

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Megan Meckley
Arcadis U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

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JOB DESCRIPTION

Ford LTP

JOB NUMBER

240-208976-1

Eurofins Cleveland

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	15
QC Sample Results	16
QC Association Summary	23
Lab Chronicle	24
Certification Summary	25
Chain of Custody	26

Definitions/Glossary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
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: Ford LTP

Job ID: 240-208976-1

Job ID: 240-208976-1

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Job Narrative 240-208976-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 8/7/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2°C and 1.3°C.

GC/MS VOA

Method 8260D: The following sample(s) was unable to be prepared and/or analyzed due to instrument failure : MS/MSD.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-623420 was outside the method criteria for the following analyte(s): 1,1-Dichloroethene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples MW-04_080124 (240-208976-3) and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

No additional 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

Job ID: 240-208976-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CLE
8260D SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CLE
5030C	Purge and Trap	SW846	EET CLE

Protocol References:

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

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396



Sample Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-208976-1	TRIP BLANK_107	Water	08/01/24 00:00	08/07/24 08:00
240-208976-2	MW-10_080124	Water	08/01/24 14:55	08/07/24 08:00
240-208976-3	MW-04_080124	Water	08/01/24 13:05	08/07/24 08:00
240-208976-4	DUP-03	Water	08/01/24 00:00	08/07/24 08:00
240-208976-5	MW-02_080124	Water	08/01/24 09:25	08/07/24 08:00
240-208976-6	MW-05_080124	Water	08/01/24 11:35	08/07/24 08:00

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

Detection Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Client Sample ID: TRIP BLANK_107

Lab Sample ID: 240-208976-1

No Detections.

Client Sample ID: MW-10_080124

Lab Sample ID: 240-208976-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.6		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	8700		400	180	ug/L	400		8260D	Total/NA

Client Sample ID: MW-04_080124

Lab Sample ID: 240-208976-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.8	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	3900		63	29	ug/L	62.5		8260D	Total/NA
trans-1,2-Dichloroethene	130		63	32	ug/L	62.5		8260D	Total/NA
Trichloroethene	160		63	28	ug/L	62.5		8260D	Total/NA
Vinyl chloride	2600		63	28	ug/L	62.5		8260D	Total/NA

Client Sample ID: DUP-03

Lab Sample ID: 240-208976-4

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		8260D SIM	Total/NA
cis-1,2-Dichloroethene	3700		63	29	ug/L	62.5		8260D	Total/NA
trans-1,2-Dichloroethene	120		63	32	ug/L	62.5		8260D	Total/NA
Trichloroethene	160		63	28	ug/L	62.5		8260D	Total/NA
Vinyl chloride	2500		63	28	ug/L	62.5		8260D	Total/NA

Client Sample ID: MW-02_080124

Lab Sample ID: 240-208976-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.6		2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	5200		170	77	ug/L	166.667		8260D	Total/NA
trans-1,2-Dichloroethene	770		170	85	ug/L	166.667		8260D	Total/NA
Vinyl chloride	480		170	75	ug/L	166.667		8260D	Total/NA

Client Sample ID: MW-05_080124

Lab Sample ID: 240-208976-6

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Client Sample ID: TRIP BLANK_107

Lab Sample ID: 240-208976-1

Date Collected: 08/01/24 00:00

Matrix: Water

Date Received: 08/07/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/14/24 13:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/24 13:48	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 13:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/24 13:48	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 13:48	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/14/24 13:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	126		62 - 137		08/14/24 13:48	1
4-Bromofluorobenzene (Surr)	89		56 - 136		08/14/24 13:48	1
Toluene-d8 (Surr)	101		78 - 122		08/14/24 13:48	1
Dibromofluoromethane (Surr)	109		73 - 120		08/14/24 13:48	1

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Client Sample ID: MW-10_080124

Lab Sample ID: 240-208976-2

Date Collected: 08/01/24 14:55

Matrix: Water

Date Received: 08/07/24 08:00

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.6		2.0	0.86	ug/L			08/12/24 15:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		68 - 127					08/12/24 15:28	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	400	U	400	200	ug/L			08/13/24 19:49	400
cis-1,2-Dichloroethene	400	U	400	180	ug/L			08/13/24 19:49	400
Tetrachloroethene	400	U	400	180	ug/L			08/13/24 19:49	400
trans-1,2-Dichloroethene	400	U	400	200	ug/L			08/13/24 19:49	400
Trichloroethene	400	U	400	180	ug/L			08/13/24 19:49	400
Vinyl chloride	8700		400	180	ug/L			08/13/24 19:49	400
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	129		62 - 137					08/13/24 19:49	400
4-Bromofluorobenzene (Surr)	85		56 - 136					08/13/24 19:49	400
Toluene-d8 (Surr)	98		78 - 122					08/13/24 19:49	400
Dibromofluoromethane (Surr)	113		73 - 120					08/13/24 19:49	400

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Client Sample ID: MW-04_080124

Lab Sample ID: 240-208976-3

Date Collected: 08/01/24 13:05

Matrix: Water

Date Received: 08/07/24 08:00

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.8	J	2.0	0.86	ug/L			08/12/24 15:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		68 - 127					08/12/24 15:52	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	63	U	63	31	ug/L			08/15/24 10:32	62.5
cis-1,2-Dichloroethene	3900		63	29	ug/L			08/15/24 10:32	62.5
Tetrachloroethene	63	U	63	28	ug/L			08/15/24 10:32	62.5
trans-1,2-Dichloroethene	130		63	32	ug/L			08/15/24 10:32	62.5
Trichloroethene	160		63	28	ug/L			08/15/24 10:32	62.5
Vinyl chloride	2600		63	28	ug/L			08/15/24 10:32	62.5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		62 - 137					08/15/24 10:32	62.5
4-Bromofluorobenzene (Surr)	103		56 - 136					08/15/24 10:32	62.5
Toluene-d8 (Surr)	103		78 - 122					08/15/24 10:32	62.5
Dibromofluoromethane (Surr)	93		73 - 120					08/15/24 10:32	62.5

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Client Sample ID: DUP-03

Lab Sample ID: 240-208976-4

Date Collected: 08/01/24 00:00

Matrix: Water

Date Received: 08/07/24 08:00

Method: SW846 8260D 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			08/13/24 13:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		68 - 127					08/13/24 13:21	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	63	U	63	31	ug/L			08/14/24 13:37	62.5
cis-1,2-Dichloroethene	3700		63	29	ug/L			08/14/24 13:37	62.5
Tetrachloroethene	63	U	63	28	ug/L			08/14/24 13:37	62.5
trans-1,2-Dichloroethene	120		63	32	ug/L			08/14/24 13:37	62.5
Trichloroethene	160		63	28	ug/L			08/14/24 13:37	62.5
Vinyl chloride	2500		63	28	ug/L			08/14/24 13:37	62.5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		62 - 137					08/14/24 13:37	62.5
4-Bromofluorobenzene (Surr)	102		56 - 136					08/14/24 13:37	62.5
Toluene-d8 (Surr)	102		78 - 122					08/14/24 13:37	62.5
Dibromofluoromethane (Surr)	91		73 - 120					08/14/24 13:37	62.5

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Client Sample ID: MW-02_080124

Lab Sample ID: 240-208976-5

Date Collected: 08/01/24 09:25

Matrix: Water

Date Received: 08/07/24 08:00

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.6		2.0	0.86	ug/L			08/13/24 12:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		68 - 127					08/13/24 12:57	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	170	U	170	82	ug/L			08/13/24 17:42	166.667
cis-1,2-Dichloroethene	5200		170	77	ug/L			08/13/24 17:42	166.667
Tetrachloroethene	170	U	170	73	ug/L			08/13/24 17:42	166.667
trans-1,2-Dichloroethene	770		170	85	ug/L			08/13/24 17:42	166.667
Trichloroethene	170	U	170	73	ug/L			08/13/24 17:42	166.667
Vinyl chloride	480		170	75	ug/L			08/13/24 17:42	166.667
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124		62 - 137					08/13/24 17:42	166.667
4-Bromofluorobenzene (Surr)	78		56 - 136					08/13/24 17:42	166.667
Toluene-d8 (Surr)	96		78 - 122					08/13/24 17:42	166.667
Dibromofluoromethane (Surr)	112		73 - 120					08/13/24 17:42	166.667

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Client Sample ID: MW-05_080124

Lab Sample ID: 240-208976-6

Date Collected: 08/01/24 11:35

Matrix: Water

Date Received: 08/07/24 08:00

Method: SW846 8260D 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			08/13/24 12:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		68 - 127					08/13/24 12:34	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/14/24 12:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/24 12:38	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 12:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/24 12:38	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 12:38	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/14/24 12:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		62 - 137					08/14/24 12:38	1
4-Bromofluorobenzene (Surr)	106		56 - 136					08/14/24 12:38	1
Toluene-d8 (Surr)	103		78 - 122					08/14/24 12:38	1
Dibromofluoromethane (Surr)	93		73 - 120					08/14/24 12:38	1

Surrogate Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-208976-1	TRIP BLANK_107	126	89	101	109
240-208976-2	MW-10_080124	129	85	98	113
240-208976-2 MS	MW-10_080124	99	86	91	92
240-208976-2 MSD	MW-10_080124	107	106	97	102
240-208976-3	MW-04_080124	114	103	103	93
240-208976-4	DUP-03	114	102	102	91
240-208976-5	MW-02_080124	124	78	96	112
240-208976-6	MW-05_080124	118	106	103	93
240-209169-B-6 MS	Matrix Spike	116	115	102	103
240-209169-B-6 MSD	Matrix Spike Duplicate	108	103	93	96
240-209185-B-1 MS	Matrix Spike	110	110	100	98
240-209185-B-1 MSD	Matrix Spike Duplicate	104	101	93	92
LCS 240-623180/6	Lab Control Sample	102	103	98	96
LCS 240-623282/5	Lab Control Sample	103	107	97	93
LCS 240-623297/6	Lab Control Sample	105	109	105	95
LCS 240-623420/5	Lab Control Sample	115	115	105	103
MB 240-623180/10	Method Blank	113	89	98	105
MB 240-623282/10	Method Blank	112	102	103	91
MB 240-623297/10	Method Blank	126	91	103	107
MB 240-623420/10	Method Blank	118	106	102	96

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (68-127)
240-208970-E-3 MS	Matrix Spike	110
240-208970-E-3 MSD	Matrix Spike Duplicate	108
240-208976-2	MW-10_080124	108
240-208976-3	MW-04_080124	106
240-208976-4	DUP-03	107
240-208976-5	MW-02_080124	109
240-208976-6	MW-05_080124	109
240-209082-E-2 MS	Matrix Spike	109
240-209082-E-2 MSD	Matrix Spike Duplicate	99
LCS 240-622992/4	Lab Control Sample	103
LCS 240-623167/4	Lab Control Sample	97
MB 240-622992/7	Method Blank	101
MB 240-623167/6	Method Blank	105

Surrogate Legend

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

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-623180/10

Matrix: Water

Analysis Batch: 623180

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	0.49	ug/L			08/13/24 12:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/13/24 12:38	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/13/24 12:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/13/24 12:38	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/13/24 12:38	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/13/24 12:38	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	113		62 - 137		08/13/24 12:38	1
4-Bromofluorobenzene (Surr)	89		56 - 136		08/13/24 12:38	1
Toluene-d8 (Surr)	98		78 - 122		08/13/24 12:38	1
Dibromofluoromethane (Surr)	105		73 - 120		08/13/24 12:38	1

Lab Sample ID: LCS 240-623180/6

Matrix: Water

Analysis Batch: 623180

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	20.0	17.4		ug/L		87	63 - 134
cis-1,2-Dichloroethene	20.0	18.0		ug/L		90	77 - 123
Tetrachloroethene	20.0	19.8		ug/L		99	76 - 123
trans-1,2-Dichloroethene	20.0	17.7		ug/L		89	75 - 124
Trichloroethene	20.0	19.0		ug/L		95	70 - 122
Vinyl chloride	20.0	17.9		ug/L		90	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		62 - 137
4-Bromofluorobenzene (Surr)	103		56 - 136
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	96		73 - 120

Lab Sample ID: 240-208976-2 MS

Matrix: Water

Analysis Batch: 623180

Client Sample ID: MW-10_080124

Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	400	U	8000	6800		ug/L		85	56 - 135
cis-1,2-Dichloroethene	400	U	8000	7160		ug/L		90	66 - 128
Tetrachloroethene	400	U	8000	6930		ug/L		87	62 - 131
trans-1,2-Dichloroethene	400	U	8000	6810		ug/L		85	56 - 136
Trichloroethene	400	U	8000	7340		ug/L		92	61 - 124
Vinyl chloride	8700		8000	12400		ug/L		46	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	99		62 - 137
4-Bromofluorobenzene (Surr)	86		56 - 136
Toluene-d8 (Surr)	91		78 - 122

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QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

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

Lab Sample ID: 240-208976-2 MS
Matrix: Water
Analysis Batch: 623180

Client Sample ID: MW-10_080124
Prep Type: Total/NA

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	92		73 - 120

Lab Sample ID: 240-208976-2 MSD
Matrix: Water
Analysis Batch: 623180

Client Sample ID: MW-10_080124
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
1,1-Dichloroethene	400	U	8000	6920		ug/L		86	56 - 135	2	26
cis-1,2-Dichloroethene	400	U	8000	7480		ug/L		93	66 - 128	4	14
Tetrachloroethene	400	U	8000	7230		ug/L		90	62 - 131	4	20
trans-1,2-Dichloroethene	400	U	8000	7040		ug/L		88	56 - 136	3	15
Trichloroethene	400	U	8000	7590		ug/L		95	61 - 124	3	15
Vinyl chloride	8700		8000	13200		ug/L		56	43 - 157	6	24

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	107		62 - 137
4-Bromofluorobenzene (Surr)	106		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	102		73 - 120

Lab Sample ID: MB 240-623282/10
Matrix: Water
Analysis Batch: 623282

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	0.49	ug/L		08/14/24 07:02	1	
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L		08/14/24 07:02	1	
Tetrachloroethene	1.0	U	1.0	0.44	ug/L		08/14/24 07:02	1	
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L		08/14/24 07:02	1	
Trichloroethene	1.0	U	1.0	0.44	ug/L		08/14/24 07:02	1	
Vinyl chloride	1.0	U	1.0	0.45	ug/L		08/14/24 07:02	1	

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	112		62 - 137		08/14/24 07:02	1
4-Bromofluorobenzene (Surr)	102		56 - 136		08/14/24 07:02	1
Toluene-d8 (Surr)	103		78 - 122		08/14/24 07:02	1
Dibromofluoromethane (Surr)	91		73 - 120		08/14/24 07:02	1

Lab Sample ID: LCS 240-623282/5
Matrix: Water
Analysis Batch: 623282

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec
		Result	Qualifier				Limits
1,1-Dichloroethene	50.0	37.7		ug/L		75	63 - 134
cis-1,2-Dichloroethene	50.0	44.6		ug/L		89	77 - 123
Tetrachloroethene	50.0	46.2		ug/L		92	76 - 123
trans-1,2-Dichloroethene	50.0	40.4		ug/L		81	75 - 124
Trichloroethene	50.0	43.9		ug/L		88	70 - 122

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QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

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

Lab Sample ID: LCS 240-623282/5

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 623282

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	50.0	46.1		ug/L		92	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	107		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	93		73 - 120

Lab Sample ID: 240-209185-B-1 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 623282

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.0	U	50.0	33.4		ug/L		67	56 - 135
cis-1,2-Dichloroethene	1.0	U	50.0	42.6		ug/L		85	66 - 128
Tetrachloroethene	1.0	U	50.0	40.2		ug/L		80	62 - 131
trans-1,2-Dichloroethene	1.0	U	50.0	38.0		ug/L		76	56 - 136
Trichloroethene	1.0	U	50.0	41.3		ug/L		83	61 - 124
Vinyl chloride	1.0	U	50.0	43.1		ug/L		86	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110		62 - 137
4-Bromofluorobenzene (Surr)	110		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	98		73 - 120

Lab Sample ID: 240-209185-B-1 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 623282

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	50.0	32.5		ug/L		65	56 - 135	3	26
cis-1,2-Dichloroethene	1.0	U	50.0	41.4		ug/L		83	66 - 128	3	14
Tetrachloroethene	1.0	U	50.0	38.9		ug/L		78	62 - 131	3	20
trans-1,2-Dichloroethene	1.0	U	50.0	37.1		ug/L		74	56 - 136	2	15
Trichloroethene	1.0	U	50.0	40.2		ug/L		80	61 - 124	3	15
Vinyl chloride	1.0	U	50.0	42.6		ug/L		85	43 - 157	1	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		62 - 137
4-Bromofluorobenzene (Surr)	101		56 - 136
Toluene-d8 (Surr)	93		78 - 122
Dibromofluoromethane (Surr)	92		73 - 120

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

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

Lab Sample ID: MB 240-623297/10

Matrix: Water

Analysis Batch: 623297

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	0.49	ug/L			08/14/24 13:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/24 13:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 13:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/24 13:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/24 13:23	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/14/24 13:23	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	126		62 - 137		08/14/24 13:23	1
4-Bromofluorobenzene (Surr)	91		56 - 136		08/14/24 13:23	1
Toluene-d8 (Surr)	103		78 - 122		08/14/24 13:23	1
Dibromofluoromethane (Surr)	107		73 - 120		08/14/24 13:23	1

Lab Sample ID: LCS 240-623297/6

Matrix: Water

Analysis Batch: 623297

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	20.0	17.6		ug/L		88	77 - 123
Tetrachloroethene	20.0	18.5		ug/L		92	76 - 123
trans-1,2-Dichloroethene	20.0	17.9		ug/L		89	75 - 124
Trichloroethene	20.0	17.2		ug/L		86	70 - 122
Vinyl chloride	20.0	18.2		ug/L		91	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	105		62 - 137
4-Bromofluorobenzene (Surr)	109		56 - 136
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	95		73 - 120

Lab Sample ID: MB 240-623420/10

Matrix: Water

Analysis Batch: 623420

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	0.49	ug/L			08/15/24 09:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/15/24 09:52	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/15/24 09:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/15/24 09:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/15/24 09:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/15/24 09:52	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	118		62 - 137		08/15/24 09:52	1
4-Bromofluorobenzene (Surr)	106		56 - 136		08/15/24 09:52	1
Toluene-d8 (Surr)	102		78 - 122		08/15/24 09:52	1

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QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

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

Lab Sample ID: MB 240-623420/10

Matrix: Water

Analysis Batch: 623420

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane (Surr)	96		73 - 120		08/15/24 09:52	1

Lab Sample ID: LCS 240-623420/5

Matrix: Water

Analysis Batch: 623420

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	50.0	44.3		ug/L		89	77 - 123
Tetrachloroethene	50.0	45.6		ug/L		91	76 - 123
trans-1,2-Dichloroethene	50.0	41.4		ug/L		83	75 - 124
Trichloroethene	50.0	44.5		ug/L		89	70 - 122
Vinyl chloride	50.0	48.4		ug/L		97	60 - 144

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	115		62 - 137
4-Bromofluorobenzene (Surr)	115		56 - 136
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	103		73 - 120

Lab Sample ID: 240-209169-B-6 MS

Matrix: Water

Analysis Batch: 623420

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
cis-1,2-Dichloroethene	1.0	U	50.0	41.9		ug/L		84	66 - 128
Tetrachloroethene	1.0	U	50.0	38.7		ug/L		77	62 - 131
trans-1,2-Dichloroethene	1.0	U	50.0	37.5		ug/L		75	56 - 136
Trichloroethene	1.0	U	50.0	39.5		ug/L		79	61 - 124
Vinyl chloride	1.0	U	50.0	44.5		ug/L		89	43 - 157

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	116		62 - 137
4-Bromofluorobenzene (Surr)	115		56 - 136
Toluene-d8 (Surr)	102		78 - 122
Dibromofluoromethane (Surr)	103		73 - 120

Lab Sample ID: 240-209169-B-6 MSD

Matrix: Water

Analysis Batch: 623420

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
cis-1,2-Dichloroethene	1.0	U	50.0	40.3		ug/L		81	66 - 128	4	14
Tetrachloroethene	1.0	U	50.0	35.2		ug/L		70	62 - 131	9	20
trans-1,2-Dichloroethene	1.0	U	50.0	35.2		ug/L		70	56 - 136	6	15
Trichloroethene	1.0	U	50.0	37.9		ug/L		76	61 - 124	4	15

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QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

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

Lab Sample ID: 240-209169-B-6 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 623420

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl chloride	1.0	U	50.0	43.2		ug/L		86	43 - 157	3	24
Surrogate											
	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	108		62 - 137								
4-Bromofluorobenzene (Surr)	103		56 - 136								
Toluene-d8 (Surr)	93		78 - 122								
Dibromofluoromethane (Surr)	96		73 - 120								

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

Lab Sample ID: MB 240-622992/7

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 622992

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			08/12/24 10:23	1
Surrogate									
	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 127					08/12/24 10:23	1

Lab Sample ID: LCS 240-622992/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 622992

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	10.0	9.30		ug/L		93	75 - 121
Surrogate							
	%Recovery	Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	103		68 - 127				

Lab Sample ID: 240-208970-E-3 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 622992

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	2.0	U	10.0	8.89		ug/L		89	20 - 180
Surrogate									
	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	110		68 - 127						

Lab Sample ID: 240-208970-E-3 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 622992

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	9.27		ug/L		93	20 - 180	4	20

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QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

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

Lab Sample ID: 240-208970-E-3 MSD
Matrix: Water
Analysis Batch: 622992

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

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	108		68 - 127

Lab Sample ID: MB 240-623167/6
Matrix: Water
Analysis Batch: 623167

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			08/13/24 11:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		68 - 127		08/13/24 11:00	1

Lab Sample ID: LCS 240-623167/4
Matrix: Water
Analysis Batch: 623167

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	9.32		ug/L		93	75 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		68 - 127

Lab Sample ID: 240-209082-E-2 MS
Matrix: Water
Analysis Batch: 623167

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	11.5		ug/L		115	20 - 180

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		68 - 127

Lab Sample ID: 240-209082-E-2 MSD
Matrix: Water
Analysis Batch: 623167

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	20 - 180	5	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		68 - 127

QC Association Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

GC/MS VOA

Analysis Batch: 622992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-208976-2	MW-10_080124	Total/NA	Water	8260D SIM	
240-208976-3	MW-04_080124	Total/NA	Water	8260D SIM	
MB 240-622992/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-622992/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-208970-E-3 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-208970-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 623167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-208976-4	DUP-03	Total/NA	Water	8260D SIM	
240-208976-5	MW-02_080124	Total/NA	Water	8260D SIM	
240-208976-6	MW-05_080124	Total/NA	Water	8260D SIM	
MB 240-623167/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-623167/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-209082-E-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-209082-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 623180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-208976-2	MW-10_080124	Total/NA	Water	8260D	
240-208976-5	MW-02_080124	Total/NA	Water	8260D	
MB 240-623180/10	Method Blank	Total/NA	Water	8260D	
LCS 240-623180/6	Lab Control Sample	Total/NA	Water	8260D	
240-208976-2 MS	MW-10_080124	Total/NA	Water	8260D	
240-208976-2 MSD	MW-10_080124	Total/NA	Water	8260D	

Analysis Batch: 623282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-208976-4	DUP-03	Total/NA	Water	8260D	
240-208976-6	MW-05_080124	Total/NA	Water	8260D	
MB 240-623282/10	Method Blank	Total/NA	Water	8260D	
LCS 240-623282/5	Lab Control Sample	Total/NA	Water	8260D	
240-209185-B-1 MS	Matrix Spike	Total/NA	Water	8260D	
240-209185-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 623297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-208976-1	TRIP BLANK_107	Total/NA	Water	8260D	
MB 240-623297/10	Method Blank	Total/NA	Water	8260D	
LCS 240-623297/6	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 623420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-208976-3	MW-04_080124	Total/NA	Water	8260D	
MB 240-623420/10	Method Blank	Total/NA	Water	8260D	
LCS 240-623420/5	Lab Control Sample	Total/NA	Water	8260D	
240-209169-B-6 MS	Matrix Spike	Total/NA	Water	8260D	
240-209169-B-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Lab Chronicle

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Client Sample ID: TRIP BLANK_107

Lab Sample ID: 240-208976-1

Date Collected: 08/01/24 00:00

Matrix: Water

Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	623297	MDH	EET CLE	08/14/24 13:48

Client Sample ID: MW-10_080124

Lab Sample ID: 240-208976-2

Date Collected: 08/01/24 14:55

Matrix: Water

Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		400	623180	MDH	EET CLE	08/13/24 19:49
Total/NA	Analysis	8260D SIM		1	622992	MS	EET CLE	08/12/24 15:28

Client Sample ID: MW-04_080124

Lab Sample ID: 240-208976-3

Date Collected: 08/01/24 13:05

Matrix: Water

Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		62.5	623420	TJL2	EET CLE	08/15/24 10:32
Total/NA	Analysis	8260D SIM		1	622992	MS	EET CLE	08/12/24 15:52

Client Sample ID: DUP-03

Lab Sample ID: 240-208976-4

Date Collected: 08/01/24 00:00

Matrix: Water

Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		62.5	623282	TJL2	EET CLE	08/14/24 13:37
Total/NA	Analysis	8260D SIM		1	623167	MS	EET CLE	08/13/24 13:21

Client Sample ID: MW-02_080124

Lab Sample ID: 240-208976-5

Date Collected: 08/01/24 09:25

Matrix: Water

Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		166.667	623180	MDH	EET CLE	08/13/24 17:42
Total/NA	Analysis	8260D SIM		1	623167	MS	EET CLE	08/13/24 12:57

Client Sample ID: MW-05_080124

Lab Sample ID: 240-208976-6

Date Collected: 08/01/24 11:35

Matrix: Water

Date Received: 08/07/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	623282	TJL2	EET CLE	08/14/24 12:38
Total/NA	Analysis	8260D SIM		1	623167	MS	EET CLE	08/13/24 12:34

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-208976-1

Laboratory: Eurofins Cleveland

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

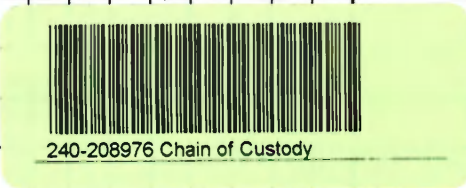
Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24



Chain of Custody Record

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

Client Contact		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other		TestAmerica Laboratories, Inc.																						
Company Name: Arcadis		Client Project Manager: Kris Hinskey			Site Contact: Christina Weaver			Lab Contact: Mike DeMonico			COC No:															
Address: 28550 Cabot Drive, Suite 500		Telephone: 248-994-2240			Telephone: 248-994-2240			Telephone: 330-497-9396			1 of 1 COCs															
City/State/Zip: Novi, MI, 48377		Email: kristoffer.hinskey@arcadis.com			Analysis Turnaround Time					Analyses																
Phone: 248-994-2240		Sampler Name: <i>Kent Kuspe</i>			TAT if different from below					<input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day																
Project Name: Ford LTP		Method of Shipment/Carrier:			Filtered Sample (Y/N)																					
Project Number: 30206169.0401.03		Shipping/Tracking No:			Composite=C / Grab=G					<input type="checkbox"/> 1,1-DCE 8260D <input type="checkbox"/> cis-1,2-DCE 8260D <input type="checkbox"/> Trans-1,2-DCE 8260D <input type="checkbox"/> PCE 8260D <input type="checkbox"/> TCE 8260D <input type="checkbox"/> Vinyl Chloride 8260D <input type="checkbox"/> 1,4-Dioxane 8260D SIM																
PO # US3410018772		Matrix			Containers & Preservatives																					
Sample Identification		Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc	NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	1,1-DCE 8260D	cis-1,2-DCE 8260D	Trans-1,2-DCE 8260D	PCE 8260D	TCE 8260D	Vinyl Chloride 8260D	1,4-Dioxane 8260D SIM	For lab use only
TRIP BLANK_ 107		---	---	1							1						NG	X	X	X	X	X			1 Trip Blank	
MW-10-080124		8/1/24	1455	6							6						NG	X	X	X	X	X			3 VOAs for 8260D 3 VOAs for 8260D SIM	
MW-4-080124		8/1/24	1305	6							6						NG	X	X	X	X	X				
DUP-03		8/1/24	— ⁽⁵⁾	6							6						NG	X	X	X	X	X				
MW-02-080124		8/1/24	0905	6							6						NG	X	X	X	X	X				
MW-05-080124		8/1/24	1135	6							6						NG	X	X	X	X	X				
Possible Hazard Identification		<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																			
Special Instructions/QC Requirements & Comments:		<input checked="" type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728 Level IV Reporting requested.																			
Relinquished by: <i>Kent Kuspe</i>		Company: Arcadis	Date/Time: 8/1/24 1625	Received by: <i>Novi Cold Storage</i>		Company: Arcadis	Date/Time: 8/1/24 1625																			
Relinquished by: <i>Novi Cold Storage</i>		Company: ARCADIS	Date/Time: 8/2/24 1600	Received by: <i>[Signature]</i>		Company: ARCADIS	Date/Time: 8/2/24 1600																			
Relinquished by: <i>[Signature]</i>		Company: ARCADIS	Date/Time: 8/2/24 1700	Received in Laboratory by: <i>[Signature]</i>		Company: EETA	Date/Time: 8/2/24																			



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Eurofins - Cleveland Sample Receipt Form/Narrative
 Barberlon Facility
 Client Alrad/s Site Name _____
 Login # _____
 Cooler unpacked by: [Signature]

Cooler Received on 8-7-24 Opened on 8-7-24

FedEx. 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____
 Receipt After-hours Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC 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 # 22 (CF -01 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

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

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2
 - 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?
 - 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# HC442471
 - 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 _____

Temperature readings

Client Sample ID	Lab ID	Container Type	Container	Preservation	Preservation
			pH	Temp	Added
					Lot Number
TRIP BLANK_107	240-208976-A-1	Voa Vial 40ml - Hydrochloric Acid			
MW-10_080124	240-208976-A-2	Voa Vial 40ml - Hydrochloric Acid			
MW-10_080124	240-208976-B-2	Voa Vial 40ml - Hydrochloric Acid			
MW-10_080124	240-208976-C-2	Voa Vial 40ml - Hydrochloric Acid			
MW-10_080124	240-208976-D-2	Voa Vial 40ml - Hydrochloric Acid			
MW-10_080124	240-208976-E-2	Voa Vial 40ml - Hydrochloric Acid			
MW-10_080124	240-208976-F-2	Voa Vial 40ml - Hydrochloric Acid			
MW-04_080124	240-208976-A-3	Voa Vial 40ml - Hydrochloric Acid			
MW-04_080124	240-208976-B-3	Voa Vial 40ml - Hydrochloric Acid			
MW-04_080124	240-208976-C-3	Voa Vial 40ml - Hydrochloric Acid			
MW-04_080124	240-208976-D-3	Voa Vial 40ml - Hydrochloric Acid			
MW-04_080124	240-208976-E-3	Voa Vial 40ml - Hydrochloric Acid			
MW-04_080124	240-208976-F-3	Voa Vial 40ml - Hydrochloric Acid			
DUP-03	240-208976-A-4	Voa Vial 40ml - Hydrochloric Acid			
DUP-03	240-208976-B-4	Voa Vial 40ml - Hydrochloric Acid			
DUP-03	240-208976-C-4	Voa Vial 40ml - Hydrochloric Acid			
DUP-03	240-208976-D-4	Voa Vial 40ml - Hydrochloric Acid			
DUP-03	240-208976-E-4	Voa Vial 40ml - Hydrochloric Acid			
DUP-03	240-208976-F-4	Voa Vial 40ml - Hydrochloric Acid			
MW-02_080124	240-208976-A-5	Voa Vial 40ml - Hydrochloric Acid			
MW-02_080124	240-208976-B-5	Voa Vial 40ml - Hydrochloric Acid			
MW-02_080124	240-208976-C-5	Voa Vial 40ml - Hydrochloric Acid			
MW-02_080124	240-208976-D-5	Voa Vial 40ml - Hydrochloric Acid			
MW-02_080124	240-208976-E-5	Voa Vial 40ml - Hydrochloric Acid			
MW-02_080124	240-208976-F-5	Voa Vial 40ml - Hydrochloric Acid			
MW-05_080124	240-208976-A-6	Voa Vial 40ml - Hydrochloric Acid			
MW-05_080124	240-208976-B-6	Voa Vial 40ml - Hydrochloric Acid			
MW-05_080124	240-208976-C-6	Voa Vial 40ml - Hydrochloric Acid			
MW-05_080124	240-208976-D-6	Voa Vial 40ml - Hydrochloric Acid			
MW-05_080124	240-208976-E-6	Voa Vial 40ml - Hydrochloric Acid			
MW-05_080124	240-208976-F-6	Voa Vial 40ml - Hydrochloric Acid			

DATA VERIFICATION REPORT



August 21, 2024

Megan Meckley
Arcadis
28550 Cabot Drive
Suite 500
Novi, MI US 48377

CADENA project ID: E203728
Project: Ford Livonia Transmission Plant - Soil Gas, Ground Water and Soil
Project number: 30206169.0401.04_WA-02
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 208976-1
Sample date: 2024-08-01
Report received by CADENA: 2024-08-21
Initial Data Verification completed by CADENA: 2024-08-21
Number of Samples:6
Sample Matrices:Water
Test Categories:GCMS VOC

Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.

The following minor QC exceptions or missing information were noted:

GCMS VOC QC batch CCV response outliers as noted in the laboratory submittal case narrative were not used to qualify client sample results as part of this level 2 data package verification review.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, MS/MSD Recovery, MS/MSD RPD, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <http://clms.cadenaco.com/index.cfm>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 208976-1

Analyte	Cas No.	Sample Name: TRIP BLANK_107				MW-10_080124				MW-04_080124				DUP-03				MW-02_080124				MW-05_080124			
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC																									
<u>OSW-8260D</u>																									
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	400	ug/l	---	ND	63	ug/l	---	ND	63	ug/l	---	ND	170	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	400	ug/l	---	3900	63	ug/l	---	3700	63	ug/l	---	5200	170	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	400	ug/l	---	ND	63	ug/l	---	ND	63	ug/l	---	ND	170	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	400	ug/l	---	130	63	ug/l	---	120	63	ug/l	---	770	170	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	400	ug/l	---	160	63	ug/l	---	160	63	ug/l	---	ND	170	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	8700	400	ug/l	---	2600	63	ug/l	---	2500	63	ug/l	---	480	170	ug/l	---	ND	1.0	ug/l	---
<u>OSW-8260DSIM</u>																									
1,4-Dioxane	123-91-1					4.6	2.0	ug/l	---	1.8	2.0	ug/l	J	1.6	2.0	ug/l	J	4.6	2.0	ug/l	---	ND	2.0	ug/l	---