

## ANALYTICAL REPORT

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

Laboratory Job ID: 240-112481-1

Client Project/Site: Ford LTP Livonia MI - E203631

**For:**

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

Attn: Kristoffer Hinskey



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Authorized for release by:  
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*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 Livonia MI - E203631

Job ID: 240-112481-1

## 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.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

**Job ID: 240-112481-1**

**Laboratory: Eurofins TestAmerica, Canton**

**Narrative**

## CASE NARRATIVE

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

**Project: Ford LTP Livonia MI - E203631**

**Report Number: 240-112481-1**

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 5/11/2019 10:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

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

Samples MW-75SR\_050919 (240-112481-1), MW-84S\_050919 (240-112481-2), DUP-01\_050919 (240-112481-4) and TRIP BLANK (240-112481-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/21/2019.

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-75SR\_050919 (240-112481-1), MW-84S\_050919 (240-112481-2) and DUP-01\_050919 (240-112481-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 05/15/2019.

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 Livonia MI - E203631

Job ID: 240-112481-1

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 Livonia MI - E203631

Job ID: 240-112481-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-112481-1	MW-75SR_050919	Water	05/09/19 10:51	05/11/19 10:10	
240-112481-2	MW-84S_050919	Water	05/09/19 13:28	05/11/19 10:10	
240-112481-4	DUP-01_050919	Water	05/09/19 00:00	05/11/19 10:10	
240-112481-5	TRIP BLANK	Water	05/09/19 00:00	05/11/19 10:10	

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# Detection Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

**Client Sample ID: MW-75SR\_050919**

**Lab Sample ID: 240-112481-1**

No Detections.

**Client Sample ID: MW-84S\_050919**

**Lab Sample ID: 240-112481-2**

No Detections.

**Client Sample ID: DUP-01\_050919**

**Lab Sample ID: 240-112481-4**

No Detections.

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-112481-5**

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

**Client Sample ID: MW-75SR\_050919**

**Lab Sample ID: 240-112481-1**

Date Collected: 05/09/19 10:51

Matrix: Water

Date Received: 05/11/19 10:10

**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	-		05/15/19 14:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		63 - 125		05/15/19 14:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L	-		05/21/19 20:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L	-		05/21/19 20:24	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L	-		05/21/19 20:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L	-		05/21/19 20:24	1
Trichloroethene	1.0	U	1.0	0.10	ug/L	-		05/21/19 20:24	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L	-		05/21/19 20:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 121		05/21/19 20:24	1
4-Bromofluorobenzene (Surr)	94		59 - 120		05/21/19 20:24	1
Toluene-d8 (Surr)	92		70 - 123		05/21/19 20:24	1
Dibromofluoromethane (Surr)	102		75 - 128		05/21/19 20:24	1



# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

**Client Sample ID: MW-84S\_050919**

**Lab Sample ID: 240-112481-2**

Date Collected: 05/09/19 13:28

Matrix: Water

Date Received: 05/11/19 10:10

**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	-		05/15/19 15:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		63 - 125		05/15/19 15:12	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	0.19	ug/L	-		05/21/19 20:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L	-		05/21/19 20:50	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L	-		05/21/19 20:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L	-		05/21/19 20:50	1
Trichloroethene	1.0	U	1.0	0.10	ug/L	-		05/21/19 20:50	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L	-		05/21/19 20:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 121		05/21/19 20:50	1
4-Bromofluorobenzene (Surr)	96		59 - 120		05/21/19 20:50	1
Toluene-d8 (Surr)	92		70 - 123		05/21/19 20:50	1
Dibromofluoromethane (Surr)	96		75 - 128		05/21/19 20:50	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

**Client Sample ID: DUP-01\_050919**

**Lab Sample ID: 240-112481-4**

Date Collected: 05/09/19 00:00

Matrix: Water

Date Received: 05/11/19 10:10

**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	-		05/15/19 16:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		63 - 125		05/15/19 16:02	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	0.19	ug/L	-		05/21/19 21:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L	-		05/21/19 21:40	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L	-		05/21/19 21:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L	-		05/21/19 21:40	1
Trichloroethene	1.0	U	1.0	0.10	ug/L	-		05/21/19 21:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L	-		05/21/19 21:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 121		05/21/19 21:40	1
4-Bromofluorobenzene (Surr)	106		59 - 120		05/21/19 21:40	1
Toluene-d8 (Surr)	90		70 - 123		05/21/19 21:40	1
Dibromofluoromethane (Surr)	104		75 - 128		05/21/19 21:40	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-112481-5**

**Date Collected: 05/09/19 00:00**

**Matrix: Water**

**Date Received: 05/11/19 10:10**

**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			05/21/19 22:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/21/19 22:04	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/21/19 22:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/21/19 22:04	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/21/19 22:04	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/21/19 22:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 121		05/21/19 22:04	1
4-Bromofluorobenzene (Surr)	103		59 - 120		05/21/19 22:04	1
Toluene-d8 (Surr)	91		70 - 123		05/21/19 22:04	1
Dibromofluoromethane (Surr)	101		75 - 128		05/21/19 22:04	1

# Surrogate Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

## 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 (70-121)	BFB (59-120)	TOL (70-123)	DBFM (75-128)
240-112392-A-13 MS	Matrix Spike	105	93	95	104
240-112392-A-13 MSD	Matrix Spike Duplicate	106	86	85	100
240-112481-1	MW-75SR_050919	106	94	92	102
240-112481-2	MW-84S_050919	95	96	92	96
240-112481-4	DUP-01_050919	106	106	90	104
240-112481-5	TRIP BLANK	103	103	91	101
LCS 240-382328/4	Lab Control Sample	100	100	95	108
MB 240-382328/6	Method Blank	100	93	88	105

#### 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 (63-125)
240-112478-N-1 MS	Matrix Spike	92
240-112478-N-1 MSD	Matrix Spike Duplicate	94
240-112481-1	MW-75SR_050919	86
240-112481-2	MW-84S_050919	86
240-112481-4	DUP-01_050919	93
LCS 240-381406/4	Lab Control Sample	85
MB 240-381406/5	Method Blank	86

#### Surrogate Legend

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

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

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

**Lab Sample ID: MB 240-382328/6**  
**Matrix: Water**  
**Analysis Batch: 382328**

**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			05/21/19 13:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/21/19 13:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/21/19 13:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/21/19 13:48	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/21/19 13:48	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/21/19 13:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 121		05/21/19 13:48	1
4-Bromofluorobenzene (Surr)	93		59 - 120		05/21/19 13:48	1
Toluene-d8 (Surr)	88		70 - 123		05/21/19 13:48	1
Dibromofluoromethane (Surr)	105		75 - 128		05/21/19 13:48	1

**Lab Sample ID: LCS 240-382328/4**  
**Matrix: Water**  
**Analysis Batch: 382328**

**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	9.65		ug/L		97	65 - 139
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	76 - 128
Tetrachloroethene	10.0	10.7		ug/L		107	74 - 130
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	78 - 133
Trichloroethene	10.0	11.4		ug/L		114	76 - 125
Vinyl chloride	10.0	10.7		ug/L		107	58 - 143

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 121
4-Bromofluorobenzene (Surr)	100		59 - 120
Toluene-d8 (Surr)	95		70 - 123
Dibromofluoromethane (Surr)	108		75 - 128

**Lab Sample ID: 240-112392-A-13 MS**  
**Matrix: Water**  
**Analysis Batch: 382328**

**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	40	U	400	405		ug/L		101	53 - 140
cis-1,2-Dichloroethene	40	U	400	412		ug/L		103	64 - 130
Tetrachloroethene	40	U	400	408		ug/L		102	51 - 136
trans-1,2-Dichloroethene	40	U	400	410		ug/L		103	68 - 133
Trichloroethene	600		400	981		ug/L		96	55 - 131
Vinyl chloride	40	U	400	407		ug/L		102	43 - 154

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		70 - 121
4-Bromofluorobenzene (Surr)	93		59 - 120
Toluene-d8 (Surr)	95		70 - 123

Eurofins TestAmerica, Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

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

Lab Sample ID: 240-112392-A-13 MS  
Matrix: Water  
Analysis Batch: 382328

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	104		75 - 128

Lab Sample ID: 240-112392-A-13 MSD  
Matrix: Water  
Analysis Batch: 382328

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	40	U	400	374		ug/L		94	53 - 140	8	35
cis-1,2-Dichloroethene	40	U	400	385		ug/L		96	64 - 130	7	21
Tetrachloroethene	40	U	400	357		ug/L		89	51 - 136	13	23
trans-1,2-Dichloroethene	40	U	400	366		ug/L		92	68 - 133	11	24
Trichloroethene	600		400	961		ug/L		91	55 - 131	2	23
Vinyl chloride	40	U	400	367		ug/L		92	43 - 154	10	29

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 121
4-Bromofluorobenzene (Surr)	86		59 - 120
Toluene-d8 (Surr)	85		70 - 123
Dibromofluoromethane (Surr)	100		75 - 128

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

Lab Sample ID: MB 240-381406/5  
Matrix: Water  
Analysis Batch: 381406

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			05/15/19 12:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		63 - 125		05/15/19 12:16	1

Lab Sample ID: LCS 240-381406/4  
Matrix: Water  
Analysis Batch: 381406

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	11.9		ug/L		119	59 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		63 - 125

Lab Sample ID: 240-112478-N-1 MS  
Matrix: Water  
Analysis Batch: 381406

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	11.9		ug/L		119	52 - 129

Eurofins TestAmerica, Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

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

<i>Surrogate</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	92		63 - 125

**Lab Sample ID: 240-112478-N-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 381406**

**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>
1,4-Dioxane	2.0	U	10.0	11.8		ug/L		118	52 - 129	0	13

<i>Surrogate</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	94		63 - 125

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# QC Association Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

## GC/MS VOA

### Analysis Batch: 381406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-112481-1	MW-75SR_050919	Total/NA	Water	8260B SIM	
240-112481-2	MW-84S_050919	Total/NA	Water	8260B SIM	
240-112481-4	DUP-01_050919	Total/NA	Water	8260B SIM	
MB 240-381406/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-381406/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-112478-N-1 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-112478-N-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

### Analysis Batch: 382328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-112481-1	MW-75SR_050919	Total/NA	Water	8260B	
240-112481-2	MW-84S_050919	Total/NA	Water	8260B	
240-112481-4	DUP-01_050919	Total/NA	Water	8260B	
240-112481-5	TRIP BLANK	Total/NA	Water	8260B	
MB 240-382328/6	Method Blank	Total/NA	Water	8260B	
LCS 240-382328/4	Lab Control Sample	Total/NA	Water	8260B	
240-112392-A-13 MS	Matrix Spike	Total/NA	Water	8260B	
240-112392-A-13 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	



# Lab Chronicle

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-112481-1

**Client Sample ID: MW-75SR\_050919**

**Lab Sample ID: 240-112481-1**

**Date Collected: 05/09/19 10:51**

**Matrix: Water**

**Date Received: 05/11/19 10:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	382328	05/21/19 20:24	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	381406	05/15/19 14:47	SAM	TAL CAN

**Client Sample ID: MW-84S\_050919**

**Lab Sample ID: 240-112481-2**

**Date Collected: 05/09/19 13:28**

**Matrix: Water**

**Date Received: 05/11/19 10:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	382328	05/21/19 20:50	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	381406	05/15/19 15:12	SAM	TAL CAN

**Client Sample ID: DUP-01\_050919**

**Lab Sample ID: 240-112481-4**

**Date Collected: 05/09/19 00:00**

**Matrix: Water**

**Date Received: 05/11/19 10:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	382328	05/21/19 21:40	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	381406	05/15/19 16:02	SAM	TAL CAN

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-112481-5**

**Date Collected: 05/09/19 00:00**

**Matrix: Water**

**Date Received: 05/11/19 10:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	382328	05/21/19 22:04	LRW	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 Livonia MI - E203631

Job ID: 240-112481-1

## Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-20
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19 *
Illinois	NELAP	5	200004	07-31-19 *
Iowa	State Program	7	421	06-01-21
Kansas	NELAP	7	E-10336	04-30-20
Kentucky (UST)	State Program	4	58	02-23-20
Kentucky (WW)	State Program	4	98016	12-31-19
Minnesota	NELAP	5	039-999-348	12-31-19 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19 *
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19 *
New York	NELAP	2	10975	03-31-20
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-20
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-18-10	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-20 *
West Virginia DEP	State Program	3	210	12-31-19

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

Eurofins TestAmerica, Canton MICHIGAN 190 Chain of Custody Record

1.0/C.O.R

4101 Shuffel Street NW  
North Canton, OH 44720  
Phone (330) 497-9396 Fax (330) 497-0772

<b>Client Information</b>			Lab PM: DelMontico, Michael			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
Client Contact: Caitlin O'Neill			E-Mail: michael.delmontico@testamerica.com			Page: Page 13 of 13			Job #:		
Company: ARCADIS U.S. Inc			Lab PM: DelMontico, Michael			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
Address: 28550 Cabot Drive Suite 500			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
City: Novi			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
State, Zip: MI, 48377			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
Phone:			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
Email: Caitlin.O'Neill@arcadis.com			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
Project Name: Ford LTP Livonia MI - E203631			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
Site:			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
Due Date Requested:			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
TAT Requested (days): 10 days			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
PO #: MI001318.0002.00002			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
WO #: E203631			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
Project #: 24015353			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
SSOW#:			E-Mail: michael.delmontico@testamerica.com			Carrier Tracking No(s):			COC No: 240-60548-25803.13		
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=Solid, O=wastewater, BT=tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B, 8260B SIM	8260B - VOCs (Short List)	Analysis Requested		
MW-75SR - 050919	5/9/19	1051	G	Water	N	N	X	X	Total Number of containers: 6		
MW-84S - 050919	5/9/19	1328	G	Water	N	N	X	X	Total Number of containers: 6		
MW-84 - 050919	5/9/19	1509	G	Water	N	N	X	X	Total Number of containers: 6		
DUP-01-050919	5/9/19	-	G	Water	N	N	X	X	Total Number of containers: 6		
Trip Blank	5/9/19	-	Blank	Water	N	N	X	X	Total Number of containers: 1		
									Special Instructions/Note: trip blank		
									Special Instructions/Note:		
<p>Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological</p> <p>Deliverable Requested: I, II, III (V) Other (specify)</p> <p>Empty Kit Relinquished by: _____ Date: _____ Time: _____</p> <p>Relinquished by: _____ Date/Time: 5/9/19 1830 Company: ARCADIS</p> <p>Relinquished by: _____ Date/Time: 5/10/19 1445 Company: ARCADIS</p> <p>Relinquished by: _____ Date/Time: 5/10/19 1630 Company: ETAL</p> <p>Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:</p>											
<p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <p><input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months</p> <p>Special Instructions/QC Requirements:</p>											
<p>Received by: _____ Date/Time: 5/9/19 1830 Company: ARCADIS</p> <p>Received by: _____ Date/Time: 5/10/19 1445 Company: ETAL</p> <p>Received by: _____ Date/Time: 5/10/19 1630 Company: ETAL</p> <p>Cooler Temperature(s) °C and Other Remarks:</p>											



Ver: 01/16/2019  
1  
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TestAmerica Canton Sample Receipt Form/Narrative

Login #: 112481

Canton Facility

Client Arcadis Site Name \_\_\_\_\_

Cooler unpacked by: [Signature]

Cooler Received on 5-11-19 Opened on 5-11-19

FedEx: 1<sup>st</sup> Grd  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-8 (CF -0.2 °C) Observed Cooler Temp. 1.0 °C Corrected Cooler Temp. 0.8 °C  
IR GUN #36 (CF +0.7°C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2 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

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were all preserved sample(s) at the correct pH upon receipt? Yes  No  NA  pH Strip Lot# HC984738

13. Were VOAs on the COC? Yes  No  NA

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 # B839001VB Yes  No

16. Was a LL Hg or Me Hg trip blank present? Yes  No

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

Concerning \_\_\_\_\_

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: Martin

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: \_\_\_\_\_

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