

## ANALYTICAL REPORT

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

Laboratory Job ID: 240-135583-1  
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:  
9/10/2020 8:43:30 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 On-Site

Job ID: 240-135583-1

## Qualifiers

### GC/MS VOA

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

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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: 240-135583-1

**Job ID: 240-135583-1**

**Laboratory: Eurofins TestAmerica, Canton**

**Narrative**

## CASE NARRATIVE

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

**Project: Ford LTP On-Site**

**Report Number: 240-135583-1**

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 8/26/2020 9:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.5° C.

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

Samples TRIP BLANK (240-135583-1), MW-200\_082420 (240-135583-2), MW-200S\_082420 (240-135583-3), MW-18\_082420 (240-135583-4) and MW-39\_082420 (240-135583-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 09/04/2020.

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-200\_082420 (240-135583-2), MW-200S\_082420 (240-135583-3), MW-18\_082420 (240-135583-4) and MW-39\_082420 (240-135583-5) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/31/2020.

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

# Method Summary

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

Job ID: 240-135583-1

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

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# Sample Summary

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

Job ID: 240-135583-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-135583-1	TRIP BLANK	Water	08/24/20 00:00	08/26/20 09:30	
240-135583-2	MW-200_082420	Water	08/24/20 10:35	08/26/20 09:30	
240-135583-3	MW-200S_082420	Water	08/24/20 11:35	08/26/20 09:30	
240-135583-4	MW-18_08242020	Water	08/24/20 13:30	08/26/20 09:30	
240-135583-5	MW-39_08242020	Water	08/24/20 15:10	08/26/20 09:30	

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# Detection Summary

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

Job ID: 240-135583-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-135583-1**

No Detections.

**Client Sample ID: MW-200\_082420**

**Lab Sample ID: 240-135583-2**

No Detections.

**Client Sample ID: MW-200S\_082420**

**Lab Sample ID: 240-135583-3**

No Detections.

**Client Sample ID: MW-18\_08242020**

**Lab Sample ID: 240-135583-4**

No Detections.

**Client Sample ID: MW-39\_08242020**

**Lab Sample ID: 240-135583-5**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton



# Client Sample Results

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

Job ID: 240-135583-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-135583-1**

**Date Collected: 08/24/20 00:00**

**Matrix: Water**

**Date Received: 08/26/20 09:30**

**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	0.46	ug/L			09/04/20 18:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/04/20 18:48	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/04/20 18:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/04/20 18:48	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/04/20 18:48	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/04/20 18:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 130		09/04/20 18:48	1
4-Bromofluorobenzene (Surr)	85		47 - 134		09/04/20 18:48	1
Toluene-d8 (Surr)	93		69 - 122		09/04/20 18:48	1
Dibromofluoromethane (Surr)	87		78 - 129		09/04/20 18:48	1



# Client Sample Results

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

Job ID: 240-135583-1

**Client Sample ID: MW-200\_082420**

**Lab Sample ID: 240-135583-2**

Date Collected: 08/24/20 10:35

Matrix: Water

Date Received: 08/26/20 09:30

**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			08/31/20 21:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 133					08/31/20 21:39	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	0.46	ug/L			09/04/20 19:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/04/20 19:10	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/04/20 19:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/04/20 19:10	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/04/20 19:10	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/04/20 19:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 130					09/04/20 19:10	1
4-Bromofluorobenzene (Surr)	85		47 - 134					09/04/20 19:10	1
Toluene-d8 (Surr)	93		69 - 122					09/04/20 19:10	1
Dibromofluoromethane (Surr)	88		78 - 129					09/04/20 19:10	1

# Client Sample Results

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

Job ID: 240-135583-1

**Client Sample ID: MW-200S\_082420**

**Lab Sample ID: 240-135583-3**

Date Collected: 08/24/20 11:35

Matrix: Water

Date Received: 08/26/20 09:30

**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			08/31/20 22:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 133					08/31/20 22:12	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	0.46	ug/L			09/04/20 19:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/04/20 19:32	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/04/20 19:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/04/20 19:32	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/04/20 19:32	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/04/20 19:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 130					09/04/20 19:32	1
4-Bromofluorobenzene (Surr)	83		47 - 134					09/04/20 19:32	1
Toluene-d8 (Surr)	91		69 - 122					09/04/20 19:32	1
Dibromofluoromethane (Surr)	89		78 - 129					09/04/20 19:32	1

# Client Sample Results

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

Job ID: 240-135583-1

**Client Sample ID: MW-18\_08242020**

**Lab Sample ID: 240-135583-4**

Date Collected: 08/24/20 13:30

Matrix: Water

Date Received: 08/26/20 09:30

**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			08/31/20 22:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133					08/31/20 22:37	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	0.46	ug/L			09/04/20 19:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/04/20 19:53	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/04/20 19:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/04/20 19:53	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/04/20 19:53	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/04/20 19:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 130					09/04/20 19:53	1
4-Bromofluorobenzene (Surr)	83		47 - 134					09/04/20 19:53	1
Toluene-d8 (Surr)	92		69 - 122					09/04/20 19:53	1
Dibromofluoromethane (Surr)	87		78 - 129					09/04/20 19:53	1

# Client Sample Results

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

Job ID: 240-135583-1

**Client Sample ID: MW-39\_08242020**

**Lab Sample ID: 240-135583-5**

Date Collected: 08/24/20 15:10

Matrix: Water

Date Received: 08/26/20 09:30

**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			08/31/20 23:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 133		08/31/20 23:02	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	0.46	ug/L			09/04/20 20:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/04/20 20:15	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/04/20 20:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/04/20 20:15	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/04/20 20:15	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/04/20 20:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 130		09/04/20 20:15	1
4-Bromofluorobenzene (Surr)	81		47 - 134		09/04/20 20:15	1
Toluene-d8 (Surr)	91		69 - 122		09/04/20 20:15	1
Dibromofluoromethane (Surr)	88		78 - 129		09/04/20 20:15	1

# Surrogate Summary

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

Job ID: 240-135583-1

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA	BFB	TOL	DBFM
		(75-130)	(47-134)	(69-122)	(78-129)
240-135581-H-2 MS	Matrix Spike	87	99	98	87
240-135581-K-2 MSD	Matrix Spike Duplicate	84	98	97	87
240-135583-1	TRIP BLANK	93	85	93	87
240-135583-2	MW-200_082420	93	85	93	88
240-135583-3	MW-200S_082420	93	83	91	89
240-135583-4	MW-18_08242020	95	83	92	87
240-135583-5	MW-39_08242020	92	81	91	88
LCS 240-450091/4	Lab Control Sample	86	101	98	87
MB 240-450091/7	Method Blank	94	84	91	88

#### 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)
240-135520-D-3 MS	Matrix Spike	91
240-135520-D-3 MSD	Matrix Spike Duplicate	88
240-135583-2	MW-200_082420	91
240-135583-3	MW-200S_082420	99
240-135583-4	MW-18_08242020	88
240-135583-5	MW-39_08242020	94
LCS 240-449401/4	Lab Control Sample	92
MB 240-449401/5	Method Blank	86

#### Surrogate Legend

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

# QC Sample Results

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

Job ID: 240-135583-1

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

**Lab Sample ID: MB 240-450091/7**  
**Matrix: Water**  
**Analysis Batch: 450091**

**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	0.46	ug/L			09/04/20 12:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/04/20 12:17	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/04/20 12:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/04/20 12:17	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/04/20 12:17	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/04/20 12:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 130		09/04/20 12:17	1
4-Bromofluorobenzene (Surr)	84		47 - 134		09/04/20 12:17	1
Toluene-d8 (Surr)	91		69 - 122		09/04/20 12:17	1
Dibromofluoromethane (Surr)	88		78 - 129		09/04/20 12:17	1

**Lab Sample ID: LCS 240-450091/4**  
**Matrix: Water**  
**Analysis Batch: 450091**

**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	9.41		ug/L		94	73 - 129
cis-1,2-Dichloroethene	10.0	11.4		ug/L		114	75 - 124
Tetrachloroethene	10.0	11.8		ug/L		118	70 - 125
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	74 - 130
Trichloroethene	10.0	10.1		ug/L		101	71 - 121
Vinyl chloride	10.0	8.60		ug/L		86	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		75 - 130
4-Bromofluorobenzene (Surr)	101		47 - 134
Toluene-d8 (Surr)	98		69 - 122
Dibromofluoromethane (Surr)	87		78 - 129

**Lab Sample ID: 240-135581-H-2 MS**  
**Matrix: Water**  
**Analysis Batch: 450091**

**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	7.94		ug/L		79	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.30		ug/L		93	68 - 121
Tetrachloroethene	1.0	U	10.0	9.45		ug/L		94	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.15		ug/L		91	69 - 126
Trichloroethene	1.0	U	10.0	8.37		ug/L		84	56 - 124
Vinyl chloride	1.0	U	10.0	8.71		ug/L		87	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		75 - 130
4-Bromofluorobenzene (Surr)	99		47 - 134
Toluene-d8 (Surr)	98		69 - 122

# QC Sample Results

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

Job ID: 240-135583-1

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

**Lab Sample ID: 240-135581-H-2 MS**  
**Matrix: Water**  
**Analysis Batch: 450091**

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

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	87		78 - 129

**Lab Sample ID: 240-135581-K-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 450091**

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

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
1,1-Dichloroethene	1.0	U	10.0	8.07		ug/L		81	64 - 132	2	35	
cis-1,2-Dichloroethene	1.0	U	10.0	9.51		ug/L		95	68 - 121	2	35	
Tetrachloroethene	1.0	U	10.0	9.69		ug/L		97	52 - 129	3	35	
trans-1,2-Dichloroethene	1.0	U	10.0	9.19		ug/L		92	69 - 126	0	35	
Trichloroethene	1.0	U	10.0	8.31		ug/L		83	56 - 124	1	35	
Vinyl chloride	1.0	U	10.0	7.95		ug/L		80	49 - 136	9	35	

Surrogate	MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	84		75 - 130
4-Bromofluorobenzene (Surr)	98		47 - 134
Toluene-d8 (Surr)	97		69 - 122
Dibromofluoromethane (Surr)	87		78 - 129

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

**Lab Sample ID: MB 240-449401/5**  
**Matrix: Water**  
**Analysis Batch: 449401**

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/31/20 12:55	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	86		70 - 133		08/31/20 12:55	1

**Lab Sample ID: LCS 240-449401/4**  
**Matrix: Water**  
**Analysis Batch: 449401**

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

Analyte	Spike	LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	RPD
1,4-Dioxane	10.0	11.4		ug/L		114	80 - 135	

Surrogate	LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		70 - 133

**Lab Sample ID: 240-135520-D-3 MS**  
**Matrix: Water**  
**Analysis Batch: 449401**

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

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	RPD
1,4-Dioxane	1.4	J	10.0	12.3		ug/L		108	46 - 170	

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-135583-1

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

<i>Surrogate</i>	<i>MS</i> <i>%Recovery</i>	<i>MS</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	91		70 - 133

**Lab Sample ID: 240-135520-D-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 449401**

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

<i>Analyte</i>	<i>Sample</i> <i>Result</i>	<i>Sample</i> <i>Qualifier</i>	<i>Spike</i> <i>Added</i>	<i>MSD</i> <i>Result</i>	<i>MSD</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> <i>Limits</i>	<i>RPD</i>	<i>RPD</i> <i>Limit</i>
1,4-Dioxane	1.4	J	10.0	11.6		ug/L		101	46 - 170	6	26

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	88		70 - 133

- 1
- 2
- 3
- 4
- 5
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- 7
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- 10
- 11
- 12
- 13
- 14



# QC Association Summary

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

Job ID: 240-135583-1

## GC/MS VOA

### Analysis Batch: 449401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135583-2	MW-200_082420	Total/NA	Water	8260B SIM	
240-135583-3	MW-200S_082420	Total/NA	Water	8260B SIM	
240-135583-4	MW-18_08242020	Total/NA	Water	8260B SIM	
240-135583-5	MW-39_08242020	Total/NA	Water	8260B SIM	
MB 240-449401/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-449401/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-135520-D-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-135520-D-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

### Analysis Batch: 450091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135583-1	TRIP BLANK	Total/NA	Water	8260B	
240-135583-2	MW-200_082420	Total/NA	Water	8260B	
240-135583-3	MW-200S_082420	Total/NA	Water	8260B	
240-135583-4	MW-18_08242020	Total/NA	Water	8260B	
240-135583-5	MW-39_08242020	Total/NA	Water	8260B	
MB 240-450091/7	Method Blank	Total/NA	Water	8260B	
LCS 240-450091/4	Lab Control Sample	Total/NA	Water	8260B	
240-135581-H-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-135581-K-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

# Lab Chronicle

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

Job ID: 240-135583-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135583-1

Date Collected: 08/24/20 00:00

Matrix: Water

Date Received: 08/26/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	450091	09/04/20 18:48	LEE	TAL CAN

## Client Sample ID: MW-200\_082420

Lab Sample ID: 240-135583-2

Date Collected: 08/24/20 10:35

Matrix: Water

Date Received: 08/26/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	450091	09/04/20 19:10	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	449401	08/31/20 21:39	SAM	TAL CAN

## Client Sample ID: MW-200S\_082420

Lab Sample ID: 240-135583-3

Date Collected: 08/24/20 11:35

Matrix: Water

Date Received: 08/26/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	450091	09/04/20 19:32	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	449401	08/31/20 22:12	SAM	TAL CAN

## Client Sample ID: MW-18\_08242020

Lab Sample ID: 240-135583-4

Date Collected: 08/24/20 13:30

Matrix: Water

Date Received: 08/26/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	450091	09/04/20 19:53	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	449401	08/31/20 22:37	SAM	TAL CAN

## Client Sample ID: MW-39\_08242020

Lab Sample ID: 240-135583-5

Date Collected: 08/24/20 15:10

Matrix: Water

Date Received: 08/26/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	450091	09/04/20 20:15	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	449401	08/31/20 23:02	SAM	TAL CAN

### Laboratory References:

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

# Accreditation/Certification Summary

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

Job ID: 240-135583-1

## 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	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-20 *
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
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	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

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

Chain of Custody Record

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

<b>Client Contact</b> Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford LTP On-Site Project Number: 30050315.401.03 PO # 30050315.401.03		<b>Regulatory program:</b> <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other		<b>Client Project Manager:</b> Kris Hiney Telephone: 248-994-2240 Email: kris@hiney.com		<b>Site Contact:</b> John McClafferty Telephone: 734-644-5131		<b>Lab Contact:</b> Mike DeMonico Telephone: 330-497-9396		TestAmerica Laboratories, Inc. COC No: _____ of _____ COCs For lab use only		
<b>Sampler Name:</b> Patrick Labadie <b>Method of Shipment/Carrier:</b> <b>Shipping/Tracking No:</b>		<b>Analysis turnaround time</b> TAT if different from below 10 day <input type="checkbox"/> 3 weeks <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day <input type="checkbox"/>		<b>Containers &amp; Preservatives</b> H2SO4 <input type="checkbox"/> HNO3 <input type="checkbox"/> HCl <input type="checkbox"/> NaOH <input type="checkbox"/> ZnAc <input type="checkbox"/> NaOH <input type="checkbox"/> Other: _____ Unpres: _____ Other: _____		<b>Matrix</b> Aqueous <input type="checkbox"/> Solid <input type="checkbox"/> Other: _____ Sediment <input type="checkbox"/> Other: _____		<b>Filtered Sample (Y/N)</b> Composite C / Grab-G <input type="checkbox"/> Y <input type="checkbox"/> N		<b>Analyses</b> 1,1-DCE 8260B <input type="checkbox"/> X cis-1,2-DCE 8260B <input type="checkbox"/> X Trans-1,2-DCE 8260B <input type="checkbox"/> X PCE 8260B <input type="checkbox"/> X TCE 8260B <input type="checkbox"/> X Vinyl Chloride 8260B <input type="checkbox"/> X 1,4-Dioxane 8260B SIM <input type="checkbox"/> X		Walk-in client <input type="checkbox"/> Lab sampling <input type="checkbox"/> Job/SIDG No: _____ Sample Specific Notes / Special Instructions: TRIP BLANK 3 VOA's for 8260B 3 VOA's for 8260B SIM I
Sample Identification TRIP BLANK MW-200-082420 MW-200S-082420 MW-18-082420 MW-39-082420		Sample Date 8-24-20 11:35 13:30 15:10	Sample Time 10:35 11:35 13:30 15:10	Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritable <input type="checkbox"/> sm Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> unknown		Special Instructions/OC Requirements & Comments: Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728 Level IV Reporting requested.		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		240-135583 Chain of Custody 		
Relinquished by: Patrick Labadie Relinquished by: RACHEL BLEAK Relinquished by: Jeni Hare		Date/Time 8/24/20 16:20 8/25/20 09:20 8/25/20 9:25	Date/Time 8/24/20 16:20 8/25/20 09:20 8/25/20 9:25	Received by: NOVI Cold Storage Received by: Jeni Hare Received at Laboratory by: JLD		Company: Arcadis Company: ARCADIS Company: ETA		Date/Time: 8-24-20 / 16:20 Date/Time: 8/25/20 9:25 Date/Time: 8-25-20 9:20		Company: Arcadis Company: ETA Company: ETA		

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


Login # : 135583

**Canton Facility**

Client Arcadis Site Name \_\_\_\_\_ Cooler unpacked by: Ryan C  
 Cooler Received on 8-26-20 Opened on 8-26-20 920  
 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 # IA 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-10 (CF +0.7 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  
 IR GUN #IR-11 (CF +0.9 °C) Observed Cooler Temp. 3.6 °C Corrected Cooler Temp. 4.5 °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  
 -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 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 No
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC911298
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # \_\_\_\_\_ Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes No

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

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

Concerning \_\_\_\_\_

**17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES**

Samples processed by: \_\_\_\_\_

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

**18. SAMPLE CONDITION**

Sample(s) \_\_\_\_\_ were received after the recommended holding time had expired.  
 Sample(s) \_\_\_\_\_ were received in a broken container.  
 Sample(s) \_\_\_\_\_ were received with bubble >6 mm in diameter. (Notify PM)

**19. SAMPLE PRESERVATION**

Sample(s) \_\_\_\_\_ were further preserved in the laboratory.  
 Time preserved: \_\_\_\_\_ Preservative(s) added/Lot number(s): \_\_\_\_\_

VOA Sample Preservation - Date/Time VOAs Frozen: \_\_\_\_\_