromofluoromethane (Surr)	90		73 - 120		11/12/21 04:17	1



# Client Sample Results

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

Job ID: 240-159536-1

**Client Sample ID: MW-77\_110421**

**Lab Sample ID: 240-159536-2**

Date Collected: 11/04/21 11:05

Matrix: Water

Date Received: 11/06/21 08:00

**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			11/12/21 20:52	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)	82		66 - 120					11/12/21 20:52	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	0.49	ug/L			11/12/21 04:39	1
<b>cis-1,2-Dichloroethene</b>	<b>1.3</b>		1.0	0.46	ug/L			11/12/21 04:39	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/12/21 04:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/12/21 04:39	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/12/21 04:39	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/12/21 04:39	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)	100		62 - 137					11/12/21 04:39	1
4-Bromofluorobenzene (Surr)	83		56 - 136					11/12/21 04:39	1
Toluene-d8 (Surr)	110		78 - 122					11/12/21 04:39	1
Dibromofluoromethane (Surr)	99		73 - 120					11/12/21 04:39	1

# Client Sample Results

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

Job ID: 240-159536-1

**Client Sample ID: MW-77S\_110421**

**Lab Sample ID: 240-159536-3**

Date Collected: 11/04/21 12:00

Matrix: Water

Date Received: 11/06/21 08:00

**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			11/12/21 21:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		66 - 120		11/12/21 21:16	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	0.49	ug/L			11/13/21 03:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/13/21 03:58	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/13/21 03:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/13/21 03:58	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/13/21 03:58	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/13/21 03:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		62 - 137		11/13/21 03:58	1
4-Bromofluorobenzene (Surr)	79		56 - 136		11/13/21 03:58	1
Toluene-d8 (Surr)	108		78 - 122		11/13/21 03:58	1
Dibromofluoromethane (Surr)	99		73 - 120		11/13/21 03:58	1

# Surrogate Summary

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

Job ID: 240-159536-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-159536-1	TRIP BLANK_40	91	72	104	90
240-159536-2	MW-77_110421	100	83	110	99
240-159536-3	MW-77S_110421	99	79	108	99
240-159536-3 MS	MW-77S_110421	93	86	114	94
240-159536-3 MSD	MW-77S_110421	98	93	112	97
240-159539-B-5 MS	Matrix Spike	96	94	116	97
240-159539-B-5 MSD	Matrix Spike Duplicate	90	87	108	92
LCS 240-512565/4	Lab Control Sample	89	87	107	90
LCS 240-512748/4	Lab Control Sample	93	91	113	93
MB 240-512565/6	Method Blank	92	73	102	90
MB 240-512748/6	Method Blank	92	79	103	92

**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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (66-120)
240-159536-2	MW-77_110421	82
240-159536-3	MW-77S_110421	82
240-159543-G-3 MS	Matrix Spike	85
240-159543-O-3 MSD	Matrix Spike Duplicate	83
LCS 240-512758/4	Lab Control Sample	83
MB 240-512758/5	Method Blank	84

**Surrogate Legend**

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

# QC Sample Results

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

Job ID: 240-159536-1

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

**Lab Sample ID: MB 240-512565/6**  
**Matrix: Water**  
**Analysis Batch: 512565**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/11/21 23:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 23:50	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 23:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 23:50	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 23:50	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/11/21 23:50	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	92		62 - 137		11/11/21 23:50	1
4-Bromofluorobenzene (Surr)	73		56 - 136		11/11/21 23:50	1
Toluene-d8 (Surr)	102		78 - 122		11/11/21 23:50	1
Dibromofluoromethane (Surr)	90		73 - 120		11/11/21 23:50	1

**Lab Sample ID: LCS 240-512565/4**  
**Matrix: Water**  
**Analysis Batch: 512565**

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	10.0	10.4		ug/L		104	63 - 134
cis-1,2-Dichloroethene	10.0	10.1		ug/L		101	77 - 123
Tetrachloroethene	10.0	10.6		ug/L		106	76 - 123
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	75 - 124
Trichloroethene	10.0	8.95		ug/L		90	70 - 122
Vinyl chloride	10.0	9.56		ug/L		96	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	89		62 - 137
4-Bromofluorobenzene (Surr)	87		56 - 136
Toluene-d8 (Surr)	107		78 - 122
Dibromofluoromethane (Surr)	90		73 - 120

**Lab Sample ID: 240-159539-B-5 MS**  
**Matrix: Water**  
**Analysis Batch: 512565**

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

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	25	U	250	224		ug/L		90	56 - 135
cis-1,2-Dichloroethene	43		250	285		ug/L		97	66 - 128
Tetrachloroethene	25	U	250	201		ug/L		80	62 - 131
trans-1,2-Dichloroethene	86		250	316		ug/L		92	56 - 136
Trichloroethene	830	F1	250	936	F1	ug/L		41	61 - 124
Vinyl chloride	25	U	250	246		ug/L		99	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	96		62 - 137
4-Bromofluorobenzene (Surr)	94		56 - 136
Toluene-d8 (Surr)	116		78 - 122

# QC Sample Results

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

Job ID: 240-159536-1

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

**Lab Sample ID: 240-159539-B-5 MS**  
**Matrix: Water**  
**Analysis Batch: 512565**

**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>	97		73 - 120

**Lab Sample ID: 240-159539-B-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 512565**

**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 MSD</i>		<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i>		<i>RPD</i>	
				<i>Result</i>	<i>Qualifier</i>				<i>Limits</i>	<i>RPD</i>	<i>Limit</i>	
1,1-Dichloroethene	25	U	250	213		ug/L		85	56 - 135	5	26	
cis-1,2-Dichloroethene	43		250	272		ug/L		92	66 - 128	5	14	
Tetrachloroethene	25	U	250	210		ug/L		84	62 - 131	4	20	
trans-1,2-Dichloroethene	86		250	297		ug/L		84	56 - 136	6	15	
Trichloroethene	830	F1	250	885	F1	ug/L		21	61 - 124	6	15	
Vinyl chloride	25	U	250	233		ug/L		93	43 - 157	6	24	

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	90		62 - 137
<i>4-Bromofluorobenzene (Surr)</i>	87		56 - 136
<i>Toluene-d8 (Surr)</i>	108		78 - 122
<i>Dibromofluoromethane (Surr)</i>	92		73 - 120

**Lab Sample ID: MB 240-512748/6**  
**Matrix: Water**  
**Analysis Batch: 512748**

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

<i>Analyte</i>	<i>MB MB</i>		<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
	<i>Result</i>	<i>Qualifier</i>							
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/12/21 23:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/12/21 23:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/12/21 23:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/12/21 23:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/12/21 23:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/12/21 23:07	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>	92		62 - 137		11/12/21 23:07	1
<i>4-Bromofluorobenzene (Surr)</i>	79		56 - 136		11/12/21 23:07	1
<i>Toluene-d8 (Surr)</i>	103		78 - 122		11/12/21 23:07	1
<i>Dibromofluoromethane (Surr)</i>	92		73 - 120		11/12/21 23:07	1

**Lab Sample ID: LCS 240-512748/4**  
**Matrix: Water**  
**Analysis Batch: 512748**

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS LCS</i>		<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i>	
		<i>Result</i>	<i>Qualifier</i>				<i>Limits</i>	
1,1-Dichloroethene	10.0	10.3		ug/L		103	63 - 134	
cis-1,2-Dichloroethene	10.0	9.94		ug/L		99	77 - 123	
Tetrachloroethene	10.0	10.8		ug/L		108	76 - 123	
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	75 - 124	
Trichloroethene	10.0	8.81		ug/L		88	70 - 122	

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# QC Sample Results

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

Job ID: 240-159536-1

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

**Lab Sample ID: LCS 240-512748/4**

**Matrix: Water**

**Analysis Batch: 512748**

**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	10.0		ug/L		100	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	91		56 - 136
Toluene-d8 (Surr)	113		78 - 122
Dibromofluoromethane (Surr)	93		73 - 120

**Lab Sample ID: 240-159536-3 MS**

**Matrix: Water**

**Analysis Batch: 512748**

**Client Sample ID: MW-77S\_110421**

**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	9.26		ug/L		93	56 - 135
cis-1,2-Dichloroethene	1.0	U	10.0	10.1		ug/L		101	66 - 128
Tetrachloroethene	1.0	U	10.0	9.29		ug/L		93	62 - 131
trans-1,2-Dichloroethene	1.0	U	10.0	9.49		ug/L		95	56 - 136
Trichloroethene	1.0	U	10.0	7.71		ug/L		77	61 - 124
Vinyl chloride	1.0	U	10.0	8.69		ug/L		87	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	86		56 - 136
Toluene-d8 (Surr)	114		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120

**Lab Sample ID: 240-159536-3 MSD**

**Matrix: Water**

**Analysis Batch: 512748**

**Client Sample ID: MW-77S\_110421**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	10.0	9.41		ug/L		94	56 - 135	2	26
cis-1,2-Dichloroethene	1.0	U	10.0	9.89		ug/L		99	66 - 128	2	14
Tetrachloroethene	1.0	U	10.0	9.07		ug/L		91	62 - 131	2	20
trans-1,2-Dichloroethene	1.0	U	10.0	9.73		ug/L		97	56 - 136	2	15
Trichloroethene	1.0	U	10.0	7.96		ug/L		80	61 - 124	3	15
Vinyl chloride	1.0	U	10.0	9.96		ug/L		100	43 - 157	14	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		62 - 137
4-Bromofluorobenzene (Surr)	93		56 - 136
Toluene-d8 (Surr)	112		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120

# QC Sample Results

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

Job ID: 240-159536-1

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

**Lab Sample ID: MB 240-512758/5**  
**Matrix: Water**  
**Analysis Batch: 512758**

**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			11/12/21 16:51	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		66 - 120					11/12/21 16:51	1

**Lab Sample ID: LCS 240-512758/4**  
**Matrix: Water**  
**Analysis Batch: 512758**

**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	9.63		ug/L		96	80 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	83		66 - 120				

**Lab Sample ID: 240-159543-G-3 MS**  
**Matrix: Water**  
**Analysis Batch: 512758**

**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 F1	10.0	9.98		ug/L		100	51 - 153
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	85		66 - 120						

**Lab Sample ID: 240-159543-O-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 512758**

**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	Limit
1,4-Dioxane	2.0	U F1	10.0	9.71		ug/L		97	51 - 153	3	16
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	83		66 - 120								

# QC Association Summary

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

Job ID: 240-159536-1

## GC/MS VOA

### Analysis Batch: 512565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159536-1	TRIP BLANK_40	Total/NA	Water	8260B	
240-159536-2	MW-77_110421	Total/NA	Water	8260B	
MB 240-512565/6	Method Blank	Total/NA	Water	8260B	
LCS 240-512565/4	Lab Control Sample	Total/NA	Water	8260B	
240-159539-B-5 MS	Matrix Spike	Total/NA	Water	8260B	
240-159539-B-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 512748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159536-3	MW-77S_110421	Total/NA	Water	8260B	
MB 240-512748/6	Method Blank	Total/NA	Water	8260B	
LCS 240-512748/4	Lab Control Sample	Total/NA	Water	8260B	
240-159536-3 MS	MW-77S_110421	Total/NA	Water	8260B	
240-159536-3 MSD	MW-77S_110421	Total/NA	Water	8260B	

### Analysis Batch: 512758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159536-2	MW-77_110421	Total/NA	Water	8260B SIM	
240-159536-3	MW-77S_110421	Total/NA	Water	8260B SIM	
MB 240-512758/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-512758/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-159543-G-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-159543-O-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	



# Lab Chronicle

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

Job ID: 240-159536-1

**Client Sample ID: TRIP BLANK\_40**

**Lab Sample ID: 240-159536-1**

**Date Collected: 11/04/21 00:00**

**Matrix: Water**

**Date Received: 11/06/21 08:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512565	11/12/21 04:17	LEE	TAL CAN

**Client Sample ID: MW-77\_110421**

**Lab Sample ID: 240-159536-2**

**Date Collected: 11/04/21 11:05**

**Matrix: Water**

**Date Received: 11/06/21 08:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512565	11/12/21 04:39	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	512758	11/12/21 20:52	CS	TAL CAN

**Client Sample ID: MW-77S\_110421**

**Lab Sample ID: 240-159536-3**

**Date Collected: 11/04/21 12:00**

**Matrix: Water**

**Date Received: 11/06/21 08:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512748	11/13/21 03:58	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	512758	11/12/21 21:16	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 - Off-Site

Job ID: 240-159536-1

## 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	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

Chain of Custody Record

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

Regulatory program:  DW  NPDES  RCRA  Other

**Client Contact**  
 Company Name: Arcadis  
 Address: 28550 Cabot Drive, Suite 500  
 City/State/Zip: Novi, MI, 48377  
 Phone: 248-994-2240  
 Project Name: Ford LTP Off-Site  
 Project Number: 30089642.402.04  
 PO # 30089642.402.04

**Client Project Manager: Kris Hinskey**  
 Telephone: 248-994-2240  
 Email: kristoffer.hinskey@arcadis.com  
 Sampler Name: *Seth Turner*  
 Method of Shipments/Carrier:  
 Shipping/Tracking No:

**Site Contact: Jalia McCafferty**  
 Telephone: 734-644-5131  
**Lab Contact: Mike DelMonico**  
 Telephone: 330-497-9396

**Analyses**  
 Walk-in client  
 Lab sampling  
 JobSDG No:

**TestAmerica Laboratories, Inc.**  
 COC No: 1 of 1  
 For lab use only  
 Sample Specific Notes / Special Instructions:

Sample Identification	Sample Date	Sample Time	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
			Air	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	Lead										
TRIP BLANK_40			X																		1 Trip Blank
MW-77-110421	11/04/21	1105	X																		3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-775-110421	11/4/21	1200	X																		



**Possible Hazard Identification**  
 Non-Hazard  Irritable  Poison B  Unknown  
 Corrosive  Inert  Non-Irritant

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

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>Seth Turner</i>	Arcadis	11/4/21/1500	NOVI Cold Storage	Arcadis	11/4/21/1500
<i>Christina Wilson</i>	Arcadis	11/5/21/1435	<i>Joni Hale</i>	ETA	11/5/21/1435
<i>Joni Hale</i>	ETA	11/5/21/1448	<i>M.A.A.</i>	ETA	11/5/21/1435

**Eurofins TestAmerica Canton Sample Receipt Form/Narrative** Login # : 159536  
**Canton Facility**

Client ARCADIS Site Name \_\_\_\_\_ Cooler unpacked by: Matthew Swana  
Cooler Received on 11/6/21 Opened on 11/6/21  
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 # TA 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-14 (CF +0.1 °C) Observed Cooler Temp. 0.9 °C Corrected Cooler Temp. 1.0 °C  
IR GUN #IR-15 (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 1  Yes  No  
-Were the seals on the outside of the cooler(s) signed & dated?  Yes  No NA  
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?  Yes  No NA  
-Were tamper/custody seals intact and uncompromised?  Yes  No NA

3. Shippers' packing slip attached to the cooler(s)?  Yes  No  
4. Did custody papers accompany the sample(s)?  Yes  No  
5. Were the custody papers relinquished & signed in the appropriate place?  Yes  No  
6. Was/were the person(s) who collected the samples clearly identified on the COC?  Yes  No  
7. Did all bottles arrive in good condition (Unbroken)?  Yes  No  
8. Could all bottle labels (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# HC157842  
14. Were VOAs on the COC?  Yes  No  
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 # 0104201G  Yes  No  
17. Was a LL Hg or Me Hg trip blank present? Yes  No  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

**18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES**  additional next page Samples processed by: [Signature]

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