

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton
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Tel: (330)497-9396

TestAmerica Job ID: 240-99975-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

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



Authorized for release by:
8/30/2018 9:09:10 AM

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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: 240-99975-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance 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: 240-99975-1

Job ID: 240-99975-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-99975-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 8/16/2018 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.6° C and 3.6° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-54_081318 (240-99975-1), MW-58_081318 (240-99975-2), MW-44_081318 (240-99975-3), MW-69_081318 (240-99975-4), MW-55_081318 (240-99975-5), MW-25_081318 (240-99975-6), DUP-04_081318 (240-99975-7), MW-36_081418 (240-99975-8), MW-24_081418 (240-99975-9), MW-1_081418 (240-99975-10), MW-7_081418 (240-99975-11), TRIPBLANK-01_081418 (240-99975-12) and TRIPBLANK-02_081418 (240-99975-13) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/24/2018 and 08/25/2018.

1,2,4-Trimethylbenzene failed the recovery criteria low for LCS 240-342461/4. Refer to the QC report for details.

Several analytes exceeded the RPD limit for the MSD of sample 240-99910-5 in batch 240-342404.

Cyclohexane failed the recovery criteria low for the MS of sample MW-36_081418MS (240-99975-8) in batch 240-342461. Refer to the QC report for details.

Sample MW-44_081318 (240-99975-3)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Case Narrative

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

TestAmerica Job ID: 240-99975-1

Job ID: 240-99975-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

The laboratory control sample (LCS) for analytical batch 342461 exceeded control criteria for 1,2,4-Trimethylbenzene. The samples associated with this LCS were non-detect for the affected analyte. In accordance with the laboratory SOP, a low level CCV at the reporting limit (labeled as an MRL) was analyzed and the affected compound was detected therefore, the data has been reported. No further corrective action was required: MW-36_081418 (240-99975-8), MW-24_081418 (240-99975-9), MW-1_081418 (240-99975-10), TRIPBLANK-01_081418 (240-99975-12), TRIPBLANK-02_081418 (240-99975-13) and (LCS 240-342461/4).

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-54_081318 (240-99975-1), MW-58_081318 (240-99975-2), MW-44_081318 (240-99975-3), MW-69_081318 (240-99975-4), MW-55_081318 (240-99975-5), MW-25_081318 (240-99975-6), DUP-04_081318 (240-99975-7), MW-36_081418 (240-99975-8), MW-24_081418 (240-99975-9), MW-1_081418 (240-99975-10) and MW-7_081418 (240-99975-11) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/21/2018 and 08/22/2018.

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

Method Summary

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

TestAmerica Job ID: 240-99975-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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



Sample Summary

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

TestAmerica Job ID: 240-99975-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-99975-1	MW-54_081318	Water	08/13/18 09:30	08/16/18 09:00
240-99975-2	MW-58_081318	Water	08/13/18 11:25	08/16/18 09:00
240-99975-3	MW-44_081318	Water	08/13/18 13:15	08/16/18 09:00
240-99975-4	MW-69_081318	Water	08/13/18 14:25	08/16/18 09:00
240-99975-5	MW-55_081318	Water	08/13/18 15:55	08/16/18 09:00
240-99975-6	MW-25_081318	Water	08/13/18 17:15	08/16/18 09:00
240-99975-7	DUP-04_081318	Water	08/13/18 00:00	08/16/18 09:00
240-99975-8	MW-36_081418	Water	08/14/18 10:20	08/16/18 09:00
240-99975-9	MW-24_081418	Water	08/14/18 09:05	08/16/18 09:00
240-99975-10	MW-1_081418	Water	08/14/18 12:10	08/16/18 09:00
240-99975-11	MW-7_081418	Water	08/14/18 14:25	08/16/18 09:00
240-99975-12	TRIPBLANK-01_081418	Water	08/14/18 00:00	08/16/18 09:00
240-99975-13	TRIPBLANK-02_081418	Water	08/14/18 00:00	08/16/18 09:00



Detection Summary

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-54_081318

Lab Sample ID: 240-99975-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.34	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-58_081318

Lab Sample ID: 240-99975-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.2		2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: MW-44_081318

Lab Sample ID: 240-99975-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	9.5		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	240		20	4.0	ug/L	20		8260B	Total/NA

Client Sample ID: MW-69_081318

Lab Sample ID: 240-99975-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	7.1		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	2.7		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-55_081318

Lab Sample ID: 240-99975-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.1	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.39	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-25_081318

Lab Sample ID: 240-99975-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.9	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: DUP-04_081318

Lab Sample ID: 240-99975-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.9		2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: MW-36_081418

Lab Sample ID: 240-99975-8

No Detections.

Client Sample ID: MW-24_081418

Lab Sample ID: 240-99975-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	1.7	J	10	1.2	ug/L	1		8260B	Total/NA
2-Hexanone	0.88	J	10	0.54	ug/L	1		8260B	Total/NA
4-Methyl-2-pentanone (MIBK)	0.77	J	10	0.42	ug/L	1		8260B	Total/NA
1,4-Dioxane	22	J	50	13	ug/L	1		8260B	Total/NA

Client Sample ID: MW-1_081418

Lab Sample ID: 240-99975-10

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Detection Summary

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-7_081418

Lab Sample ID: 240-99975-11

No Detections.

Client Sample ID: TRIPBLANK-01_081418

Lab Sample ID: 240-99975-12

No Detections.

Client Sample ID: TRIPBLANK-02_081418

Lab Sample ID: 240-99975-13

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: 240-99975-1

Client Sample ID: MW-54_081318

Lab Sample ID: 240-99975-1

Date Collected: 08/13/18 09:30

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	J	2.0	0.86	ug/L			08/21/18 19:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					08/21/18 19:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 15:43	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 15:43	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 15:43	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 15:43	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 15:43	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 15:43	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 15:43	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 15:43	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 15:43	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 15:43	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 15:43	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 15:43	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/24/18 15:43	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 15:43	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 15:43	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 15:43	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 15:43	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 15:43	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 15:43	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 15:43	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 15:43	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 15:43	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 15:43	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 15:43	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 15:43	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 15:43	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 15:43	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 15:43	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 15:43	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 15:43	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 15:43	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 15:43	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 15:43	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 15:43	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 15:43	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 15:43	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 15:43	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 15:43	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 15:43	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 15:43	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 15:43	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 15:43	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 15:43	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-54_081318

Lab Sample ID: 240-99975-1

Date Collected: 08/13/18 09:30

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/24/18 15:43	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 15:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 15:43	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 15:43	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 15:43	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 15:43	1
Vinyl chloride	0.34	J	1.0	0.20	ug/L			08/24/18 15:43	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 15:43	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 15:43	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 15:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		69 - 120		08/24/18 15:43	1
Dibromofluoromethane (Surr)	103		69 - 124		08/24/18 15:43	1
1,2-Dichloroethane-d4 (Surr)	100		61 - 138		08/24/18 15:43	1
Toluene-d8 (Surr)	96		73 - 120		08/24/18 15:43	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-58_081318

Lab Sample ID: 240-99975-2

Date Collected: 08/13/18 11:25

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.2		2.0	0.86	ug/L			08/21/18 20:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		63 - 125					08/21/18 20:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 16:05	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 16:05	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 16:05	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 16:05	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 16:05	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 16:05	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 16:05	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 16:05	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 16:05	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 16:05	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 16:05	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 16:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/24/18 16:05	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 16:05	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 16:05	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 16:05	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 16:05	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 16:05	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 16:05	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 16:05	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 16:05	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 16:05	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 16:05	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 16:05	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 16:05	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 16:05	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 16:05	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 16:05	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 16:05	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 16:05	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 16:05	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 16:05	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 16:05	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 16:05	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 16:05	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 16:05	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 16:05	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 16:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 16:05	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 16:05	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 16:05	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 16:05	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 16:05	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-58_081318

Lab Sample ID: 240-99975-2

Date Collected: 08/13/18 11:25

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/24/18 16:05	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 16:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 16:05	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 16:05	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 16:05	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 16:05	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/24/18 16:05	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 16:05	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 16:05	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 16:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		69 - 120		08/24/18 16:05	1
Dibromofluoromethane (Surr)	112		69 - 124		08/24/18 16:05	1
1,2-Dichloroethane-d4 (Surr)	104		61 - 138		08/24/18 16:05	1
Toluene-d8 (Surr)	99		73 - 120		08/24/18 16:05	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-44_081318

Lab Sample ID: 240-99975-3

Date Collected: 08/13/18 13:15

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	9.5		2.0	0.86	ug/L			08/21/18 20:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					08/21/18 20:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	200	U	200	110	ug/L			08/24/18 16:28	20
Benzene	20	U	20	2.6	ug/L			08/24/18 16:28	20
Bromodichloromethane	20	U	20	3.4	ug/L			08/24/18 16:28	20
Bromoform	20	U	20	15	ug/L			08/24/18 16:28	20
Bromomethane	20	U	20	8.4	ug/L			08/24/18 16:28	20
2-Butanone (MEK)	200	U	200	23	ug/L			08/24/18 16:28	20
Carbon disulfide	100	U	100	5.6	ug/L			08/24/18 16:28	20
Carbon tetrachloride	20	U	20	5.2	ug/L			08/24/18 16:28	20
Chlorobenzene	20	U	20	2.8	ug/L			08/24/18 16:28	20
Chloroethane	20	U	20	17	ug/L			08/24/18 16:28	20
Chloroform	20	U	20	2.6	ug/L			08/24/18 16:28	20
Chloromethane	20	U	20	4.0	ug/L			08/24/18 16:28	20
cis-1,2-Dichloroethene	20	U	20	3.2	ug/L			08/24/18 16:28	20
cis-1,3-Dichloropropene	20	U	20	12	ug/L			08/24/18 16:28	20
Cyclohexane	20	U	20	4.8	ug/L			08/24/18 16:28	20
Dibromochloromethane	20	U	20	7.8	ug/L			08/24/18 16:28	20
1,2-Dibromo-3-Chloropropane	20	U	20	18	ug/L			08/24/18 16:28	20
1,2-Dibromoethane	20	U	20	2.4	ug/L			08/24/18 16:28	20
1,2-Dichlorobenzene	20	U	20	3.0	ug/L			08/24/18 16:28	20
1,3-Dichlorobenzene	20	U	20	3.0	ug/L			08/24/18 16:28	20
1,4-Dichlorobenzene	20	U	20	3.2	ug/L			08/24/18 16:28	20
Dichlorodifluoromethane	20	U	20	7.0	ug/L			08/24/18 16:28	20
1,1-Dichloroethane	20	U	20	3.4	ug/L			08/24/18 16:28	20
1,2-Dichloroethane	20	U	20	4.2	ug/L			08/24/18 16:28	20
1,1-Dichloroethene	20	U	20	3.8	ug/L			08/24/18 16:28	20
1,2-Dichloropropane	20	U	20	3.0	ug/L			08/24/18 16:28	20
Ethylbenzene	20	U	20	2.2	ug/L			08/24/18 16:28	20
2-Hexanone	200	U	200	11	ug/L			08/24/18 16:28	20
Isopropylbenzene	20	U	20	1.8	ug/L			08/24/18 16:28	20
Methyl acetate	200	U	200	34	ug/L			08/24/18 16:28	20
Methylcyclohexane	20	U	20	6.6	ug/L			08/24/18 16:28	20
Methylene Chloride	100	U	100	52	ug/L			08/24/18 16:28	20
4-Methyl-2-pentanone (MIBK)	200	U	200	8.4	ug/L			08/24/18 16:28	20
Methyl tert-butyl ether	20	U	20	1.4	ug/L			08/24/18 16:28	20
Styrene	20	U	20	2.0	ug/L			08/24/18 16:28	20
1,1,2,2-Tetrachloroethane	20	U	20	2.6	ug/L			08/24/18 16:28	20
Tetrachloroethene	20	U	20	3.0	ug/L			08/24/18 16:28	20
Toluene	20	U	20	2.8	ug/L			08/24/18 16:28	20
trans-1,2-Dichloroethene	20	U	20	3.8	ug/L			08/24/18 16:28	20
trans-1,3-Dichloropropene	20	U	20	13	ug/L			08/24/18 16:28	20
1,2,4-Trichlorobenzene	20	U	20	5.2	ug/L			08/24/18 16:28	20
1,1,1-Trichloroethane	20	U	20	4.8	ug/L			08/24/18 16:28	20
1,1,2-Trichloroethane	20	U	20	1.8	ug/L			08/24/18 16:28	20

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-44_081318

Lab Sample ID: 240-99975-3

Date Collected: 08/13/18 13:15

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	20	U	20	2.0	ug/L			08/24/18 16:28	20
Trichlorofluoromethane	20	U	20	9.0	ug/L			08/24/18 16:28	20
1,1,2-Trichloro-1,2,2-trifluoroethane	20	U	20	8.2	ug/L			08/24/18 16:28	20
1,2,3-Trimethylbenzene	100	U	100	2.8	ug/L			08/24/18 16:28	20
1,2,4-Trimethylbenzene	20	U	20	1.4	ug/L			08/24/18 16:28	20
1,3,5-Trimethylbenzene	20	U	20	2.4	ug/L			08/24/18 16:28	20
Vinyl chloride	240		20	4.0	ug/L			08/24/18 16:28	20
Xylenes, Total	40	U	40	3.0	ug/L			08/24/18 16:28	20
1,4-Dioxane	1000	U	1000	250	ug/L			08/24/18 16:28	20
Diethyl ether	40	U	40	3.8	ug/L			08/24/18 16:28	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		69 - 120		08/24/18 16:28	20
Dibromofluoromethane (Surr)	111		69 - 124		08/24/18 16:28	20
1,2-Dichloroethane-d4 (Surr)	103		61 - 138		08/24/18 16:28	20
Toluene-d8 (Surr)	96		73 - 120		08/24/18 16:28	20

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-69_081318

Lab Sample ID: 240-99975-4

Date Collected: 08/13/18 14:25

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	7.1		2.0	0.86	ug/L			08/21/18 21:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 125					08/21/18 21:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 16:50	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 16:50	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 16:50	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 16:50	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 16:50	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 16:50	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 16:50	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 16:50	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 16:50	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 16:50	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 16:50	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 16:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/24/18 16:50	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 16:50	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 16:50	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 16:50	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 16:50	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 16:50	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 16:50	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 16:50	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 16:50	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 16:50	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 16:50	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 16:50	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 16:50	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 16:50	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 16:50	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 16:50	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 16:50	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 16:50	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 16:50	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 16:50	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 16:50	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 16:50	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 16:50	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 16:50	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 16:50	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 16:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 16:50	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 16:50	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 16:50	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 16:50	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 16:50	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-69_081318

Lab Sample ID: 240-99975-4

Date Collected: 08/13/18 14:25

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/24/18 16:50	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 16:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 16:50	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 16:50	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 16:50	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 16:50	1
Vinyl chloride	2.7		1.0	0.20	ug/L			08/24/18 16:50	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 16:50	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 16:50	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 16:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		69 - 120		08/24/18 16:50	1
Dibromofluoromethane (Surr)	112		69 - 124		08/24/18 16:50	1
1,2-Dichloroethane-d4 (Surr)	106		61 - 138		08/24/18 16:50	1
Toluene-d8 (Surr)	95		73 - 120		08/24/18 16:50	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-55_081318

Lab Sample ID: 240-99975-5

Date Collected: 08/13/18 15:55

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.1	J	2.0	0.86	ug/L			08/21/18 21:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					08/21/18 21:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 17:12	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 17:12	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 17:12	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 17:12	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 17:12	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 17:12	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 17:12	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 17:12	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 17:12	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 17:12	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 17:12	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 17:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/24/18 17:12	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 17:12	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 17:12	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 17:12	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 17:12	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 17:12	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 17:12	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 17:12	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 17:12	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 17:12	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 17:12	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 17:12	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 17:12	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 17:12	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 17:12	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 17:12	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 17:12	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 17:12	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 17:12	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 17:12	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 17:12	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 17:12	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 17:12	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 17:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 17:12	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 17:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 17:12	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 17:12	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 17:12	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 17:12	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 17:12	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-55_081318

Lab Sample ID: 240-99975-5

Date Collected: 08/13/18 15:55

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/24/18 17:12	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 17:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 17:12	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 17:12	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 17:12	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 17:12	1
Vinyl chloride	0.39	J	1.0	0.20	ug/L			08/24/18 17:12	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 17:12	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 17:12	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 17:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		69 - 120		08/24/18 17:12	1
Dibromofluoromethane (Surr)	111		69 - 124		08/24/18 17:12	1
1,2-Dichloroethane-d4 (Surr)	102		61 - 138		08/24/18 17:12	1
Toluene-d8 (Surr)	95		73 - 120		08/24/18 17:12	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-25_081318

Lab Sample ID: 240-99975-6

Date Collected: 08/13/18 17:15

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.9	J	2.0	0.86	ug/L			08/22/18 13:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125					08/22/18 13:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 17:35	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 17:35	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 17:35	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 17:35	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 17:35	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 17:35	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 17:35	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 17:35	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 17:35	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 17:35	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 17:35	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 17:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/24/18 17:35	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 17:35	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 17:35	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 17:35	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 17:35	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 17:35	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 17:35	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 17:35	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 17:35	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 17:35	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 17:35	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 17:35	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 17:35	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 17:35	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 17:35	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 17:35	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 17:35	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 17:35	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 17:35	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 17:35	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 17:35	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 17:35	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 17:35	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 17:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 17:35	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 17:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 17:35	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 17:35	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 17:35	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 17:35	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 17:35	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-25_081318

Lab Sample ID: 240-99975-6

Date Collected: 08/13/18 17:15

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/24/18 17:35	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 17:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 17:35	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 17:35	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 17:35	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 17:35	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/24/18 17:35	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 17:35	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 17:35	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 17:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		69 - 120		08/24/18 17:35	1
Dibromofluoromethane (Surr)	107		69 - 124		08/24/18 17:35	1
1,2-Dichloroethane-d4 (Surr)	101		61 - 138		08/24/18 17:35	1
Toluene-d8 (Surr)	97		73 - 120		08/24/18 17:35	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: DUP-04_081318

Lab Sample ID: 240-99975-7

Date Collected: 08/13/18 00:00

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.9		2.0	0.86	ug/L			08/22/18 14:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125					08/22/18 14:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 17:57	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 17:57	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 17:57	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 17:57	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 17:57	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 17:57	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 17:57	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 17:57	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 17:57	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 17:57	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 17:57	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 17:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/24/18 17:57	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 17:57	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 17:57	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 17:57	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 17:57	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 17:57	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 17:57	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 17:57	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 17:57	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 17:57	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 17:57	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 17:57	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 17:57	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 17:57	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 17:57	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 17:57	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 17:57	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 17:57	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 17:57	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 17:57	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 17:57	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 17:57	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 17:57	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 17:57	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 17:57	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 17:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 17:57	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 17:57	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 17:57	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 17:57	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 17:57	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: DUP-04_081318

Lab Sample ID: 240-99975-7

Date Collected: 08/13/18 00:00

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/24/18 17:57	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 17:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 17:57	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 17:57	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 17:57	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 17:57	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/24/18 17:57	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 17:57	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 17:57	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 17:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		69 - 120		08/24/18 17:57	1
Dibromofluoromethane (Surr)	111		69 - 124		08/24/18 17:57	1
1,2-Dichloroethane-d4 (Surr)	104		61 - 138		08/24/18 17:57	1
Toluene-d8 (Surr)	97		73 - 120		08/24/18 17:57	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-36_081418

Lab Sample ID: 240-99975-8

Date Collected: 08/14/18 10:20

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/22/18 14:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		63 - 125					08/22/18 14:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/25/18 02:05	1
Benzene	1.0	U	1.0	0.13	ug/L			08/25/18 02:05	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/25/18 02:05	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/25/18 02:05	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/25/18 02:05	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/25/18 02:05	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/25/18 02:05	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/25/18 02:05	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/25/18 02:05	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/25/18 02:05	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/25/18 02:05	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/25/18 02:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/25/18 02:05	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/25/18 02:05	1
Cyclohexane	1.0	U F1	1.0	0.24	ug/L			08/25/18 02:05	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/25/18 02:05	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/25/18 02:05	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/25/18 02:05	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/25/18 02:05	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/25/18 02:05	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/25/18 02:05	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/25/18 02:05	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/25/18 02:05	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/25/18 02:05	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/25/18 02:05	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/25/18 02:05	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/25/18 02:05	1
2-Hexanone	10	U	10	0.54	ug/L			08/25/18 02:05	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/25/18 02:05	1
Methyl acetate	10	U	10	1.7	ug/L			08/25/18 02:05	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/25/18 02:05	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/25/18 02:05	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/25/18 02:05	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/25/18 02:05	1
Styrene	1.0	U	1.0	0.10	ug/L			08/25/18 02:05	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/25/18 02:05	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/25/18 02:05	1
Toluene	1.0	U	1.0	0.14	ug/L			08/25/18 02:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/25/18 02:05	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/25/18 02:05	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/25/18 02:05	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/25/18 02:05	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/25/18 02:05	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-36_081418

Lab Sample ID: 240-99975-8

Date Collected: 08/14/18 10:20

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/25/18 02:05	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/25/18 02:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/25/18 02:05	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/25/18 02:05	1
1,2,4-Trimethylbenzene	1.0	U *	1.0	0.070	ug/L			08/25/18 02:05	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/25/18 02:05	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/25/18 02:05	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/25/18 02:05	1
1,4-Dioxane	50	U	50	13	ug/L			08/25/18 02:05	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/25/18 02:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		69 - 120		08/25/18 02:05	1
Dibromofluoromethane (Surr)	106		69 - 124		08/25/18 02:05	1
1,2-Dichloroethane-d4 (Surr)	99		61 - 138		08/25/18 02:05	1
Toluene-d8 (Surr)	94		73 - 120		08/25/18 02:05	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-24_081418

Lab Sample ID: 240-99975-9

Date Collected: 08/14/18 09:05

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/22/18 15:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		63 - 125					08/22/18 15:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/25/18 03:11	1
Benzene	1.0	U	1.0	0.13	ug/L			08/25/18 03:11	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/25/18 03:11	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/25/18 03:11	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/25/18 03:11	1
2-Butanone (MEK)	1.7	J	10	1.2	ug/L			08/25/18 03:11	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/25/18 03:11	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/25/18 03:11	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/25/18 03:11	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/25/18 03:11	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/25/18 03:11	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/25/18 03:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/25/18 03:11	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/25/18 03:11	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/25/18 03:11	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/25/18 03:11	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/25/18 03:11	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/25/18 03:11	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/25/18 03:11	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/25/18 03:11	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/25/18 03:11	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/25/18 03:11	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/25/18 03:11	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/25/18 03:11	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/25/18 03:11	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/25/18 03:11	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/25/18 03:11	1
2-Hexanone	0.88	J	10	0.54	ug/L			08/25/18 03:11	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/25/18 03:11	1
Methyl acetate	10	U	10	1.7	ug/L			08/25/18 03:11	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/25/18 03:11	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/25/18 03:11	1
4-Methyl-2-pentanone (MIBK)	0.77	J	10	0.42	ug/L			08/25/18 03:11	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/25/18 03:11	1
Styrene	1.0	U	1.0	0.10	ug/L			08/25/18 03:11	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/25/18 03:11	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/25/18 03:11	1
Toluene	1.0	U	1.0	0.14	ug/L			08/25/18 03:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/25/18 03:11	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/25/18 03:11	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/25/18 03:11	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/25/18 03:11	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/25/18 03:11	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-24_081418

Lab Sample ID: 240-99975-9

Date Collected: 08/14/18 09:05

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/25/18 03:11	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/25/18 03:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/25/18 03:11	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/25/18 03:11	1
1,2,4-Trimethylbenzene	1.0	U *	1.0	0.070	ug/L			08/25/18 03:11	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/25/18 03:11	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/25/18 03:11	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/25/18 03:11	1
1,4-Dioxane	22	J	50	13	ug/L			08/25/18 03:11	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/25/18 03:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		69 - 120		08/25/18 03:11	1
Dibromofluoromethane (Surr)	109		69 - 124		08/25/18 03:11	1
1,2-Dichloroethane-d4 (Surr)	99		61 - 138		08/25/18 03:11	1
Toluene-d8 (Surr)	97		73 - 120		08/25/18 03:11	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-1_081418

Lab Sample ID: 240-99975-10

Date Collected: 08/14/18 12:10

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/22/18 16:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		63 - 125					08/22/18 16:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/25/18 03:33	1
Benzene	1.0	U	1.0	0.13	ug/L			08/25/18 03:33	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/25/18 03:33	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/25/18 03:33	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/25/18 03:33	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/25/18 03:33	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/25/18 03:33	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/25/18 03:33	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/25/18 03:33	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/25/18 03:33	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/25/18 03:33	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/25/18 03:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/25/18 03:33	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/25/18 03:33	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/25/18 03:33	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/25/18 03:33	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/25/18 03:33	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/25/18 03:33	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/25/18 03:33	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/25/18 03:33	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/25/18 03:33	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/25/18 03:33	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/25/18 03:33	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/25/18 03:33	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/25/18 03:33	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/25/18 03:33	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/25/18 03:33	1
2-Hexanone	10	U	10	0.54	ug/L			08/25/18 03:33	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/25/18 03:33	1
Methyl acetate	10	U	10	1.7	ug/L			08/25/18 03:33	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/25/18 03:33	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/25/18 03:33	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/25/18 03:33	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/25/18 03:33	1
Styrene	1.0	U	1.0	0.10	ug/L			08/25/18 03:33	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/25/18 03:33	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/25/18 03:33	1
Toluene	1.0	U	1.0	0.14	ug/L			08/25/18 03:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/25/18 03:33	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/25/18 03:33	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/25/18 03:33	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/25/18 03:33	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/25/18 03:33	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-1_081418

Lab Sample ID: 240-99975-10

Date Collected: 08/14/18 12:10

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/25/18 03:33	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/25/18 03:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/25/18 03:33	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/25/18 03:33	1
1,2,4-Trimethylbenzene	1.0	U *	1.0	0.070	ug/L			08/25/18 03:33	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/25/18 03:33	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/25/18 03:33	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/25/18 03:33	1
1,4-Dioxane	50	U	50	13	ug/L			08/25/18 03:33	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/25/18 03:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		69 - 120		08/25/18 03:33	1
Dibromofluoromethane (Surr)	105		69 - 124		08/25/18 03:33	1
1,2-Dichloroethane-d4 (Surr)	96		61 - 138		08/25/18 03:33	1
Toluene-d8 (Surr)	96		73 - 120		08/25/18 03:33	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-7_081418

Lab Sample ID: 240-99975-11

Date Collected: 08/14/18 14:25

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/22/18 16:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		63 - 125					08/22/18 16:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 18:19	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 18:19	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 18:19	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 18:19	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 18:19	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 18:19	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 18:19	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 18:19	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 18:19	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 18:19	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 18:19	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 18:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/24/18 18:19	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 18:19	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 18:19	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 18:19	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 18:19	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 18:19	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 18:19	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 18:19	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 18:19	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 18:19	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 18:19	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 18:19	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 18:19	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 18:19	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 18:19	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 18:19	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 18:19	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 18:19	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 18:19	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 18:19	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 18:19	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 18:19	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 18:19	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 18:19	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 18:19	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 18:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 18:19	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 18:19	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 18:19	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 18:19	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 18:19	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-7_081418

Lab Sample ID: 240-99975-11

Date Collected: 08/14/18 14:25

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/24/18 18:19	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 18:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 18:19	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 18:19	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 18:19	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 18:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/24/18 18:19	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 18:19	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 18:19	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 18:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		69 - 120		08/24/18 18:19	1
Dibromofluoromethane (Surr)	107		69 - 124		08/24/18 18:19	1
1,2-Dichloroethane-d4 (Surr)	98		61 - 138		08/24/18 18:19	1
Toluene-d8 (Surr)	96		73 - 120		08/24/18 18:19	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: TRIPBLANK-01_081418

Lab Sample ID: 240-99975-12

Date Collected: 08/14/18 00:00

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/25/18 03:55	1
Benzene	1.0	U	1.0	0.13	ug/L			08/25/18 03:55	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/25/18 03:55	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/25/18 03:55	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/25/18 03:55	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/25/18 03:55	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/25/18 03:55	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/25/18 03:55	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/25/18 03:55	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/25/18 03:55	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/25/18 03:55	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/25/18 03:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/25/18 03:55	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/25/18 03:55	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/25/18 03:55	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/25/18 03:55	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/25/18 03:55	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/25/18 03:55	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/25/18 03:55	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/25/18 03:55	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/25/18 03:55	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/25/18 03:55	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/25/18 03:55	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/25/18 03:55	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/25/18 03:55	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/25/18 03:55	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/25/18 03:55	1
2-Hexanone	10	U	10	0.54	ug/L			08/25/18 03:55	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/25/18 03:55	1
Methyl acetate	10	U	10	1.7	ug/L			08/25/18 03:55	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/25/18 03:55	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/25/18 03:55	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/25/18 03:55	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/25/18 03:55	1
Styrene	1.0	U	1.0	0.10	ug/L			08/25/18 03:55	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/25/18 03:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/25/18 03:55	1
Toluene	1.0	U	1.0	0.14	ug/L			08/25/18 03:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/25/18 03:55	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/25/18 03:55	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/25/18 03:55	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/25/18 03:55	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/25/18 03:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/25/18 03:55	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/25/18 03:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/25/18 03:55	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/25/18 03:55	1
1,2,4-Trimethylbenzene	1.0	U*	1.0	0.070	ug/L			08/25/18 03:55	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/25/18 03:55	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: TRIPBLANK-01_081418

Lab Sample ID: 240-99975-12

Date Collected: 08/14/18 00:00

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/25/18 03:55	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/25/18 03:55	1
1,4-Dioxane	50	U	50	13	ug/L			08/25/18 03:55	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/25/18 03:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		69 - 120		08/25/18 03:55	1
Dibromofluoromethane (Surr)	109		69 - 124		08/25/18 03:55	1
1,2-Dichloroethane-d4 (Surr)	102		61 - 138		08/25/18 03:55	1
Toluene-d8 (Surr)	100		73 - 120		08/25/18 03:55	1

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: TRIPBLANK-02_081418

Lab Sample ID: 240-99975-13

Date Collected: 08/14/18 00:00

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/25/18 04:17	1
Benzene	1.0	U	1.0	0.13	ug/L			08/25/18 04:17	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/25/18 04:17	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/25/18 04:17	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/25/18 04:17	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/25/18 04:17	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/25/18 04:17	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/25/18 04:17	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/25/18 04:17	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/25/18 04:17	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/25/18 04:17	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/25/18 04:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/25/18 04:17	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/25/18 04:17	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/25/18 04:17	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/25/18 04:17	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/25/18 04:17	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/25/18 04:17	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/25/18 04:17	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/25/18 04:17	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/25/18 04:17	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/25/18 04:17	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/25/18 04:17	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/25/18 04:17	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/25/18 04:17	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/25/18 04:17	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/25/18 04:17	1
2-Hexanone	10	U	10	0.54	ug/L			08/25/18 04:17	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/25/18 04:17	1
Methyl acetate	10	U	10	1.7	ug/L			08/25/18 04:17	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/25/18 04:17	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/25/18 04:17	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/25/18 04:17	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/25/18 04:17	1
Styrene	1.0	U	1.0	0.10	ug/L			08/25/18 04:17	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/25/18 04:17	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/25/18 04:17	1
Toluene	1.0	U	1.0	0.14	ug/L			08/25/18 04:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/25/18 04:17	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/25/18 04:17	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/25/18 04:17	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/25/18 04:17	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/25/18 04:17	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/25/18 04:17	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/25/18 04:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/25/18 04:17	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/25/18 04:17	1
1,2,4-Trimethylbenzene	1.0	U*	1.0	0.070	ug/L			08/25/18 04:17	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/25/18 04:17	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: TRIPBLANK-02_081418

Lab Sample ID: 240-99975-13

Date Collected: 08/14/18 00:00

Matrix: Water

Date Received: 08/16/18 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/25/18 04:17	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/25/18 04:17	1
1,4-Dioxane	50	U	50	13	ug/L			08/25/18 04:17	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/25/18 04:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		69 - 120					08/25/18 04:17	1
Dibromofluoromethane (Surr)	112		69 - 124					08/25/18 04:17	1
1,2-Dichloroethane-d4 (Surr)	100		61 - 138					08/25/18 04:17	1
Toluene-d8 (Surr)	96		73 - 120					08/25/18 04:17	1

Surrogate Summary

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

TestAmerica Job ID: 240-99975-1

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)
240-99910-A-5 MSD	Matrix Spike Duplicate	100	108	98	101
240-99910-H-5 MS	Matrix Spike	102	106	101	101
240-99975-1	MW-54_081318	92	103	100	96
240-99975-2	MW-58_081318	91	112	104	99
240-99975-3	MW-44_081318	88	111	103	96
240-99975-4	MW-69_081318	91	112	106	95
240-99975-5	MW-55_081318	89	111	102	95
240-99975-6	MW-25_081318	93	107	101	97
240-99975-7	DUP-04_081318	92	111	104	97
240-99975-8	MW-36_081418	92	106	99	94
240-99975-8 MS	MW-36_081418	99	105	95	99
240-99975-8 MSD	MW-36_081418	98	104	92	101
240-99975-9	MW-24_081418	92	109	99	97
240-99975-10	MW-1_081418	94	105	96	96
240-99975-11	MW-7_081418	92	107	98	96
240-99975-12	TRIPBLANK-01_081418	92	109	102	100
240-99975-13	TRIPBLANK-02_081418	92	112	100	96
LCS 240-342404/4	Lab Control Sample	98	99	94	99
LCS 240-342461/4	Lab Control Sample	104	100	90	98
MB 240-342404/6	Method Blank	91	108	103	97
MB 240-342461/6	Method Blank	91	104	96	95

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)
240-99859-A-7 MS	Matrix Spike	105
240-99859-A-7 MSD	Matrix Spike Duplicate	102
240-99975-1	MW-54_081318	107
240-99975-2	MW-58_081318	100
240-99975-3	MW-44_081318	107
240-99975-4	MW-69_081318	106
240-99975-5	MW-55_081318	107
240-99975-6	MW-25_081318	98
240-99975-7	DUP-04_081318	98
240-99975-8	MW-36_081418	104
240-99975-8 MS	MW-36_081418	103
240-99975-8 MSD	MW-36_081418	98
240-99975-9	MW-24_081418	104
240-99975-10	MW-1_081418	104
240-99975-11	MW-7_081418	101

TestAmerica Canton

Surrogate Summary

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

TestAmerica Job ID: 240-99975-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (63-125)
LCS 240-341828/4	Lab Control Sample	100
LCS 240-342018/4	Lab Control Sample	97
MB 240-341828/5	Method Blank	106
MB 240-342018/5	Method Blank	97

Surrogate Legend

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

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

QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: MB 240-342404/6

Matrix: Water

Analysis Batch: 342404

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 11:37	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 11:37	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 11:37	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 11:37	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 11:37	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 11:37	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 11:37	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 11:37	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 11:37	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 11:37	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 11:37	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 11:37	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/24/18 11:37	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 11:37	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 11:37	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 11:37	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 11:37	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 11:37	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 11:37	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 11:37	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 11:37	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 11:37	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 11:37	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 11:37	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 11:37	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 11:37	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 11:37	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 11:37	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 11:37	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 11:37	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 11:37	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 11:37	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 11:37	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 11:37	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 11:37	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 11:37	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 11:37	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 11:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 11:37	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 11:37	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 11:37	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 11:37	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 11:37	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/24/18 11:37	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 11:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 11:37	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 11:37	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 11:37	1

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QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: MB 240-342404/6
Matrix: Water
Analysis Batch: 342404

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 11:37	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/24/18 11:37	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 11:37	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 11:37	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 11:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		69 - 120		08/24/18 11:37	1
Dibromofluoromethane (Surr)	108		69 - 124		08/24/18 11:37	1
1,2-Dichloroethane-d4 (Surr)	103		61 - 138		08/24/18 11:37	1
Toluene-d8 (Surr)	97		73 - 120		08/24/18 11:37	1

Lab Sample ID: LCS 240-342404/4
Matrix: Water
Analysis Batch: 342404

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	17.8		ug/L		89	35 - 131
Benzene	10.0	9.97		ug/L		100	79 - 120
Bromodichloromethane	10.0	9.74		ug/L		97	79 - 125
Bromoform	10.0	10.7		ug/L		107	55 - 145
Bromomethane	10.0	8.15		ug/L		82	17 - 158
2-Butanone (MEK)	20.0	18.4		ug/L		92	43 - 149
Carbon disulfide	10.0	9.40		ug/L		94	49 - 141
Carbon tetrachloride	10.0	9.42		ug/L		94	55 - 171
Chlorobenzene	10.0	9.95		ug/L		99	80 - 120
Chloroethane	10.0	8.23		ug/L		82	10 - 149
Chloroform	10.0	9.43		ug/L		94	80 - 120
Chloromethane	10.0	8.48		ug/L		85	59 - 124
cis-1,2-Dichloroethene	10.0	9.12		ug/L		91	77 - 120
cis-1,3-Dichloropropene	10.0	10.2		ug/L		102	75 - 120
Cyclohexane	10.0	9.52		ug/L		95	66 - 135
Dibromochloromethane	10.0	10.2		ug/L		102	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	9.11		ug/L		91	50 - 130
1,2-Dibromoethane	10.0	10.0		ug/L		100	80 - 120
1,2-Dichlorobenzene	10.0	9.92		ug/L		99	80 - 120
1,3-Dichlorobenzene	10.0	9.97		ug/L		100	80 - 120
1,4-Dichlorobenzene	10.0	10.1		ug/L		101	80 - 120
Dichlorodifluoromethane	10.0	8.34		ug/L		83	42 - 141
1,1-Dichloroethane	10.0	9.74		ug/L		97	74 - 120
1,2-Dichloroethane	10.0	8.76		ug/L		88	68 - 133
1,1-Dichloroethene	10.0	8.96		ug/L		90	65 - 127
1,2-Dichloropropane	10.0	10.5		ug/L		105	78 - 127
Ethylbenzene	10.0	9.51		ug/L		95	80 - 120
2-Hexanone	20.0	18.3		ug/L		91	28 - 169
Isopropylbenzene	10.0	9.05		ug/L		91	80 - 128
Methyl acetate	20.0	19.1		ug/L		95	63 - 137
Methylcyclohexane	10.0	9.10		ug/L		91	63 - 141

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QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: LCS 240-342404/4
Matrix: Water
Analysis Batch: 342404

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	9.70		ug/L		97	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	17.9		ug/L		90	53 - 144
Methyl tert-butyl ether	10.0	8.90		ug/L		89	73 - 120
Styrene	10.0	9.63		ug/L		96	80 - 121
1,1,2,2-Tetrachloroethane	10.0	10.2		ug/L		102	58 - 122
Tetrachloroethene	10.0	10.3		ug/L		103	80 - 122
Toluene	10.0	9.92		ug/L		99	78 - 120
trans-1,2-Dichloroethene	10.0	9.61		ug/L		96	74 - 124
trans-1,3-Dichloropropene	10.0	9.30		ug/L		93	67 - 120
1,2,4-Trichlorobenzene	10.0	8.65		ug/L		87	34 - 141
1,1,1-Trichloroethane	10.0	9.92		ug/L		99	64 - 147
1,1,2-Trichloroethane	10.0	9.96		ug/L		100	76 - 121
Trichloroethene	10.0	9.62		ug/L		96	76 - 124
Trichlorofluoromethane	10.0	8.05		ug/L		80	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.0		ug/L		100	65 - 144
1,2,4-Trimethylbenzene	10.0	8.84		ug/L		88	80 - 120
1,3,5-Trimethylbenzene	10.0	9.19		ug/L		92	79 - 120
Vinyl chloride	10.0	8.42		ug/L		84	65 - 124
Xylenes, Total	20.0	18.8		ug/L		94	80 - 120
1,4-Dioxane	200	190		ug/L		95	35 - 134
Diethyl ether	10.0	9.04		ug/L		90	72 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		69 - 120
Dibromofluoromethane (Surr)	99		69 - 124
1,2-Dichloroethane-d4 (Surr)	94		61 - 138
Toluene-d8 (Surr)	99		73 - 120

Lab Sample ID: 240-99910-A-5 MSD
Matrix: Water
Analysis Batch: 342404

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	18.8		ug/L		94	19 - 133	10	35
Benzene	1.0	U	10.0	9.31		ug/L		93	69 - 127	6	10
Bromodichloromethane	1.0	U	10.0	9.32		ug/L		93	75 - 128	7	13
Bromoform	1.0	U	10.0	9.83		ug/L		98	61 - 135	8	13
Bromomethane	1.0	U	10.0	7.38		ug/L		74	10 - 148	5	35
2-Butanone (MEK)	10	U	20.0	15.6		ug/L		78	34 - 153	9	23
Carbon disulfide	5.0	U F2	10.0	9.09	F2	ug/L		91	46 - 143	55	18
Carbon tetrachloride	1.0	U	10.0	8.99		ug/L		90	53 - 175	15	17
Chlorobenzene	1.0	U	10.0	9.15		ug/L		91	76 - 120	8	12
Chloroethane	1.0	U	10.0	7.56		ug/L		76	10 - 141	4	35
Chloroform	1.0	U	10.0	9.45		ug/L		95	74 - 125	11	11
Chloromethane	1.0	U	10.0	7.89		ug/L		79	34 - 127	11	25
cis-1,2-Dichloroethene	0.68	J	10.0	9.73		ug/L		90	69 - 127	6	11
cis-1,3-Dichloropropene	1.0	U	10.0	8.62		ug/L		86	68 - 120	13	13

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QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: 240-99910-A-5 MSD

Matrix: Water

Analysis Batch: 342404

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyclohexane	1.0	U	10.0	8.21		ug/L		82	56 - 135	25	35
Dibromochloromethane	1.0	U	10.0	9.34		ug/L		93	62 - 131	5	15
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.69		ug/L		87	48 - 130	13	31
1,2-Dibromoethane	1.0	U	10.0	9.21		ug/L		92	73 - 121	8	12
1,2-Dichlorobenzene	1.0	U	10.0	9.41		ug/L		94	70 - 120	10	19
1,3-Dichlorobenzene	1.0	U	10.0	8.82		ug/L		88	71 - 120	8	18
1,4-Dichlorobenzene	1.0	U	10.0	9.08		ug/L		91	72 - 120	7	17
Dichlorodifluoromethane	1.0	U	10.0	6.78		ug/L		68	45 - 130	17	34
1,1-Dichloroethane	1.0	U	10.0	9.07		ug/L		91	69 - 122	1	11
1,2-Dichloroethane	1.0	U	10.0	8.41		ug/L		84	64 - 138	2	11
1,1-Dichloroethene	1.0	U	10.0	8.74		ug/L		87	62 - 127	14	14
1,2-Dichloropropane	1.0	U	10.0	9.68		ug/L		97	72 - 131	4	12
Ethylbenzene	1.0	U	10.0	8.57		ug/L		86	72 - 121	6	15
2-Hexanone	10	U F2	20.0	15.8	F2	ug/L		79	21 - 184	16	12
Isopropylbenzene	1.0	U	10.0	8.50		ug/L		85	70 - 132	9	16
Methyl acetate	10	U	20.0	18.8		ug/L		94	52 - 139	9	14
Methylcyclohexane	1.0	U	10.0	7.95		ug/L		80	46 - 139	32	35
Methylene Chloride	5.0	U	10.0	9.70		ug/L		97	52 - 137	5	12
4-Methyl-2-pentanone (MIBK)	10	U	20.0	15.8		ug/L		79	53 - 147	11	16
Methyl tert-butyl ether	1.0	U	10.0	8.67		ug/L		87	67 - 125	6	12
Styrene	1.0	U	10.0	8.69		ug/L		87	74 - 125	7	14
1,1,2,2-Tetrachloroethane	1.0	U	10.0	9.10		ug/L		91	51 - 123	5	17
Tetrachloroethene	1.0	U	10.0	9.46		ug/L		95	69 - 126	4	18
Toluene	1.0	U	10.0	9.20		ug/L		92	69 - 125	6	14
trans-1,2-Dichloroethene	1.0	U	10.0	9.23		ug/L		92	66 - 131	3	11
trans-1,3-Dichloropropene	1.0	U	10.0	7.77		ug/L		78	59 - 120	4	14
1,2,4-Trichlorobenzene	1.0	U	10.0	7.77		ug/L		78	26 - 138	7	35
1,1,1-Trichloroethane	1.0	U F2	10.0	9.16	F2	ug/L		92	57 - 156	15	13
1,1,2-Trichloroethane	1.0	U	10.0	9.60		ug/L		96	68 - 127	9	11
Trichloroethene	1.0	U	10.0	9.40		ug/L		94	68 - 129	7	12
Trichlorofluoromethane	1.0	U F2	10.0	7.32	F2	ug/L		73	28 - 172	60	26
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	8.54		ug/L		85	58 - 137	31	35
1,2,4-Trimethylbenzene	1.0	U	10.0	8.27		ug/L		83	64 - 120	7	22
1,3,5-Trimethylbenzene	1.0	U	10.0	8.36		ug/L		84	67 - 120	8	25
Vinyl chloride	1.0	U F2	10.0	8.08	F2	ug/L		81	55 - 123	16	12
Xylenes, Total	2.0	U	20.0	17.7		ug/L		89	71 - 122	7	14
Diethyl ether	2.0	U F2	10.0	8.93	F2	ug/L		89	65 - 124	12	11

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		69 - 120
Dibromofluoromethane (Surr)	108		69 - 124
1,2-Dichloroethane-d4 (Surr)	98		61 - 138
Toluene-d8 (Surr)	101		73 - 120

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QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: 240-99910-H-5 MS

Matrix: Water

Analysis Batch: 342404

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	17.0		ug/L		85	19 - 133
Benzene	1.0	U	10.0	8.73		ug/L		87	69 - 127
Bromodichloromethane	1.0	U	10.0	8.72		ug/L		87	75 - 128
Bromoform	1.0	U	10.0	9.12		ug/L		91	61 - 135
Bromomethane	1.0	U	10.0	7.02		ug/L		70	10 - 148
2-Butanone (MEK)	10	U	20.0	14.3		ug/L		71	34 - 153
Carbon disulfide	5.0	U F2	10.0	5.17		ug/L		52	46 - 143
Carbon tetrachloride	1.0	U	10.0	7.72		ug/L		77	53 - 175
Chlorobenzene	1.0	U	10.0	8.48		ug/L		85	76 - 120
Chloroethane	1.0	U	10.0	7.28		ug/L		73	10 - 141
Chloroform	1.0	U	10.0	8.51		ug/L		85	74 - 125
Chloromethane	1.0	U	10.0	7.08		ug/L		71	34 - 127
cis-1,2-Dichloroethene	0.68	J	10.0	9.14		ug/L		85	69 - 127
cis-1,3-Dichloropropene	1.0	U	10.0	7.58		ug/L		76	68 - 120
Cyclohexane	1.0	U	10.0	6.40		ug/L		64	56 - 135
Dibromochloromethane	1.0	U	10.0	8.86		ug/L		89	62 - 131
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	7.63		ug/L		76	48 - 130
1,2-Dibromoethane	1.0	U	10.0	8.52		ug/L		85	73 - 121
1,2-Dichlorobenzene	1.0	U	10.0	8.50		ug/L		85	70 - 120
1,3-Dichlorobenzene	1.0	U	10.0	8.16		ug/L		82	71 - 120
1,4-Dichlorobenzene	1.0	U	10.0	8.49		ug/L		85	72 - 120
Dichlorodifluoromethane	1.0	U	10.0	5.73		ug/L		57	45 - 130
1,1-Dichloroethane	1.0	U	10.0	9.00		ug/L		90	69 - 122
1,2-Dichloroethane	1.0	U	10.0	8.23		ug/L		82	64 - 138
1,1-Dichloroethene	1.0	U	10.0	7.63		ug/L		76	62 - 127
1,2-Dichloropropane	1.0	U	10.0	9.29		ug/L		93	72 - 131
Ethylbenzene	1.0	U	10.0	8.07		ug/L		81	72 - 121
2-Hexanone	10	U F2	20.0	13.5		ug/L		67	21 - 184
Isopropylbenzene	1.0	U	10.0	7.75		ug/L		77	70 - 132
Methyl acetate	10	U	20.0	17.2		ug/L		86	52 - 139
Methylcyclohexane	1.0	U	10.0	5.73		ug/L		57	46 - 139
Methylene Chloride	5.0	U	10.0	9.20		ug/L		92	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U	20.0	14.1		ug/L		71	53 - 147
Methyl tert-butyl ether	1.0	U	10.0	8.16		ug/L		82	67 - 125
Styrene	1.0	U	10.0	8.12		ug/L		81	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U	10.0	8.62		ug/L		86	51 - 123
Tetrachloroethene	1.0	U	10.0	9.05		ug/L		91	69 - 126
Toluene	1.0	U	10.0	8.68		ug/L		87	69 - 125
trans-1,2-Dichloroethene	1.0	U	10.0	8.98		ug/L		90	66 - 131
trans-1,3-Dichloropropene	1.0	U	10.0	7.45		ug/L		75	59 - 120
1,2,4-Trichlorobenzene	1.0	U	10.0	7.22		ug/L		72	26 - 138
1,1,1-Trichloroethane	1.0	U F2	10.0	7.89		ug/L		79	57 - 156
1,1,2-Trichloroethane	1.0	U	10.0	8.79		ug/L		88	68 - 127
Trichloroethene	1.0	U	10.0	8.73		ug/L		87	68 - 129
Trichlorofluoromethane	1.0	U F2	10.0	3.93		ug/L		39	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	6.26		ug/L		63	58 - 137
1,2,4-Trimethylbenzene	1.0	U	10.0	7.72		ug/L		77	64 - 120

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QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: 240-99910-H-5 MS

Matrix: Water

Analysis Batch: 342404

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
1,3,5-Trimethylbenzene	1.0	U	10.0	7.71		ug/L		77	67 - 120
Vinyl chloride	1.0	U F2	10.0	6.90		ug/L		69	55 - 123
Xylenes, Total	2.0	U	20.0	16.5		ug/L		82	71 - 122
Diethyl ether	2.0	U F2	10.0	7.88		ug/L		79	65 - 124

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		69 - 120
Dibromofluoromethane (Surr)	106		69 - 124
1,2-Dichloroethane-d4 (Surr)	101		61 - 138
Toluene-d8 (Surr)	101		73 - 120

Lab Sample ID: MB 240-342461/6

Matrix: Water

Analysis Batch: 342461

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 22:45	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 22:45	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 22:45	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 22:45	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 22:45	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 22:45	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 22:45	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 22:45	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 22:45	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 22:45	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 22:45	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 22:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/24/18 22:45	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 22:45	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 22:45	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 22:45	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 22:45	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 22:45	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 22:45	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 22:45	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 22:45	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 22:45	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 22:45	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 22:45	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 22:45	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 22:45	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 22:45	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 22:45	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 22:45	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 22:45	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 22:45	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 22:45	1

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QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: MB 240-342461/6
Matrix: Water
Analysis Batch: 342461

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 22:45	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 22:45	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 22:45	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 22:45	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 22:45	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 22:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 22:45	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 22:45	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 22:45	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 22:45	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 22:45	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/24/18 22:45	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 22:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 22:45	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 22:45	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 22:45	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 22:45	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/24/18 22:45	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 22:45	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 22:45	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 22:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		69 - 120		08/24/18 22:45	1
Dibromofluoromethane (Surr)	104		69 - 124		08/24/18 22:45	1
1,2-Dichloroethane-d4 (Surr)	96		61 - 138		08/24/18 22:45	1
Toluene-d8 (Surr)	95		73 - 120		08/24/18 22:45	1

Lab Sample ID: LCS 240-342461/4
Matrix: Water
Analysis Batch: 342461

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	16.5		ug/L		83	35 - 131
Benzene	10.0	9.56		ug/L		96	79 - 120
Bromodichloromethane	10.0	9.64		ug/L		96	79 - 125
Bromoform	10.0	10.5		ug/L		105	55 - 145
Bromomethane	10.0	8.16		ug/L		82	17 - 158
2-Butanone (MEK)	20.0	16.3		ug/L		81	43 - 149
Carbon disulfide	10.0	8.38		ug/L		84	49 - 141
Carbon tetrachloride	10.0	8.50		ug/L		85	55 - 171
Chlorobenzene	10.0	9.37		ug/L		94	80 - 120
Chloroethane	10.0	8.23		ug/L		82	10 - 149
Chloroform	10.0	9.22		ug/L		92	80 - 120
Chloromethane	10.0	8.77		ug/L		88	59 - 124
cis-1,2-Dichloroethene	10.0	8.74		ug/L		87	77 - 120
cis-1,3-Dichloropropene	10.0	9.64		ug/L		96	75 - 120
Cyclohexane	10.0	8.03		ug/L		80	66 - 135

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QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: LCS 240-342461/4
Matrix: Water
Analysis Batch: 342461

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	9.89		ug/L		99	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	8.67		ug/L		87	50 - 130
1,2-Dibromoethane	10.0	9.58		ug/L		96	80 - 120
1,2-Dichlorobenzene	10.0	9.25		ug/L		92	80 - 120
1,3-Dichlorobenzene	10.0	8.98		ug/L		90	80 - 120
1,4-Dichlorobenzene	10.0	9.02		ug/L		90	80 - 120
Dichlorodifluoromethane	10.0	6.96		ug/L		70	42 - 141
1,1-Dichloroethane	10.0	9.24		ug/L		92	74 - 120
1,2-Dichloroethane	10.0	8.76		ug/L		88	68 - 133
1,1-Dichloroethene	10.0	7.94		ug/L		79	65 - 127
1,2-Dichloropropane	10.0	10.5		ug/L		105	78 - 127
Ethylbenzene	10.0	8.62		ug/L		86	80 - 120
2-Hexanone	20.0	16.7		ug/L		83	28 - 169
Isopropylbenzene	10.0	8.07		ug/L		81	80 - 128
Methyl acetate	20.0	18.4		ug/L		92	63 - 137
Methylcyclohexane	10.0	7.61		ug/L		76	63 - 141
Methylene Chloride	10.0	9.29		ug/L		93	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	16.9		ug/L		84	53 - 144
Methyl tert-butyl ether	10.0	9.04		ug/L		90	73 - 120
Styrene	10.0	8.93		ug/L		89	80 - 121
1,1,2,2-Tetrachloroethane	10.0	9.75		ug/L		97	58 - 122
Tetrachloroethene	10.0	9.37		ug/L		94	80 - 122
Toluene	10.0	9.31		ug/L		93	78 - 120
trans-1,2-Dichloroethene	10.0	8.91		ug/L		89	74 - 124
trans-1,3-Dichloropropene	10.0	8.84		ug/L		88	67 - 120
1,2,4-Trichlorobenzene	10.0	7.77		ug/L		78	34 - 141
1,1,1-Trichloroethane	10.0	8.96		ug/L		90	64 - 147
1,1,2-Trichloroethane	10.0	9.92		ug/L		99	76 - 121
Trichloroethene	10.0	9.16		ug/L		92	76 - 124
Trichlorofluoromethane	10.0	7.18		ug/L		72	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	8.60		ug/L		86	65 - 144
1,2,4-Trimethylbenzene	10.0	7.93	*	ug/L		79	80 - 120
1,3,5-Trimethylbenzene	10.0	8.07		ug/L		81	79 - 120
Vinyl chloride	10.0	7.87		ug/L		79	65 - 124
Xylenes, Total	20.0	17.4		ug/L		87	80 - 120
1,4-Dioxane	200	189		ug/L		95	35 - 134
Diethyl ether	10.0	8.92		ug/L		89	72 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		69 - 120
Dibromofluoromethane (Surr)	100		69 - 124
1,2-Dichloroethane-d4 (Surr)	90		61 - 138
Toluene-d8 (Surr)	98		73 - 120

QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: 240-99975-8 MS

Matrix: Water

Analysis Batch: 342461

Client Sample ID: MW-36_081418

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	%Rec.
	Result	Qualifier		Added	Result				
Acetone	10	U	20.0	16.2		ug/L		81	19 - 133
Benzene	1.0	U	10.0	9.00		ug/L		90	69 - 127
Bromodichloromethane	1.0	U	10.0	8.99		ug/L		90	75 - 128
Bromoform	1.0	U	10.0	9.29		ug/L		93	61 - 135
Bromomethane	1.0	U	10.0	7.62		ug/L		76	10 - 148
2-Butanone (MEK)	10	U	20.0	14.6		ug/L		73	34 - 153
Carbon disulfide	5.0	U	10.0	7.77		ug/L		78	46 - 143
Carbon tetrachloride	1.0	U	10.0	6.85		ug/L		68	53 - 175
Chlorobenzene	1.0	U	10.0	8.76		ug/L		88	76 - 120
Chloroethane	1.0	U	10.0	7.71		ug/L		77	10 - 141
Chloroform	1.0	U	10.0	9.18		ug/L		92	74 - 125
Chloromethane	1.0	U	10.0	8.76		ug/L		88	34 - 127
cis-1,2-Dichloroethene	1.0	U	10.0	8.43		ug/L		84	69 - 127
cis-1,3-Dichloropropene	1.0	U	10.0	8.02		ug/L		80	68 - 120
Cyclohexane	1.0	U F1	10.0	5.38	F1	ug/L		54	56 - 135
Dibromochloromethane	1.0	U	10.0	9.31		ug/L		93	62 - 131
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.19		ug/L		82	48 - 130
1,2-Dibromoethane	1.0	U	10.0	8.77		ug/L		88	73 - 121
1,2-Dichlorobenzene	1.0	U	10.0	8.55		ug/L		85	70 - 120
1,3-Dichlorobenzene	1.0	U	10.0	8.57		ug/L		86	71 - 120
1,4-Dichlorobenzene	1.0	U	10.0	8.50		ug/L		85	72 - 120
Dichlorodifluoromethane	1.0	U	10.0	6.94		ug/L		69	45 - 130
1,1-Dichloroethane	1.0	U	10.0	8.83		ug/L		88	69 - 122
1,2-Dichloroethane	1.0	U	10.0	8.12		ug/L		81	64 - 138
1,1-Dichloroethene	1.0	U	10.0	7.10		ug/L		71	62 - 127
1,2-Dichloropropane	1.0	U	10.0	9.27		ug/L		93	72 - 131
Ethylbenzene	1.0	U	10.0	7.67		ug/L		77	72 - 121
2-Hexanone	10	U	20.0	14.6		ug/L		73	21 - 184
Isopropylbenzene	1.0	U	10.0	7.13		ug/L		71	70 - 132
Methyl acetate	10	U	20.0	16.4		ug/L		82	52 - 139
Methylcyclohexane	1.0	U	10.0	5.16		ug/L		52	46 - 139
Methylene Chloride	5.0	U	10.0	9.66		ug/L		97	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U	20.0	14.9		ug/L		75	53 - 147
Methyl tert-butyl ether	1.0	U	10.0	8.05		ug/L		81	67 - 125
Styrene	1.0	U	10.0	8.20		ug/L		82	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U	10.0	8.67		ug/L		87	51 - 123
Tetrachloroethene	1.0	U	10.0	8.51		ug/L		85	69 - 126
Toluene	1.0	U	10.0	8.52		ug/L		85	69 - 125
trans-1,2-Dichloroethene	1.0	U	10.0	8.77		ug/L		88	66 - 131
trans-1,3-Dichloropropene	1.0	U	10.0	7.59		ug/L		76	59 - 120
1,2,4-Trichlorobenzene	1.0	U	10.0	7.00		ug/L		70	26 - 138
1,1,1-Trichloroethane	1.0	U	10.0	7.86		ug/L		79	57 - 156
1,1,2-Trichloroethane	1.0	U	10.0	9.07		ug/L		91	68 - 127
Trichloroethene	1.0	U	10.0	8.68		ug/L		87	68 - 129
Trichlorofluoromethane	1.0	U	10.0	6.94		ug/L		69	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	5.75		ug/L		58	58 - 137
1,2,4-Trimethylbenzene	1.0	U *	10.0	7.41		ug/L		74	64 - 120

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QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: 240-99975-8 MS

Matrix: Water

Analysis Batch: 342461

Client Sample ID: MW-36_081418

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	1.0	U	10.0	7.37		ug/L		74	67 - 120
Vinyl chloride	1.0	U	10.0	7.34		ug/L		73	55 - 123
Xylenes, Total	2.0	U	20.0	16.2		ug/L		81	71 - 122
1,4-Dioxane	50	U	200	156		ug/L		78	13 - 155
Diethyl ether	2.0	U	10.0	8.34		ug/L		83	65 - 124

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		69 - 120
Dibromofluoromethane (Surr)	105		69 - 124
1,2-Dichloroethane-d4 (Surr)	95		61 - 138
Toluene-d8 (Surr)	99		73 - 120

Lab Sample ID: 240-99975-8 MSD

Matrix: Water

Analysis Batch: 342461

Client Sample ID: MW-36_081418

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	16.9		ug/L		84	19 - 133	4	35
Benzene	1.0	U	10.0	8.77		ug/L		88	69 - 127	3	10
Bromodichloromethane	1.0	U	10.0	8.73		ug/L		87	75 - 128	3	13
Bromoform	1.0	U	10.0	9.25		ug/L		92	61 - 135	0	13
Bromomethane	1.0	U	10.0	7.42		ug/L		74	10 - 148	3	35
2-Butanone (MEK)	10	U	20.0	15.3		ug/L		76	34 - 153	5	23
Carbon disulfide	5.0	U	10.0	7.90		ug/L		79	46 - 143	2	18
Carbon tetrachloride	1.0	U	10.0	7.95		ug/L		80	53 - 175	15	17
Chlorobenzene	1.0	U	10.0	8.55		ug/L		85	76 - 120	2	12
Chloroethane	1.0	U	10.0	7.24		ug/L		72	10 - 141	6	35
Chloroform	1.0	U	10.0	8.70		ug/L		87	74 - 125	5	11
Chloromethane	1.0	U	10.0	8.81		ug/L		88	34 - 127	1	25
cis-1,2-Dichloroethene	1.0	U	10.0	8.34		ug/L		83	69 - 127	1	11
cis-1,3-Dichloropropene	1.0	U	10.0	8.04		ug/L		80	68 - 120	0	13
Cyclohexane	1.0	U F1	10.0	7.28		ug/L		73	56 - 135	30	35
Dibromochloromethane	1.0	U	10.0	8.98		ug/L		90	62 - 131	4	15
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.47		ug/L		85	48 - 130	3	31
1,2-Dibromoethane	1.0	U	10.0	8.75		ug/L		88	73 - 121	0	12
1,2-Dichlorobenzene	1.0	U	10.0	8.32		ug/L		83	70 - 120	3	19
1,3-Dichlorobenzene	1.0	U	10.0	8.20		ug/L		82	71 - 120	4	18
1,4-Dichlorobenzene	1.0	U	10.0	8.37		ug/L		84	72 - 120	2	17
Dichlorodifluoromethane	1.0	U	10.0	7.44		ug/L		74	45 - 130	7	34
1,1-Dichloroethane	1.0	U	10.0	8.82		ug/L		88	69 - 122	0	11
1,2-Dichloroethane	1.0	U	10.0	8.04		ug/L		80	64 - 138	1	11
1,1-Dichloroethene	1.0	U	10.0	7.34		ug/L		73	62 - 127	3	14
1,2-Dichloropropane	1.0	U	10.0	9.40		ug/L		94	72 - 131	1	12
Ethylbenzene	1.0	U	10.0	7.87		ug/L		79	72 - 121	3	15
2-Hexanone	10	U	20.0	15.9		ug/L		80	21 - 184	9	12
Isopropylbenzene	1.0	U	10.0	7.50		ug/L		75	70 - 132	5	16
Methyl acetate	10	U	20.0	16.2		ug/L		81	52 - 139	1	14
Methylcyclohexane	1.0	U	10.0	6.86		ug/L		69	46 - 139	28	35

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: 240-99975-8 MSD
Matrix: Water
Analysis Batch: 342461

Client Sample ID: MW-36_081418
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Chloride	5.0	U	10.0	9.47		ug/L		95	52 - 137	2	12
4-Methyl-2-pentanone (MIBK)	10	U	20.0	15.4		ug/L		77	53 - 147	3	16
Methyl tert-butyl ether	1.0	U	10.0	8.04		ug/L		80	67 - 125	0	12
Styrene	1.0	U	10.0	7.90		ug/L		79	74 - 125	4	14
1,1,2,2-Tetrachloroethane	1.0	U	10.0	8.90		ug/L		89	51 - 123	3	17
Tetrachloroethene	1.0	U	10.0	8.81		ug/L		88	69 - 126	3	18
Toluene	1.0	U	10.0	8.42		ug/L		84	69 - 125	1	14
trans-1,2-Dichloroethene	1.0	U	10.0	8.67		ug/L		87	66 - 131	1	11
trans-1,3-Dichloropropene	1.0	U	10.0	7.54		ug/L		75	59 - 120	1	14
1,2,4-Trichlorobenzene	1.0	U	10.0	7.26		ug/L		73	26 - 138	4	35
1,1,1-Trichloroethane	1.0	U	10.0	8.31		ug/L		83	57 - 156	6	13
1,1,2-Trichloroethane	1.0	U	10.0	9.21		ug/L		92	68 - 127	2	11
Trichloroethene	1.0	U	10.0	8.53		ug/L		85	68 - 129	2	12
Trichlorofluoromethane	1.0	U	10.0	6.78		ug/L		68	28 - 172	2	26
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	7.83		ug/L		78	58 - 137	31	35
1,2,4-Trimethylbenzene	1.0	U *	10.0	7.35		ug/L		74	64 - 120	1	22
1,3,5-Trimethylbenzene	1.0	U	10.0	7.38		ug/L		74	67 - 120	0	25
Vinyl chloride	1.0	U	10.0	7.42		ug/L		74	55 - 123	1	12
Xylenes, Total	2.0	U	20.0	15.9		ug/L		80	71 - 122	2	14
1,4-Dioxane	50	U	200	182		ug/L		91	13 - 155	16	35
Diethyl ether	2.0	U	10.0	8.79		ug/L		88	65 - 124	5	11

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		69 - 120
Dibromofluoromethane (Surr)	104		69 - 124
1,2-Dichloroethane-d4 (Surr)	92		61 - 138
Toluene-d8 (Surr)	101		73 - 120

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

Lab Sample ID: MB 240-341828/5
Matrix: Water
Analysis Batch: 341828

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/21/18 11:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 125		08/21/18 11:56	1

Lab Sample ID: LCS 240-341828/4
Matrix: Water
Analysis Batch: 341828

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	9.24		ug/L		92	59 - 131

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: LCS 240-341828/4
Matrix: Water
Analysis Batch: 341828

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

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

Lab Sample ID: 240-99859-A-7 MS
Matrix: Water
Analysis Batch: 341828

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	1.9	J	10.0	11.8		ug/L		99	52 - 129
Surrogate	MS	MS							
1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits						
	105		63 - 125						

Lab Sample ID: 240-99859-A-7 MSD
Matrix: Water
Analysis Batch: 341828

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	1.9	J	10.0	12.9		ug/L		110	52 - 129	9	13
Surrogate	MSD	MSD									
1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits								
	102		63 - 125								

Lab Sample ID: MB 240-342018/5
Matrix: Water
Analysis Batch: 342018

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	0.86	ug/L			08/22/18 12:28	1
Surrogate	MB	MB							
1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
	97		63 - 125					08/22/18 12:28	1

Lab Sample ID: LCS 240-342018/4
Matrix: Water
Analysis Batch: 342018

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	9.97		ug/L		100	59 - 131
Surrogate	LCS	LCS							
1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits						
	97		63 - 125						

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-99975-1

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

Lab Sample ID: 240-99975-8 MS
Matrix: Water
Analysis Batch: 342018

Client Sample ID: MW-36_081418
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	9.36		ug/L		94	52 - 129
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	103		63 - 125						

Lab Sample ID: 240-99975-8 MSD
Matrix: Water
Analysis Batch: 342018

Client Sample ID: MW-36_081418
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	8.77		ug/L		88	52 - 129	7	13
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	98		63 - 125								

QC Association Summary

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

TestAmerica Job ID: 240-99975-1

GC/MS VOA

Analysis Batch: 341828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99975-1	MW-54_081318	Total/NA	Water	8260B SIM	
240-99975-2	MW-58_081318	Total/NA	Water	8260B SIM	
240-99975-3	MW-44_081318	Total/NA	Water	8260B SIM	
240-99975-4	MW-69_081318	Total/NA	Water	8260B SIM	
240-99975-5	MW-55_081318	Total/NA	Water	8260B SIM	
MB 240-341828/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-341828/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-99859-A-7 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-99859-A-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 342018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99975-6	MW-25_081318	Total/NA	Water	8260B SIM	
240-99975-7	DUP-04_081318	Total/NA	Water	8260B SIM	
240-99975-8	MW-36_081418	Total/NA	Water	8260B SIM	
240-99975-9	MW-24_081418	Total/NA	Water	8260B SIM	
240-99975-10	MW-1_081418	Total/NA	Water	8260B SIM	
240-99975-11	MW-7_081418	Total/NA	Water	8260B SIM	
MB 240-342018/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-342018/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-99975-8 MS	MW-36_081418	Total/NA	Water	8260B SIM	
240-99975-8 MSD	MW-36_081418	Total/NA	Water	8260B SIM	

Analysis Batch: 342404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99975-1	MW-54_081318	Total/NA	Water	8260B	
240-99975-2	MW-58_081318	Total/NA	Water	8260B	
240-99975-3	MW-44_081318	Total/NA	Water	8260B	
240-99975-4	MW-69_081318	Total/NA	Water	8260B	
240-99975-5	MW-55_081318	Total/NA	Water	8260B	
240-99975-6	MW-25_081318	Total/NA	Water	8260B	
240-99975-7	DUP-04_081318	Total/NA	Water	8260B	
240-99975-11	MW-7_081418	Total/NA	Water	8260B	
MB 240-342404/6	Method Blank	Total/NA	Water	8260B	
LCS 240-342404/4	Lab Control Sample	Total/NA	Water	8260B	
240-99910-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
240-99910-H-5 MS	Matrix Spike	Total/NA	Water	8260B	

Analysis Batch: 342461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99975-8	MW-36_081418	Total/NA	Water	8260B	
240-99975-9	MW-24_081418	Total/NA	Water	8260B	
240-99975-10	MW-1_081418	Total/NA	Water	8260B	
240-99975-12	TRIPBLANK-01_081418	Total/NA	Water	8260B	
240-99975-13	TRIPBLANK-02_081418	Total/NA	Water	8260B	
MB 240-342461/6	Method Blank	Total/NA	Water	8260B	
LCS 240-342461/4	Lab Control Sample	Total/NA	Water	8260B	
240-99975-8 MS	MW-36_081418	Total/NA	Water	8260B	
240-99975-8 MSD	MW-36_081418	Total/NA	Water	8260B	

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-54_081318

Date Collected: 08/13/18 09:30

Date Received: 08/16/18 09:00

Lab Sample ID: 240-99975-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342404	08/24/18 15:43	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341828	08/21/18 19:47	SAM	TAL CAN

Client Sample ID: MW-58_081318

Date Collected: 08/13/18 11:25

Date Received: 08/16/18 09:00

Lab Sample ID: 240-99975-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342404	08/24/18 16:05	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341828	08/21/18 20:11	SAM	TAL CAN

Client Sample ID: MW-44_081318

Date Collected: 08/13/18 13:15

Date Received: 08/16/18 09:00

Lab Sample ID: 240-99975-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	342404	08/24/18 16:28	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341828	08/21/18 20:36	SAM	TAL CAN

Client Sample ID: MW-69_081318

Date Collected: 08/13/18 14:25

Date Received: 08/16/18 09:00

Lab Sample ID: 240-99975-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342404	08/24/18 16:50	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341828	08/21/18 21:00	SAM	TAL CAN

Client Sample ID: MW-55_081318

Date Collected: 08/13/18 15:55

Date Received: 08/16/18 09:00

Lab Sample ID: 240-99975-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342404	08/24/18 17:12	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	341828	08/21/18 21:25	SAM	TAL CAN

Client Sample ID: MW-25_081318

Date Collected: 08/13/18 17:15

Date Received: 08/16/18 09:00

Lab Sample ID: 240-99975-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342404	08/24/18 17:35	LEE	TAL CAN

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: MW-25_081318

Lab Sample ID: 240-99975-6

Date Collected: 08/13/18 17:15

Matrix: Water

Date Received: 08/16/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 13:42	SAM	TAL CAN

Client Sample ID: DUP-04_081318

Lab Sample ID: 240-99975-7

Date Collected: 08/13/18 00:00

Matrix: Water

Date Received: 08/16/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342404	08/24/18 17:57	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 14:07	SAM	TAL CAN

Client Sample ID: MW-36_081418

Lab Sample ID: 240-99975-8

Date Collected: 08/14/18 10:20

Matrix: Water

Date Received: 08/16/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342461	08/25/18 02:05	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 14:31	SAM	TAL CAN

Client Sample ID: MW-24_081418

Lab Sample ID: 240-99975-9

Date Collected: 08/14/18 09:05

Matrix: Water

Date Received: 08/16/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342461	08/25/18 03:11	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 15:46	SAM	TAL CAN

Client Sample ID: MW-1_081418

Lab Sample ID: 240-99975-10

Date Collected: 08/14/18 12:10

Matrix: Water

Date Received: 08/16/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342461	08/25/18 03:33	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 16:11	SAM	TAL CAN

Client Sample ID: MW-7_081418

Lab Sample ID: 240-99975-11

Date Collected: 08/14/18 14:25

Matrix: Water

Date Received: 08/16/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342404	08/24/18 18:19	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 16:36	SAM	TAL CAN

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-99975-1

Client Sample ID: TRIPBLANK-01_081418

Lab Sample ID: 240-99975-12

Date Collected: 08/14/18 00:00

Matrix: Water

Date Received: 08/16/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342461	08/25/18 03:55	LEE	TAL CAN

Client Sample ID: TRIPBLANK-02_081418

Lab Sample ID: 240-99975-13

Date Collected: 08/14/18 00:00

Matrix: Water

Date Received: 08/16/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342461	08/25/18 04:17	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: 240-99975-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-18 *
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18
Minnesota	NELAP	5	039-999-348	12-31-18
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-17-9	08-31-18 *
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18 *
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18

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



Chain of Custody Record

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

2.6 / C-2.6
3.6 / C-3.6

Client Contact Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford LTP Project Number: M1001454.0004.00001 PO # M1001454.0004.00001		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Client Project Manager: Kris Hinskey Telephone: 248-994-2240 Email: kristoffer.hinskey@arcadis.com		Site Contact: Angela DeGrandis Telephone: 330-497-9396	
Method of Shipment/Carrier: Shipping/Tracking No:		Analysis Turnaround Time TAT if different from below: <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	
Sample Identification		Container & Preservative	
Sample Date	Sample Time	Matrix	Other:
MW-54-081318	9:30	Air	HCl
MW-58-081318	11:25	Aqueous	HNO3
MW-44-081318	13:15	Sediment	H2SO4
MW-69-081318	14:25	Solid	Other:
MW-55-081318	15:55	Air	Umpres
MW-25-081318	17:15	Aqueous	NaOH
DUP-04-081318	—	Sediment	NaOH
MW-36-081418	10:20	Air	HCl
MW-24-081418	9:05	Aqueous	HNO3
MW-1-081418	12:10	Sediment	H2SO4

Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Irritant <input type="checkbox"/> Unknown	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
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Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jim.tomalia@cadena.com, Cadena #E203728 Level IV Reporting.	Received by: Novis Cold Storage Date/Time: 8-14-18 Company: Arcadis
Relinquished by: Emma TerBeek / Emma TerBeek Date/Time: 8-15-2018/13:15 Company: Arcadis	Received by: [Signature] Date/Time: 8/15/18 14:31 Company: Arcadis
Relinquished by: [Signature] Date/Time: 8/14/18 9:00 Company: [Signature]	Received by: [Signature] Date/Time: 8/14/18 13:15 Company: [Signature]



MICHIGAN 190

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

Client Contact Company Name: Arcadis Address: 26550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford LTP Project Number: MI001454.0004.00001 PO # MI001454.0004.00001		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other		Client Project Manager: Kris Hinsky Telephone: 248-994-2240 Email: kristoffer.hinsky@arcadis.com		Site Contact: Angela DeGrandis Telephone: 734-320-0065		Lab Contact: Mike DeMonico Telephone: 330-497-9396		TestAmerica Laboratories, Inc. COC No: _____ _____ of _____ COCs	
Method of Shipment/Carrier: Shipping/Tracking No: _____		Analysis turnaround time TAT if different from below: <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Containers & Preservatives H2SO4 _____ HNO3 _____ HCl _____ NaOH _____ ZnAc _____ LiPres _____ Others: _____		Filtered Sample (Y/N) Composite/Grab _____ VOCs 8260B _____ 1,4-Dioxane 8260B SIM _____		Walk-in client Lab sampling _____ Job/SDG No: _____		Sample Specific Notes / Special Instructions: _____	
Sample Identification Sample Date Sample Time MW-7-081418 8-14-18 1425 TRIPBLANK-01-081418 8-14-18 — TRIPBLANK-02-081418 8-14-18 —		Matrix Air _____ Aqueous _____ Sediment _____ Solid _____ Other: _____		Return to Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Received by: _____ Date/Time: 8-14-18 Company: Arcadis		Received by: _____ Date/Time: 8/15/18 13:15 Company: TKC		Received by: _____ Date/Time: 8/15/18 9:00 Company: TKC	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritable <input type="checkbox"/> Corrosive <input type="checkbox"/> Toxic <input type="checkbox"/> Flammable <input type="checkbox"/> Volatile <input type="checkbox"/> In Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown											
Special Instructions/OC Requirements & Comments: Submit all results through Cadena at jim.tomalia@cadenas.com. Cadena #E203728 Level IV Reporting.											
Relinquished by: Emma Ter Beer <i>[Signature]</i> Date/Time: 8-14-18 Company: Arcadis											
Relinquished by: Novi Cold Storage Date/Time: 08-15-2018 13:15 Company: Arcadis											
Relinquished by: <i>[Signature]</i> Date/Time: 8/15/18 14:31 Company: TKC											

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Canton Facility Cooler unpacked by: GB
 Client Knead's Site Name _____
 Cooler Received on 8/16/18 Opened on 8/16/18

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____
 Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # 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

- See Multiple Cooler Form
1. Cooler temperature upon receipt
 IR GUN# IR-8 (CF +0 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN #36 (CF -0.3°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
 - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 - Were tamper/custody seals intact and uncompromised? Yes No NA
 3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels be reconciled with the COC? Yes No
 9. Were correct bottle(s) used for the test(s) indicated? Yes No
 10. Sufficient quantity received to perform indicated analyses? Yes No
 11. Are these work share samples? Yes No
 12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC849161
 13. Were VOAs on the COC? Yes No NA
 14. Were air bubbles >6 mm in any VOA vials? Yes No NA ● ← Larger than this.
 15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Knead Yes No NA
 16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:

 VOAs
 Oil and Grease
 TOC

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

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: GB

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

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

