

ANALYTICAL REPORT

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Tel: (330)497-9396

Laboratory Job ID: 240-140525-1
Client Project/Site: Ford LTP - On Site

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



Authorized for release by:
12/2/2020 9:50:11 AM

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



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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Job ID: 240-140525-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP - On Site

Report Number: 240-140525-1

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

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins 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 Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 11/19/2020 9:20 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0° C and 1.6° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-140525-1), MW-10_111720 (240-140525-2), MW-04_111720 (240-140525-3), LMW-20-14_111720 (240-140525-4), MW-02_111720 (240-140525-5) and DUP-08 (240-140525-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/27/2020 and 11/28/2020.

cis-1,2-Dichloroethene was detected in method blank MB 240-463028/7 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.

Samples MW-10_111720 (240-140525-2)[333.33X], MW-04_111720 (240-140525-3)[714.28X], MW-02_111720 (240-140525-5)[250X] and DUP-08 (240-140525-6)[500X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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-10_111720 (240-140525-2), MW-04_111720 (240-140525-3), LMW-20-14_111720 (240-140525-4), MW-02_111720

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Job ID: 240-140525-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

(240-140525-5) and DUP-08 (240-140525-6) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/25/2020.

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

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Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

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 = Eurofins 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 - On Site

Job ID: 240-140525-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-140525-1	TRIP BLANK	Water	11/17/20 00:00	11/19/20 09:20	
240-140525-2	MW-10_111720	Water	11/17/20 11:23	11/19/20 09:20	
240-140525-3	MW-04_111720	Water	11/17/20 12:37	11/19/20 09:20	
240-140525-4	LMW-20-14_111720	Water	11/17/20 13:53	11/19/20 09:20	
240-140525-5	MW-02_111720	Water	11/17/20 15:33	11/19/20 09:20	
240-140525-6	DUP-08	Water	11/17/20 00:00	11/19/20 09:20	

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Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140525-1

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-10_111720

Lab Sample ID: 240-140525-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.9		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	97	J B	330	53	ug/L	333.33		8260B	Total/NA
Vinyl chloride	4800		330	67	ug/L	333.33		8260B	Total/NA

Client Sample ID: MW-04_111720

Lab Sample ID: 240-140525-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.0	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	13000	B	710	110	ug/L	714.28		8260B	Total/NA
trans-1,2-Dichloroethene	410	J	710	140	ug/L	714.28		8260B	Total/NA
Trichloroethene	15000		710	71	ug/L	714.28		8260B	Total/NA
Vinyl chloride	1600		710	140	ug/L	714.28		8260B	Total/NA

Client Sample ID: LMW-20-14_111720

Lab Sample ID: 240-140525-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.62	J B	1.0	0.16	ug/L	1		8260B	Total/NA
Trichloroethene	0.72	J	1.0	0.10	ug/L	1		8260B	Total/NA

Client Sample ID: MW-02_111720

Lab Sample ID: 240-140525-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.7		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	3000	B	250	40	ug/L	250		8260B	Total/NA
trans-1,2-Dichloroethene	630		250	48	ug/L	250		8260B	Total/NA
Vinyl chloride	210	J	250	50	ug/L	250		8260B	Total/NA

Client Sample ID: DUP-08

Lab Sample ID: 240-140525-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.90	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	13000	B	500	80	ug/L	500		8260B	Total/NA
trans-1,2-Dichloroethene	470	J	500	95	ug/L	500		8260B	Total/NA
Trichloroethene	15000		500	50	ug/L	500		8260B	Total/NA
Vinyl chloride	1400		500	100	ug/L	500		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140525-1

Date Collected: 11/17/20 00:00

Matrix: Water

Date Received: 11/19/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/27/20 22:44	1
cis-1,2-Dichloroethene	0.31	J B	1.0	0.16	ug/L			11/27/20 22:44	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/27/20 22:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/27/20 22:44	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/27/20 22:44	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/27/20 22:44	1
2-Methylnaphthalene	5.0	U	5.0	2.4	ug/L			11/27/20 22:44	1
Naphthalene	1.0	U	1.0	0.32	ug/L			11/27/20 22:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130					11/27/20 22:44	1
4-Bromofluorobenzene (Surr)	103		47 - 134					11/27/20 22:44	1
Toluene-d8 (Surr)	80		69 - 122					11/27/20 22:44	1
Dibromofluoromethane (Surr)	88		78 - 129					11/27/20 22:44	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Client Sample ID: MW-10_111720

Lab Sample ID: 240-140525-2

Date Collected: 11/17/20 11:23

Matrix: Water

Date Received: 11/19/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.9		2.0	0.86	ug/L			11/25/20 15:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 133					11/25/20 15:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	330	U	330	63	ug/L			11/27/20 23:09	333.33
cis-1,2-Dichloroethene	97	J B	330	53	ug/L			11/27/20 23:09	333.33
Tetrachloroethene	330	U	330	50	ug/L			11/27/20 23:09	333.33
trans-1,2-Dichloroethene	330	U	330	63	ug/L			11/27/20 23:09	333.33
Trichloroethene	330	U	330	33	ug/L			11/27/20 23:09	333.33
Vinyl chloride	4800		330	67	ug/L			11/27/20 23:09	333.33
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130					11/27/20 23:09	333.33
4-Bromofluorobenzene (Surr)	102		47 - 134					11/27/20 23:09	333.33
Toluene-d8 (Surr)	77		69 - 122					11/27/20 23:09	333.33
Dibromofluoromethane (Surr)	89		78 - 129					11/27/20 23:09	333.33

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Client Sample ID: MW-04_111720

Lab Sample ID: 240-140525-3

Date Collected: 11/17/20 12:37

Matrix: Water

Date Received: 11/19/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.0	J	2.0	0.86	ug/L			11/25/20 15:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133					11/25/20 15:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	710	U	710	140	ug/L			11/27/20 23:33	714.28
cis-1,2-Dichloroethene	13000	B	710	110	ug/L			11/27/20 23:33	714.28
Tetrachloroethene	710	U	710	110	ug/L			11/27/20 23:33	714.28
trans-1,2-Dichloroethene	410	J	710	140	ug/L			11/27/20 23:33	714.28
Trichloroethene	15000		710	71	ug/L			11/27/20 23:33	714.28
Vinyl chloride	1600		710	140	ug/L			11/27/20 23:33	714.28
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130					11/27/20 23:33	714.28
4-Bromofluorobenzene (Surr)	101		47 - 134					11/27/20 23:33	714.28
Toluene-d8 (Surr)	77		69 - 122					11/27/20 23:33	714.28
Dibromofluoromethane (Surr)	91		78 - 129					11/27/20 23:33	714.28

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Client Sample ID: LMW-20-14_111720

Lab Sample ID: 240-140525-4

Date Collected: 11/17/20 13:53

Matrix: Water

Date Received: 11/19/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/25/20 16:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 133					11/25/20 16:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/27/20 23:58	1
cis-1,2-Dichloroethene	0.62	J B	1.0	0.16	ug/L			11/27/20 23:58	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/27/20 23:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/27/20 23:58	1
Trichloroethene	0.72	J	1.0	0.10	ug/L			11/27/20 23:58	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/27/20 23:58	1
2-Methylnaphthalene	5.0	U	5.0	2.4	ug/L			11/27/20 23:58	1
Naphthalene	1.0	U	1.0	0.32	ug/L			11/27/20 23:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 130					11/27/20 23:58	1
4-Bromofluorobenzene (Surr)	100		47 - 134					11/27/20 23:58	1
Toluene-d8 (Surr)	78		69 - 122					11/27/20 23:58	1
Dibromofluoromethane (Surr)	87		78 - 129					11/27/20 23:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Client Sample ID: MW-02_111720

Lab Sample ID: 240-140525-5

Date Collected: 11/17/20 15:33

Matrix: Water

Date Received: 11/19/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.7		2.0	0.86	ug/L			11/25/20 16:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 133					11/25/20 16:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	250	U	250	48	ug/L			11/28/20 00:23	250
cis-1,2-Dichloroethene	3000	B	250	40	ug/L			11/28/20 00:23	250
Tetrachloroethene	250	U	250	38	ug/L			11/28/20 00:23	250
trans-1,2-Dichloroethene	630		250	48	ug/L			11/28/20 00:23	250
Trichloroethene	250	U	250	25	ug/L			11/28/20 00:23	250
Vinyl chloride	210	J	250	50	ug/L			11/28/20 00:23	250
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130					11/28/20 00:23	250
4-Bromofluorobenzene (Surr)	99		47 - 134					11/28/20 00:23	250
Toluene-d8 (Surr)	78		69 - 122					11/28/20 00:23	250
Dibromofluoromethane (Surr)	87		78 - 129					11/28/20 00:23	250

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Client Sample ID: DUP-08

Lab Sample ID: 240-140525-6

Date Collected: 11/17/20 00:00

Matrix: Water

Date Received: 11/19/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.90	J	2.0	0.86	ug/L			11/25/20 17:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 133					11/25/20 17:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	500	U	500	95	ug/L			11/28/20 00:48	500
cis-1,2-Dichloroethene	13000	B	500	80	ug/L			11/28/20 00:48	500
Tetrachloroethene	500	U	500	75	ug/L			11/28/20 00:48	500
trans-1,2-Dichloroethene	470	J	500	95	ug/L			11/28/20 00:48	500
Trichloroethene	15000		500	50	ug/L			11/28/20 00:48	500
Vinyl chloride	1400		500	100	ug/L			11/28/20 00:48	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130					11/28/20 00:48	500
4-Bromofluorobenzene (Surr)	98		47 - 134					11/28/20 00:48	500
Toluene-d8 (Surr)	77		69 - 122					11/28/20 00:48	500
Dibromofluoromethane (Surr)	87		78 - 129					11/28/20 00:48	500

Surrogate Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-140391-K-3 MS	Matrix Spike	87	107	80	87
240-140391-L-3 MSD	Matrix Spike Duplicate	86	103	81	87
240-140525-1	TRIP BLANK	90	103	80	88
240-140525-2	MW-10_111720	90	102	77	89
240-140525-3	MW-04_111720	90	101	77	91
240-140525-4	LMW-20-14_111720	85	100	78	87
240-140525-5	MW-02_111720	89	99	78	87
240-140525-6	DUP-08	86	98	77	87
LCS 240-463028/4	Lab Control Sample	85	106	83	89
MB 240-463028/7	Method Blank	88	98	78	84

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(70-133)
240-140525-2	MW-10_111720	99
240-140525-3	MW-04_111720	89
240-140525-4	LMW-20-14_111720	93
240-140525-5	MW-02_111720	98
240-140525-6	DUP-08	91
240-140735-C-3 MS	Matrix Spike	93
240-140735-C-3 MSD	Matrix Spike Duplicate	93
LCS 240-462831/4	Lab Control Sample	93
MB 240-462831/5	Method Blank	94

Surrogate Legend

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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

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

Lab Sample ID: MB 240-463028/7
Matrix: Water
Analysis Batch: 463028

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/27/20 16:03	1
cis-1,2-Dichloroethene	0.376	J	1.0	0.16	ug/L			11/27/20 16:03	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/27/20 16:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/27/20 16:03	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/27/20 16:03	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/27/20 16:03	1
2-Methylnaphthalene	5.0	U	5.0	2.4	ug/L			11/27/20 16:03	1
Naphthalene	1.0	U	1.0	0.32	ug/L			11/27/20 16:03	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		11/27/20 16:03	1
4-Bromofluorobenzene (Surr)	98		47 - 134		11/27/20 16:03	1
Toluene-d8 (Surr)	78		69 - 122		11/27/20 16:03	1
Dibromofluoromethane (Surr)	84		78 - 129		11/27/20 16:03	1

Lab Sample ID: LCS 240-463028/4
Matrix: Water
Analysis Batch: 463028

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	10.0	10.1		ug/L		101	73 - 129
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	75 - 124
Tetrachloroethene	10.0	9.47		ug/L		95	70 - 125
trans-1,2-Dichloroethene	10.0	10.0		ug/L		100	74 - 130
Trichloroethene	10.0	10.1		ug/L		101	71 - 121
Vinyl chloride	10.0	11.1		ug/L		111	61 - 134
Naphthalene	10.0	7.83		ug/L		78	28 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	85		75 - 130
4-Bromofluorobenzene (Surr)	106		47 - 134
Toluene-d8 (Surr)	83		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

Lab Sample ID: 240-140391-K-3 MS
Matrix: Water
Analysis Batch: 463028

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

Analyte	Sample Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U	10.0	10.1		ug/L		101	64 - 132
cis-1,2-Dichloroethene	0.45	J B	10.0	9.73		ug/L		93	68 - 121
Tetrachloroethene	1.0	U	10.0	8.75		ug/L		87	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.95		ug/L		90	69 - 126
Trichloroethene	1.0	U	10.0	9.54		ug/L		95	56 - 124
Vinyl chloride	1.0	U	10.0	10.5		ug/L		105	49 - 136

Eurofins TestAmerica, Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

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

Lab Sample ID: 240-140391-K-3 MS
Matrix: Water
Analysis Batch: 463028

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

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	87		75 - 130
4-Bromofluorobenzene (Surr)	107		47 - 134
Toluene-d8 (Surr)	80		69 - 122
Dibromofluoromethane (Surr)	87		78 - 129

Lab Sample ID: 240-140391-L-3 MSD
Matrix: Water
Analysis Batch: 463028

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
1,1-Dichloroethene	1.0	U	10.0	9.65		ug/L		96	64 - 132	5	35
cis-1,2-Dichloroethene	0.45	J B	10.0	10.0		ug/L		96	68 - 121	3	35
Tetrachloroethene	1.0	U	10.0	9.01		ug/L		90	52 - 129	3	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.15		ug/L		92	69 - 126	2	35
Trichloroethene	1.0	U	10.0	9.79		ug/L		98	56 - 124	3	35
Vinyl chloride	1.0	U	10.0	10.9		ug/L		109	49 - 136	3	35

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	86		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	81		69 - 122
Dibromofluoromethane (Surr)	87		78 - 129

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

Lab Sample ID: MB 240-462831/5
Matrix: Water
Analysis Batch: 462831

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/25/20 12:24	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	94		70 - 133		11/25/20 12:24	1

Lab Sample ID: LCS 240-462831/4
Matrix: Water
Analysis Batch: 462831

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
1,4-Dioxane	10.0	10.8		ug/L		108	80 - 135

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		70 - 133

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

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

Lab Sample ID: 240-140735-C-3 MS

Matrix: Water

Analysis Batch: 462831

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	10.7		ug/L		107	46 - 170
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	93		70 - 133						

Lab Sample ID: 240-140735-C-3 MSD

Matrix: Water

Analysis Batch: 462831

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	11.0		ug/L		110	46 - 170	3	26
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	93		70 - 133								

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

GC/MS VOA

Analysis Batch: 462831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140525-2	MW-10_111720	Total/NA	Water	8260B SIM	
240-140525-3	MW-04_111720	Total/NA	Water	8260B SIM	
240-140525-4	LMW-20-14_111720	Total/NA	Water	8260B SIM	
240-140525-5	MW-02_111720	Total/NA	Water	8260B SIM	
240-140525-6	DUP-08	Total/NA	Water	8260B SIM	
MB 240-462831/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-462831/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-140735-C-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-140735-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 463028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140525-1	TRIP BLANK	Total/NA	Water	8260B	
240-140525-2	MW-10_111720	Total/NA	Water	8260B	
240-140525-3	MW-04_111720	Total/NA	Water	8260B	
240-140525-4	LMW-20-14_111720	Total/NA	Water	8260B	
240-140525-5	MW-02_111720	Total/NA	Water	8260B	
240-140525-6	DUP-08	Total/NA	Water	8260B	
MB 240-463028/7	Method Blank	Total/NA	Water	8260B	
LCS 240-463028/4	Lab Control Sample	Total/NA	Water	8260B	
240-140391-K-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-140391-L-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Client Sample ID: TRIP BLANK

Date Collected: 11/17/20 00:00

Date Received: 11/19/20 09:20

Lab Sample ID: 240-140525-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	463028	11/27/20 22:44	LRW	TAL CAN

Client Sample ID: MW-10_111720

Date Collected: 11/17/20 11:23

Date Received: 11/19/20 09:20

Lab Sample ID: 240-140525-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		333.33	463028	11/27/20 23:09	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462831	11/25/20 15:21	SAM	TAL CAN

Client Sample ID: MW-04_111720

Date Collected: 11/17/20 12:37

Date Received: 11/19/20 09:20

Lab Sample ID: 240-140525-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		714.28	463028	11/27/20 23:33	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462831	11/25/20 15:46	SAM	TAL CAN

Client Sample ID: LMW-20-14_111720

Date Collected: 11/17/20 13:53

Date Received: 11/19/20 09:20

Lab Sample ID: 240-140525-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	463028	11/27/20 23:58	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462831	11/25/20 16:11	SAM	TAL CAN

Client Sample ID: MW-02_111720

Date Collected: 11/17/20 15:33

Date Received: 11/19/20 09:20

Lab Sample ID: 240-140525-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	463028	11/28/20 00:23	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462831	11/25/20 16:36	SAM	TAL CAN

Client Sample ID: DUP-08

Date Collected: 11/17/20 00:00

Date Received: 11/19/20 09:20

Lab Sample ID: 240-140525-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		500	463028	11/28/20 00:48	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462831	11/25/20 17:02	SAM	TAL CAN

Laboratory References:

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

Eurofins TestAmerica, Canton

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-140525-1

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : 140525
Canton Facility

Client Arcadis Site Name _____ Cooler unpacked by: Matt Snyder
Cooler Received on 11-19-20 Opened on 11-19-20
FedEx: Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

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

TestAmerica Cooler # 712 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-11 (CF +0.9 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN #IR-12 (CF +0.5 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC907861
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

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

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

19. 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)

20. SAMPLE PRESERVATION
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____

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