

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

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Tel: (330)497-9396

TestAmerica Job ID: 240-95545-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

ARCADIS U.S., Inc.

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Novi, Michigan 48377

Attn: Kristoffer Hinskey



Authorized for release by:

5/29/2018 11:50:39 AM

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*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.*

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# Definitions/Glossary

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

TestAmerica Job ID: 240-95545-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
F1	MS and/or MSD Recovery is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## 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: 240-95545-1

**Job ID: 240-95545-1**

**Laboratory: TestAmerica Canton**

**Narrative**

## CASE NARRATIVE

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

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

**Report Number: 240-95545-1**

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 5/12/2018 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.9° C, 2.3° C, 3.1° C and 3.9° C.

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

Samples MW-2\_051018 (240-95545-1), MW-3\_051018 (240-95545-2), MW-5\_051018 (240-95545-3), MW-4\_051018 (240-95545-4), MW-10\_051018 (240-95545-5), MW-1\_051118 (240-95545-6), MW-9\_051118 (240-95545-7), MW-66\_051018 (240-95545-8), MW-65\_051018 (240-95545-9), MW-22\_051018 (240-95545-10), MW-47\_051018 (240-95545-11), MW-14\_051018 (240-95545-12), MW-49\_051018 (240-95545-13) and TRIP BLANK (240-95545-14) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/23/2018, 05/24/2018 and 05/25/2018.

4-Bromofluorobenzene (Surr) failed the surrogate recovery criteria low for MW-47\_051018 (240-95545-11).

Dibromofluoromethane (Surr) failed the surrogate recovery criteria high for MW-5\_051018 (240-95545-3).

Dibromofluoromethane (Surr) and Toluene-d8 (Surr) failed the surrogate recovery criteria high for MW-4\_051018 (240-95545-4). Refer to the QC report for details.

# Case Narrative

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

TestAmerica Job ID: 240-95545-1

## Job ID: 240-95545-1 (Continued)

### Laboratory: TestAmerica Canton (Continued)

1,1-Dichloroethane, 1,1-Dichloroethene, Bromomethane, Diethyl ether, Methylene Chloride and trans-1,2-Dichloroethene failed the recovery criteria high for LCS 240-328193/4.

1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, Chloroform, Toluene and trans-1,3-Dichloropropene failed the recovery criteria high for LCS 240-328363/4. Refer to the QC report for details.

2-Hexanone exceeded the RPD limit for the MSD of sample 240-95530-2 in batch 240-328344.

cis-1,3-Dichloropropene, trans-1,3-Dichloropropene and Vinyl chloride failed the recovery criteria low for the MSD of sample 240-95533-49 in batch 240-328193. Several analytes exceeded the RPD limit.

Bromodichloromethane, Chloromethane, cis-1,3-Dichloropropene and Vinyl chloride failed the recovery criteria low for the MS of sample 240-95533-49 in batch 240-328193.

Acetone failed the recovery criteria high for the MS of sample 240-95585-2 in batch 240-328594. Refer to the QC report for details.

Samples MW-2\_051018 (240-95545-1)[100X], MW-2\_051018 (240-95545-1)[25X], MW-4\_051018 (240-95545-4)[1000X], MW-10\_051018 (240-95545-5)[100X], MW-65\_051018 (240-95545-9)[2X], MW-22\_051018 (240-95545-10)[66.67X], MW-47\_051018 (240-95545-11)[10X], MW-47\_051018 (240-95545-11)[5X] and MW-49\_051018 (240-95545-13)[1666.67X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Method(s) 8260B: Surrogate recovery for the following sample was outside the upper control limit: MW-5\_051018 (240-95545-3). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8260B: The laboratory control sample (LCS) for 328193 recovered outside control limits for multiple analytes. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported: MW-5\_051018 (240-95545-3), MW-10\_051018 (240-95545-5) and MW-66\_051018 (240-95545-8).

Method(s) 8260B: The laboratory control sample (LCS) for analytical batch 240-328363 recovered outside control limits for multiple analytes: These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported: MW-2\_051018 (240-95545-1), MW-3\_051018 (240-95545-2), MW-65\_051018 (240-95545-9), MW-22\_051018 (240-95545-10), TRIP BLANK (240-95545-14) and (LCS 240-328363/4).

Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 240-328363 recovered above the upper control limit for multiple analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: MW-2\_051018 (240-95545-1), MW-3\_051018 (240-95545-2), MW-65\_051018 (240-95545-9), MW-22\_051018 (240-95545-10), TRIP BLANK (240-95545-14) and (CCVIS 240-328363/2).

Method(s) 8260B: There was an MS/MSD analyzed in batch 328363 but could not be reported because the associated sample needed reanalyzed in a different batch: MW-2\_051018 (240-95545-1), MW-3\_051018 (240-95545-2), MW-65\_051018 (240-95545-9), MW-22\_051018 (240-95545-10) and TRIP BLANK (240-95545-14).

Method(s) 8260B: The initial calibration (ICAL) did not pass the method calibration acceptance criteria for [1,4-Dioxane]. This variance only affects results measured above the reporting limit. A CCV standard at or below the reporting limit (RL) was analyzed with the samples and found to be acceptable. This demonstrates the reporting limit is valid for the affected analytes. The samples associated with the ICAL were non-detects for the affected analytes; therefore, the results have been reported. The following samples are impacted: MW-2\_051018 (240-95545-1), MW-4\_051018 (240-95545-4), MW-47\_051018 (240-95545-11) and (CCVIS 240-328594/2).

Method(s) 8260B: The following sample was re-analyzed outside of analytical holding time due to cis-1,2-Dichloroethene needing a dilution: MW-2\_051018 (240-95545-1).

Method(s) 8260B: Reanalysis of the following samples were performed outside of the analytical holding time due to surrogates being out of control on initial tune: MW-4\_051018 (240-95545-4) and MW-47\_051018 (240-95545-11).

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: 240-95545-1

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## Job ID: 240-95545-1 (Continued)

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### Laboratory: TestAmerica Canton (Continued)

#### VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-2\_051018 (240-95545-1), MW-3\_051018 (240-95545-2), MW-5\_051018 (240-95545-3), MW-4\_051018 (240-95545-4), MW-10\_051018 (240-95545-5), MW-1\_051118 (240-95545-6), MW-9\_051118 (240-95545-7), MW-66\_051018 (240-95545-8), MW-65\_051018 (240-95545-9), MW-22\_051018 (240-95545-10), MW-47\_051018 (240-95545-11), MW-14\_051018 (240-95545-12) and MW-49\_051018 (240-95545-13) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 05/18/2018.

1,4-Dioxane failed the recovery criteria low for the MS and MSD of sample MW-4\_051018 (240-95545-4) in batch 240-327549. Refer to the QC report for details.

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: 240-95545-1

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: 240-95545-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-95545-1	MW-2_051018	Water	05/10/18 13:37	05/12/18 10:00
240-95545-2	MW-3_051018	Water	05/10/18 12:54	05/12/18 10:00
240-95545-3	MW-5_051018	Water	05/10/18 14:20	05/12/18 10:00
240-95545-4	MW-4_051018	Water	05/10/18 15:21	05/12/18 10:00
240-95545-5	MW-10_051018	Water	05/10/18 16:38	05/12/18 10:00
240-95545-6	MW-1_051118	Water	05/11/18 08:09	05/12/18 10:00
240-95545-7	MW-9_051118	Water	05/11/18 09:09	05/12/18 10:00
240-95545-8	MW-66_051018	Water	05/10/18 10:30	05/12/18 10:00
240-95545-9	MW-65_051018	Water	05/10/18 11:25	05/12/18 10:00
240-95545-10	MW-22_051018	Water	05/10/18 12:20	05/12/18 10:00
240-95545-11	MW-47_051018	Water	05/10/18 17:00	05/12/18 10:00
240-95545-12	MW-14_051018	Water	05/11/18 10:42	05/12/18 10:00
240-95545-13	MW-49_051018	Water	05/11/18 12:07	05/12/18 10:00
240-95545-14	TRIP BLANK	Water	05/10/18 00:00	05/12/18 10:00





# Detection Summary

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

TestAmerica Job ID: 240-95545-1

## Client Sample ID: MW-2\_051018

## Lab Sample ID: 240-95545-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.7		2.0	0.24	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	1700	H	100	30	ug/L	100		8260B	Total/NA
trans-1,2-Dichloroethene	510		25	7.3	ug/L	25		8260B	Total/NA
Vinyl chloride	190		25	11	ug/L	25		8260B	Total/NA

## Client Sample ID: MW-3\_051018

## Lab Sample ID: 240-95545-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.50	J	2.0	0.24	ug/L	1		8260B SIM	Total/NA

## Client Sample ID: MW-5\_051018

## Lab Sample ID: 240-95545-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	1.9	J	10	1.8	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.58	J	1.0	0.30	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-4\_051018

## Lab Sample ID: 240-95545-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.76	J F1	2.0	0.24	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	21000	H	1000	300	ug/L	1000		8260B	Total/NA
trans-1,2-Dichloroethene	860	J H	1000	290	ug/L	1000		8260B	Total/NA
Trichloroethene	23000	H	1000	330	ug/L	1000		8260B	Total/NA
Vinyl chloride	610	J H	1000	450	ug/L	1000		8260B	Total/NA

## Client Sample ID: MW-10\_051018

## Lab Sample ID: 240-95545-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.4		2.0	0.24	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	3100		100	45	ug/L	100		8260B	Total/NA

## Client Sample ID: MW-1\_051118

## Lab Sample ID: 240-95545-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	2.8	J	10	1.8	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-9\_051118

## Lab Sample ID: 240-95545-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.6		2.0	0.24	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	2.2		1.0	0.45	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-66\_051018

## Lab Sample ID: 240-95545-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	2.4		1.0	0.45	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-65\_051018

## Lab Sample ID: 240-95545-9

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: 240-95545-1

## Client Sample ID: MW-65\_051018 (Continued)

## Lab Sample ID: 240-95545-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.1		2.0	0.24	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	6.0		2.0	0.60	ug/L	2		8260B	Total/NA
Vinyl chloride	41		2.0	0.90	ug/L	2		8260B	Total/NA

## Client Sample ID: MW-22\_051018

## Lab Sample ID: 240-95545-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	34		2.0	0.24	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	180		67	20	ug/L	66.67		8260B	Total/NA
Vinyl chloride	2400		67	30	ug/L	66.67		8260B	Total/NA

## Client Sample ID: MW-47\_051018

## Lab Sample ID: 240-95545-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	49	H	5.0	1.5	ug/L	5		8260B	Total/NA
1,1-Dichloroethane	2.9	J H	5.0	1.3	ug/L	5		8260B	Total/NA
trans-1,2-Dichloroethene	6.5	H	5.0	1.5	ug/L	5		8260B	Total/NA
1,1,1-Trichloroethane	1.9	J H	5.0	1.2	ug/L	5		8260B	Total/NA
Vinyl chloride	88	H	5.0	2.3	ug/L	5		8260B	Total/NA

## Client Sample ID: MW-14\_051018

## Lab Sample ID: 240-95545-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.0	J	10	1.8	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-49\_051018

## Lab Sample ID: 240-95545-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.5		2.0	0.24	ug/L	1		8260B SIM	Total/NA
Acetone	3900	J	17000	2900	ug/L	1666.67		8260B	Total/NA
cis-1,2-Dichloroethene	17000		1700	500	ug/L	1666.67		8260B	Total/NA
Methylene Chloride	940	J	8300	880	ug/L	1666.67		8260B	Total/NA
Vinyl chloride	8100		1700	750	ug/L	1666.67		8260B	Total/NA

## Client Sample ID: TRIP BLANK

## Lab Sample ID: 240-95545-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.5	J	10	1.8	ug/L	1		8260B	Total/NA

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: 240-95545-1

**Client Sample ID: MW-2\_051018**

**Lab Sample ID: 240-95545-1**

**Date Collected: 05/10/18 13:37**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.7		2.0	0.24	ug/L			05/18/18 17:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		63 - 125					05/18/18 17:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	250	U	250	44	ug/L			05/24/18 11:58	25
Benzene	25	U	25	7.0	ug/L			05/24/18 11:58	25
Bromodichloromethane	25	U	25	7.5	ug/L			05/24/18 11:58	25
Bromoform	25	U	25	11	ug/L			05/24/18 11:58	25
Bromomethane	25	U	25	11	ug/L			05/24/18 11:58	25
2-Butanone (MEK)	250	U	250	26	ug/L			05/24/18 11:58	25
Carbon disulfide	130	U	130	8.5	ug/L			05/24/18 11:58	25
Carbon tetrachloride	25	U	25	8.8	ug/L			05/24/18 11:58	25
Chlorobenzene	25	U	25	8.0	ug/L			05/24/18 11:58	25
Chloroethane	25	U	25	10	ug/L			05/24/18 11:58	25
Chloroform	25	U *	25	7.8	ug/L			05/24/18 11:58	25
Chloromethane	25	U	25	11	ug/L			05/24/18 11:58	25
<b>cis-1,2-Dichloroethene</b>	<b>1700</b>	<b>H</b>	100	30	ug/L			05/25/18 16:15	100
cis-1,3-Dichloropropene	25	U	25	6.5	ug/L			05/24/18 11:58	25
Cyclohexane	25	U	25	11	ug/L			05/24/18 11:58	25
Dibromochloromethane	25	U	25	6.3	ug/L			05/24/18 11:58	25
1,2-Dibromo-3-Chloropropane	25	U	25	12	ug/L			05/24/18 11:58	25
1,2-Dibromoethane	25	U	25	5.8	ug/L			05/24/18 11:58	25
1,2-Dichlorobenzene	25	U	25	6.5	ug/L			05/24/18 11:58	25
1,3-Dichlorobenzene	25	U	25	8.0	ug/L			05/24/18 11:58	25
1,4-Dichlorobenzene	25	U	25	5.8	ug/L			05/24/18 11:58	25
Dichlorodifluoromethane	25	U	25	13	ug/L			05/24/18 11:58	25
1,1-Dichloroethane	25	U *	25	6.3	ug/L			05/24/18 11:58	25
1,2-Dichloroethane	25	U	25	7.5	ug/L			05/24/18 11:58	25
1,1-Dichloroethene	25	U	25	6.8	ug/L			05/24/18 11:58	25
1,2-Dichloropropane	25	U	25	7.5	ug/L			05/24/18 11:58	25
Diethyl ether	50	U	50	8.8	ug/L			05/24/18 11:58	25
Ethylbenzene	25	U	25	6.5	ug/L			05/24/18 11:58	25
2-Hexanone	250	U	250	31	ug/L			05/24/18 11:58	25
Isopropylbenzene	25	U	25	5.3	ug/L			05/24/18 11:58	25
Methyl acetate	250	U	250	36	ug/L			05/24/18 11:58	25
Methylcyclohexane	25	U	25	11	ug/L			05/24/18 11:58	25
Methylene Chloride	130	U	130	13	ug/L			05/24/18 11:58	25
4-Methyl-2-pentanone (MIBK)	250	U	250	18	ug/L			05/24/18 11:58	25
Methyl tert-butyl ether	25	U	25	6.8	ug/L			05/24/18 11:58	25
Styrene	25	U	25	5.8	ug/L			05/24/18 11:58	25
1,1,2,2-Tetrachloroethane	25	U *	25	8.0	ug/L			05/24/18 11:58	25
Tetrachloroethene	25	U	25	7.5	ug/L			05/24/18 11:58	25
Toluene	25	U *	25	5.8	ug/L			05/24/18 11:58	25
<b>trans-1,2-Dichloroethene</b>	<b>510</b>		25	7.3	ug/L			05/24/18 11:58	25
trans-1,3-Dichloropropene	25	U *	25	7.8	ug/L			05/24/18 11:58	25
1,2,4-Trichlorobenzene	25	U	25	6.8	ug/L			05/24/18 11:58	25
1,1,1-Trichloroethane	25	U	25	5.8	ug/L			05/24/18 11:58	25

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-2\_051018**

**Lab Sample ID: 240-95545-1**

**Date Collected: 05/10/18 13:37**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	25	U *	25	8.5	ug/L			05/24/18 11:58	25
Trichloroethene	25	U	25	8.3	ug/L			05/24/18 11:58	25
Trichlorofluoromethane	25	U	25	13	ug/L			05/24/18 11:58	25
1,1,2-Trichloro-1,2,2-trifluoroethane	25	U	25	10	ug/L			05/24/18 11:58	25
1,2,3-Trimethylbenzene	130	U	130	5.5	ug/L			05/24/18 11:58	25
1,2,4-Trimethylbenzene	25	U	25	6.0	ug/L			05/24/18 11:58	25
1,3,5-Trimethylbenzene	25	U	25	6.0	ug/L			05/24/18 11:58	25
<b>Vinyl chloride</b>	<b>190</b>		25	11	ug/L			05/24/18 11:58	25
Xylenes, Total	50	U	50	6.0	ug/L			05/24/18 11:58	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		69 - 120		05/24/18 11:58	25
4-Bromofluorobenzene (Surr)	93		69 - 120		05/25/18 16:15	100
Dibromofluoromethane (Surr)	106		69 - 124		05/24/18 11:58	25
Dibromofluoromethane (Surr)	90		69 - 124		05/25/18 16:15	100
1,2-Dichloroethane-d4 (Surr)	108		61 - 138		05/24/18 11:58	25
1,2-Dichloroethane-d4 (Surr)	93		61 - 138		05/25/18 16:15	100
Toluene-d8 (Surr)	117		73 - 120		05/24/18 11:58	25
Toluene-d8 (Surr)	100		73 - 120		05/25/18 16:15	100

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-3\_051018**

**Lab Sample ID: 240-95545-2**

**Date Collected: 05/10/18 12:54**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.50	J	2.0	0.24	ug/L			05/18/18 17:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		63 - 125					05/18/18 17:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			05/24/18 12:21	1
Benzene	1.0	U	1.0	0.28	ug/L			05/24/18 12:21	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/24/18 12:21	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/24/18 12:21	1
Bromomethane	1.0	U	1.0	0.42	ug/L			05/24/18 12:21	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/24/18 12:21	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/24/18 12:21	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/24/18 12:21	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 12:21	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/24/18 12:21	1
Chloroform	1.0	U*	1.0	0.31	ug/L			05/24/18 12:21	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/24/18 12:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 12:21	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/24/18 12:21	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/24/18 12:21	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/24/18 12:21	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/24/18 12:21	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/24/18 12:21	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/24/18 12:21	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 12:21	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/24/18 12:21	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 12:21	1
1,1-Dichloroethane	1.0	U*	1.0	0.25	ug/L			05/24/18 12:21	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/24/18 12:21	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 12:21	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/24/18 12:21	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			05/24/18 12:21	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/24/18 12:21	1
2-Hexanone	10	U	10	1.2	ug/L			05/24/18 12:21	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/24/18 12:21	1
Methyl acetate	10	U	10	1.4	ug/L			05/24/18 12:21	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/24/18 12:21	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			05/24/18 12:21	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/24/18 12:21	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/24/18 12:21	1
Styrene	1.0	U	1.0	0.23	ug/L			05/24/18 12:21	1
1,1,2,2-Tetrachloroethane	1.0	U*	1.0	0.32	ug/L			05/24/18 12:21	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 12:21	1
Toluene	1.0	U*	1.0	0.23	ug/L			05/24/18 12:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 12:21	1
trans-1,3-Dichloropropene	1.0	U*	1.0	0.31	ug/L			05/24/18 12:21	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/24/18 12:21	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/24/18 12:21	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-3\_051018**

**Lab Sample ID: 240-95545-2**

**Date Collected: 05/10/18 12:54**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U *	1.0	0.34	ug/L			05/24/18 12:21	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 12:21	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 12:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/24/18 12:21	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/24/18 12:21	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 12:21	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 12:21	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 12:21	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/24/18 12:21	1
<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)	73		69 - 120					05/24/18 12:21	1
Dibromofluoromethane (Surr)	108		69 - 124					05/24/18 12:21	1
1,2-Dichloroethane-d4 (Surr)	109		61 - 138					05/24/18 12:21	1
Toluene-d8 (Surr)	111		73 - 120					05/24/18 12:21	1

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-5\_051018**

**Lab Sample ID: 240-95545-3**

**Date Collected: 05/10/18 14:20**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/18/18 18:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		63 - 125					05/18/18 18:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1.9	J	10	1.8	ug/L			05/23/18 21:30	1
Benzene	1.0	U	1.0	0.28	ug/L			05/23/18 21:30	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/23/18 21:30	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/23/18 21:30	1
Bromomethane	1.0	U *	1.0	0.42	ug/L			05/23/18 21:30	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/23/18 21:30	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/23/18 21:30	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/23/18 21:30	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/23/18 21:30	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/23/18 21:30	1
Chloroform	1.0	U	1.0	0.31	ug/L			05/23/18 21:30	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/23/18 21:30	1
cis-1,2-Dichloroethene	0.58	J	1.0	0.30	ug/L			05/23/18 21:30	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/23/18 21:30	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/23/18 21:30	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/23/18 21:30	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/23/18 21:30	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/23/18 21:30	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/23/18 21:30	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/23/18 21:30	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/23/18 21:30	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/23/18 21:30	1
1,1-Dichloroethane	1.0	U *	1.0	0.25	ug/L			05/23/18 21:30	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/23/18 21:30	1
1,1-Dichloroethene	1.0	U *	1.0	0.27	ug/L			05/23/18 21:30	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/23/18 21:30	1
Diethyl ether	2.0	U *	2.0	0.35	ug/L			05/23/18 21:30	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/23/18 21:30	1
2-Hexanone	10	U	10	1.2	ug/L			05/23/18 21:30	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/23/18 21:30	1
Methyl acetate	10	U	10	1.4	ug/L			05/23/18 21:30	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/23/18 21:30	1
Methylene Chloride	5.0	U *	5.0	0.53	ug/L			05/23/18 21:30	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/23/18 21:30	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/23/18 21:30	1
Styrene	1.0	U	1.0	0.23	ug/L			05/23/18 21:30	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			05/23/18 21:30	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 21:30	1
Toluene	1.0	U	1.0	0.23	ug/L			05/23/18 21:30	1
trans-1,2-Dichloroethene	1.0	U *	1.0	0.29	ug/L			05/23/18 21:30	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			05/23/18 21:30	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/23/18 21:30	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/23/18 21:30	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-5\_051018**

**Lab Sample ID: 240-95545-3**

**Date Collected: 05/10/18 14:20**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			05/23/18 21:30	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 21:30	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/23/18 21:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/23/18 21:30	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/23/18 21:30	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/23/18 21:30	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/23/18 21:30	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/18 21:30	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/23/18 21:30	1
<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)	77		69 - 120					05/23/18 21:30	1
Dibromofluoromethane (Surr)	127	X	69 - 124					05/23/18 21:30	1
1,2-Dichloroethane-d4 (Surr)	129		61 - 138					05/23/18 21:30	1
Toluene-d8 (Surr)	97		73 - 120					05/23/18 21:30	1



# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-4\_051018**

**Lab Sample ID: 240-95545-4**

**Date Collected: 05/10/18 15:21**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.76	J F1	2.0	0.24	ug/L			05/18/18 18:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	75		63 - 125					05/18/18 18:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10000	U H	10000	1800	ug/L			05/25/18 16:37	1000
Benzene	1000	U H	1000	280	ug/L			05/25/18 16:37	1000
Bromodichloromethane	1000	U H	1000	300	ug/L			05/25/18 16:37	1000
Bromoform	1000	U H	1000	430	ug/L			05/25/18 16:37	1000
Bromomethane	1000	U H	1000	420	ug/L			05/25/18 16:37	1000
2-Butanone (MEK)	10000	U H	10000	1000	ug/L			05/25/18 16:37	1000
Carbon disulfide	5000	U H	5000	340	ug/L			05/25/18 16:37	1000
Carbon tetrachloride	1000	U H	1000	350	ug/L			05/25/18 16:37	1000
Chlorobenzene	1000	U H	1000	320	ug/L			05/25/18 16:37	1000
Chloroethane	1000	U H	1000	410	ug/L			05/25/18 16:37	1000
Chloroform	1000	U H	1000	310	ug/L			05/25/18 16:37	1000
Chloromethane	1000	U H	1000	430	ug/L			05/25/18 16:37	1000
<b>cis-1,2-Dichloroethene</b>	<b>21000</b>	<b>H</b>	1000	300	ug/L			05/25/18 16:37	1000
cis-1,3-Dichloropropene	1000	U H	1000	260	ug/L			05/25/18 16:37	1000
Cyclohexane	1000	U H	1000	440	ug/L			05/25/18 16:37	1000
Dibromochloromethane	1000	U H	1000	250	ug/L			05/25/18 16:37	1000
1,2-Dibromo-3-Chloropropane	1000	U H	1000	470	ug/L			05/25/18 16:37	1000
1,2-Dibromoethane	1000	U H	1000	230	ug/L			05/25/18 16:37	1000
1,2-Dichlorobenzene	1000	U H	1000	260	ug/L			05/25/18 16:37	1000
1,3-Dichlorobenzene	1000	U H	1000	320	ug/L			05/25/18 16:37	1000
1,4-Dichlorobenzene	1000	U H	1000	230	ug/L			05/25/18 16:37	1000
Dichlorodifluoromethane	1000	U H	1000	500	ug/L			05/25/18 16:37	1000
1,1-Dichloroethane	1000	U H	1000	250	ug/L			05/25/18 16:37	1000
1,2-Dichloroethane	1000	U H	1000	300	ug/L			05/25/18 16:37	1000
1,1-Dichloroethene	1000	U H	1000	270	ug/L			05/25/18 16:37	1000
1,2-Dichloropropane	1000	U H	1000	300	ug/L			05/25/18 16:37	1000
Diethyl ether	2000	U H	2000	350	ug/L			05/25/18 16:37	1000
Ethylbenzene	1000	U H	1000	260	ug/L			05/25/18 16:37	1000
2-Hexanone	10000	U H	10000	1200	ug/L			05/25/18 16:37	1000
Isopropylbenzene	1000	U H	1000	210	ug/L			05/25/18 16:37	1000
Methyl acetate	10000	U H	10000	1400	ug/L			05/25/18 16:37	1000
Methylcyclohexane	1000	U H	1000	450	ug/L			05/25/18 16:37	1000
Methylene Chloride	5000	U H	5000	530	ug/L			05/25/18 16:37	1000
4-Methyl-2-pentanone (MIBK)	10000	U H	10000	710	ug/L			05/25/18 16:37	1000
Methyl tert-butyl ether	1000	U H	1000	270	ug/L			05/25/18 16:37	1000
Styrene	1000	U H	1000	230	ug/L			05/25/18 16:37	1000
1,1,1,2-Tetrachloroethane	1000	U H	1000	320	ug/L			05/25/18 16:37	1000
Tetrachloroethene	1000	U H	1000	300	ug/L			05/25/18 16:37	1000
Toluene	1000	U H	1000	230	ug/L			05/25/18 16:37	1000
<b>trans-1,2-Dichloroethene</b>	<b>860</b>	<b>J H</b>	1000	290	ug/L			05/25/18 16:37	1000
trans-1,3-Dichloropropene	1000	U H	1000	310	ug/L			05/25/18 16:37	1000
1,2,4-Trichlorobenzene	1000	U H	1000	270	ug/L			05/25/18 16:37	1000
1,1,1-Trichloroethane	1000	U H	1000	230	ug/L			05/25/18 16:37	1000

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-4\_051018**

**Lab Sample ID: 240-95545-4**

**Date Collected: 05/10/18 15:21**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1000	U H	1000	340	ug/L			05/25/18 16:37	1000
<b>Trichloroethene</b>	<b>23000</b>	<b>H</b>	1000	330	ug/L			05/25/18 16:37	1000
Trichlorofluoromethane	1000	U H	1000	500	ug/L			05/25/18 16:37	1000
1,1,2-Trichloro-1,2,2-trifluoroethane	1000	U H	1000	410	ug/L			05/25/18 16:37	1000
1,2,3-Trimethylbenzene	5000	U H	5000	220	ug/L			05/25/18 16:37	1000
1,2,4-Trimethylbenzene	1000	U H	1000	240	ug/L			05/25/18 16:37	1000
1,3,5-Trimethylbenzene	1000	U H	1000	240	ug/L			05/25/18 16:37	1000
<b>Vinyl chloride</b>	<b>610</b>	<b>J H</b>	1000	450	ug/L			05/25/18 16:37	1000
Xylenes, Total	2000	U H	2000	240	ug/L			05/25/18 16:37	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)	90		69 - 120					05/25/18 16:37	1000
Dibromofluoromethane (Surr)	93		69 - 124					05/25/18 16:37	1000
1,2-Dichloroethane-d4 (Surr)	95		61 - 138					05/25/18 16:37	1000
Toluene-d8 (Surr)	101		73 - 120					05/25/18 16:37	1000

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

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		69 - 120					05/24/18 12:44	1000
Dibromofluoromethane (Surr)	126	X	69 - 124					05/24/18 12:44	1000
1,2-Dichloroethane-d4 (Surr)	126		61 - 138					05/24/18 12:44	1000
Toluene-d8 (Surr)	139	X	73 - 120					05/24/18 12:44	1000

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-10\_051018**

**Lab Sample ID: 240-95545-5**

**Date Collected: 05/10/18 16:38**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.4		2.0	0.24	ug/L			05/18/18 20:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		63 - 125					05/18/18 20:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1000	U	1000	180	ug/L			05/23/18 22:14	100
Benzene	100	U	100	28	ug/L			05/23/18 22:14	100
Bromodichloromethane	100	U	100	30	ug/L			05/23/18 22:14	100
Bromoform	100	U	100	43	ug/L			05/23/18 22:14	100
Bromomethane	100	U *	100	42	ug/L			05/23/18 22:14	100
2-Butanone (MEK)	1000	U	1000	100	ug/L			05/23/18 22:14	100
Carbon disulfide	500	U	500	34	ug/L			05/23/18 22:14	100
Carbon tetrachloride	100	U	100	35	ug/L			05/23/18 22:14	100
Chlorobenzene	100	U	100	32	ug/L			05/23/18 22:14	100
Chloroethane	100	U	100	41	ug/L			05/23/18 22:14	100
Chloroform	100	U	100	31	ug/L			05/23/18 22:14	100
Chloromethane	100	U	100	43	ug/L			05/23/18 22:14	100
cis-1,2-Dichloroethene	100	U	100	30	ug/L			05/23/18 22:14	100
cis-1,3-Dichloropropene	100	U	100	26	ug/L			05/23/18 22:14	100
Cyclohexane	100	U	100	44	ug/L			05/23/18 22:14	100
Dibromochloromethane	100	U	100	25	ug/L			05/23/18 22:14	100
1,2-Dibromo-3-Chloropropane	100	U	100	47	ug/L			05/23/18 22:14	100
1,2-Dibromoethane	100	U	100	23	ug/L			05/23/18 22:14	100
1,2-Dichlorobenzene	100	U	100	26	ug/L			05/23/18 22:14	100
1,3-Dichlorobenzene	100	U	100	32	ug/L			05/23/18 22:14	100
1,4-Dichlorobenzene	100	U	100	23	ug/L			05/23/18 22:14	100
Dichlorodifluoromethane	100	U	100	50	ug/L			05/23/18 22:14	100
1,1-Dichloroethane	100	U *	100	25	ug/L			05/23/18 22:14	100
1,2-Dichloroethane	100	U	100	30	ug/L			05/23/18 22:14	100
1,1-Dichloroethene	100	U *	100	27	ug/L			05/23/18 22:14	100
1,2-Dichloropropane	100	U	100	30	ug/L			05/23/18 22:14	100
Diethyl ether	200	U *	200	35	ug/L			05/23/18 22:14	100
Ethylbenzene	100	U	100	26	ug/L			05/23/18 22:14	100
2-Hexanone	1000	U	1000	120	ug/L			05/23/18 22:14	100
Isopropylbenzene	100	U	100	21	ug/L			05/23/18 22:14	100
Methyl acetate	1000	U	1000	140	ug/L			05/23/18 22:14	100
Methylcyclohexane	100	U	100	45	ug/L			05/23/18 22:14	100
Methylene Chloride	500	U *	500	53	ug/L			05/23/18 22:14	100
4-Methyl-2-pentanone (MIBK)	1000	U	1000	71	ug/L			05/23/18 22:14	100
Methyl tert-butyl ether	100	U	100	27	ug/L			05/23/18 22:14	100
Styrene	100	U	100	23	ug/L			05/23/18 22:14	100
1,1,2,2-Tetrachloroethane	100	U	100	32	ug/L			05/23/18 22:14	100
Tetrachloroethene	100	U	100	30	ug/L			05/23/18 22:14	100
Toluene	100	U	100	23	ug/L			05/23/18 22:14	100
trans-1,2-Dichloroethene	100	U *	100	29	ug/L			05/23/18 22:14	100
trans-1,3-Dichloropropene	100	U	100	31	ug/L			05/23/18 22:14	100
1,2,4-Trichlorobenzene	100	U	100	27	ug/L			05/23/18 22:14	100
1,1,1-Trichloroethane	100	U	100	23	ug/L			05/23/18 22:14	100

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-10\_051018**

**Lab Sample ID: 240-95545-5**

**Date Collected: 05/10/18 16:38**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	100	U	100	34	ug/L			05/23/18 22:14	100
Trichloroethene	100	U	100	33	ug/L			05/23/18 22:14	100
Trichlorofluoromethane	100	U	100	50	ug/L			05/23/18 22:14	100
1,1,2-Trichloro-1,2,2-trifluoroethane	100	U	100	41	ug/L			05/23/18 22:14	100
1,2,3-Trimethylbenzene	500	U	500	22	ug/L			05/23/18 22:14	100
1,2,4-Trimethylbenzene	100	U	100	24	ug/L			05/23/18 22:14	100
1,3,5-Trimethylbenzene	100	U	100	24	ug/L			05/23/18 22:14	100
<b>Vinyl chloride</b>	<b>3100</b>		100	45	ug/L			05/23/18 22:14	100
Xylenes, Total	200	U	200	24	ug/L			05/23/18 22:14	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	73		69 - 120					05/23/18 22:14	100
Dibromofluoromethane (Surr)	110		69 - 124					05/23/18 22:14	100
1,2-Dichloroethane-d4 (Surr)	112		61 - 138					05/23/18 22:14	100
Toluene-d8 (Surr)	91		73 - 120					05/23/18 22:14	100

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-1\_051118**

**Lab Sample ID: 240-95545-6**

**Date Collected: 05/11/18 08:09**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/18/18 20:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125					05/18/18 20:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	2.8	J	10	1.8	ug/L			05/24/18 16:49	1
Benzene	1.0	U	1.0	0.28	ug/L			05/24/18 16:49	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/24/18 16:49	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/24/18 16:49	1
Bromomethane	1.0	U	1.0	0.42	ug/L			05/24/18 16:49	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/24/18 16:49	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/24/18 16:49	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/24/18 16:49	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 16:49	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/24/18 16:49	1
Chloroform	1.0	U	1.0	0.31	ug/L			05/24/18 16:49	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/24/18 16:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 16:49	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/24/18 16:49	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/24/18 16:49	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/24/18 16:49	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/24/18 16:49	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/24/18 16:49	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/24/18 16:49	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 16:49	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/24/18 16:49	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 16:49	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			05/24/18 16:49	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/24/18 16:49	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 16:49	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/24/18 16:49	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			05/24/18 16:49	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/24/18 16:49	1
2-Hexanone	10	U	10	1.2	ug/L			05/24/18 16:49	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/24/18 16:49	1
Methyl acetate	10	U	10	1.4	ug/L			05/24/18 16:49	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/24/18 16:49	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			05/24/18 16:49	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/24/18 16:49	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/24/18 16:49	1
Styrene	1.0	U	1.0	0.23	ug/L			05/24/18 16:49	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			05/24/18 16:49	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 16:49	1
Toluene	1.0	U	1.0	0.23	ug/L			05/24/18 16:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 16:49	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			05/24/18 16:49	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/24/18 16:49	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/24/18 16:49	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-1\_051118**

**Lab Sample ID: 240-95545-6**

**Date Collected: 05/11/18 08:09**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			05/24/18 16:49	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 16:49	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 16:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/24/18 16:49	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/24/18 16:49	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 16:49	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 16:49	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 16:49	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/24/18 16:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		69 - 120		05/24/18 16:49	1
Dibromofluoromethane (Surr)	100		69 - 124		05/24/18 16:49	1
1,2-Dichloroethane-d4 (Surr)	107		61 - 138		05/24/18 16:49	1
Toluene-d8 (Surr)	97		73 - 120		05/24/18 16:49	1

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-9\_051118**

**Lab Sample ID: 240-95545-7**

**Date Collected: 05/11/18 09:09**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.6		2.0	0.24	ug/L			05/18/18 20:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		63 - 125					05/18/18 20:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			05/24/18 17:13	1
Benzene	1.0	U	1.0	0.28	ug/L			05/24/18 17:13	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/24/18 17:13	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/24/18 17:13	1
Bromomethane	1.0	U	1.0	0.42	ug/L			05/24/18 17:13	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/24/18 17:13	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/24/18 17:13	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/24/18 17:13	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 17:13	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/24/18 17:13	1
Chloroform	1.0	U	1.0	0.31	ug/L			05/24/18 17:13	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/24/18 17:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 17:13	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/24/18 17:13	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/24/18 17:13	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/24/18 17:13	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/24/18 17:13	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/24/18 17:13	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/24/18 17:13	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 17:13	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/24/18 17:13	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 17:13	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			05/24/18 17:13	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/24/18 17:13	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 17:13	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/24/18 17:13	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			05/24/18 17:13	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/24/18 17:13	1
2-Hexanone	10	U	10	1.2	ug/L			05/24/18 17:13	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/24/18 17:13	1
Methyl acetate	10	U	10	1.4	ug/L			05/24/18 17:13	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/24/18 17:13	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			05/24/18 17:13	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/24/18 17:13	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/24/18 17:13	1
Styrene	1.0	U	1.0	0.23	ug/L			05/24/18 17:13	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			05/24/18 17:13	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 17:13	1
Toluene	1.0	U	1.0	0.23	ug/L			05/24/18 17:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 17:13	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			05/24/18 17:13	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/24/18 17:13	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/24/18 17:13	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-9\_051118**

**Lab Sample ID: 240-95545-7**

**Date Collected: 05/11/18 09:09**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			05/24/18 17:13	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 17:13	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 17:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/24/18 17:13	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/24/18 17:13	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 17:13	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 17:13	1
<b>Vinyl chloride</b>	<b>2.2</b>		1.0	0.45	ug/L			05/24/18 17:13	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/24/18 17:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		69 - 120					05/24/18 17:13	1
Dibromofluoromethane (Surr)	95		69 - 124					05/24/18 17:13	1
1,2-Dichloroethane-d4 (Surr)	103		61 - 138					05/24/18 17:13	1
Toluene-d8 (Surr)	95		73 - 120					05/24/18 17:13	1



# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-66\_051018**

**Lab Sample ID: 240-95545-8**

**Date Collected: 05/10/18 10:30**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/18/18 21:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		63 - 125					05/18/18 21:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			05/23/18 22:36	1
Benzene	1.0	U	1.0	0.28	ug/L			05/23/18 22:36	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/23/18 22:36	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/23/18 22:36	1
Bromomethane	1.0	U *	1.0	0.42	ug/L			05/23/18 22:36	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/23/18 22:36	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/23/18 22:36	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/23/18 22:36	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/23/18 22:36	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/23/18 22:36	1
Chloroform	1.0	U	1.0	0.31	ug/L			05/23/18 22:36	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/23/18 22:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 22:36	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/23/18 22:36	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/23/18 22:36	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/23/18 22:36	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/23/18 22:36	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/23/18 22:36	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/23/18 22:36	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/23/18 22:36	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/23/18 22:36	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/23/18 22:36	1
1,1-Dichloroethane	1.0	U *	1.0	0.25	ug/L			05/23/18 22:36	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/23/18 22:36	1
1,1-Dichloroethene	1.0	U *	1.0	0.27	ug/L			05/23/18 22:36	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/23/18 22:36	1
Diethyl ether	2.0	U *	2.0	0.35	ug/L			05/23/18 22:36	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/23/18 22:36	1
2-Hexanone	10	U	10	1.2	ug/L			05/23/18 22:36	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/23/18 22:36	1
Methyl acetate	10	U	10	1.4	ug/L			05/23/18 22:36	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/23/18 22:36	1
Methylene Chloride	5.0	U *	5.0	0.53	ug/L			05/23/18 22:36	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/23/18 22:36	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/23/18 22:36	1
Styrene	1.0	U	1.0	0.23	ug/L			05/23/18 22:36	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			05/23/18 22:36	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 22:36	1
Toluene	1.0	U	1.0	0.23	ug/L			05/23/18 22:36	1
trans-1,2-Dichloroethene	1.0	U *	1.0	0.29	ug/L			05/23/18 22:36	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			05/23/18 22:36	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/23/18 22:36	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/23/18 22:36	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-66\_051018**

**Lab Sample ID: 240-95545-8**

**Date Collected: 05/10/18 10:30**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			05/23/18 22:36	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 22:36	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/23/18 22:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/23/18 22:36	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/23/18 22:36	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/23/18 22:36	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/23/18 22:36	1
<b>Vinyl chloride</b>	<b>2.4</b>		1.0	0.45	ug/L			05/23/18 22:36	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/23/18 22:36	1
<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)	74		69 - 120					05/23/18 22:36	1
Dibromofluoromethane (Surr)	110		69 - 124					05/23/18 22:36	1
1,2-Dichloroethane-d4 (Surr)	112		61 - 138					05/23/18 22:36	1
Toluene-d8 (Surr)	93		73 - 120					05/23/18 22:36	1

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-65\_051018**

**Lab Sample ID: 240-95545-9**

**Date Collected: 05/10/18 11:25**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.1		2.0	0.24	ug/L			05/18/18 21:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		63 - 125					05/18/18 21:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	20	U	20	3.5	ug/L			05/24/18 13:06	2
Benzene	2.0	U	2.0	0.56	ug/L			05/24/18 13:06	2
Bromodichloromethane	2.0	U	2.0	0.60	ug/L			05/24/18 13:06	2
Bromoform	2.0	U	2.0	0.86	ug/L			05/24/18 13:06	2
Bromomethane	2.0	U	2.0	0.84	ug/L			05/24/18 13:06	2
2-Butanone (MEK)	20	U	20	2.0	ug/L			05/24/18 13:06	2
Carbon disulfide	10	U	10	0.68	ug/L			05/24/18 13:06	2
Carbon tetrachloride	2.0	U	2.0	0.70	ug/L			05/24/18 13:06	2
Chlorobenzene	2.0	U	2.0	0.64	ug/L			05/24/18 13:06	2
Chloroethane	2.0	U	2.0	0.82	ug/L			05/24/18 13:06	2
Chloroform	2.0	U*	2.0	0.62	ug/L			05/24/18 13:06	2
Chloromethane	2.0	U	2.0	0.86	ug/L			05/24/18 13:06	2
cis-1,2-Dichloroethene	6.0		2.0	0.60	ug/L			05/24/18 13:06	2
cis-1,3-Dichloropropene	2.0	U	2.0	0.52	ug/L			05/24/18 13:06	2
Cyclohexane	2.0	U	2.0	0.88	ug/L			05/24/18 13:06	2
Dibromochloromethane	2.0	U	2.0	0.50	ug/L			05/24/18 13:06	2
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.94	ug/L			05/24/18 13:06	2
1,2-Dibromoethane	2.0	U	2.0	0.46	ug/L			05/24/18 13:06	2
1,2-Dichlorobenzene	2.0	U	2.0	0.52	ug/L			05/24/18 13:06	2
1,3-Dichlorobenzene	2.0	U	2.0	0.64	ug/L			05/24/18 13:06	2
1,4-Dichlorobenzene	2.0	U	2.0	0.46	ug/L			05/24/18 13:06	2
Dichlorodifluoromethane	2.0	U	2.0	1.0	ug/L			05/24/18 13:06	2
1,1-Dichloroethane	2.0	U*	2.0	0.50	ug/L			05/24/18 13:06	2
1,2-Dichloroethane	2.0	U	2.0	0.60	ug/L			05/24/18 13:06	2
1,1-Dichloroethene	2.0	U	2.0	0.54	ug/L			05/24/18 13:06	2
1,2-Dichloropropane	2.0	U	2.0	0.60	ug/L			05/24/18 13:06	2
Diethyl ether	4.0	U	4.0	0.70	ug/L			05/24/18 13:06	2
Ethylbenzene	2.0	U	2.0	0.52	ug/L			05/24/18 13:06	2
2-Hexanone	20	U	20	2.5	ug/L			05/24/18 13:06	2
Isopropylbenzene	2.0	U	2.0	0.42	ug/L			05/24/18 13:06	2
Methyl acetate	20	U	20	2.9	ug/L			05/24/18 13:06	2
Methylcyclohexane	2.0	U	2.0	0.90	ug/L			05/24/18 13:06	2
Methylene Chloride	10	U	10	1.1	ug/L			05/24/18 13:06	2
4-Methyl-2-pentanone (MIBK)	20	U	20	1.4	ug/L			05/24/18 13:06	2
Methyl tert-butyl ether	2.0	U	2.0	0.54	ug/L			05/24/18 13:06	2
Styrene	2.0	U	2.0	0.46	ug/L			05/24/18 13:06	2
1,1,2,2-Tetrachloroethane	2.0	U*	2.0	0.64	ug/L			05/24/18 13:06	2
Tetrachloroethene	2.0	U	2.0	0.60	ug/L			05/24/18 13:06	2
Toluene	2.0	U*	2.0	0.46	ug/L			05/24/18 13:06	2
trans-1,2-Dichloroethene	2.0	U	2.0	0.58	ug/L			05/24/18 13:06	2
trans-1,3-Dichloropropene	2.0	U*	2.0	0.62	ug/L			05/24/18 13:06	2
1,2,4-Trichlorobenzene	2.0	U	2.0	0.54	ug/L			05/24/18 13:06	2
1,1,1-Trichloroethane	2.0	U	2.0	0.46	ug/L			05/24/18 13:06	2

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-65\_051018**

**Lab Sample ID: 240-95545-9**

**Date Collected: 05/10/18 11:25**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	2.0	U *	2.0	0.68	ug/L			05/24/18 13:06	2
Trichloroethene	2.0	U	2.0	0.66	ug/L			05/24/18 13:06	2
Trichlorofluoromethane	2.0	U	2.0	1.0	ug/L			05/24/18 13:06	2
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	0.82	ug/L			05/24/18 13:06	2
1,2,3-Trimethylbenzene	10	U	10	0.44	ug/L			05/24/18 13:06	2
1,2,4-Trimethylbenzene	2.0	U	2.0	0.48	ug/L			05/24/18 13:06	2
1,3,5-Trimethylbenzene	2.0	U	2.0	0.48	ug/L			05/24/18 13:06	2
<b>Vinyl chloride</b>	<b>41</b>		2.0	0.90	ug/L			05/24/18 13:06	2
Xylenes, Total	4.0	U	4.0	0.48	ug/L			05/24/18 13:06	2
<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)	75		69 - 120					05/24/18 13:06	2
Dibromofluoromethane (Surr)	104		69 - 124					05/24/18 13:06	2
1,2-Dichloroethane-d4 (Surr)	106		61 - 138					05/24/18 13:06	2
Toluene-d8 (Surr)	111		73 - 120					05/24/18 13:06	2

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-22\_051018**

**Lab Sample ID: 240-95545-10**

**Date Collected: 05/10/18 12:20**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	34		2.0	0.24	ug/L			05/18/18 22:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		63 - 125					05/18/18 22:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	670	U	670	120	ug/L			05/24/18 13:29	66.67
Benzene	67	U	67	19	ug/L			05/24/18 13:29	66.67
Bromodichloromethane	67	U	67	20	ug/L			05/24/18 13:29	66.67
Bromoform	67	U	67	29	ug/L			05/24/18 13:29	66.67
Bromomethane	67	U	67	28	ug/L			05/24/18 13:29	66.67
2-Butanone (MEK)	670	U	670	68	ug/L			05/24/18 13:29	66.67
Carbon disulfide	330	U	330	23	ug/L			05/24/18 13:29	66.67
Carbon tetrachloride	67	U	67	23	ug/L			05/24/18 13:29	66.67
Chlorobenzene	67	U	67	21	ug/L			05/24/18 13:29	66.67
Chloroethane	67	U	67	27	ug/L			05/24/18 13:29	66.67
Chloroform	67	U *	67	21	ug/L			05/24/18 13:29	66.67
Chloromethane	67	U	67	29	ug/L			05/24/18 13:29	66.67
<b>cis-1,2-Dichloroethene</b>	<b>180</b>		67	20	ug/L			05/24/18 13:29	66.67
cis-1,3-Dichloropropene	67	U	67	17	ug/L			05/24/18 13:29	66.67
Cyclohexane	67	U	67	29	ug/L			05/24/18 13:29	66.67
Dibromochloromethane	67	U	67	17	ug/L			05/24/18 13:29	66.67
1,2-Dibromo-3-Chloropropane	67	U	67	31	ug/L			05/24/18 13:29	66.67
1,2-Dibromoethane	67	U	67	15	ug/L			05/24/18 13:29	66.67
1,2-Dichlorobenzene	67	U	67	17	ug/L			05/24/18 13:29	66.67
1,3-Dichlorobenzene	67	U	67	21	ug/L			05/24/18 13:29	66.67
1,4-Dichlorobenzene	67	U	67	15	ug/L			05/24/18 13:29	66.67
Dichlorodifluoromethane	67	U	67	33	ug/L			05/24/18 13:29	66.67
1,1-Dichloroethane	67	U *	67	17	ug/L			05/24/18 13:29	66.67
1,2-Dichloroethane	67	U	67	20	ug/L			05/24/18 13:29	66.67
1,1-Dichloroethene	67	U	67	18	ug/L			05/24/18 13:29	66.67
1,2-Dichloropropane	67	U	67	20	ug/L			05/24/18 13:29	66.67
Diethyl ether	130	U	130	23	ug/L			05/24/18 13:29	66.67
Ethylbenzene	67	U	67	17	ug/L			05/24/18 13:29	66.67
2-Hexanone	670	U	670	82	ug/L			05/24/18 13:29	66.67
Isopropylbenzene	67	U	67	14	ug/L			05/24/18 13:29	66.67
Methyl acetate	670	U	670	95	ug/L			05/24/18 13:29	66.67
Methylcyclohexane	67	U	67	30	ug/L			05/24/18 13:29	66.67
Methylene Chloride	330	U	330	35	ug/L			05/24/18 13:29	66.67
4-Methyl-2-pentanone (MIBK)	670	U	670	47	ug/L			05/24/18 13:29	66.67
Methyl tert-butyl ether	67	U	67	18	ug/L			05/24/18 13:29	66.67
Styrene	67	U	67	15	ug/L			05/24/18 13:29	66.67
1,1,2,2-Tetrachloroethane	67	U *	67	21	ug/L			05/24/18 13:29	66.67
Tetrachloroethene	67	U	67	20	ug/L			05/24/18 13:29	66.67
Toluene	67	U *	67	15	ug/L			05/24/18 13:29	66.67
trans-1,2-Dichloroethene	67	U	67	19	ug/L			05/24/18 13:29	66.67
trans-1,3-Dichloropropene	67	U *	67	21	ug/L			05/24/18 13:29	66.67
1,2,4-Trichlorobenzene	67	U	67	18	ug/L			05/24/18 13:29	66.67
1,1,1-Trichloroethane	67	U	67	15	ug/L			05/24/18 13:29	66.67

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-22\_051018**

**Lab Sample ID: 240-95545-10**

**Date Collected: 05/10/18 12:20**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	67	U *	67	23	ug/L			05/24/18 13:29	66.67
Trichloroethene	67	U	67	22	ug/L			05/24/18 13:29	66.67
Trichlorofluoromethane	67	U	67	33	ug/L			05/24/18 13:29	66.67
1,1,2-Trichloro-1,2,2-trifluoroethane	67	U	67	27	ug/L			05/24/18 13:29	66.67
1,2,3-Trimethylbenzene	330	U	330	15	ug/L			05/24/18 13:29	66.67
1,2,4-Trimethylbenzene	67	U	67	16	ug/L			05/24/18 13:29	66.67
1,3,5-Trimethylbenzene	67	U	67	16	ug/L			05/24/18 13:29	66.67
<b>Vinyl chloride</b>	<b>2400</b>		67	30	ug/L			05/24/18 13:29	66.67
Xylenes, Total	130	U	130	16	ug/L			05/24/18 13:29	66.67
<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)	78		69 - 120					05/24/18 13:29	66.67
Dibromofluoromethane (Surr)	107		69 - 124					05/24/18 13:29	66.67
1,2-Dichloroethane-d4 (Surr)	112		61 - 138					05/24/18 13:29	66.67
Toluene-d8 (Surr)	115		73 - 120					05/24/18 13:29	66.67

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-47\_051018**

**Lab Sample ID: 240-95545-11**

**Date Collected: 05/10/18 17:00**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/18/18 22:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		63 - 125					05/18/18 22:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	50	U H	50	8.8	ug/L			05/25/18 16:59	5
Benzene	5.0	U H	5.0	1.4	ug/L			05/25/18 16:59	5
Bromodichloromethane	5.0	U H	5.0	1.5	ug/L			05/25/18 16:59	5
Bromoform	5.0	U H	5.0	2.2	ug/L			05/25/18 16:59	5
Bromomethane	5.0	U H	5.0	2.1	ug/L			05/25/18 16:59	5
2-Butanone (MEK)	50	U H	50	5.1	ug/L			05/25/18 16:59	5
Carbon disulfide	25	U H	25	1.7	ug/L			05/25/18 16:59	5
Carbon tetrachloride	5.0	U H	5.0	1.8	ug/L			05/25/18 16:59	5
Chlorobenzene	5.0	U H	5.0	1.6	ug/L			05/25/18 16:59	5
Chloroethane	5.0	U H	5.0	2.1	ug/L			05/25/18 16:59	5
Chloroform	5.0	U H	5.0	1.6	ug/L			05/25/18 16:59	5
Chloromethane	5.0	U H	5.0	2.2	ug/L			05/25/18 16:59	5
<b>cis-1,2-Dichloroethene</b>	<b>49</b>	<b>H</b>	5.0	1.5	ug/L			05/25/18 16:59	5
cis-1,3-Dichloropropene	5.0	U H	5.0	1.3	ug/L			05/25/18 16:59	5
Cyclohexane	5.0	U H	5.0	2.2	ug/L			05/25/18 16:59	5
Dibromochloromethane	5.0	U H	5.0	1.3	ug/L			05/25/18 16:59	5
1,2-Dibromo-3-Chloropropane	5.0	U H	5.0	2.4	ug/L			05/25/18 16:59	5
1,2-Dibromoethane	5.0	U H	5.0	1.2	ug/L			05/25/18 16:59	5
1,2-Dichlorobenzene	5.0	U H	5.0	1.3	ug/L			05/25/18 16:59	5
1,3-Dichlorobenzene	5.0	U H	5.0	1.6	ug/L			05/25/18 16:59	5
1,4-Dichlorobenzene	5.0	U H	5.0	1.2	ug/L			05/25/18 16:59	5
Dichlorodifluoromethane	5.0	U H	5.0	2.5	ug/L			05/25/18 16:59	5
<b>1,1-Dichloroethane</b>	<b>2.9</b>	<b>J H</b>	5.0	1.3	ug/L			05/25/18 16:59	5
1,2-Dichloroethane	5.0	U H	5.0	1.5	ug/L			05/25/18 16:59	5
1,1-Dichloroethene	5.0	U H	5.0	1.4	ug/L			05/25/18 16:59	5
1,2-Dichloropropane	5.0	U H	5.0	1.5	ug/L			05/25/18 16:59	5
Diethyl ether	10	U H	10	1.8	ug/L			05/25/18 16:59	5
Ethylbenzene	5.0	U H	5.0	1.3	ug/L			05/25/18 16:59	5
2-Hexanone	50	U H	50	6.2	ug/L			05/25/18 16:59	5
Isopropylbenzene	5.0	U H	5.0	1.1	ug/L			05/25/18 16:59	5
Methyl acetate	50	U H	50	7.2	ug/L			05/25/18 16:59	5
Methylcyclohexane	5.0	U H	5.0	2.3	ug/L			05/25/18 16:59	5
Methylene Chloride	25	U H	25	2.7	ug/L			05/25/18 16:59	5
4-Methyl-2-pentanone (MIBK)	50	U H	50	3.6	ug/L			05/25/18 16:59	5
Methyl tert-butyl ether	5.0	U H	5.0	1.4	ug/L			05/25/18 16:59	5
Styrene	5.0	U H	5.0	1.2	ug/L			05/25/18 16:59	5
1,1,1,2-Tetrachloroethane	5.0	U H	5.0	1.6	ug/L			05/25/18 16:59	5
Tetrachloroethene	5.0	U H	5.0	1.5	ug/L			05/25/18 16:59	5
Toluene	5.0	U H	5.0	1.2	ug/L			05/25/18 16:59	5
<b>trans-1,2-Dichloroethene</b>	<b>6.5</b>	<b>H</b>	5.0	1.5	ug/L			05/25/18 16:59	5
trans-1,3-Dichloropropene	5.0	U H	5.0	1.6	ug/L			05/25/18 16:59	5
1,2,4-Trichlorobenzene	5.0	U H	5.0	1.4	ug/L			05/25/18 16:59	5
<b>1,1,1-Trichloroethane</b>	<b>1.9</b>	<b>J H</b>	5.0	1.2	ug/L			05/25/18 16:59	5

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-47\_051018**

**Lab Sample ID: 240-95545-11**

**Date Collected: 05/10/18 17:00**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	5.0	U H	5.0	1.7	ug/L			05/25/18 16:59	5
Trichloroethene	5.0	U H	5.0	1.7	ug/L			05/25/18 16:59	5
Trichlorofluoromethane	5.0	U H	5.0	2.5	ug/L			05/25/18 16:59	5
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U H	5.0	2.1	ug/L			05/25/18 16:59	5
1,2,3-Trimethylbenzene	25	U H	25	1.1	ug/L			05/25/18 16:59	5
1,2,4-Trimethylbenzene	5.0	U H	5.0	1.2	ug/L			05/25/18 16:59	5
1,3,5-Trimethylbenzene	5.0	U H	5.0	1.2	ug/L			05/25/18 16:59	5
<b>Vinyl chloride</b>	<b>88</b>	<b>H</b>	5.0	2.3	ug/L			05/25/18 16:59	5
Xylenes, Total	10	U H	10	1.2	ug/L			05/25/18 16:59	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		69 - 120		05/25/18 16:59	5
Dibromofluoromethane (Surr)	87		69 - 124		05/25/18 16:59	5
1,2-Dichloroethane-d4 (Surr)	89		61 - 138		05/25/18 16:59	5
Toluene-d8 (Surr)	92		73 - 120		05/25/18 16:59	5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	62	X	69 - 120		05/24/18 13:52	10
Dibromofluoromethane (Surr)	89		69 - 124		05/24/18 13:52	10
1,2-Dichloroethane-d4 (Surr)	96		61 - 138		05/24/18 13:52	10
Toluene-d8 (Surr)	96		73 - 120		05/24/18 13:52	10



# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-14\_051018**

**Lab Sample ID: 240-95545-12**

**Date Collected: 05/11/18 10:42**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/18/18 22:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		63 - 125					05/18/18 22:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.0	J	10	1.8	ug/L			05/24/18 17:36	1
Benzene	1.0	U	1.0	0.28	ug/L			05/24/18 17:36	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/24/18 17:36	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/24/18 17:36	1
Bromomethane	1.0	U	1.0	0.42	ug/L			05/24/18 17:36	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/24/18 17:36	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/24/18 17:36	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/24/18 17:36	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 17:36	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/24/18 17:36	1
Chloroform	1.0	U	1.0	0.31	ug/L			05/24/18 17:36	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/24/18 17:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 17:36	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/24/18 17:36	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/24/18 17:36	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/24/18 17:36	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/24/18 17:36	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/24/18 17:36	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/24/18 17:36	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 17:36	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/24/18 17:36	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 17:36	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			05/24/18 17:36	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/24/18 17:36	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 17:36	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/24/18 17:36	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			05/24/18 17:36	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/24/18 17:36	1
2-Hexanone	10	U	10	1.2	ug/L			05/24/18 17:36	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/24/18 17:36	1
Methyl acetate	10	U	10	1.4	ug/L			05/24/18 17:36	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/24/18 17:36	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			05/24/18 17:36	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/24/18 17:36	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/24/18 17:36	1
Styrene	1.0	U	1.0	0.23	ug/L			05/24/18 17:36	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			05/24/18 17:36	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 17:36	1
Toluene	1.0	U	1.0	0.23	ug/L			05/24/18 17:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 17:36	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			05/24/18 17:36	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/24/18 17:36	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/24/18 17:36	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-14\_051018**

**Lab Sample ID: 240-95545-12**

**Date Collected: 05/11/18 10:42**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			05/24/18 17:36	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 17:36	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 17:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/24/18 17:36	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/24/18 17:36	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 17:36	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 17:36	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 17:36	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/24/18 17:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		69 - 120					05/24/18 17:36	1
Dibromofluoromethane (Surr)	96		69 - 124					05/24/18 17:36	1
1,2-Dichloroethane-d4 (Surr)	103		61 - 138					05/24/18 17:36	1
Toluene-d8 (Surr)	94		73 - 120					05/24/18 17:36	1

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-49\_051018**

**Lab Sample ID: 240-95545-13**

**Date Collected: 05/11/18 12:07**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>5.5</b>		2.0	0.24	ug/L			05/18/18 23:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		63 - 125					05/18/18 23:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Acetone</b>	<b>3900</b>	<b>J</b>	17000	2900	ug/L			05/24/18 18:00	1666.67
Benzene	1700	U	1700	470	ug/L			05/24/18 18:00	1666.67
Bromodichloromethane	1700	U	1700	500	ug/L			05/24/18 18:00	1666.67
Bromoform	1700	U	1700	720	ug/L			05/24/18 18:00	1666.67
Bromomethane	1700	U	1700	700	ug/L			05/24/18 18:00	1666.67
2-Butanone (MEK)	17000	U	17000	1700	ug/L			05/24/18 18:00	1666.67
Carbon disulfide	8300	U	8300	570	ug/L			05/24/18 18:00	1666.67
Carbon tetrachloride	1700	U	1700	580	ug/L			05/24/18 18:00	1666.67
Chlorobenzene	1700	U	1700	530	ug/L			05/24/18 18:00	1666.67
Chloroethane	1700	U	1700	680	ug/L			05/24/18 18:00	1666.67
Chloroform	1700	U	1700	520	ug/L			05/24/18 18:00	1666.67
Chloromethane	1700	U	1700	720	ug/L			05/24/18 18:00	1666.67
<b>cis-1,2-Dichloroethene</b>	<b>17000</b>		1700	500	ug/L			05/24/18 18:00	1666.67
cis-1,3-Dichloropropene	1700	U	1700	430	ug/L			05/24/18 18:00	1666.67
Cyclohexane	1700	U	1700	730	ug/L			05/24/18 18:00	1666.67
Dibromochloromethane	1700	U	1700	420	ug/L			05/24/18 18:00	1666.67
1,2-Dibromo-3-Chloropropane	1700	U	1700	780	ug/L			05/24/18 18:00	1666.67
1,2-Dibromoethane	1700	U	1700	380	ug/L			05/24/18 18:00	1666.67
1,2-Dichlorobenzene	1700	U	1700	430	ug/L			05/24/18 18:00	1666.67
1,3-Dichlorobenzene	1700	U	1700	530	ug/L			05/24/18 18:00	1666.67
1,4-Dichlorobenzene	1700	U	1700	380	ug/L			05/24/18 18:00	1666.67
Dichlorodifluoromethane	1700	U	1700	830	ug/L			05/24/18 18:00	1666.67
1,1-Dichloroethane	1700	U	1700	420	ug/L			05/24/18 18:00	1666.67
1,2-Dichloroethane	1700	U	1700	500	ug/L			05/24/18 18:00	1666.67
1,1-Dichloroethene	1700	U	1700	450	ug/L			05/24/18 18:00	1666.67
1,2-Dichloropropane	1700	U	1700	500	ug/L			05/24/18 18:00	1666.67
Diethyl ether	3300	U	3300	580	ug/L			05/24/18 18:00	1666.67
Ethylbenzene	1700	U	1700	430	ug/L			05/24/18 18:00	1666.67
2-Hexanone	17000	U	17000	2100	ug/L			05/24/18 18:00	1666.67
Isopropylbenzene	1700	U	1700	350	ug/L			05/24/18 18:00	1666.67
Methyl acetate	17000	U	17000	2400	ug/L			05/24/18 18:00	1666.67
Methylcyclohexane	1700	U	1700	750	ug/L			05/24/18 18:00	1666.67
<b>Methylene Chloride</b>	<b>940</b>	<b>J</b>	8300	880	ug/L			05/24/18 18:00	1666.67
4-Methyl-2-pentanone (MIBK)	17000	U	17000	1200	ug/L			05/24/18 18:00	1666.67
Methyl tert-butyl ether	1700	U	1700	450	ug/L			05/24/18 18:00	1666.67
Styrene	1700	U	1700	380	ug/L			05/24/18 18:00	1666.67
1,1,1,2-Tetrachloroethane	1700	U	1700	530	ug/L			05/24/18 18:00	1666.67
Tetrachloroethene	1700	U	1700	500	ug/L			05/24/18 18:00	1666.67
Toluene	1700	U	1700	380	ug/L			05/24/18 18:00	1666.67
trans-1,2-Dichloroethene	1700	U	1700	480	ug/L			05/24/18 18:00	1666.67
trans-1,3-Dichloropropene	1700	U	1700	520	ug/L			05/24/18 18:00	1666.67
1,2,4-Trichlorobenzene	1700	U	1700	450	ug/L			05/24/18 18:00	1666.67
1,1,1-Trichloroethane	1700	U	1700	380	ug/L			05/24/18 18:00	1666.67

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-49\_051018**

**Lab Sample ID: 240-95545-13**

**Date Collected: 05/11/18 12:07**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1700	U	1700	570	ug/L			05/24/18 18:00	1666.67
Trichloroethene	1700	U	1700	550	ug/L			05/24/18 18:00	1666.67
Trichlorofluoromethane	1700	U	1700	830	ug/L			05/24/18 18:00	1666.67
1,1,2-Trichloro-1,2,2-trifluoroethane	1700	U	1700	680	ug/L			05/24/18 18:00	1666.67
1,2,3-Trimethylbenzene	8300	U	8300	370	ug/L			05/24/18 18:00	1666.67
1,2,4-Trimethylbenzene	1700	U	1700	400	ug/L			05/24/18 18:00	1666.67
1,3,5-Trimethylbenzene	1700	U	1700	400	ug/L			05/24/18 18:00	1666.67
<b>Vinyl chloride</b>	<b>8100</b>		1700	750	ug/L			05/24/18 18:00	1666.67
Xylenes, Total	3300	U	3300	400	ug/L			05/24/18 18:00	1666.67

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		69 - 120		05/24/18 18:00	1666.67
Dibromofluoromethane (Surr)	98		69 - 124		05/24/18 18:00	1666.67
1,2-Dichloroethane-d4 (Surr)	103		61 - 138		05/24/18 18:00	1666.67
Toluene-d8 (Surr)	95		73 - 120		05/24/18 18:00	1666.67

# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-95545-14**

**Date Collected: 05/10/18 00:00**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3.5	J	10	1.8	ug/L			05/24/18 14:15	1
Benzene	1.0	U	1.0	0.28	ug/L			05/24/18 14:15	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/24/18 14:15	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/24/18 14:15	1
Bromomethane	1.0	U	1.0	0.42	ug/L			05/24/18 14:15	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/24/18 14:15	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/24/18 14:15	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/24/18 14:15	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 14:15	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/24/18 14:15	1
Chloroform	1.0	U *	1.0	0.31	ug/L			05/24/18 14:15	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/24/18 14:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 14:15	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/24/18 14:15	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/24/18 14:15	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/24/18 14:15	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/24/18 14:15	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/24/18 14:15	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/24/18 14:15	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 14:15	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/24/18 14:15	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 14:15	1
1,1-Dichloroethane	1.0	U *	1.0	0.25	ug/L			05/24/18 14:15	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/24/18 14:15	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 14:15	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/24/18 14:15	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			05/24/18 14:15	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/24/18 14:15	1
2-Hexanone	10	U	10	1.2	ug/L			05/24/18 14:15	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/24/18 14:15	1
Methyl acetate	10	U	10	1.4	ug/L			05/24/18 14:15	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/24/18 14:15	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			05/24/18 14:15	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/24/18 14:15	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/24/18 14:15	1
Styrene	1.0	U	1.0	0.23	ug/L			05/24/18 14:15	1
1,1,2,2-Tetrachloroethane	1.0	U *	1.0	0.32	ug/L			05/24/18 14:15	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 14:15	1
Toluene	1.0	U *	1.0	0.23	ug/L			05/24/18 14:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 14:15	1
trans-1,3-Dichloropropene	1.0	U *	1.0	0.31	ug/L			05/24/18 14:15	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/24/18 14:15	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/24/18 14:15	1
1,1,2-Trichloroethane	1.0	U *	1.0	0.34	ug/L			05/24/18 14:15	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 14:15	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 14:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/24/18 14:15	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/24/18 14:15	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 14:15	1

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# Client Sample Results

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-95545-14**

**Date Collected: 05/10/18 00:00**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 14:15	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 14:15	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/24/18 14:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	70		69 - 120		05/24/18 14:15	1
Dibromofluoromethane (Surr)	97		69 - 124		05/24/18 14:15	1
1,2-Dichloroethane-d4 (Surr)	100		61 - 138		05/24/18 14:15	1
Toluene-d8 (Surr)	107		73 - 120		05/24/18 14:15	1



# Surrogate Summary

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

TestAmerica Job ID: 240-95545-1

## 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)
240-95530-A-2 MS	Matrix Spike	94	96	101	99
240-95530-C-2 MSD	Matrix Spike Duplicate	96	96	102	100
240-95533-A-49 MSD	Matrix Spike Duplicate	92	98	92	102
240-95533-F-49 MS	Matrix Spike	94	99	89	101
240-95545-1	MW-2_051018	76	106	108	117
240-95545-1	MW-2_051018	93	90	93	100
240-95545-2	MW-3_051018	73	108	109	111
240-95545-3	MW-5_051018	77	127 X	129	97
240-95545-4 - RA	MW-4_051018	91	126 X	126	139 X
240-95545-4	MW-4_051018	90	93	95	101
240-95545-5	MW-10_051018	73	110	112	91
240-95545-6	MW-1_051118	87	100	107	97
240-95545-7	MW-9_051118	89	95	103	95
240-95545-8	MW-66_051018	74	110	112	93
240-95545-9	MW-65_051018	75	104	106	111
240-95545-10	MW-22_051018	78	107	112	115
240-95545-11 - RA	MW-47_051018	62 X	89	96	96
240-95545-11	MW-47_051018	85	87	89	92
240-95545-12	MW-14_051018	89	96	103	94
240-95545-13	MW-49_051018	90	98	103	95
240-95545-14	TRIP BLANK	70	97	100	107
240-95585-D-2 MS	Matrix Spike	92	95	88	98
240-95585-D-2 MSD	Matrix Spike Duplicate	92	97	98	100
LCS 240-328193/4	Lab Control Sample	96	98	93	102
LCS 240-328344/4	Lab Control Sample	92	96	95	99
LCS 240-328344/5	Lab Control Sample	87	96	98	93
LCS 240-328363/4	Lab Control Sample	83	100	99	114
LCS 240-328594/4	Lab Control Sample	93	91	89	96
MB 240-328193/6	Method Blank	78	123	102	95
MB 240-328344/7	Method Blank	93	97	101	98
MB 240-328363/6	Method Blank	74	108	110	117
MB 240-328594/6	Method Blank	88	93	91	94

**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)
240-95545-1	MW-2_051018	96
240-95545-2	MW-3_051018	95
240-95545-3	MW-5_051018	103
240-95545-4	MW-4_051018	75

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# Surrogate Summary

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

TestAmerica Job ID: 240-95545-1

## 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)
240-95545-4 MS	MW-4_051018	84
240-95545-4 MSD	MW-4_051018	81
240-95545-5	MW-10_051018	102
240-95545-6	MW-1_051118	98
240-95545-7	MW-9_051118	95
240-95545-8	MW-66_051018	92
240-95545-9	MW-65_051018	90
240-95545-10	MW-22_051018	95
240-95545-11	MW-47_051018	90
240-95545-12	MW-14_051018	92
240-95545-13	MW-49_051018	83
LCS 240-327549/4	Lab Control Sample	96
MB 240-327549/5	Method Blank	93

#### Surrogate Legend

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



# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: MB 240-328193/6**

**Matrix: Water**

**Analysis Batch: 328193**

**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	1.8	ug/L			05/23/18 14:11	1
Benzene	1.0	U	1.0	0.28	ug/L			05/23/18 14:11	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/23/18 14:11	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/23/18 14:11	1
Bromomethane	1.0	U	1.0	0.42	ug/L			05/23/18 14:11	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/23/18 14:11	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/23/18 14:11	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/23/18 14:11	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/23/18 14:11	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/23/18 14:11	1
Chloroform	1.0	U	1.0	0.31	ug/L			05/23/18 14:11	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/23/18 14:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 14:11	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/23/18 14:11	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/23/18 14:11	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/23/18 14:11	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/23/18 14:11	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/23/18 14:11	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/23/18 14:11	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/23/18 14:11	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/23/18 14:11	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/23/18 14:11	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			05/23/18 14:11	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/23/18 14:11	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 14:11	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/23/18 14:11	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			05/23/18 14:11	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/23/18 14:11	1
2-Hexanone	10	U	10	1.2	ug/L			05/23/18 14:11	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/23/18 14:11	1
Methyl acetate	10	U	10	1.4	ug/L			05/23/18 14:11	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/23/18 14:11	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			05/23/18 14:11	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/23/18 14:11	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/23/18 14:11	1
Styrene	1.0	U	1.0	0.23	ug/L			05/23/18 14:11	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			05/23/18 14:11	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 14:11	1
Toluene	1.0	U	1.0	0.23	ug/L			05/23/18 14:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 14:11	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			05/23/18 14:11	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/23/18 14:11	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/23/18 14:11	1
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			05/23/18 14:11	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 14:11	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/23/18 14:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/23/18 14:11	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/23/18 14:11	1

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# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: MB 240-328193/6**  
**Matrix: Water**  
**Analysis Batch: 328193**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/23/18 14:11	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/23/18 14:11	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/18 14:11	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/23/18 14:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		69 - 120		05/23/18 14:11	1
Dibromofluoromethane (Surr)	123		69 - 124		05/23/18 14:11	1
1,2-Dichloroethane-d4 (Surr)	102		61 - 138		05/23/18 14:11	1
Toluene-d8 (Surr)	95		73 - 120		05/23/18 14:11	1

**Lab Sample ID: LCS 240-328193/4**  
**Matrix: Water**  
**Analysis Batch: 328193**

**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	25.8		ug/L		129	35 - 131
Benzene	10.0	10.1		ug/L		101	79 - 120
Bromodichloromethane	10.0	9.56		ug/L		96	79 - 125
Bromoform	10.0	8.09		ug/L		81	55 - 145
Bromomethane	10.0	16.1	*	ug/L		161	17 - 158
2-Butanone (MEK)	20.0	18.5		ug/L		93	43 - 149
Carbon disulfide	10.0	13.7		ug/L		137	49 - 141
Carbon tetrachloride	10.0	10.3		ug/L		103	55 - 171
Chlorobenzene	10.0	10.4		ug/L		104	80 - 120
Chloroethane	10.0	13.1		ug/L		131	10 - 149
Chloroform	10.0	10.3		ug/L		103	80 - 120
Chloromethane	10.0	8.92		ug/L		89	59 - 124
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	77 - 120
cis-1,3-Dichloropropene	10.0	8.09		ug/L		81	75 - 120
Cyclohexane	10.0	10.4		ug/L		104	66 - 135
Dibromochloromethane	10.0	8.95		ug/L		90	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	7.26		ug/L		73	50 - 130
1,2-Dibromoethane	10.0	9.60		ug/L		96	80 - 120
1,2-Dichlorobenzene	10.0	9.84		ug/L		98	80 - 120
1,3-Dichlorobenzene	10.0	9.68		ug/L		97	80 - 120
1,4-Dichlorobenzene	10.0	9.74		ug/L		97	80 - 120
Dichlorodifluoromethane	10.0	7.70		ug/L		77	42 - 141
1,1-Dichloroethane	10.0	12.9	*	ug/L		129	74 - 120
1,2-Dichloroethane	10.0	9.67		ug/L		97	68 - 133
1,1-Dichloroethene	10.0	14.3	*	ug/L		143	65 - 127
1,2-Dichloropropane	10.0	10.7		ug/L		107	78 - 127
Diethyl ether	10.0	13.7	*	ug/L		137	72 - 125
Ethylbenzene	10.0	10.4		ug/L		104	80 - 120
2-Hexanone	20.0	16.9		ug/L		85	28 - 169
Isopropylbenzene	10.0	9.92		ug/L		99	80 - 128
Methyl acetate	20.0	23.3		ug/L		116	63 - 137
Methylcyclohexane	10.0	9.36		ug/L		94	63 - 141

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: LCS 240-328193/4**  
**Matrix: Water**  
**Analysis Batch: 328193**

**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	14.6	*	ug/L		146	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	17.1		ug/L		86	53 - 144
Methyl tert-butyl ether	10.0	10.3		ug/L		103	73 - 120
Styrene	10.0	10.3		ug/L		103	80 - 121
1,1,2,2-Tetrachloroethane	10.0	9.72		ug/L		97	58 - 122
Tetrachloroethene	10.0	10.4		ug/L		104	80 - 122
Toluene	10.0	10.7		ug/L		107	78 - 120
trans-1,2-Dichloroethene	10.0	14.0	*	ug/L		140	74 - 124
trans-1,3-Dichloropropene	10.0	7.41		ug/L		74	67 - 120
1,2,4-Trichlorobenzene	10.0	6.28		ug/L		63	34 - 141
1,1,1-Trichloroethane	10.0	9.94		ug/L		99	64 - 147
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	76 - 121
Trichloroethene	10.0	9.62		ug/L		96	76 - 124
Trichlorofluoromethane	10.0	14.2		ug/L		142	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	13.3		ug/L		133	65 - 144
1,2,4-Trimethylbenzene	10.0	9.58		ug/L		96	80 - 120
1,3,5-Trimethylbenzene	10.0	9.58		ug/L		96	79 - 120
Vinyl chloride	10.0	11.1		ug/L		111	65 - 124
Xylenes, Total	20.0	20.6		ug/L		103	80 - 120
1,4-Dioxane	200	153		ug/L		76	35 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		69 - 120
Dibromofluoromethane (Surr)	98		69 - 124
1,2-Dichloroethane-d4 (Surr)	93		61 - 138
Toluene-d8 (Surr)	102		73 - 120

**Lab Sample ID: 240-95533-A-49 MSD**  
**Matrix: Water**  
**Analysis Batch: 328193**

**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
Acetone	10	U	20.0	23.4		ug/L		117	19 - 133	25	35
Benzene	1.0	U	10.0	9.02		ug/L		90	69 - 127	1	10
Bromodichloromethane	1.0	U F1 F2	10.0	8.42	F2	ug/L		84	75 - 128	18	13
Bromoform	1.0	U	10.0	6.63		ug/L		66	61 - 135	6	13
Bromomethane	1.0	U *	10.0	13.2		ug/L		132	10 - 148	31	35
2-Butanone (MEK)	10	U	20.0	15.7		ug/L		78	34 - 153	7	23
Carbon disulfide	5.0	U F2	10.0	10.8	F2	ug/L		108	46 - 143	27	18
Carbon tetrachloride	1.0	U	10.0	8.60		ug/L		86	53 - 175	3	17
Chlorobenzene	1.0	U	10.0	9.31		ug/L		93	76 - 120	2	12
Chloroethane	1.0	U	10.0	12.6		ug/L		126	10 - 141	30	35
Chloroform	1.0	U	10.0	9.08		ug/L		91	74 - 125	1	11
Chloromethane	1.0	U F1 F2	10.0	6.01	F2	ug/L		60	34 - 127	66	25
cis-1,2-Dichloroethene	1.0	U	10.0	9.03		ug/L		90	69 - 127	2	11
cis-1,3-Dichloropropene	1.0	U F1 F2	10.0	6.17	F1 F2	ug/L		62	68 - 120	18	13
Cyclohexane	1.0	U	10.0	8.65		ug/L		86	56 - 135	11	35

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: 240-95533-A-49 MSD**

**Matrix: Water**

**Analysis Batch: 328193**

**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
Dibromochloromethane	1.0	U	10.0	7.65		ug/L		76	62 - 131	5	15
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	5.95		ug/L		60	48 - 130	3	31
1,2-Dibromoethane	1.0	U	10.0	8.69		ug/L		87	73 - 121	0	12
1,2-Dichlorobenzene	1.0	U	10.0	8.59		ug/L		86	70 - 120	0	19
1,3-Dichlorobenzene	1.0	U	10.0	8.51		ug/L		85	71 - 120	1	18
1,4-Dichlorobenzene	1.0	U	10.0	8.65		ug/L		87	72 - 120	2	17
Dichlorodifluoromethane	1.0	U	10.0	7.19		ug/L		72	45 - 130	29	34
1,1-Dichloroethane	1.0	U *	10.0	9.09		ug/L		91	69 - 122	3	11
1,2-Dichloroethane	1.0	U	10.0	8.69		ug/L		87	64 - 138	5	11
1,1-Dichloroethene	1.0	U * F2	10.0	12.6	F2	ug/L		126	62 - 127	25	14
1,2-Dichloropropane	1.0	U	10.0	9.38		ug/L		94	72 - 131	1	12
Ethylbenzene	1.0	U	10.0	9.04		ug/L		90	72 - 121	2	15
2-Hexanone	10	U	20.0	15.5		ug/L		77	21 - 184	0	12
Isopropylbenzene	1.0	U	10.0	8.46		ug/L		85	70 - 132	3	16
Methyl acetate	10	U	20.0	16.1		ug/L		80	52 - 139	6	14
Methylcyclohexane	1.0	U	10.0	7.84		ug/L		78	46 - 139	21	35
Methylene Chloride	5.0	U *	10.0	9.34		ug/L		93	52 - 137	4	12
4-Methyl-2-pentanone (MIBK)	10	U F2	20.0	14.7	F2	ug/L		74	53 - 147	23	16
Methyl tert-butyl ether	1.0	U	10.0	7.13		ug/L		71	67 - 125	0	12
Styrene	1.0	U	10.0	8.93		ug/L		89	74 - 125	3	14
1,1,2,2-Tetrachloroethane	1.0	U	10.0	8.77		ug/L		88	51 - 123	2	17
Tetrachloroethene	1.0	U	10.0	9.23		ug/L		92	69 - 126	2	18
Toluene	1.0	U	10.0	9.59		ug/L		96	69 - 125	0	14
trans-1,2-Dichloroethene	1.0	U *	10.0	9.87		ug/L		99	66 - 131	2	11
trans-1,3-Dichloropropene	1.0	U F1	10.0	5.83	F1	ug/L		58	59 - 120	5	14
1,2,4-Trichlorobenzene	1.0	U	10.0	5.47		ug/L		55	26 - 138	1	35
1,1,1-Trichloroethane	1.0	U	10.0	8.65		ug/L		87	57 - 156	3	13
1,1,2-Trichloroethane	1.0	U	10.0	9.49		ug/L		95	68 - 127	2	11
Trichloroethene	1.0	U	10.0	8.39		ug/L		84	68 - 129	1	12
Trichlorofluoromethane	1.0	U F2	10.0	13.2	F2	ug/L		132	28 - 172	30	26
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U F2	10.0	11.1	F2	ug/L		111	58 - 137	36	35
Vinyl chloride	32	F1	10.0	31.1	F1	ug/L		-12	55 - 123	11	12

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	98		69 - 124
1,2-Dichloroethane-d4 (Surr)	92		61 - 138
Toluene-d8 (Surr)	102		73 - 120

**Lab Sample ID: 240-95533-F-49 MS**

**Matrix: Water**

**Analysis Batch: 328193**

**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	10	U	20.0	18.2		ug/L		91	19 - 133
Benzene	1.0	U	10.0	9.14		ug/L		91	69 - 127
Bromodichloromethane	1.0	U F1 F2	10.0	7.02	F1	ug/L		70	75 - 128

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

Lab Sample ID: 240-95533-F-49 MS

Matrix: Water

Analysis Batch: 328193

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
Bromoform	1.0	U	10.0	7.06		ug/L		71	61 - 135
Bromomethane	1.0	U *	10.0	9.60		ug/L		96	10 - 148
2-Butanone (MEK)	10	U	20.0	16.8		ug/L		84	34 - 153
Carbon disulfide	5.0	U F2	10.0	14.2		ug/L		142	46 - 143
Carbon tetrachloride	1.0	U	10.0	8.32		ug/L		83	53 - 175
Chlorobenzene	1.0	U	10.0	9.45		ug/L		95	76 - 120
Chloroethane	1.0	U	10.0	9.36		ug/L		94	10 - 141
Chloroform	1.0	U	10.0	8.98		ug/L		90	74 - 125
Chloromethane	1.0	U F1 F2	10.0	3.04	F1	ug/L		30	34 - 127
cis-1,2-Dichloroethene	1.0	U	10.0	9.22		ug/L		92	69 - 127
cis-1,3-Dichloropropene	1.0	U F1 F2	10.0	5.16	F1	ug/L		52	68 - 120
Cyclohexane	1.0	U	10.0	7.71		ug/L		77	56 - 135
Dibromochloromethane	1.0	U	10.0	8.01		ug/L		80	62 - 131
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	6.11		ug/L		61	48 - 130
1,2-Dibromoethane	1.0	U	10.0	8.70		ug/L		87	73 - 121
1,2-Dichlorobenzene	1.0	U	10.0	8.55		ug/L		86	70 - 120
1,3-Dichlorobenzene	1.0	U	10.0	8.39		ug/L		84	71 - 120
1,4-Dichlorobenzene	1.0	U	10.0	8.50		ug/L		85	72 - 120
Dichlorodifluoromethane	1.0	U	10.0	5.35		ug/L		54	45 - 130
1,1-Dichloroethane	1.0	U *	10.0	9.32		ug/L		93	69 - 122
1,2-Dichloroethane	1.0	U	10.0	8.30		ug/L		83	64 - 138
1,1-Dichloroethene	1.0	U * F2	10.0	9.78		ug/L		98	62 - 127
1,2-Dichloropropane	1.0	U	10.0	9.31		ug/L		93	72 - 131
Ethylbenzene	1.0	U	10.0	9.20		ug/L		92	72 - 121
2-Hexanone	10	U	20.0	15.4		ug/L		77	21 - 184
Isopropylbenzene	1.0	U	10.0	8.73		ug/L		87	70 - 132
Methyl acetate	10	U	20.0	17.0		ug/L		85	52 - 139
Methylcyclohexane	1.0	U	10.0	6.37		ug/L		64	46 - 139
Methylene Chloride	5.0	U *	10.0	9.69		ug/L		97	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U F2	20.0	11.7		ug/L		58	53 - 147
Methyl tert-butyl ether	1.0	U	10.0	7.16		ug/L		72	67 - 125
Styrene	1.0	U	10.0	9.16		ug/L		92	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U	10.0	8.62		ug/L		86	51 - 123
Tetrachloroethene	1.0	U	10.0	9.43		ug/L		94	69 - 126
Toluene	1.0	U	10.0	9.63		ug/L		96	69 - 125
trans-1,2-Dichloroethene	1.0	U *	10.0	10.1		ug/L		101	66 - 131
trans-1,3-Dichloropropene	1.0	U F1	10.0	6.14		ug/L		61	59 - 120
1,2,4-Trichlorobenzene	1.0	U	10.0	5.39		ug/L		54	26 - 138
1,1,1-Trichloroethane	1.0	U	10.0	8.42		ug/L		84	57 - 156
1,1,2-Trichloroethane	1.0	U	10.0	9.68		ug/L		97	68 - 127
Trichloroethene	1.0	U	10.0	8.46		ug/L		85	68 - 129
Trichlorofluoromethane	1.0	U F2	10.0	9.78		ug/L		98	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U F2	10.0	7.67		ug/L		77	58 - 137
Vinyl chloride	32	F1	10.0	27.8	F1	ug/L		-46	55 - 123

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		69 - 120

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: 240-95533-F-49 MS**  
**Matrix: Water**  
**Analysis Batch: 328193**

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	99		69 - 124
1,2-Dichloroethane-d4 (Surr)	89		61 - 138
Toluene-d8 (Surr)	101		73 - 120

**Lab Sample ID: MB 240-328344/7**  
**Matrix: Water**  
**Analysis Batch: 328344**

**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	1.8	ug/L			05/24/18 12:35	1
Benzene	1.0	U	1.0	0.28	ug/L			05/24/18 12:35	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/24/18 12:35	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/24/18 12:35	1
Bromomethane	1.0	U	1.0	0.42	ug/L			05/24/18 12:35	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/24/18 12:35	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/24/18 12:35	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/24/18 12:35	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 12:35	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/24/18 12:35	1
Chloroform	1.0	U	1.0	0.31	ug/L			05/24/18 12:35	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/24/18 12:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 12:35	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/24/18 12:35	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/24/18 12:35	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/24/18 12:35	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/24/18 12:35	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/24/18 12:35	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/24/18 12:35	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 12:35	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/24/18 12:35	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 12:35	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			05/24/18 12:35	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/24/18 12:35	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 12:35	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/24/18 12:35	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			05/24/18 12:35	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/24/18 12:35	1
2-Hexanone	10	U	10	1.2	ug/L			05/24/18 12:35	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/24/18 12:35	1
Methyl acetate	10	U	10	1.4	ug/L			05/24/18 12:35	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/24/18 12:35	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			05/24/18 12:35	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/24/18 12:35	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/24/18 12:35	1
Styrene	1.0	U	1.0	0.23	ug/L			05/24/18 12:35	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			05/24/18 12:35	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 12:35	1
Toluene	1.0	U	1.0	0.23	ug/L			05/24/18 12:35	1

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: MB 240-328344/7**  
**Matrix: Water**  
**Analysis Batch: 328344**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 12:35	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			05/24/18 12:35	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/24/18 12:35	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/24/18 12:35	1
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			05/24/18 12:35	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 12:35	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 12:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/24/18 12:35	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/24/18 12:35	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 12:35	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 12:35	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 12:35	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/24/18 12:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		69 - 120		05/24/18 12:35	1
Dibromofluoromethane (Surr)	97		69 - 124		05/24/18 12:35	1
1,2-Dichloroethane-d4 (Surr)	101		61 - 138		05/24/18 12:35	1
Toluene-d8 (Surr)	98		73 - 120		05/24/18 12:35	1

**Lab Sample ID: LCS 240-328344/4**  
**Matrix: Water**  
**Analysis Batch: 328344**

**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	21.4		ug/L		107	35 - 131
Benzene	10.0	10.5		ug/L		105	79 - 120
Bromodichloromethane	10.0	10.3		ug/L		103	79 - 125
Bromoform	10.0	9.53		ug/L		95	55 - 145
Bromomethane	10.0	10.7		ug/L		107	17 - 158
2-Butanone (MEK)	20.0	22.6		ug/L		113	43 - 149
Carbon disulfide	10.0	10.7		ug/L		107	49 - 141
Carbon tetrachloride	10.0	9.63		ug/L		96	55 - 171
Chlorobenzene	10.0	10.7		ug/L		107	80 - 120
Chloroethane	10.0	11.9		ug/L		119	10 - 149
Chloroform	10.0	10.7		ug/L		107	80 - 120
Chloromethane	10.0	9.95		ug/L		100	59 - 124
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	77 - 120
cis-1,3-Dichloropropene	10.0	9.17		ug/L		92	75 - 120
Cyclohexane	10.0	10.8		ug/L		108	66 - 135
Dibromochloromethane	10.0	10.3		ug/L		103	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	8.31		ug/L		83	50 - 130
1,2-Dibromoethane	10.0	10.2		ug/L		102	80 - 120
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	80 - 120
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
Dichlorodifluoromethane	10.0	7.83		ug/L		78	42 - 141
1,1-Dichloroethane	10.0	10.6		ug/L		106	74 - 120

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID:** LCS 240-328344/4  
**Matrix:** Water  
**Analysis Batch:** 328344

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane	10.0	11.3		ug/L		113	68 - 133
1,1-Dichloroethene	10.0	10.8		ug/L		108	65 - 127
1,2-Dichloropropane	10.0	10.8		ug/L		108	78 - 127
Diethyl ether	10.0	11.8		ug/L		118	72 - 125
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120
2-Hexanone	20.0	19.7		ug/L		98	28 - 169
Isopropylbenzene	10.0	10.1		ug/L		101	80 - 128
Methyl acetate	20.0	20.8		ug/L		104	63 - 137
Methylcyclohexane	10.0	9.68		ug/L		97	63 - 141
Methylene Chloride	10.0	10.4		ug/L		104	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	18.3		ug/L		91	53 - 144
Methyl tert-butyl ether	10.0	7.39		ug/L		74	73 - 120
Styrene	10.0	10.4		ug/L		104	80 - 121
1,1,2,2-Tetrachloroethane	10.0	10.7		ug/L		107	58 - 122
Tetrachloroethene	10.0	10.5		ug/L		105	80 - 122
Toluene	10.0	10.8		ug/L		108	78 - 120
trans-1,2-Dichloroethene	10.0	11.3		ug/L		113	74 - 124
trans-1,3-Dichloropropene	10.0	8.14		ug/L		81	67 - 120
1,2,4-Trichlorobenzene	10.0	10.3		ug/L		103	34 - 141
1,1,1-Trichloroethane	10.0	9.56		ug/L		96	64 - 147
1,1,2-Trichloroethane	10.0	11.1		ug/L		111	76 - 121
Trichloroethene	10.0	10.0		ug/L		100	76 - 124
Trichlorofluoromethane	10.0	12.3		ug/L		123	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.3		ug/L		113	65 - 144
1,2,4-Trimethylbenzene	10.0	10.0		ug/L		100	80 - 120
1,3,5-Trimethylbenzene	10.0	10.1		ug/L		101	79 - 120
Vinyl chloride	10.0	10.9		ug/L		109	65 - 124
Xylenes, Total	20.0	20.5		ug/L		103	80 - 120
1,4-Dioxane	200	97.3		ug/L		49	35 - 134

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	96		69 - 124
1,2-Dichloroethane-d4 (Surr)	95		61 - 138
Toluene-d8 (Surr)	99		73 - 120

**Lab Sample ID:** LCS 240-328344/5  
**Matrix:** Water  
**Analysis Batch:** 328344

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trimethylbenzene	10.0	10.5		ug/L		105	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	87		69 - 120
Dibromofluoromethane (Surr)	96		69 - 124
1,2-Dichloroethane-d4 (Surr)	98		61 - 138

TestAmerica Canton



# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: LCS 240-328344/5**  
**Matrix: Water**  
**Analysis Batch: 328344**

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

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	93		73 - 120

**Lab Sample ID: 240-95530-A-2 MS**  
**Matrix: Water**  
**Analysis Batch: 328344**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Acetone	10	U	20.0	22.1		ug/L		111	19 - 133
Benzene	1.0	U	10.0	10.6		ug/L		106	69 - 127
2-Butanone (MEK)	10	U	20.0	23.7		ug/L		119	34 - 153
Carbon tetrachloride	1.0	U	10.0	10.0		ug/L		100	53 - 175
Chlorobenzene	1.0	U	10.0	10.6		ug/L		106	76 - 120
Chloroform	1.0	U	10.0	10.7		ug/L		107	74 - 125
Chloromethane	1.0	U	10.0	11.0		ug/L		110	34 - 127
cis-1,3-Dichloropropene	1.0	U	10.0	9.16		ug/L		92	68 - 120
1,2-Dibromoethane	1.0	U	10.0	10.2		ug/L		102	73 - 121
1,2-Dichlorobenzene	1.0	U	10.0	10.2		ug/L		102	70 - 120
1,3-Dichlorobenzene	1.0	U	10.0	10.4		ug/L		104	71 - 120
1,4-Dichlorobenzene	1.0	U	10.0	10.4		ug/L		104	72 - 120
1,1-Dichloroethane	1.0	U	10.0	10.6		ug/L		106	69 - 122
1,2-Dichloroethane	1.0	U	10.0	11.8		ug/L		118	64 - 138
1,1-Dichloroethene	1.0	U	10.0	11.0		ug/L		110	62 - 127
1,2-Dichloropropane	1.0	U	10.0	11.1		ug/L		111	72 - 131
Ethylbenzene	1.0	U	10.0	10.4		ug/L		104	72 - 121
2-Hexanone	10	U F2	20.0	19.9		ug/L		100	21 - 184
Methylene Chloride	5.0	U	10.0	10.1		ug/L		101	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U	20.0	20.0		ug/L		100	53 - 147
Styrene	1.0	U	10.0	10.3		ug/L		103	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U	10.0	10.7		ug/L		107	51 - 123
Tetrachloroethene	1.0	U	10.0	10.8		ug/L		108	69 - 126
Toluene	1.0	U	10.0	10.6		ug/L		106	69 - 125
trans-1,2-Dichloroethene	1.0	U	10.0	11.4		ug/L		114	66 - 131
1,1,1-Trichloroethane	1.0	U	10.0	9.44		ug/L		94	57 - 156
Trichloroethene	1.0	U	10.0	10.4		ug/L		104	68 - 129
Trichlorofluoromethane	1.0	U	10.0	12.5		ug/L		125	28 - 172
Vinyl chloride	1.0	U	10.0	11.6		ug/L		116	55 - 123
Xylenes, Total	2.0	U	20.0	20.4		ug/L		102	71 - 122
1,4-Dioxane	50	U	200	97.8		ug/L		49	13 - 155

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	94		69 - 120
Dibromofluoromethane (Surr)	96		69 - 124
1,2-Dichloroethane-d4 (Surr)	101		61 - 138
Toluene-d8 (Surr)	99		73 - 120

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: 240-95530-C-2 MSD**

**Matrix: Water**

**Analysis Batch: 328344**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits			
Acetone	10	U	20.0	23.9		ug/L		120	19 - 133	8	35	
Benzene	1.0	U	10.0	10.7		ug/L		107	69 - 127	1	10	
2-Butanone (MEK)	10	U	20.0	25.7		ug/L		129	34 - 153	8	23	
Carbon tetrachloride	1.0	U	10.0	9.85		ug/L		98	53 - 175	2	17	
Chlorobenzene	1.0	U	10.0	10.9		ug/L		109	76 - 120	3	12	
Chloroform	1.0	U	10.0	10.8		ug/L		108	74 - 125	1	11	
Chloromethane	1.0	U	10.0	11.1		ug/L		111	34 - 127	1	25	
cis-1,3-Dichloropropene	1.0	U	10.0	9.30		ug/L		93	68 - 120	1	13	
1,2-Dibromoethane	1.0	U	10.0	11.0		ug/L		110	73 - 121	7	12	
1,2-Dichlorobenzene	1.0	U	10.0	10.3		ug/L		103	70 - 120	1	19	
1,3-Dichlorobenzene	1.0	U	10.0	10.4		ug/L		104	71 - 120	0	18	
1,4-Dichlorobenzene	1.0	U	10.0	10.4		ug/L		104	72 - 120	0	17	
1,1-Dichloroethane	1.0	U	10.0	10.7		ug/L		107	69 - 122	1	11	
1,2-Dichloroethane	1.0	U	10.0	11.8		ug/L		118	64 - 138	0	11	
1,1-Dichloroethene	1.0	U	10.0	10.7		ug/L		107	62 - 127	3	14	
1,2-Dichloropropane	1.0	U	10.0	10.9		ug/L		109	72 - 131	1	12	
Ethylbenzene	1.0	U	10.0	10.7		ug/L		107	72 - 121	3	15	
2-Hexanone	10	U F2	20.0	23.2	F2	ug/L		116	21 - 184	15	12	
Methylene Chloride	5.0	U	10.0	10.2		ug/L		102	52 - 137	1	12	
4-Methyl-2-pentanone (MIBK)	10	U	20.0	21.4		ug/L		107	53 - 147	7	16	
Styrene	1.0	U	10.0	10.7		ug/L		107	74 - 125	3	14	
1,1,2,2-Tetrachloroethane	1.0	U	10.0	11.1		ug/L		111	51 - 123	4	17	
Tetrachloroethene	1.0	U	10.0	11.0		ug/L		110	69 - 126	2	18	
Toluene	1.0	U	10.0	11.2		ug/L		112	69 - 125	6	14	
trans-1,2-Dichloroethene	1.0	U	10.0	11.5		ug/L		115	66 - 131	1	11	
1,1,1-Trichloroethane	1.0	U	10.0	9.60		ug/L		96	57 - 156	2	13	
Trichloroethene	1.0	U	10.0	10.4		ug/L		104	68 - 129	0	12	
Trichlorofluoromethane	1.0	U	10.0	12.4		ug/L		124	28 - 172	1	26	
Vinyl chloride	1.0	U	10.0	11.8		ug/L		118	55 - 123	1	12	
Xylenes, Total	2.0	U	20.0	20.9		ug/L		105	71 - 122	2	14	
1,4-Dioxane	50	U	200	136		ug/L		68	13 - 155	33	35	

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	96		69 - 120
Dibromofluoromethane (Surr)	96		69 - 124
1,2-Dichloroethane-d4 (Surr)	102		61 - 138
Toluene-d8 (Surr)	100		73 - 120

**Lab Sample ID: MB 240-328363/6**

**Matrix: Water**

**Analysis Batch: 328363**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	10	U	10	1.8	ug/L			05/24/18 11:13	1
Benzene	1.0	U	1.0	0.28	ug/L			05/24/18 11:13	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/24/18 11:13	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/24/18 11:13	1
Bromomethane	1.0	U	1.0	0.42	ug/L			05/24/18 11:13	1

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: MB 240-328363/6**

**Matrix: Water**

**Analysis Batch: 328363**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/24/18 11:13	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/24/18 11:13	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/24/18 11:13	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 11:13	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/24/18 11:13	1
Chloroform	1.0	U	1.0	0.31	ug/L			05/24/18 11:13	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/24/18 11:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 11:13	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/24/18 11:13	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/24/18 11:13	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/24/18 11:13	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/24/18 11:13	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/24/18 11:13	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/24/18 11:13	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/24/18 11:13	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/24/18 11:13	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 11:13	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			05/24/18 11:13	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/24/18 11:13	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 11:13	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/24/18 11:13	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			05/24/18 11:13	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/24/18 11:13	1
2-Hexanone	10	U	10	1.2	ug/L			05/24/18 11:13	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/24/18 11:13	1
Methyl acetate	10	U	10	1.4	ug/L			05/24/18 11:13	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/24/18 11:13	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			05/24/18 11:13	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/24/18 11:13	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/24/18 11:13	1
Styrene	1.0	U	1.0	0.23	ug/L			05/24/18 11:13	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			05/24/18 11:13	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 11:13	1
Toluene	1.0	U	1.0	0.23	ug/L			05/24/18 11:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 11:13	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			05/24/18 11:13	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/24/18 11:13	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/24/18 11:13	1
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			05/24/18 11:13	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 11:13	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/24/18 11:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/24/18 11:13	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/24/18 11:13	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 11:13	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/24/18 11:13	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 11:13	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/24/18 11:13	1

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: MB 240-328363/6**  
**Matrix: Water**  
**Analysis Batch: 328363**

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		69 - 120		05/24/18 11:13	1
Dibromofluoromethane (Surr)	108		69 - 124		05/24/18 11:13	1
1,2-Dichloroethane-d4 (Surr)	110		61 - 138		05/24/18 11:13	1
Toluene-d8 (Surr)	117		73 - 120		05/24/18 11:13	1

**Lab Sample ID: LCS 240-328363/4**  
**Matrix: Water**  
**Analysis Batch: 328363**

**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	16.8		ug/L		84	35 - 131
Benzene	10.0	11.7		ug/L		117	79 - 120
Bromodichloromethane	10.0	11.7		ug/L		117	79 - 125
Bromoform	10.0	9.59		ug/L		96	55 - 145
Bromomethane	10.0	12.9		ug/L		129	17 - 158
2-Butanone (MEK)	20.0	19.0		ug/L		95	43 - 149
Carbon disulfide	10.0	10.9		ug/L		109	49 - 141
Carbon tetrachloride	10.0	11.2		ug/L		112	55 - 171
Chlorobenzene	10.0	11.7		ug/L		117	80 - 120
Chloroethane	10.0	13.0		ug/L		130	10 - 149
Chloroform	10.0	12.1	*	ug/L		121	80 - 120
Chloromethane	10.0	9.52		ug/L		95	59 - 124
cis-1,2-Dichloroethene	10.0	11.7		ug/L		117	77 - 120
cis-1,3-Dichloropropene	10.0	11.7		ug/L		117	75 - 120
Cyclohexane	10.0	11.6		ug/L		116	66 - 135
Dibromochloromethane	10.0	11.7		ug/L		117	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	8.66		ug/L		87	50 - 130
1,2-Dibromoethane	10.0	11.0		ug/L		110	80 - 120
1,2-Dichlorobenzene	10.0	11.2		ug/L		112	80 - 120
1,3-Dichlorobenzene	10.0	11.2		ug/L		112	80 - 120
1,4-Dichlorobenzene	10.0	11.2		ug/L		112	80 - 120
Dichlorodifluoromethane	10.0	8.39		ug/L		84	42 - 141
1,1-Dichloroethane	10.0	12.6	*	ug/L		126	74 - 120
1,2-Dichloroethane	10.0	12.7		ug/L		127	68 - 133
1,1-Dichloroethene	10.0	9.75		ug/L		98	65 - 127
1,2-Dichloropropane	10.0	12.4		ug/L		124	78 - 127
Diethyl ether	10.0	11.8		ug/L		118	72 - 125
Ethylbenzene	10.0	11.0		ug/L		110	80 - 120
2-Hexanone	20.0	19.9		ug/L		100	28 - 169
Isopropylbenzene	10.0	9.46		ug/L		95	80 - 128
Methyl acetate	20.0	22.5		ug/L		113	63 - 137
Methylcyclohexane	10.0	9.09		ug/L		91	63 - 141
Methylene Chloride	10.0	10.9		ug/L		109	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	20.1		ug/L		101	53 - 144
Methyl tert-butyl ether	10.0	10.5		ug/L		105	73 - 120
Styrene	10.0	9.93		ug/L		99	80 - 121
1,1,2,2-Tetrachloroethane	10.0	12.9	*	ug/L		129	58 - 122
Tetrachloroethene	10.0	11.2		ug/L		112	80 - 122

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID:** LCS 240-328363/4  
**Matrix:** Water  
**Analysis Batch:** 328363

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	10.0	13.1	*	ug/L		131	78 - 120
trans-1,2-Dichloroethene	10.0	11.2		ug/L		112	74 - 124
trans-1,3-Dichloropropene	10.0	12.6	*	ug/L		126	67 - 120
1,2,4-Trichlorobenzene	10.0	9.98		ug/L		100	34 - 141
1,1,1-Trichloroethane	10.0	11.3		ug/L		113	64 - 147
1,1,2-Trichloroethane	10.0	13.3	*	ug/L		133	76 - 121
Trichloroethene	10.0	10.7		ug/L		107	76 - 124
Trichlorofluoromethane	10.0	11.8		ug/L		118	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.90		ug/L		99	65 - 144
1,2,4-Trimethylbenzene	10.0	11.1		ug/L		111	80 - 120
1,3,5-Trimethylbenzene	10.0	11.5		ug/L		115	79 - 120
Vinyl chloride	10.0	10.3		ug/L		103	65 - 124
Xylenes, Total	20.0	21.6		ug/L		108	80 - 120
1,4-Dioxane	200	173		ug/L		87	35 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		69 - 120
Dibromofluoromethane (Surr)	100		69 - 124
1,2-Dichloroethane-d4 (Surr)	99		61 - 138
Toluene-d8 (Surr)	114		73 - 120

**Lab Sample ID:** MB 240-328594/6  
**Matrix:** Water  
**Analysis Batch:** 328594

**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	1.8	ug/L			05/25/18 15:08	1
Benzene	1.0	U	1.0	0.28	ug/L			05/25/18 15:08	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			05/25/18 15:08	1
Bromoform	1.0	U	1.0	0.43	ug/L			05/25/18 15:08	1
Bromomethane	1.0	U	1.0	0.42	ug/L			05/25/18 15:08	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			05/25/18 15:08	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			05/25/18 15:08	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			05/25/18 15:08	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			05/25/18 15:08	1
Chloroethane	1.0	U	1.0	0.41	ug/L			05/25/18 15:08	1
Chloroform	1.0	U	1.0	0.31	ug/L			05/25/18 15:08	1
Chloromethane	1.0	U	1.0	0.43	ug/L			05/25/18 15:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/25/18 15:08	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			05/25/18 15:08	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			05/25/18 15:08	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			05/25/18 15:08	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			05/25/18 15:08	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			05/25/18 15:08	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			05/25/18 15:08	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			05/25/18 15:08	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			05/25/18 15:08	1

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: MB 240-328594/6**  
**Matrix: Water**  
**Analysis Batch: 328594**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			05/25/18 15:08	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			05/25/18 15:08	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			05/25/18 15:08	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/25/18 15:08	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			05/25/18 15:08	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			05/25/18 15:08	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			05/25/18 15:08	1
2-Hexanone	10	U	10	1.2	ug/L			05/25/18 15:08	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			05/25/18 15:08	1
Methyl acetate	10	U	10	1.4	ug/L			05/25/18 15:08	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			05/25/18 15:08	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			05/25/18 15:08	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			05/25/18 15:08	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			05/25/18 15:08	1
Styrene	1.0	U	1.0	0.23	ug/L			05/25/18 15:08	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			05/25/18 15:08	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/25/18 15:08	1
Toluene	1.0	U	1.0	0.23	ug/L			05/25/18 15:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/25/18 15:08	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			05/25/18 15:08	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			05/25/18 15:08	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			05/25/18 15:08	1
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			05/25/18 15:08	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/25/18 15:08	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			05/25/18 15:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			05/25/18 15:08	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			05/25/18 15:08	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/25/18 15:08	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			05/25/18 15:08	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/25/18 15:08	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			05/25/18 15:08	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	88		69 - 120		05/25/18 15:08	1
Dibromofluoromethane (Surr)	93		69 - 124		05/25/18 15:08	1
1,2-Dichloroethane-d4 (Surr)	91		61 - 138		05/25/18 15:08	1
Toluene-d8 (Surr)	94		73 - 120		05/25/18 15:08	1

**Lab Sample ID: LCS 240-328594/4**  
**Matrix: Water**  
**Analysis Batch: 328594**

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Acetone	20.0	20.0		ug/L		100	35 - 131
Benzene	10.0	9.48		ug/L		95	79 - 120
Bromodichloromethane	10.0	9.95		ug/L		100	79 - 125
Bromoform	10.0	9.56		ug/L		96	55 - 145
Bromomethane	10.0	7.50		ug/L		75	17 - 158

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# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: LCS 240-328594/4**

**Matrix: Water**

**Analysis Batch: 328594**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Butanone (MEK)	20.0	22.3		ug/L		112	43 - 149
Carbon disulfide	10.0	9.53		ug/L		95	49 - 141
Carbon tetrachloride	10.0	9.88		ug/L		99	55 - 171
Chlorobenzene	10.0	9.92		ug/L		99	80 - 120
Chloroethane	10.0	7.05		ug/L		71	10 - 149
Chloroform	10.0	9.64		ug/L		96	80 - 120
Chloromethane	10.0	7.78		ug/L		78	59 - 124
cis-1,2-Dichloroethene	10.0	9.39		ug/L		94	77 - 120
cis-1,3-Dichloropropene	10.0	10.3		ug/L		103	75 - 120
Cyclohexane	10.0	10.0		ug/L		100	66 - 135
Dibromochloromethane	10.0	10.3		ug/L		103	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	10.1		ug/L		101	50 - 130
1,2-Dibromoethane	10.0	10.6		ug/L		106	80 - 120
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	80 - 120
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
1,4-Dichlorobenzene	10.0	10.4		ug/L		104	80 - 120
Dichlorodifluoromethane	10.0	8.91		ug/L		89	42 - 141
1,1-Dichloroethane	10.0	9.79		ug/L		98	74 - 120
1,2-Dichloroethane	10.0	10.1		ug/L		101	68 - 133
1,1-Dichloroethene	10.0	10.1		ug/L		101	65 - 127
1,2-Dichloropropane	10.0	10.7		ug/L		107	78 - 127
Diethyl ether	10.0	11.0		ug/L		110	72 - 125
Ethylbenzene	10.0	9.88		ug/L		99	80 - 120
2-Hexanone	20.0	20.4		ug/L		102	28 - 169
Isopropylbenzene	10.0	9.86		ug/L		99	80 - 128
Methyl acetate	20.0	20.0		ug/L		100	63 - 137
Methylcyclohexane	10.0	9.19		ug/L		92	63 - 141
Methylene Chloride	10.0	9.35		ug/L		94	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	20.5		ug/L		102	53 - 144
Methyl tert-butyl ether	10.0	9.85		ug/L		98	73 - 120
Styrene	10.0	9.90		ug/L		99	80 - 121
1,1,2,2-Tetrachloroethane	10.0	10.7		ug/L		107	58 - 122
Tetrachloroethene	10.0	10.4		ug/L		104	80 - 122
Toluene	10.0	10.2		ug/L		102	78 - 120
trans-1,2-Dichloroethene	10.0	10.0		ug/L		100	74 - 124
trans-1,3-Dichloropropene	10.0	10.0		ug/L		100	67 - 120
1,2,4-Trichlorobenzene	10.0	9.15		ug/L		92	34 - 141
1,1,1-Trichloroethane	10.0	9.70		ug/L		97	64 - 147
1,1,2-Trichloroethane	10.0	10.8		ug/L		108	76 - 121
Trichloroethene	10.0	9.98		ug/L		100	76 - 124
Trichlorofluoromethane	10.0	8.08		ug/L		81	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.4		ug/L		104	65 - 144
1,2,4-Trimethylbenzene	10.0	10.1		ug/L		101	80 - 120
1,3,5-Trimethylbenzene	10.0	10.4		ug/L		104	79 - 120
Vinyl chloride	10.0	9.70		ug/L		97	65 - 124
Xylenes, Total	20.0	20.0		ug/L		100	80 - 120
1,4-Dioxane	200	142		ug/L		71	35 - 134

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: LCS 240-328594/4**  
**Matrix: Water**  
**Analysis Batch: 328594**

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		69 - 120
Dibromofluoromethane (Surr)	91		69 - 124
1,2-Dichloroethane-d4 (Surr)	89		61 - 138
Toluene-d8 (Surr)	96		73 - 120

**Lab Sample ID: 240-95585-D-2 MS**  
**Matrix: Water**  
**Analysis Batch: 328594**

**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	130	U F1	267	384	F1	ug/L		144	19 - 133
Benzene	13	U	133	122		ug/L		92	69 - 127
Bromodichloromethane	13	U	133	126		ug/L		95	75 - 128
Bromoform	13	U	133	112		ug/L		84	61 - 135
Bromomethane	13	U	133	132		ug/L		99	10 - 148
2-Butanone (MEK)	130	U	267	267		ug/L		100	34 - 153
Carbon disulfide	67	U	133	122		ug/L		91	46 - 143
Carbon tetrachloride	13	U	133	119		ug/L		90	53 - 175
Chlorobenzene	13	U	133	122		ug/L		91	76 - 120
Chloroethane	13	U	133	148		ug/L		111	10 - 141
Chloroform	13	U	133	130		ug/L		98	74 - 125
Chloromethane	13	U	133	143		ug/L		107	34 - 127
cis-1,2-Dichloroethene	13	U	133	127		ug/L		95	69 - 127
cis-1,3-Dichloropropene	13	U	133	110		ug/L		83	68 - 120
Cyclohexane	13	U	133	120		ug/L		90	56 - 135
Dibromochloromethane	13	U	133	122		ug/L		92	62 - 131
1,2-Dibromo-3-Chloropropane	13	U	133	120		ug/L		90	48 - 130
1,2-Dibromoethane	13	U	133	130		ug/L		97	73 - 121
1,2-Dichlorobenzene	13	U	133	123		ug/L		92	70 - 120
1,3-Dichlorobenzene	13	U	133	120		ug/L		90	71 - 120
1,4-Dichlorobenzene	13	U	133	120		ug/L		90	72 - 120
Dichlorodifluoromethane	13	U	133	110		ug/L		82	45 - 130
1,1-Dichloroethane	13	U	133	129		ug/L		97	69 - 122
1,2-Dichloroethane	13	U	133	131		ug/L		98	64 - 138
1,1-Dichloroethene	13	U	133	130		ug/L		98	62 - 127
1,2-Dichloropropane	13	U	133	131		ug/L		98	72 - 131
Diethyl ether	27	U	133	146		ug/L		109	65 - 124
Ethylbenzene	13	U	133	116		ug/L		87	72 - 121
2-Hexanone	130	U	267	264		ug/L		99	21 - 184
Isopropylbenzene	13	U	133	118		ug/L		88	70 - 132
Methyl acetate	130	U	267	284		ug/L		107	52 - 139
Methylcyclohexane	13	U	133	110		ug/L		82	46 - 139
Methylene Chloride	9.7	J	133	129		ug/L		89	52 - 137
4-Methyl-2-pentanone (MIBK)	130	U	267	256		ug/L		96	53 - 147
Methyl tert-butyl ether	13	U	133	127		ug/L		96	67 - 125
Styrene	13	U	133	115		ug/L		86	74 - 125
1,1,2,2-Tetrachloroethane	13	U	133	127		ug/L		95	51 - 123
Tetrachloroethene	13	U	133	121		ug/L		91	69 - 126

TestAmerica Canton



# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: 240-95585-D-2 MS**

**Matrix: Water**

**Analysis Batch: 328594**

**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
Toluene	13	U	133	132		ug/L		99	69 - 125
trans-1,2-Dichloroethene	13	U	133	127		ug/L		95	66 - 131
trans-1,3-Dichloropropene	13	U	133	106		ug/L		80	59 - 120
1,2,4-Trichlorobenzene	13	U	133	110		ug/L		82	26 - 138
1,1,1-Trichloroethane	13	U	133	126		ug/L		94	57 - 156
1,1,2-Trichloroethane	13	U	133	133		ug/L		100	68 - 127
Trichloroethene	13	U	133	122		ug/L		91	68 - 129
Trichlorofluoromethane	13	U	133	127		ug/L		95	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	13	U	133	124		ug/L		93	58 - 137
1,2,4-Trimethylbenzene	13	U	133	121		ug/L		90	64 - 120
1,3,5-Trimethylbenzene	13	U	133	119		ug/L		89	67 - 120
Vinyl chloride	270		133	395		ug/L		95	55 - 123
Xylenes, Total	27	U	267	244		ug/L		92	71 - 122
1,4-Dioxane	670	U	2670	1490		ug/L		56	13 - 155

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	95		69 - 124
1,2-Dichloroethane-d4 (Surr)	88		61 - 138
Toluene-d8 (Surr)	98		73 - 120

**Lab Sample ID: 240-95585-D-2 MSD**

**Matrix: Water**

**Analysis Batch: 328594**

**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
Acetone	130	U F1	267	275		ug/L		103	19 - 133	33	35
Benzene	13	U	133	125		ug/L		94	69 - 127	2	10
Bromodichloromethane	13	U	133	125		ug/L		93	75 - 128	1	13
Bromoform	13	U	133	112		ug/L		84	61 - 135	0	13
Bromomethane	13	U	133	150		ug/L		113	10 - 148	13	35
2-Butanone (MEK)	130	U	267	264		ug/L		99	34 - 153	1	23
Carbon disulfide	67	U	133	128		ug/L		96	46 - 143	5	18
Carbon tetrachloride	13	U	133	125		ug/L		94	53 - 175	5	17
Chlorobenzene	13	U	133	126		ug/L		94	76 - 120	3	12
Chloroethane	13	U	133	155		ug/L		116	10 - 141	5	35
Chloroform	13	U	133	131		ug/L		98	74 - 125	0	11
Chloromethane	13	U	133	142		ug/L		106	34 - 127	1	25
cis-1,2-Dichloroethene	13	U	133	131		ug/L		98	69 - 127	3	11
cis-1,3-Dichloropropene	13	U	133	114		ug/L		86	68 - 120	3	13
Cyclohexane	13	U	133	123		ug/L		93	56 - 135	2	35
Dibromochloromethane	13	U	133	124		ug/L		93	62 - 131	1	15
1,2-Dibromo-3-Chloropropane	13	U	133	114		ug/L		85	48 - 130	5	31
1,2-Dibromoethane	13	U	133	131		ug/L		98	73 - 121	1	12
1,2-Dichlorobenzene	13	U	133	127		ug/L		96	70 - 120	4	19
1,3-Dichlorobenzene	13	U	133	123		ug/L		93	71 - 120	3	18
1,4-Dichlorobenzene	13	U	133	125		ug/L		93	72 - 120	4	17

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: 240-95585-D-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 328594**

**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
Dichlorodifluoromethane	13	U	133	107		ug/L		80	45 - 130	3	34
1,1-Dichloroethane	13	U	133	132		ug/L		99	69 - 122	2	11
1,2-Dichloroethane	13	U	133	139		ug/L		105	64 - 138	6	11
1,1-Dichloroethene	13	U	133	129		ug/L		97	62 - 127	1	14
1,2-Dichloropropane	13	U	133	139		ug/L		104	72 - 131	6	12
Diethyl ether	27	U	133	144		ug/L		108	65 - 124	1	11
Ethylbenzene	13	U	133	116		ug/L		87	72 - 121	1	15
2-Hexanone	130	U	267	256		ug/L		96	21 - 184	3	12
Isopropylbenzene	13	U	133	119		ug/L		89	70 - 132	1	16
Methyl acetate	130	U	267	259		ug/L		97	52 - 139	9	14
Methylcyclohexane	13	U	133	112		ug/L		84	46 - 139	2	35
Methylene Chloride	9.7	J	133	131		ug/L		91	52 - 137	2	12
4-Methyl-2-pentanone (MIBK)	130	U	267	257		ug/L		96	53 - 147	0	16
Methyl tert-butyl ether	13	U	133	133		ug/L		99	67 - 125	4	12
Styrene	13	U	133	119		ug/L		89	74 - 125	3	14
1,1,2,2-Tetrachloroethane	13	U	133	129		ug/L		97	51 - 123	2	17
Tetrachloroethene	13	U	133	123		ug/L		92	69 - 126	2	18
Toluene	13	U	133	127		ug/L		95	69 - 125	4	14
trans-1,2-Dichloroethene	13	U	133	132		ug/L		99	66 - 131	4	11
trans-1,3-Dichloropropene	13	U	133	112		ug/L		84	59 - 120	5	14
1,2,4-Trichlorobenzene	13	U	133	113		ug/L		85	26 - 138	3	35
1,1,1-Trichloroethane	13	U	133	135		ug/L		101	57 - 156	7	13
1,1,2-Trichloroethane	13	U	133	136		ug/L		102	68 - 127	2	11
Trichloroethene	13	U	133	126		ug/L		94	68 - 129	3	12
Trichlorofluoromethane	13	U	133	127		ug/L		95	28 - 172	0	26
1,1,2-Trichloro-1,2,2-trifluoroethane	13	U	133	125		ug/L		94	58 - 137	1	35
1,2,4-Trimethylbenzene	13	U	133	124		ug/L		93	64 - 120	2	22
1,3,5-Trimethylbenzene	13	U	133	124		ug/L		93	67 - 120	4	25
Vinyl chloride	270		133	404		ug/L		101	55 - 123	2	12
Xylenes, Total	27	U	267	249		ug/L		93	71 - 122	2	14
1,4-Dioxane	670	U	2670	1410		ug/L		53	13 - 155	6	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	97		69 - 124
1,2-Dichloroethane-d4 (Surr)	98		61 - 138
Toluene-d8 (Surr)	100		73 - 120

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

**Lab Sample ID: MB 240-327549/5**  
**Matrix: Water**  
**Analysis Batch: 327549**

**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	0.24	ug/L			05/18/18 16:17	1

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-95545-1

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

**Lab Sample ID: MB 240-327549/5**  
**Matrix: Water**  
**Analysis Batch: 327549**

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

Surrogate	<i>MB MB</i> %Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		63 - 125		05/18/18 16:17	1

**Lab Sample ID: LCS 240-327549/4**  
**Matrix: Water**  
**Analysis Batch: 327549**

**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	8.86		ug/L		89	59 - 131
Surrogate	<i>LCS LCS</i> %Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	96		63 - 125						

**Lab Sample ID: 240-95545-4 MS**  
**Matrix: Water**  
**Analysis Batch: 327549**

**Client Sample ID: MW-4\_051018**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	0.76	J F1	10.0	4.72	F1	ug/L		40	52 - 129
Surrogate	<i>MS MS</i> %Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	84		63 - 125						

**Lab Sample ID: 240-95545-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 327549**

**Client Sample ID: MW-4\_051018**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
1,4-Dioxane	0.76	J F1	10.0	4.95	F1	ug/L		42	52 - 129	5	13
Surrogate	<i>MSD MSD</i> %Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	81		63 - 125								

# QC Association Summary

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

TestAmerica Job ID: 240-95545-1

## GC/MS VOA

### Analysis Batch: 327549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95545-1	MW-2_051018	Total/NA	Water	8260B SIM	
240-95545-2	MW-3_051018	Total/NA	Water	8260B SIM	
240-95545-3	MW-5_051018	Total/NA	Water	8260B SIM	
240-95545-4	MW-4_051018	Total/NA	Water	8260B SIM	
240-95545-5	MW-10_051018	Total/NA	Water	8260B SIM	
240-95545-6	MW-1_051118	Total/NA	Water	8260B SIM	
240-95545-7	MW-9_051118	Total/NA	Water	8260B SIM	
240-95545-8	MW-66_051018	Total/NA	Water	8260B SIM	
240-95545-9	MW-65_051018	Total/NA	Water	8260B SIM	
240-95545-10	MW-22_051018	Total/NA	Water	8260B SIM	
240-95545-11	MW-47_051018	Total/NA	Water	8260B SIM	
240-95545-12	MW-14_051018	Total/NA	Water	8260B SIM	
240-95545-13	MW-49_051018	Total/NA	Water	8260B SIM	
MB 240-327549/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-327549/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-95545-4 MS	MW-4_051018	Total/NA	Water	8260B SIM	
240-95545-4 MSD	MW-4_051018	Total/NA	Water	8260B SIM	

### Analysis Batch: 328193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95545-3	MW-5_051018	Total/NA	Water	8260B	
240-95545-5	MW-10_051018	Total/NA	Water	8260B	
240-95545-8	MW-66_051018	Total/NA	Water	8260B	
MB 240-328193/6	Method Blank	Total/NA	Water	8260B	
LCS 240-328193/4	Lab Control Sample	Total/NA	Water	8260B	
240-95533-A-49 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
240-95533-F-49 MS	Matrix Spike	Total/NA	Water	8260B	

### Analysis Batch: 328344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95545-6	MW-1_051118	Total/NA	Water	8260B	
240-95545-7	MW-9_051118	Total/NA	Water	8260B	
240-95545-12	MW-14_051018	Total/NA	Water	8260B	
240-95545-13	MW-49_051018	Total/NA	Water	8260B	
MB 240-328344/7	Method Blank	Total/NA	Water	8260B	
LCS 240-328344/4	Lab Control Sample	Total/NA	Water	8260B	
LCS 240-328344/5	Lab Control Sample	Total/NA	Water	8260B	
240-95530-A-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-95530-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 328363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95545-1	MW-2_051018	Total/NA	Water	8260B	
240-95545-2	MW-3_051018	Total/NA	Water	8260B	
240-95545-4 - RA	MW-4_051018	Total/NA	Water	8260B	
240-95545-9	MW-65_051018	Total/NA	Water	8260B	
240-95545-10	MW-22_051018	Total/NA	Water	8260B	
240-95545-11 - RA	MW-47_051018	Total/NA	Water	8260B	
240-95545-14	TRIP BLANK	Total/NA	Water	8260B	
MB 240-328363/6	Method Blank	Total/NA	Water	8260B	
LCS 240-328363/4	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: 240-95545-1

## Analysis Batch: 328594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95545-1	MW-2_051018	Total/NA	Water	8260B	
240-95545-4	MW-4_051018	Total/NA	Water	8260B	
240-95545-11	MW-47_051018	Total/NA	Water	8260B	
MB 240-328594/6	Method Blank	Total/NA	Water	8260B	
LCS 240-328594/4	Lab Control Sample	Total/NA	Water	8260B	
240-95585-D-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-95585-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

- 1
- 2
- 3
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- 12
- 13
- 14

# Lab Chronicle

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-2\_051018**  
**Date Collected: 05/10/18 13:37**  
**Date Received: 05/12/18 10:00**

**Lab Sample ID: 240-95545-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	328594	05/25/18 16:15	LRW	TAL CAN
Total/NA	Analysis	8260B		25	328363	05/24/18 11:58	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 17:32	SAM	TAL CAN

**Client Sample ID: MW-3\_051018**  
**Date Collected: 05/10/18 12:54**  
**Date Received: 05/12/18 10:00**

**Lab Sample ID: 240-95545-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328363	05/24/18 12:21	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 17:57	SAM	TAL CAN

**Client Sample ID: MW-5\_051018**  
**Date Collected: 05/10/18 14:20**  
**Date Received: 05/12/18 10:00**

**Lab Sample ID: 240-95545-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328193	05/23/18 21:30	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 18:23	SAM	TAL CAN

**Client Sample ID: MW-4\_051018**  
**Date Collected: 05/10/18 15:21**  
**Date Received: 05/12/18 10:00**

**Lab Sample ID: 240-95545-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1000	328594	05/25/18 16:37	LRW	TAL CAN
Total/NA	Analysis	8260B	RA	1000	328363	05/24/18 12:44	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 18:48	SAM	TAL CAN

**Client Sample ID: MW-10\_051018**  
**Date Collected: 05/10/18 16:38**  
**Date Received: 05/12/18 10:00**

**Lab Sample ID: 240-95545-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	328193	05/23/18 22:14	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 20:03	SAM	TAL CAN

# Lab Chronicle

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-1\_051118**

**Lab Sample ID: 240-95545-6**

**Date Collected: 05/11/18 08:09**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328344	05/24/18 16:49	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 20:28	SAM	TAL CAN

**Client Sample ID: MW-9\_051118**

**Lab Sample ID: 240-95545-7**

**Date Collected: 05/11/18 09:09**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328344	05/24/18 17:13	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 20:53	SAM	TAL CAN

**Client Sample ID: MW-66\_051018**

**Lab Sample ID: 240-95545-8**

**Date Collected: 05/10/18 10:30**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328193	05/23/18 22:36	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 21:18	SAM	TAL CAN

**Client Sample ID: MW-65\_051018**

**Lab Sample ID: 240-95545-9**

**Date Collected: 05/10/18 11:25**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	328363	05/24/18 13:06	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 21:42	SAM	TAL CAN

**Client Sample ID: MW-22\_051018**

**Lab Sample ID: 240-95545-10**

**Date Collected: 05/10/18 12:20**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		66.67	328363	05/24/18 13:29	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 22:07	SAM	TAL CAN

**Client Sample ID: MW-47\_051018**

**Lab Sample ID: 240-95545-11**

**Date Collected: 05/10/18 17:00**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	328594	05/25/18 16:59	LRW	TAL CAN

TestAmerica Canton

# Lab Chronicle

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

TestAmerica Job ID: 240-95545-1

**Client Sample ID: MW-47\_051018**

**Lab Sample ID: 240-95545-11**

**Date Collected: 05/10/18 17:00**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	RA	10	328363	05/24/18 13:52	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 22:32	SAM	TAL CAN

**Client Sample ID: MW-14\_051018**

**Lab Sample ID: 240-95545-12**

**Date Collected: 05/11/18 10:42**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328344	05/24/18 17:36	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 22:57	SAM	TAL CAN

**Client Sample ID: MW-49\_051018**

**Lab Sample ID: 240-95545-13**

**Date Collected: 05/11/18 12:07**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1666.67	328344	05/24/18 18:00	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	327549	05/18/18 23:23	SAM	TAL CAN

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-95545-14**

**Date Collected: 05/10/18 00:00**

**Matrix: Water**

**Date Received: 05/12/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328363	05/24/18 14:15	LEE	TAL CAN

**Laboratory References:**

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



# Accreditation/Certification Summary

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

TestAmerica Job ID: 240-95545-1

## 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	06-30-18 *
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	07-31-18 *
Nevada	State Program	9	OH-000482008A	07-31-18 *
New Jersey	NELAP	2	OH001	06-30-18 *
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	08-31-18 *
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.



**Chain of Custody Record**

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

<b>Client Contact</b> Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford LTP Project Number: MI001454.0004.00001 PO # MI001454.0004.00001		<b>Regulatory program:</b> <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
<b>Client Project Manager: Kris Hinsley</b> Telephone: 248-994-2240 Email: kristoffer.hinsley@arcadis.com		<b>Site Contact: Angela DeGrandis</b> Telephone: 734-320-0065	
<b>Method of Shipment/Carrier:</b> Shipping/Tracking No:		<b>Analysis Turnaround Time</b> TAT if different from below <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	
<b>Sample Identification</b> MW-3-051018 (66) 5-11-18 MW-2-051018 MW-3-051018 MW-5-051018 MW-4-051018 MW-10-051018 MW-1-051118 MW-9-051118 MW-66-051018 MW-65-051018		<b>Containers &amp; Preservatives</b> H2SO4 HNO3 HCl NaOH NaOH Other:	
<b>Sample Date</b> 5-10-18 5-10-18 5-10-18 5-10-18 5-10-18 5-10-18 5-11-18 5-11-18 5/10/18 5/10/18		<b>Sample Time</b> 1205 1337 1254 1420 1521 1638 809 909 1030 1125	
<b>Matrix</b> Air Aqueous Sediment Solid Other:		<b>Filtered Sample (Y/N)</b> Y Y Y Y Y Y Y Y Y Y Y Y	
<b>Composite=C/Grab=C</b> Y Y Y Y Y Y Y Y Y Y Y Y		<b>VOCs 8260B</b> Y Y Y Y Y Y Y Y Y Y Y Y	
<b>1,4-Dioxane 8260B SIM</b> Y Y Y Y Y Y Y Y Y Y Y Y		<b>Analyses</b> Walk-in client Lab sampling Job/SDG No.	
<b>Client Contact</b> Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford LTP Project Number: MI001454.0004.00001 PO # MI001454.0004.00001		<b>Lab Contact: Denise Pohl</b> Telephone: 330-966-9789	
<b>Sample Specific Notes / Special Instructions:</b> 240-95545 Chain of Custody		<b>COC No:</b> / of 2 COCs For lab use only	

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

**Special Instructions/QC Requirements & Comments:**  
 Submit all results through Carlana at jim.tomalia@cardena.com, Carlana #E203728

**Relinquished by:** KALON BELIGOS [Signature]  
 Relinquished by: [Signature]  
 Relinquished by: [Signature]

**Received by:** [Signature]  
 Received by: [Signature]  
 Received in Laboratory by: [Signature]

**Company:** ARCADIS  
 Company: TAC  
 Company:

**Date/Time:** 5-11-18 1221  
 Date/Time: 5/11/18 14:41  
 Date/Time:

**Company:** TAC  
 Company: TAC  
 Company:

**Date/Time:** 5/11/18 13:49  
 Date/Time: 5-12-18 1000  
 Date/Time:

**Chain of Custody Record**

TestAmerica Laboratory location: Brighton — 10448 Citation Drive, Suite 200 / Brighton, MI 48115 / 810-229-2763

Regulatory program:  DW  NPDES  RCRA  Other

Client Contact  
 Company Name: Arcadis  
 Address: 28550 Cabot Drive, Suite 500  
 City/State/Zip: Novi, MI, 48377  
 Phone: 248-994-2240  
 Project Name: Ford LTP  
 Project Number: MI001454.0004.00001  
 PO # MI001454.0004.00001

Client Project Manager: Kris Hinskey  
 Telephone: 248-994-2240  
 Email: kristoffer.hinskey@arcadis.com

Site Contact: Angela DeGrandis  
 Telephone: 734-320-0065

Lab Contact: Denise Pahl  
 Telephone: 330-966-9789

TestAmerica Laboratories, Inc.  
 COC No: 2  
 For lab use only

Sample Identification	Sample Date	Sample Time	Matrix			Containers & Preservatives							Filtered Sample (Y/N)	Composite C/Grab-C	VOCs 82608	1,4-Dioxane 82608 SIM	Analyses	Sample Specific Notes / Special Instructions:																		
			Air	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc	LiPres							Other:																	
MW-22-051018	5/10/18	1220	X																																	
MW-47-051018	5/10/18	1700	X																																	
MW-14-051118	5/11/18	1642	X																																	
MW-49-051118	5/11/18	1207	X																																	
TRIP BLANK			X																																	

Possible Hazard Identification  
 Non-Hazard  Irritant  Poison B  Unknown

Special Instructions/QC Requirements & Comments:  
 Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Relinquished by: ARCADIS Date/Time: 5-11-18 12:21  
 Relinquished by: ARCADIS Date/Time: 5/11/18 14:41  
 Relinquished by: TAL Date/Time: 5-17-18 10:00

Received by: TAL Date/Time: 5/11/18 15:49  
 Received by: -TA Date/Time: 5-17-18 10:00

Company: ARCADIS  
 Company: TAL  
 Company: -TA

Submit all results through Cadena at jim.tommella@cadena.com; Cadena #E203728  
 Lab#:

**TestAmerica Canton Sample Receipt Form/Narrative**

Login # : 95545

**Canton Facility**

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

Cooler unpacked by: \_\_\_\_\_

Cooler Received on 5.12.18 Opened on 5.12.18

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 mvit

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 +0.1 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C
- IR GUN #36 (CF +0.3 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C
- IR GUN # 627 (CF -1.3 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 4 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# HC732776
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 # \_\_\_\_\_  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: \_\_\_\_\_

JR

**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

TestAmerica Multiple Cooler Receipt Form/Narrative Canton Facility				Login #: <u>95548</u>
Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
client	8	3.8	3.9	ice
		2.2	2.3	
		1.8	1.9	
		2.0	2.1	