

## ANALYTICAL REPORT

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

Laboratory Job ID: 240-110851-1  
Client Project/Site: Ford LTP Livonia MI - E203631

For:  
ARCADIS U.S., Inc.  
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Suite 500  
Novi, Michigan 48377

Attn: Kristoffer Hinskey



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Authorized for release by:  
4/15/2019 2:48:55 PM

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

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# Definitions/Glossary

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

Job ID: 240-110851-1

## 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: 240-110851-1

**Job ID: 240-110851-1**

**Laboratory: Eurofins TestAmerica, Canton**

**Narrative**

## CASE NARRATIVE

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

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

**Report Number: 240-110851-1**

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 sample was 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, sample was 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 sample was received on 4/12/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

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

Samples MW-192S\_041119 (240-110851-1) and TRIP BLANK (240-110851-2) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The sample was analyzed on 04/12/2019.

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

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

Sample MW-192S\_041119 (240-110851-1) was analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The sample was analyzed on 04/12/2019.

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: 240-110851-1

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 Livonia MI - E203631

Job ID: 240-110851-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-110851-1	MW-192S_041119	Water	04/11/19 11:45	04/12/19 09:20
240-110851-2	TRIP BLANK	Water	04/11/19 00:00	04/12/19 09:20

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- 10
- 11
- 12
- 13
- 14

# Detection Summary

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

Job ID: 240-110851-1

**Client Sample ID: MW-192S\_041119**

**Lab Sample ID: 240-110851-1**

No Detections.

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-110851-2**

No Detections.

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

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: 240-110851-1

**Client Sample ID: MW-192S\_041119**

**Lab Sample ID: 240-110851-1**

Date Collected: 04/11/19 11:45

Matrix: Water

Date Received: 04/12/19 09:20

**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			04/12/19 14:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		63 - 125		04/12/19 14:48	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			04/12/19 17:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/12/19 17:27	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/12/19 17:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/12/19 17:27	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/12/19 17:27	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/12/19 17:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 121		04/12/19 17:27	1
4-Bromofluorobenzene (Surr)	98		59 - 120		04/12/19 17:27	1
Toluene-d8 (Surr)	92		70 - 123		04/12/19 17:27	1
Dibromofluoromethane (Surr)	89		75 - 128		04/12/19 17:27	1

# Client Sample Results

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

Job ID: 240-110851-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-110851-2**

**Date Collected: 04/11/19 00:00**

**Matrix: Water**

**Date Received: 04/12/19 09:20**

**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			04/12/19 16:37	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/12/19 16:37	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/12/19 16:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/12/19 16:37	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/12/19 16:37	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/12/19 16:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 121		04/12/19 16:37	1
4-Bromofluorobenzene (Surr)	100		59 - 120		04/12/19 16:37	1
Toluene-d8 (Surr)	95		70 - 123		04/12/19 16:37	1
Dibromofluoromethane (Surr)	88		75 - 128		04/12/19 16:37	1

# Surrogate Summary

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

Job ID: 240-110851-1

## 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)
240-110851-1	MW-192S_041119	87	98	92	89
240-110851-1 MS	MW-192S_041119	90	101	94	96
240-110851-1 MSD	MW-192S_041119	95	96	93	92
240-110851-2	TRIP BLANK	87	100	95	88
LCS 240-376208/5	Lab Control Sample	94	100	96	100
MB 240-376208/8	Method Blank	91	101	94	93

#### 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)
240-110825-B-3 MS	Matrix Spike	107
240-110825-B-3 MSD	Matrix Spike Duplicate	105
240-110851-1	MW-192S_041119	104
LCS 240-376210/4	Lab Control Sample	100
MB 240-376210/5	Method Blank	102

#### 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: 240-110851-1

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

**Lab Sample ID: MB 240-376208/8**  
**Matrix: Water**  
**Analysis Batch: 376208**

**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			04/12/19 12:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/12/19 12:28	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/12/19 12:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/12/19 12:28	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/12/19 12:28	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/12/19 12:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 121		04/12/19 12:28	1
4-Bromofluorobenzene (Surr)	101		59 - 120		04/12/19 12:28	1
Toluene-d8 (Surr)	94		70 - 123		04/12/19 12:28	1
Dibromofluoromethane (Surr)	93		75 - 128		04/12/19 12:28	1

**Lab Sample ID: LCS 240-376208/5**  
**Matrix: Water**  
**Analysis Batch: 376208**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	10.2		ug/L		102	65 - 139
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	76 - 128
Tetrachloroethene	10.0	9.06		ug/L		91	74 - 130
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	78 - 133
Trichloroethene	10.0	10.1		ug/L		101	76 - 125
Vinyl chloride	10.0	11.4		ug/L		114	58 - 143

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 121
4-Bromofluorobenzene (Surr)	100		59 - 120
Toluene-d8 (Surr)	96		70 - 123
Dibromofluoromethane (Surr)	100		75 - 128

**Lab Sample ID: 240-110851-1 MS**  
**Matrix: Water**  
**Analysis Batch: 376208**

**Client Sample ID: MW-192S\_041119**  
**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	10.5		ug/L		105	53 - 140
cis-1,2-Dichloroethene	1.0	U	10.0	9.61		ug/L		96	64 - 130
Tetrachloroethene	1.0	U	10.0	8.89		ug/L		89	51 - 136
trans-1,2-Dichloroethene	1.0	U	10.0	10.5		ug/L		105	68 - 133
Trichloroethene	1.0	U	10.0	9.93		ug/L		99	55 - 131
Vinyl chloride	1.0	U	10.0	10.7		ug/L		107	43 - 154

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		70 - 121
4-Bromofluorobenzene (Surr)	101		59 - 120
Toluene-d8 (Surr)	94		70 - 123

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-110851-1

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

Lab Sample ID: 240-110851-1 MS  
Matrix: Water  
Analysis Batch: 376208

Client Sample ID: MW-192S\_041119  
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	96		75 - 128

Lab Sample ID: 240-110851-1 MSD  
Matrix: Water  
Analysis Batch: 376208

Client Sample ID: MW-192S\_041119  
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	9.66		ug/L		97	53 - 140	8	35
cis-1,2-Dichloroethene	1.0	U	10.0	10.0		ug/L		100	64 - 130	4	21
Tetrachloroethene	1.0	U	10.0	7.70		ug/L		77	51 - 136	14	23
trans-1,2-Dichloroethene	1.0	U	10.0	9.71		ug/L		97	68 - 133	8	24
Trichloroethene	1.0	U	10.0	9.29		ug/L		93	55 - 131	7	23
Vinyl chloride	1.0	U	10.0	10.2		ug/L		102	43 - 154	5	29

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 121
4-Bromofluorobenzene (Surr)	96		59 - 120
Toluene-d8 (Surr)	93		70 - 123
Dibromofluoromethane (Surr)	92		75 - 128

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

Lab Sample ID: MB 240-376210/5  
Matrix: Water  
Analysis Batch: 376210

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			04/12/19 11:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		63 - 125		04/12/19 11:48	1

Lab Sample ID: LCS 240-376210/4  
Matrix: Water  
Analysis Batch: 376210

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	10.9		ug/L		109	59 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		63 - 125

Lab Sample ID: 240-110825-B-3 MS  
Matrix: Water  
Analysis Batch: 376210

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	20	U	100	94.8		ug/L		95	52 - 129

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-110851-1

## 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)	107		63 - 125

**Lab Sample ID: 240-110825-B-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 376210**

**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	20	U	100	91.8		ug/L		92	52 - 129	3	13

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	105		63 - 125

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# QC Association Summary

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

Job ID: 240-110851-1

## GC/MS VOA

### Analysis Batch: 376208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110851-1	MW-192S_041119	Total/NA	Water	8260B	
240-110851-2	TRIP BLANK	Total/NA	Water	8260B	
MB 240-376208/8	Method Blank	Total/NA	Water	8260B	
LCS 240-376208/5	Lab Control Sample	Total/NA	Water	8260B	
240-110851-1 MS	MW-192S_041119	Total/NA	Water	8260B	
240-110851-1 MSD	MW-192S_041119	Total/NA	Water	8260B	

### Analysis Batch: 376210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110851-1	MW-192S_041119	Total/NA	Water	8260B SIM	
MB 240-376210/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-376210/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-110825-B-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-110825-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

# Lab Chronicle

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

Job ID: 240-110851-1

**Client Sample ID: MW-192S\_041119**

**Lab Sample ID: 240-110851-1**

**Date Collected: 04/11/19 11:45**

**Matrix: Water**

**Date Received: 04/12/19 09:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	376208	04/12/19 17:27	SAM	TAL CAN
Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	376210	04/12/19 14:48	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	376210	04/12/19 14:48	SAM	TAL CAN

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-110851-2**

**Date Collected: 04/11/19 00:00**

**Matrix: Water**

**Date Received: 04/12/19 09:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	376208	04/12/19 16:37	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 Livonia MI - E203631

Job ID: 240-110851-1

## 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
Kansas	NELAP	7	E-10336	04-30-19 *
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.



1.8/11.6

**Chain of Custody Record**

TestAmerica Laboratory location: N.Canton — 4101 Shuffel Street NW/ North Canton, OH 44720 / 330-497-9396

<b>Client Contact</b> Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240		<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 Hinsky Telephone: 248-994-2240 Email: kristoffer.hinsky@arcadis.com		<b>Site Contact:</b> Angela DeGrano Telephone: 330-497-9396 Lab Contact: Mike DeMonico	
<b>Method of Shipment/Carrier:</b> FedEx <b>Shipping/Tracking No.:</b>		<b>Analyses</b> 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 Composite C/Grab-C Filtered Sample (Y/N)	
<b>Sample Identification</b> MW-1925-04119 Trip Blank		<b>Containers &amp; Preservatives</b> H2SO4 HNO3 HCl NaOH NaOH ZnOH Urpres Other:	
<b>Sample Date:</b> 4/11/19 <b>Sample Time:</b> 1145		<b>Matrix</b> Air Aqueous Sediment Solid Other:	
<b>Possible Hazard Identification</b> <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		<b>Sample Disposal</b> (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	
<b>Special Instructions/QC Requirements &amp; Comments:</b> Submit all results through Cadena at jim.tomalia@cadena.com, Cadena #E203631 Level IV Reporting.			
<b>Relinquished by:</b> [Signature] <b>Relinquished by:</b> [Signature] <b>Relinquished by:</b> [Signature]		<b>Received by:</b> [Signature] <b>Received by:</b> [Signature] <b>Received in Laboratory by:</b> [Signature]	
<b>Company:</b> Arcadis <b>Date/Time:</b> 4/11/19 1500		<b>Company:</b> [Signature] <b>Date/Time:</b> 4/12/19 920	
<b>Company:</b> <b>Date/Time:</b>		<b>Company:</b> <b>Date/Time:</b>	

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TestAmerica Canton Sample Receipt Form/Narrative

Login # : 110951

Canton Facility

Client Arcadis Site Name

Cooler unpacked by:

Cooler Received on 4/12/19 Opened on 4/12/19

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

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

TestAmerica Cooler # 36 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
IR GUN# IR-8 (CF -0.2 °C) Observed Cooler Temp. 1.8 °C Corrected Cooler Temp. 1.6 °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 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
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
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 # 834001 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:

RC

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: