

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 240-99736-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

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

Attn: Kristoffer Hinskey



Authorized for release by:  
8/24/2018 10:08:52 AM

Michael DelMonico, Project Manager I  
(330)497-9396  
[michael.delmonico@testamericainc.com](mailto:michael.delmonico@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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

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

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Method Summary . . . . .	6
Sample Summary . . . . .	7
Detection Summary . . . . .	8
Client Sample Results . . . . .	10
Surrogate Summary . . . . .	32
QC Sample Results . . . . .	34
QC Association Summary . . . . .	50
Lab Chronicle . . . . .	52
Certification Summary . . . . .	55
Chain of Custody . . . . .	56

# Definitions/Glossary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

## 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
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 - E203728

TestAmerica Job ID: 240-99736-1

**Job ID: 240-99736-1**

**Laboratory: TestAmerica Canton**

**Narrative**

## CASE NARRATIVE

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

**Project: Ford LTP Livonia MI - E203728**

**Report Number: 240-99736-1**

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.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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 TestAmerica and its client.

### **RECEIPT**

The samples were received on 8/10/2018 8:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.4° C and 1.8° C.

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

Samples MW-4\_080718 (240-99736-1), MW-15-61D\_080718 (240-99736-2), MW-15-60D\_080718 (240-99736-3), MW-32\_080718 (240-99736-4), DUP-01\_0807 (240-99736-5), MW-3\_080718 (240-99736-6), MW-5\_080718 (240-99736-7), MW-18\_080718 (240-99736-8), MW-39\_080718 (240-99736-9), MW-29\_080918 (240-99736-10) and TRIP BLANK (240-99736-11) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/21/2018.

1,1,2-Trichloro-1,2,2-trifluoroethane, Cyclohexane, Isopropylbenzene and Methylcyclohexane failed the recovery criteria low for the MS of sample MW-32\_080718MS (240-99736-4) in batch 240-341699.

1,1,2-Trichloro-1,2,2-trifluoroethane, Cyclohexane and Methylcyclohexane exceeded the RPD limit for the MSD of sample MW-32\_080718MSD (240-99736-4) in batch 240-341699. Refer to the QC report for details.

Sample MW-4\_080718 (240-99736-1)[1000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

# Case Narrative

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

---

## Job ID: 240-99736-1 (Continued)

---

### Laboratory: TestAmerica Canton (Continued)

#### VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-4\_080718 (240-99736-1), MW-15-61D\_080718 (240-99736-2), MW-15-60D\_080718 (240-99736-3), MW-32\_080718 (240-99736-4), DUP-01\_0807 (240-99736-5), MW-3\_080718 (240-99736-6), MW-5\_080718 (240-99736-7), MW-18\_080718 (240-99736-8), MW-39\_080718 (240-99736-9) and MW-29\_080918 (240-99736-10) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/15/2018 and 08/16/2018.

Sample MW-4\_080718 (240-99736-1)[100X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following sample was diluted due to the nature of the sample matrix: MW-4\_080718 (240-99736-1). Elevated reporting limits (RLs) are provided.

No additional 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 - E203728

TestAmerica Job ID: 240-99736-1

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 = 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 - E203728

TestAmerica Job ID: 240-99736-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-99736-1	MW-4_080718	Water	08/07/18 09:55	08/10/18 08:45
240-99736-2	MW-15-61D_080718	Water	08/07/18 11:36	08/10/18 08:45
240-99736-3	MW-15-60D_080718	Water	08/07/18 09:57	08/10/18 08:45
240-99736-4	MW-32_080718	Water	08/07/18 14:36	08/10/18 08:45
240-99736-5	DUP-01_0807	Water	08/07/18 00:00	08/10/18 08:45
240-99736-6	MW-3_080718	Water	08/07/18 11:35	08/10/18 08:45
240-99736-7	MW-5_080718	Water	08/07/18 12:55	08/10/18 08:45
240-99736-8	MW-18_080718	Water	08/07/18 15:50	08/10/18 08:45
240-99736-9	MW-39_080718	Water	08/07/18 13:46	08/10/18 08:45
240-99736-10	MW-29_080918	Water	08/09/18 10:00	08/10/18 08:45
240-99736-11	TRIP BLANK	Water	08/07/18 00:00	08/10/18 08:45



# Detection Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

## Client Sample ID: MW-4\_080718

## Lab Sample ID: 240-99736-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	22000		1000	160	ug/L	1000		8260B	Total/NA
trans-1,2-Dichloroethene	1000		1000	190	ug/L	1000		8260B	Total/NA
Trichloroethene	31000		1000	100	ug/L	1000		8260B	Total/NA

## Client Sample ID: MW-15-61D\_080718

## Lab Sample ID: 240-99736-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.25	J	1.0	0.13	ug/L	1		8260B	Total/NA
Ethylbenzene	0.12	J	1.0	0.11	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-15-60D\_080718

## Lab Sample ID: 240-99736-3

No Detections.

## Client Sample ID: MW-32\_080718

## Lab Sample ID: 240-99736-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.32	J	1.0	0.16	ug/L	1		8260B	Total/NA

## Client Sample ID: DUP-01\_0807

## Lab Sample ID: 240-99736-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.3	J	10	5.4	ug/L	1		8260B	Total/NA
Benzene	0.14	J	1.0	0.13	ug/L	1		8260B	Total/NA
2-Butanone (MEK)	1.5	J	10	1.2	ug/L	1		8260B	Total/NA
Ethylbenzene	0.13	J	1.0	0.11	ug/L	1		8260B	Total/NA
2-Hexanone	1.1	J	10	0.54	ug/L	1		8260B	Total/NA
4-Methyl-2-pentanone (MIBK)	0.94	J	10	0.42	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-3\_080718

## Lab Sample ID: 240-99736-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA

## Client Sample ID: MW-5\_080718

## Lab Sample ID: 240-99736-7

No Detections.

## Client Sample ID: MW-18\_080718

## Lab Sample ID: 240-99736-8

No Detections.

## Client Sample ID: MW-39\_080718

## Lab Sample ID: 240-99736-9

No Detections.

## Client Sample ID: MW-29\_080918

## Lab Sample ID: 240-99736-10

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Canton



# Detection Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-99736-11**

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.

TestAmerica Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-4\_080718**

**Lab Sample ID: 240-99736-1**

**Date Collected: 08/07/18 09:55**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	200	U	200	86	ug/L			08/16/18 13:42	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		63 - 125					08/16/18 13:42	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10000	U	10000	5400	ug/L			08/21/18 16:13	1000
Benzene	1000	U	1000	130	ug/L			08/21/18 16:13	1000
Bromodichloromethane	1000	U	1000	170	ug/L			08/21/18 16:13	1000
Bromoform	1000	U	1000	760	ug/L			08/21/18 16:13	1000
Bromomethane	1000	U	1000	420	ug/L			08/21/18 16:13	1000
2-Butanone (MEK)	10000	U	10000	1200	ug/L			08/21/18 16:13	1000
Carbon disulfide	5000	U	5000	280	ug/L			08/21/18 16:13	1000
Carbon tetrachloride	1000	U	1000	260	ug/L			08/21/18 16:13	1000
Chlorobenzene	1000	U	1000	140	ug/L			08/21/18 16:13	1000
Chloroethane	1000	U	1000	830	ug/L			08/21/18 16:13	1000
Chloroform	1000	U	1000	130	ug/L			08/21/18 16:13	1000
Chloromethane	1000	U	1000	200	ug/L			08/21/18 16:13	1000
<b>cis-1,2-Dichloroethene</b>	<b>22000</b>		1000	160	ug/L			08/21/18 16:13	1000
cis-1,3-Dichloropropene	1000	U	1000	610	ug/L			08/21/18 16:13	1000
Cyclohexane	1000	U	1000	240	ug/L			08/21/18 16:13	1000
Dibromochloromethane	1000	U	1000	390	ug/L			08/21/18 16:13	1000
1,2-Dibromo-3-Chloropropane	1000	U	1000	910	ug/L			08/21/18 16:13	1000
1,2-Dibromoethane	1000	U	1000	120	ug/L			08/21/18 16:13	1000
1,2-Dichlorobenzene	1000	U	1000	150	ug/L			08/21/18 16:13	1000
1,3-Dichlorobenzene	1000	U	1000	150	ug/L			08/21/18 16:13	1000
1,4-Dichlorobenzene	1000	U	1000	160	ug/L			08/21/18 16:13	1000
Dichlorodifluoromethane	1000	U	1000	350	ug/L			08/21/18 16:13	1000
1,1-Dichloroethane	1000	U	1000	170	ug/L			08/21/18 16:13	1000
1,2-Dichloroethane	1000	U	1000	210	ug/L			08/21/18 16:13	1000
1,1-Dichloroethene	1000	U	1000	190	ug/L			08/21/18 16:13	1000
1,2-Dichloropropane	1000	U	1000	150	ug/L			08/21/18 16:13	1000
Ethylbenzene	1000	U	1000	110	ug/L			08/21/18 16:13	1000
2-Hexanone	10000	U	10000	540	ug/L			08/21/18 16:13	1000
Isopropylbenzene	1000	U	1000	90	ug/L			08/21/18 16:13	1000
Methyl acetate	10000	U	10000	1700	ug/L			08/21/18 16:13	1000
Methylcyclohexane	1000	U	1000	330	ug/L			08/21/18 16:13	1000
Methylene Chloride	5000	U	5000	2600	ug/L			08/21/18 16:13	1000
4-Methyl-2-pentanone (MIBK)	10000	U	10000	420	ug/L			08/21/18 16:13	1000
Methyl tert-butyl ether	1000	U	1000	70	ug/L			08/21/18 16:13	1000
Styrene	1000	U	1000	100	ug/L			08/21/18 16:13	1000
1,1,2,2-Tetrachloroethane	1000	U	1000	130	ug/L			08/21/18 16:13	1000
Tetrachloroethene	1000	U	1000	150	ug/L			08/21/18 16:13	1000
Toluene	1000	U	1000	140	ug/L			08/21/18 16:13	1000
<b>trans-1,2-Dichloroethene</b>	<b>1000</b>		1000	190	ug/L			08/21/18 16:13	1000
trans-1,3-Dichloropropene	1000	U	1000	670	ug/L			08/21/18 16:13	1000
1,2,4-Trichlorobenzene	1000	U	1000	260	ug/L			08/21/18 16:13	1000
1,1,1-Trichloroethane	1000	U	1000	240	ug/L			08/21/18 16:13	1000
1,1,2-Trichloroethane	1000	U	1000	90	ug/L			08/21/18 16:13	1000

TestAmerica Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-4\_080718**

**Lab Sample ID: 240-99736-1**

**Date Collected: 08/07/18 09:55**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Trichloroethene</b>	<b>31000</b>		1000	100	ug/L			08/21/18 16:13	1000
Trichlorofluoromethane	1000	U	1000	450	ug/L			08/21/18 16:13	1000
1,1,2-Trichloro-1,2,2-trifluoroethane	1000	U	1000	410	ug/L			08/21/18 16:13	1000
1,2,3-Trimethylbenzene	5000	U	5000	140	ug/L			08/21/18 16:13	1000
1,2,4-Trimethylbenzene	1000	U	1000	70	ug/L			08/21/18 16:13	1000
1,3,5-Trimethylbenzene	1000	U	1000	120	ug/L			08/21/18 16:13	1000
Vinyl chloride	1000	U	1000	200	ug/L			08/21/18 16:13	1000
Xylenes, Total	2000	U	2000	150	ug/L			08/21/18 16:13	1000
1,4-Dioxane	50000	U	50000	13000	ug/L			08/21/18 16:13	1000
Diethyl ether	2000	U	2000	190	ug/L			08/21/18 16:13	1000
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	94		69 - 120					08/21/18 16:13	1000
Dibromofluoromethane (Surr)	109		69 - 124					08/21/18 16:13	1000
1,2-Dichloroethane-d4 (Surr)	107		61 - 138					08/21/18 16:13	1000
Toluene-d8 (Surr)	101		73 - 120					08/21/18 16:13	1000

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-15-61D\_080718**

**Lab Sample ID: 240-99736-2**

**Date Collected: 08/07/18 11:36**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

**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			08/15/18 18:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		63 - 125					08/15/18 18:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 00:54	1
<b>Benzene</b>	<b>0.25</b>	<b>J</b>	1.0	0.13	ug/L			08/21/18 00:54	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 00:54	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 00:54	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 00:54	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 00:54	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 00:54	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 00:54	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 00:54	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 00:54	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 00:54	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 00:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 00:54	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 00:54	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 00:54	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 00:54	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 00:54	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 00:54	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 00:54	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 00:54	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 00:54	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 00:54	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 00:54	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 00:54	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 00:54	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 00:54	1
<b>Ethylbenzene</b>	<b>0.12</b>	<b>J</b>	1.0	0.11	ug/L			08/21/18 00:54	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 00:54	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 00:54	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 00:54	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 00:54	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 00:54	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 00:54	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 00:54	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 00:54	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 00:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 00:54	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 00:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 00:54	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 00:54	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 00:54	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 00:54	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 00:54	1

TestAmerica Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-15-61D\_080718**

**Lab Sample ID: 240-99736-2**

**Date Collected: 08/07/18 11:36**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 00:54	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 00:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 00:54	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 00:54	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 00:54	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 00:54	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 00:54	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 00:54	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 00:54	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 00:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		69 - 120		08/21/18 00:54	1
Dibromofluoromethane (Surr)	105		69 - 124		08/21/18 00:54	1
1,2-Dichloroethane-d4 (Surr)	104		61 - 138		08/21/18 00:54	1
Toluene-d8 (Surr)	101		73 - 120		08/21/18 00:54	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-15-60D\_080718**

**Lab Sample ID: 240-99736-3**

**Date Collected: 08/07/18 09:57**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

**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			08/16/18 14:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125					08/16/18 14:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 01:16	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 01:16	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 01:16	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 01:16	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 01:16	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 01:16	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 01:16	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 01:16	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 01:16	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 01:16	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 01:16	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 01:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 01:16	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 01:16	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 01:16	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 01:16	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 01:16	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 01:16	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 01:16	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 01:16	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 01:16	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 01:16	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 01:16	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 01:16	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 01:16	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 01:16	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 01:16	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 01:16	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 01:16	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 01:16	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 01:16	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 01:16	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 01:16	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 01:16	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 01:16	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 01:16	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 01:16	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 01:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 01:16	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 01:16	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 01:16	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 01:16	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 01:16	1

TestAmerica Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-15-60D\_080718**

**Lab Sample ID: 240-99736-3**

**Date Collected: 08/07/18 09:57**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 01:16	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 01:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 01:16	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 01:16	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 01:16	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 01:16	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 01:16	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 01:16	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 01:16	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 01:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		69 - 120		08/21/18 01:16	1
Dibromofluoromethane (Surr)	108		69 - 124		08/21/18 01:16	1
1,2-Dichloroethane-d4 (Surr)	113		61 - 138		08/21/18 01:16	1
Toluene-d8 (Surr)	99		73 - 120		08/21/18 01:16	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-32\_080718**

**Lab Sample ID: 240-99736-4**

**Date Collected: 08/07/18 14:36**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

**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			08/15/18 16:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		63 - 125					08/15/18 16:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 01:38	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 01:38	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 01:38	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 01:38	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 01:38	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 01:38	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 01:38	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 01:38	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 01:38	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 01:38	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 01:38	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 01:38	1
<b>cis-1,2-Dichloroethene</b>	<b>0.32</b>	<b>J</b>	1.0	0.16	ug/L			08/21/18 01:38	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 01:38	1
Cyclohexane	1.0	U F2 F1	1.0	0.24	ug/L			08/21/18 01:38	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 01:38	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 01:38	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 01:38	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 01:38	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 01:38	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 01:38	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 01:38	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 01:38	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 01:38	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 01:38	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 01:38	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 01:38	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 01:38	1
Isopropylbenzene	1.0	U F1	1.0	0.090	ug/L			08/21/18 01:38	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 01:38	1
Methylcyclohexane	1.0	U F2 F1	1.0	0.33	ug/L			08/21/18 01:38	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 01:38	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 01:38	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 01:38	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 01:38	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 01:38	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 01:38	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 01:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 01:38	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 01:38	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 01:38	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 01:38	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 01:38	1

TestAmerica Canton



# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-32\_080718**

**Lab Sample ID: 240-99736-4**

**Date Collected: 08/07/18 14:36**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 01:38	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 01:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U F2 F1	1.0	0.41	ug/L			08/21/18 01:38	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 01:38	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 01:38	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 01:38	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 01:38	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 01:38	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 01:38	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 01:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		69 - 120		08/21/18 01:38	1
Dibromofluoromethane (Surr)	115		69 - 124		08/21/18 01:38	1
1,2-Dichloroethane-d4 (Surr)	111		61 - 138		08/21/18 01:38	1
Toluene-d8 (Surr)	104		73 - 120		08/21/18 01:38	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: DUP-01\_0807**

**Lab Sample ID: 240-99736-5**

**Date Collected: 08/07/18 00:00**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

**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			08/15/18 19:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		63 - 125					08/15/18 19:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	6.3	J	10	5.4	ug/L			08/21/18 02:44	1
Benzene	0.14	J	1.0	0.13	ug/L			08/21/18 02:44	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 02:44	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 02:44	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 02:44	1
2-Butanone (MEK)	1.5	J	10	1.2	ug/L			08/21/18 02:44	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 02:44	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 02:44	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 02:44	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 02:44	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 02:44	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 02:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 02:44	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 02:44	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 02:44	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 02:44	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 02:44	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 02:44	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 02:44	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 02:44	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 02:44	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 02:44	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 02:44	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 02:44	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 02:44	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 02:44	1
Ethylbenzene	0.13	J	1.0	0.11	ug/L			08/21/18 02:44	1
2-Hexanone	1.1	J	10	0.54	ug/L			08/21/18 02:44	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 02:44	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 02:44	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 02:44	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 02:44	1
4-Methyl-2-pentanone (MIBK)	0.94	J	10	0.42	ug/L			08/21/18 02:44	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 02:44	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 02:44	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 02:44	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 02:44	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 02:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 02:44	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 02:44	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 02:44	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 02:44	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 02:44	1

TestAmerica Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: DUP-01\_0807**

**Lab Sample ID: 240-99736-5**

**Date Collected: 08/07/18 00:00**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 02:44	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 02:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 02:44	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 02:44	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 02:44	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 02:44	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 02:44	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 02:44	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 02:44	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 02:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		69 - 120		08/21/18 02:44	1
Dibromofluoromethane (Surr)	110		69 - 124		08/21/18 02:44	1
1,2-Dichloroethane-d4 (Surr)	111		61 - 138		08/21/18 02:44	1
Toluene-d8 (Surr)	103		73 - 120		08/21/18 02:44	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-3\_080718**

**Lab Sample ID: 240-99736-6**

**Date Collected: 08/07/18 11:35**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	J	2.0	0.86	ug/L			08/16/18 14:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		63 - 125					08/16/18 14:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 03:07	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 03:07	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 03:07	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 03:07	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 03:07	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 03:07	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 03:07	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 03:07	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 03:07	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 03:07	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 03:07	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 03:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 03:07	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 03:07	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 03:07	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 03:07	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 03:07	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 03:07	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 03:07	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 03:07	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 03:07	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 03:07	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 03:07	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 03:07	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 03:07	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 03:07	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 03:07	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 03:07	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 03:07	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 03:07	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 03:07	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 03:07	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 03:07	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 03:07	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 03:07	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 03:07	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 03:07	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 03:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 03:07	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 03:07	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 03:07	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 03:07	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 03:07	1

TestAmerica Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-3\_080718**

**Lab Sample ID: 240-99736-6**

**Date Collected: 08/07/18 11:35**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 03:07	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 03:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 03:07	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 03:07	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 03:07	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 03:07	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 03:07	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 03:07	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 03:07	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 03:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		69 - 120		08/21/18 03:07	1
Dibromofluoromethane (Surr)	110		69 - 124		08/21/18 03:07	1
1,2-Dichloroethane-d4 (Surr)	108		61 - 138		08/21/18 03:07	1
Toluene-d8 (Surr)	105		73 - 120		08/21/18 03:07	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-5\_080718**

**Lab Sample ID: 240-99736-7**

**Date Collected: 08/07/18 12:55**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

**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			08/15/18 20:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124		63 - 125					08/15/18 20:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 03:29	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 03:29	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 03:29	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 03:29	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 03:29	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 03:29	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 03:29	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 03:29	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 03:29	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 03:29	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 03:29	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 03:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 03:29	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 03:29	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 03:29	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 03:29	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 03:29	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 03:29	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 03:29	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 03:29	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 03:29	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 03:29	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 03:29	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 03:29	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 03:29	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 03:29	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 03:29	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 03:29	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 03:29	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 03:29	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 03:29	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 03:29	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 03:29	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 03:29	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 03:29	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 03:29	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 03:29	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 03:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 03:29	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 03:29	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 03:29	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 03:29	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 03:29	1

TestAmerica Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-5\_080718**

**Lab Sample ID: 240-99736-7**

**Date Collected: 08/07/18 12:55**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 03:29	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 03:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 03:29	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 03:29	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 03:29	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 03:29	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 03:29	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 03:29	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 03:29	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 03:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		69 - 120		08/21/18 03:29	1
Dibromofluoromethane (Surr)	113		69 - 124		08/21/18 03:29	1
1,2-Dichloroethane-d4 (Surr)	110		61 - 138		08/21/18 03:29	1
Toluene-d8 (Surr)	103		73 - 120		08/21/18 03:29	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-18\_080718**

**Lab Sample ID: 240-99736-8**

**Date Collected: 08/07/18 15:50**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

**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			08/15/18 20:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		63 - 125					08/15/18 20:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 03:52	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 03:52	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 03:52	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 03:52	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 03:52	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 03:52	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 03:52	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 03:52	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 03:52	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 03:52	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 03:52	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 03:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 03:52	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 03:52	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 03:52	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 03:52	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 03:52	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 03:52	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 03:52	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 03:52	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 03:52	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 03:52	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 03:52	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 03:52	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 03:52	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 03:52	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 03:52	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 03:52	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 03:52	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 03:52	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 03:52	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 03:52	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 03:52	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 03:52	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 03:52	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 03:52	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 03:52	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 03:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 03:52	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 03:52	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 03:52	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 03:52	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 03:52	1

TestAmerica Canton



# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-18\_080718**

**Lab Sample ID: 240-99736-8**

**Date Collected: 08/07/18 15:50**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 03:52	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 03:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 03:52	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 03:52	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 03:52	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 03:52	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 03:52	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 03:52	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 03:52	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 03:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		69 - 120		08/21/18 03:52	1
Dibromofluoromethane (Surr)	109		69 - 124		08/21/18 03:52	1
1,2-Dichloroethane-d4 (Surr)	105		61 - 138		08/21/18 03:52	1
Toluene-d8 (Surr)	98		73 - 120		08/21/18 03:52	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-39\_080718**

**Lab Sample ID: 240-99736-9**

**Date Collected: 08/07/18 13:46**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

**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			08/15/18 21:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		63 - 125					08/15/18 21:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 04:14	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 04:14	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 04:14	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 04:14	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 04:14	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 04:14	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 04:14	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 04:14	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 04:14	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 04:14	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 04:14	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 04:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 04:14	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 04:14	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 04:14	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 04:14	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 04:14	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 04:14	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 04:14	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 04:14	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 04:14	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 04:14	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 04:14	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 04:14	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 04:14	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 04:14	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 04:14	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 04:14	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 04:14	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 04:14	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 04:14	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 04:14	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 04:14	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 04:14	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 04:14	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 04:14	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 04:14	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 04:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 04:14	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 04:14	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 04:14	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 04:14	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 04:14	1

TestAmerica Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-39\_080718**

**Lab Sample ID: 240-99736-9**

**Date Collected: 08/07/18 13:46**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 04:14	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 04:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 04:14	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 04:14	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 04:14	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 04:14	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 04:14	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 04:14	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 04:14	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 04:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		69 - 120		08/21/18 04:14	1
Dibromofluoromethane (Surr)	111		69 - 124		08/21/18 04:14	1
1,2-Dichloroethane-d4 (Surr)	107		61 - 138		08/21/18 04:14	1
Toluene-d8 (Surr)	99		73 - 120		08/21/18 04:14	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-29\_080918**

**Lab Sample ID: 240-99736-10**

**Date Collected: 08/09/18 10:00**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

**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			08/16/18 14:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		63 - 125					08/16/18 14:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 22:09	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 22:09	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 22:09	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 22:09	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 22:09	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 22:09	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 22:09	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 22:09	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 22:09	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 22:09	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 22:09	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 22:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 22:09	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 22:09	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 22:09	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 22:09	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 22:09	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 22:09	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 22:09	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 22:09	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 22:09	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 22:09	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 22:09	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 22:09	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 22:09	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 22:09	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 22:09	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 22:09	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 22:09	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 22:09	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 22:09	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 22:09	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 22:09	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 22:09	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 22:09	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 22:09	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 22:09	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 22:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 22:09	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 22:09	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 22:09	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 22:09	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 22:09	1

TestAmerica Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-29\_080918**

**Lab Sample ID: 240-99736-10**

**Date Collected: 08/09/18 10:00**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 22:09	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 22:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 22:09	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 22:09	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 22:09	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 22:09	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 22:09	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 22:09	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 22:09	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 22:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		69 - 120		08/21/18 22:09	1
Dibromofluoromethane (Surr)	105		69 - 124		08/21/18 22:09	1
1,2-Dichloroethane-d4 (Surr)	105		61 - 138		08/21/18 22:09	1
Toluene-d8 (Surr)	99		73 - 120		08/21/18 22:09	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-99736-11**

**Date Collected: 08/07/18 00:00**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 04:36	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 04:36	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 04:36	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 04:36	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 04:36	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 04:36	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 04:36	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 04:36	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 04:36	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 04:36	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 04:36	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 04:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 04:36	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 04:36	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 04:36	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 04:36	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 04:36	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 04:36	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 04:36	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 04:36	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 04:36	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 04:36	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 04:36	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 04:36	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 04:36	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 04:36	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 04:36	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 04:36	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 04:36	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 04:36	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 04:36	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 04:36	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 04:36	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 04:36	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 04:36	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 04:36	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 04:36	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 04:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 04:36	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 04:36	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 04:36	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 04:36	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 04:36	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 04:36	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 04:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 04:36	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 04:36	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 04:36	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 04:36	1

TestAmerica Canton

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-99736-11**

**Date Collected: 08/07/18 00:00**

**Matrix: Water**

**Date Received: 08/10/18 08:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 04:36	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 04:36	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 04:36	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 04:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		69 - 120					08/21/18 04:36	1
Dibromofluoromethane (Surr)	118		69 - 124					08/21/18 04:36	1
1,2-Dichloroethane-d4 (Surr)	111		61 - 138					08/21/18 04:36	1
Toluene-d8 (Surr)	103		73 - 120					08/21/18 04:36	1

# Surrogate Summary

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB (69-120)	DBFM (69-124)	DCA (61-138)	TOL (73-120)
240-99736-1	MW-4_080718	94	109	107	101
240-99736-2	MW-15-61D_080718	95	105	104	101
240-99736-3	MW-15-60D_080718	90	108	113	99
240-99736-4	MW-32_080718	94	115	111	104
240-99736-4 MS	MW-32_080718	101	102	102	101
240-99736-4 MSD	MW-32_080718	101	101	101	101
240-99736-5	DUP-01_0807	96	110	111	103
240-99736-6	MW-3_080718	95	110	108	105
240-99736-7	MW-5_080718	92	113	110	103
240-99736-8	MW-18_080718	93	109	105	98
240-99736-9	MW-39_080718	95	111	107	99
240-99736-10	MW-29_080918	93	105	105	99
240-99736-11	TRIP BLANK	96	118	111	103
240-99857-E-3 MS	Matrix Spike	100	105	101	104
240-99857-E-3 MSD	Matrix Spike Duplicate	103	102	100	107
240-100128-B-1 MS	Matrix Spike	97	107	104	104
240-100128-B-1 MSD	Matrix Spike Duplicate	99	101	103	102
LCS 240-341699/4	Lab Control Sample	100	103	105	103
LCS 240-341810/4	Lab Control Sample	97	107	100	102
LCS 240-341894/4	Lab Control Sample	99	104	98	104
MB 240-341699/6	Method Blank	90	109	107	99
MB 240-341810/6	Method Blank	91	112	105	101
MB 240-341894/6	Method Blank	92	106	102	99

### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

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

TOL = Toluene-d8 (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 (63-125)
240-99736-1	MW-4_080718	97
240-99736-2	MW-15-61D_080718	121
240-99736-3	MW-15-60D_080718	98
240-99736-4	MW-32_080718	117
240-99736-4 MS	MW-32_080718	119
240-99736-4 MSD	MW-32_080718	111
240-99736-5	DUP-01_0807	117
240-99736-6	MW-3_080718	99
240-99736-7	MW-5_080718	124
240-99736-8	MW-18_080718	114
240-99736-9	MW-39_080718	121
240-99736-10	MW-29_080918	102
500-149833-C-4 MS	Matrix Spike	103

TestAmerica Canton



# Surrogate Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (63-125)
500-149833-C-4 MSD	Matrix Spike Duplicate	102
LCS 240-341043/4	Lab Control Sample	117
LCS 240-341200/4	Lab Control Sample	98
MB 240-341043/5	Method Blank	113
MB 240-341200/5	Method Blank	102

#### Surrogate Legend

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

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

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: MB 240-341699/6**

**Matrix: Water**

**Analysis Batch: 341699**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/20/18 23:02	1
Benzene	1.0	U	1.0	0.13	ug/L			08/20/18 23:02	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/20/18 23:02	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/20/18 23:02	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/20/18 23:02	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/20/18 23:02	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/20/18 23:02	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/20/18 23:02	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/20/18 23:02	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/20/18 23:02	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/20/18 23:02	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/20/18 23:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/20/18 23:02	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/20/18 23:02	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/20/18 23:02	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/20/18 23:02	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/20/18 23:02	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/20/18 23:02	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/20/18 23:02	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/20/18 23:02	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/20/18 23:02	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/20/18 23:02	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/20/18 23:02	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/20/18 23:02	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/20/18 23:02	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/20/18 23:02	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/20/18 23:02	1
2-Hexanone	10	U	10	0.54	ug/L			08/20/18 23:02	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/20/18 23:02	1
Methyl acetate	10	U	10	1.7	ug/L			08/20/18 23:02	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/20/18 23:02	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/20/18 23:02	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/20/18 23:02	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/20/18 23:02	1
Styrene	1.0	U	1.0	0.10	ug/L			08/20/18 23:02	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/20/18 23:02	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/20/18 23:02	1
Toluene	1.0	U	1.0	0.14	ug/L			08/20/18 23:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/20/18 23:02	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/20/18 23:02	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/20/18 23:02	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/20/18 23:02	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/20/18 23:02	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/20/18 23:02	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/20/18 23:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/20/18 23:02	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/20/18 23:02	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/20/18 23:02	1

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: MB 240-341699/6**  
**Matrix: Water**  
**Analysis Batch: 341699**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/20/18 23:02	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/20/18 23:02	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/20/18 23:02	1
1,4-Dioxane	50	U	50	13	ug/L			08/20/18 23:02	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/20/18 23:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		69 - 120		08/20/18 23:02	1
Dibromofluoromethane (Surr)	109		69 - 124		08/20/18 23:02	1
1,2-Dichloroethane-d4 (Surr)	107		61 - 138		08/20/18 23:02	1
Toluene-d8 (Surr)	99		73 - 120		08/20/18 23:02	1

**Lab Sample ID: LCS 240-341699/4**  
**Matrix: Water**  
**Analysis Batch: 341699**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	17.3		ug/L		87	35 - 131
Benzene	10.0	9.50		ug/L		95	79 - 120
Bromodichloromethane	10.0	10.1		ug/L		101	79 - 125
Bromoform	10.0	9.85		ug/L		98	55 - 145
Bromomethane	10.0	9.12		ug/L		91	17 - 158
2-Butanone (MEK)	20.0	16.7		ug/L		83	43 - 149
Carbon disulfide	10.0	8.89		ug/L		89	49 - 141
Carbon tetrachloride	10.0	8.81		ug/L		88	55 - 171
Chlorobenzene	10.0	9.29		ug/L		93	80 - 120
Chloroethane	10.0	9.38		ug/L		94	10 - 149
Chloroform	10.0	9.53		ug/L		95	80 - 120
Chloromethane	10.0	8.78		ug/L		88	59 - 124
cis-1,2-Dichloroethene	10.0	9.29		ug/L		93	77 - 120
cis-1,3-Dichloropropene	10.0	9.34		ug/L		93	75 - 120
Cyclohexane	10.0	8.74		ug/L		87	66 - 135
Dibromochloromethane	10.0	9.90		ug/L		99	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	8.41		ug/L		84	50 - 130
1,2-Dibromoethane	10.0	9.56		ug/L		96	80 - 120
1,2-Dichlorobenzene	10.0	9.25		ug/L		93	80 - 120
1,3-Dichlorobenzene	10.0	8.80		ug/L		88	80 - 120
1,4-Dichlorobenzene	10.0	8.84		ug/L		88	80 - 120
Dichlorodifluoromethane	10.0	8.69		ug/L		87	42 - 141
1,1-Dichloroethane	10.0	9.69		ug/L		97	74 - 120
1,2-Dichloroethane	10.0	9.19		ug/L		92	68 - 133
1,1-Dichloroethene	10.0	8.50		ug/L		85	65 - 127
1,2-Dichloropropane	10.0	10.6		ug/L		106	78 - 127
Ethylbenzene	10.0	8.70		ug/L		87	80 - 120
2-Hexanone	20.0	16.9		ug/L		84	28 - 169
Isopropylbenzene	10.0	8.42		ug/L		84	80 - 128
Methyl acetate	20.0	18.2		ug/L		91	63 - 137
Methylcyclohexane	10.0	8.25		ug/L		82	63 - 141

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: LCS 240-341699/4**

**Matrix: Water**

**Analysis Batch: 341699**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	10.0	10.0		ug/L		100	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	17.2		ug/L		86	53 - 144
Methyl tert-butyl ether	10.0	9.44		ug/L		94	73 - 120
Styrene	10.0	8.97		ug/L		90	80 - 121
1,1,2,2-Tetrachloroethane	10.0	9.68		ug/L		97	58 - 122
Tetrachloroethene	10.0	8.88		ug/L		89	80 - 122
Toluene	10.0	9.36		ug/L		94	78 - 120
trans-1,2-Dichloroethene	10.0	9.13		ug/L		91	74 - 124
trans-1,3-Dichloropropene	10.0	9.00		ug/L		90	67 - 120
1,2,4-Trichlorobenzene	10.0	8.58		ug/L		86	34 - 141
1,1,1-Trichloroethane	10.0	9.27		ug/L		93	64 - 147
1,1,2-Trichloroethane	10.0	10.2		ug/L		102	76 - 121
Trichloroethene	10.0	9.22		ug/L		92	76 - 124
Trichlorofluoromethane	10.0	8.52		ug/L		85	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.06		ug/L		91	65 - 144
1,2,4-Trimethylbenzene	10.0	8.34		ug/L		83	80 - 120
1,3,5-Trimethylbenzene	10.0	8.79		ug/L		88	79 - 120
Vinyl chloride	10.0	8.72		ug/L		87	65 - 124
Xylenes, Total	20.0	17.9		ug/L		89	80 - 120
1,4-Dioxane	200	181		ug/L		90	35 - 134
Diethyl ether	10.0	9.71		ug/L		97	72 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		69 - 120
Dibromofluoromethane (Surr)	103		69 - 124
1,2-Dichloroethane-d4 (Surr)	105		61 - 138
Toluene-d8 (Surr)	103		73 - 120

**Lab Sample ID: 240-99736-4 MS**

**Matrix: Water**

**Analysis Batch: 341699**

**Client Sample ID: MW-32\_080718**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	20.0	18.0		ug/L		90	19 - 133
Benzene	1.0	U	10.0	8.97		ug/L		90	69 - 127
Bromodichloromethane	1.0	U	10.0	9.39		ug/L		94	75 - 128
Bromoform	1.0	U	10.0	8.86		ug/L		89	61 - 135
Bromomethane	1.0	U	10.0	7.42		ug/L		74	10 - 148
2-Butanone (MEK)	10	U	20.0	16.4		ug/L		82	34 - 153
Carbon disulfide	5.0	U	10.0	7.71		ug/L		77	46 - 143
Carbon tetrachloride	1.0	U	10.0	7.59		ug/L		76	53 - 175
Chlorobenzene	1.0	U	10.0	8.70		ug/L		87	76 - 120
Chloroethane	1.0	U	10.0	8.37		ug/L		84	10 - 141
Chloroform	1.0	U	10.0	9.27		ug/L		93	74 - 125
Chloromethane	1.0	U	10.0	7.26		ug/L		73	34 - 127
cis-1,2-Dichloroethene	0.32	J	10.0	8.90		ug/L		86	69 - 127
cis-1,3-Dichloropropene	1.0	U	10.0	8.75		ug/L		88	68 - 120

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: 240-99736-4 MS**

**Matrix: Water**

**Analysis Batch: 341699**

**Client Sample ID: MW-32\_080718**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier		Added	Result				
Cyclohexane	1.0	U F2 F1	10.0	5.11	F1	ug/L		51	56 - 135
Dibromochloromethane	1.0	U	10.0	9.07		ug/L		91	62 - 131
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	7.81		ug/L		78	48 - 130
1,2-Dibromoethane	1.0	U	10.0	9.13		ug/L		91	73 - 121
1,2-Dichlorobenzene	1.0	U	10.0	7.78		ug/L		78	70 - 120
1,3-Dichlorobenzene	1.0	U	10.0	7.83		ug/L		78	71 - 120
1,4-Dichlorobenzene	1.0	U	10.0	8.28		ug/L		83	72 - 120
Dichlorodifluoromethane	1.0	U	10.0	6.31		ug/L		63	45 - 130
1,1-Dichloroethane	1.0	U	10.0	9.00		ug/L		90	69 - 122
1,2-Dichloroethane	1.0	U	10.0	8.83		ug/L		88	64 - 138
1,1-Dichloroethene	1.0	U	10.0	7.71		ug/L		77	62 - 127
1,2-Dichloropropane	1.0	U	10.0	9.62		ug/L		96	72 - 131
Ethylbenzene	1.0	U	10.0	7.78		ug/L		78	72 - 121
2-Hexanone	10	U	20.0	16.9		ug/L		85	21 - 184
Isopropylbenzene	1.0	U F1	10.0	6.87	F1	ug/L		69	70 - 132
Methyl acetate	10	U	20.0	17.1		ug/L		86	52 - 139
Methylcyclohexane	1.0	U F2 F1	10.0	4.44	F1	ug/L		44	46 - 139
Methylene Chloride	5.0	U	10.0	9.55		ug/L		95	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U	20.0	16.4		ug/L		82	53 - 147
Methyl tert-butyl ether	1.0	U	10.0	8.18		ug/L		82	67 - 125
Styrene	1.0	U	10.0	8.31		ug/L		83	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U	10.0	9.66		ug/L		97	51 - 123
Tetrachloroethene	1.0	U	10.0	7.43		ug/L		74	69 - 126
Toluene	1.0	U	10.0	8.52		ug/L		85	69 - 125
trans-1,2-Dichloroethene	1.0	U	10.0	8.69		ug/L		87	66 - 131
trans-1,3-Dichloropropene	1.0	U	10.0	8.39		ug/L		84	59 - 120
1,2,4-Trichlorobenzene	1.0	U	10.0	6.30		ug/L		63	26 - 138
1,1,1-Trichloroethane	1.0	U	10.0	8.14		ug/L		81	57 - 156
1,1,2-Trichloroethane	1.0	U	10.0	9.62		ug/L		96	68 - 127
Trichloroethene	1.0	U	10.0	8.23		ug/L		82	68 - 129
Trichlorofluoromethane	1.0	U	10.0	6.25		ug/L		63	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U F2 F1	10.0	5.04	F1	ug/L		50	58 - 137
1,2,4-Trimethylbenzene	1.0	U	10.0	7.23		ug/L		72	64 - 120
1,3,5-Trimethylbenzene	1.0	U	10.0	7.22		ug/L		72	67 - 120
Vinyl chloride	1.0	U	10.0	7.94		ug/L		79	55 - 123
Xylenes, Total	2.0	U	20.0	15.3		ug/L		76	71 - 122
1,4-Dioxane	50	U	200	167		ug/L		84	13 - 155
Diethyl ether	2.0	U	10.0	9.20		ug/L		92	65 - 124

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	101		69 - 120
Dibromofluoromethane (Surr)	102		69 - 124
1,2-Dichloroethane-d4 (Surr)	102		61 - 138
Toluene-d8 (Surr)	101		73 - 120

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: 240-99736-4 MSD**

**Matrix: Water**

**Analysis Batch: 341699**

**Client Sample ID: MW-32\_080718**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	20.0	21.3		ug/L		106	19 - 133	16	35
Benzene	1.0	U	10.0	9.34		ug/L		93	69 - 127	4	10
Bromodichloromethane	1.0	U	10.0	9.32		ug/L		93	75 - 128	1	13
Bromoform	1.0	U	10.0	9.26		ug/L		93	61 - 135	4	13
Bromomethane	1.0	U	10.0	8.16		ug/L		82	10 - 148	9	35
2-Butanone (MEK)	10	U	20.0	18.2		ug/L		91	34 - 153	10	23
Carbon disulfide	5.0	U	10.0	8.77		ug/L		88	46 - 143	13	18
Carbon tetrachloride	1.0	U	10.0	8.43		ug/L		84	53 - 175	10	17
Chlorobenzene	1.0	U	10.0	9.07		ug/L		91	76 - 120	4	12
Chloroethane	1.0	U	10.0	8.27		ug/L		83	10 - 141	1	35
Chloroform	1.0	U	10.0	8.93		ug/L		89	74 - 125	4	11
Chloromethane	1.0	U	10.0	8.99		ug/L		90	34 - 127	21	25
cis-1,2-Dichloroethene	0.32	J	10.0	8.74		ug/L		84	69 - 127	2	11
cis-1,3-Dichloropropene	1.0	U	10.0	8.62		ug/L		86	68 - 120	1	13
Cyclohexane	1.0	U F2 F1	10.0	7.97	F2	ug/L		80	56 - 135	44	35
Dibromochloromethane	1.0	U	10.0	9.21		ug/L		92	62 - 131	1	15
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	9.17		ug/L		92	48 - 130	16	31
1,2-Dibromoethane	1.0	U	10.0	9.37		ug/L		94	73 - 121	3	12
1,2-Dichlorobenzene	1.0	U	10.0	9.00		ug/L		90	70 - 120	15	19
1,3-Dichlorobenzene	1.0	U	10.0	8.75		ug/L		88	71 - 120	11	18
1,4-Dichlorobenzene	1.0	U	10.0	8.71		ug/L		87	72 - 120	5	17
Dichlorodifluoromethane	1.0	U	10.0	8.06		ug/L		81	45 - 130	24	34
1,1-Dichloroethane	1.0	U	10.0	9.37		ug/L		94	69 - 122	4	11
1,2-Dichloroethane	1.0	U	10.0	9.20		ug/L		92	64 - 138	4	11
1,1-Dichloroethene	1.0	U	10.0	8.18		ug/L		82	62 - 127	6	14
1,2-Dichloropropane	1.0	U	10.0	9.90		ug/L		99	72 - 131	3	12
Ethylbenzene	1.0	U	10.0	8.48		ug/L		85	72 - 121	9	15
2-Hexanone	10	U	20.0	18.2		ug/L		91	21 - 184	7	12
Isopropylbenzene	1.0	U F1	10.0	7.99		ug/L		80	70 - 132	15	16
Methyl acetate	10	U	20.0	18.6		ug/L		93	52 - 139	9	14
Methylcyclohexane	1.0	U F2 F1	10.0	7.31	F2	ug/L		73	46 - 139	49	35
Methylene Chloride	5.0	U	10.0	9.26		ug/L		93	52 - 137	3	12
4-Methyl-2-pentanone (MIBK)	10	U	20.0	18.2		ug/L		91	53 - 147	10	16
Methyl tert-butyl ether	1.0	U	10.0	8.51		ug/L		85	67 - 125	4	12
Styrene	1.0	U	10.0	8.61		ug/L		86	74 - 125	4	14
1,1,2,2-Tetrachloroethane	1.0	U	10.0	9.85		ug/L		98	51 - 123	2	17
Tetrachloroethene	1.0	U	10.0	8.62		ug/L		86	69 - 126	15	18
Toluene	1.0	U	10.0	8.98		ug/L		90	69 - 125	5	14
trans-1,2-Dichloroethene	1.0	U	10.0	8.90		ug/L		89	66 - 131	2	11
trans-1,3-Dichloropropene	1.0	U	10.0	8.39		ug/L		84	59 - 120	0	14
1,2,4-Trichlorobenzene	1.0	U	10.0	7.66		ug/L		77	26 - 138	19	35
1,1,1-Trichloroethane	1.0	U	10.0	8.63		ug/L		86	57 - 156	6	13
1,1,2-Trichloroethane	1.0	U	10.0	10.0		ug/L		100	68 - 127	4	11
Trichloroethene	1.0	U	10.0	8.92		ug/L		89	68 - 129	8	12
Trichlorofluoromethane	1.0	U	10.0	7.78		ug/L		78	28 - 172	22	26
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U F2 F1	10.0	8.33	F2	ug/L		83	58 - 137	49	35
1,2,4-Trimethylbenzene	1.0	U	10.0	8.14		ug/L		81	64 - 120	12	22

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: 240-99736-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 341699**

**Client Sample ID: MW-32\_080718**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene	1.0	U	10.0	8.16		ug/L		82	67 - 120	12	25
Vinyl chloride	1.0	U	10.0	8.79		ug/L		88	55 - 123	10	12
Xylenes, Total	2.0	U	20.0	16.6		ug/L		83	71 - 122	9	14
1,4-Dioxane	50	U	200	170		ug/L		85	13 - 155	1	35
Diethyl ether	2.0	U	10.0	9.27		ug/L		93	65 - 124	1	11

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	101		69 - 120
Dibromofluoromethane (Surr)	101		69 - 124
1,2-Dichloroethane-d4 (Surr)	101		61 - 138
Toluene-d8 (Surr)	101		73 - 120

**Lab Sample ID: MB 240-341810/6**  
**Matrix: Water**  
**Analysis Batch: 341810**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 10:16	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 10:16	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 10:16	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 10:16	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 10:16	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 10:16	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 10:16	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 10:16	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 10:16	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 10:16	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 10:16	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 10:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 10:16	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 10:16	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 10:16	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 10:16	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 10:16	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 10:16	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 10:16	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 10:16	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 10:16	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 10:16	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 10:16	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 10:16	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 10:16	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 10:16	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 10:16	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 10:16	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 10:16	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 10:16	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 10:16	1

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: MB 240-341810/6**  
**Matrix: Water**  
**Analysis Batch: 341810**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 10:16	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 10:16	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 10:16	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 10:16	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 10:16	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 10:16	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 10:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 10:16	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 10:16	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 10:16	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 10:16	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 10:16	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 10:16	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 10:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 10:16	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 10:16	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 10:16	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 10:16	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 10:16	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 10:16	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 10:16	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 10:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		69 - 120		08/21/18 10:16	1
Dibromofluoromethane (Surr)	112		69 - 124		08/21/18 10:16	1
1,2-Dichloroethane-d4 (Surr)	105		61 - 138		08/21/18 10:16	1
Toluene-d8 (Surr)	101		73 - 120		08/21/18 10:16	1

**Lab Sample ID: LCS 240-341810/4**  
**Matrix: Water**  
**Analysis Batch: 341810**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	19.3		ug/L		96	35 - 131
Benzene	10.0	10.1		ug/L		101	79 - 120
Bromodichloromethane	10.0	10.2		ug/L		102	79 - 125
Bromoform	10.0	9.80		ug/L		98	55 - 145
Bromomethane	10.0	9.33		ug/L		93	17 - 158
2-Butanone (MEK)	20.0	19.0		ug/L		95	43 - 149
Carbon disulfide	10.0	9.92		ug/L		99	49 - 141
Carbon tetrachloride	10.0	9.91		ug/L		99	55 - 171
Chlorobenzene	10.0	9.79		ug/L		98	80 - 120
Chloroethane	10.0	9.09		ug/L		91	10 - 149
Chloroform	10.0	10.4		ug/L		104	80 - 120
Chloromethane	10.0	9.60		ug/L		96	59 - 124
cis-1,2-Dichloroethene	10.0	9.54		ug/L		95	77 - 120
cis-1,3-Dichloropropene	10.0	9.74		ug/L		97	75 - 120

TestAmerica Canton



# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: LCS 240-341810/4**  
**Matrix: Water**  
**Analysis Batch: 341810**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyclohexane	10.0	9.74		ug/L		97	66 - 135
Dibromochloromethane	10.0	9.76		ug/L		98	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	8.91		ug/L		89	50 - 130
1,2-Dibromoethane	10.0	9.98		ug/L		100	80 - 120
1,2-Dichlorobenzene	10.0	9.75		ug/L		98	80 - 120
1,3-Dichlorobenzene	10.0	9.62		ug/L		96	80 - 120
1,4-Dichlorobenzene	10.0	9.76		ug/L		98	80 - 120
Dichlorodifluoromethane	10.0	10.3		ug/L		103	42 - 141
1,1-Dichloroethane	10.0	10.1		ug/L		101	74 - 120
1,2-Dichloroethane	10.0	9.65		ug/L		97	68 - 133
1,1-Dichloroethene	10.0	10.1		ug/L		101	65 - 127
1,2-Dichloropropane	10.0	10.6		ug/L		106	78 - 127
Ethylbenzene	10.0	9.42		ug/L		94	80 - 120
2-Hexanone	20.0	17.5		ug/L		88	28 - 169
Isopropylbenzene	10.0	9.29		ug/L		93	80 - 128
Methyl acetate	20.0	20.1		ug/L		100	63 - 137
Methylcyclohexane	10.0	9.30		ug/L		93	63 - 141
Methylene Chloride	10.0	10.0		ug/L		100	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	17.2		ug/L		86	53 - 144
Methyl tert-butyl ether	10.0	9.33		ug/L		93	73 - 120
Styrene	10.0	9.46		ug/L		95	80 - 121
1,1,2,2-Tetrachloroethane	10.0	10.1		ug/L		101	58 - 122
Tetrachloroethene	10.0	10.2		ug/L		102	80 - 122
Toluene	10.0	10.0		ug/L		100	78 - 120
trans-1,2-Dichloroethene	10.0	9.99		ug/L		100	74 - 124
trans-1,3-Dichloropropene	10.0	8.92		ug/L		89	67 - 120
1,2,4-Trichlorobenzene	10.0	8.36		ug/L		84	34 - 141
1,1,1-Trichloroethane	10.0	10.1		ug/L		101	64 - 147
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	76 - 121
Trichloroethene	10.0	9.80		ug/L		98	76 - 124
Trichlorofluoromethane	10.0	9.12		ug/L		91	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.2		ug/L		102	65 - 144
1,2,4-Trimethylbenzene	10.0	9.23		ug/L		92	80 - 120
1,3,5-Trimethylbenzene	10.0	9.55		ug/L		95	79 - 120
Vinyl chloride	10.0	9.72		ug/L		97	65 - 124
Xylenes, Total	20.0	18.5		ug/L		92	80 - 120
1,4-Dioxane	200	208		ug/L		104	35 - 134
Diethyl ether	10.0	10.3		ug/L		103	72 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		69 - 120
Dibromofluoromethane (Surr)	107		69 - 124
1,2-Dichloroethane-d4 (Surr)	100		61 - 138
Toluene-d8 (Surr)	102		73 - 120

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: 240-100128-B-1 MS**

**Matrix: Water**  
**Analysis Batch: 341810**

**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
Benzene	180		1430	1590		ug/L		98	69 - 127
Ethylbenzene	29	J	1430	1320		ug/L		90	72 - 121
Methyl tert-butyl ether	140	U	1430	1310		ug/L		92	67 - 125
Toluene	360		1430	1780		ug/L		99	69 - 125
Xylenes, Total	5000		2860	8010		ug/L		105	71 - 122

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		69 - 120
Dibromofluoromethane (Surr)	107		69 - 124
1,2-Dichloroethane-d4 (Surr)	104		61 - 138
Toluene-d8 (Surr)	104		73 - 120

**Lab Sample ID: 240-100128-B-1 MSD**

**Matrix: Water**  
**Analysis Batch: 341810**

**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
Benzene	180		1430	1560		ug/L		96	69 - 127	2	10
Ethylbenzene	29	J	1430	1300		ug/L		89	72 - 121	1	15
Methyl tert-butyl ether	140	U	1430	1300		ug/L		91	67 - 125	1	12
Toluene	360		1430	1680		ug/L		92	69 - 125	6	14
Xylenes, Total	5000		2860	7800		ug/L		98	71 - 122	3	14

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		69 - 120
Dibromofluoromethane (Surr)	101		69 - 124
1,2-Dichloroethane-d4 (Surr)	103		61 - 138
Toluene-d8 (Surr)	102		73 - 120

**Lab Sample ID: MB 240-341894/6**

**Matrix: Water**  
**Analysis Batch: 341894**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 21:25	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 21:25	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 21:25	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 21:25	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 21:25	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 21:25	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 21:25	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 21:25	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 21:25	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 21:25	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 21:25	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 21:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 21:25	1

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: MB 240-341894/6**  
**Matrix: Water**  
**Analysis Batch: 341894**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 21:25	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 21:25	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 21:25	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 21:25	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 21:25	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 21:25	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 21:25	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 21:25	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 21:25	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 21:25	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 21:25	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 21:25	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 21:25	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 21:25	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 21:25	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 21:25	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 21:25	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 21:25	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 21:25	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 21:25	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 21:25	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 21:25	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 21:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 21:25	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 21:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 21:25	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 21:25	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 21:25	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 21:25	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 21:25	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 21:25	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 21:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 21:25	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 21:25	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 21:25	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 21:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 21:25	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 21:25	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 21:25	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 21:25	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	92		69 - 120		08/21/18 21:25	1
Dibromofluoromethane (Surr)	106		69 - 124		08/21/18 21:25	1
1,2-Dichloroethane-d4 (Surr)	102		61 - 138		08/21/18 21:25	1
Toluene-d8 (Surr)	99		73 - 120		08/21/18 21:25	1

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

Lab Sample ID: LCS 240-341894/4

Matrix: Water

Analysis Batch: 341894

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	15.7		ug/L		78	35 - 131
Benzene	10.0	9.51		ug/L		95	79 - 120
Bromodichloromethane	10.0	9.45		ug/L		94	79 - 125
Bromoform	10.0	9.47		ug/L		95	55 - 145
Bromomethane	10.0	8.17		ug/L		82	17 - 158
2-Butanone (MEK)	20.0	15.7		ug/L		79	43 - 149
Carbon disulfide	10.0	8.79		ug/L		88	49 - 141
Carbon tetrachloride	10.0	9.00		ug/L		90	55 - 171
Chlorobenzene	10.0	9.31		ug/L		93	80 - 120
Chloroethane	10.0	8.33		ug/L		83	10 - 149
Chloroform	10.0	9.44		ug/L		94	80 - 120
Chloromethane	10.0	8.12		ug/L		81	59 - 124
cis-1,2-Dichloroethene	10.0	9.19		ug/L		92	77 - 120
cis-1,3-Dichloropropene	10.0	9.01		ug/L		90	75 - 120
Cyclohexane	10.0	8.59		ug/L		86	66 - 135
Dibromochloromethane	10.0	10.1		ug/L		101	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	8.82		ug/L		88	50 - 130
1,2-Dibromoethane	10.0	9.30		ug/L		93	80 - 120
1,2-Dichlorobenzene	10.0	9.16		ug/L		92	80 - 120
1,3-Dichlorobenzene	10.0	8.96		ug/L		90	80 - 120
1,4-Dichlorobenzene	10.0	9.18		ug/L		92	80 - 120
Dichlorodifluoromethane	10.0	7.99		ug/L		80	42 - 141
1,1-Dichloroethane	10.0	9.84		ug/L		98	74 - 120
1,2-Dichloroethane	10.0	9.35		ug/L		94	68 - 133
1,1-Dichloroethene	10.0	8.89		ug/L		89	65 - 127
1,2-Dichloropropane	10.0	9.69		ug/L		97	78 - 127
Ethylbenzene	10.0	8.81		ug/L		88	80 - 120
2-Hexanone	20.0	16.4		ug/L		82	28 - 169
Isopropylbenzene	10.0	8.55		ug/L		86	80 - 128
Methyl acetate	20.0	18.1		ug/L		91	63 - 137
Methylcyclohexane	10.0	8.04		ug/L		80	63 - 141
Methylene Chloride	10.0	9.99		ug/L		100	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	15.7		ug/L		79	53 - 144
Methyl tert-butyl ether	10.0	9.36		ug/L		94	73 - 120
Styrene	10.0	8.89		ug/L		89	80 - 121
1,1,2,2-Tetrachloroethane	10.0	10.4		ug/L		104	58 - 122
Tetrachloroethene	10.0	9.30		ug/L		93	80 - 122
Toluene	10.0	9.66		ug/L		97	78 - 120
trans-1,2-Dichloroethene	10.0	9.50		ug/L		95	74 - 124
trans-1,3-Dichloropropene	10.0	8.83		ug/L		88	67 - 120
1,2,4-Trichlorobenzene	10.0	7.41		ug/L		74	34 - 141
1,1,1-Trichloroethane	10.0	9.22		ug/L		92	64 - 147
1,1,2-Trichloroethane	10.0	10.2		ug/L		102	76 - 121
Trichloroethene	10.0	9.11		ug/L		91	76 - 124
Trichlorofluoromethane	10.0	7.95		ug/L		80	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	8.42		ug/L		84	65 - 144
1,2,4-Trimethylbenzene	10.0	8.67		ug/L		87	80 - 120

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: LCS 240-341894/4**  
**Matrix: Water**  
**Analysis Batch: 341894**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	10.0	8.92		ug/L		89	79 - 120
Vinyl chloride	10.0	8.70		ug/L		87	65 - 124
Xylenes, Total	20.0	17.5		ug/L		88	80 - 120
1,4-Dioxane	200	178		ug/L		89	35 - 134
Diethyl ether	10.0	9.76		ug/L		98	72 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		69 - 120
Dibromofluoromethane (Surr)	104		69 - 124
1,2-Dichloroethane-d4 (Surr)	98		61 - 138
Toluene-d8 (Surr)	104		73 - 120

**Lab Sample ID: 240-99857-E-3 MS**  
**Matrix: Water**  
**Analysis Batch: 341894**

**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
Acetone	1400	U	2860	2270		ug/L		79	19 - 133
Benzene	140	U	1430	1300		ug/L		91	69 - 127
Bromodichloromethane	140	U	1430	1360		ug/L		95	75 - 128
Bromoform	140	U	1430	1340		ug/L		94	61 - 135
Bromomethane	140	U	1430	1240		ug/L		87	10 - 148
2-Butanone (MEK)	1400	U	2860	2300		ug/L		81	34 - 153
Carbon disulfide	710	U	1430	1180		ug/L		82	46 - 143
Carbon tetrachloride	140	U	1430	1110		ug/L		78	53 - 175
Chlorobenzene	140	U	1430	1250		ug/L		88	76 - 120
Chloroethane	140	U	1430	1200		ug/L		84	10 - 141
Chloroform	140	U	1430	1320		ug/L		93	74 - 125
Chloromethane	140	U	1430	1230		ug/L		86	34 - 127
cis-1,2-Dichloroethene	140	U	1430	1280		ug/L		90	69 - 127
cis-1,3-Dichloropropene	140	U	1430	1310		ug/L		92	68 - 120
Cyclohexane	140	U	1430	906		ug/L		63	56 - 135
Dibromochloromethane	140	U	1430	1420		ug/L		99	62 - 131
1,2-Dibromo-3-Chloropropane	140	U	1430	1050		ug/L		74	48 - 130
1,2-Dibromoethane	140	U	1430	1360		ug/L		95	73 - 121
1,2-Dichlorobenzene	140	U	1430	1210		ug/L		85	70 - 120
1,3-Dichlorobenzene	140	U	1430	1210		ug/L		84	71 - 120
1,4-Dichlorobenzene	140	U	1430	1250		ug/L		87	72 - 120
Dichlorodifluoromethane	140	U	1430	1140		ug/L		80	45 - 130
1,1-Dichloroethane	140	U	1430	1370		ug/L		96	69 - 122
1,2-Dichloroethane	140	U	1430	1330		ug/L		93	64 - 138
1,1-Dichloroethene	140	U	1430	1160		ug/L		81	62 - 127
1,2-Dichloropropane	140	U	1430	1370		ug/L		96	72 - 131
Ethylbenzene	140	U	1430	1100		ug/L		77	72 - 121
2-Hexanone	1400	U	2860	2300		ug/L		81	21 - 184
Isopropylbenzene	140	U	1430	1020		ug/L		72	70 - 132
Methyl acetate	1400	U	2860	2600		ug/L		91	52 - 139
Methylcyclohexane	140	U	1430	788		ug/L		55	46 - 139

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: 240-99857-E-3 MS**

**Matrix: Water**

**Analysis Batch: 341894**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Methylene Chloride	710	U	1430	1380		ug/L		96	52 - 137
4-Methyl-2-pentanone (MIBK)	1400	U	2860	2320		ug/L		81	53 - 147
Methyl tert-butyl ether	140	U	1430	1310		ug/L		91	67 - 125
Styrene	140	U	1430	1190		ug/L		83	74 - 125
1,1,2,2-Tetrachloroethane	140	U	1430	1400		ug/L		98	51 - 123
Tetrachloroethene	140	U	1430	1150		ug/L		81	69 - 126
Toluene	140	U	1430	1280		ug/L		89	69 - 125
trans-1,2-Dichloroethene	140	U	1430	1280		ug/L		90	66 - 131
trans-1,3-Dichloropropene	140	U	1430	1210		ug/L		85	59 - 120
1,2,4-Trichlorobenzene	140	U	1430	1030		ug/L		72	26 - 138
1,1,1-Trichloroethane	140	U	1430	1190		ug/L		83	57 - 156
1,1,2-Trichloroethane	140	U	1430	1400		ug/L		98	68 - 127
Trichloroethene	140	U	1430	1210		ug/L		85	68 - 129
Trichlorofluoromethane	140	U	1430	1050		ug/L		73	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	140	U	1430	986		ug/L		69	58 - 137
1,2,4-Trimethylbenzene	140	U	1430	1100		ug/L		77	64 - 120
1,3,5-Trimethylbenzene	140	U	1430	1100		ug/L		77	67 - 120
Vinyl chloride	2300		1430	3340		ug/L		76	55 - 123
Xylenes, Total	290	U	2860	2270		ug/L		79	71 - 122
1,4-Dioxane	7100	U	28600	20000		ug/L		70	13 - 155
Diethyl ether	290	U	1430	1320		ug/L		92	65 - 124

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		69 - 120
Dibromofluoromethane (Surr)	105		69 - 124
1,2-Dichloroethane-d4 (Surr)	101		61 - 138
Toluene-d8 (Surr)	104		73 - 120

**Lab Sample ID: 240-99857-E-3 MSD**

**Matrix: Water**

**Analysis Batch: 341894**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Acetone	1400	U	2860	2150		ug/L		75	19 - 133	5	35
Benzene	140	U	1430	1370		ug/L		96	69 - 127	5	10
Bromodichloromethane	140	U	1430	1380		ug/L		97	75 - 128	1	13
Bromoform	140	U	1430	1380		ug/L		97	61 - 135	3	13
Bromomethane	140	U	1430	1120		ug/L		78	10 - 148	10	35
2-Butanone (MEK)	1400	U	2860	2340		ug/L		82	34 - 153	2	23
Carbon disulfide	710	U	1430	1310		ug/L		91	46 - 143	10	18
Carbon tetrachloride	140	U	1430	1250		ug/L		87	53 - 175	11	17
Chlorobenzene	140	U	1430	1360		ug/L		95	76 - 120	8	12
Chloroethane	140	U	1430	1200		ug/L		84	10 - 141	0	35
Chloroform	140	U	1430	1380		ug/L		97	74 - 125	4	11
Chloromethane	140	U	1430	1300		ug/L		91	34 - 127	6	25
cis-1,2-Dichloroethene	140	U	1430	1300		ug/L		91	69 - 127	2	11
cis-1,3-Dichloropropene	140	U	1430	1230		ug/L		86	68 - 120	7	13

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: 240-99857-E-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 341894**

**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
Cyclohexane	140	U	1430	1200		ug/L		84	56 - 135	28	35
Dibromochloromethane	140	U	1430	1460		ug/L		102	62 - 131	3	15
1,2-Dibromo-3-Chloropropane	140	U	1430	1190		ug/L		84	48 - 130	12	31
1,2-Dibromoethane	140	U	1430	1300		ug/L		91	73 - 121	5	12
1,2-Dichlorobenzene	140	U	1430	1270		ug/L		89	70 - 120	4	19
1,3-Dichlorobenzene	140	U	1430	1260		ug/L		88	71 - 120	5	18
1,4-Dichlorobenzene	140	U	1430	1250		ug/L		87	72 - 120	0	17
Dichlorodifluoromethane	140	U	1430	1170		ug/L		82	45 - 130	3	34
1,1-Dichloroethane	140	U	1430	1400		ug/L		98	69 - 122	2	11
1,2-Dichloroethane	140	U	1430	1300		ug/L		91	64 - 138	2	11
1,1-Dichloroethene	140	U	1430	1310		ug/L		92	62 - 127	12	14
1,2-Dichloropropane	140	U	1430	1420		ug/L		99	72 - 131	3	12
Ethylbenzene	140	U	1430	1240		ug/L		87	72 - 121	12	15
2-Hexanone	1400	U	2860	2390		ug/L		84	21 - 184	4	12
Isopropylbenzene	140	U	1430	1130		ug/L		79	70 - 132	10	16
Methyl acetate	1400	U	2860	2640		ug/L		92	52 - 139	1	14
Methylcyclohexane	140	U	1430	1090		ug/L		76	46 - 139	32	35
Methylene Chloride	710	U	1430	1460		ug/L		102	52 - 137	6	12
4-Methyl-2-pentanone (MIBK)	1400	U	2860	2360		ug/L		82	53 - 147	1	16
Methyl tert-butyl ether	140	U	1430	1290		ug/L		90	67 - 125	2	12
Styrene	140	U	1430	1260		ug/L		88	74 - 125	5	14
1,1,2,2-Tetrachloroethane	140	U	1430	1390		ug/L		97	51 - 123	1	17
Tetrachloroethene	140	U	1430	1260		ug/L		88	69 - 126	8	18
Toluene	140	U	1430	1320		ug/L		92	69 - 125	3	14
trans-1,2-Dichloroethene	140	U	1430	1340		ug/L		94	66 - 131	5	11
trans-1,3-Dichloropropene	140	U	1430	1210		ug/L		85	59 - 120	0	14
1,2,4-Trichlorobenzene	140	U	1430	1030		ug/L		72	26 - 138	0	35
1,1,1-Trichloroethane	140	U	1430	1340		ug/L		94	57 - 156	12	13
1,1,2-Trichloroethane	140	U	1430	1430		ug/L		100	68 - 127	2	11
Trichloroethene	140	U	1430	1280		ug/L		90	68 - 129	6	12
Trichlorofluoromethane	140	U	1430	1090		ug/L		77	28 - 172	4	26
1,1,2-Trichloro-1,2,2-trifluoroethane	140	U	1430	1160		ug/L		81	58 - 137	16	35
1,2,4-Trimethylbenzene	140	U	1430	1150		ug/L		81	64 - 120	5	22
1,3,5-Trimethylbenzene	140	U	1430	1200		ug/L		84	67 - 120	9	25
Vinyl chloride	2300		1430	3260		ug/L		70	55 - 123	2	12
Xylenes, Total	290	U	2860	2480		ug/L		87	71 - 122	9	14
1,4-Dioxane	7100	U	28600	25800		ug/L		90	13 - 155	25	35
Diethyl ether	290	U	1430	1370		ug/L		96	65 - 124	4	11

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		69 - 120
Dibromofluoromethane (Surr)	102		69 - 124
1,2-Dichloroethane-d4 (Surr)	100		61 - 138
Toluene-d8 (Surr)	107		73 - 120

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: MB 240-341043/5**  
**Matrix: Water**  
**Analysis Batch: 341043**

**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			08/15/18 13:34	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		63 - 125					08/15/18 13:34	1

**Lab Sample ID: LCS 240-341043/4**  
**Matrix: Water**  
**Analysis Batch: 341043**

**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	9.89		ug/L		99	59 - 131
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	117		63 - 125				

**Lab Sample ID: 240-99736-4 MS**  
**Matrix: Water**  
**Analysis Batch: 341043**

**Client Sample ID: MW-32\_080718**  
**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	10.2		ug/L		102	52 - 129
Surrogate	%Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	119		63 - 125						

**Lab Sample ID: 240-99736-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 341043**

**Client Sample ID: MW-32\_080718**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	9.80		ug/L		98	52 - 129	4	13
Surrogate	%Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	111		63 - 125								

**Lab Sample ID: MB 240-341200/5**  
**Matrix: Water**  
**Analysis Batch: 341200**

**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			08/16/18 12:28	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		63 - 125					08/16/18 12:28	1

TestAmerica Canton



# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

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

**Lab Sample ID: LCS 240-341200/4**  
**Matrix: Water**  
**Analysis Batch: 341200**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	10.5		ug/L		105	59 - 131
<b>Surrogate</b>		<b>LCS %Recovery</b>	<b>LCS Qualifier</b>				<b>Limits</b>
1,2-Dichloroethane-d4 (Surr)		98					63 - 125

**Lab Sample ID: 500-149833-C-4 MS**  
**Matrix: Water**  
**Analysis Batch: 341200**

**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	9.93		ug/L		99	52 - 129
<b>Surrogate</b>		<b>MS %Recovery</b>							<b>Limits</b>
1,2-Dichloroethane-d4 (Surr)		103							63 - 125

**Lab Sample ID: 500-149833-C-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 341200**

**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
1,4-Dioxane	2.0	U	10.0	9.87		ug/L		99	52 - 129	1	13
<b>Surrogate</b>		<b>MSD %Recovery</b>							<b>Limits</b>		
1,2-Dichloroethane-d4 (Surr)		102							63 - 125		

# QC Association Summary

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

## GC/MS VOA

### Analysis Batch: 341043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99736-2	MW-15-61D_080718	Total/NA	Water	8260B SIM	
240-99736-4	MW-32_080718	Total/NA	Water	8260B SIM	
240-99736-5	DUP-01_0807	Total/NA	Water	8260B SIM	
240-99736-7	MW-5_080718	Total/NA	Water	8260B SIM	
240-99736-8	MW-18_080718	Total/NA	Water	8260B SIM	
240-99736-9	MW-39_080718	Total/NA	Water	8260B SIM	
MB 240-341043/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-341043/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-99736-4 MS	MW-32_080718	Total/NA	Water	8260B SIM	
240-99736-4 MSD	MW-32_080718	Total/NA	Water	8260B SIM	

### Analysis Batch: 341200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99736-1	MW-4_080718	Total/NA	Water	8260B SIM	
240-99736-3	MW-15-60D_080718	Total/NA	Water	8260B SIM	
240-99736-6	MW-3_080718	Total/NA	Water	8260B SIM	
240-99736-10	MW-29_080918	Total/NA	Water	8260B SIM	
MB 240-341200/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-341200/4	Lab Control Sample	Total/NA	Water	8260B SIM	
500-149833-C-4 MS	Matrix Spike	Total/NA	Water	8260B SIM	
500-149833-C-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

### Analysis Batch: 341699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99736-2	MW-15-61D_080718	Total/NA	Water	8260B	
240-99736-3	MW-15-60D_080718	Total/NA	Water	8260B	
240-99736-4	MW-32_080718	Total/NA	Water	8260B	
240-99736-5	DUP-01_0807	Total/NA	Water	8260B	
240-99736-6	MW-3_080718	Total/NA	Water	8260B	
240-99736-7	MW-5_080718	Total/NA	Water	8260B	
240-99736-8	MW-18_080718	Total/NA	Water	8260B	
240-99736-9	MW-39_080718	Total/NA	Water	8260B	
240-99736-11	TRIP BLANK	Total/NA	Water	8260B	
MB 240-341699/6	Method Blank	Total/NA	Water	8260B	
LCS 240-341699/4	Lab Control Sample	Total/NA	Water	8260B	
240-99736-4 MS	MW-32_080718	Total/NA	Water	8260B	
240-99736-4 MSD	MW-32_080718	Total/NA	Water	8260B	

### Analysis Batch: 341810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99736-1	MW-4_080718	Total/NA	Water	8260B	
MB 240-341810/6	Method Blank	Total/NA	Water	8260B	
LCS 240-341810/4	Lab Control Sample	Total/NA	Water	8260B	
240-100128-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-100128-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 341894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99736-10	MW-29_080918	Total/NA	Water	8260B	
MB 240-341894/6	Method Blank	Total/NA	Water	8260B	
LCS 240-341894/4	Lab Control Sample	Total/NA	Water	8260B	

TestAmerica Canton

# QC Association Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

## GC/MS VOA (Continued)

### Analysis Batch: 341894 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99857-E-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-99857-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

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

# Lab Chronicle

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-4\_080718**

**Date Collected: 08/07/18 09:55**

**Date Received: 08/10/18 08:45**

**Lab Sample ID: 240-99736-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1000	341810	08/21/18 16:13	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		100	341200	08/16/18 13:42	SAM	TAL CAN

**Client Sample ID: MW-15-61D\_080718**

**Date Collected: 08/07/18 11:36**

**Date Received: 08/10/18 08:45**

**Lab Sample ID: 240-99736-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341699	08/21/18 00:54	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341043	08/15/18 18:34	SAM	TAL CAN

**Client Sample ID: MW-15-60D\_080718**

**Date Collected: 08/07/18 09:57**

**Date Received: 08/10/18 08:45**

**Lab Sample ID: 240-99736-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341699	08/21/18 01:16	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341200	08/16/18 14:07	SAM	TAL CAN

**Client Sample ID: MW-32\_080718**

**Date Collected: 08/07/18 14:36**

**Date Received: 08/10/18 08:45**

**Lab Sample ID: 240-99736-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341699	08/21/18 01:38	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341043	08/15/18 16:54	SAM	TAL CAN

**Client Sample ID: DUP-01\_0807**

**Date Collected: 08/07/18 00:00**

**Date Received: 08/10/18 08:45**

**Lab Sample ID: 240-99736-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341699	08/21/18 02:44	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341043	08/15/18 19:24	SAM	TAL CAN

**Client Sample ID: MW-3\_080718**

**Date Collected: 08/07/18 11:35**

**Date Received: 08/10/18 08:45**

**Lab Sample ID: 240-99736-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341699	08/21/18 03:07	LEE	TAL CAN

TestAmerica Canton

# Lab Chronicle

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Client Sample ID: MW-3\_080718**

**Lab Sample ID: 240-99736-6**

Date Collected: 08/07/18 11:35

Matrix: Water

Date Received: 08/10/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	341200	08/16/18 14:32	SAM	TAL CAN

**Client Sample ID: MW-5\_080718**

**Lab Sample ID: 240-99736-7**

Date Collected: 08/07/18 12:55

Matrix: Water

Date Received: 08/10/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341699	08/21/18 03:29	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341043	08/15/18 20:14	SAM	TAL CAN

**Client Sample ID: MW-18\_080718**

**Lab Sample ID: 240-99736-8**

Date Collected: 08/07/18 15:50

Matrix: Water

Date Received: 08/10/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341699	08/21/18 03:52	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341043	08/15/18 20:39	SAM	TAL CAN

**Client Sample ID: MW-39\_080718**

**Lab Sample ID: 240-99736-9**

Date Collected: 08/07/18 13:46

Matrix: Water

Date Received: 08/10/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341699	08/21/18 04:14	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341043	08/15/18 21:04	SAM	TAL CAN

**Client Sample ID: MW-29\_080918**

**Lab Sample ID: 240-99736-10**

Date Collected: 08/09/18 10:00

Matrix: Water

Date Received: 08/10/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341894	08/21/18 22:09	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341200	08/16/18 14:58	SAM	TAL CAN

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-99736-11**

Date Collected: 08/07/18 00:00

Matrix: Water

Date Received: 08/10/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341699	08/21/18 04:36	LEE	TAL CAN

TestAmerica Canton

# Lab Chronicle

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

**Laboratory References:**

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

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

# Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99736-1

## Laboratory: 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	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-18 *
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18
Minnesota	NELAP	5	039-999-348	12-31-18
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	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-17-9	08-31-18 *
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18 *
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18

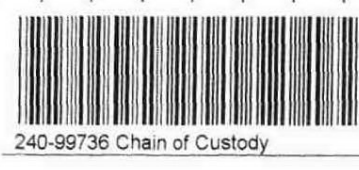
\* Accreditation/Certification renewal pending - accreditation/certification considered valid.



1.8 / C-1.8  
1.9 / C-1 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 Cahot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford U,TP Project Number: M1001454.0004.00001 PO # M1001454.0004.00001		<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 DeGrandis Telephone: 734-320-0065		<b>Lab Contact:</b> Mike DeMonico Telephone: 330-497-9396		TestAmerica Laboratories, Inc. COC No: _____ of _____ COCs	
<b>Method of Shipment/Carrier:</b> Shipping/Tracking No: _____		<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> HCl <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> ZnOH <input type="checkbox"/> Umpres <input type="checkbox"/> Other: _____		<b>Filtered Sample (Y/N)</b> Composite <input type="checkbox"/> Grab <input type="checkbox"/>		<b>Analyses</b> 1,4-Dioxane 8260B SIM		For lab use only: Walk-in client _____ Lab sampling _____ Job/SDG No: _____	
<b>Sample Identification</b>		<b>Matrix</b> Aqueous <input type="checkbox"/> Solid <input type="checkbox"/> Other: _____		<b>Sample Date</b>		<b>Sample Time</b>		<b>Sample Specific Notes / Special Instructions:</b>		MS MSD	
MW-4-080718		X		8/7/18		0955		NG 3 3			
MW-15-61D-080718		↓				1136		↓ ↓ ↓ ↓			
MW-15-60D-080718		↓				0957		↓ ↓ ↓ ↓			
MW-32-080718		X				1436		NG 9 9			
DUP-01-0807		↓				-		↓ ↓ ↓ ↓			
MW-3-080718		↓				1135		↓ ↓ ↓ ↓			
MW-5-080718		↓				1255		↓ ↓ ↓ ↓			
MW-18-080718		↓				1350		↓ ↓ ↓ ↓			
MW-39-080718		↓		8/9/18		1346		↓ ↓ ↓ ↓			
MW-29-080918		X		8/9/18		1000		NG 3 3			
Possible Hazard Identification <input type="checkbox"/> Non-hazard <input type="checkbox"/> Irritant <input type="checkbox"/> Flammable <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown											
Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jim.tomalia@cadena.com, Cadena #E203728 Level IV Reporting.											
Requisitioned by: DIVYA KAMATH		Company: Arcadis		Date/Time: 8/9/18/10:00		Received by: [Signature]		Company: The		Date/Time: 8/9/18 13:24	
Requisitioned by: [Signature]		Company: The		Date/Time: 8/9/18 19:29		Received by: [Signature]		Company: TAE		Date/Time: 8/9/18 9:45	
Requisitioned by: [Signature]		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:	



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

©2006 TestAmerica Laboratories, Inc. All rights reserved. TestAmerica & Design are trademarks of TestAmerica Laboratories, Inc.



**TestAmerica Canton Sample Receipt Form/Narrative** Login # : 49736

**Canton Facility**

Client Ancadis Site Name Stioke Cooler unpacked by: Oil Brown

Cooler Received on 8/10/18 Opened on 8/10/18

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 # \_\_\_\_\_ 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 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  
 IR GUN #36 (CF -0.3°C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity \_\_\_\_\_ 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 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# HC849161  
 13. Were VOAs on the COC? Yes No  
 14. Were air bubbles >6 mm in any VOA vials? Yes No NA  Larger than this.  
 15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 15A125WB 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: \_\_\_\_\_

Rec'd 1x40 trip blank not on COC - will log for VOC 8260 at end of job

---

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

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

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

TestAmerica Multiple Cooler Receipt Form/Narrative  
 Canton Facility

Login #: 99736

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
Client	8	1.8	1.8	Ice
Client	8	1.4	1.4	Ice