TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Canton
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Tel: (330)497-9396

TestAmerica Job ID: 240-99976-1
Client Project/Site: Ford LTP Livonia MI - E203728

For:
ARCADIS U.S., Inc.
28550 Cabot Drive
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Novi, Michigan 48377

Attn: Kristoffer Hinskey

Authorized for release by:
8/30/2018 9:24:23 AM

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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.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 240-99976-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

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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 2.6º C and 3.6º C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-53_081318 (240-99976-1), MW-28_081318 (240-99976-2), MW-67_081318 (240-99976-3), MW-56_081318 (240-99976-4), MW-64_081318 (240-99976-5), MW-21_081418 (240-99976-6), MW-49_081418 (240-99976-7), MW-14_081418 (240-99976-8) and MW-09_081418 (240-99976-9) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/24/2018 and 08/27/2018.

cis-1,2-Dichloroethene was detected in method blank MB 240-342604/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. 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. Refer to the QC report for details.

Samples MW-67_081318 (240-99976-3)[2.5X], MW-21_081418 (240-99976-6)[1000X] and MW-49_081418 (240-99976-7)[500X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The pH of the sample(s) was greater than 2. The sample was analyzed within the normal 14 day holding time; however, experimental

Job ID: 240-99976-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

evidence suggests that some aromatic compounds in wastewater samples, notably, Benzene, Toluene, and Ethylbenzene are susceptible to biological degradation if sample is not preserved to a pH of 2: MW-53_081318 (240-99976-1).

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-53_081318 (240-99976-1), MW-28_081318 (240-99976-2), MW-67_081318 (240-99976-3), MW-56_081318 (240-99976-4), MW-64_081318 (240-99976-5), MW-21_081418 (240-99976-6), MW-49_081418 (240-99976-7), MW-14_081418 (240-99976-8) and MW-09_081418 (240-99976-9) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 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: 240-99976-1

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: 240-99976-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-99976-1	MW-53_081318	Water	08/13/18 09:25	08/16/18 09:00
240-99976-2	MW-28_081318	Water	08/13/18 11:45	08/16/18 09:00
240-99976-3	MW-67_081318	Water	08/13/18 14:20	08/16/18 09:00
240-99976-4	MW-56_081318	Water	08/13/18 16:25	08/16/18 09:00
240-99976-5	MW-64_081318	Water	08/13/18 17:40	08/16/18 09:00
240-99976-6	MW-21_081418	Water	08/14/18 09:20	08/16/18 09:00
240-99976-7	MW-49_081418	Water	08/14/18 10:40	08/16/18 09:00
240-99976-8	MW-14_081418	Water	08/14/18 12:25	08/16/18 09:00
240-99976-9	MW-09_081418	Water	08/14/18 14:25	08/16/18 09:00

Detection Summary

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-53_081318 — Lab Sample ID: 240-99976-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.6	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.45	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-28_081318 — Lab Sample ID: 240-99976-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.86	J	1.0	0.16	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	15		1.0	0.17	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	0.33	J	1.0	0.19	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.22	J	1.0	0.15	ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	37		1.0	0.24	ug/L	1		8260B	Total/NA
Trichloroethene	0.66	J	1.0	0.10	ug/L	1		8260B	Total/NA

Client Sample ID: MW-67_081318 — Lab Sample ID: 240-99976-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	4.5		2.5	0.40	ug/L	2.5		8260B	Total/NA
trans-1,2-Dichloroethene	0.78	J	2.5	0.48	ug/L	2.5		8260B	Total/NA
1,1,1-Trichloroethane	0.80	J	2.5	0.60	ug/L	2.5		8260B	Total/NA
Trichloroethene	60		2.5	0.25	ug/L	2.5		8260B	Total/NA

Client Sample ID: MW-56_081318 — Lab Sample ID: 240-99976-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.3		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.24	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-64_081318 — Lab Sample ID: 240-99976-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.29	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	5.9		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-21_081418 — Lab Sample ID: 240-99976-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	6.5		2.0	0.86	ug/L	1		8260B SIM	Total/NA
2-Butanone (MEK)	1500	J	10000	1200	ug/L	1000		8260B	Total/NA
cis-1,2-Dichloroethene	26000	B	1000	160	ug/L	1000		8260B	Total/NA
2-Hexanone	910	J	10000	540	ug/L	1000		8260B	Total/NA
4-Methyl-2-pentanone (MIBK)	830	J	10000	420	ug/L	1000		8260B	Total/NA
trans-1,2-Dichloroethene	190	J	1000	190	ug/L	1000		8260B	Total/NA
Vinyl chloride	3400		1000	200	ug/L	1000		8260B	Total/NA
1,4-Dioxane	25000	J	50000	13000	ug/L	1000		8260B	Total/NA

Client Sample ID: MW-49_081418 — Lab Sample ID: 240-99976-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.0		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	15000	B	500	80	ug/L	500		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-49_081418 (Continued) — Lab Sample ID: 240-99976-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	110	J	500	95	ug/L	500		8260B	Total/NA
Vinyl chloride	4900		500	100	ug/L	500		8260B	Total/NA

Client Sample ID: MW-14_081418 — Lab Sample ID: 240-99976-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.31	J B	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-09_081418 — Lab Sample ID: 240-99976-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.3		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.29	J B	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	1.7		1.0	0.20	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-53_081318
Date Collected: 08/13/18 09:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.6	J	2.0	0.86	ug/L			08/22/18 17:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*63 - 125*		*08/22/18 17:01*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 18:41	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 18:41	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 18:41	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 18:41	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 18:41	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 18:41	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 18:41	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 18:41	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 18:41	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 18:41	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 18:41	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 18:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/24/18 18:41	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 18:41	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 18:41	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 18:41	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 18:41	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 18:41	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 18:41	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 18:41	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 18:41	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 18:41	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 18:41	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 18:41	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 18:41	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 18:41	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 18:41	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 18:41	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 18:41	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 18:41	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 18:41	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 18:41	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 18:41	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 18:41	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 18:41	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 18:41	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 18:41	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 18:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 18:41	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 18:41	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 18:41	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 18:41	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 18:41	1

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-53_081318
Date Collected: 08/13/18 09:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-1
Matrix: Water

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 18:41	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 18:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 18:41	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 18:41	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 18:41	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 18:41	1
Vinyl chloride	**0.45**	**J**	1.0	0.20	ug/L			08/24/18 18:41	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 18:41	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 18:41	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 18:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*69 - 120*		*08/24/18 18:41*	*1*
Dibromofluoromethane (Surr)	*112*		*69 - 124*		*08/24/18 18:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*61 - 138*		*08/24/18 18:41*	*1*
Toluene-d8 (Surr)	*97*		*73 - 120*		*08/24/18 18:41*	*1*

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-28_081318
Date Collected: 08/13/18 11:45
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/22/18 17:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 125*		*08/22/18 17:25*	*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 19:04	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 19:04	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 19:04	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 19:04	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 19:04	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 19:04	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 19:04	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 19:04	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 19:04	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 19:04	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 19:04	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 19:04	1
cis-1,2-Dichloroethene	**0.86**	**J**	1.0	0.16	ug/L			08/24/18 19:04	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 19:04	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 19:04	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 19:04	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 19:04	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 19:04	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 19:04	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 19:04	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 19:04	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 19:04	1
1,1-Dichloroethane	**15**		1.0	0.17	ug/L			08/24/18 19:04	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 19:04	1
1,1-Dichloroethene	**0.33**	**J**	1.0	0.19	ug/L			08/24/18 19:04	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 19:04	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 19:04	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 19:04	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 19:04	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 19:04	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 19:04	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 19:04	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 19:04	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 19:04	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 19:04	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 19:04	1
Tetrachloroethene	**0.22**	**J**	1.0	0.15	ug/L			08/24/18 19:04	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 19:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 19:04	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 19:04	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 19:04	1
1,1,1-Trichloroethane	**37**		1.0	0.24	ug/L			08/24/18 19:04	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 19:04	1

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-28_081318
Date Collected: 08/13/18 11:45
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**0.66**	**J**	1.0	0.10	ug/L			08/24/18 19:04	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 19:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 19:04	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 19:04	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 19:04	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 19:04	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/24/18 19:04	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 19:04	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 19:04	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 19:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*69 - 120*		*08/24/18 19:04*	*1*
Dibromofluoromethane (Surr)	*111*		*69 - 124*		*08/24/18 19:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*61 - 138*		*08/24/18 19:04*	*1*
Toluene-d8 (Surr)	*96*		*73 - 120*		*08/24/18 19:04*	*1*

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-67_081318
Date Collected: 08/13/18 14:20
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/22/18 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 125*		*08/22/18 17:50*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	14	ug/L			08/24/18 19:26	2.5
Benzene	2.5	U	2.5	0.33	ug/L			08/24/18 19:26	2.5
Bromodichloromethane	2.5	U	2.5	0.43	ug/L			08/24/18 19:26	2.5
Bromoform	2.5	U	2.5	1.9	ug/L			08/24/18 19:26	2.5
Bromomethane	2.5	U	2.5	1.1	ug/L			08/24/18 19:26	2.5
2-Butanone (MEK)	25	U	25	2.9	ug/L			08/24/18 19:26	2.5
Carbon disulfide	13	U	13	0.70	ug/L			08/24/18 19:26	2.5
Carbon tetrachloride	2.5	U	2.5	0.65	ug/L			08/24/18 19:26	2.5
Chlorobenzene	2.5	U	2.5	0.35	ug/L			08/24/18 19:26	2.5
Chloroethane	2.5	U	2.5	2.1	ug/L			08/24/18 19:26	2.5
Chloroform	2.5	U	2.5	0.33	ug/L			08/24/18 19:26	2.5
Chloromethane	2.5	U	2.5	0.50	ug/L			08/24/18 19:26	2.5
cis-1,2-Dichloroethene	**4.5**		2.5	0.40	ug/L			08/24/18 19:26	2.5
cis-1,3-Dichloropropene	2.5	U	2.5	1.5	ug/L			08/24/18 19:26	2.5
Cyclohexane	2.5	U	2.5	0.60	ug/L			08/24/18 19:26	2.5
Dibromochloromethane	2.5	U	2.5	0.98	ug/L			08/24/18 19:26	2.5
1,2-Dibromo-3-Chloropropane	2.5	U	2.5	2.3	ug/L			08/24/18 19:26	2.5
1,2-Dibromoethane	2.5	U	2.5	0.30	ug/L			08/24/18 19:26	2.5
1,2-Dichlorobenzene	2.5	U	2.5	0.38	ug/L			08/24/18 19:26	2.5
1,3-Dichlorobenzene	2.5	U	2.5	0.38	ug/L			08/24/18 19:26	2.5
1,4-Dichlorobenzene	2.5	U	2.5	0.40	ug/L			08/24/18 19:26	2.5
Dichlorodifluoromethane	2.5	U	2.5	0.88	ug/L			08/24/18 19:26	2.5
1,1-Dichloroethane	2.5	U	2.5	0.43	ug/L			08/24/18 19:26	2.5
1,2-Dichloroethane	2.5	U	2.5	0.53	ug/L			08/24/18 19:26	2.5
1,1-Dichloroethene	2.5	U	2.5	0.48	ug/L			08/24/18 19:26	2.5
1,2-Dichloropropane	2.5	U	2.5	0.38	ug/L			08/24/18 19:26	2.5
Ethylbenzene	2.5	U	2.5	0.28	ug/L			08/24/18 19:26	2.5
2-Hexanone	25	U	25	1.4	ug/L			08/24/18 19:26	2.5
Isopropylbenzene	2.5	U	2.5	0.23	ug/L			08/24/18 19:26	2.5
Methyl acetate	25	U	25	4.3	ug/L			08/24/18 19:26	2.5
Methylcyclohexane	2.5	U	2.5	0.83	ug/L			08/24/18 19:26	2.5
Methylene Chloride	13	U	13	6.6	ug/L			08/24/18 19:26	2.5
4-Methyl-2-pentanone (MIBK)	25	U	25	1.1	ug/L			08/24/18 19:26	2.5
Methyl tert-butyl ether	2.5	U	2.5	0.18	ug/L			08/24/18 19:26	2.5
Styrene	2.5	U	2.5	0.25	ug/L			08/24/18 19:26	2.5
1,1,2,2-Tetrachloroethane	2.5	U	2.5	0.33	ug/L			08/24/18 19:26	2.5
Tetrachloroethene	2.5	U	2.5	0.38	ug/L			08/24/18 19:26	2.5
Toluene	2.5	U	2.5	0.35	ug/L			08/24/18 19:26	2.5
trans-1,2-Dichloroethene	**0.78**	**J**	2.5	0.48	ug/L			08/24/18 19:26	2.5
trans-1,3-Dichloropropene	2.5	U	2.5	1.7	ug/L			08/24/18 19:26	2.5
1,2,4-Trichlorobenzene	2.5	U	2.5	0.65	ug/L			08/24/18 19:26	2.5
1,1,1-Trichloroethane	**0.80**	**J**	2.5	0.60	ug/L			08/24/18 19:26	2.5
1,1,2-Trichloroethane	2.5	U	2.5	0.23	ug/L			08/24/18 19:26	2.5

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-67_081318
Date Collected: 08/13/18 14:20
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**60**		2.5	0.25	ug/L			08/24/18 19:26	2.5
Trichlorofluoromethane	2.5	U	2.5	1.1	ug/L			08/24/18 19:26	2.5
1,1,2-Trichloro-1,2,2-trifluoroethane	2.5	U	2.5	1.0	ug/L			08/24/18 19:26	2.5
1,2,3-Trimethylbenzene	13	U	13	0.35	ug/L			08/24/18 19:26	2.5
1,2,4-Trimethylbenzene	2.5	U	2.5	0.18	ug/L			08/24/18 19:26	2.5
1,3,5-Trimethylbenzene	2.5	U	2.5	0.30	ug/L			08/24/18 19:26	2.5
Vinyl chloride	2.5	U	2.5	0.50	ug/L			08/24/18 19:26	2.5
Xylenes, Total	5.0	U	5.0	0.38	ug/L			08/24/18 19:26	2.5
1,4-Dioxane	130	U	130	32	ug/L			08/24/18 19:26	2.5
Diethyl ether	5.0	U	5.0	0.48	ug/L			08/24/18 19:26	2.5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*69 - 120*		*08/24/18 19:26*	*2.5*
Dibromofluoromethane (Surr)	*108*		*69 - 124*		*08/24/18 19:26*	*2.5*
1,2-Dichloroethane-d4 (Surr)	*104*		*61 - 138*		*08/24/18 19:26*	*2.5*
Toluene-d8 (Surr)	*95*		*73 - 120*		*08/24/18 19:26*	*2.5*

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-56_081318
Date Collected: 08/13/18 16:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.3		2.0	0.86	ug/L			08/22/18 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*63 - 125*		*08/22/18 18:14*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 19:48	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 19:48	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 19:48	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 19:48	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 19:48	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 19:48	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 19:48	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 19:48	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 19:48	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 19:48	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 19:48	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 19:48	1
cis-1,2-Dichloroethene	0.24	J	1.0	0.16	ug/L			08/24/18 19:48	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 19:48	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 19:48	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 19:48	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 19:48	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 19:48	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 19:48	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 19:48	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 19:48	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 19:48	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 19:48	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 19:48	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 19:48	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 19:48	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 19:48	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 19:48	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 19:48	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 19:48	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 19:48	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 19:48	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 19:48	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 19:48	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 19:48	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 19:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 19:48	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 19:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 19:48	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 19:48	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 19:48	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 19:48	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 19:48	1

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-56_081318
Date Collected: 08/13/18 16:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-4
Matrix: Water

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 19:48	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 19:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 19:48	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 19:48	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 19:48	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 19:48	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/24/18 19:48	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 19:48	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 19:48	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 19:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*69 - 120*		*08/24/18 19:48*	*1*
Dibromofluoromethane (Surr)	*107*		*69 - 124*		*08/24/18 19:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*61 - 138*		*08/24/18 19:48*	*1*
Toluene-d8 (Surr)	*96*		*73 - 120*		*08/24/18 19:48*	*1*

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-64_081318
Date Collected: 08/13/18 17:40
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/22/18 18:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*63 - 125*		*08/22/18 18:39*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/24/18 20:10	1
Benzene	1.0	U	1.0	0.13	ug/L			08/24/18 20:10	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/24/18 20:10	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/24/18 20:10	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/24/18 20:10	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/24/18 20:10	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/24/18 20:10	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/24/18 20:10	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/24/18 20:10	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/24/18 20:10	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/24/18 20:10	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/24/18 20:10	1
cis-1,2-Dichloroethene	**0.29**	**J**	1.0	0.16	ug/L			08/24/18 20:10	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/24/18 20:10	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/24/18 20:10	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/24/18 20:10	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/24/18 20:10	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/24/18 20:10	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 20:10	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/24/18 20:10	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/24/18 20:10	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/24/18 20:10	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/24/18 20:10	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/24/18 20:10	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 20:10	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/24/18 20:10	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/24/18 20:10	1
2-Hexanone	10	U	10	0.54	ug/L			08/24/18 20:10	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/24/18 20:10	1
Methyl acetate	10	U	10	1.7	ug/L			08/24/18 20:10	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/24/18 20:10	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/24/18 20:10	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/24/18 20:10	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/24/18 20:10	1
Styrene	1.0	U	1.0	0.10	ug/L			08/24/18 20:10	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/24/18 20:10	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/24/18 20:10	1
Toluene	1.0	U	1.0	0.14	ug/L			08/24/18 20:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/24/18 20:10	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/24/18 20:10	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/24/18 20:10	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/24/18 20:10	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/24/18 20:10	1

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-64_081318
Date Collected: 08/13/18 17:40
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-5
Matrix: Water

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 20:10	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/24/18 20:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/24/18 20:10	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/24/18 20:10	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/24/18 20:10	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/24/18 20:10	1
Vinyl chloride	**5.9**		1.0	0.20	ug/L			08/24/18 20:10	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/24/18 20:10	1
1,4-Dioxane	50	U	50	13	ug/L			08/24/18 20:10	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/24/18 20:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*69 - 120*		*08/24/18 20:10*	*1*
Dibromofluoromethane (Surr)	*108*		*69 - 124*		*08/24/18 20:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*61 - 138*		*08/24/18 20:10*	*1*
Toluene-d8 (Surr)	*95*		*73 - 120*		*08/24/18 20:10*	*1*

Client Sample ID: MW-21_081418
Date Collected: 08/14/18 09:20
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**6.5**		2.0	0.86	ug/L			08/22/18 19:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*63 - 125*		*08/22/18 19:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10000	U	10000	5400	ug/L			08/27/18 18:38	1000
Benzene	1000	U	1000	130	ug/L			08/27/18 18:38	1000
Bromodichloromethane	1000	U	1000	170	ug/L			08/27/18 18:38	1000
Bromoform	1000	U	1000	760	ug/L			08/27/18 18:38	1000
Bromomethane	1000	U	1000	420	ug/L			08/27/18 18:38	1000
2-Butanone (MEK)	**1500**	**J**	10000	1200	ug/L			08/27/18 18:38	1000
Carbon disulfide	5000	U	5000	280	ug/L			08/27/18 18:38	1000
Carbon tetrachloride	1000	U	1000	260	ug/L			08/27/18 18:38	1000
Chlorobenzene	1000	U	1000	140	ug/L			08/27/18 18:38	1000
Chloroethane	1000	U	1000	830	ug/L			08/27/18 18:38	1000
Chloroform	1000	U	1000	130	ug/L			08/27/18 18:38	1000
Chloromethane	1000	U	1000	200	ug/L			08/27/18 18:38	1000
cis-1,2-Dichloroethene	**26000**	**B**	1000	160	ug/L			08/27/18 18:38	1000
cis-1,3-Dichloropropene	1000	U	1000	610	ug/L			08/27/18 18:38	1000
Cyclohexane	1000	U	1000	240	ug/L			08/27/18 18:38	1000
Dibromochloromethane	1000	U	1000	390	ug/L			08/27/18 18:38	1000
1,2-Dibromo-3-Chloropropane	1000	U	1000	910	ug/L			08/27/18 18:38	1000
1,2-Dibromoethane	1000	U	1000	120	ug/L			08/27/18 18:38	1000
1,2-Dichlorobenzene	1000	U	1000	150	ug/L			08/27/18 18:38	1000
1,3-Dichlorobenzene	1000	U	1000	150	ug/L			08/27/18 18:38	1000
1,4-Dichlorobenzene	1000	U	1000	160	ug/L			08/27/18 18:38	1000
Dichlorodifluoromethane	1000	U	1000	350	ug/L			08/27/18 18:38	1000
1,1-Dichloroethane	1000	U	1000	170	ug/L			08/27/18 18:38	1000
1,2-Dichloroethane	1000	U	1000	210	ug/L			08/27/18 18:38	1000
1,1-Dichloroethene	1000	U	1000	190	ug/L			08/27/18 18:38	1000
1,2-Dichloropropane	1000	U	1000	150	ug/L			08/27/18 18:38	1000
Ethylbenzene	1000	U	1000	110	ug/L			08/27/18 18:38	1000
2-Hexanone	**910**	**J**	10000	540	ug/L			08/27/18 18:38	1000
Isopropylbenzene	1000	U	1000	90	ug/L			08/27/18 18:38	1000
Methyl acetate	10000	U	10000	1700	ug/L			08/27/18 18:38	1000
Methylcyclohexane	1000	U	1000	330	ug/L			08/27/18 18:38	1000
Methylene Chloride	5000	U	5000	2600	ug/L			08/27/18 18:38	1000
4-Methyl-2-pentanone (MIBK)	**830**	**J**	10000	420	ug/L			08/27/18 18:38	1000
Methyl tert-butyl ether	1000	U	1000	70	ug/L			08/27/18 18:38	1000
Styrene	1000	U	1000	100	ug/L			08/27/18 18:38	1000
1,1,2,2-Tetrachloroethane	1000	U	1000	130	ug/L			08/27/18 18:38	1000
Tetrachloroethene	1000	U	1000	150	ug/L			08/27/18 18:38	1000
Toluene	1000	U	1000	140	ug/L			08/27/18 18:38	1000
trans-1,2-Dichloroethene	**190**	**J**	1000	190	ug/L			08/27/18 18:38	1000
trans-1,3-Dichloropropene	1000	U	1000	670	ug/L			08/27/18 18:38	1000
1,2,4-Trichlorobenzene	1000	U	1000	260	ug/L			08/27/18 18:38	1000
1,1,1-Trichloroethane	1000	U	1000	240	ug/L			08/27/18 18:38	1000
1,1,2-Trichloroethane	1000	U	1000	90	ug/L			08/27/18 18:38	1000

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-21_081418
Date Collected: 08/14/18 09:20
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1000	U	1000	100	ug/L			08/27/18 18:38	1000
Trichlorofluoromethane	1000	U	1000	450	ug/L			08/27/18 18:38	1000
1,1,2-Trichloro-1,2,2-trifluoroethane	1000	U	1000	410	ug/L			08/27/18 18:38	1000
1,2,3-Trimethylbenzene	5000	U	5000	140	ug/L			08/27/18 18:38	1000
1,2,4-Trimethylbenzene	1000	U	1000	70	ug/L			08/27/18 18:38	1000
1,3,5-Trimethylbenzene	1000	U	1000	120	ug/L			08/27/18 18:38	1000
Vinyl chloride	**3400**		1000	200	ug/L			08/27/18 18:38	1000
Xylenes, Total	2000	U	2000	150	ug/L			08/27/18 18:38	1000
1,4-Dioxane	**25000**	**J**	50000	13000	ug/L			08/27/18 18:38	1000
Diethyl ether	2000	U	2000	190	ug/L			08/27/18 18:38	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*69 - 120*		*08/27/18 18:38*	*1000*
Dibromofluoromethane (Surr)	*110*		*69 - 124*		*08/27/18 18:38*	*1000*
1,2-Dichloroethane-d4 (Surr)	*94*		*61 - 138*		*08/27/18 18:38*	*1000*
Toluene-d8 (Surr)	*98*		*73 - 120*		*08/27/18 18:38*	*1000*

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-49_081418
Date Collected: 08/14/18 10:40
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.0		2.0	0.86	ug/L			08/22/18 19:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*63 - 125*		*08/22/18 19:28*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	5000	U	5000	2700	ug/L			08/27/18 19:00	500
Benzene	500	U	500	65	ug/L			08/27/18 19:00	500
Bromodichloromethane	500	U	500	85	ug/L			08/27/18 19:00	500
Bromoform	500	U	500	380	ug/L			08/27/18 19:00	500
Bromomethane	500	U	500	210	ug/L			08/27/18 19:00	500
2-Butanone (MEK)	5000	U	5000	580	ug/L			08/27/18 19:00	500
Carbon disulfide	2500	U	2500	140	ug/L			08/27/18 19:00	500
Carbon tetrachloride	500	U	500	130	ug/L			08/27/18 19:00	500
Chlorobenzene	500	U	500	70	ug/L			08/27/18 19:00	500
Chloroethane	500	U	500	420	ug/L			08/27/18 19:00	500
Chloroform	500	U	500	65	ug/L			08/27/18 19:00	500
Chloromethane	500	U	500	100	ug/L			08/27/18 19:00	500
cis-1,2-Dichloroethene	15000	B	500	80	ug/L			08/27/18 19:00	500
cis-1,3-Dichloropropene	500	U	500	310	ug/L			08/27/18 19:00	500
Cyclohexane	500	U	500	120	ug/L			08/27/18 19:00	500
Dibromochloromethane	500	U	500	200	ug/L			08/27/18 19:00	500
1,2-Dibromo-3-Chloropropane	500	U	500	460	ug/L			08/27/18 19:00	500
1,2-Dibromoethane	500	U	500	60	ug/L			08/27/18 19:00	500
1,2-Dichlorobenzene	500	U	500	75	ug/L			08/27/18 19:00	500
1,3-Dichlorobenzene	500	U	500	75	ug/L			08/27/18 19:00	500
1,4-Dichlorobenzene	500	U	500	80	ug/L			08/27/18 19:00	500
Dichlorodifluoromethane	500	U	500	180	ug/L			08/27/18 19:00	500
1,1-Dichloroethane	500	U	500	85	ug/L			08/27/18 19:00	500
1,2-Dichloroethane	500	U	500	110	ug/L			08/27/18 19:00	500
1,1-Dichloroethene	500	U	500	95	ug/L			08/27/18 19:00	500
1,2-Dichloropropane	500	U	500	75	ug/L			08/27/18 19:00	500
Ethylbenzene	500	U	500	55	ug/L			08/27/18 19:00	500
2-Hexanone	5000	U	5000	270	ug/L			08/27/18 19:00	500
Isopropylbenzene	500	U	500	45	ug/L			08/27/18 19:00	500
Methyl acetate	5000	U	5000	860	ug/L			08/27/18 19:00	500
Methylcyclohexane	500	U	500	170	ug/L			08/27/18 19:00	500
Methylene Chloride	2500	U	2500	1300	ug/L			08/27/18 19:00	500
4-Methyl-2-pentanone (MIBK)	5000	U	5000	210	ug/L			08/27/18 19:00	500
Methyl tert-butyl ether	500	U	500	35	ug/L			08/27/18 19:00	500
Styrene	500	U	500	50	ug/L			08/27/18 19:00	500
1,1,2,2-Tetrachloroethane	500	U	500	65	ug/L			08/27/18 19:00	500
Tetrachloroethene	500	U	500	75	ug/L			08/27/18 19:00	500
Toluene	500	U	500	70	ug/L			08/27/18 19:00	500
trans-1,2-Dichloroethene	110	J	500	95	ug/L			08/27/18 19:00	500
trans-1,3-Dichloropropene	500	U	500	340	ug/L			08/27/18 19:00	500
1,2,4-Trichlorobenzene	500	U	500	130	ug/L			08/27/18 19:00	500
1,1,1-Trichloroethane	500	U	500	120	ug/L			08/27/18 19:00	500
1,1,2-Trichloroethane	500	U	500	45	ug/L			08/27/18 19:00	500

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-49_081418
Date Collected: 08/14/18 10:40
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	500	U	500	50	ug/L			08/27/18 19:00	500
Trichlorofluoromethane	500	U	500	230	ug/L			08/27/18 19:00	500
1,1,2-Trichloro-1,2,2-trifluoroethane	500	U	500	210	ug/L			08/27/18 19:00	500
1,2,3-Trimethylbenzene	2500	U	2500	70	ug/L			08/27/18 19:00	500
1,2,4-Trimethylbenzene	500	U	500	35	ug/L			08/27/18 19:00	500
1,3,5-Trimethylbenzene	500	U	500	60	ug/L			08/27/18 19:00	500
Vinyl chloride	**4900**		500	100	ug/L			08/27/18 19:00	500
Xylenes, Total	1000	U	1000	75	ug/L			08/27/18 19:00	500
1,4-Dioxane	25000	U	25000	6400	ug/L			08/27/18 19:00	500
Diethyl ether	1000	U	1000	95	ug/L			08/27/18 19:00	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*69 - 120*		*08/27/18 19:00*	*500*
Dibromofluoromethane (Surr)	*110*		*69 - 124*		*08/27/18 19:00*	*500*
1,2-Dichloroethane-d4 (Surr)	*96*		*61 - 138*		*08/27/18 19:00*	*500*
Toluene-d8 (Surr)	*95*		*73 - 120*		*08/27/18 19:00*	*500*

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-14_081418
Date Collected: 08/14/18 12:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-8
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/22/18 19:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 125*		*08/22/18 19:53*	*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			08/27/18 12:19	1
Benzene	1.0	U	1.0	0.13	ug/L			08/27/18 12:19	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/27/18 12:19	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/27/18 12:19	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/27/18 12:19	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/27/18 12:19	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/27/18 12:19	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/27/18 12:19	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/27/18 12:19	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/27/18 12:19	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/27/18 12:19	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/27/18 12:19	1
cis-1,2-Dichloroethene	**0.31**	**J B**	1.0	0.16	ug/L			08/27/18 12:19	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/27/18 12:19	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/27/18 12:19	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/27/18 12:19	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/27/18 12:19	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/27/18 12:19	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/27/18 12:19	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/27/18 12:19	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/27/18 12:19	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/27/18 12:19	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/27/18 12:19	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/27/18 12:19	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/27/18 12:19	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/27/18 12:19	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/27/18 12:19	1
2-Hexanone	10	U	10	0.54	ug/L			08/27/18 12:19	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/27/18 12:19	1
Methyl acetate	10	U	10	1.7	ug/L			08/27/18 12:19	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/27/18 12:19	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/27/18 12:19	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/27/18 12:19	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/27/18 12:19	1
Styrene	1.0	U	1.0	0.10	ug/L			08/27/18 12:19	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/27/18 12:19	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/27/18 12:19	1
Toluene	1.0	U	1.0	0.14	ug/L			08/27/18 12:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/27/18 12:19	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/27/18 12:19	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/27/18 12:19	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/27/18 12:19	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/27/18 12:19	1

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-14_081418
Date Collected: 08/14/18 12:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-8
Matrix: Water

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			08/27/18 12:19	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/27/18 12:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/27/18 12:19	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/27/18 12:19	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/27/18 12:19	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/27/18 12:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/27/18 12:19	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/27/18 12:19	1
1,4-Dioxane	50	U	50	13	ug/L			08/27/18 12:19	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/27/18 12:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*69 - 120*		*08/27/18 12:19*	*1*
Dibromofluoromethane (Surr)	*108*		*69 - 124*		*08/27/18 12:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*61 - 138*		*08/27/18 12:19*	*1*
Toluene-d8 (Surr)	*94*		*73 - 120*		*08/27/18 12:19*	*1*

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-09_081418
Date Collected: 08/14/18 14:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-9
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.3		2.0	0.86	ug/L			08/22/18 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 125*		*08/22/18 20:18*	*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			08/27/18 12:41	1
Benzene	1.0	U	1.0	0.13	ug/L			08/27/18 12:41	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/27/18 12:41	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/27/18 12:41	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/27/18 12:41	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/27/18 12:41	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/27/18 12:41	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/27/18 12:41	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/27/18 12:41	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/27/18 12:41	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/27/18 12:41	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/27/18 12:41	1
cis-1,2-Dichloroethene	0.29	J B	1.0	0.16	ug/L			08/27/18 12:41	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/27/18 12:41	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/27/18 12:41	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/27/18 12:41	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/27/18 12:41	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/27/18 12:41	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/27/18 12:41	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/27/18 12:41	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/27/18 12:41	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/27/18 12:41	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/27/18 12:41	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/27/18 12:41	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/27/18 12:41	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/27/18 12:41	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/27/18 12:41	1
2-Hexanone	10	U	10	0.54	ug/L			08/27/18 12:41	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/27/18 12:41	1
Methyl acetate	10	U	10	1.7	ug/L			08/27/18 12:41	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/27/18 12:41	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/27/18 12:41	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/27/18 12:41	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/27/18 12:41	1
Styrene	1.0	U	1.0	0.10	ug/L			08/27/18 12:41	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/27/18 12:41	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/27/18 12:41	1
Toluene	1.0	U	1.0	0.14	ug/L			08/27/18 12:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/27/18 12:41	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/27/18 12:41	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/27/18 12:41	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/27/18 12:41	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/27/18 12:41	1

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-09_081418
Date Collected: 08/14/18 14:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-9
Matrix: Water

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			08/27/18 12:41	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/27/18 12:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/27/18 12:41	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/27/18 12:41	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/27/18 12:41	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/27/18 12:41	1
Vinyl chloride	**1.7**		1.0	0.20	ug/L			08/27/18 12:41	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/27/18 12:41	1
1,4-Dioxane	50	U	50	13	ug/L			08/27/18 12:41	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/27/18 12:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*		*08/27/18 12:41*	*1*
Dibromofluoromethane (Surr)	*109*		*69 - 124*		*08/27/18 12:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*61 - 138*		*08/27/18 12:41*	*1*
Toluene-d8 (Surr)	*98*		*73 - 120*		*08/27/18 12:41*	*1*

Surrogate Summary

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

TestAmerica Job ID: 240-99976-1

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(69-120)	(69-124)	(61-138)	(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
240-99976-1	MW-53_081318	92	112	101	97
240-99976-2	MW-28_081318	93	111	100	96
240-99976-3	MW-67_081318	91	108	104	95
240-99976-4	MW-56_081318	91	107	102	96
240-99976-5	MW-64_081318	91	108	99	95
240-99976-6	MW-21_081418	96	110	94	98
240-99976-7	MW-49_081418	93	110	96	95
240-99976-8	MW-14_081418	93	108	98	94
240-99976-9	MW-09_081418	95	109	99	98
240-99991-B-3 MS	Matrix Spike	100	102	92	97
240-99991-B-3 MSD	Matrix Spike Duplicate	100	107	95	97
LCS 240-342404/4	Lab Control Sample	98	99	94	99
LCS 240-342604/4	Lab Control Sample	97	105	90	96
MB 240-342404/6	Method Blank	91	108	103	97
MB 240-342604/6	Method Blank	95	108	96	97

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(63-125)
240-99975-D-8 MS	Matrix Spike	103
240-99975-D-8 MSD	Matrix Spike Duplicate	98
240-99976-1	MW-53_081318	98
240-99976-2	MW-28_081318	102
240-99976-3	MW-67_081318	102
240-99976-4	MW-56_081318	100
240-99976-5	MW-64_081318	101
240-99976-6	MW-21_081418	85
240-99976-7	MW-49_081418	90
240-99976-8	MW-14_081418	102
240-99976-9	MW-09_081418	102
LCS 240-342018/4	Lab Control Sample	97
MB 240-342018/5	Method Blank	97

Surrogate Legend

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

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

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

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

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*

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
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

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 240-342604/6
Matrix: Water
Analysis Batch: 342604

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			08/27/18 10:06	1
Benzene	1.0	U	1.0	0.13	ug/L			08/27/18 10:06	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/27/18 10:06	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/27/18 10:06	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/27/18 10:06	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/27/18 10:06	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/27/18 10:06	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/27/18 10:06	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/27/18 10:06	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/27/18 10:06	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/27/18 10:06	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/27/18 10:06	1
cis-1,2-Dichloroethene	0.349	J	1.0	0.16	ug/L			08/27/18 10:06	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/27/18 10:06	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/27/18 10:06	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/27/18 10:06	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/27/18 10:06	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/27/18 10:06	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/27/18 10:06	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/27/18 10:06	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/27/18 10:06	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/27/18 10:06	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/27/18 10:06	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/27/18 10:06	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/27/18 10:06	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/27/18 10:06	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/27/18 10:06	1
2-Hexanone	10	U	10	0.54	ug/L			08/27/18 10:06	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/27/18 10:06	1
Methyl acetate	10	U	10	1.7	ug/L			08/27/18 10:06	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/27/18 10:06	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/27/18 10:06	1

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

Lab Sample ID: MB 240-342604/6
Matrix: Water
Analysis Batch: 342604

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			08/27/18 10:06	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/27/18 10:06	1
Styrene	1.0	U	1.0	0.10	ug/L			08/27/18 10:06	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/27/18 10:06	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/27/18 10:06	1
Toluene	1.0	U	1.0	0.14	ug/L			08/27/18 10:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/27/18 10:06	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/27/18 10:06	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/27/18 10:06	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/27/18 10:06	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/27/18 10:06	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/27/18 10:06	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/27/18 10:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/27/18 10:06	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/27/18 10:06	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/27/18 10:06	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/27/18 10:06	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/27/18 10:06	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/27/18 10:06	1
1,4-Dioxane	50	U	50	13	ug/L			08/27/18 10:06	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/27/18 10:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*		*08/27/18 10:06*	*1*
Dibromofluoromethane (Surr)	*108*		*69 - 124*		*08/27/18 10:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*61 - 138*		*08/27/18 10:06*	*1*
Toluene-d8 (Surr)	*97*		*73 - 120*		*08/27/18 10:06*	*1*

Lab Sample ID: LCS 240-342604/4
Matrix: Water
Analysis Batch: 342604

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	18.9		ug/L		95	35 - 131
Benzene	10.0	10.2		ug/L		102	79 - 120
Bromodichloromethane	10.0	10.1		ug/L		101	79 - 125
Bromoform	10.0	11.2		ug/L		112	55 - 145
Bromomethane	10.0	8.10		ug/L		81	17 - 158
2-Butanone (MEK)	20.0	17.2		ug/L		86	43 - 149
Carbon disulfide	10.0	9.96		ug/L		100	49 - 141
Carbon tetrachloride	10.0	9.95		ug/L		100	55 - 171
Chlorobenzene	10.0	10.1		ug/L		101	80 - 120
Chloroethane	10.0	8.27		ug/L		83	10 - 149
Chloroform	10.0	10.1		ug/L		101	80 - 120
Chloromethane	10.0	7.58		ug/L		76	59 - 124
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	77 - 120
cis-1,3-Dichloropropene	10.0	9.26		ug/L		93	75 - 120
Cyclohexane	10.0	9.84		ug/L		98	66 - 135

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

Lab Sample ID: LCS 240-342604/4
Matrix: Water
Analysis Batch: 342604

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	10.0	10.6		ug/L		106	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	9.37		ug/L		94	50 - 130
1,2-Dibromoethane	10.0	9.72		ug/L		97	80 - 120
1,2-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
1,3-Dichlorobenzene	10.0	9.95		ug/L		100	80 - 120
1,4-Dichlorobenzene	10.0	10.1		ug/L		101	80 - 120
Dichlorodifluoromethane	10.0	8.12		ug/L		81	42 - 141
1,1-Dichloroethane	10.0	9.89		ug/L		99	74 - 120
1,2-Dichloroethane	10.0	9.09		ug/L		91	68 - 133
1,1-Dichloroethene	10.0	9.65		ug/L		97	65 - 127
1,2-Dichloropropane	10.0	10.4		ug/L		104	78 - 127
Ethylbenzene	10.0	9.45		ug/L		95	80 - 120
2-Hexanone	20.0	15.8		ug/L		79	28 - 169
Isopropylbenzene	10.0	9.26		ug/L		93	80 - 128
Methyl acetate	20.0	19.0		ug/L		95	63 - 137
Methylcyclohexane	10.0	9.31		ug/L		93	63 - 141
Methylene Chloride	10.0	10.1		ug/L		101	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	16.6		ug/L		83	53 - 144
Methyl tert-butyl ether	10.0	9.23		ug/L		92	73 - 120
Styrene	10.0	9.51		ug/L		95	80 - 121
1,1,2,2-Tetrachloroethane	10.0	9.85		ug/L		99	58 - 122
Tetrachloroethene	10.0	11.1		ug/L		111	80 - 122
Toluene	10.0	9.79		ug/L		98	78 - 120
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	74 - 124
trans-1,3-Dichloropropene	10.0	8.77		ug/L		88	67 - 120
1,2,4-Trichlorobenzene	10.0	9.39		ug/L		94	34 - 141
1,1,1-Trichloroethane	10.0	9.80		ug/L		98	64 - 147
1,1,2-Trichloroethane	10.0	9.85		ug/L		99	76 - 121
Trichloroethene	10.0	10.1		ug/L		101	76 - 124
Trichlorofluoromethane	10.0	8.09		ug/L		81	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.1		ug/L		101	65 - 144
1,2,4-Trimethylbenzene	10.0	8.93		ug/L		89	80 - 120
1,3,5-Trimethylbenzene	10.0	8.81		ug/L		88	79 - 120
Vinyl chloride	10.0	8.45		ug/L		84	65 - 124
Xylenes, Total	20.0	19.4		ug/L		97	80 - 120
1,4-Dioxane	200	232		ug/L		116	35 - 134
Diethyl ether	10.0	9.46		ug/L		95	72 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*69 - 120*
Dibromofluoromethane (Surr)	*105*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*90*		*61 - 138*
Toluene-d8 (Surr)	*96*		*73 - 120*

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

Lab Sample ID: 240-99991-B-3 MS
Matrix: Water
Analysis Batch: 342604

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	370		100	471	E	ug/L		102	69 - 127
Chlorobenzene	4.1	J	100	98.4		ug/L		94	76 - 120
Chloroethane	21		100	98.2		ug/L		77	10 - 141
Chloroform	5.1	J	100	92.1		ug/L		87	74 - 125
cis-1,2-Dichloroethene	2.5	J B	100	90.9		ug/L		88	69 - 127
1,2-Dichlorobenzene	10	U	100	88.7		ug/L		89	70 - 120
1,3-Dichlorobenzene	10	U	100	86.8		ug/L		87	71 - 120
1,4-Dichlorobenzene	10	U	100	91.3		ug/L		91	72 - 120
Dichlorodifluoromethane	10	U	100	75.2		ug/L		75	45 - 130
1,1-Dichloroethane	6.1	J	100	95.5		ug/L		89	69 - 122
1,2-Dichloroethane	50		100	129		ug/L		79	64 - 138
1,1-Dichloroethene	10	U	100	82.4		ug/L		82	62 - 127
Ethylbenzene	9.9	J	100	101		ug/L		91	72 - 121
Methylene Chloride	50	U	100	92.4		ug/L		92	52 - 137
Styrene	10	U	100	91.9		ug/L		92	74 - 125
Tetrachloroethene	10	U	100	102		ug/L		102	69 - 126
Toluene	21		100	113		ug/L		92	69 - 125
trans-1,2-Dichloroethene	10	U	100	90.9		ug/L		91	66 - 131
1,1,2-Trichloroethane	5.3	J	100	103		ug/L		98	68 - 127
Trichloroethene	10	U	100	99.6		ug/L		100	68 - 129
Vinyl chloride	10	U	100	82.8		ug/L		83	55 - 123
Xylenes, Total	14	J	200	196		ug/L		91	71 - 122

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*69 - 120*
Dibromofluoromethane (Surr)	*102*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*92*		*61 - 138*
Toluene-d8 (Surr)	*97*		*73 - 120*

Lab Sample ID: 240-99991-B-3 MSD
Matrix: Water
Analysis Batch: 342604

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	370		100	476	E	ug/L		107	69 - 127	1	10
Chlorobenzene	4.1	J	100	98.6		ug/L		94	76 - 120	0	12
Chloroethane	21		100	99.9		ug/L		79	10 - 141	2	35
Chloroform	5.1	J	100	99.0		ug/L		94	74 - 125	7	11
cis-1,2-Dichloroethene	2.5	J B	100	95.6		ug/L		93	69 - 127	5	11
1,2-Dichlorobenzene	10	U	100	92.0		ug/L		92	70 - 120	4	19
1,3-Dichlorobenzene	10	U	100	92.2		ug/L		92	71 - 120	6	18
1,4-Dichlorobenzene	10	U	100	93.3		ug/L		93	72 - 120	2	17
Dichlorodifluoromethane	10	U	100	75.1		ug/L		75	45 - 130	0	34
1,1-Dichloroethane	6.1	J	100	99.5		ug/L		93	69 - 122	4	11
1,2-Dichloroethane	50		100	135		ug/L		85	64 - 138	4	11
1,1-Dichloroethene	10	U	100	87.5		ug/L		87	62 - 127	6	14
Ethylbenzene	9.9	J	100	101		ug/L		91	72 - 121	0	15
Methylene Chloride	50	U	100	100		ug/L		100	52 - 137	8	12

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

Lab Sample ID: 240-99991-B-3 MSD
Matrix: Water
Analysis Batch: 342604

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
Styrene	10	U	100	91.8		ug/L		92	74 - 125	0	14
Tetrachloroethene	10	U	100	102		ug/L		102	69 - 126	0	18
Toluene	21		100	115		ug/L		93	69 - 125	2	14
trans-1,2-Dichloroethene	10	U	100	96.0		ug/L		96	66 - 131	5	11
1,1,2-Trichloroethane	5.3	J	100	98.5		ug/L		93	68 - 127	5	11
Trichloroethene	10	U	100	97.6		ug/L		98	68 - 129	2	12
Vinyl chloride	10	U	100	80.3		ug/L		80	55 - 123	3	12
Xylenes, Total	14	J	200	198		ug/L		92	71 - 122	1	14

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*69 - 120*
Dibromofluoromethane (Surr)	*107*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*95*		*61 - 138*
Toluene-d8 (Surr)	*97*		*73 - 120*

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

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

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			08/22/18 12:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*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 Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			10.0	9.97		ug/L		100	59 - 131		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*63 - 125*

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

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane	2.0	U	10.0	9.36		ug/L		94	52 - 129		

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

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

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

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	8.77		ug/L		88	52 - 129	7	13

Surrogate	*MSD %Recovery*	*MSD 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: 240-99976-1

GC/MS VOA

Analysis Batch: 342018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99976-1	MW-53_081318	Total/NA	Water	8260B SIM	
240-99976-2	MW-28_081318	Total/NA	Water	8260B SIM	
240-99976-3	MW-67_081318	Total/NA	Water	8260B SIM	
240-99976-4	MW-56_081318	Total/NA	Water	8260B SIM	
240-99976-5	MW-64_081318	Total/NA	Water	8260B SIM	
240-99976-6	MW-21_081418	Total/NA	Water	8260B SIM	
240-99976-7	MW-49_081418	Total/NA	Water	8260B SIM	
240-99976-8	MW-14_081418	Total/NA	Water	8260B SIM	
240-99976-9	MW-09_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-D-8 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-99975-D-8 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 342404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99976-1	MW-53_081318	Total/NA	Water	8260B	
240-99976-2	MW-28_081318	Total/NA	Water	8260B	
240-99976-3	MW-67_081318	Total/NA	Water	8260B	
240-99976-4	MW-56_081318	Total/NA	Water	8260B	
240-99976-5	MW-64_081318	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: 342604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99976-6	MW-21_081418	Total/NA	Water	8260B	
240-99976-7	MW-49_081418	Total/NA	Water	8260B	
240-99976-8	MW-14_081418	Total/NA	Water	8260B	
240-99976-9	MW-09_081418	Total/NA	Water	8260B	
MB 240-342604/6	Method Blank	Total/NA	Water	8260B	
LCS 240-342604/4	Lab Control Sample	Total/NA	Water	8260B	
240-99991-B-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-99991-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-53_081318
Date Collected: 08/13/18 09:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-1
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 18:41	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 17:01	SAM	TAL CAN

Client Sample ID: MW-28_081318
Date Collected: 08/13/18 11:45
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-2
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 19:04	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 17:25	SAM	TAL CAN

Client Sample ID: MW-67_081318
Date Collected: 08/13/18 14:20
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	342404	08/24/18 19:26	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 17:50	SAM	TAL CAN

Client Sample ID: MW-56_081318
Date Collected: 08/13/18 16:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-4
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 19:48	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 18:14	SAM	TAL CAN

Client Sample ID: MW-64_081318
Date Collected: 08/13/18 17:40
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-5
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 20:10	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 18:39	SAM	TAL CAN

Client Sample ID: MW-21_081418
Date Collected: 08/14/18 09:20
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1000	342604	08/27/18 18:38	LEE	TAL CAN

Lab Chronicle

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

TestAmerica Job ID: 240-99976-1

Client Sample ID: MW-21_081418
Date Collected: 08/14/18 09:20
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-6
Matrix: Water

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 19:04	SAM	TAL CAN

Client Sample ID: MW-49_081418
Date Collected: 08/14/18 10:40
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		500	342604	08/27/18 19:00	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 19:28	SAM	TAL CAN

Client Sample ID: MW-14_081418
Date Collected: 08/14/18 12:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342604	08/27/18 12:19	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 19:53	SAM	TAL CAN

Client Sample ID: MW-09_081418
Date Collected: 08/14/18 14:25
Date Received: 08/16/18 09:00

Lab Sample ID: 240-99976-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	342604	08/27/18 12:41	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	342018	08/22/18 20:18	SAM	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: 240-99976-1

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.

MICHIGAN 190

Chain of Custody Record

26/C2.6
36/C3.6

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other			
Company Name: Arcadis	Client Project Manager: Kris Hinskey	Site Contact: Angela DeGrandis	Lab Contact: Mike DelMonico	COC No:
Address: 28550 Cabot Drive, Suite 500	Telephone: 248-994-2240	Telephone: 734-320-0065	Telephone: 330-497-9396	of COCs
City/State/Zip: Novi, MI, 48377	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	For lab use only
Phone: 248-994-2240		TAT if different from below ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Walk-in client
Project Name: Ford LTP		10 day		Lab sampling
Project Number: MI001454.0004.00001	Method of Shipment/Carrier:			Job/SDG No:
PO # MI001454.0004.00001	Shipping/Tracking No:			

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	VOCs 8260B	1,4-Dioxane 8260B SIM	Sample Specific Notes / Special Instructions:
MW-53_081318	8/13/18	0925		6						6					N	G	3	3	
MW-28_081318	8/13/18	1145		6						6					N	G	3	3	
MW-67_081318	8/13/18	1420		6						6					N	G	3	3	
MW-56_081318	8/13/18	1625		6						6					N	G	3	3	
MW-64_081318	8/13/18	1740		6						6					N	G	3	3	
MW-21_081418	8/14/18	0920		6						6					N	G	3	3	
MW-49_081418	8/14/18	1040		6						6					N	G	3	3	
MW-14_081418	8/14/18	1225		6						6					N	G	3	3	
MW-09_081418	8/14/18	1425		6						6					N	G	3	3	

240-99976 Chain of Custody

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

Special Instructions/QC Requirements & Comments:

Submit all results through Cadena at jim.tomalia@cadena.com. Cadena #E203728
Level IV Reporting.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
CAITLIN O'NEILL / [illegible]	ARCADIS	08-14-2018 / 15:55	NOVI COLD STORAGE	ARCADIS	08-14-2018 / 15:55
NOVI COLD STORAGE	ARCADIS	08-15-2018 / 13:15	[signature]	TLC	8/15/18 13:16
[signature]	TLC	8/15/18 14:31	Received in Laboratory by: [signature]	Company: TAL	Date/Time: 8/16/18 900

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 99976
Canton Facility

Client Arcadis Site Name _____ Cooler unpacked by: Gil Brown

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 # Canton Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

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

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

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

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: 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): _____

WI-NC-099

TestAmerica Multiple Cooler Receipt Form/Narrative **Login # :** 99976
Canton Facility

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
Canton	4	2.6	2.6	IRC
↓	↓	3.6	3.6	↓