

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton
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Tel: (330)497-9396

TestAmerica Job ID: 240-103745-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

ARCADIS U.S., Inc.
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Attn: Kristoffer Hinskey



Authorized for release by:
11/16/2018 3:53:59 PM

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

1

2

3

4

5

6

7

8

9

10

11

12

13

14



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	11
Surrogate Summary	45
QC Sample Results	47
QC Association Summary	61
Lab Chronicle	63
Certification Summary	67
Chain of Custody	68

Definitions/Glossary

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

TestAmerica Job ID: 240-103745-1

Qualifiers

GC/MS VOA

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

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: 240-103745-1

Job ID: 240-103745-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-103745-1

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 11/2/2018 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIPBLANK (240-103745-1), TW-16-04_103018 (240-103745-2), TW-16-03_103018 (240-103745-3), PW-16-02_103018 (240-103745-4), MW-51_103018 (240-103745-5), MW-44_103018 (240-103745-6), MW-65_103018 (240-103745-7), MW-49_103018 (240-103745-8), TW-16-02_103018 (240-103745-9), TW-16-01_103018 (240-103745-10), DUP-03 (240-103745-11), DUP-05 (240-103745-12), PW-16-01_103018 (240-103745-13), MW-22_103018 (240-103745-14), MW-23_103018 (240-103745-15), DUP-02 (240-103745-16) and DUP-04 (240-103745-17) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/12/2018 and 11/13/2018.

1,2-Dichloroethane-d4 (Surr) failed the surrogate recovery criteria high for DUP-03 (240-103745-11), DUP-05 (240-103745-12), MW-22_103018 (240-103745-14), and DUP-02 (240-103745-16). Refer to the QC report for details.

cis-1,2-Dichloroethene failed the recovery criteria low for the MS of sample 240-104164-6 in batch 240-355135. Refer to the QC report for details.

Samples TW-16-04_103018 (240-103745-2)[3.33X], TW-16-03_103018 (240-103745-3)[6.67X], PW-16-02_103018 (240-103745-4)[2X], MW-44_103018 (240-103745-6)[20X], MW-65_103018 (240-103745-7)[2X], MW-49_103018 (240-103745-8)[1000X], TW-16-02_103018

Case Narrative

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

TestAmerica Job ID: 240-103745-1

Job ID: 240-103745-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

(240-103745-9)[500X], TW-16-01_103018 (240-103745-10)[25X], DUP-03 (240-103745-11)[4X], PW-16-01_103018 (240-103745-13) [40X], MW-22_103018 (240-103745-14)[100X], MW-23_103018 (240-103745-15)[2500X], DUP-02 (240-103745-16)[333.33X] and DUP-04 (240-103745-17)[100X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Surrogate recovery for the following sample was outside control limits: DUP-05 (240-103745-12) Re-extraction and/or re-analysis was performed with concurring results.

Surrogate recovery for the following samples were outside of acceptance limits: DUP-03 (240-103745-11), MW-22_103018 (240-103745-14) and DUP-02 (240-103745-16). There was insufficient sample to perform a re-extraction; therefore, the data have been reported.

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples TRIPBLANK (240-103745-1), TW-16-04_103018 (240-103745-2), TW-16-03_103018 (240-103745-3), PW-16-02_103018 (240-103745-4), MW-51_103018 (240-103745-5), MW-44_103018 (240-103745-6), MW-65_103018 (240-103745-7), MW-49_103018 (240-103745-8), TW-16-02_103018 (240-103745-9), TW-16-01_103018 (240-103745-10), DUP-03 (240-103745-11), DUP-05 (240-103745-12), PW-16-01_103018 (240-103745-13), MW-22_103018 (240-103745-14), MW-23_103018 (240-103745-15), DUP-02 (240-103745-16) and DUP-04 (240-103745-17) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/07/2018, 11/09/2018 and 11/11/2018.

Sample MW-23_103018 (240-103745-15)[100X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following sample was diluted due to the nature of the sample matrix: MW-23_103018 (240-103745-15). Elevated reporting limits (RLs) are provided.

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

Method Summary

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

TestAmerica Job ID: 240-103745-1

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: 240-103745-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-103745-1	TRIPBLANK	Water	10/30/18 00:00	11/02/18 08:50
240-103745-2	TW-16-04_103018	Water	10/30/18 09:30	11/02/18 08:50
240-103745-3	TW-16-03_103018	Water	10/30/18 10:55	11/02/18 08:50
240-103745-4	PW-16-02_103018	Water	10/30/18 12:00	11/02/18 08:50
240-103745-5	MW-51_103018	Water	10/30/18 13:30	11/02/18 08:50
240-103745-6	MW-44_103018	Water	10/30/18 15:00	11/02/18 08:50
240-103745-7	MW-65_103018	Water	10/30/18 16:10	11/02/18 08:50
240-103745-8	MW-49_103018	Water	10/30/18 17:55	11/02/18 08:50
240-103745-9	TW-16-02_103018	Water	10/30/18 09:25	11/02/18 08:50
240-103745-10	TW-16-01_103018	Water	10/30/18 10:25	11/02/18 08:50
240-103745-11	DUP-03	Water	10/30/18 00:00	11/02/18 08:50
240-103745-12	DUP-05	Water	10/30/18 00:00	11/02/18 08:50
240-103745-13	PW-16-01_103018	Water	10/30/18 11:30	11/02/18 08:50
240-103745-14	MW-22_103018	Water	10/30/18 13:25	11/02/18 08:50
240-103745-15	MW-23_103018	Water	10/30/18 17:25	11/02/18 08:50
240-103745-16	DUP-02	Water	10/30/18 00:00	11/02/18 08:50
240-103745-17	DUP-04	Water	10/30/18 00:00	11/02/18 08:50

Detection Summary

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TRIPBLANK

Lab Sample ID: 240-103745-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromodichloromethane	0.23	J	1.0	0.17	ug/L	1		8260B	Total/NA
2-Butanone (MEK)	3.9	J	10	1.2	ug/L	1		8260B	Total/NA
Chloroform	0.42	J	1.0	0.13	ug/L	1		8260B	Total/NA
Chloromethane	0.42	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: TW-16-04_103018

Lab Sample ID: 240-103745-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.5	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	20		3.3	0.53	ug/L	3.33		8260B	Total/NA
Vinyl chloride	90		3.3	0.67	ug/L	3.33		8260B	Total/NA

Client Sample ID: TW-16-03_103018

Lab Sample ID: 240-103745-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.1	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	42		6.7	1.1	ug/L	6.67		8260B	Total/NA
Vinyl chloride	97		6.7	1.3	ug/L	6.67		8260B	Total/NA

Client Sample ID: PW-16-02_103018

Lab Sample ID: 240-103745-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	11		2.0	0.32	ug/L	2		8260B	Total/NA
Vinyl chloride	62		2.0	0.40	ug/L	2		8260B	Total/NA

Client Sample ID: MW-51_103018

Lab Sample ID: 240-103745-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.5		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.33	J	1.0	0.16	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	0.40	J	1.0	0.15	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.0		1.0	0.17	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	0.24	J	1.0	0.21	ug/L	1		8260B	Total/NA
Vinyl chloride	0.39	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-44_103018

Lab Sample ID: 240-103745-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.7		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	240		20	4.0	ug/L	20		8260B	Total/NA

Client Sample ID: MW-65_103018

Lab Sample ID: 240-103745-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.9		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	7.0		2.0	0.32	ug/L	2		8260B	Total/NA
Vinyl chloride	48		2.0	0.40	ug/L	2		8260B	Total/NA

Client Sample ID: MW-49_103018

Lab Sample ID: 240-103745-8

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: 240-103745-1

Client Sample ID: MW-49_103018 (Continued)

Lab Sample ID: 240-103745-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.4		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	22000		1000	160	ug/L	1000		8260B	Total/NA
Vinyl chloride	8400		1000	200	ug/L	1000		8260B	Total/NA

Client Sample ID: TW-16-02_103018

Lab Sample ID: 240-103745-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.3		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	6900		500	80	ug/L	500		8260B	Total/NA
Vinyl chloride	12000		500	100	ug/L	500		8260B	Total/NA

Client Sample ID: TW-16-01_103018

Lab Sample ID: 240-103745-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	180		25	4.0	ug/L	25		8260B	Total/NA
trans-1,2-Dichloroethene	14	J	25	4.8	ug/L	25		8260B	Total/NA
Vinyl chloride	830		25	5.0	ug/L	25		8260B	Total/NA

Client Sample ID: DUP-03

Lab Sample ID: 240-103745-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.5	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	22		4.0	0.64	ug/L	4		8260B	Total/NA
Vinyl chloride	95		4.0	0.80	ug/L	4		8260B	Total/NA

Client Sample ID: DUP-05

Lab Sample ID: 240-103745-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.3		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.29	J	1.0	0.16	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	0.41	J	1.0	0.15	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.1		1.0	0.17	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	0.21	J	1.0	0.21	ug/L	1		8260B	Total/NA
Vinyl chloride	0.35	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: PW-16-01_103018

Lab Sample ID: 240-103745-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.3	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	250		40	6.4	ug/L	40		8260B	Total/NA
trans-1,2-Dichloroethene	10	J	40	7.6	ug/L	40		8260B	Total/NA
Vinyl chloride	1400		40	8.0	ug/L	40		8260B	Total/NA

Client Sample ID: MW-22_103018

Lab Sample ID: 240-103745-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	37		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	180		100	16	ug/L	100		8260B	Total/NA
Vinyl chloride	2600		100	20	ug/L	100		8260B	Total/NA

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: 240-103745-1

Client Sample ID: MW-23_103018

Lab Sample ID: 240-103745-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	66000		2500	400	ug/L	2500		8260B	Total/NA
trans-1,2-Dichloroethene	3000		2500	480	ug/L	2500		8260B	Total/NA
Trichloroethene	18000		2500	250	ug/L	2500		8260B	Total/NA
Vinyl chloride	1600	J	2500	500	ug/L	2500		8260B	Total/NA

Client Sample ID: DUP-02

Lab Sample ID: 240-103745-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.8		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	6400		330	53	ug/L	333.33		8260B	Total/NA
trans-1,2-Dichloroethene	96	J	330	63	ug/L	333.33		8260B	Total/NA
Vinyl chloride	11000		330	67	ug/L	333.33		8260B	Total/NA

Client Sample ID: DUP-04

Lab Sample ID: 240-103745-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	37		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	170		100	16	ug/L	100		8260B	Total/NA
Vinyl chloride	2200		100	20	ug/L	100		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: 240-103745-1

Client Sample ID: TRIPBLANK

Lab Sample ID: 240-103745-1

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/07/18 14:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		63 - 125					11/07/18 14:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/12/18 15:32	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 15:32	1
Bromodichloromethane	0.23	J	1.0	0.17	ug/L			11/12/18 15:32	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 15:32	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 15:32	1
2-Butanone (MEK)	3.9	J	10	1.2	ug/L			11/12/18 15:32	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 15:32	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 15:32	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 15:32	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 15:32	1
Chloroform	0.42	J	1.0	0.13	ug/L			11/12/18 15:32	1
Chloromethane	0.42	J	1.0	0.20	ug/L			11/12/18 15:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/18 15:32	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 15:32	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 15:32	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 15:32	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 15:32	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 15:32	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 15:32	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 15:32	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/12/18 15:32	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 15:32	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/12/18 15:32	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/12/18 15:32	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 15:32	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 15:32	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 15:32	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 15:32	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 15:32	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 15:32	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 15:32	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 15:32	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 15:32	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/12/18 15:32	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 15:32	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 15:32	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 15:32	1
Toluene	1.0	U	1.0	0.14	ug/L			11/12/18 15:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 15:32	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 15:32	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 15:32	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 15:32	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 15:32	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TRIPBLANK

Lab Sample ID: 240-103745-1

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/18 15:32	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 15:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 15:32	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 15:32	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 15:32	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 15:32	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/12/18 15:32	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 15:32	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 15:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					11/12/18 15:32	1
Dibromofluoromethane (Surr)	125		75 - 128					11/12/18 15:32	1
1,2-Dichloroethane-d4 (Surr)	115		70 - 121					11/12/18 15:32	1
Toluene-d8 (Surr)	89		70 - 123					11/12/18 15:32	1

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TW-16-04_103018

Lab Sample ID: 240-103745-2

Date Collected: 10/30/18 09:30

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.5	J	2.0	0.86	ug/L			11/07/18 20:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 125					11/07/18 20:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	33	U	33	18	ug/L			11/13/18 14:54	3.33
Benzene	3.3	U	3.3	0.43	ug/L			11/13/18 14:54	3.33
Bromodichloromethane	3.3	U	3.3	0.57	ug/L			11/13/18 14:54	3.33
Bromoform	3.3	U	3.3	2.5	ug/L			11/13/18 14:54	3.33
Bromomethane	3.3	U	3.3	1.4	ug/L			11/13/18 14:54	3.33
2-Butanone (MEK)	33	U	33	3.9	ug/L			11/13/18 14:54	3.33
Carbon disulfide	17	U	17	0.93	ug/L			11/13/18 14:54	3.33
Carbon tetrachloride	3.3	U	3.3	0.87	ug/L			11/13/18 14:54	3.33
Chlorobenzene	3.3	U	3.3	0.47	ug/L			11/13/18 14:54	3.33
Chloroethane	3.3	U	3.3	2.8	ug/L			11/13/18 14:54	3.33
Chloroform	3.3	U	3.3	0.43	ug/L			11/13/18 14:54	3.33
Chloromethane	3.3	U	3.3	0.67	ug/L			11/13/18 14:54	3.33
cis-1,2-Dichloroethene	20		3.3	0.53	ug/L			11/13/18 14:54	3.33
cis-1,3-Dichloropropene	3.3	U	3.3	2.0	ug/L			11/13/18 14:54	3.33
Cyclohexane	3.3	U	3.3	0.80	ug/L			11/13/18 14:54	3.33
Dibromochloromethane	3.3	U	3.3	1.3	ug/L			11/13/18 14:54	3.33
1,2-Dibromo-3-Chloropropane	3.3	U	3.3	3.0	ug/L			11/13/18 14:54	3.33
1,2-Dibromoethane	3.3	U	3.3	0.40	ug/L			11/13/18 14:54	3.33
1,2-Dichlorobenzene	3.3	U	3.3	0.50	ug/L			11/13/18 14:54	3.33
1,3-Dichlorobenzene	3.3	U	3.3	0.50	ug/L			11/13/18 14:54	3.33
1,4-Dichlorobenzene	3.3	U	3.3	0.53	ug/L			11/13/18 14:54	3.33
Dichlorodifluoromethane	3.3	U	3.3	1.2	ug/L			11/13/18 14:54	3.33
1,1-Dichloroethane	3.3	U	3.3	0.57	ug/L			11/13/18 14:54	3.33
1,2-Dichloroethane	3.3	U	3.3	0.70	ug/L			11/13/18 14:54	3.33
1,1-Dichloroethene	3.3	U	3.3	0.63	ug/L			11/13/18 14:54	3.33
1,2-Dichloropropane	3.3	U	3.3	0.50	ug/L			11/13/18 14:54	3.33
Ethylbenzene	3.3	U	3.3	0.37	ug/L			11/13/18 14:54	3.33
2-Hexanone	33	U	33	1.8	ug/L			11/13/18 14:54	3.33
Isopropylbenzene	3.3	U	3.3	0.30	ug/L			11/13/18 14:54	3.33
Methyl acetate	33	U	33	5.7	ug/L			11/13/18 14:54	3.33
Methylcyclohexane	3.3	U	3.3	1.1	ug/L			11/13/18 14:54	3.33
Methylene Chloride	17	U	17	8.7	ug/L			11/13/18 14:54	3.33
4-Methyl-2-pentanone (MIBK)	33	U	33	1.4	ug/L			11/13/18 14:54	3.33
Methyl tert-butyl ether	3.3	U	3.3	0.23	ug/L			11/13/18 14:54	3.33
Styrene	3.3	U	3.3	0.33	ug/L			11/13/18 14:54	3.33
1,1,2,2-Tetrachloroethane	3.3	U	3.3	0.43	ug/L			11/13/18 14:54	3.33
Tetrachloroethene	3.3	U	3.3	0.50	ug/L			11/13/18 14:54	3.33
Toluene	3.3	U	3.3	0.47	ug/L			11/13/18 14:54	3.33
trans-1,2-Dichloroethene	3.3	U	3.3	0.63	ug/L			11/13/18 14:54	3.33
trans-1,3-Dichloropropene	3.3	U	3.3	2.2	ug/L			11/13/18 14:54	3.33
1,2,4-Trichlorobenzene	3.3	U	3.3	0.87	ug/L			11/13/18 14:54	3.33
1,1,1-Trichloroethane	3.3	U	3.3	0.80	ug/L			11/13/18 14:54	3.33
1,1,2-Trichloroethane	3.3	U	3.3	0.30	ug/L			11/13/18 14:54	3.33

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TW-16-04_103018

Lab Sample ID: 240-103745-2

Date Collected: 10/30/18 09:30

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	3.3	U	3.3	0.33	ug/L			11/13/18 14:54	3.33
Trichlorofluoromethane	3.3	U	3.3	1.5	ug/L			11/13/18 14:54	3.33
1,1,2-Trichloro-1,2,2-trifluoroethane	3.3	U	3.3	1.4	ug/L			11/13/18 14:54	3.33
1,2,3-Trimethylbenzene	17	U	17	0.47	ug/L			11/13/18 14:54	3.33
1,2,4-Trimethylbenzene	3.3	U	3.3	0.23	ug/L			11/13/18 14:54	3.33
1,3,5-Trimethylbenzene	3.3	U	3.3	0.40	ug/L			11/13/18 14:54	3.33
Vinyl chloride	90		3.3	0.67	ug/L			11/13/18 14:54	3.33
Xylenes, Total	6.7	U	6.7	0.50	ug/L			11/13/18 14:54	3.33
Diethyl ether	6.7	U	6.7	0.63	ug/L			11/13/18 14:54	3.33

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		59 - 120		11/13/18 14:54	3.33
Dibromofluoromethane (Surr)	116		75 - 128		11/13/18 14:54	3.33
1,2-Dichloroethane-d4 (Surr)	114		70 - 121		11/13/18 14:54	3.33
Toluene-d8 (Surr)	89		70 - 123		11/13/18 14:54	3.33

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TW-16-03_103018

Lab Sample ID: 240-103745-3

Date Collected: 10/30/18 10:55

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.1	J	2.0	0.86	ug/L			11/07/18 21:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/07/18 21:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	67	U	67	36	ug/L			11/12/18 16:20	6.67
Benzene	6.7	U	6.7	0.87	ug/L			11/12/18 16:20	6.67
Bromodichloromethane	6.7	U	6.7	1.1	ug/L			11/12/18 16:20	6.67
Bromoform	6.7	U	6.7	5.1	ug/L			11/12/18 16:20	6.67
Bromomethane	6.7	U	6.7	2.8	ug/L			11/12/18 16:20	6.67
2-Butanone (MEK)	67	U	67	7.7	ug/L			11/12/18 16:20	6.67
Carbon disulfide	33	U	33	1.9	ug/L			11/12/18 16:20	6.67
Carbon tetrachloride	6.7	U	6.7	1.7	ug/L			11/12/18 16:20	6.67
Chlorobenzene	6.7	U	6.7	0.93	ug/L			11/12/18 16:20	6.67
Chloroethane	6.7	U	6.7	5.5	ug/L			11/12/18 16:20	6.67
Chloroform	6.7	U	6.7	0.87	ug/L			11/12/18 16:20	6.67
Chloromethane	6.7	U	6.7	1.3	ug/L			11/12/18 16:20	6.67
cis-1,2-Dichloroethene	42		6.7	1.1	ug/L			11/12/18 16:20	6.67
cis-1,3-Dichloropropene	6.7	U	6.7	4.1	ug/L			11/12/18 16:20	6.67
Cyclohexane	6.7	U	6.7	1.6	ug/L			11/12/18 16:20	6.67
Dibromochloromethane	6.7	U	6.7	2.6	ug/L			11/12/18 16:20	6.67
1,2-Dibromo-3-Chloropropane	6.7	U	6.7	6.1	ug/L			11/12/18 16:20	6.67
1,2-Dibromoethane	6.7	U	6.7	0.80	ug/L			11/12/18 16:20	6.67
1,2-Dichlorobenzene	6.7	U	6.7	1.0	ug/L			11/12/18 16:20	6.67
1,3-Dichlorobenzene	6.7	U	6.7	1.0	ug/L			11/12/18 16:20	6.67
1,4-Dichlorobenzene	6.7	U	6.7	1.1	ug/L			11/12/18 16:20	6.67
Dichlorodifluoromethane	6.7	U	6.7	2.3	ug/L			11/12/18 16:20	6.67
1,1-Dichloroethane	6.7	U	6.7	1.1	ug/L			11/12/18 16:20	6.67
1,2-Dichloroethane	6.7	U	6.7	1.4	ug/L			11/12/18 16:20	6.67
1,1-Dichloroethene	6.7	U	6.7	1.3	ug/L			11/12/18 16:20	6.67
1,2-Dichloropropane	6.7	U	6.7	1.0	ug/L			11/12/18 16:20	6.67
Ethylbenzene	6.7	U	6.7	0.73	ug/L			11/12/18 16:20	6.67
2-Hexanone	67	U	67	3.6	ug/L			11/12/18 16:20	6.67
Isopropylbenzene	6.7	U	6.7	0.60	ug/L			11/12/18 16:20	6.67
Methyl acetate	67	U	67	11	ug/L			11/12/18 16:20	6.67
Methylcyclohexane	6.7	U	6.7	2.2	ug/L			11/12/18 16:20	6.67
Methylene Chloride	33	U	33	17	ug/L			11/12/18 16:20	6.67
4-Methyl-2-pentanone (MIBK)	67	U	67	2.8	ug/L			11/12/18 16:20	6.67
Methyl tert-butyl ether	6.7	U	6.7	0.47	ug/L			11/12/18 16:20	6.67
Styrene	6.7	U	6.7	0.67	ug/L			11/12/18 16:20	6.67
1,1,2,2-Tetrachloroethane	6.7	U	6.7	0.87	ug/L			11/12/18 16:20	6.67
Tetrachloroethene	6.7	U	6.7	1.0	ug/L			11/12/18 16:20	6.67
Toluene	6.7	U	6.7	0.93	ug/L			11/12/18 16:20	6.67
trans-1,2-Dichloroethene	6.7	U	6.7	1.3	ug/L			11/12/18 16:20	6.67
trans-1,3-Dichloropropene	6.7	U	6.7	4.5	ug/L			11/12/18 16:20	6.67
1,2,4-Trichlorobenzene	6.7	U	6.7	1.7	ug/L			11/12/18 16:20	6.67
1,1,1-Trichloroethane	6.7	U	6.7	1.6	ug/L			11/12/18 16:20	6.67
1,1,2-Trichloroethane	6.7	U	6.7	0.60	ug/L			11/12/18 16:20	6.67

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TW-16-03_103018

Lab Sample ID: 240-103745-3

Date Collected: 10/30/18 10:55

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	6.7	U	6.7	0.67	ug/L			11/12/18 16:20	6.67
Trichlorofluoromethane	6.7	U	6.7	3.0	ug/L			11/12/18 16:20	6.67
1,1,2-Trichloro-1,2,2-trifluoroethane	6.7	U	6.7	2.7	ug/L			11/12/18 16:20	6.67
1,2,3-Trimethylbenzene	33	U	33	0.93	ug/L			11/12/18 16:20	6.67
1,2,4-Trimethylbenzene	6.7	U	6.7	0.47	ug/L			11/12/18 16:20	6.67
1,3,5-Trimethylbenzene	6.7	U	6.7	0.80	ug/L			11/12/18 16:20	6.67
Vinyl chloride	97		6.7	1.3	ug/L			11/12/18 16:20	6.67
Xylenes, Total	13	U	13	1.0	ug/L			11/12/18 16:20	6.67
Diethyl ether	13	U	13	1.3	ug/L			11/12/18 16:20	6.67
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		59 - 120					11/12/18 16:20	6.67
Dibromofluoromethane (Surr)	117		75 - 128					11/12/18 16:20	6.67
1,2-Dichloroethane-d4 (Surr)	114		70 - 121					11/12/18 16:20	6.67
Toluene-d8 (Surr)	92		70 - 123					11/12/18 16:20	6.67

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: PW-16-02_103018

Lab Sample ID: 240-103745-4

Date Collected: 10/30/18 12:00

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	J	2.0	0.86	ug/L			11/07/18 21:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		63 - 125					11/07/18 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	11	ug/L			11/12/18 16:44	2
Benzene	2.0	U	2.0	0.26	ug/L			11/12/18 16:44	2
Bromodichloromethane	2.0	U	2.0	0.34	ug/L			11/12/18 16:44	2
Bromoform	2.0	U	2.0	1.5	ug/L			11/12/18 16:44	2
Bromomethane	2.0	U	2.0	0.84	ug/L			11/12/18 16:44	2
2-Butanone (MEK)	20	U	20	2.3	ug/L			11/12/18 16:44	2
Carbon disulfide	10	U	10	0.56	ug/L			11/12/18 16:44	2
Carbon tetrachloride	2.0	U	2.0	0.52	ug/L			11/12/18 16:44	2
Chlorobenzene	2.0	U	2.0	0.28	ug/L			11/12/18 16:44	2
Chloroethane	2.0	U	2.0	1.7	ug/L			11/12/18 16:44	2
Chloroform	2.0	U	2.0	0.26	ug/L			11/12/18 16:44	2
Chloromethane	2.0	U	2.0	0.40	ug/L			11/12/18 16:44	2
cis-1,2-Dichloroethene	11		2.0	0.32	ug/L			11/12/18 16:44	2
cis-1,3-Dichloropropene	2.0	U	2.0	1.2	ug/L			11/12/18 16:44	2
Cyclohexane	2.0	U	2.0	0.48	ug/L			11/12/18 16:44	2
Dibromochloromethane	2.0	U	2.0	0.78	ug/L			11/12/18 16:44	2
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	1.8	ug/L			11/12/18 16:44	2
1,2-Dibromoethane	2.0	U	2.0	0.24	ug/L			11/12/18 16:44	2
1,2-Dichlorobenzene	2.0	U	2.0	0.30	ug/L			11/12/18 16:44	2
1,3-Dichlorobenzene	2.0	U	2.0	0.30	ug/L			11/12/18 16:44	2
1,4-Dichlorobenzene	2.0	U	2.0	0.32	ug/L			11/12/18 16:44	2
Dichlorodifluoromethane	2.0	U	2.0	0.70	ug/L			11/12/18 16:44	2
1,1-Dichloroethane	2.0	U	2.0	0.34	ug/L			11/12/18 16:44	2
1,2-Dichloroethane	2.0	U	2.0	0.42	ug/L			11/12/18 16:44	2
1,1-Dichloroethene	2.0	U	2.0	0.38	ug/L			11/12/18 16:44	2
1,2-Dichloropropane	2.0	U	2.0	0.30	ug/L			11/12/18 16:44	2
Ethylbenzene	2.0	U	2.0	0.22	ug/L			11/12/18 16:44	2
2-Hexanone	20	U	20	1.1	ug/L			11/12/18 16:44	2
Isopropylbenzene	2.0	U	2.0	0.18	ug/L			11/12/18 16:44	2
Methyl acetate	20	U	20	3.4	ug/L			11/12/18 16:44	2
Methylcyclohexane	2.0	U	2.0	0.66	ug/L			11/12/18 16:44	2
Methylene Chloride	10	U	10	5.2	ug/L			11/12/18 16:44	2
4-Methyl-2-pentanone (MIBK)	20	U	20	0.84	ug/L			11/12/18 16:44	2
Methyl tert-butyl ether	2.0	U	2.0	0.14	ug/L			11/12/18 16:44	2
Styrene	2.0	U	2.0	0.20	ug/L			11/12/18 16:44	2
1,1,2,2-Tetrachloroethane	2.0	U	2.0	0.26	ug/L			11/12/18 16:44	2
Tetrachloroethene	2.0	U	2.0	0.30	ug/L			11/12/18 16:44	2
Toluene	2.0	U	2.0	0.28	ug/L			11/12/18 16:44	2
trans-1,2-Dichloroethene	2.0	U	2.0	0.38	ug/L			11/12/18 16:44	2
trans-1,3-Dichloropropene	2.0	U	2.0	1.3	ug/L			11/12/18 16:44	2
1,2,4-Trichlorobenzene	2.0	U	2.0	0.52	ug/L			11/12/18 16:44	2
1,1,1-Trichloroethane	2.0	U	2.0	0.48	ug/L			11/12/18 16:44	2
1,1,2-Trichloroethane	2.0	U	2.0	0.18	ug/L			11/12/18 16:44	2

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: PW-16-02_103018

Lab Sample ID: 240-103745-4

Date Collected: 10/30/18 12:00

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	2.0	U	2.0	0.20	ug/L			11/12/18 16:44	2
Trichlorofluoromethane	2.0	U	2.0	0.90	ug/L			11/12/18 16:44	2
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	0.82	ug/L			11/12/18 16:44	2
1,2,3-Trimethylbenzene	10	U	10	0.28	ug/L			11/12/18 16:44	2
1,2,4-Trimethylbenzene	2.0	U	2.0	0.14	ug/L			11/12/18 16:44	2
1,3,5-Trimethylbenzene	2.0	U	2.0	0.24	ug/L			11/12/18 16:44	2
Vinyl chloride	62		2.0	0.40	ug/L			11/12/18 16:44	2
Xylenes, Total	4.0	U	4.0	0.30	ug/L			11/12/18 16:44	2
Diethyl ether	4.0	U	4.0	0.38	ug/L			11/12/18 16:44	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		59 - 120					11/12/18 16:44	2
Dibromofluoromethane (Surr)	125		75 - 128					11/12/18 16:44	2
1,2-Dichloroethane-d4 (Surr)	118		70 - 121					11/12/18 16:44	2
Toluene-d8 (Surr)	91		70 - 123					11/12/18 16:44	2

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-51_103018

Lab Sample ID: 240-103745-5

Date Collected: 10/30/18 13:30

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.5		2.0	0.86	ug/L			11/07/18 22:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/07/18 22:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/12/18 17:08	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 17:08	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/12/18 17:08	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 17:08	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 17:08	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/12/18 17:08	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 17:08	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 17:08	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 17:08	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 17:08	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/12/18 17:08	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/12/18 17:08	1
cis-1,2-Dichloroethene	0.33	J	1.0	0.16	ug/L			11/12/18 17:08	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 17:08	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 17:08	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 17:08	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 17:08	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 17:08	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 17:08	1
1,3-Dichlorobenzene	0.40	J	1.0	0.15	ug/L			11/12/18 17:08	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/12/18 17:08	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 17:08	1
1,1-Dichloroethane	1.0		1.0	0.17	ug/L			11/12/18 17:08	1
1,2-Dichloroethane	0.24	J	1.0	0.21	ug/L			11/12/18 17:08	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 17:08	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 17:08	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 17:08	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 17:08	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 17:08	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 17:08	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 17:08	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 17:08	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 17:08	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/12/18 17:08	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 17:08	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 17:08	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 17:08	1
Toluene	1.0	U	1.0	0.14	ug/L			11/12/18 17:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 17:08	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 17:08	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 17:08	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 17:08	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 17:08	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-51_103018

Lab Sample ID: 240-103745-5

Date Collected: 10/30/18 13:30

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/18 17:08	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 17:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 17:08	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 17:08	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 17:08	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 17:08	1
Vinyl chloride	0.39	J	1.0	0.20	ug/L			11/12/18 17:08	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 17:08	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 17:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					11/12/18 17:08	1
Dibromofluoromethane (Surr)	122		75 - 128					11/12/18 17:08	1
1,2-Dichloroethane-d4 (Surr)	120		70 - 121					11/12/18 17:08	1
Toluene-d8 (Surr)	90		70 - 123					11/12/18 17:08	1

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-44_103018

Lab Sample ID: 240-103745-6

Date Collected: 10/30/18 15:00

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.7		2.0	0.86	ug/L			11/07/18 22:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		63 - 125					11/07/18 22:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	200	U	200	110	ug/L			11/12/18 17:31	20
Benzene	20	U	20	2.6	ug/L			11/12/18 17:31	20
Bromodichloromethane	20	U	20	3.4	ug/L			11/12/18 17:31	20
Bromoform	20	U	20	15	ug/L			11/12/18 17:31	20
Bromomethane	20	U	20	8.4	ug/L			11/12/18 17:31	20
2-Butanone (MEK)	200	U	200	23	ug/L			11/12/18 17:31	20
Carbon disulfide	100	U	100	5.6	ug/L			11/12/18 17:31	20
Carbon tetrachloride	20	U	20	5.2	ug/L			11/12/18 17:31	20
Chlorobenzene	20	U	20	2.8	ug/L			11/12/18 17:31	20
Chloroethane	20	U	20	17	ug/L			11/12/18 17:31	20
Chloroform	20	U	20	2.6	ug/L			11/12/18 17:31	20
Chloromethane	20	U	20	4.0	ug/L			11/12/18 17:31	20
cis-1,2-Dichloroethene	20	U	20	3.2	ug/L			11/12/18 17:31	20
cis-1,3-Dichloropropene	20	U	20	12	ug/L			11/12/18 17:31	20
Cyclohexane	20	U	20	4.8	ug/L			11/12/18 17:31	20
Dibromochloromethane	20	U	20	7.8	ug/L			11/12/18 17:31	20
1,2-Dibromo-3-Chloropropane	20	U	20	18	ug/L			11/12/18 17:31	20
1,2-Dibromoethane	20	U	20	2.4	ug/L			11/12/18 17:31	20
1,2-Dichlorobenzene	20	U	20	3.0	ug/L			11/12/18 17:31	20
1,3-Dichlorobenzene	20	U	20	3.0	ug/L			11/12/18 17:31	20
1,4-Dichlorobenzene	20	U	20	3.2	ug/L			11/12/18 17:31	20
Dichlorodifluoromethane	20	U	20	7.0	ug/L			11/12/18 17:31	20
1,1-Dichloroethane	20	U	20	3.4	ug/L			11/12/18 17:31	20
1,2-Dichloroethane	20	U	20	4.2	ug/L			11/12/18 17:31	20
1,1-Dichloroethene	20	U	20	3.8	ug/L			11/12/18 17:31	20
1,2-Dichloropropane	20	U	20	3.0	ug/L			11/12/18 17:31	20
Ethylbenzene	20	U	20	2.2	ug/L			11/12/18 17:31	20
2-Hexanone	200	U	200	11	ug/L			11/12/18 17:31	20
Isopropylbenzene	20	U	20	1.8	ug/L			11/12/18 17:31	20
Methyl acetate	200	U	200	34	ug/L			11/12/18 17:31	20
Methylcyclohexane	20	U	20	6.6	ug/L			11/12/18 17:31	20
Methylene Chloride	100	U	100	52	ug/L			11/12/18 17:31	20
4-Methyl-2-pentanone (MIBK)	200	U	200	8.4	ug/L			11/12/18 17:31	20
Methyl tert-butyl ether	20	U	20	1.4	ug/L			11/12/18 17:31	20
Styrene	20	U	20	2.0	ug/L			11/12/18 17:31	20
1,1,2,2-Tetrachloroethane	20	U	20	2.6	ug/L			11/12/18 17:31	20
Tetrachloroethene	20	U	20	3.0	ug/L			11/12/18 17:31	20
Toluene	20	U	20	2.8	ug/L			11/12/18 17:31	20
trans-1,2-Dichloroethene	20	U	20	3.8	ug/L			11/12/18 17:31	20
trans-1,3-Dichloropropene	20	U	20	13	ug/L			11/12/18 17:31	20
1,2,4-Trichlorobenzene	20	U	20	5.2	ug/L			11/12/18 17:31	20
1,1,1-Trichloroethane	20	U	20	4.8	ug/L			11/12/18 17:31	20
1,1,2-Trichloroethane	20	U	20	1.8	ug/L			11/12/18 17:31	20

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-44_103018

Lab Sample ID: 240-103745-6

Date Collected: 10/30/18 15:00

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	20	U	20	2.0	ug/L			11/12/18 17:31	20
Trichlorofluoromethane	20	U	20	9.0	ug/L			11/12/18 17:31	20
1,1,2-Trichloro-1,2,2-trifluoroethane	20	U	20	8.2	ug/L			11/12/18 17:31	20
1,2,3-Trimethylbenzene	100	U	100	2.8	ug/L			11/12/18 17:31	20
1,2,4-Trimethylbenzene	20	U	20	1.4	ug/L			11/12/18 17:31	20
1,3,5-Trimethylbenzene	20	U	20	2.4	ug/L			11/12/18 17:31	20
Vinyl chloride	240		20	4.0	ug/L			11/12/18 17:31	20
Xylenes, Total	40	U	40	3.0	ug/L			11/12/18 17:31	20
Diethyl ether	40	U	40	3.8	ug/L			11/12/18 17:31	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					11/12/18 17:31	20
Dibromofluoromethane (Surr)	124		75 - 128					11/12/18 17:31	20
1,2-Dichloroethane-d4 (Surr)	120		70 - 121					11/12/18 17:31	20
Toluene-d8 (Surr)	90		70 - 123					11/12/18 17:31	20

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-65_103018

Lab Sample ID: 240-103745-7

Date Collected: 10/30/18 16:10

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.9		2.0	0.86	ug/L			11/09/18 17:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		63 - 125					11/09/18 17:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	20	U	20	11	ug/L			11/13/18 15:18	2
Benzene	2.0	U	2.0	0.26	ug/L			11/13/18 15:18	2
Bromodichloromethane	2.0	U	2.0	0.34	ug/L			11/13/18 15:18	2
Bromoform	2.0	U	2.0	1.5	ug/L			11/13/18 15:18	2
Bromomethane	2.0	U	2.0	0.84	ug/L			11/13/18 15:18	2
2-Butanone (MEK)	20	U	20	2.3	ug/L			11/13/18 15:18	2
Carbon disulfide	10	U	10	0.56	ug/L			11/13/18 15:18	2
Carbon tetrachloride	2.0	U	2.0	0.52	ug/L			11/13/18 15:18	2
Chlorobenzene	2.0	U	2.0	0.28	ug/L			11/13/18 15:18	2
Chloroethane	2.0	U	2.0	1.7	ug/L			11/13/18 15:18	2
Chloroform	2.0	U	2.0	0.26	ug/L			11/13/18 15:18	2
Chloromethane	2.0	U	2.0	0.40	ug/L			11/13/18 15:18	2
cis-1,2-Dichloroethene	7.0		2.0	0.32	ug/L			11/13/18 15:18	2
cis-1,3-Dichloropropene	2.0	U	2.0	1.2	ug/L			11/13/18 15:18	2
Cyclohexane	2.0	U	2.0	0.48	ug/L			11/13/18 15:18	2
Dibromochloromethane	2.0	U	2.0	0.78	ug/L			11/13/18 15:18	2
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	1.8	ug/L			11/13/18 15:18	2
1,2-Dibromoethane	2.0	U	2.0	0.24	ug/L			11/13/18 15:18	2
1,2-Dichlorobenzene	2.0	U	2.0	0.30	ug/L			11/13/18 15:18	2
1,3-Dichlorobenzene	2.0	U	2.0	0.30	ug/L			11/13/18 15:18	2
1,4-Dichlorobenzene	2.0	U	2.0	0.32	ug/L			11/13/18 15:18	2
Dichlorodifluoromethane	2.0	U	2.0	0.70	ug/L			11/13/18 15:18	2
1,1-Dichloroethane	2.0	U	2.0	0.34	ug/L			11/13/18 15:18	2
1,2-Dichloroethane	2.0	U	2.0	0.42	ug/L			11/13/18 15:18	2
1,1-Dichloroethene	2.0	U	2.0	0.38	ug/L			11/13/18 15:18	2
1,2-Dichloropropane	2.0	U	2.0	0.30	ug/L			11/13/18 15:18	2
Ethylbenzene	2.0	U	2.0	0.22	ug/L			11/13/18 15:18	2
2-Hexanone	20	U	20	1.1	ug/L			11/13/18 15:18	2
Isopropylbenzene	2.0	U	2.0	0.18	ug/L			11/13/18 15:18	2
Methyl acetate	20	U	20	3.4	ug/L			11/13/18 15:18	2
Methylcyclohexane	2.0	U	2.0	0.66	ug/L			11/13/18 15:18	2
Methylene Chloride	10	U	10	5.2	ug/L			11/13/18 15:18	2
4-Methyl-2-pentanone (MIBK)	20	U	20	0.84	ug/L			11/13/18 15:18	2
Methyl tert-butyl ether	2.0	U	2.0	0.14	ug/L			11/13/18 15:18	2
Styrene	2.0	U	2.0	0.20	ug/L			11/13/18 15:18	2
1,1,2,2-Tetrachloroethane	2.0	U	2.0	0.26	ug/L			11/13/18 15:18	2
Tetrachloroethene	2.0	U	2.0	0.30	ug/L			11/13/18 15:18	2
Toluene	2.0	U	2.0	0.28	ug/L			11/13/18 15:18	2
trans-1,2-Dichloroethene	2.0	U	2.0	0.38	ug/L			11/13/18 15:18	2
trans-1,3-Dichloropropene	2.0	U	2.0	1.3	ug/L			11/13/18 15:18	2
1,2,4-Trichlorobenzene	2.0	U	2.0	0.52	ug/L			11/13/18 15:18	2
1,1,1-Trichloroethane	2.0	U	2.0	0.48	ug/L			11/13/18 15:18	2
1,1,2-Trichloroethane	2.0	U	2.0	0.18	ug/L			11/13/18 15:18	2

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-65_103018

Lab Sample ID: 240-103745-7

Date Collected: 10/30/18 16:10

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	2.0	U	2.0	0.20	ug/L			11/13/18 15:18	2
Trichlorofluoromethane	2.0	U	2.0	0.90	ug/L			11/13/18 15:18	2
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	0.82	ug/L			11/13/18 15:18	2
1,2,3-Trimethylbenzene	10	U	10	0.28	ug/L			11/13/18 15:18	2
1,2,4-Trimethylbenzene	2.0	U	2.0	0.14	ug/L			11/13/18 15:18	2
1,3,5-Trimethylbenzene	2.0	U	2.0	0.24	ug/L			11/13/18 15:18	2
Vinyl chloride	48		2.0	0.40	ug/L			11/13/18 15:18	2
Xylenes, Total	4.0	U	4.0	0.30	ug/L			11/13/18 15:18	2
Diethyl ether	4.0	U	4.0	0.38	ug/L			11/13/18 15:18	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					11/13/18 15:18	2
Dibromofluoromethane (Surr)	121		75 - 128					11/13/18 15:18	2
1,2-Dichloroethane-d4 (Surr)	116		70 - 121					11/13/18 15:18	2
Toluene-d8 (Surr)	91		70 - 123					11/13/18 15:18	2

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-49_103018

Lab Sample ID: 240-103745-8

Date Collected: 10/30/18 17:55

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.4		2.0	0.86	ug/L			11/09/18 17:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		63 - 125					11/09/18 17:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10000	U	10000	5400	ug/L			11/13/18 15:42	1000
Benzene	1000	U	1000	130	ug/L			11/13/18 15:42	1000
Bromodichloromethane	1000	U	1000	170	ug/L			11/13/18 15:42	1000
Bromoform	1000	U	1000	760	ug/L			11/13/18 15:42	1000
Bromomethane	1000	U	1000	420	ug/L			11/13/18 15:42	1000
2-Butanone (MEK)	10000	U	10000	1200	ug/L			11/13/18 15:42	1000
Carbon disulfide	5000	U	5000	280	ug/L			11/13/18 15:42	1000
Carbon tetrachloride	1000	U	1000	260	ug/L			11/13/18 15:42	1000
Chlorobenzene	1000	U	1000	140	ug/L			11/13/18 15:42	1000
Chloroethane	1000	U	1000	830	ug/L			11/13/18 15:42	1000
Chloroform	1000	U	1000	130	ug/L			11/13/18 15:42	1000
Chloromethane	1000	U	1000	200	ug/L			11/13/18 15:42	1000
cis-1,2-Dichloroethene	22000		1000	160	ug/L			11/13/18 15:42	1000
cis-1,3-Dichloropropene	1000	U	1000	610	ug/L			11/13/18 15:42	1000
Cyclohexane	1000	U	1000	240	ug/L			11/13/18 15:42	1000
Dibromochloromethane	1000	U	1000	390	ug/L			11/13/18 15:42	1000
1,2-Dibromo-3-Chloropropane	1000	U	1000	910	ug/L			11/13/18 15:42	1000
1,2-Dibromoethane	1000	U	1000	120	ug/L			11/13/18 15:42	1000
1,2-Dichlorobenzene	1000	U	1000	150	ug/L			11/13/18 15:42	1000
1,3-Dichlorobenzene	1000	U	1000	150	ug/L			11/13/18 15:42	1000
1,4-Dichlorobenzene	1000	U	1000	160	ug/L			11/13/18 15:42	1000
Dichlorodifluoromethane	1000	U	1000	350	ug/L			11/13/18 15:42	1000
1,1-Dichloroethane	1000	U	1000	170	ug/L			11/13/18 15:42	1000
1,2-Dichloroethane	1000	U	1000	210	ug/L			11/13/18 15:42	1000
1,1-Dichloroethene	1000	U	1000	190	ug/L			11/13/18 15:42	1000
1,2-Dichloropropane	1000	U	1000	150	ug/L			11/13/18 15:42	1000
Ethylbenzene	1000	U	1000	110	ug/L			11/13/18 15:42	1000
2-Hexanone	10000	U	10000	540	ug/L			11/13/18 15:42	1000
Isopropylbenzene	1000	U	1000	90	ug/L			11/13/18 15:42	1000
Methyl acetate	10000	U	10000	1700	ug/L			11/13/18 15:42	1000
Methylcyclohexane	1000	U	1000	330	ug/L			11/13/18 15:42	1000
Methylene Chloride	5000	U	5000	2600	ug/L			11/13/18 15:42	1000
4-Methyl-2-pentanone (MIBK)	10000	U	10000	420	ug/L			11/13/18 15:42	1000
Methyl tert-butyl ether	1000	U	1000	70	ug/L			11/13/18 15:42	1000
Styrene	1000	U	1000	100	ug/L			11/13/18 15:42	1000
1,1,2,2-Tetrachloroethane	1000	U	1000	130	ug/L			11/13/18 15:42	1000
Tetrachloroethene	1000	U	1000	150	ug/L			11/13/18 15:42	1000
Toluene	1000	U	1000	140	ug/L			11/13/18 15:42	1000
trans-1,2-Dichloroethene	1000	U	1000	190	ug/L			11/13/18 15:42	1000
trans-1,3-Dichloropropene	1000	U	1000	670	ug/L			11/13/18 15:42	1000
1,2,4-Trichlorobenzene	1000	U	1000	260	ug/L			11/13/18 15:42	1000
1,1,1-Trichloroethane	1000	U	1000	240	ug/L			11/13/18 15:42	1000
1,1,2-Trichloroethane	1000	U	1000	90	ug/L			11/13/18 15:42	1000

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-49_103018

Lab Sample ID: 240-103745-8

Date Collected: 10/30/18 17:55

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1000	U	1000	100	ug/L			11/13/18 15:42	1000
Trichlorofluoromethane	1000	U	1000	450	ug/L			11/13/18 15:42	1000
1,1,2-Trichloro-1,2,2-trifluoroethane	1000	U	1000	410	ug/L			11/13/18 15:42	1000
1,2,3-Trimethylbenzene	5000	U	5000	140	ug/L			11/13/18 15:42	1000
1,2,4-Trimethylbenzene	1000	U	1000	70	ug/L			11/13/18 15:42	1000
1,3,5-Trimethylbenzene	1000	U	1000	120	ug/L			11/13/18 15:42	1000
Vinyl chloride	8400		1000	200	ug/L			11/13/18 15:42	1000
Xylenes, Total	2000	U	2000	150	ug/L			11/13/18 15:42	1000
Diethyl ether	2000	U	2000	190	ug/L			11/13/18 15:42	1000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		59 - 120					11/13/18 15:42	1000
Dibromofluoromethane (Surr)	117		75 - 128					11/13/18 15:42	1000
1,2-Dichloroethane-d4 (Surr)	112		70 - 121					11/13/18 15:42	1000
Toluene-d8 (Surr)	90		70 - 123					11/13/18 15:42	1000

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TW-16-02_103018

Lab Sample ID: 240-103745-9

Date Collected: 10/30/18 09:25

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.3		2.0	0.86	ug/L			11/09/18 17:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		63 - 125					11/09/18 17:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	5000	U	5000	2700	ug/L			11/13/18 16:06	500
Benzene	500	U	500	65	ug/L			11/13/18 16:06	500
Bromodichloromethane	500	U	500	85	ug/L			11/13/18 16:06	500
Bromoform	500	U	500	380	ug/L			11/13/18 16:06	500
Bromomethane	500	U	500	210	ug/L			11/13/18 16:06	500
2-Butanone (MEK)	5000	U	5000	580	ug/L			11/13/18 16:06	500
Carbon disulfide	2500	U	2500	140	ug/L			11/13/18 16:06	500
Carbon tetrachloride	500	U	500	130	ug/L			11/13/18 16:06	500
Chlorobenzene	500	U	500	70	ug/L			11/13/18 16:06	500
Chloroethane	500	U	500	420	ug/L			11/13/18 16:06	500
Chloroform	500	U	500	65	ug/L			11/13/18 16:06	500
Chloromethane	500	U	500	100	ug/L			11/13/18 16:06	500
cis-1,2-Dichloroethene	6900		500	80	ug/L			11/13/18 16:06	500
cis-1,3-Dichloropropene	500	U	500	310	ug/L			11/13/18 16:06	500
Cyclohexane	500	U	500	120	ug/L			11/13/18 16:06	500
Dibromochloromethane	500	U	500	200	ug/L			11/13/18 16:06	500
1,2-Dibromo-3-Chloropropane	500	U	500	460	ug/L			11/13/18 16:06	500
1,2-Dibromoethane	500	U	500	60	ug/L			11/13/18 16:06	500
1,2-Dichlorobenzene	500	U	500	75	ug/L			11/13/18 16:06	500
1,3-Dichlorobenzene	500	U	500	75	ug/L			11/13/18 16:06	500
1,4-Dichlorobenzene	500	U	500	80	ug/L			11/13/18 16:06	500
Dichlorodifluoromethane	500	U	500	180	ug/L			11/13/18 16:06	500
1,1-Dichloroethane	500	U	500	85	ug/L			11/13/18 16:06	500
1,2-Dichloroethane	500	U	500	110	ug/L			11/13/18 16:06	500
1,1-Dichloroethene	500	U	500	95	ug/L			11/13/18 16:06	500
1,2-Dichloropropane	500	U	500	75	ug/L			11/13/18 16:06	500
Ethylbenzene	500	U	500	55	ug/L			11/13/18 16:06	500
2-Hexanone	5000	U	5000	270	ug/L			11/13/18 16:06	500
Isopropylbenzene	500	U	500	45	ug/L			11/13/18 16:06	500
Methyl acetate	5000	U	5000	860	ug/L			11/13/18 16:06	500
Methylcyclohexane	500	U	500	170	ug/L			11/13/18 16:06	500
Methylene Chloride	2500	U	2500	1300	ug/L			11/13/18 16:06	500
4-Methyl-2-pentanone (MIBK)	5000	U	5000	210	ug/L			11/13/18 16:06	500
Methyl tert-butyl ether	500	U	500	35	ug/L			11/13/18 16:06	500
Styrene	500	U	500	50	ug/L			11/13/18 16:06	500
1,1,2,2-Tetrachloroethane	500	U	500	65	ug/L			11/13/18 16:06	500
Tetrachloroethene	500	U	500	75	ug/L			11/13/18 16:06	500
Toluene	500	U	500	70	ug/L			11/13/18 16:06	500
trans-1,2-Dichloroethene	500	U	500	95	ug/L			11/13/18 16:06	500
trans-1,3-Dichloropropene	500	U	500	340	ug/L			11/13/18 16:06	500
1,2,4-Trichlorobenzene	500	U	500	130	ug/L			11/13/18 16:06	500
1,1,1-Trichloroethane	500	U	500	120	ug/L			11/13/18 16:06	500
1,1,2-Trichloroethane	500	U	500	45	ug/L			11/13/18 16:06	500

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TW-16-02_103018

Lab Sample ID: 240-103745-9

Date Collected: 10/30/18 09:25

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	500	U	500	50	ug/L			11/13/18 16:06	500
Trichlorofluoromethane	500	U	500	230	ug/L			11/13/18 16:06	500
1,1,2-Trichloro-1,2,2-trifluoroethane	500	U	500	210	ug/L			11/13/18 16:06	500
1,2,3-Trimethylbenzene	2500	U	2500	70	ug/L			11/13/18 16:06	500
1,2,4-Trimethylbenzene	500	U	500	35	ug/L			11/13/18 16:06	500
1,3,5-Trimethylbenzene	500	U	500	60	ug/L			11/13/18 16:06	500
Vinyl chloride	12000		500	100	ug/L			11/13/18 16:06	500
Xylenes, Total	1000	U	1000	75	ug/L			11/13/18 16:06	500
Diethyl ether	1000	U	1000	95	ug/L			11/13/18 16:06	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		59 - 120					11/13/18 16:06	500
Dibromofluoromethane (Surr)	121		75 - 128					11/13/18 16:06	500
1,2-Dichloroethane-d4 (Surr)	114		70 - 121					11/13/18 16:06	500
Toluene-d8 (Surr)	93		70 - 123					11/13/18 16:06	500

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TW-16-01_103018

Lab Sample ID: 240-103745-10

Date Collected: 10/30/18 10:25

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/09/18 19:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/09/18 19:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	250	U	250	140	ug/L			11/12/18 19:07	25
Benzene	25	U	25	3.3	ug/L			11/12/18 19:07	25
Bromodichloromethane	25	U	25	4.3	ug/L			11/12/18 19:07	25
Bromoform	25	U	25	19	ug/L			11/12/18 19:07	25
Bromomethane	25	U	25	11	ug/L			11/12/18 19:07	25
2-Butanone (MEK)	250	U	250	29	ug/L			11/12/18 19:07	25
Carbon disulfide	130	U	130	7.0	ug/L			11/12/18 19:07	25
Carbon tetrachloride	25	U	25	6.5	ug/L			11/12/18 19:07	25
Chlorobenzene	25	U	25	3.5	ug/L			11/12/18 19:07	25
Chloroethane	25	U	25	21	ug/L			11/12/18 19:07	25
Chloroform	25	U	25	3.3	ug/L			11/12/18 19:07	25
Chloromethane	25	U	25	5.0	ug/L			11/12/18 19:07	25
cis-1,2-Dichloroethene	180		25	4.0	ug/L			11/12/18 19:07	25
cis-1,3-Dichloropropene	25	U	25	15	ug/L			11/12/18 19:07	25
Cyclohexane	25	U	25	6.0	ug/L			11/12/18 19:07	25
Dibromochloromethane	25	U	25	9.8	ug/L			11/12/18 19:07	25
1,2-Dibromo-3-Chloropropane	25	U	25	23	ug/L			11/12/18 19:07	25
1,2-Dibromoethane	25	U	25	3.0	ug/L			11/12/18 19:07	25
1,2-Dichlorobenzene	25	U	25	3.8	ug/L			11/12/18 19:07	25
1,3-Dichlorobenzene	25	U	25	3.8	ug/L			11/12/18 19:07	25
1,4-Dichlorobenzene	25	U	25	4.0	ug/L			11/12/18 19:07	25
Dichlorodifluoromethane	25	U	25	8.8	ug/L			11/12/18 19:07	25
1,1-Dichloroethane	25	U	25	4.3	ug/L			11/12/18 19:07	25
1,2-Dichloroethane	25	U	25	5.3	ug/L			11/12/18 19:07	25
1,1-Dichloroethene	25	U	25	4.8	ug/L			11/12/18 19:07	25
1,2-Dichloropropane	25	U	25	3.8	ug/L			11/12/18 19:07	25
Ethylbenzene	25	U	25	2.8	ug/L			11/12/18 19:07	25
2-Hexanone	250	U	250	14	ug/L			11/12/18 19:07	25
Isopropylbenzene	25	U	25	2.3	ug/L			11/12/18 19:07	25
Methyl acetate	250	U	250	43	ug/L			11/12/18 19:07	25
Methylcyclohexane	25	U	25	8.3	ug/L			11/12/18 19:07	25
Methylene Chloride	130	U	130	66	ug/L			11/12/18 19:07	25
4-Methyl-2-pentanone (MIBK)	250	U	250	11	ug/L			11/12/18 19:07	25
Methyl tert-butyl ether	25	U	25	1.8	ug/L			11/12/18 19:07	25
Styrene	25	U	25	2.5	ug/L			11/12/18 19:07	25
1,1,2,2-Tetrachloroethane	25	U	25	3.3	ug/L			11/12/18 19:07	25
Tetrachloroethene	25	U	25	3.8	ug/L			11/12/18 19:07	25
Toluene	25	U	25	3.5	ug/L			11/12/18 19:07	25
trans-1,2-Dichloroethene	14	J	25	4.8	ug/L			11/12/18 19:07	25
trans-1,3-Dichloropropene	25	U	25	17	ug/L			11/12/18 19:07	25
1,2,4-Trichlorobenzene	25	U	25	6.5	ug/L			11/12/18 19:07	25
1,1,1-Trichloroethane	25	U	25	6.0	ug/L			11/12/18 19:07	25
1,1,2-Trichloroethane	25	U	25	2.3	ug/L			11/12/18 19:07	25

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TW-16-01_103018

Lab Sample ID: 240-103745-10

Date Collected: 10/30/18 10:25

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	25	U	25	2.5	ug/L			11/12/18 19:07	25
Trichlorofluoromethane	25	U	25	11	ug/L			11/12/18 19:07	25
1,1,2-Trichloro-1,2,2-trifluoroethane	25	U	25	10	ug/L			11/12/18 19:07	25
1,2,3-Trimethylbenzene	130	U	130	3.5	ug/L			11/12/18 19:07	25
1,2,4-Trimethylbenzene	25	U	25	1.8	ug/L			11/12/18 19:07	25
1,3,5-Trimethylbenzene	25	U	25	3.0	ug/L			11/12/18 19:07	25
Vinyl chloride	830		25	5.0	ug/L			11/12/18 19:07	25
Xylenes, Total	50	U	50	3.8	ug/L			11/12/18 19:07	25
Diethyl ether	50	U	50	4.8	ug/L			11/12/18 19:07	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		59 - 120		11/12/18 19:07	25
Dibromofluoromethane (Surr)	121		75 - 128		11/12/18 19:07	25
1,2-Dichloroethane-d4 (Surr)	118		70 - 121		11/12/18 19:07	25
Toluene-d8 (Surr)	90		70 - 123		11/12/18 19:07	25

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: DUP-03

Date Collected: 10/30/18 00:00

Date Received: 11/02/18 08:50

Lab Sample ID: 240-103745-11

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.5	J	2.0	0.86	ug/L			11/09/18 19:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		63 - 125					11/09/18 19:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	40	U	40	22	ug/L			11/13/18 16:30	4
Benzene	4.0	U	4.0	0.52	ug/L			11/13/18 16:30	4
Bromodichloromethane	4.0	U	4.0	0.68	ug/L			11/13/18 16:30	4
Bromoform	4.0	U	4.0	3.0	ug/L			11/13/18 16:30	4
Bromomethane	4.0	U	4.0	1.7	ug/L			11/13/18 16:30	4
2-Butanone (MEK)	40	U	40	4.6	ug/L			11/13/18 16:30	4
Carbon disulfide	20	U	20	1.1	ug/L			11/13/18 16:30	4
Carbon tetrachloride	4.0	U	4.0	1.0	ug/L			11/13/18 16:30	4
Chlorobenzene	4.0	U	4.0	0.56	ug/L			11/13/18 16:30	4
Chloroethane	4.0	U	4.0	3.3	ug/L			11/13/18 16:30	4
Chloroform	4.0	U	4.0	0.52	ug/L			11/13/18 16:30	4
Chloromethane	4.0	U	4.0	0.80	ug/L			11/13/18 16:30	4
cis-1,2-Dichloroethene	22		4.0	0.64	ug/L			11/13/18 16:30	4
cis-1,3-Dichloropropene	4.0	U	4.0	2.4	ug/L			11/13/18 16:30	4
Cyclohexane	4.0	U	4.0	0.96	ug/L			11/13/18 16:30	4
Dibromochloromethane	4.0	U	4.0	1.6	ug/L			11/13/18 16:30	4
1,2-Dibromo-3-Chloropropane	4.0	U	4.0	3.6	ug/L			11/13/18 16:30	4
1,2-Dibromoethane	4.0	U	4.0	0.48	ug/L			11/13/18 16:30	4
1,2-Dichlorobenzene	4.0	U	4.0	0.60	ug/L			11/13/18 16:30	4
1,3-Dichlorobenzene	4.0	U	4.0	0.60	ug/L			11/13/18 16:30	4
1,4-Dichlorobenzene	4.0	U	4.0	0.64	ug/L			11/13/18 16:30	4
Dichlorodifluoromethane	4.0	U	4.0	1.4	ug/L			11/13/18 16:30	4
1,1-Dichloroethane	4.0	U	4.0	0.68	ug/L			11/13/18 16:30	4
1,2-Dichloroethane	4.0	U	4.0	0.84	ug/L			11/13/18 16:30	4
1,1-Dichloroethene	4.0	U	4.0	0.76	ug/L			11/13/18 16:30	4
1,2-Dichloropropane	4.0	U	4.0	0.60	ug/L			11/13/18 16:30	4
Ethylbenzene	4.0	U	4.0	0.44	ug/L			11/13/18 16:30	4
2-Hexanone	40	U	40	2.2	ug/L			11/13/18 16:30	4
Isopropylbenzene	4.0	U	4.0	0.36	ug/L			11/13/18 16:30	4
Methyl acetate	40	U	40	6.9	ug/L			11/13/18 16:30	4
Methylcyclohexane	4.0	U	4.0	1.3	ug/L			11/13/18 16:30	4
Methylene Chloride	20	U	20	10	ug/L			11/13/18 16:30	4
4-Methyl-2-pentanone (MIBK)	40	U	40	1.7	ug/L			11/13/18 16:30	4
Methyl tert-butyl ether	4.0	U	4.0	0.28	ug/L			11/13/18 16:30	4
Styrene	4.0	U	4.0	0.40	ug/L			11/13/18 16:30	4
1,1,2,2-Tetrachloroethane	4.0	U	4.0	0.52	ug/L			11/13/18 16:30	4
Tetrachloroethene	4.0	U	4.0	0.60	ug/L			11/13/18 16:30	4
Toluene	4.0	U	4.0	0.56	ug/L			11/13/18 16:30	4
trans-1,2-Dichloroethene	4.0	U	4.0	0.76	ug/L			11/13/18 16:30	4
trans-1,3-Dichloropropene	4.0	U	4.0	2.7	ug/L			11/13/18 16:30	4
1,2,4-Trichlorobenzene	4.0	U	4.0	1.0	ug/L			11/13/18 16:30	4
1,1,1-Trichloroethane	4.0	U	4.0	0.96	ug/L			11/13/18 16:30	4
1,1,2-Trichloroethane	4.0	U	4.0	0.36	ug/L			11/13/18 16:30	4

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: DUP-03

Lab Sample ID: 240-103745-11

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	4.0	U	4.0	0.40	ug/L			11/13/18 16:30	4
Trichlorofluoromethane	4.0	U	4.0	1.8	ug/L			11/13/18 16:30	4
1,1,2-Trichloro-1,2,2-trifluoroethane	4.0	U	4.0	1.6	ug/L			11/13/18 16:30	4
1,2,3-Trimethylbenzene	20	U	20	0.56	ug/L			11/13/18 16:30	4
1,2,4-Trimethylbenzene	4.0	U	4.0	0.28	ug/L			11/13/18 16:30	4
1,3,5-Trimethylbenzene	4.0	U	4.0	0.48	ug/L			11/13/18 16:30	4
Vinyl chloride	95		4.0	0.80	ug/L			11/13/18 16:30	4
Xylenes, Total	8.0	U	8.0	0.60	ug/L			11/13/18 16:30	4
Diethyl ether	8.0	U	8.0	0.76	ug/L			11/13/18 16:30	4
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		59 - 120					11/13/18 16:30	4
Dibromofluoromethane (Surr)	125		75 - 128					11/13/18 16:30	4
1,2-Dichloroethane-d4 (Surr)	122	X	70 - 121					11/13/18 16:30	4
Toluene-d8 (Surr)	91		70 - 123					11/13/18 16:30	4

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: DUP-05

Date Collected: 10/30/18 00:00

Date Received: 11/02/18 08:50

Lab Sample ID: 240-103745-12

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.3		2.0	0.86	ug/L			11/09/18 20:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		63 - 125					11/09/18 20:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/13/18 16:54	1
Benzene	1.0	U	1.0	0.13	ug/L			11/13/18 16:54	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/13/18 16:54	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/13/18 16:54	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/13/18 16:54	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/13/18 16:54	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/13/18 16:54	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/13/18 16:54	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/13/18 16:54	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/13/18 16:54	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/13/18 16:54	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/13/18 16:54	1
cis-1,2-Dichloroethene	0.29	J	1.0	0.16	ug/L			11/13/18 16:54	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/13/18 16:54	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/13/18 16:54	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/13/18 16:54	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/13/18 16:54	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/13/18 16:54	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/13/18 16:54	1
1,3-Dichlorobenzene	0.41	J	1.0	0.15	ug/L			11/13/18 16:54	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/13/18 16:54	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/13/18 16:54	1
1,1-Dichloroethane	1.1		1.0	0.17	ug/L			11/13/18 16:54	1
1,2-Dichloroethane	0.21	J	1.0	0.21	ug/L			11/13/18 16:54	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 16:54	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/13/18 16:54	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/13/18 16:54	1
2-Hexanone	10	U	10	0.54	ug/L			11/13/18 16:54	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/13/18 16:54	1
Methyl acetate	10	U	10	1.7	ug/L			11/13/18 16:54	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/13/18 16:54	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/13/18 16:54	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/13/18 16:54	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/13/18 16:54	1
Styrene	1.0	U	1.0	0.10	ug/L			11/13/18 16:54	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/13/18 16:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/13/18 16:54	1
Toluene	1.0	U	1.0	0.14	ug/L			11/13/18 16:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 16:54	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/13/18 16:54	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/13/18 16:54	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/13/18 16:54	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/13/18 16:54	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: DUP-05

Lab Sample ID: 240-103745-12

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/13/18 16:54	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/13/18 16:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/13/18 16:54	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/13/18 16:54	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/13/18 16:54	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/13/18 16:54	1
Vinyl chloride	0.35	J	1.0	0.20	ug/L			11/13/18 16:54	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/13/18 16:54	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/13/18 16:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					11/13/18 16:54	1
Dibromofluoromethane (Surr)	125		75 - 128					11/13/18 16:54	1
1,2-Dichloroethane-d4 (Surr)	122	X	70 - 121					11/13/18 16:54	1
Toluene-d8 (Surr)	89		70 - 123					11/13/18 16:54	1

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: PW-16-01_103018

Lab Sample ID: 240-103745-13

Date Collected: 10/30/18 11:30

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.3	J	2.0	0.86	ug/L			11/09/18 20:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/09/18 20:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	400	U	400	220	ug/L			11/12/18 20:18	40
Benzene	40	U	40	5.2	ug/L			11/12/18 20:18	40
Bromodichloromethane	40	U	40	6.8	ug/L			11/12/18 20:18	40
Bromoform	40	U	40	30	ug/L			11/12/18 20:18	40
Bromomethane	40	U	40	17	ug/L			11/12/18 20:18	40
2-Butanone (MEK)	400	U	400	46	ug/L			11/12/18 20:18	40
Carbon disulfide	200	U	200	11	ug/L			11/12/18 20:18	40
Carbon tetrachloride	40	U	40	10	ug/L			11/12/18 20:18	40
Chlorobenzene	40	U	40	5.6	ug/L			11/12/18 20:18	40
Chloroethane	40	U	40	33	ug/L			11/12/18 20:18	40
Chloroform	40	U	40	5.2	ug/L			11/12/18 20:18	40
Chloromethane	40	U	40	8.0	ug/L			11/12/18 20:18	40
cis-1,2-Dichloroethene	250		40	6.4	ug/L			11/12/18 20:18	40
cis-1,3-Dichloropropene	40	U	40	24	ug/L			11/12/18 20:18	40
Cyclohexane	40	U	40	9.6	ug/L			11/12/18 20:18	40
Dibromochloromethane	40	U	40	16	ug/L			11/12/18 20:18	40
1,2-Dibromo-3-Chloropropane	40	U	40	36	ug/L			11/12/18 20:18	40
1,2-Dibromoethane	40	U	40	4.8	ug/L			11/12/18 20:18	40
1,2-Dichlorobenzene	40	U	40	6.0	ug/L			11/12/18 20:18	40
1,3-Dichlorobenzene	40	U	40	6.0	ug/L			11/12/18 20:18	40
1,4-Dichlorobenzene	40	U	40	6.4	ug/L			11/12/18 20:18	40
Dichlorodifluoromethane	40	U	40	14	ug/L			11/12/18 20:18	40
1,1-Dichloroethane	40	U	40	6.8	ug/L			11/12/18 20:18	40
1,2-Dichloroethane	40	U	40	8.4	ug/L			11/12/18 20:18	40
1,1-Dichloroethene	40	U	40	7.6	ug/L			11/12/18 20:18	40
1,2-Dichloropropane	40	U	40	6.0	ug/L			11/12/18 20:18	40
Ethylbenzene	40	U	40	4.4	ug/L			11/12/18 20:18	40
2-Hexanone	400	U	400	22	ug/L			11/12/18 20:18	40
Isopropylbenzene	40	U	40	3.6	ug/L			11/12/18 20:18	40
Methyl acetate	400	U	400	69	ug/L			11/12/18 20:18	40
Methylcyclohexane	40	U	40	13	ug/L			11/12/18 20:18	40
Methylene Chloride	200	U	200	100	ug/L			11/12/18 20:18	40
4-Methyl-2-pentanone (MIBK)	400	U	400	17	ug/L			11/12/18 20:18	40
Methyl tert-butyl ether	40	U	40	2.8	ug/L			11/12/18 20:18	40
Styrene	40	U	40	4.0	ug/L			11/12/18 20:18	40
1,1,1,2-Tetrachloroethane	40	U	40	5.2	ug/L			11/12/18 20:18	40
Tetrachloroethene	40	U	40	6.0	ug/L			11/12/18 20:18	40
Toluene	40	U	40	5.6	ug/L			11/12/18 20:18	40
trans-1,2-Dichloroethene	10	J	40	7.6	ug/L			11/12/18 20:18	40
trans-1,3-Dichloropropene	40	U	40	27	ug/L			11/12/18 20:18	40
1,2,4-Trichlorobenzene	40	U	40	10	ug/L			11/12/18 20:18	40
1,1,1-Trichloroethane	40	U	40	9.6	ug/L			11/12/18 20:18	40
1,1,2-Trichloroethane	40	U	40	3.6	ug/L			11/12/18 20:18	40

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: PW-16-01_103018

Lab Sample ID: 240-103745-13

Date Collected: 10/30/18 11:30

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	40	U	40	4.0	ug/L			11/12/18 20:18	40
Trichlorofluoromethane	40	U	40	18	ug/L			11/12/18 20:18	40
1,1,2-Trichloro-1,2,2-trifluoroethane	40	U	40	16	ug/L			11/12/18 20:18	40
1,2,3-Trimethylbenzene	200	U	200	5.6	ug/L			11/12/18 20:18	40
1,2,4-Trimethylbenzene	40	U	40	2.8	ug/L			11/12/18 20:18	40
1,3,5-Trimethylbenzene	40	U	40	4.8	ug/L			11/12/18 20:18	40
Vinyl chloride	1400		40	8.0	ug/L			11/12/18 20:18	40
Xylenes, Total	80	U	80	6.0	ug/L			11/12/18 20:18	40
Diethyl ether	80	U	80	7.6	ug/L			11/12/18 20:18	40
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					11/12/18 20:18	40
Dibromofluoromethane (Surr)	122		75 - 128					11/12/18 20:18	40
1,2-Dichloroethane-d4 (Surr)	120		70 - 121					11/12/18 20:18	40
Toluene-d8 (Surr)	91		70 - 123					11/12/18 20:18	40

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-22_103018

Lab Sample ID: 240-103745-14

Date Collected: 10/30/18 13:25

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	37		2.0	0.86	ug/L			11/09/18 20:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		63 - 125					11/09/18 20:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1000	U	1000	540	ug/L			11/13/18 17:18	100
Benzene	100	U	100	13	ug/L			11/13/18 17:18	100
Bromodichloromethane	100	U	100	17	ug/L			11/13/18 17:18	100
Bromoform	100	U	100	76	ug/L			11/13/18 17:18	100
Bromomethane	100	U	100	42	ug/L			11/13/18 17:18	100
2-Butanone (MEK)	1000	U	1000	120	ug/L			11/13/18 17:18	100
Carbon disulfide	500	U	500	28	ug/L			11/13/18 17:18	100
Carbon tetrachloride	100	U	100	26	ug/L			11/13/18 17:18	100
Chlorobenzene	100	U	100	14	ug/L			11/13/18 17:18	100
Chloroethane	100	U	100	83	ug/L			11/13/18 17:18	100
Chloroform	100	U	100	13	ug/L			11/13/18 17:18	100
Chloromethane	100	U	100	20	ug/L			11/13/18 17:18	100
cis-1,2-Dichloroethene	180		100	16	ug/L			11/13/18 17:18	100
cis-1,3-Dichloropropene	100	U	100	61	ug/L			11/13/18 17:18	100
Cyclohexane	100	U	100	24	ug/L			11/13/18 17:18	100
Dibromochloromethane	100	U	100	39	ug/L			11/13/18 17:18	100
1,2-Dibromo-3-Chloropropane	100	U	100	91	ug/L			11/13/18 17:18	100
1,2-Dibromoethane	100	U	100	12	ug/L			11/13/18 17:18	100
1,2-Dichlorobenzene	100	U	100	15	ug/L			11/13/18 17:18	100
1,3-Dichlorobenzene	100	U	100	15	ug/L			11/13/18 17:18	100
1,4-Dichlorobenzene	100	U	100	16	ug/L			11/13/18 17:18	100
Dichlorodifluoromethane	100	U	100	35	ug/L			11/13/18 17:18	100
1,1-Dichloroethane	100	U	100	17	ug/L			11/13/18 17:18	100
1,2-Dichloroethane	100	U	100	21	ug/L			11/13/18 17:18	100
1,1-Dichloroethene	100	U	100	19	ug/L			11/13/18 17:18	100
1,2-Dichloropropane	100	U	100	15	ug/L			11/13/18 17:18	100
Ethylbenzene	100	U	100	11	ug/L			11/13/18 17:18	100
2-Hexanone	1000	U	1000	54	ug/L			11/13/18 17:18	100
Isopropylbenzene	100	U	100	9.0	ug/L			11/13/18 17:18	100
Methyl acetate	1000	U	1000	170	ug/L			11/13/18 17:18	100
Methylcyclohexane	100	U	100	33	ug/L			11/13/18 17:18	100
Methylene Chloride	500	U	500	260	ug/L			11/13/18 17:18	100
4-Methyl-2-pentanone (MIBK)	1000	U	1000	42	ug/L			11/13/18 17:18	100
Methyl tert-butyl ether	100	U	100	7.0	ug/L			11/13/18 17:18	100
Styrene	100	U	100	10	ug/L			11/13/18 17:18	100
1,1,2,2-Tetrachloroethane	100	U	100	13	ug/L			11/13/18 17:18	100
Tetrachloroethene	100	U	100	15	ug/L			11/13/18 17:18	100
Toluene	100	U	100	14	ug/L			11/13/18 17:18	100
trans-1,2-Dichloroethene	100	U	100	19	ug/L			11/13/18 17:18	100
trans-1,3-Dichloropropene	100	U	100	67	ug/L			11/13/18 17:18	100
1,2,4-Trichlorobenzene	100	U	100	26	ug/L			11/13/18 17:18	100
1,1,1-Trichloroethane	100	U	100	24	ug/L			11/13/18 17:18	100
1,1,2-Trichloroethane	100	U	100	9.0	ug/L			11/13/18 17:18	100

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-22_103018

Lab Sample ID: 240-103745-14

Date Collected: 10/30/18 13:25

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	100	U	100	10	ug/L			11/13/18 17:18	100
Trichlorofluoromethane	100	U	100	45	ug/L			11/13/18 17:18	100
1,1,2-Trichloro-1,2,2-trifluoroethane	100	U	100	41	ug/L			11/13/18 17:18	100
1,2,3-Trimethylbenzene	500	U	500	14	ug/L			11/13/18 17:18	100
1,2,4-Trimethylbenzene	100	U	100	7.0	ug/L			11/13/18 17:18	100
1,3,5-Trimethylbenzene	100	U	100	12	ug/L			11/13/18 17:18	100
Vinyl chloride	2600		100	20	ug/L			11/13/18 17:18	100
Xylenes, Total	200	U	200	15	ug/L			11/13/18 17:18	100
Diethyl ether	200	U	200	19	ug/L			11/13/18 17:18	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		59 - 120					11/13/18 17:18	100
Dibromofluoromethane (Surr)	123		75 - 128					11/13/18 17:18	100
1,2-Dichloroethane-d4 (Surr)	122	X	70 - 121					11/13/18 17:18	100
Toluene-d8 (Surr)	90		70 - 123					11/13/18 17:18	100

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-23_103018

Lab Sample ID: 240-103745-15

Date Collected: 10/30/18 17:25

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	200	U	200	86	ug/L			11/11/18 14:31	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		63 - 125					11/11/18 14:31	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25000	U	25000	14000	ug/L			11/13/18 17:42	2500
Benzene	2500	U	2500	330	ug/L			11/13/18 17:42	2500
Bromodichloromethane	2500	U	2500	430	ug/L			11/13/18 17:42	2500
Bromoform	2500	U	2500	1900	ug/L			11/13/18 17:42	2500
Bromomethane	2500	U	2500	1100	ug/L			11/13/18 17:42	2500
2-Butanone (MEK)	25000	U	25000	2900	ug/L			11/13/18 17:42	2500
Carbon disulfide	13000	U	13000	700	ug/L			11/13/18 17:42	2500
Carbon tetrachloride	2500	U	2500	650	ug/L			11/13/18 17:42	2500
Chlorobenzene	2500	U	2500	350	ug/L			11/13/18 17:42	2500
Chloroethane	2500	U	2500	2100	ug/L			11/13/18 17:42	2500
Chloroform	2500	U	2500	330	ug/L			11/13/18 17:42	2500
Chloromethane	2500	U	2500	500	ug/L			11/13/18 17:42	2500
cis-1,2-Dichloroethene	66000		2500	400	ug/L			11/13/18 17:42	2500
cis-1,3-Dichloropropene	2500	U	2500	1500	ug/L			11/13/18 17:42	2500
Cyclohexane	2500	U	2500	600	ug/L			11/13/18 17:42	2500
Dibromochloromethane	2500	U	2500	980	ug/L			11/13/18 17:42	2500
1,2-Dibromo-3-Chloropropane	2500	U	2500	2300	ug/L			11/13/18 17:42	2500
1,2-Dibromoethane	2500	U	2500	300	ug/L			11/13/18 17:42	2500
1,2-Dichlorobenzene	2500	U	2500	380	ug/L			11/13/18 17:42	2500
1,3-Dichlorobenzene	2500	U	2500	380	ug/L			11/13/18 17:42	2500
1,4-Dichlorobenzene	2500	U	2500	400	ug/L			11/13/18 17:42	2500
Dichlorodifluoromethane	2500	U	2500	880	ug/L			11/13/18 17:42	2500
1,1-Dichloroethane	2500	U	2500	430	ug/L			11/13/18 17:42	2500
1,2-Dichloroethane	2500	U	2500	530	ug/L			11/13/18 17:42	2500
1,1-Dichloroethene	2500	U	2500	480	ug/L			11/13/18 17:42	2500
1,2-Dichloropropane	2500	U	2500	380	ug/L			11/13/18 17:42	2500
Ethylbenzene	2500	U	2500	280	ug/L			11/13/18 17:42	2500
2-Hexanone	25000	U	25000	1400	ug/L			11/13/18 17:42	2500
Isopropylbenzene	2500	U	2500	230	ug/L			11/13/18 17:42	2500
Methyl acetate	25000	U	25000	4300	ug/L			11/13/18 17:42	2500
Methylcyclohexane	2500	U	2500	830	ug/L			11/13/18 17:42	2500
Methylene Chloride	13000	U	13000	6600	ug/L			11/13/18 17:42	2500
4-Methyl-2-pentanone (MIBK)	25000	U	25000	1100	ug/L			11/13/18 17:42	2500
Methyl tert-butyl ether	2500	U	2500	180	ug/L			11/13/18 17:42	2500
Styrene	2500	U	2500	250	ug/L			11/13/18 17:42	2500
1,1,2,2-Tetrachloroethane	2500	U	2500	330	ug/L			11/13/18 17:42	2500
Tetrachloroethene	2500	U	2500	380	ug/L			11/13/18 17:42	2500
Toluene	2500	U	2500	350	ug/L			11/13/18 17:42	2500
trans-1,2-Dichloroethene	3000		2500	480	ug/L			11/13/18 17:42	2500
trans-1,3-Dichloropropene	2500	U	2500	1700	ug/L			11/13/18 17:42	2500
1,2,4-Trichlorobenzene	2500	U	2500	650	ug/L			11/13/18 17:42	2500
1,1,1-Trichloroethane	2500	U	2500	600	ug/L			11/13/18 17:42	2500
1,1,2-Trichloroethane	2500	U	2500	230	ug/L			11/13/18 17:42	2500

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-23_103018

Lab Sample ID: 240-103745-15

Date Collected: 10/30/18 17:25

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	18000		2500	250	ug/L			11/13/18 17:42	2500
Trichlorofluoromethane	2500	U	2500	1100	ug/L			11/13/18 17:42	2500
1,1,2-Trichloro-1,2,2-trifluoroethane	2500	U	2500	1000	ug/L			11/13/18 17:42	2500
1,2,3-Trimethylbenzene	13000	U	13000	350	ug/L			11/13/18 17:42	2500
1,2,4-Trimethylbenzene	2500	U	2500	180	ug/L			11/13/18 17:42	2500
1,3,5-Trimethylbenzene	2500	U	2500	300	ug/L			11/13/18 17:42	2500
Vinyl chloride	1600	J	2500	500	ug/L			11/13/18 17:42	2500
Xylenes, Total	5000	U	5000	380	ug/L			11/13/18 17:42	2500
Diethyl ether	5000	U	5000	480	ug/L			11/13/18 17:42	2500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					11/13/18 17:42	2500
Dibromofluoromethane (Surr)	120		75 - 128					11/13/18 17:42	2500
1,2-Dichloroethane-d4 (Surr)	120		70 - 121					11/13/18 17:42	2500
Toluene-d8 (Surr)	91		70 - 123					11/13/18 17:42	2500

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: DUP-02

Date Collected: 10/30/18 00:00

Date Received: 11/02/18 08:50

Lab Sample ID: 240-103745-16

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.8		2.0	0.86	ug/L			11/11/18 14:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125					11/11/18 14:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3300	U	3300	1800	ug/L			11/13/18 18:06	333.33
Benzene	330	U	330	43	ug/L			11/13/18 18:06	333.33
Bromodichloromethane	330	U	330	57	ug/L			11/13/18 18:06	333.33
Bromoform	330	U	330	250	ug/L			11/13/18 18:06	333.33
Bromomethane	330	U	330	140	ug/L			11/13/18 18:06	333.33
2-Butanone (MEK)	3300	U	3300	390	ug/L			11/13/18 18:06	333.33
Carbon disulfide	1700	U	1700	93	ug/L			11/13/18 18:06	333.33
Carbon tetrachloride	330	U	330	87	ug/L			11/13/18 18:06	333.33
Chlorobenzene	330	U	330	47	ug/L			11/13/18 18:06	333.33
Chloroethane	330	U	330	280	ug/L			11/13/18 18:06	333.33
Chloroform	330	U	330	43	ug/L			11/13/18 18:06	333.33
Chloromethane	330	U	330	67	ug/L			11/13/18 18:06	333.33
cis-1,2-Dichloroethene	6400		330	53	ug/L			11/13/18 18:06	333.33
cis-1,3-Dichloropropene	330	U	330	200	ug/L			11/13/18 18:06	333.33
Cyclohexane	330	U	330	80	ug/L			11/13/18 18:06	333.33
Dibromochloromethane	330	U	330	130	ug/L			11/13/18 18:06	333.33
1,2-Dibromo-3-Chloropropane	330	U	330	300	ug/L			11/13/18 18:06	333.33
1,2-Dibromoethane	330	U	330	40	ug/L			11/13/18 18:06	333.33
1,2-Dichlorobenzene	330	U	330	50	ug/L			11/13/18 18:06	333.33
1,3-Dichlorobenzene	330	U	330	50	ug/L			11/13/18 18:06	333.33
1,4-Dichlorobenzene	330	U	330	53	ug/L			11/13/18 18:06	333.33
Dichlorodifluoromethane	330	U	330	120	ug/L			11/13/18 18:06	333.33
1,1-Dichloroethane	330	U	330	57	ug/L			11/13/18 18:06	333.33
1,2-Dichloroethane	330	U	330	70	ug/L			11/13/18 18:06	333.33
1,1-Dichloroethene	330	U	330	63	ug/L			11/13/18 18:06	333.33
1,2-Dichloropropane	330	U	330	50	ug/L			11/13/18 18:06	333.33
Ethylbenzene	330	U	330	37	ug/L			11/13/18 18:06	333.33
2-Hexanone	3300	U	3300	180	ug/L			11/13/18 18:06	333.33
Isopropylbenzene	330	U	330	30	ug/L			11/13/18 18:06	333.33
Methyl acetate	3300	U	3300	570	ug/L			11/13/18 18:06	333.33
Methylcyclohexane	330	U	330	110	ug/L			11/13/18 18:06	333.33
Methylene Chloride	1700	U	1700	870	ug/L			11/13/18 18:06	333.33
4-Methyl-2-pentanone (MIBK)	3300	U	3300	140	ug/L			11/13/18 18:06	333.33
Methyl tert-butyl ether	330	U	330	23	ug/L			11/13/18 18:06	333.33
Styrene	330	U	330	33	ug/L			11/13/18 18:06	333.33
1,1,2,2-Tetrachloroethane	330	U	330	43	ug/L			11/13/18 18:06	333.33
Tetrachloroethene	330	U	330	50	ug/L			11/13/18 18:06	333.33
Toluene	330	U	330	47	ug/L			11/13/18 18:06	333.33
trans-1,2-Dichloroethene	96	J	330	63	ug/L			11/13/18 18:06	333.33
trans-1,3-Dichloropropene	330	U	330	220	ug/L			11/13/18 18:06	333.33
1,2,4-Trichlorobenzene	330	U	330	87	ug/L			11/13/18 18:06	333.33
1,1,1-Trichloroethane	330	U	330	80	ug/L			11/13/18 18:06	333.33
1,1,2-Trichloroethane	330	U	330	30	ug/L			11/13/18 18:06	333.33

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: DUP-02

Lab Sample ID: 240-103745-16

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	330	U	330	33	ug/L			11/13/18 18:06	333.33
Trichlorofluoromethane	330	U	330	150	ug/L			11/13/18 18:06	333.33
1,1,2-Trichloro-1,2,2-trifluoroethane	330	U	330	140	ug/L			11/13/18 18:06	333.33
1,2,3-Trimethylbenzene	1700	U	1700	47	ug/L			11/13/18 18:06	333.33
1,2,4-Trimethylbenzene	330	U	330	23	ug/L			11/13/18 18:06	333.33
1,3,5-Trimethylbenzene	330	U	330	40	ug/L			11/13/18 18:06	333.33
Vinyl chloride	11000		330	67	ug/L			11/13/18 18:06	333.33
Xylenes, Total	670	U	670	50	ug/L			11/13/18 18:06	333.33
Diethyl ether	670	U	670	63	ug/L			11/13/18 18:06	333.33
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		59 - 120					11/13/18 18:06	333.33
Dibromofluoromethane (Surr)	123		75 - 128					11/13/18 18:06	333.33
1,2-Dichloroethane-d4 (Surr)	122	X	70 - 121					11/13/18 18:06	333.33
Toluene-d8 (Surr)	92		70 - 123					11/13/18 18:06	333.33

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: DUP-04

Date Collected: 10/30/18 00:00

Date Received: 11/02/18 08:50

Lab Sample ID: 240-103745-17

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	37		2.0	0.86	ug/L			11/11/18 15:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/11/18 15:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1000	U	1000	540	ug/L			11/13/18 16:29	100
Benzene	100	U	100	13	ug/L			11/13/18 16:29	100
Bromodichloromethane	100	U	100	17	ug/L			11/13/18 16:29	100
Bromoform	100	U	100	76	ug/L			11/13/18 16:29	100
Bromomethane	100	U	100	42	ug/L			11/13/18 16:29	100
2-Butanone (MEK)	1000	U	1000	120	ug/L			11/13/18 16:29	100
Carbon disulfide	500	U	500	28	ug/L			11/13/18 16:29	100
Carbon tetrachloride	100	U	100	26	ug/L			11/13/18 16:29	100
Chlorobenzene	100	U	100	14	ug/L			11/13/18 16:29	100
Chloroethane	100	U	100	83	ug/L			11/13/18 16:29	100
Chloroform	100	U	100	13	ug/L			11/13/18 16:29	100
Chloromethane	100	U	100	20	ug/L			11/13/18 16:29	100
cis-1,2-Dichloroethene	170		100	16	ug/L			11/13/18 16:29	100
cis-1,3-Dichloropropene	100	U	100	61	ug/L			11/13/18 16:29	100
Cyclohexane	100	U	100	24	ug/L			11/13/18 16:29	100
Dibromochloromethane	100	U	100	39	ug/L			11/13/18 16:29	100
1,2-Dibromo-3-Chloropropane	100	U	100	91	ug/L			11/13/18 16:29	100
1,2-Dibromoethane	100	U	100	12	ug/L			11/13/18 16:29	100
1,2-Dichlorobenzene	100	U	100	15	ug/L			11/13/18 16:29	100
1,3-Dichlorobenzene	100	U	100	15	ug/L			11/13/18 16:29	100
1,4-Dichlorobenzene	100	U	100	16	ug/L			11/13/18 16:29	100
Dichlorodifluoromethane	100	U	100	35	ug/L			11/13/18 16:29	100
1,1-Dichloroethane	100	U	100	17	ug/L			11/13/18 16:29	100
1,2-Dichloroethane	100	U	100	21	ug/L			11/13/18 16:29	100
1,1-Dichloroethene	100	U	100	19	ug/L			11/13/18 16:29	100
1,2-Dichloropropane	100	U	100	15	ug/L			11/13/18 16:29	100
Ethylbenzene	100	U	100	11	ug/L			11/13/18 16:29	100
2-Hexanone	1000	U	1000	54	ug/L			11/13/18 16:29	100
Isopropylbenzene	100	U	100	9.0	ug/L			11/13/18 16:29	100
Methyl acetate	1000	U	1000	170	ug/L			11/13/18 16:29	100
Methylcyclohexane	100	U	100	33	ug/L			11/13/18 16:29	100
Methylene Chloride	500	U	500	260	ug/L			11/13/18 16:29	100
4-Methyl-2-pentanone (MIBK)	1000	U	1000	42	ug/L			11/13/18 16:29	100
Methyl tert-butyl ether	100	U	100	7.0	ug/L			11/13/18 16:29	100
Styrene	100	U	100	10	ug/L			11/13/18 16:29	100
1,1,2,2-Tetrachloroethane	100	U	100	13	ug/L			11/13/18 16:29	100
Tetrachloroethene	100	U	100	15	ug/L			11/13/18 16:29	100
Toluene	100	U	100	14	ug/L			11/13/18 16:29	100
trans-1,2-Dichloroethene	100	U	100	19	ug/L			11/13/18 16:29	100
trans-1,3-Dichloropropene	100	U	100	67	ug/L			11/13/18 16:29	100
1,2,4-Trichlorobenzene	100	U	100	26	ug/L			11/13/18 16:29	100
1,1,1-Trichloroethane	100	U	100	24	ug/L			11/13/18 16:29	100
1,1,2-Trichloroethane	100	U	100	9.0	ug/L			11/13/18 16:29	100

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: DUP-04

Lab Sample ID: 240-103745-17

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	100	U	100	10	ug/L			11/13/18 16:29	100
Trichlorofluoromethane	100	U	100	45	ug/L			11/13/18 16:29	100
1,1,2-Trichloro-1,2,2-trifluoroethane	100	U	100	41	ug/L			11/13/18 16:29	100
1,2,3-Trimethylbenzene	500	U	500	14	ug/L			11/13/18 16:29	100
1,2,4-Trimethylbenzene	100	U	100	7.0	ug/L			11/13/18 16:29	100
1,3,5-Trimethylbenzene	100	U	100	12	ug/L			11/13/18 16:29	100
Vinyl chloride	2200		100	20	ug/L			11/13/18 16:29	100
Xylenes, Total	200	U	200	15	ug/L			11/13/18 16:29	100
Diethyl ether	200	U	200	19	ug/L			11/13/18 16:29	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		59 - 120					11/13/18 16:29	100
Dibromofluoromethane (Surr)	93		75 - 128					11/13/18 16:29	100
1,2-Dichloroethane-d4 (Surr)	87		70 - 121					11/13/18 16:29	100
Toluene-d8 (Surr)	100		70 - 123					11/13/18 16:29	100

Surrogate Summary

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

TestAmerica Job ID: 240-103745-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB (59-120)	DBFM (75-128)	DCA (70-121)	TOL (70-123)
240-103745-1	TRIPBLANK	76	125	115	89
240-103745-2	TW-16-04_103018	75	116	114	89
240-103745-3	TW-16-03_103018	77	117	114	92
240-103745-4	PW-16-02_103018	74	125	118	91
240-103745-5	MW-51_103018	76	122	120	90
240-103745-6	MW-44_103018	76	124	120	90
240-103745-7	MW-65_103018	76	121	116	91
240-103745-8	MW-49_103018	77	117	112	90
240-103745-9	TW-16-02_103018	77	121	114	93
240-103745-10	TW-16-01_103018	75	121	118	90
240-103745-11	DUP-03	78	125	122 X	91
240-103745-12	DUP-05	76	125	122 X	89
240-103745-13	PW-16-01_103018	76	122	120	91
240-103745-14	MW-22_103018	78	123	122 X	90
240-103745-15	MW-23_103018	76	120	120	91
240-103745-16	DUP-02	81	123	122 X	92
240-103745-17	DUP-04	91	93	87	100
240-103776-A-17 MSD	Matrix Spike Duplicate	105	99	96	101
240-103776-C-17 MS	Matrix Spike	106	98	95	104
240-104164-B-6 MS	Matrix Spike	95	95	89	102
240-104164-B-6 MSD	Matrix Spike Duplicate	95	98	92	99
240-104164-E-18 MS	Matrix Spike	103	97	95	100
240-104164-F-18 MSD	Matrix Spike Duplicate	104	98	95	102
LCS 240-354885/4	Lab Control Sample	105	99	95	101
LCS 240-355135/4	Lab Control Sample	97	95	92	101
LCS 240-355137/4	Lab Control Sample	102	100	95	101
MB 240-354885/6	Method Blank	81	114	111	95
MB 240-355135/6	Method Blank	94	100	91	99
MB 240-355137/6	Method Blank	79	112	110	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

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(63-125)
240-103638-C-2 MS	Matrix Spike	107
240-103638-C-2 MSD	Matrix Spike Duplicate	105
240-103638-C-9 MS	Matrix Spike	104
240-103638-C-9 MSD	Matrix Spike Duplicate	106
240-103745-1	TRIPBLANK	104
240-103745-2	TW-16-04_103018	106
240-103745-3	TW-16-03_103018	107

TestAmerica Canton

Surrogate Summary

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

TestAmerica Job ID: 240-103745-1

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)
240-103745-4	PW-16-02_103018	105
240-103745-5	MW-51_103018	107
240-103745-6	MW-44_103018	105
240-103745-7	MW-65_103018	104
240-103745-8	MW-49_103018	88
240-103745-9	TW-16-02_103018	99
240-103745-9 MS	TW-16-02_103018	99
240-103745-9 MSD	TW-16-02_103018	97
240-103745-10	TW-16-01_103018	107
240-103745-11	DUP-03	105
240-103745-12	DUP-05	105
240-103745-13	PW-16-01_103018	107
240-103745-14	MW-22_103018	109
240-103745-15	MW-23_103018	99
240-103745-16	DUP-02	98
240-103745-17	DUP-04	107
240-103817-F-3 MS	Matrix Spike	104
240-103817-F-3 MSD	Matrix Spike Duplicate	107
LCS 240-354129/4	Lab Control Sample	103
LCS 240-354542/4	Lab Control Sample	104
LCS 240-354800/4	Lab Control Sample	92
MB 240-354129/5	Method Blank	98
MB 240-354542/5	Method Blank	105
MB 240-354800/5	Method Blank	103

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: 240-103745-1

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

Lab Sample ID: MB 240-354885/6

Matrix: Water

Analysis Batch: 354885

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	5.4	ug/L			11/12/18 12:21	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 12:21	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/12/18 12:21	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 12:21	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 12:21	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/12/18 12:21	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 12:21	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 12:21	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 12:21	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 12:21	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/12/18 12:21	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/12/18 12:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/18 12:21	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 12:21	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 12:21	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 12:21	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 12:21	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 12:21	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 12:21	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 12:21	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/12/18 12:21	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 12:21	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/12/18 12:21	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/12/18 12:21	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 12:21	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 12:21	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 12:21	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 12:21	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 12:21	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 12:21	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 12:21	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 12:21	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 12:21	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/12/18 12:21	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 12:21	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 12:21	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 12:21	1
Toluene	1.0	U	1.0	0.14	ug/L			11/12/18 12:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 12:21	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 12:21	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 12:21	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 12:21	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 12:21	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/18 12:21	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 12:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 12:21	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 12:21	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 12:21	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: MB 240-354885/6
Matrix: Water
Analysis Batch: 354885

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 12:21	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/12/18 12:21	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 12:21	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 12:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		59 - 120		11/12/18 12:21	1
Dibromofluoromethane (Surr)	114		75 - 128		11/12/18 12:21	1
1,2-Dichloroethane-d4 (Surr)	111		70 - 121		11/12/18 12:21	1
Toluene-d8 (Surr)	95		70 - 123		11/12/18 12:21	1

Lab Sample ID: LCS 240-354885/4
Matrix: Water
Analysis Batch: 354885

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	20.3		ug/L		101	21 - 162
Benzene	10.0	10.8		ug/L		108	80 - 123
Bromodichloromethane	10.0	9.44		ug/L		94	77 - 125
Bromoform	10.0	7.85		ug/L		78	49 - 141
Bromomethane	10.0	8.31		ug/L		83	41 - 175
2-Butanone (MEK)	20.0	21.6		ug/L		108	39 - 163
Carbon disulfide	10.0	10.3		ug/L		103	60 - 138
Carbon tetrachloride	10.0	10.4		ug/L		104	63 - 140
Chlorobenzene	10.0	10.6		ug/L		106	80 - 121
Chloroethane	10.0	7.23		ug/L		72	33 - 173
Chloroform	10.0	10.6		ug/L		106	79 - 127
Chloromethane	10.0	11.9		ug/L		119	54 - 143
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	76 - 128
cis-1,3-Dichloropropene	10.0	9.02		ug/L		90	64 - 132
Cyclohexane	10.0	9.77		ug/L		98	58 - 145
Dibromochloromethane	10.0	8.96		ug/L		90	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	9.19		ug/L		92	46 - 132
1,2-Dibromoethane	10.0	11.0		ug/L		110	77 - 123
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	78 - 120
1,3-Dichlorobenzene	10.0	10.1		ug/L		101	78 - 120
1,4-Dichlorobenzene	10.0	9.81		ug/L		98	78 - 120
Dichlorodifluoromethane	10.0	10.7		ug/L		107	29 - 148
1,1-Dichloroethane	10.0	10.6		ug/L		106	75 - 133
1,2-Dichloroethane	10.0	9.88		ug/L		99	71 - 135
1,1-Dichloroethene	10.0	10.8		ug/L		108	65 - 139
1,2-Dichloropropane	10.0	11.1		ug/L		111	78 - 133
Ethylbenzene	10.0	10.2		ug/L		102	80 - 120
2-Hexanone	20.0	21.2		ug/L		106	43 - 148
Isopropylbenzene	10.0	9.92		ug/L		99	74 - 120
Methyl acetate	20.0	23.8		ug/L		119	52 - 145
Methylcyclohexane	10.0	9.20		ug/L		92	60 - 125
Methylene Chloride	10.0	11.4		ug/L		114	70 - 134

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: LCS 240-354885/4
Matrix: Water
Analysis Batch: 354885

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Methyl-2-pentanone (MIBK)	20.0	19.9		ug/L		99	49 - 143
Methyl tert-butyl ether	10.0	6.24		ug/L		62	51 - 133
Styrene	10.0	10.5		ug/L		105	79 - 120
1,1,2,2-Tetrachloroethane	10.0	11.3		ug/L		113	65 - 139
Tetrachloroethene	10.0	10.4		ug/L		104	74 - 130
Toluene	10.0	11.0		ug/L		110	78 - 129
trans-1,2-Dichloroethene	10.0	11.0		ug/L		110	78 - 133
trans-1,3-Dichloropropene	10.0	8.87		ug/L		89	55 - 128
1,2,4-Trichlorobenzene	10.0	8.46		ug/L		85	42 - 133
1,1,1-Trichloroethane	10.0	10.2		ug/L		102	69 - 134
1,1,2-Trichloroethane	10.0	11.8		ug/L		118	78 - 133
Trichloroethene	10.0	9.88		ug/L		99	76 - 125
Trichlorofluoromethane	10.0	11.1		ug/L		111	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.5		ug/L		115	50 - 156
1,2,4-Trimethylbenzene	10.0	9.99		ug/L		100	74 - 120
1,3,5-Trimethylbenzene	10.0	9.89		ug/L		99	75 - 121
Vinyl chloride	10.0	10.5		ug/L		105	58 - 143
Xylenes, Total	20.0	21.0		ug/L		105	80 - 120
1,4-Dioxane	200	178		ug/L		89	10 - 175
Diethyl ether	10.0	11.7		ug/L		117	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
4-Bromofluorobenzene (Surr)	105		59 - 120
Dibromofluoromethane (Surr)	99		75 - 128
1,2-Dichloroethane-d4 (Surr)	95		70 - 121
Toluene-d8 (Surr)	101		70 - 123

Lab Sample ID: 240-103776-A-17 MSD
Matrix: Water
Analysis Batch: 354885

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	10.0	11.2		ug/L		112	71 - 122	3	22
Bromoform	1.0	U	10.0	8.13		ug/L		81	44 - 129	2	28
Chlorobenzene	1.0	U	10.0	10.8		ug/L		108	70 - 123	0	23
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.77		ug/L		88	38 - 124	7	35
1,2-Dibromoethane	1.0	U	10.0	11.4		ug/L		114	71 - 123	0	27
1,2-Dichlorobenzene	1.0	U	10.0	10.5		ug/L		105	64 - 120	3	30
1,4-Dichlorobenzene	1.0	U	10.0	10.2		ug/L		102	63 - 120	4	28
1,1-Dichloroethane	1.0	U	10.0	10.9		ug/L		109	63 - 136	2	23
1,2-Dichloroethane	1.0	U	10.0	10.3		ug/L		103	65 - 135	1	24
Methylene Chloride	5.0	U	10.0	11.8		ug/L		118	61 - 130	4	29
1,2,4-Trichlorobenzene	1.0	U	10.0	8.12		ug/L		81	30 - 126	8	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	105		59 - 120
Dibromofluoromethane (Surr)	99		75 - 128

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: 240-103776-A-17 MSD
Matrix: Water
Analysis Batch: 354885

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

<i>Surrogate</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	96		70 - 121
Toluene-d8 (Surr)	101		70 - 123

Lab Sample ID: 240-103776-C-17 MS
Matrix: Water
Analysis Batch: 354885

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
Benzene	1.0	U	10.0	10.8		ug/L		108	71 - 122
Bromoform	1.0	U	10.0	8.27		ug/L		83	44 - 129
Chlorobenzene	1.0	U	10.0	10.8		ug/L		108	70 - 123
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.21		ug/L		82	38 - 124
1,2-Dibromoethane	1.0	U	10.0	11.4		ug/L		114	71 - 123
1,2-Dichlorobenzene	1.0	U	10.0	10.2		ug/L		102	64 - 120
1,4-Dichlorobenzene	1.0	U	10.0	9.76		ug/L		98	63 - 120
1,1-Dichloroethane	1.0	U	10.0	10.7		ug/L		107	63 - 136
1,2-Dichloroethane	1.0	U	10.0	10.2		ug/L		102	65 - 135
Methylene Chloride	5.0	U	10.0	11.3		ug/L		113	61 - 130
1,2,4-Trichlorobenzene	1.0	U	10.0	7.50		ug/L		75	30 - 126

<i>Surrogate</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
4-Bromofluorobenzene (Surr)	106		59 - 120
Dibromofluoromethane (Surr)	98		75 - 128
1,2-Dichloroethane-d4 (Surr)	95		70 - 121
Toluene-d8 (Surr)	104		70 - 123

Lab Sample ID: MB 240-355135/6
Matrix: Water
Analysis Batch: 355135

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Acetone	10	U	10	5.4	ug/L			11/13/18 13:00	1
Benzene	1.0	U	1.0	0.13	ug/L			11/13/18 13:00	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/13/18 13:00	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/13/18 13:00	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/13/18 13:00	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/13/18 13:00	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/13/18 13:00	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/13/18 13:00	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/13/18 13:00	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/13/18 13:00	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/13/18 13:00	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/13/18 13:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/13/18 13:00	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/13/18 13:00	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/13/18 13:00	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/13/18 13:00	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/13/18 13:00	1

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QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: MB 240-355135/6
Matrix: Water
Analysis Batch: 355135

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/13/18 13:00	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/13/18 13:00	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/13/18 13:00	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/13/18 13:00	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/13/18 13:00	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/13/18 13:00	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/13/18 13:00	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 13:00	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/13/18 13:00	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/13/18 13:00	1
2-Hexanone	10	U	10	0.54	ug/L			11/13/18 13:00	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/13/18 13:00	1
Methyl acetate	10	U	10	1.7	ug/L			11/13/18 13:00	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/13/18 13:00	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/13/18 13:00	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/13/18 13:00	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/13/18 13:00	1
Styrene	1.0	U	1.0	0.10	ug/L			11/13/18 13:00	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/13/18 13:00	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/13/18 13:00	1
Toluene	1.0	U	1.0	0.14	ug/L			11/13/18 13:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 13:00	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/13/18 13:00	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/13/18 13:00	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/13/18 13:00	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/13/18 13:00	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/13/18 13:00	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/13/18 13:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/13/18 13:00	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/13/18 13:00	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/13/18 13:00	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/13/18 13:00	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/13/18 13:00	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/13/18 13:00	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/13/18 13:00	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	94		59 - 120		11/13/18 13:00	1
Dibromofluoromethane (Surr)	100		75 - 128		11/13/18 13:00	1
1,2-Dichloroethane-d4 (Surr)	91		70 - 121		11/13/18 13:00	1
Toluene-d8 (Surr)	99		70 - 123		11/13/18 13:00	1

Lab Sample ID: LCS 240-355135/4
Matrix: Water
Analysis Batch: 355135

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Acetone	20.0	21.3		ug/L		107	21 - 162

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QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: LCS 240-355135/4

Matrix: Water

Analysis Batch: 355135

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.74		ug/L		97	80 - 123
Bromodichloromethane	10.0	9.33		ug/L		93	77 - 125
Bromoform	10.0	10.5		ug/L		105	49 - 141
Bromomethane	10.0	7.48		ug/L		75	41 - 175
2-Butanone (MEK)	20.0	21.2		ug/L		106	39 - 163
Carbon disulfide	10.0	8.44		ug/L		84	60 - 138
Carbon tetrachloride	10.0	9.53		ug/L		95	63 - 140
Chlorobenzene	10.0	10.5		ug/L		105	80 - 121
Chloroethane	10.0	7.78		ug/L		78	33 - 173
Chloroform	10.0	9.93		ug/L		99	79 - 127
Chloromethane	10.0	10.2		ug/L		102	54 - 143
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	76 - 128
cis-1,3-Dichloropropene	10.0	9.79		ug/L		98	64 - 132
Cyclohexane	10.0	10.2		ug/L		102	58 - 145
Dibromochloromethane	10.0	10.9		ug/L		109	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	8.80		ug/L		88	46 - 132
1,2-Dibromoethane	10.0	10.5		ug/L		105	77 - 123
1,2-Dichlorobenzene	10.0	9.93		ug/L		99	78 - 120
1,3-Dichlorobenzene	10.0	9.78		ug/L		98	78 - 120
1,4-Dichlorobenzene	10.0	9.72		ug/L		97	78 - 120
Dichlorodifluoromethane	10.0	7.75		ug/L		77	29 - 148
1,1-Dichloroethane	10.0	10.1		ug/L		101	75 - 133
1,2-Dichloroethane	10.0	9.78		ug/L		98	71 - 135
1,1-Dichloroethene	10.0	9.16		ug/L		92	65 - 139
1,2-Dichloropropane	10.0	10.3		ug/L		103	78 - 133
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120
2-Hexanone	20.0	22.3		ug/L		112	43 - 148
Isopropylbenzene	10.0	9.93		ug/L		99	74 - 120
Methyl acetate	20.0	21.3		ug/L		106	52 - 145
Methylcyclohexane	10.0	9.00		ug/L		90	60 - 125
Methylene Chloride	10.0	9.38		ug/L		94	70 - 134
4-Methyl-2-pentanone (MIBK)	20.0	19.2		ug/L		96	49 - 143
Methyl tert-butyl ether	10.0	8.70		ug/L		87	51 - 133
Styrene	10.0	9.85		ug/L		99	79 - 120
1,1,2,2-Tetrachloroethane	10.0	9.53		ug/L		95	65 - 139
Tetrachloroethene	10.0	11.2		ug/L		112	74 - 130
Toluene	10.0	10.5		ug/L		105	78 - 129
trans-1,2-Dichloroethene	10.0	9.92		ug/L		99	78 - 133
trans-1,3-Dichloropropene	10.0	9.58		ug/L		96	55 - 128
1,2,4-Trichlorobenzene	10.0	9.32		ug/L		93	42 - 133
1,1,1-Trichloroethane	10.0	9.26		ug/L		93	69 - 134
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	78 - 133
Trichloroethene	10.0	9.99		ug/L		100	76 - 125
Trichlorofluoromethane	10.0	9.41		ug/L		94	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.4		ug/L		104	50 - 156
1,2,4-Trimethylbenzene	10.0	9.34		ug/L		93	74 - 120
1,3,5-Trimethylbenzene	10.0	9.91		ug/L		99	75 - 121

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QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: LCS 240-355135/4
Matrix: Water
Analysis Batch: 355135

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	9.20		ug/L		92	58 - 143
Xylenes, Total	20.0	20.2		ug/L		101	80 - 120
1,4-Dioxane	200	136		ug/L		68	10 - 175
Diethyl ether	10.0	11.3		ug/L		113	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		59 - 120
Dibromofluoromethane (Surr)	95		75 - 128
1,2-Dichloroethane-d4 (Surr)	92		70 - 121
Toluene-d8 (Surr)	101		70 - 123

Lab Sample ID: 240-104164-B-6 MS
Matrix: Water
Analysis Batch: 355135

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	250	U	2500	2330		ug/L		93	71 - 122
Chloromethane	250	U	2500	2450		ug/L		98	31 - 154
cis-1,2-Dichloroethene	8200	F1	2500	9770	F1	ug/L		61	64 - 130
trans-1,2-Dichloroethene	53	J	2500	2450		ug/L		96	68 - 133
Trichloroethene	50	J	2500	2480		ug/L		97	55 - 131
Vinyl chloride	3400		2500	5210		ug/L		74	43 - 154

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		59 - 120
Dibromofluoromethane (Surr)	95		75 - 128
1,2-Dichloroethane-d4 (Surr)	89		70 - 121
Toluene-d8 (Surr)	102		70 - 123

Lab Sample ID: 240-104164-B-6 MSD
Matrix: Water
Analysis Batch: 355135

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	250	U	2500	2390		ug/L		96	71 - 122	3	22
Chloromethane	250	U	2500	2260		ug/L		90	31 - 154	8	35
cis-1,2-Dichloroethene	8200	F1	2500	10200	E	ug/L		80	64 - 130	5	21
trans-1,2-Dichloroethene	53	J	2500	2510		ug/L		98	68 - 133	3	24
Trichloroethene	50	J	2500	2380		ug/L		93	55 - 131	4	23
Vinyl chloride	3400		2500	4980		ug/L		65	43 - 154	5	29

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		59 - 120
Dibromofluoromethane (Surr)	98		75 - 128
1,2-Dichloroethane-d4 (Surr)	92		70 - 121
Toluene-d8 (Surr)	99		70 - 123

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: MB 240-355137/6

Matrix: Water

Analysis Batch: 355137

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/13/18 12:55	1
Benzene	1.0	U	1.0	0.13	ug/L			11/13/18 12:55	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/13/18 12:55	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/13/18 12:55	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/13/18 12:55	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/13/18 12:55	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/13/18 12:55	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/13/18 12:55	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/13/18 12:55	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/13/18 12:55	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/13/18 12:55	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/13/18 12:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/13/18 12:55	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/13/18 12:55	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/13/18 12:55	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/13/18 12:55	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/13/18 12:55	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/13/18 12:55	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/13/18 12:55	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/13/18 12:55	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/13/18 12:55	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/13/18 12:55	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/13/18 12:55	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/13/18 12:55	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 12:55	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/13/18 12:55	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/13/18 12:55	1
2-Hexanone	10	U	10	0.54	ug/L			11/13/18 12:55	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/13/18 12:55	1
Methyl acetate	10	U	10	1.7	ug/L			11/13/18 12:55	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/13/18 12:55	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/13/18 12:55	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/13/18 12:55	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/13/18 12:55	1
Styrene	1.0	U	1.0	0.10	ug/L			11/13/18 12:55	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/13/18 12:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/13/18 12:55	1
Toluene	1.0	U	1.0	0.14	ug/L			11/13/18 12:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 12:55	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/13/18 12:55	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/13/18 12:55	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/13/18 12:55	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/13/18 12:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/13/18 12:55	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/13/18 12:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/13/18 12:55	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/13/18 12:55	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/13/18 12:55	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: MB 240-355137/6
Matrix: Water
Analysis Batch: 355137

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/13/18 12:55	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/13/18 12:55	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/13/18 12:55	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/13/18 12:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		59 - 120		11/13/18 12:55	1
Dibromofluoromethane (Surr)	112		75 - 128		11/13/18 12:55	1
1,2-Dichloroethane-d4 (Surr)	110		70 - 121		11/13/18 12:55	1
Toluene-d8 (Surr)	94		70 - 123		11/13/18 12:55	1

Lab Sample ID: LCS 240-355137/4
Matrix: Water
Analysis Batch: 355137

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	20.0		ug/L		100	21 - 162
Benzene	10.0	10.6		ug/L		106	80 - 123
Bromodichloromethane	10.0	9.44		ug/L		94	77 - 125
Bromoform	10.0	8.00		ug/L		80	49 - 141
Bromomethane	10.0	8.37		ug/L		84	41 - 175
2-Butanone (MEK)	20.0	21.5		ug/L		108	39 - 163
Carbon disulfide	10.0	10.4		ug/L		104	60 - 138
Carbon tetrachloride	10.0	10.2		ug/L		102	63 - 140
Chlorobenzene	10.0	10.3		ug/L		103	80 - 121
Chloroethane	10.0	7.52		ug/L		75	33 - 173
Chloroform	10.0	10.5		ug/L		105	79 - 127
Chloromethane	10.0	11.7		ug/L		117	54 - 143
cis-1,2-Dichloroethene	10.0	10.1		ug/L		101	76 - 128
cis-1,3-Dichloropropene	10.0	9.22		ug/L		92	64 - 132
Cyclohexane	10.0	9.90		ug/L		99	58 - 145
Dibromochloromethane	10.0	9.33		ug/L		93	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	8.70		ug/L		87	46 - 132
1,2-Dibromoethane	10.0	10.9		ug/L		109	77 - 123
1,2-Dichlorobenzene	10.0	10.0		ug/L		100	78 - 120
1,3-Dichlorobenzene	10.0	9.94		ug/L		99	78 - 120
1,4-Dichlorobenzene	10.0	9.65		ug/L		97	78 - 120
Dichlorodifluoromethane	10.0	10.7		ug/L		107	29 - 148
1,1-Dichloroethane	10.0	10.3		ug/L		103	75 - 133
1,2-Dichloroethane	10.0	9.68		ug/L		97	71 - 135
1,1-Dichloroethene	10.0	11.1		ug/L		111	65 - 139
1,2-Dichloropropane	10.0	10.9		ug/L		109	78 - 133
Ethylbenzene	10.0	10.4		ug/L		104	80 - 120
2-Hexanone	20.0	21.0		ug/L		105	43 - 148
Isopropylbenzene	10.0	10.1		ug/L		101	74 - 120
Methyl acetate	20.0	23.4		ug/L		117	52 - 145
Methylcyclohexane	10.0	9.34		ug/L		93	60 - 125
Methylene Chloride	10.0	11.7		ug/L		117	70 - 134

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: LCS 240-355137/4

Matrix: Water

Analysis Batch: 355137

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Methyl-2-pentanone (MIBK)	20.0	20.3		ug/L		101	49 - 143
Methyl tert-butyl ether	10.0	6.17		ug/L		62	51 - 133
Styrene	10.0	10.6		ug/L		106	79 - 120
1,1,2,2-Tetrachloroethane	10.0	10.9		ug/L		109	65 - 139
Tetrachloroethene	10.0	10.7		ug/L		107	74 - 130
Toluene	10.0	10.8		ug/L		108	78 - 129
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	78 - 133
trans-1,3-Dichloropropene	10.0	9.07		ug/L		91	55 - 128
1,2,4-Trichlorobenzene	10.0	8.26		ug/L		83	42 - 133
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	69 - 134
1,1,2-Trichloroethane	10.0	11.8		ug/L		118	78 - 133
Trichloroethene	10.0	9.71		ug/L		97	76 - 125
Trichlorofluoromethane	10.0	11.3		ug/L		113	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.2		ug/L		112	50 - 156
1,2,4-Trimethylbenzene	10.0	9.70		ug/L		97	74 - 120
1,3,5-Trimethylbenzene	10.0	9.62		ug/L		96	75 - 121
Vinyl chloride	10.0	10.3		ug/L		103	58 - 143
Xylenes, Total	20.0	21.1		ug/L		106	80 - 120
1,4-Dioxane	200	174		ug/L		87	10 - 175
Diethyl ether	10.0	11.6		ug/L		116	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
4-Bromofluorobenzene (Surr)	102		59 - 120
Dibromofluoromethane (Surr)	100		75 - 128
1,2-Dichloroethane-d4 (Surr)	95		70 - 121
Toluene-d8 (Surr)	101		70 - 123

Lab Sample ID: 240-104164-E-18 MS

Matrix: Water

Analysis Batch: 355137

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	200	U	2000	2110		ug/L		105	71 - 122
Chloromethane	200	U	2000	2320		ug/L		116	31 - 154
cis-1,2-Dichloroethene	4900		2000	6240		ug/L		69	64 - 130
trans-1,2-Dichloroethene	39	J	2000	2180		ug/L		107	68 - 133
Trichloroethene	1900		2000	3650		ug/L		87	55 - 131
Vinyl chloride	380		2000	2330		ug/L		98	43 - 154

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	103		59 - 120
Dibromofluoromethane (Surr)	97		75 - 128
1,2-Dichloroethane-d4 (Surr)	95		70 - 121
Toluene-d8 (Surr)	100		70 - 123

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: 240-104164-F-18 MSD
Matrix: Water
Analysis Batch: 355137

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	200	U	2000	2130		ug/L		107	71 - 122	1	22
Chloromethane	200	U	2000	2350		ug/L		118	31 - 154	2	35
cis-1,2-Dichloroethene	4900		2000	6450		ug/L		80	64 - 130	3	21
trans-1,2-Dichloroethene	39	J	2000	2200		ug/L		108	68 - 133	1	24
Trichloroethene	1900		2000	3720		ug/L		91	55 - 131	2	23
Vinyl chloride	380		2000	2380		ug/L		100	43 - 154	2	29

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		59 - 120
Dibromofluoromethane (Surr)	98		75 - 128
1,2-Dichloroethane-d4 (Surr)	95		70 - 121
Toluene-d8 (Surr)	102		70 - 123

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

Lab Sample ID: MB 240-354129/5
Matrix: Water
Analysis Batch: 354129

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/07/18 12:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125		11/07/18 12:44	1

Lab Sample ID: LCS 240-354129/4
Matrix: Water
Analysis Batch: 354129

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	9.22		ug/L		92	59 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		63 - 125

Lab Sample ID: 240-103638-C-2 MS
Matrix: Water
Analysis Batch: 354129

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	3.2		10.0	14.0		ug/L		107	52 - 129

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		63 - 125

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QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: 240-103638-C-2 MSD

Matrix: Water
Analysis Batch: 354129

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	3.2		10.0	13.6		ug/L		104	52 - 129	3	13
Surrogate	%Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	105		63 - 125								

Lab Sample ID: 240-103638-C-9 MS

Matrix: Water
Analysis Batch: 354129

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	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	9.97		ug/L		100	52 - 129		
Surrogate	%Recovery	MS Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	104		63 - 125								

Lab Sample ID: 240-103638-C-9 MSD

Matrix: Water
Analysis Batch: 354129

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	10.5		ug/L		105	52 - 129	5	13
Surrogate	%Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	106		63 - 125								

Lab Sample ID: MB 240-354542/5

Matrix: Water
Analysis Batch: 354542

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/09/18 11:02	1	
Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac				
1,2-Dichloroethane-d4 (Surr)	105		63 - 125		11/09/18 11:02	1				

Lab Sample ID: LCS 240-354542/4

Matrix: Water
Analysis Batch: 354542

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	10.0	9.90		ug/L		99	59 - 131		
Surrogate	%Recovery	LCS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	104		63 - 125						

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: 240-103745-9 MS
Matrix: Water
Analysis Batch: 354542

Client Sample ID: TW-16-02_103018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	
1,4-Dioxane	5.3		10.0	13.1		ug/L		78	52 - 129	
Surrogate	%Recovery	MS Qualifier	MS Limits							
1,2-Dichloroethane-d4 (Surr)	99		63 - 125							

Lab Sample ID: 240-103745-9 MSD
Matrix: Water
Analysis Batch: 354542

Client Sample ID: TW-16-02_103018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	5.3		10.0	13.7		ug/L		84	52 - 129	4	13
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
1,2-Dichloroethane-d4 (Surr)	97		63 - 125								

Lab Sample ID: MB 240-354800/5
Matrix: Water
Analysis Batch: 354800

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/11/18 13:14	1	
Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac				
1,2-Dichloroethane-d4 (Surr)	103		63 - 125		11/11/18 13:14	1				

Lab Sample ID: LCS 240-354800/4
Matrix: Water
Analysis Batch: 354800

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	10.5		ug/L		105	59 - 131
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	92		63 - 125				

Lab Sample ID: 240-103817-F-3 MS
Matrix: Water
Analysis Batch: 354800

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.6		10.0	13.5		ug/L		108	52 - 129
Surrogate	%Recovery	MS Qualifier	MS Limits						
1,2-Dichloroethane-d4 (Surr)	104		63 - 125						

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QC Sample Results

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

TestAmerica Job ID: 240-103745-1

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

Lab Sample ID: 240-103817-F-3 MSD
Matrix: Water
Analysis Batch: 354800

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.6		10.0	12.9		ug/L		103	52 - 129	4	13
Surrogate	%Recovery	MSD Qualifier									Limits
1,2-Dichloroethane-d4 (Surr)	107										63 - 125

- 1
- 2
- 3
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- 9
- 10
- 11
- 12
- 13
- 14

QC Association Summary

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

TestAmerica Job ID: 240-103745-1

GC/MS VOA

Analysis Batch: 354129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103745-1	TRIPBLANK	Total/NA	Water	8260B SIM	
240-103745-2	TW-16-04_103018	Total/NA	Water	8260B SIM	
240-103745-3	TW-16-03_103018	Total/NA	Water	8260B SIM	
240-103745-4	PW-16-02_103018	Total/NA	Water	8260B SIM	
240-103745-5	MW-51_103018	Total/NA	Water	8260B SIM	
240-103745-6	MW-44_103018	Total/NA	Water	8260B SIM	
MB 240-354129/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-354129/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-103638-C-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-103638-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	
240-103638-C-9 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-103638-C-9 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 354542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103745-7	MW-65_103018	Total/NA	Water	8260B SIM	
240-103745-8	MW-49_103018	Total/NA	Water	8260B SIM	
240-103745-9	TW-16-02_103018	Total/NA	Water	8260B SIM	
240-103745-10	TW-16-01_103018	Total/NA	Water	8260B SIM	
240-103745-11	DUP-03	Total/NA	Water	8260B SIM	
240-103745-12	DUP-05	Total/NA	Water	8260B SIM	
240-103745-13	PW-16-01_103018	Total/NA	Water	8260B SIM	
240-103745-14	MW-22_103018	Total/NA	Water	8260B SIM	
MB 240-354542/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-354542/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-103745-9 MS	TW-16-02_103018	Total/NA	Water	8260B SIM	
240-103745-9 MSD	TW-16-02_103018	Total/NA	Water	8260B SIM	

Analysis Batch: 354800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103745-15	MW-23_103018	Total/NA	Water	8260B SIM	
240-103745-16	DUP-02	Total/NA	Water	8260B SIM	
240-103745-17	DUP-04	Total/NA	Water	8260B SIM	
MB 240-354800/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-354800/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-103817-F-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-103817-F-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 354885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103745-1	TRIPBLANK	Total/NA	Water	8260B	
240-103745-3	TW-16-03_103018	Total/NA	Water	8260B	
240-103745-4	PW-16-02_103018	Total/NA	Water	8260B	
240-103745-5	MW-51_103018	Total/NA	Water	8260B	
240-103745-6	MW-44_103018	Total/NA	Water	8260B	
240-103745-10	TW-16-01_103018	Total/NA	Water	8260B	
240-103745-13	PW-16-01_103018	Total/NA	Water	8260B	
MB 240-354885/6	Method Blank	Total/NA	Water	8260B	
LCS 240-354885/4	Lab Control Sample	Total/NA	Water	8260B	
240-103776-A-17 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
240-103776-C-17 MS	Matrix Spike	Total/NA	Water	8260B	

TestAmerica Canton

QC Association Summary

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

TestAmerica Job ID: 240-103745-1

Analysis Batch: 355135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103745-17	DUP-04	Total/NA	Water	8260B	
MB 240-355135/6	Method Blank	Total/NA	Water	8260B	
LCS 240-355135/4	Lab Control Sample	Total/NA	Water	8260B	
240-104164-B-6 MS	Matrix Spike	Total/NA	Water	8260B	
240-104164-B-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 355137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103745-2	TW-16-04_103018	Total/NA	Water	8260B	
240-103745-7	MW-65_103018	Total/NA	Water	8260B	
240-103745-8	MW-49_103018	Total/NA	Water	8260B	
240-103745-9	TW-16-02_103018	Total/NA	Water	8260B	
240-103745-11	DUP-03	Total/NA	Water	8260B	
240-103745-12	DUP-05	Total/NA	Water	8260B	
240-103745-14	MW-22_103018	Total/NA	Water	8260B	
240-103745-15	MW-23_103018	Total/NA	Water	8260B	
240-103745-16	DUP-02	Total/NA	Water	8260B	
MB 240-355137/6	Method Blank	Total/NA	Water	8260B	
LCS 240-355137/4	Lab Control Sample	Total/NA	Water	8260B	
240-104164-E-18 MS	Matrix Spike	Total/NA	Water	8260B	
240-104164-F-18 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: TRIPBLANK

Date Collected: 10/30/18 00:00

Date Received: 11/02/18 08:50

Lab Sample ID: 240-103745-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354885	11/12/18 15:32	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 14:01	SAM	TAL CAN

Client Sample ID: TW-16-04_103018

Date Collected: 10/30/18 09:30

Date Received: 11/02/18 08:50

Lab Sample ID: 240-103745-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		3.33	355137	11/13/18 14:54	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 20:51	SAM	TAL CAN

Client Sample ID: TW-16-03_103018

Date Collected: 10/30/18 10:55

Date Received: 11/02/18 08:50

Lab Sample ID: 240-103745-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		6.67	354885	11/12/18 16:20	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 21:16	SAM	TAL CAN

Client Sample ID: PW-16-02_103018

Date Collected: 10/30/18 12:00

Date Received: 11/02/18 08:50

Lab Sample ID: 240-103745-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	354885	11/12/18 16:44	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 21:42	SAM	TAL CAN

Client Sample ID: MW-51_103018

Date Collected: 10/30/18 13:30

Date Received: 11/02/18 08:50

Lab Sample ID: 240-103745-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354885	11/12/18 17:08	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 22:07	SAM	TAL CAN

Client Sample ID: MW-44_103018

Date Collected: 10/30/18 15:00

Date Received: 11/02/18 08:50

Lab Sample ID: 240-103745-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	354885	11/12/18 17:31	LRW	TAL CAN

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: MW-44_103018

Lab Sample ID: 240-103745-6

Date Collected: 10/30/18 15:00

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 22:33	SAM	TAL CAN

Client Sample ID: MW-65_103018

Lab Sample ID: 240-103745-7

Date Collected: 10/30/18 16:10

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	355137	11/13/18 15:18	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354542	11/09/18 17:01	SAM	TAL CAN

Client Sample ID: MW-49_103018

Lab Sample ID: 240-103745-8

Date Collected: 10/30/18 17:55

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1000	355137	11/13/18 15:42	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354542	11/09/18 17:26	SAM	TAL CAN

Client Sample ID: TW-16-02_103018

Lab Sample ID: 240-103745-9

Date Collected: 10/30/18 09:25

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		500	355137	11/13/18 16:06	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354542	11/09/18 17:52	SAM	TAL CAN

Client Sample ID: TW-16-01_103018

Lab Sample ID: 240-103745-10

Date Collected: 10/30/18 10:25

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		25	354885	11/12/18 19:07	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354542	11/09/18 19:09	SAM	TAL CAN

Client Sample ID: DUP-03

Lab Sample ID: 240-103745-11

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	355137	11/13/18 16:30	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354542	11/09/18 19:35	SAM	TAL CAN

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: DUP-05

Lab Sample ID: 240-103745-12

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355137	11/13/18 16:54	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354542	11/09/18 20:00	SAM	TAL CAN

Client Sample ID: PW-16-01_103018

Lab Sample ID: 240-103745-13

Date Collected: 10/30/18 11:30

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		40	354885	11/12/18 20:18	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354542	11/09/18 20:26	SAM	TAL CAN

Client Sample ID: MW-22_103018

Lab Sample ID: 240-103745-14

Date Collected: 10/30/18 13:25

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	355137	11/13/18 17:18	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354542	11/09/18 20:51	SAM	TAL CAN

Client Sample ID: MW-23_103018

Lab Sample ID: 240-103745-15

Date Collected: 10/30/18 17:25

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2500	355137	11/13/18 17:42	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		100	354800	11/11/18 14:31	SAM	TAL CAN

Client Sample ID: DUP-02

Lab Sample ID: 240-103745-16

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		333.33	355137	11/13/18 18:06	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 14:56	SAM	TAL CAN

Client Sample ID: DUP-04

Lab Sample ID: 240-103745-17

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	355135	11/13/18 16:29	LRW	TAL CAN

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-103745-1

Client Sample ID: DUP-04

Lab Sample ID: 240-103745-17

Date Collected: 10/30/18 00:00

Matrix: Water

Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 15:22	SAM	TAL CAN

Laboratory References:

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

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Accreditation/Certification Summary

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

TestAmerica Job ID: 240-103745-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18 *
Minnesota	NELAP	5	039-999-348	12-31-18 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-17-9	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
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 / 810-225-2763

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: M1001454.0004.00001 PO # M1001454.0004.00001		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other		Client Project Manager: Kris Hinsky Telephone: 248-994-2240 Email: kristoffer.hinsky@arcadis.com		Lab Contact: Mike DelMonte Telephone: 330-497-9396		TestAmerica Laboratories, Inc. COC No: _____ of _____ COCs			
Method of Shipment/Carrier: Shipping/Tracking No: _____		Analysis Turnaround Time 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		Containers & Preservatives H2SO4 _____ HNO3 _____ HCl _____ NaOH _____ ZnAc _____ Other: _____		Analyses 1,4-Dioxane 8260B SIM _____ VOCs 8260B _____ Composite=C / Grab-G _____ Filtered Sample (Y/N) _____		For lab use only: Walk-in client _____ Lab sampling _____ Job/SDG No _____		Sample Specific Notes / Special Instructions:	
Sample Identification		Matrix Air _____ Aqueous _____ Sediment _____ Solid _____ Other: _____		Sample Date		Sample Time		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Sample Specific Notes / Special Instructions:	
TRIP BLANK		X		—		—		NG X		1,4-Dioxane 8260B SIM	
TW-16-04-103018		—		10/30/18		0930		3 3		VOCs 8260B	
TW-16-03-103018		—		—		1055		3 3		Composite=C / Grab-G	
PW-16-02-103018		—		—		1200		3 3		Filtered Sample (Y/N)	
MW-51-103018		—		—		1330		3 3		Sample Specific Notes / Special Instructions:	
MW-44-103018		—		—		1500		3 3		Sample Specific Notes / Special Instructions:	
MW-65-103018		—		—		1610		3 3		Sample Specific Notes / Special Instructions:	
MW-49-103018		—		—		1755		3 3		Sample Specific Notes / Special Instructions:	
TW-16-02-103018		—		—		0925		3 3		Sample Specific Notes / Special Instructions:	
TW-16-01-103018		X		—		1025		NG 3 3		Sample Specific Notes / Special Instructions:	



Submit all results through Cadena at jim.tomalia@cadenas.com, Cadena #E203728

Relinquished by: <i>David Wal</i>	Company: Arcadis	Date/Time: 10/30/18	Received by: <i>Novi Office Cold Storage</i>	Company: Arcadis	Date/Time: 10/30/18
Relinquished by: <i>NOVI COLD STORAGE Kelly</i>	Company: ARCADIS	Date/Time: 11/1/18 09:47	Received by: <i>Jen Herli</i>	Company: TAC	Date/Time: 11/1/18 950
Relinquished by: <i>Jen Herli</i>	Company: TAC	Date/Time: 11/1/18 1225	Received in Laboratory by: <i>POB</i>	Company: TAC	Date/Time: 11-2-18 850

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TestAmerica Laboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-225-2763

Client Contact		Regulatory program:		Site Contact: Angela DeGrandis		Lab Contact: Mike DeMontico		TestAmerica Laboratories, Inc.										
Company Name: Arcadis		DW		Telephone: 734-320-0065		Telephone: 330-497-9396		COC No:										
Address: 26550 Cabot Drive, Suite 500		NPDES		TAT if different from below		Analyses		For lab use only										
City/State/Zip: Novi, MI, 48377		RCRA		10 day		VOCs 8260B		Walk-in client										
Phone: 248-994-2240		Other		3 weeks		Composite C/Grab-G		Lab sampling										
Project Name: Ford LTP		Other		2 weeks		Filtered Sample (Y/N)		Job/SDG No.										
Project Number: MI001454.0004.00001		Other		1 week		1,4-Dioxane 8260B SIM		Sample Specific Notes / Special Instructions:										
PO # MI001454.0004.00001		Other		2 days														
Shipping/Tracking No:		Other		1 day														
Sample Identification	Sample Date	Sample Time	Matrix			Containers & Preservatives			Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)									
			Air	Aqueous	Sediment	Solid	Other:	H2SO4		HNO3	HCl	NaOH	NaOH	Upret	Other:			
Dup-03	---	---	X															
Dup-05	---	---	X															
PW-16-01-103018	10/30/18	1300	X															
MW-22-103018	10/30/18	1325	X															
MW-23-103018	10/30/18	1725	X															
Dup-02	---	---	X															
Dup-04	---	---	X															

Relinquished by: <i>Arcadis / Justin Westhuis</i>	Date/Time: 10/30/18 1930	Company: Arcadis
Relinquished by: <i>NOVI COLD STORAGE / Robert</i>	Date/Time: 11/1/18 09:47	Company: TR
Relinquished by: <i>Novi Hauler</i>	Date/Time: 11/1/18 12:25	Company: TR

Submit all results through Cadena at jim.tomalia@cadenas.com, Cadena #E203728

Level IV Reporting.

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