

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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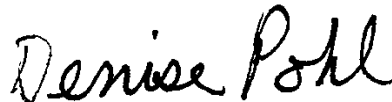
TestAmerica Job ID: 240-91640-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

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



Authorized for release by:
2/28/2018 1:11:01 PM

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

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Definitions/Glossary

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

TestAmerica Job ID: 240-91640-1

Qualifiers

GC/MS VOA

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

Glossary

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

Case Narrative

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

TestAmerica Job ID: 240-91640-1

Job ID: 240-91640-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-91640-1

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 2/17/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-3_021318 (240-91640-1), MW-5_021318 (240-91640-2), MW-2_021318 (240-91640-3), MW-4_021318 (240-91640-4), MW-10_021318 (240-91640-5), TW-16-04_021418 (240-91640-6), PW-16-02_021418 (240-91640-7), TW-16-03_021418 (240-91640-8), TW-16-02_021418 (240-91640-9) and TRIP BLANK (240-91640-10) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/21/2018 and 02/22/2018.

1,1,2,2-Tetrachloroethane and Toluene failed the recovery criteria high for LCS 240-315600/4. 1,1,2,2-Tetrachloroethane, 1,1-Dichloroethane, 1,3,5-Trimethylbenzene, Chloroform and Toluene failed the recovery criteria high for LCS 240-315781/4. Refer to the QC report for details.

1,1,2,2-Tetrachloroethane failed the recovery criteria high for the MSD of sample PW-16-02_021418MSD (240-91640-7) in batch 240-315600. 2-Hexanone exceeded the RPD limit. Bromoform failed the recovery criteria low for the MS of sample 240-91647-14 in batch 240-315781. 1,1,2,2-Tetrachloroethane failed the recovery criteria high. Bromoform failed the recovery criteria low for the MSD of sample 240-91647-14 in batch 240-315781. Refer to the QC report for details.

Case Narrative

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

TestAmerica Job ID: 240-91640-1

Job ID: 240-91640-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Samples MW-2_021318 (240-91640-3)[66.67X], MW-4_021318 (240-91640-4)[1666.67X], MW-10_021318 (240-91640-5)[200X], TW-16-04_021418 (240-91640-6)[6.67X], TW-16-03_021418 (240-91640-8)[10X] and TW-16-02_021418 (240-91640-9)[1000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 315600 recovered above the upper control limit for Toluene and 1,2-Dichloropropane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: MW-3_021318 (240-91640-1), MW-2_021318 (240-91640-3), MW-4_021318 (240-91640-4), MW-10_021318 (240-91640-5), TW-16-04_021418 (240-91640-6), PW-16-02_021418 (240-91640-7), TW-16-03_021418 (240-91640-8), TW-16-02_021418 (240-91640-9) and TRIP BLANK (240-91640-10).

Method(s) 8260B: The laboratory control sample (LCS) for 315600 recovered outside control limits for multiple analytes. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported: MW-3_021318 (240-91640-1), MW-2_021318 (240-91640-3), MW-4_021318 (240-91640-4), MW-10_021318 (240-91640-5), TW-16-04_021418 (240-91640-6), PW-16-02_021418 (240-91640-7), TW-16-03_021418 (240-91640-8), TW-16-02_021418 (240-91640-9), TRIP BLANK (240-91640-10) and (LCS 240-315600/4).

Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 315781 recovered above the upper control limit for Toluene. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following sample is impacted: MW-5_021318 (240-91640-2).

Method(s) 8260B: The laboratory control sample (LCS) for 315781 recovered outside control limits for multiple analytes. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported: MW-5_021318 (240-91640-2) and (LCS 240-315781/4).

Method(s) 8260B: The pH of the sample was greater than 2. The sample was analyzed within the normal 14 day holding time; however, experimental evidence suggests that some aromatic compounds in wastewater samples, notably, Benzene, Toluene, and Ethylbenzene are susceptible to biological degradation if sample is not preserved to a pH of 2: MW-5_021318 (240-91640-2).

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 MW-3_021318 (240-91640-1), MW-5_021318 (240-91640-2), MW-2_021318 (240-91640-3), MW-4_021318 (240-91640-4), MW-10_021318 (240-91640-5), TW-16-04_021418 (240-91640-6), PW-16-02_021418 (240-91640-7), TW-16-03_021418 (240-91640-8) and TW-16-02_021418 (240-91640-9) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 02/23/2018 and 02/26/2018.

Method(s) 8260B SIM: The following sample was diluted due to the nature of the sample matrix: MW-4_021318 (240-91640-4). 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: 240-91640-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN

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: 240-91640-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-91640-1	MW-3_021318	Water	02/13/18 10:07	02/17/18 09:30
240-91640-2	MW-5_021318	Water	02/13/18 11:07	02/17/18 09:30
240-91640-3	MW-2_021318	Water	02/13/18 12:22	02/17/18 09:30
240-91640-4	MW-4_021318	Water	02/13/18 14:12	02/17/18 09:30
240-91640-5	MW-10_021318	Water	02/13/18 15:22	02/17/18 09:30
240-91640-6	TW-16-04_021418	Water	02/14/18 10:42	02/17/18 09:30
240-91640-7	PW-16-02_021418	Water	02/14/18 12:02	02/17/18 09:30
240-91640-8	TW-16-03_021418	Water	02/14/18 13:57	02/17/18 09:30
240-91640-9	TW-16-02_021418	Water	02/14/18 16:12	02/17/18 09:30
240-91640-10	TRIP BLANK	Water	02/14/18 00:00	02/17/18 09:30



Detection Summary

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-3_021318

Lab Sample ID: 240-91640-1

No Detections.

Client Sample ID: MW-5_021318

Lab Sample ID: 240-91640-2

No Detections.

Client Sample ID: MW-2_021318

Lab Sample ID: 240-91640-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.4		2.0	0.24	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	1400		67	20	ug/L	66.67		8260B	Total/NA
trans-1,2-Dichloroethene	390		67	19	ug/L	66.67		8260B	Total/NA
Vinyl chloride	210		67	30	ug/L	66.67		8260B	Total/NA

Client Sample ID: MW-4_021318

Lab Sample ID: 240-91640-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.38	J	2.0	0.24	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	26000		1700	500	ug/L	1666.67		8260B	Total/NA
trans-1,2-Dichloroethene	1100	J	1700	480	ug/L	1666.67		8260B	Total/NA
Trichloroethene	23000		1700	550	ug/L	1666.67		8260B	Total/NA

Client Sample ID: MW-10_021318

Lab Sample ID: 240-91640-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.4		2.0	0.24	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	1900		200	90	ug/L	200		8260B	Total/NA

Client Sample ID: TW-16-04_021418

Lab Sample ID: 240-91640-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	25		6.7	2.0	ug/L	6.67		8260B	Total/NA
Vinyl chloride	77		6.7	3.0	ug/L	6.67		8260B	Total/NA

Client Sample ID: PW-16-02_021418

Lab Sample ID: 240-91640-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	12		1.0	0.30	ug/L	1		8260B	Total/NA
Vinyl chloride	18		1.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: TW-16-03_021418

Lab Sample ID: 240-91640-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	40		10	3.0	ug/L	10		8260B	Total/NA
Vinyl chloride	95		10	4.5	ug/L	10		8260B	Total/NA

Client Sample ID: TW-16-02_021418

Lab Sample ID: 240-91640-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.9		2.0	0.24	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	3500		1000	300	ug/L	1000		8260B	Total/NA
Vinyl chloride	9100		1000	450	ug/L	1000		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

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Detection Summary

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-91640-10

No Detections.

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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: 240-91640-1

Client Sample ID: MW-3_021318

Lab Sample ID: 240-91640-1

Date Collected: 02/13/18 10:07

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			02/23/18 14:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124		63 - 125					02/23/18 14:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			02/21/18 15:52	1
Benzene	1.0	U	1.0	0.28	ug/L			02/21/18 15:52	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			02/21/18 15:52	1
Bromoform	1.0	U	1.0	0.43	ug/L			02/21/18 15:52	1
Bromomethane	1.0	U	1.0	0.42	ug/L			02/21/18 15:52	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			02/21/18 15:52	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			02/21/18 15:52	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			02/21/18 15:52	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			02/21/18 15:52	1
Chloroethane	1.0	U	1.0	0.41	ug/L			02/21/18 15:52	1
Chloroform	1.0	U	1.0	0.31	ug/L			02/21/18 15:52	1
Chloromethane	1.0	U	1.0	0.43	ug/L			02/21/18 15:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			02/21/18 15:52	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			02/21/18 15:52	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			02/21/18 15:52	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			02/21/18 15:52	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			02/21/18 15:52	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			02/21/18 15:52	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			02/21/18 15:52	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			02/21/18 15:52	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			02/21/18 15:52	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			02/21/18 15:52	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			02/21/18 15:52	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			02/21/18 15:52	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			02/21/18 15:52	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			02/21/18 15:52	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			02/21/18 15:52	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			02/21/18 15:52	1
2-Hexanone	10	U	10	1.2	ug/L			02/21/18 15:52	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			02/21/18 15:52	1
Methyl acetate	10	U	10	1.4	ug/L			02/21/18 15:52	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			02/21/18 15:52	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			02/21/18 15:52	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			02/21/18 15:52	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			02/21/18 15:52	1
Styrene	1.0	U	1.0	0.23	ug/L			02/21/18 15:52	1
1,1,2,2-Tetrachloroethane	1.0	U *	1.0	0.32	ug/L			02/21/18 15:52	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			02/21/18 15:52	1
Toluene	1.0	U *	1.0	0.23	ug/L			02/21/18 15:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			02/21/18 15:52	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			02/21/18 15:52	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			02/21/18 15:52	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			02/21/18 15:52	1

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Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-3_021318

Lab Sample ID: 240-91640-1

Date Collected: 02/13/18 10:07

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			02/21/18 15:52	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			02/21/18 15:52	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			02/21/18 15:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			02/21/18 15:52	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			02/21/18 15:52	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/21/18 15:52	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/21/18 15:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/21/18 15:52	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			02/21/18 15:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		69 - 120					02/21/18 15:52	1
Dibromofluoromethane (Surr)	105		69 - 124					02/21/18 15:52	1
1,2-Dichloroethane-d4 (Surr)	112		61 - 138					02/21/18 15:52	1
Toluene-d8 (Surr)	109		73 - 120					02/21/18 15:52	1

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-5_021318

Lab Sample ID: 240-91640-2

Date Collected: 02/13/18 11:07

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			02/23/18 14:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124		63 - 125					02/23/18 14:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			02/22/18 12:28	1
Benzene	1.0	U	1.0	0.28	ug/L			02/22/18 12:28	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			02/22/18 12:28	1
Bromoform	1.0	U	1.0	0.43	ug/L			02/22/18 12:28	1
Bromomethane	1.0	U	1.0	0.42	ug/L			02/22/18 12:28	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			02/22/18 12:28	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			02/22/18 12:28	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			02/22/18 12:28	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			02/22/18 12:28	1
Chloroethane	1.0	U	1.0	0.41	ug/L			02/22/18 12:28	1
Chloroform	1.0	U*	1.0	0.31	ug/L			02/22/18 12:28	1
Chloromethane	1.0	U	1.0	0.43	ug/L			02/22/18 12:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			02/22/18 12:28	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			02/22/18 12:28	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			02/22/18 12:28	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			02/22/18 12:28	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			02/22/18 12:28	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			02/22/18 12:28	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			02/22/18 12:28	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			02/22/18 12:28	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			02/22/18 12:28	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			02/22/18 12:28	1
1,1-Dichloroethane	1.0	U*	1.0	0.25	ug/L			02/22/18 12:28	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			02/22/18 12:28	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			02/22/18 12:28	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			02/22/18 12:28	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			02/22/18 12:28	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			02/22/18 12:28	1
2-Hexanone	10	U	10	1.2	ug/L			02/22/18 12:28	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			02/22/18 12:28	1
Methyl acetate	10	U	10	1.4	ug/L			02/22/18 12:28	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			02/22/18 12:28	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			02/22/18 12:28	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			02/22/18 12:28	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			02/22/18 12:28	1
Styrene	1.0	U	1.0	0.23	ug/L			02/22/18 12:28	1
1,1,2,2-Tetrachloroethane	1.0	U*	1.0	0.32	ug/L			02/22/18 12:28	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			02/22/18 12:28	1
Toluene	1.0	U*	1.0	0.23	ug/L			02/22/18 12:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			02/22/18 12:28	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			02/22/18 12:28	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			02/22/18 12:28	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			02/22/18 12:28	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-5_021318

Lab Sample ID: 240-91640-2

Date Collected: 02/13/18 11:07

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			02/22/18 12:28	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			02/22/18 12:28	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			02/22/18 12:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			02/22/18 12:28	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			02/22/18 12:28	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/22/18 12:28	1
1,3,5-Trimethylbenzene	1.0	U *	1.0	0.24	ug/L			02/22/18 12:28	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/22/18 12:28	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			02/22/18 12:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		69 - 120		02/22/18 12:28	1
Dibromofluoromethane (Surr)	109		69 - 124		02/22/18 12:28	1
1,2-Dichloroethane-d4 (Surr)	112		61 - 138		02/22/18 12:28	1
Toluene-d8 (Surr)	108		73 - 120		02/22/18 12:28	1

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-2_021318

Lab Sample ID: 240-91640-3

Date Collected: 02/13/18 12:22

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.4		2.0	0.24	ug/L			02/23/18 15:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124		63 - 125					02/23/18 15:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	670	U	670	120	ug/L			02/21/18 16:37	66.67
Benzene	67	U	67	19	ug/L			02/21/18 16:37	66.67
Bromodichloromethane	67	U	67	20	ug/L			02/21/18 16:37	66.67
Bromoform	67	U	67	29	ug/L			02/21/18 16:37	66.67
Bromomethane	67	U	67	28	ug/L			02/21/18 16:37	66.67
2-Butanone (MEK)	670	U	670	68	ug/L			02/21/18 16:37	66.67
Carbon disulfide	330	U	330	23	ug/L			02/21/18 16:37	66.67
Carbon tetrachloride	67	U	67	23	ug/L			02/21/18 16:37	66.67
Chlorobenzene	67	U	67	21	ug/L			02/21/18 16:37	66.67
Chloroethane	67	U	67	27	ug/L			02/21/18 16:37	66.67
Chloroform	67	U	67	21	ug/L			02/21/18 16:37	66.67
Chloromethane	67	U	67	29	ug/L			02/21/18 16:37	66.67
cis-1,2-Dichloroethene	1400		67	20	ug/L			02/21/18 16:37	66.67
cis-1,3-Dichloropropene	67	U	67	17	ug/L			02/21/18 16:37	66.67
Cyclohexane	67	U	67	29	ug/L			02/21/18 16:37	66.67
Dibromochloromethane	67	U	67	17	ug/L			02/21/18 16:37	66.67
1,2-Dibromo-3-Chloropropane	67	U	67	31	ug/L			02/21/18 16:37	66.67
1,2-Dibromoethane	67	U	67	15	ug/L			02/21/18 16:37	66.67
1,2-Dichlorobenzene	67	U	67	17	ug/L			02/21/18 16:37	66.67
1,3-Dichlorobenzene	67	U	67	21	ug/L			02/21/18 16:37	66.67
1,4-Dichlorobenzene	67	U	67	15	ug/L			02/21/18 16:37	66.67
Dichlorodifluoromethane	67	U	67	33	ug/L			02/21/18 16:37	66.67
1,1-Dichloroethane	67	U	67	17	ug/L			02/21/18 16:37	66.67
1,2-Dichloroethane	67	U	67	20	ug/L			02/21/18 16:37	66.67
1,1-Dichloroethene	67	U	67	18	ug/L			02/21/18 16:37	66.67
1,2-Dichloropropane	67	U	67	20	ug/L			02/21/18 16:37	66.67
Diethyl ether	130	U	130	23	ug/L			02/21/18 16:37	66.67
Ethylbenzene	67	U	67	17	ug/L			02/21/18 16:37	66.67
2-Hexanone	670	U	670	82	ug/L			02/21/18 16:37	66.67
Isopropylbenzene	67	U	67	14	ug/L			02/21/18 16:37	66.67
Methyl acetate	670	U	670	95	ug/L			02/21/18 16:37	66.67
Methylcyclohexane	67	U	67	30	ug/L			02/21/18 16:37	66.67
Methylene Chloride	330	U	330	35	ug/L			02/21/18 16:37	66.67
4-Methyl-2-pentanone (MIBK)	670	U	670	47	ug/L			02/21/18 16:37	66.67
Methyl tert-butyl ether	67	U	67	18	ug/L			02/21/18 16:37	66.67
Styrene	67	U	67	15	ug/L			02/21/18 16:37	66.67
1,1,2,2-Tetrachloroethane	67	U *	67	21	ug/L			02/21/18 16:37	66.67
Tetrachloroethene	67	U	67	20	ug/L			02/21/18 16:37	66.67
Toluene	67	U *	67	15	ug/L			02/21/18 16:37	66.67
trans-1,2-Dichloroethene	390		67	19	ug/L			02/21/18 16:37	66.67
trans-1,3-Dichloropropene	67	U	67	21	ug/L			02/21/18 16:37	66.67
1,2,4-Trichlorobenzene	67	U	67	18	ug/L			02/21/18 16:37	66.67
1,1,1-Trichloroethane	67	U	67	15	ug/L			02/21/18 16:37	66.67

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-2_021318

Lab Sample ID: 240-91640-3

Date Collected: 02/13/18 12:22

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	67	U	67	23	ug/L			02/21/18 16:37	66.67
Trichloroethene	67	U	67	22	ug/L			02/21/18 16:37	66.67
Trichlorofluoromethane	67	U	67	33	ug/L			02/21/18 16:37	66.67
1,1,2-Trichloro-1,2,2-trifluoroethane	67	U	67	27	ug/L			02/21/18 16:37	66.67
1,2,3-Trimethylbenzene	330	U	330	15	ug/L			02/21/18 16:37	66.67
1,2,4-Trimethylbenzene	67	U	67	16	ug/L			02/21/18 16:37	66.67
1,3,5-Trimethylbenzene	67	U	67	16	ug/L			02/21/18 16:37	66.67
Vinyl chloride	210		67	30	ug/L			02/21/18 16:37	66.67
Xylenes, Total	130	U	130	16	ug/L			02/21/18 16:37	66.67
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		69 - 120					02/21/18 16:37	66.67
Dibromofluoromethane (Surr)	102		69 - 124					02/21/18 16:37	66.67
1,2-Dichloroethane-d4 (Surr)	104		61 - 138					02/21/18 16:37	66.67
Toluene-d8 (Surr)	105		73 - 120					02/21/18 16:37	66.67

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-4_021318

Lab Sample ID: 240-91640-4

Date Collected: 02/13/18 14:12

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.38	J	2.0	0.24	ug/L			02/26/18 17:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		63 - 125					02/26/18 17:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	17000	U	17000	2900	ug/L			02/21/18 17:00	1666.67
Benzene	1700	U	1700	470	ug/L			02/21/18 17:00	1666.67
Bromodichloromethane	1700	U	1700	500	ug/L			02/21/18 17:00	1666.67
Bromoform	1700	U	1700	720	ug/L			02/21/18 17:00	1666.67
Bromomethane	1700	U	1700	700	ug/L			02/21/18 17:00	1666.67
2-Butanone (MEK)	17000	U	17000	1700	ug/L			02/21/18 17:00	1666.67
Carbon disulfide	8300	U	8300	570	ug/L			02/21/18 17:00	1666.67
Carbon tetrachloride	1700	U	1700	580	ug/L			02/21/18 17:00	1666.67
Chlorobenzene	1700	U	1700	530	ug/L			02/21/18 17:00	1666.67
Chloroethane	1700	U	1700	680	ug/L			02/21/18 17:00	1666.67
Chloroform	1700	U	1700	520	ug/L			02/21/18 17:00	1666.67
Chloromethane	1700	U	1700	720	ug/L			02/21/18 17:00	1666.67
cis-1,2-Dichloroethene	26000		1700	500	ug/L			02/21/18 17:00	1666.67
cis-1,3-Dichloropropene	1700	U	1700	430	ug/L			02/21/18 17:00	1666.67
Cyclohexane	1700	U	1700	730	ug/L			02/21/18 17:00	1666.67
Dibromochloromethane	1700	U	1700	420	ug/L			02/21/18 17:00	1666.67
1,2-Dibromo-3-Chloropropane	1700	U	1700	780	ug/L			02/21/18 17:00	1666.67
1,2-Dibromoethane	1700	U	1700	380	ug/L			02/21/18 17:00	1666.67
1,2-Dichlorobenzene	1700	U	1700	430	ug/L			02/21/18 17:00	1666.67
1,3-Dichlorobenzene	1700	U	1700	530	ug/L			02/21/18 17:00	1666.67
1,4-Dichlorobenzene	1700	U	1700	380	ug/L			02/21/18 17:00	1666.67
Dichlorodifluoromethane	1700	U	1700	830	ug/L			02/21/18 17:00	1666.67
1,1-Dichloroethane	1700	U	1700	420	ug/L			02/21/18 17:00	1666.67
1,2-Dichloroethane	1700	U	1700	500	ug/L			02/21/18 17:00	1666.67
1,1-Dichloroethene	1700	U	1700	450	ug/L			02/21/18 17:00	1666.67
1,2-Dichloropropane	1700	U	1700	500	ug/L			02/21/18 17:00	1666.67
Diethyl ether	3300	U	3300	580	ug/L			02/21/18 17:00	1666.67
Ethylbenzene	1700	U	1700	430	ug/L			02/21/18 17:00	1666.67
2-Hexanone	17000	U	17000	2100	ug/L			02/21/18 17:00	1666.67
Isopropylbenzene	1700	U	1700	350	ug/L			02/21/18 17:00	1666.67
Methyl acetate	17000	U	17000	2400	ug/L			02/21/18 17:00	1666.67
Methylcyclohexane	1700	U	1700	750	ug/L			02/21/18 17:00	1666.67
Methylene Chloride	8300	U	8300	880	ug/L			02/21/18 17:00	1666.67
4-Methyl-2-pentanone (MIBK)	17000	U	17000	1200	ug/L			02/21/18 17:00	1666.67
Methyl tert-butyl ether	1700	U	1700	450	ug/L			02/21/18 17:00	1666.67
Styrene	1700	U	1700	380	ug/L			02/21/18 17:00	1666.67
1,1,2,2-Tetrachloroethane	1700	U *	1700	530	ug/L			02/21/18 17:00	1666.67
Tetrachloroethene	1700	U	1700	500	ug/L			02/21/18 17:00	1666.67
Toluene	1700	U *	1700	380	ug/L			02/21/18 17:00	1666.67
trans-1,2-Dichloroethene	1100	J	1700	480	ug/L			02/21/18 17:00	1666.67
trans-1,3-Dichloropropene	1700	U	1700	520	ug/L			02/21/18 17:00	1666.67
1,2,4-Trichlorobenzene	1700	U	1700	450	ug/L			02/21/18 17:00	1666.67
1,1,1-Trichloroethane	1700	U	1700	380	ug/L			02/21/18 17:00	1666.67

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-4_021318

Lab Sample ID: 240-91640-4

Date Collected: 02/13/18 14:12

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1700	U	1700	570	ug/L			02/21/18 17:00	1666.67
Trichloroethene	23000		1700	550	ug/L			02/21/18 17:00	1666.67
Trichlorofluoromethane	1700	U	1700	830	ug/L			02/21/18 17:00	1666.67
1,1,2-Trichloro-1,2,2-trifluoroethane	1700	U	1700	680	ug/L			02/21/18 17:00	1666.67
1,2,3-Trimethylbenzene	8300	U	8300	370	ug/L			02/21/18 17:00	1666.67
1,2,4-Trimethylbenzene	1700	U	1700	400	ug/L			02/21/18 17:00	1666.67
1,3,5-Trimethylbenzene	1700	U	1700	400	ug/L			02/21/18 17:00	1666.67
Vinyl chloride	1700	U	1700	750	ug/L			02/21/18 17:00	1666.67
Xylenes, Total	3300	U	3300	400	ug/L			02/21/18 17:00	1666.67

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		69 - 120		02/21/18 17:00	1666.67
Dibromofluoromethane (Surr)	106		69 - 124		02/21/18 17:00	1666.67
1,2-Dichloroethane-d4 (Surr)	114		61 - 138		02/21/18 17:00	1666.67
Toluene-d8 (Surr)	111		73 - 120		02/21/18 17:00	1666.67

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-10_021318

Lab Sample ID: 240-91640-5

Date Collected: 02/13/18 15:22

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.4		2.0	0.24	ug/L			02/23/18 15:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		63 - 125					02/23/18 15:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	2000	U	2000	350	ug/L			02/21/18 17:22	200
Benzene	200	U	200	56	ug/L			02/21/18 17:22	200
Bromodichloromethane	200	U	200	60	ug/L			02/21/18 17:22	200
Bromoform	200	U	200	86	ug/L			02/21/18 17:22	200
Bromomethane	200	U	200	84	ug/L			02/21/18 17:22	200
2-Butanone (MEK)	2000	U	2000	200	ug/L			02/21/18 17:22	200
Carbon disulfide	1000	U	1000	68	ug/L			02/21/18 17:22	200
Carbon tetrachloride	200	U	200	70	ug/L			02/21/18 17:22	200
Chlorobenzene	200	U	200	64	ug/L			02/21/18 17:22	200
Chloroethane	200	U	200	82	ug/L			02/21/18 17:22	200
Chloroform	200	U	200	62	ug/L			02/21/18 17:22	200
Chloromethane	200	U	200	86	ug/L			02/21/18 17:22	200
cis-1,2-Dichloroethene	200	U	200	60	ug/L			02/21/18 17:22	200
cis-1,3-Dichloropropene	200	U	200	52	ug/L			02/21/18 17:22	200
Cyclohexane	200	U	200	88	ug/L			02/21/18 17:22	200
Dibromochloromethane	200	U	200	50	ug/L			02/21/18 17:22	200
1,2-Dibromo-3-Chloropropane	200	U	200	94	ug/L			02/21/18 17:22	200
1,2-Dibromoethane	200	U	200	46	ug/L			02/21/18 17:22	200
1,2-Dichlorobenzene	200	U	200	52	ug/L			02/21/18 17:22	200
1,3-Dichlorobenzene	200	U	200	64	ug/L			02/21/18 17:22	200
1,4-Dichlorobenzene	200	U	200	46	ug/L			02/21/18 17:22	200
Dichlorodifluoromethane	200	U	200	100	ug/L			02/21/18 17:22	200
1,1-Dichloroethane	200	U	200	50	ug/L			02/21/18 17:22	200
1,2-Dichloroethane	200	U	200	60	ug/L			02/21/18 17:22	200
1,1-Dichloroethene	200	U	200	54	ug/L			02/21/18 17:22	200
1,2-Dichloropropane	200	U	200	60	ug/L			02/21/18 17:22	200
Diethyl ether	400	U	400	70	ug/L			02/21/18 17:22	200
Ethylbenzene	200	U	200	52	ug/L			02/21/18 17:22	200
2-Hexanone	2000	U	2000	250	ug/L			02/21/18 17:22	200
Isopropylbenzene	200	U	200	42	ug/L			02/21/18 17:22	200
Methyl acetate	2000	U	2000	290	ug/L			02/21/18 17:22	200
Methylcyclohexane	200	U	200	90	ug/L			02/21/18 17:22	200
Methylene Chloride	1000	U	1000	110	ug/L			02/21/18 17:22	200
4-Methyl-2-pentanone (MIBK)	2000	U	2000	140	ug/L			02/21/18 17:22	200
Methyl tert-butyl ether	200	U	200	54	ug/L			02/21/18 17:22	200
Styrene	200	U	200	46	ug/L			02/21/18 17:22	200
1,1,2,2-Tetrachloroethane	200	U *	200	64	ug/L			02/21/18 17:22	200
Tetrachloroethene	200	U	200	60	ug/L			02/21/18 17:22	200
Toluene	200	U *	200	46	ug/L			02/21/18 17:22	200
trans-1,2-Dichloroethene	200	U	200	58	ug/L			02/21/18 17:22	200
trans-1,3-Dichloropropene	200	U	200	62	ug/L			02/21/18 17:22	200
1,2,4-Trichlorobenzene	200	U	200	54	ug/L			02/21/18 17:22	200
1,1,1-Trichloroethane	200	U	200	46	ug/L			02/21/18 17:22	200

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-10_021318

Lab Sample ID: 240-91640-5

Date Collected: 02/13/18 15:22

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	200	U	200	68	ug/L			02/21/18 17:22	200
Trichloroethene	200	U	200	66	ug/L			02/21/18 17:22	200
Trichlorofluoromethane	200	U	200	100	ug/L			02/21/18 17:22	200
1,1,2-Trichloro-1,2,2-trifluoroethane	200	U	200	82	ug/L			02/21/18 17:22	200
1,2,3-Trimethylbenzene	1000	U	1000	44	ug/L			02/21/18 17:22	200
1,2,4-Trimethylbenzene	200	U	200	48	ug/L			02/21/18 17:22	200
1,3,5-Trimethylbenzene	200	U	200	48	ug/L			02/21/18 17:22	200
Vinyl chloride	1900		200	90	ug/L			02/21/18 17:22	200
Xylenes, Total	400	U	400	48	ug/L			02/21/18 17:22	200
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		69 - 120					02/21/18 17:22	200
Dibromofluoromethane (Surr)	109		69 - 124					02/21/18 17:22	200
1,2-Dichloroethane-d4 (Surr)	113		61 - 138					02/21/18 17:22	200
Toluene-d8 (Surr)	110		73 - 120					02/21/18 17:22	200

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: TW-16-04_021418

Lab Sample ID: 240-91640-6

Date Collected: 02/14/18 10:42

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			02/26/18 14:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		63 - 125					02/26/18 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	67	U	67	12	ug/L			02/21/18 17:45	6.67
Benzene	6.7	U	6.7	1.9	ug/L			02/21/18 17:45	6.67
Bromodichloromethane	6.7	U	6.7	2.0	ug/L			02/21/18 17:45	6.67
Bromoform	6.7	U	6.7	2.9	ug/L			02/21/18 17:45	6.67
Bromomethane	6.7	U	6.7	2.8	ug/L			02/21/18 17:45	6.67
2-Butanone (MEK)	67	U	67	6.8	ug/L			02/21/18 17:45	6.67
Carbon disulfide	33	U	33	2.3	ug/L			02/21/18 17:45	6.67
Carbon tetrachloride	6.7	U	6.7	2.3	ug/L			02/21/18 17:45	6.67
Chlorobenzene	6.7	U	6.7	2.1	ug/L			02/21/18 17:45	6.67
Chloroethane	6.7	U	6.7	2.7	ug/L			02/21/18 17:45	6.67
Chloroform	6.7	U	6.7	2.1	ug/L			02/21/18 17:45	6.67
Chloromethane	6.7	U	6.7	2.9	ug/L			02/21/18 17:45	6.67
cis-1,2-Dichloroethene	25		6.7	2.0	ug/L			02/21/18 17:45	6.67
cis-1,3-Dichloropropene	6.7	U	6.7	1.7	ug/L			02/21/18 17:45	6.67
Cyclohexane	6.7	U	6.7	2.9	ug/L			02/21/18 17:45	6.67
Dibromochloromethane	6.7	U	6.7	1.7	ug/L			02/21/18 17:45	6.67
1,2-Dibromo-3-Chloropropane	6.7	U	6.7	3.1	ug/L			02/21/18 17:45	6.67
1,2-Dibromoethane	6.7	U	6.7	1.5	ug/L			02/21/18 17:45	6.67
1,2-Dichlorobenzene	6.7	U	6.7	1.7	ug/L			02/21/18 17:45	6.67
1,3-Dichlorobenzene	6.7	U	6.7	2.1	ug/L			02/21/18 17:45	6.67
1,4-Dichlorobenzene	6.7	U	6.7	1.5	ug/L			02/21/18 17:45	6.67
Dichlorodifluoromethane	6.7	U	6.7	3.3	ug/L			02/21/18 17:45	6.67
1,1-Dichloroethane	6.7	U	6.7	1.7	ug/L			02/21/18 17:45	6.67
1,2-Dichloroethane	6.7	U	6.7	2.0	ug/L			02/21/18 17:45	6.67
1,1-Dichloroethene	6.7	U	6.7	1.8	ug/L			02/21/18 17:45	6.67
1,2-Dichloropropane	6.7	U	6.7	2.0	ug/L			02/21/18 17:45	6.67
Diethyl ether	13	U	13	2.3	ug/L			02/21/18 17:45	6.67
Ethylbenzene	6.7	U	6.7	1.7	ug/L			02/21/18 17:45	6.67
2-Hexanone	67	U	67	8.2	ug/L			02/21/18 17:45	6.67
Isopropylbenzene	6.7	U	6.7	1.4	ug/L			02/21/18 17:45	6.67
Methyl acetate	67	U	67	9.5	ug/L			02/21/18 17:45	6.67
Methylcyclohexane	6.7	U	6.7	3.0	ug/L			02/21/18 17:45	6.67
Methylene Chloride	33	U	33	3.5	ug/L			02/21/18 17:45	6.67
4-Methyl-2-pentanone (MIBK)	67	U	67	4.7	ug/L			02/21/18 17:45	6.67
Methyl tert-butyl ether	6.7	U	6.7	1.8	ug/L			02/21/18 17:45	6.67
Styrene	6.7	U	6.7	1.5	ug/L			02/21/18 17:45	6.67
1,1,2,2-Tetrachloroethane	6.7	U *	6.7	2.1	ug/L			02/21/18 17:45	6.67
Tetrachloroethene	6.7	U	6.7	2.0	ug/L			02/21/18 17:45	6.67
Toluene	6.7	U *	6.7	1.5	ug/L			02/21/18 17:45	6.67
trans-1,2-Dichloroethene	6.7	U	6.7	1.9	ug/L			02/21/18 17:45	6.67
trans-1,3-Dichloropropene	6.7	U	6.7	2.1	ug/L			02/21/18 17:45	6.67
1,2,4-Trichlorobenzene	6.7	U	6.7	1.8	ug/L			02/21/18 17:45	6.67
1,1,1-Trichloroethane	6.7	U	6.7	1.5	ug/L			02/21/18 17:45	6.67

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: TW-16-04_021418

Lab Sample ID: 240-91640-6

Date Collected: 02/14/18 10:42

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	6.7	U	6.7	2.3	ug/L			02/21/18 17:45	6.67
Trichloroethene	6.7	U	6.7	2.2	ug/L			02/21/18 17:45	6.67
Trichlorofluoromethane	6.7	U	6.7	3.3	ug/L			02/21/18 17:45	6.67
1,1,2-Trichloro-1,2,2-trifluoroethane	6.7	U	6.7	2.7	ug/L			02/21/18 17:45	6.67
1,2,3-Trimethylbenzene	33	U	33	1.5	ug/L			02/21/18 17:45	6.67
1,2,4-Trimethylbenzene	6.7	U	6.7	1.6	ug/L			02/21/18 17:45	6.67
1,3,5-Trimethylbenzene	6.7	U	6.7	1.6	ug/L			02/21/18 17:45	6.67
Vinyl chloride	77		6.7	3.0	ug/L			02/21/18 17:45	6.67
Xylenes, Total	13	U	13	1.6	ug/L			02/21/18 17:45	6.67
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		69 - 120					02/21/18 17:45	6.67
Dibromofluoromethane (Surr)	105		69 - 124					02/21/18 17:45	6.67
1,2-Dichloroethane-d4 (Surr)	111		61 - 138					02/21/18 17:45	6.67
Toluene-d8 (Surr)	110		73 - 120					02/21/18 17:45	6.67

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: PW-16-02_021418

Lab Sample ID: 240-91640-7

Date Collected: 02/14/18 12:02

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			02/26/18 15:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		63 - 125					02/26/18 15:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			02/21/18 18:08	1
Benzene	1.0	U	1.0	0.28	ug/L			02/21/18 18:08	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			02/21/18 18:08	1
Bromoform	1.0	U	1.0	0.43	ug/L			02/21/18 18:08	1
Bromomethane	1.0	U	1.0	0.42	ug/L			02/21/18 18:08	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			02/21/18 18:08	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			02/21/18 18:08	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			02/21/18 18:08	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			02/21/18 18:08	1
Chloroethane	1.0	U	1.0	0.41	ug/L			02/21/18 18:08	1
Chloroform	1.0	U	1.0	0.31	ug/L			02/21/18 18:08	1
Chloromethane	1.0	U	1.0	0.43	ug/L			02/21/18 18:08	1
cis-1,2-Dichloroethene	12		1.0	0.30	ug/L			02/21/18 18:08	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			02/21/18 18:08	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			02/21/18 18:08	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			02/21/18 18:08	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			02/21/18 18:08	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			02/21/18 18:08	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			02/21/18 18:08	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			02/21/18 18:08	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			02/21/18 18:08	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			02/21/18 18:08	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			02/21/18 18:08	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			02/21/18 18:08	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			02/21/18 18:08	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			02/21/18 18:08	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			02/21/18 18:08	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			02/21/18 18:08	1
2-Hexanone	10	U F2	10	1.2	ug/L			02/21/18 18:08	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			02/21/18 18:08	1
Methyl acetate	10	U	10	1.4	ug/L			02/21/18 18:08	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			02/21/18 18:08	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			02/21/18 18:08	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			02/21/18 18:08	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			02/21/18 18:08	1
Styrene	1.0	U	1.0	0.23	ug/L			02/21/18 18:08	1
1,1,1,2-Tetrachloroethane	1.0	U F1 *	1.0	0.32	ug/L			02/21/18 18:08	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			02/21/18 18:08	1
Toluene	1.0	U *	1.0	0.23	ug/L			02/21/18 18:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			02/21/18 18:08	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			02/21/18 18:08	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			02/21/18 18:08	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			02/21/18 18:08	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: PW-16-02_021418

Lab Sample ID: 240-91640-7

Date Collected: 02/14/18 12:02

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			02/21/18 18:08	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			02/21/18 18:08	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			02/21/18 18:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			02/21/18 18:08	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			02/21/18 18:08	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/21/18 18:08	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/21/18 18:08	1
Vinyl chloride	18		1.0	0.45	ug/L			02/21/18 18:08	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			02/21/18 18:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		69 - 120					02/21/18 18:08	1
Dibromofluoromethane (Surr)	104		69 - 124					02/21/18 18:08	1
1,2-Dichloroethane-d4 (Surr)	102		61 - 138					02/21/18 18:08	1
Toluene-d8 (Surr)	110		73 - 120					02/21/18 18:08	1

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: TW-16-03_021418

Lab Sample ID: 240-91640-8

Date Collected: 02/14/18 13:57

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			02/26/18 16:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		63 - 125					02/26/18 16:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	100	U	100	18	ug/L			02/21/18 19:14	10
Benzene	10	U	10	2.8	ug/L			02/21/18 19:14	10
Bromodichloromethane	10	U	10	3.0	ug/L			02/21/18 19:14	10
Bromoform	10	U	10	4.3	ug/L			02/21/18 19:14	10
Bromomethane	10	U	10	4.2	ug/L			02/21/18 19:14	10
2-Butanone (MEK)	100	U	100	10	ug/L			02/21/18 19:14	10
Carbon disulfide	50	U	50	3.4	ug/L			02/21/18 19:14	10
Carbon tetrachloride	10	U	10	3.5	ug/L			02/21/18 19:14	10
Chlorobenzene	10	U	10	3.2	ug/L			02/21/18 19:14	10
Chloroethane	10	U	10	4.1	ug/L			02/21/18 19:14	10
Chloroform	10	U	10	3.1	ug/L			02/21/18 19:14	10
Chloromethane	10	U	10	4.3	ug/L			02/21/18 19:14	10
cis-1,2-Dichloroethene	40		10	3.0	ug/L			02/21/18 19:14	10
cis-1,3-Dichloropropene	10	U	10	2.6	ug/L			02/21/18 19:14	10
Cyclohexane	10	U	10	4.4	ug/L			02/21/18 19:14	10
Dibromochloromethane	10	U	10	2.5	ug/L			02/21/18 19:14	10
1,2-Dibromo-3-Chloropropane	10	U	10	4.7	ug/L			02/21/18 19:14	10
1,2-Dibromoethane	10	U	10	2.3	ug/L			02/21/18 19:14	10
1,2-Dichlorobenzene	10	U	10	2.6	ug/L			02/21/18 19:14	10
1,3-Dichlorobenzene	10	U	10	3.2	ug/L			02/21/18 19:14	10
1,4-Dichlorobenzene	10	U	10	2.3	ug/L			02/21/18 19:14	10
Dichlorodifluoromethane	10	U	10	5.0	ug/L			02/21/18 19:14	10
1,1-Dichloroethane	10	U	10	2.5	ug/L			02/21/18 19:14	10
1,2-Dichloroethane	10	U	10	3.0	ug/L			02/21/18 19:14	10
1,1-Dichloroethene	10	U	10	2.7	ug/L			02/21/18 19:14	10
1,2-Dichloropropane	10	U	10	3.0	ug/L			02/21/18 19:14	10
Diethyl ether	20	U	20	3.5	ug/L			02/21/18 19:14	10
Ethylbenzene	10	U	10	2.6	ug/L			02/21/18 19:14	10
2-Hexanone	100	U	100	12	ug/L			02/21/18 19:14	10
Isopropylbenzene	10	U	10	2.1	ug/L			02/21/18 19:14	10
Methyl acetate	100	U	100	14	ug/L			02/21/18 19:14	10
Methylcyclohexane	10	U	10	4.5	ug/L			02/21/18 19:14	10
Methylene Chloride	50	U	50	5.3	ug/L			02/21/18 19:14	10
4-Methyl-2-pentanone (MIBK)	100	U	100	7.1	ug/L			02/21/18 19:14	10
Methyl tert-butyl ether	10	U	10	2.7	ug/L			02/21/18 19:14	10
Styrene	10	U	10	2.3	ug/L			02/21/18 19:14	10
1,1,2,2-Tetrachloroethane	10	U *	10	3.2	ug/L			02/21/18 19:14	10
Tetrachloroethene	10	U	10	3.0	ug/L			02/21/18 19:14	10
Toluene	10	U *	10	2.3	ug/L			02/21/18 19:14	10
trans-1,2-Dichloroethene	10	U	10	2.9	ug/L			02/21/18 19:14	10
trans-1,3-Dichloropropene	10	U	10	3.1	ug/L			02/21/18 19:14	10
1,2,4-Trichlorobenzene	10	U	10	2.7	ug/L			02/21/18 19:14	10
1,1,1-Trichloroethane	10	U	10	2.3	ug/L			02/21/18 19:14	10

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: TW-16-03_021418

Lab Sample ID: 240-91640-8

Date Collected: 02/14/18 13:57

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	10	U	10	3.4	ug/L			02/21/18 19:14	10
Trichloroethene	10	U	10	3.3	ug/L			02/21/18 19:14	10
Trichlorofluoromethane	10	U	10	5.0	ug/L			02/21/18 19:14	10
1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	4.1	ug/L			02/21/18 19:14	10
1,2,3-Trimethylbenzene	50	U	50	2.2	ug/L			02/21/18 19:14	10
1,2,4-Trimethylbenzene	10	U	10	2.4	ug/L			02/21/18 19:14	10
1,3,5-Trimethylbenzene	10	U	10	2.4	ug/L			02/21/18 19:14	10
Vinyl chloride	95		10	4.5	ug/L			02/21/18 19:14	10
Xylenes, Total	20	U	20	2.4	ug/L			02/21/18 19:14	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		69 - 120		02/21/18 19:14	10
Dibromofluoromethane (Surr)	95		69 - 124		02/21/18 19:14	10
1,2-Dichloroethane-d4 (Surr)	104		61 - 138		02/21/18 19:14	10
Toluene-d8 (Surr)	100		73 - 120		02/21/18 19:14	10

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: TW-16-02_021418

Lab Sample ID: 240-91640-9

Date Collected: 02/14/18 16:12

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.9		2.0	0.24	ug/L			02/26/18 16:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125					02/26/18 16:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10000	U	10000	1800	ug/L			02/21/18 19:37	1000
Benzene	1000	U	1000	280	ug/L			02/21/18 19:37	1000
Bromodichloromethane	1000	U	1000	300	ug/L			02/21/18 19:37	1000
Bromoform	1000	U	1000	430	ug/L			02/21/18 19:37	1000
Bromomethane	1000	U	1000	420	ug/L			02/21/18 19:37	1000
2-Butanone (MEK)	10000	U	10000	1000	ug/L			02/21/18 19:37	1000
Carbon disulfide	5000	U	5000	340	ug/L			02/21/18 19:37	1000
Carbon tetrachloride	1000	U	1000	350	ug/L			02/21/18 19:37	1000
Chlorobenzene	1000	U	1000	320	ug/L			02/21/18 19:37	1000
Chloroethane	1000	U	1000	410	ug/L			02/21/18 19:37	1000
Chloroform	1000	U	1000	310	ug/L			02/21/18 19:37	1000
Chloromethane	1000	U	1000	430	ug/L			02/21/18 19:37	1000
cis-1,2-Dichloroethene	3500		1000	300	ug/L			02/21/18 19:37	1000
cis-1,3-Dichloropropene	1000	U	1000	260	ug/L			02/21/18 19:37	1000
Cyclohexane	1000	U	1000	440	ug/L			02/21/18 19:37	1000
Dibromochloromethane	1000	U	1000	250	ug/L			02/21/18 19:37	1000
1,2-Dibromo-3-Chloropropane	1000	U	1000	470	ug/L			02/21/18 19:37	1000
1,2-Dibromoethane	1000	U	1000	230	ug/L			02/21/18 19:37	1000
1,2-Dichlorobenzene	1000	U	1000	260	ug/L			02/21/18 19:37	1000
1,3-Dichlorobenzene	1000	U	1000	320	ug/L			02/21/18 19:37	1000
1,4-Dichlorobenzene	1000	U	1000	230	ug/L			02/21/18 19:37	1000
Dichlorodifluoromethane	1000	U	1000	500	ug/L			02/21/18 19:37	1000
1,1-Dichloroethane	1000	U	1000	250	ug/L			02/21/18 19:37	1000
1,2-Dichloroethane	1000	U	1000	300	ug/L			02/21/18 19:37	1000
1,1-Dichloroethene	1000	U	1000	270	ug/L			02/21/18 19:37	1000
1,2-Dichloropropane	1000	U	1000	300	ug/L			02/21/18 19:37	1000
Diethyl ether	2000	U	2000	350	ug/L			02/21/18 19:37	1000
Ethylbenzene	1000	U	1000	260	ug/L			02/21/18 19:37	1000
2-Hexanone	10000	U	10000	1200	ug/L			02/21/18 19:37	1000
Isopropylbenzene	1000	U	1000	210	ug/L			02/21/18 19:37	1000
Methyl acetate	10000	U	10000	1400	ug/L			02/21/18 19:37	1000
Methylcyclohexane	1000	U	1000	450	ug/L			02/21/18 19:37	1000
Methylene Chloride	5000	U	5000	530	ug/L			02/21/18 19:37	1000
4-Methyl-2-pentanone (MIBK)	10000	U	10000	710	ug/L			02/21/18 19:37	1000
Methyl tert-butyl ether	1000	U	1000	270	ug/L			02/21/18 19:37	1000
Styrene	1000	U	1000	230	ug/L			02/21/18 19:37	1000
1,1,2,2-Tetrachloroethane	1000	U *	1000	320	ug/L			02/21/18 19:37	1000
Tetrachloroethene	1000	U	1000	300	ug/L			02/21/18 19:37	1000
Toluene	1000	U *	1000	230	ug/L			02/21/18 19:37	1000
trans-1,2-Dichloroethene	1000	U	1000	290	ug/L			02/21/18 19:37	1000
trans-1,3-Dichloropropene	1000	U	1000	310	ug/L			02/21/18 19:37	1000
1,2,4-Trichlorobenzene	1000	U	1000	270	ug/L			02/21/18 19:37	1000
1,1,1-Trichloroethane	1000	U	1000	230	ug/L			02/21/18 19:37	1000

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: TW-16-02_021418

Lab Sample ID: 240-91640-9

Date Collected: 02/14/18 16:12

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1000	U	1000	340	ug/L			02/21/18 19:37	1000
Trichloroethene	1000	U	1000	330	ug/L			02/21/18 19:37	1000
Trichlorofluoromethane	1000	U	1000	500	ug/L			02/21/18 19:37	1000
1,1,2-Trichloro-1,2,2-trifluoroethane	1000	U	1000	410	ug/L			02/21/18 19:37	1000
1,2,3-Trimethylbenzene	5000	U	5000	220	ug/L			02/21/18 19:37	1000
1,2,4-Trimethylbenzene	1000	U	1000	240	ug/L			02/21/18 19:37	1000
1,3,5-Trimethylbenzene	1000	U	1000	240	ug/L			02/21/18 19:37	1000
Vinyl chloride	9100		1000	450	ug/L			02/21/18 19:37	1000
Xylenes, Total	2000	U	2000	240	ug/L			02/21/18 19:37	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		69 - 120		02/21/18 19:37	1000
Dibromofluoromethane (Surr)	110		69 - 124		02/21/18 19:37	1000
1,2-Dichloroethane-d4 (Surr)	113		61 - 138		02/21/18 19:37	1000
Toluene-d8 (Surr)	111		73 - 120		02/21/18 19:37	1000

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-91640-10

Date Collected: 02/14/18 00:00

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			02/21/18 20:00	1
Benzene	1.0	U	1.0	0.28	ug/L			02/21/18 20:00	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			02/21/18 20:00	1
Bromoform	1.0	U	1.0	0.43	ug/L			02/21/18 20:00	1
Bromomethane	1.0	U	1.0	0.42	ug/L			02/21/18 20:00	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			02/21/18 20:00	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			02/21/18 20:00	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			02/21/18 20:00	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			02/21/18 20:00	1
Chloroethane	1.0	U	1.0	0.41	ug/L			02/21/18 20:00	1
Chloroform	1.0	U	1.0	0.31	ug/L			02/21/18 20:00	1
Chloromethane	1.0	U	1.0	0.43	ug/L			02/21/18 20:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			02/21/18 20:00	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			02/21/18 20:00	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			02/21/18 20:00	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			02/21/18 20:00	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			02/21/18 20:00	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			02/21/18 20:00	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			02/21/18 20:00	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			02/21/18 20:00	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			02/21/18 20:00	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			02/21/18 20:00	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			02/21/18 20:00	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			02/21/18 20:00	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			02/21/18 20:00	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			02/21/18 20:00	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			02/21/18 20:00	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			02/21/18 20:00	1
2-Hexanone	10	U	10	1.2	ug/L			02/21/18 20:00	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			02/21/18 20:00	1
Methyl acetate	10	U	10	1.4	ug/L			02/21/18 20:00	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			02/21/18 20:00	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			02/21/18 20:00	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			02/21/18 20:00	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			02/21/18 20:00	1
Styrene	1.0	U	1.0	0.23	ug/L			02/21/18 20:00	1
1,1,2,2-Tetrachloroethane	1.0	U *	1.0	0.32	ug/L			02/21/18 20:00	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			02/21/18 20:00	1
Toluene	1.0	U *	1.0	0.23	ug/L			02/21/18 20:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			02/21/18 20:00	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			02/21/18 20:00	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			02/21/18 20:00	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			02/21/18 20:00	1
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			02/21/18 20:00	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			02/21/18 20:00	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			02/21/18 20:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			02/21/18 20:00	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			02/21/18 20:00	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/21/18 20:00	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-91640-10

Date Collected: 02/14/18 00:00

Matrix: Water

Date Received: 02/17/18 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/21/18 20:00	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/21/18 20:00	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			02/21/18 20:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		69 - 120		02/21/18 20:00	1
Dibromofluoromethane (Surr)	98		69 - 124		02/21/18 20:00	1
1,2-Dichloroethane-d4 (Surr)	103		61 - 138		02/21/18 20:00	1
Toluene-d8 (Surr)	106		73 - 120		02/21/18 20:00	1

Surrogate Summary

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

TestAmerica Job ID: 240-91640-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB (69-120)	DBFM (69-124)	DCA (61-138)	TOL (73-120)
240-91640-1	MW-3_021318	81	105	112	109
240-91640-2	MW-5_021318	81	109	112	108
240-91640-3	MW-2_021318	75	102	104	105
240-91640-4	MW-4_021318	81	106	114	111
240-91640-5	MW-10_021318	80	109	113	110
240-91640-6	TW-16-04_021418	82	105	111	110
240-91640-7	PW-16-02_021418	77	104	102	110
240-91640-7 MS	PW-16-02_021418	85	102	109	111
240-91640-7 MSD	PW-16-02_021418	92	101	111	113
240-91640-8	TW-16-03_021418	74	95	104	100
240-91640-9	TW-16-02_021418	80	110	113	111
240-91640-10	TRIP BLANK	76	98	103	106
240-91647-H-14 MS	Matrix Spike	86	101	102	111
240-91647-L-14 MSD	Matrix Spike Duplicate	87	96	98	107
LCS 240-315600/4	Lab Control Sample	83	96	108	109
LCS 240-315781/4	Lab Control Sample	84	103	106	109
MB 240-315600/6	Method Blank	76	98	106	107
MB 240-315781/6	Method Blank	83	102	112	109

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

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

TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (63-125)
240-91640-1	MW-3_021318	124
240-91640-2	MW-5_021318	124
240-91640-3	MW-2_021318	124
240-91640-4	MW-4_021318	89
240-91640-5	MW-10_021318	122
240-91640-6	TW-16-04_021418	110
240-91640-7	PW-16-02_021418	105
240-91640-7 MS	PW-16-02_021418	108
240-91640-7 MSD	PW-16-02_021418	116
240-91640-8	TW-16-03_021418	109
240-91640-9	TW-16-02_021418	98
240-91647-F-14 MS	Matrix Spike	115
240-91647-F-14 MSD	Matrix Spike Duplicate	124
LCS 240-315955/4	Lab Control Sample	103
LCS 240-316152/4	Lab Control Sample	110
MB 240-315955/5	Method Blank	122
MB 240-316152/5	Method Blank	111

Surrogate Legend

TestAmerica Canton

Surrogate Summary

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

TestAmerica Job ID: 240-91640-1

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

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

QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: MB 240-315600/6

Matrix: Water

Analysis Batch: 315600

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			02/21/18 14:21	1
Benzene	1.0	U	1.0	0.28	ug/L			02/21/18 14:21	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			02/21/18 14:21	1
Bromoform	1.0	U	1.0	0.43	ug/L			02/21/18 14:21	1
Bromomethane	1.0	U	1.0	0.42	ug/L			02/21/18 14:21	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			02/21/18 14:21	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			02/21/18 14:21	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			02/21/18 14:21	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			02/21/18 14:21	1
Chloroethane	1.0	U	1.0	0.41	ug/L			02/21/18 14:21	1
Chloroform	1.0	U	1.0	0.31	ug/L			02/21/18 14:21	1
Chloromethane	1.0	U	1.0	0.43	ug/L			02/21/18 14:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			02/21/18 14:21	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			02/21/18 14:21	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			02/21/18 14:21	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			02/21/18 14:21	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			02/21/18 14:21	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			02/21/18 14:21	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			02/21/18 14:21	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			02/21/18 14:21	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			02/21/18 14:21	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			02/21/18 14:21	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			02/21/18 14:21	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			02/21/18 14:21	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			02/21/18 14:21	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			02/21/18 14:21	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			02/21/18 14:21	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			02/21/18 14:21	1
2-Hexanone	10	U	10	1.2	ug/L			02/21/18 14:21	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			02/21/18 14:21	1
Methyl acetate	10	U	10	1.4	ug/L			02/21/18 14:21	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			02/21/18 14:21	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			02/21/18 14:21	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			02/21/18 14:21	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			02/21/18 14:21	1
Styrene	1.0	U	1.0	0.23	ug/L			02/21/18 14:21	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			02/21/18 14:21	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			02/21/18 14:21	1
Toluene	1.0	U	1.0	0.23	ug/L			02/21/18 14:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			02/21/18 14:21	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			02/21/18 14:21	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			02/21/18 14:21	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			02/21/18 14:21	1
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			02/21/18 14:21	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			02/21/18 14:21	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			02/21/18 14:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			02/21/18 14:21	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			02/21/18 14:21	1

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QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: MB 240-315600/6
Matrix: Water
Analysis Batch: 315600

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/21/18 14:21	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/21/18 14:21	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/21/18 14:21	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			02/21/18 14:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		69 - 120		02/21/18 14:21	1
Dibromofluoromethane (Surr)	98		69 - 124		02/21/18 14:21	1
1,2-Dichloroethane-d4 (Surr)	106		61 - 138		02/21/18 14:21	1
Toluene-d8 (Surr)	107		73 - 120		02/21/18 14:21	1

Lab Sample ID: LCS 240-315600/4
Matrix: Water
Analysis Batch: 315600

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	12.0		ug/L		60	35 - 131
Benzene	10.0	10.9		ug/L		109	79 - 120
Bromodichloromethane	10.0	10.8		ug/L		108	79 - 125
Bromoform	10.0	8.32		ug/L		83	55 - 145
Bromomethane	10.0	8.81		ug/L		88	17 - 158
2-Butanone (MEK)	20.0	18.6		ug/L		93	43 - 149
Carbon disulfide	10.0	10.9		ug/L		109	49 - 141
Carbon tetrachloride	10.0	11.0		ug/L		110	55 - 171
Chlorobenzene	10.0	10.4		ug/L		104	80 - 120
Chloroethane	10.0	10.7		ug/L		107	10 - 149
Chloroform	10.0	11.5		ug/L		115	80 - 120
Chloromethane	10.0	11.5		ug/L		115	59 - 124
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	77 - 120
cis-1,3-Dichloropropene	10.0	10.7		ug/L		107	75 - 120
Cyclohexane	10.0	12.2		ug/L		122	66 - 135
Dibromochloromethane	10.0	10.3		ug/L		103	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	8.87		ug/L		89	50 - 130
1,2-Dibromoethane	10.0	10.5		ug/L		105	80 - 120
1,2-Dichlorobenzene	10.0	10.4		ug/L		104	80 - 120
1,3-Dichlorobenzene	10.0	9.89		ug/L		99	80 - 120
1,4-Dichlorobenzene	10.0	10.5		ug/L		105	80 - 120
Dichlorodifluoromethane	10.0	10.4		ug/L		104	42 - 141
1,1-Dichloroethane	10.0	11.4		ug/L		114	74 - 120
1,2-Dichloroethane	10.0	11.0		ug/L		110	68 - 133
1,1-Dichloroethene	10.0	9.36		ug/L		94	65 - 127
1,2-Dichloropropane	10.0	11.9		ug/L		119	78 - 127
Diethyl ether	10.0	9.92		ug/L		99	72 - 125
Ethylbenzene	10.0	10.5		ug/L		105	80 - 120
2-Hexanone	20.0	20.7		ug/L		103	28 - 169
Isopropylbenzene	10.0	9.26		ug/L		93	80 - 128
Methyl acetate	20.0	20.9		ug/L		105	63 - 137
Methylcyclohexane	10.0	9.93		ug/L		99	63 - 141

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QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: LCS 240-315600/4
Matrix: Water
Analysis Batch: 315600

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	10.0	10.5		ug/L		105	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	20.6		ug/L		103	53 - 144
Methyl tert-butyl ether	10.0	9.56		ug/L		96	73 - 120
Styrene	10.0	9.33		ug/L		93	80 - 121
1,1,2,2-Tetrachloroethane	10.0	13.0	*	ug/L		130	58 - 122
Tetrachloroethene	10.0	9.82		ug/L		98	80 - 122
Toluene	10.0	12.2	*	ug/L		122	78 - 120
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	74 - 124
trans-1,3-Dichloropropene	10.0	11.6		ug/L		116	67 - 120
1,2,4-Trichlorobenzene	10.0	9.66		ug/L		97	34 - 141
1,1,1-Trichloroethane	10.0	11.9		ug/L		119	64 - 147
1,1,2-Trichloroethane	10.0	11.8		ug/L		118	76 - 121
Trichloroethene	10.0	8.83		ug/L		88	76 - 124
Trichlorofluoromethane	10.0	11.6		ug/L		116	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	8.43		ug/L		84	65 - 144
1,2,4-Trimethylbenzene	10.0	11.0		ug/L		110	80 - 120
1,3,5-Trimethylbenzene	10.0	11.0		ug/L		110	79 - 120
Vinyl chloride	10.0	11.2		ug/L		112	65 - 124
Xylenes, Total	20.0	20.5		ug/L		103	80 - 120
1,4-Dioxane	200	140		ug/L		70	35 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		69 - 120
Dibromofluoromethane (Surr)	96		69 - 124
1,2-Dichloroethane-d4 (Surr)	108		61 - 138
Toluene-d8 (Surr)	109		73 - 120

Lab Sample ID: 240-91640-7 MS
Matrix: Water
Analysis Batch: 315600

Client Sample ID: PW-16-02_021418
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	20.0	13.3		ug/L		66	19 - 133
Benzene	1.0	U	10.0	11.6		ug/L		116	69 - 127
Bromodichloromethane	1.0	U	10.0	11.7		ug/L		117	75 - 128
Bromoform	1.0	U	10.0	7.89		ug/L		79	61 - 135
Bromomethane	1.0	U	10.0	7.99		ug/L		80	10 - 148
2-Butanone (MEK)	10	U	20.0	17.7		ug/L		89	34 - 153
Carbon disulfide	5.0	U	10.0	9.74		ug/L		97	46 - 143
Carbon tetrachloride	1.0	U	10.0	10.7		ug/L		107	53 - 175
Chlorobenzene	1.0	U	10.0	10.6		ug/L		106	76 - 120
Chloroethane	1.0	U	10.0	11.5		ug/L		115	10 - 141
Chloroform	1.0	U	10.0	12.0		ug/L		120	74 - 125
Chloromethane	1.0	U	10.0	11.9		ug/L		119	34 - 127
cis-1,2-Dichloroethene	12		10.0	23.5		ug/L		112	69 - 127
cis-1,3-Dichloropropene	1.0	U	10.0	10.4		ug/L		104	68 - 120
Cyclohexane	1.0	U	10.0	9.89		ug/L		99	56 - 135

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QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: 240-91640-7 MS

Matrix: Water

Analysis Batch: 315600

Client Sample ID: PW-16-02_021418

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	1.0	U	10.0	9.98		ug/L		100	62 - 131
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.58		ug/L		86	48 - 130
1,2-Dibromoethane	1.0	U	10.0	10.4		ug/L		104	73 - 121
1,2-Dichlorobenzene	1.0	U	10.0	10.3		ug/L		103	70 - 120
1,3-Dichlorobenzene	1.0	U	10.0	9.93		ug/L		99	71 - 120
1,4-Dichlorobenzene	1.0	U	10.0	10.0		ug/L		100	72 - 120
Dichlorodifluoromethane	1.0	U	10.0	8.81		ug/L		88	45 - 130
1,1-Dichloroethane	1.0	U	10.0	12.0		ug/L		120	69 - 122
1,2-Dichloroethane	1.0	U	10.0	11.8		ug/L		118	64 - 138
1,1-Dichloroethene	1.0	U	10.0	9.16		ug/L		92	62 - 127
1,2-Dichloropropane	1.0	U	10.0	12.3		ug/L		123	72 - 131
Diethyl ether	2.0	U	10.0	9.87		ug/L		99	65 - 124
Ethylbenzene	1.0	U	10.0	10.5		ug/L		105	72 - 121
2-Hexanone	10	U F2	20.0	18.6		ug/L		93	21 - 184
Isopropylbenzene	1.0	U	10.0	8.88		ug/L		89	70 - 132
Methyl acetate	10	U	20.0	21.1		ug/L		106	52 - 139
Methylcyclohexane	1.0	U	10.0	7.42		ug/L		74	46 - 139
Methylene Chloride	5.0	U	10.0	9.87		ug/L		99	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U	20.0	18.9		ug/L		95	53 - 147
Methyl tert-butyl ether	1.0	U	10.0	9.82		ug/L		98	67 - 125
Styrene	1.0	U	10.0	9.53		ug/L		95	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U F1 *	10.0	11.9		ug/L		119	51 - 123
Tetrachloroethene	1.0	U	10.0	9.78		ug/L		98	69 - 126
Toluene	1.0	U *	10.0	11.9		ug/L		119	69 - 125
trans-1,2-Dichloroethene	1.0	U	10.0	11.3		ug/L		113	66 - 131
trans-1,3-Dichloropropene	1.0	U	10.0	11.0		ug/L		110	59 - 120
1,2,4-Trichlorobenzene	1.0	U	10.0	9.19		ug/L		92	26 - 138
1,1,1-Trichloroethane	1.0	U	10.0	12.1		ug/L		121	57 - 156
1,1,2-Trichloroethane	1.0	U	10.0	11.4		ug/L		114	68 - 127
Trichloroethene	1.0	U	10.0	9.76		ug/L		98	68 - 129
Trichlorofluoromethane	1.0	U	10.0	9.08		ug/L		91	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	6.40		ug/L		64	58 - 137
1,2,4-Trimethylbenzene	1.0	U	10.0	10.6		ug/L		106	64 - 120
1,3,5-Trimethylbenzene	1.0	U	10.0	10.7		ug/L		107	67 - 120
Vinyl chloride	18		10.0	27.8		ug/L		98	55 - 123
Xylenes, Total	2.0	U	20.0	20.1		ug/L		100	71 - 122
1,4-Dioxane	50	U	200	116		ug/L		58	13 - 155

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	85		69 - 120
Dibromofluoromethane (Surr)	102		69 - 124
1,2-Dichloroethane-d4 (Surr)	109		61 - 138
Toluene-d8 (Surr)	111		73 - 120

QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: 240-91640-7 MSD

Matrix: Water

Analysis Batch: 315600

Client Sample ID: PW-16-02_021418

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	20.0	16.8		ug/L		84	19 - 133	23	35
Benzene	1.0	U	10.0	11.4		ug/L		114	69 - 127	2	10
Bromodichloromethane	1.0	U	10.0	11.3		ug/L		113	75 - 128	4	13
Bromoform	1.0	U	10.0	8.72		ug/L		87	61 - 135	10	13
Bromomethane	1.0	U	10.0	8.96		ug/L		90	10 - 148	11	35
2-Butanone (MEK)	10	U	20.0	18.8		ug/L		94	34 - 153	6	23
Carbon disulfide	5.0	U	10.0	10.8		ug/L		108	46 - 143	10	18
Carbon tetrachloride	1.0	U	10.0	10.7		ug/L		107	53 - 175	0	17
Chlorobenzene	1.0	U	10.0	10.6		ug/L		106	76 - 120	0	12
Chloroethane	1.0	U	10.0	10.3		ug/L		103	10 - 141	11	35
Chloroform	1.0	U	10.0	11.4		ug/L		114	74 - 125	5	11
Chloromethane	1.0	U	10.0	11.5		ug/L		115	34 - 127	4	25
cis-1,2-Dichloroethene	12		10.0	23.5		ug/L		112	69 - 127	0	11
cis-1,3-Dichloropropene	1.0	U	10.0	10.1		ug/L		101	68 - 120	3	13
Cyclohexane	1.0	U	10.0	11.9		ug/L		119	56 - 135	18	35
Dibromochloromethane	1.0	U	10.0	10.4		ug/L		104	62 - 131	5	15
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	9.47		ug/L		95	48 - 130	10	31
1,2-Dibromoethane	1.0	U	10.0	10.6		ug/L		106	73 - 121	2	12
1,2-Dichlorobenzene	1.0	U	10.0	10.3		ug/L		103	70 - 120	0	19
1,3-Dichlorobenzene	1.0	U	10.0	9.55		ug/L		96	71 - 120	4	18
1,4-Dichlorobenzene	1.0	U	10.0	9.74		ug/L		97	72 - 120	3	17
Dichlorodifluoromethane	1.0	U	10.0	10.3		ug/L		103	45 - 130	16	34
1,1-Dichloroethane	1.0	U	10.0	11.8		ug/L		118	69 - 122	2	11
1,2-Dichloroethane	1.0	U	10.0	12.1		ug/L		121	64 - 138	3	11
1,1-Dichloroethene	1.0	U	10.0	9.16		ug/L		92	62 - 127	0	14
1,2-Dichloropropane	1.0	U	10.0	12.1		ug/L		121	72 - 131	2	12
Diethyl ether	2.0	U	10.0	11.0		ug/L		110	65 - 124	11	11
Ethylbenzene	1.0	U	10.0	10.6		ug/L		106	72 - 121	1	15
2-Hexanone	10	U F2	20.0	21.9	F2	ug/L		110	21 - 184	16	12
Isopropylbenzene	1.0	U	10.0	9.37		ug/L		94	70 - 132	5	16
Methyl acetate	10	U	20.0	23.7		ug/L		119	52 - 139	12	14
Methylcyclohexane	1.0	U	10.0	9.06		ug/L		91	46 - 139	20	35
Methylene Chloride	5.0	U	10.0	10.8		ug/L		108	52 - 137	9	12
4-Methyl-2-pentanone (MIBK)	10	U	20.0	22.1		ug/L		110	53 - 147	15	16
Methyl tert-butyl ether	1.0	U	10.0	10.4		ug/L		104	67 - 125	6	12
Styrene	1.0	U	10.0	9.77		ug/L		98	74 - 125	2	14
1,1,2,2-Tetrachloroethane	1.0	U F1 *	10.0	13.7	F1	ug/L		137	51 - 123	14	17
Tetrachloroethene	1.0	U	10.0	9.55		ug/L		95	69 - 126	2	18
Toluene	1.0	U *	10.0	12.0		ug/L		120	69 - 125	1	14
trans-1,2-Dichloroethene	1.0	U	10.0	10.8		ug/L		108	66 - 131	4	11
trans-1,3-Dichloropropene	1.0	U	10.0	11.3		ug/L		113	59 - 120	2	14
1,2,4-Trichlorobenzene	1.0	U	10.0	8.63		ug/L		86	26 - 138	6	35
1,1,1-Trichloroethane	1.0	U	10.0	11.7		ug/L		117	57 - 156	3	13
1,1,2-Trichloroethane	1.0	U	10.0	12.1		ug/L		121	68 - 127	6	11
Trichloroethene	1.0	U	10.0	9.92		ug/L		99	68 - 129	2	12
Trichlorofluoromethane	1.0	U	10.0	10.7		ug/L		107	28 - 172	16	26
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	7.80		ug/L		78	58 - 137	20	35

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: 240-91640-7 MSD

Matrix: Water

Analysis Batch: 315600

Client Sample ID: PW-16-02_021418

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene	1.0	U	10.0	10.2		ug/L		102	64 - 120	4	22
1,3,5-Trimethylbenzene	1.0	U	10.0	10.7		ug/L		107	67 - 120	0	25
Vinyl chloride	18		10.0	28.8		ug/L		108	55 - 123	3	12
Xylenes, Total	2.0	U	20.0	20.5		ug/L		102	71 - 122	2	14
1,4-Dioxane	50	U	200	153		ug/L		76	13 - 155	27	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	101		69 - 124
1,2-Dichloroethane-d4 (Surr)	111		61 - 138
Toluene-d8 (Surr)	113		73 - 120

Lab Sample ID: MB 240-315781/6

Matrix: Water

Analysis Batch: 315781

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			02/22/18 12:05	1
Benzene	1.0	U	1.0	0.28	ug/L			02/22/18 12:05	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			02/22/18 12:05	1
Bromoform	1.0	U	1.0	0.43	ug/L			02/22/18 12:05	1
Bromomethane	1.0	U	1.0	0.42	ug/L			02/22/18 12:05	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			02/22/18 12:05	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			02/22/18 12:05	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			02/22/18 12:05	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			02/22/18 12:05	1
Chloroethane	1.0	U	1.0	0.41	ug/L			02/22/18 12:05	1
Chloroform	1.0	U	1.0	0.31	ug/L			02/22/18 12:05	1
Chloromethane	1.0	U	1.0	0.43	ug/L			02/22/18 12:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			02/22/18 12:05	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			02/22/18 12:05	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			02/22/18 12:05	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			02/22/18 12:05	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			02/22/18 12:05	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			02/22/18 12:05	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			02/22/18 12:05	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			02/22/18 12:05	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			02/22/18 12:05	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			02/22/18 12:05	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			02/22/18 12:05	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			02/22/18 12:05	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			02/22/18 12:05	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			02/22/18 12:05	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			02/22/18 12:05	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			02/22/18 12:05	1
2-Hexanone	10	U	10	1.2	ug/L			02/22/18 12:05	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			02/22/18 12:05	1
Methyl acetate	10	U	10	1.4	ug/L			02/22/18 12:05	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: MB 240-315781/6
Matrix: Water
Analysis Batch: 315781

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			02/22/18 12:05	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			02/22/18 12:05	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			02/22/18 12:05	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			02/22/18 12:05	1
Styrene	1.0	U	1.0	0.23	ug/L			02/22/18 12:05	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			02/22/18 12:05	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			02/22/18 12:05	1
Toluene	1.0	U	1.0	0.23	ug/L			02/22/18 12:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			02/22/18 12:05	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			02/22/18 12:05	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			02/22/18 12:05	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			02/22/18 12:05	1
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			02/22/18 12:05	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			02/22/18 12:05	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			02/22/18 12:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			02/22/18 12:05	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			02/22/18 12:05	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/22/18 12:05	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			02/22/18 12:05	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/22/18 12:05	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			02/22/18 12:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		69 - 120		02/22/18 12:05	1
Dibromofluoromethane (Surr)	102		69 - 124		02/22/18 12:05	1
1,2-Dichloroethane-d4 (Surr)	112		61 - 138		02/22/18 12:05	1
Toluene-d8 (Surr)	109		73 - 120		02/22/18 12:05	1

Lab Sample ID: LCS 240-315781/4
Matrix: Water
Analysis Batch: 315781

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	15.0		ug/L		75	35 - 131
Benzene	10.0	11.7		ug/L		117	79 - 120
Bromodichloromethane	10.0	11.9		ug/L		119	79 - 125
Bromoform	10.0	7.61		ug/L		76	55 - 145
Bromomethane	10.0	10.1		ug/L		101	17 - 158
2-Butanone (MEK)	20.0	19.4		ug/L		97	43 - 149
Carbon disulfide	10.0	11.2		ug/L		112	49 - 141
Carbon tetrachloride	10.0	11.9		ug/L		119	55 - 171
Chlorobenzene	10.0	10.8		ug/L		108	80 - 120
Chloroethane	10.0	12.3		ug/L		123	10 - 149
Chloroform	10.0	12.2	*	ug/L		122	80 - 120
Chloromethane	10.0	11.6		ug/L		116	59 - 124
cis-1,2-Dichloroethene	10.0	11.5		ug/L		115	77 - 120
cis-1,3-Dichloropropene	10.0	10.9		ug/L		109	75 - 120
Cyclohexane	10.0	12.3		ug/L		123	66 - 135

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: LCS 240-315781/4

Matrix: Water

Analysis Batch: 315781

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	10.0	10.3		ug/L		103	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	9.61		ug/L		96	50 - 130
1,2-Dibromoethane	10.0	10.2		ug/L		102	80 - 120
1,2-Dichlorobenzene	10.0	11.0		ug/L		110	80 - 120
1,3-Dichlorobenzene	10.0	10.9		ug/L		109	80 - 120
1,4-Dichlorobenzene	10.0	10.9		ug/L		109	80 - 120
Dichlorodifluoromethane	10.0	11.3		ug/L		113	42 - 141
1,1-Dichloroethane	10.0	12.1	*	ug/L		121	74 - 120
1,2-Dichloroethane	10.0	12.5		ug/L		125	68 - 133
1,1-Dichloroethene	10.0	9.98		ug/L		100	65 - 127
1,2-Dichloropropane	10.0	12.6		ug/L		126	78 - 127
Diethyl ether	10.0	10.9		ug/L		109	72 - 125
Ethylbenzene	10.0	11.0		ug/L		110	80 - 120
2-Hexanone	20.0	18.2		ug/L		91	28 - 169
Isopropylbenzene	10.0	9.62		ug/L		96	80 - 128
Methyl acetate	20.0	23.2		ug/L		116	63 - 137
Methylcyclohexane	10.0	10.3		ug/L		103	63 - 141
Methylene Chloride	10.0	12.2		ug/L		122	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	19.4		ug/L		97	53 - 144
Methyl tert-butyl ether	10.0	10.5		ug/L		105	73 - 120
Styrene	10.0	9.76		ug/L		98	80 - 121
1,1,1,2-Tetrachloroethane	10.0	13.2	*	ug/L		132	58 - 122
Tetrachloroethene	10.0	9.35		ug/L		93	80 - 122
Toluene	10.0	12.3	*	ug/L		123	78 - 120
trans-1,2-Dichloroethene	10.0	11.2		ug/L		112	74 - 124
trans-1,3-Dichloropropene	10.0	11.0		ug/L		110	67 - 120
1,2,4-Trichlorobenzene	10.0	9.40		ug/L		94	34 - 141
1,1,1-Trichloroethane	10.0	12.2		ug/L		122	64 - 147
1,1,2-Trichloroethane	10.0	11.9		ug/L		119	76 - 121
Trichloroethene	10.0	10.4		ug/L		104	76 - 124
Trichlorofluoromethane	10.0	12.1		ug/L		121	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.26		ug/L		93	65 - 144
1,2,4-Trimethylbenzene	10.0	11.5		ug/L		115	80 - 120
1,3,5-Trimethylbenzene	10.0	12.1	*	ug/L		121	79 - 120
Vinyl chloride	10.0	11.2		ug/L		112	65 - 124
Xylenes, Total	20.0	20.6		ug/L		103	80 - 120
1,4-Dioxane	200	165		ug/L		82	35 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	84		69 - 120
Dibromofluoromethane (Surr)	103		69 - 124
1,2-Dichloroethane-d4 (Surr)	106		61 - 138
Toluene-d8 (Surr)	109		73 - 120

QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: 240-91647-H-14 MS

Matrix: Water

Analysis Batch: 315781

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	%Rec.
	Result	Qualifier		Added	Result				
Acetone	10	U	20.0	11.6		ug/L		58	19 - 133
Benzene	1.0	U	10.0	10.8		ug/L		108	69 - 127
Bromodichloromethane	1.0	U	10.0	11.0		ug/L		110	75 - 128
Bromoform	1.0	U F1	10.0	5.85	F1	ug/L		58	61 - 135
Bromomethane	1.0	U	10.0	8.37		ug/L		84	10 - 148
2-Butanone (MEK)	10	U	20.0	17.4		ug/L		87	34 - 153
Carbon disulfide	5.0	U	10.0	9.46		ug/L		95	46 - 143
Carbon tetrachloride	1.0	U	10.0	10.2		ug/L		102	53 - 175
Chlorobenzene	1.0	U	10.0	10.1		ug/L		101	76 - 120
Chloroethane	1.0	U	10.0	10.5		ug/L		105	10 - 141
Chloroform	1.0	U *	10.0	11.5		ug/L		115	74 - 125
Chloromethane	1.0	U	10.0	8.80		ug/L		88	34 - 127
cis-1,2-Dichloroethene	1.0	U	10.0	10.7		ug/L		107	69 - 127
cis-1,3-Dichloropropene	1.0	U	10.0	9.54		ug/L		95	68 - 120
Cyclohexane	1.0	U	10.0	9.55		ug/L		96	56 - 135
Dibromochloromethane	1.0	U	10.0	8.32		ug/L		83	62 - 131
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	7.26		ug/L		73	48 - 130
1,2-Dibromoethane	1.0	U	10.0	10.0		ug/L		100	73 - 121
1,2-Dichlorobenzene	1.0	U	10.0	9.64		ug/L		96	70 - 120
1,3-Dichlorobenzene	1.0	U	10.0	9.39		ug/L		94	71 - 120
1,4-Dichlorobenzene	1.0	U	10.0	9.87		ug/L		99	72 - 120
Dichlorodifluoromethane	1.0	U	10.0	7.68		ug/L		77	45 - 130
1,1-Dichloroethane	1.0	U *	10.0	12.1		ug/L		121	69 - 122
1,2-Dichloroethane	1.0	U	10.0	11.8		ug/L		118	64 - 138
1,1-Dichloroethene	1.0	U	10.0	8.58		ug/L		86	62 - 127
1,2-Dichloropropane	1.0	U	10.0	11.5		ug/L		115	72 - 131
Diethyl ether	2.0	U	10.0	10.2		ug/L		102	65 - 124
Ethylbenzene	1.0	U	10.0	9.76		ug/L		98	72 - 121
2-Hexanone	10	U	20.0	17.5		ug/L		88	21 - 184
Isopropylbenzene	1.0	U	10.0	8.38		ug/L		84	70 - 132
Methyl acetate	10	U	20.0	20.2		ug/L		101	52 - 139
Methylcyclohexane	1.0	U	10.0	7.22		ug/L		72	46 - 139
Methylene Chloride	5.0	U	10.0	9.82		ug/L		98	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U	20.0	18.3		ug/L		92	53 - 147
Methyl tert-butyl ether	1.0	U	10.0	9.36		ug/L		94	67 - 125
Styrene	1.0	U	10.0	8.88		ug/L		89	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U F1 *	10.0	12.6	F1	ug/L		126	51 - 123
Tetrachloroethene	1.0	U	10.0	8.90		ug/L		89	69 - 126
Toluene	1.0	U *	10.0	11.6		ug/L		116	69 - 125
trans-1,2-Dichloroethene	1.0	U	10.0	10.1		ug/L		101	66 - 131
trans-1,3-Dichloropropene	1.0	U	10.0	9.78		ug/L		98	59 - 120
1,2,4-Trichlorobenzene	1.0	U	10.0	7.75		ug/L		78	26 - 138
1,1,1-Trichloroethane	1.0	U	10.0	11.7		ug/L		117	57 - 156
1,1,2-Trichloroethane	1.0	U	10.0	11.2		ug/L		112	68 - 127
Trichloroethene	1.0	U	10.0	9.52		ug/L		95	68 - 129
Trichlorofluoromethane	1.0	U	10.0	9.06		ug/L		91	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	6.35		ug/L		64	58 - 137

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: 240-91647-H-14 MS

Matrix: Water

Analysis Batch: 315781

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
1,2,4-Trimethylbenzene	1.0	U	10.0	9.99		ug/L		100	64 - 120
1,3,5-Trimethylbenzene	1.0	U *	10.0	10.3		ug/L		103	67 - 120
Vinyl chloride	1.0	U	10.0	10.7		ug/L		107	55 - 123
Xylenes, Total	2.0	U	20.0	18.8		ug/L		94	71 - 122
1,4-Dioxane	50	U	200	123		ug/L		61	13 - 155

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	86		69 - 120
Dibromofluoromethane (Surr)	101		69 - 124
1,2-Dichloroethane-d4 (Surr)	102		61 - 138
Toluene-d8 (Surr)	111		73 - 120

Lab Sample ID: 240-91647-L-14 MSD

Matrix: Water

Analysis Batch: 315781

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	20.0	11.0		ug/L		55	19 - 133	6	35
Benzene	1.0	U	10.0	10.7		ug/L		107	69 - 127	1	10
Bromodichloromethane	1.0	U	10.0	10.4		ug/L		104	75 - 128	6	13
Bromoform	1.0	U F1	10.0	5.88	F1	ug/L		59	61 - 135	1	13
Bromomethane	1.0	U	10.0	8.97		ug/L		90	10 - 148	7	35
2-Butanone (MEK)	10	U	20.0	17.9		ug/L		89	34 - 153	3	23
Carbon disulfide	5.0	U	10.0	9.80		ug/L		98	46 - 143	3	18
Carbon tetrachloride	1.0	U	10.0	9.43		ug/L		94	53 - 175	8	17
Chlorobenzene	1.0	U	10.0	10.3		ug/L		103	76 - 120	3	12
Chloroethane	1.0	U	10.0	11.2		ug/L		112	10 - 141	7	35
Chloroform	1.0	U *	10.0	10.8		ug/L		108	74 - 125	7	11
Chloromethane	1.0	U	10.0	8.25		ug/L		82	34 - 127	6	25
cis-1,2-Dichloroethene	1.0	U	10.0	10.3		ug/L		103	69 - 127	4	11
cis-1,3-Dichloropropene	1.0	U	10.0	8.65		ug/L		87	68 - 120	10	13
Cyclohexane	1.0	U	10.0	9.72		ug/L		97	56 - 135	2	35
Dibromochloromethane	1.0	U	10.0	8.64		ug/L		86	62 - 131	4	15
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	6.06		ug/L		61	48 - 130	18	31
1,2-Dibromoethane	1.0	U	10.0	10.1		ug/L		101	73 - 121	1	12
1,2-Dichlorobenzene	1.0	U	10.0	8.65		ug/L		87	70 - 120	11	19
1,3-Dichlorobenzene	1.0	U	10.0	8.65		ug/L		87	71 - 120	8	18
1,4-Dichlorobenzene	1.0	U	10.0	8.38		ug/L		84	72 - 120	16	17
Dichlorodifluoromethane	1.0	U	10.0	9.20		ug/L		92	45 - 130	18	34
1,1-Dichloroethane	1.0	U *	10.0	11.2		ug/L		112	69 - 122	8	11
1,2-Dichloroethane	1.0	U	10.0	11.4		ug/L		114	64 - 138	4	11
1,1-Dichloroethene	1.0	U	10.0	8.71		ug/L		87	62 - 127	2	14
1,2-Dichloropropane	1.0	U	10.0	11.5		ug/L		115	72 - 131	0	12
Diethyl ether	2.0	U	10.0	9.61		ug/L		96	65 - 124	6	11
Ethylbenzene	1.0	U	10.0	9.34		ug/L		93	72 - 121	4	15
2-Hexanone	10	U	20.0	18.9		ug/L		95	21 - 184	8	12
Isopropylbenzene	1.0	U	10.0	8.19		ug/L		82	70 - 132	2	16
Methyl acetate	10	U	20.0	20.0		ug/L		100	52 - 139	1	14

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: 240-91647-L-14 MSD
Matrix: Water
Analysis Batch: 315781

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
Methylcyclohexane	1.0	U	10.0	7.68		ug/L		77	46 - 139	6	35
Methylene Chloride	5.0	U	10.0	9.80		ug/L		98	52 - 137	0	12
4-Methyl-2-pentanone (MIBK)	10	U	20.0	18.3		ug/L		92	53 - 147	0	16
Methyl tert-butyl ether	1.0	U	10.0	9.23		ug/L		92	67 - 125	1	12
Styrene	1.0	U	10.0	8.73		ug/L		87	74 - 125	2	14
1,1,2,2-Tetrachloroethane	1.0	U F1 *	10.0	11.4		ug/L		114	51 - 123	10	17
Tetrachloroethene	1.0	U	10.0	8.63		ug/L		86	69 - 126	3	18
Toluene	1.0	U *	10.0	11.5		ug/L		115	69 - 125	1	14
trans-1,2-Dichloroethene	1.0	U	10.0	9.66		ug/L		97	66 - 131	4	11
trans-1,3-Dichloropropene	1.0	U	10.0	9.59		ug/L		96	59 - 120	2	14
1,2,4-Trichlorobenzene	1.0	U	10.0	7.42		ug/L		74	26 - 138	4	35
1,1,1-Trichloroethane	1.0	U	10.0	10.8		ug/L		108	57 - 156	7	13
1,1,2-Trichloroethane	1.0	U	10.0	12.0		ug/L		120	68 - 127	7	11
Trichloroethene	1.0	U	10.0	8.66		ug/L		87	68 - 129	9	12
Trichlorofluoromethane	1.0	U	10.0	9.86		ug/L		99	28 - 172	8	26
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	7.09		ug/L		71	58 - 137	11	35
1,2,4-Trimethylbenzene	1.0	U	10.0	8.70		ug/L		87	64 - 120	14	22
1,3,5-Trimethylbenzene	1.0	U *	10.0	9.19		ug/L		92	67 - 120	11	25
Vinyl chloride	1.0	U	10.0	10.2		ug/L		102	55 - 123	5	12
Xylenes, Total	2.0	U	20.0	18.0		ug/L		90	71 - 122	4	14
1,4-Dioxane	50	U	200	156		ug/L		78	13 - 155	24	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	87		69 - 120
Dibromofluoromethane (Surr)	96		69 - 124
1,2-Dichloroethane-d4 (Surr)	98		61 - 138
Toluene-d8 (Surr)	107		73 - 120

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

Lab Sample ID: MB 240-315955/5
Matrix: Water
Analysis Batch: 315955

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			02/23/18 12:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		63 - 125		02/23/18 12:02	1

Lab Sample ID: LCS 240-315955/4
Matrix: Water
Analysis Batch: 315955

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	8.56		ug/L		86	59 - 131

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: LCS 240-315955/4
Matrix: Water
Analysis Batch: 315955

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

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

Lab Sample ID: 240-91647-F-14 MS
Matrix: Water
Analysis Batch: 315955

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

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
1,4-Dioxane	2.0	U	10.0	8.57		ug/L		86	52 - 129
Surrogate	MS	MS							
1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits						
	115		63 - 125						

Lab Sample ID: 240-91647-F-14 MSD
Matrix: Water
Analysis Batch: 315955

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
1,4-Dioxane	2.0	U	10.0	8.78		ug/L		88	52 - 129	2	13
Surrogate	MSD	MSD									
1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits								
	124		63 - 125								

Lab Sample ID: MB 240-316152/5
Matrix: Water
Analysis Batch: 316152

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
	Result	Qualifier								
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			02/26/18 13:04	1	
Surrogate	MB	MB								
1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fac
	111		63 - 125					02/26/18 13:04	1	

Lab Sample ID: LCS 240-316152/4
Matrix: Water
Analysis Batch: 316152

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

Analyte			Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
1,4-Dioxane			10.0	9.43		ug/L		94	59 - 131
Surrogate	LCS	LCS							
1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits						
	110		63 - 125						

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QC Sample Results

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

TestAmerica Job ID: 240-91640-1

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

Lab Sample ID: 240-91640-7 MS
Matrix: Water
Analysis Batch: 316152

Client Sample ID: PW-16-02_021418
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	8.73		ug/L		87	52 - 129
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	108		63 - 125						

Lab Sample ID: 240-91640-7 MSD
Matrix: Water
Analysis Batch: 316152

Client Sample ID: PW-16-02_021418
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	8.59		ug/L		86	52 - 129	2	13
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	116		63 - 125								

QC Association Summary

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

TestAmerica Job ID: 240-91640-1

GC/MS VOA

Analysis Batch: 315600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-91640-1	MW-3_021318	Total/NA	Water	8260B	
240-91640-3	MW-2_021318	Total/NA	Water	8260B	
240-91640-4	MW-4_021318	Total/NA	Water	8260B	
240-91640-5	MW-10_021318	Total/NA	Water	8260B	
240-91640-6	TW-16-04_021418	Total/NA	Water	8260B	
240-91640-7	PW-16-02_021418	Total/NA	Water	8260B	
240-91640-8	TW-16-03_021418	Total/NA	Water	8260B	
240-91640-9	TW-16-02_021418	Total/NA	Water	8260B	
240-91640-10	TRIP BLANK	Total/NA	Water	8260B	
MB 240-315600/6	Method Blank	Total/NA	Water	8260B	
LCS 240-315600/4	Lab Control Sample	Total/NA	Water	8260B	
240-91640-7 MS	PW-16-02_021418	Total/NA	Water	8260B	
240-91640-7 MSD	PW-16-02_021418	Total/NA	Water	8260B	

Analysis Batch: 315781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-91640-2	MW-5_021318	Total/NA	Water	8260B	
MB 240-315781/6	Method Blank	Total/NA	Water	8260B	
LCS 240-315781/4	Lab Control Sample	Total/NA	Water	8260B	
240-91647-H-14 MS	Matrix Spike	Total/NA	Water	8260B	
240-91647-L-14 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 315955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-91640-1	MW-3_021318	Total/NA	Water	8260B SIM	
240-91640-2	MW-5_021318	Total/NA	Water	8260B SIM	
240-91640-3	MW-2_021318	Total/NA	Water	8260B SIM	
240-91640-5	MW-10_021318	Total/NA	Water	8260B SIM	
MB 240-315955/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-315955/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-91647-F-14 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-91647-F-14 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 316152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-91640-4	MW-4_021318	Total/NA	Water	8260B SIM	
240-91640-6	TW-16-04_021418	Total/NA	Water	8260B SIM	
240-91640-7	PW-16-02_021418	Total/NA	Water	8260B SIM	
240-91640-8	TW-16-03_021418	Total/NA	Water	8260B SIM	
240-91640-9	TW-16-02_021418	Total/NA	Water	8260B SIM	
MB 240-316152/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-316152/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-91640-7 MS	PW-16-02_021418	Total/NA	Water	8260B SIM	
240-91640-7 MSD	PW-16-02_021418	Total/NA	Water	8260B SIM	

Lab Chronicle

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: MW-3_021318
Date Collected: 02/13/18 10:07
Date Received: 02/17/18 09:30

Lab Sample ID: 240-91640-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315600	02/21/18 15:52	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	315955	02/23/18 14:10	SAM	TAL CAN

Client Sample ID: MW-5_021318
Date Collected: 02/13/18 11:07
Date Received: 02/17/18 09:30

Lab Sample ID: 240-91640-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315781	02/22/18 12:28	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	315955	02/23/18 14:36	SAM	TAL CAN

Client Sample ID: MW-2_021318
Date Collected: 02/13/18 12:22
Date Received: 02/17/18 09:30

Lab Sample ID: 240-91640-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		66.67	315600	02/21/18 16:37	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	315955	02/23/18 15:02	SAM	TAL CAN

Client Sample ID: MW-4_021318
Date Collected: 02/13/18 14:12
Date Received: 02/17/18 09:30

Lab Sample ID: 240-91640-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1666.67	315600	02/21/18 17:00	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	316152	02/26/18 17:22	SAM	TAL CAN

Client Sample ID: MW-10_021318
Date Collected: 02/13/18 15:22
Date Received: 02/17/18 09:30

Lab Sample ID: 240-91640-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		200	315600	02/21/18 17:22	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	315955	02/23/18 15:55	SAM	TAL CAN

Client Sample ID: TW-16-04_021418
Date Collected: 02/14/18 10:42
Date Received: 02/17/18 09:30

Lab Sample ID: 240-91640-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		6.67	315600	02/21/18 17:45	LEE	TAL CAN

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-91640-1

Client Sample ID: TW-16-04_021418

Lab Sample ID: 240-91640-6

Date Collected: 02/14/18 10:42

Matrix: Water

Date Received: 02/17/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	316152	02/26/18 14:46	SAM	TAL CAN

Client Sample ID: PW-16-02_021418

Lab Sample ID: 240-91640-7

Date Collected: 02/14/18 12:02

Matrix: Water

Date Received: 02/17/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315600	02/21/18 18:08	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	316152	02/26/18 15:12	SAM	TAL CAN

Client Sample ID: TW-16-03_021418

Lab Sample ID: 240-91640-8

Date Collected: 02/14/18 13:57

Matrix: Water

Date Received: 02/17/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	315600	02/21/18 19:14	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	316152	02/26/18 16:30	SAM	TAL CAN

Client Sample ID: TW-16-02_021418

Lab Sample ID: 240-91640-9

Date Collected: 02/14/18 16:12

Matrix: Water

Date Received: 02/17/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1000	315600	02/21/18 19:37	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	316152	02/26/18 16:56	SAM	TAL CAN

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-91640-10

Date Collected: 02/14/18 00:00

Matrix: Water

Date Received: 02/17/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315600	02/21/18 20:00	LEE	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 240-91640-1

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	02-23-18 *
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-18
Illinois	NELAP	5	200004	07-31-18
Kansas	NELAP	7	E-10336	01-31-18 *
Kentucky (UST)	State Program	4	58	02-23-18 *
Kentucky (WW)	State Program	4	98016	12-31-18
Minnesota	NELAP	5	039-999-348	12-31-18
Minnesota (Petrofund)	State Program	1	3506	07-31-18
Nevada	State Program	9	OH-000482008A	07-31-18
New Jersey	NELAP	2	OH001	06-30-18
New York	NELAP	2	10975	03-31-18 *
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-18 *
Pennsylvania	NELAP	3	68-00340	08-31-18
Texas	NELAP	6	T104704517-17-9	08-31-18
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18

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

1.4/C1.1

Chain of Custody Record



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

Regulatory program: DW NPDES RCRA Other

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

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

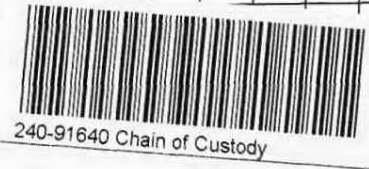
Lab Contact: Denise Pohl
 Telephone: 330-966-9789

TestAmerica Laboratories, Inc.
 COC No: 1 of 1 COCs

Analysis Turnaround Time
 TAT if different from below:
 3 weeks
 2 weeks
 1 week
 2 days
 1 day

Method of Shipment/Carrier:
 Shipping/Tracking No:

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives				Filtered Sample (Y/N)	Composite C/Grab=C	VOCs 8260B	1,4-Dioxane 8260B SIM	Analyses	Sample Specific Notes / Special Instructions
			Aqueous	Sediment	Solid	Other	H2SO4	HNO3	HCl	NaOH						
MW-3-021310	02/13/10	1007	X													
MW-5-021310	02/13/10	1107	X													
MW-2-021310	02/13/10	1222	X													
MW-4-021310	02/13/10	1412	X													
MW-10-021310	02/13/10	1522	X													
TW-10-04-021410	02/14/10	1042	X													
PW-10-02-021410	02/14/10	1202	X													
TW-10-03-021410	02/14/10	1357	X													
TW-10-02-021410	02/14/10	1012	X													
TRIPBLANK	-	-	X													



Possible Hazard Identification: Non-Hazard Irritant Injurious Poison B Unknown

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

Special Instructions/OC Requirements & Comments:
 Level IV Reporting

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

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Asmeyer, Russel	ARCADIS	2/14/10 1745	Novi Warehouse Edge	ARCADIS	2/14/10 1748
Asmeyer, Russel	ARCADIS	2/16/10 1000	JAC	JAC	2/16/10 1001
Asmeyer, Russel	JAC	2/16/10 1050	JAC	JAC	2-17-10 930

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TestAmerica Canton Sample Receipt Form/Narrative

Login # : 91640


Canton Facility

Client ARCADIS Site Name _____ Cooler unpacked by: BP
 Cooler Received on 2-17-18 Opened on 2-17-18

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

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

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN# IR-8 (CF -0.3 °C) Observed Cooler Temp. 1.4 °C Corrected Cooler Temp. 1.1 °C
 IR GUN #36 (CF +0.3°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN # 627 (CF -1.3°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
 If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC730269
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B712601WB Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

16. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: _____

17. SAMPLE CONDITION
 Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

18. SAMPLE PRESERVATION
 Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____