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ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey
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28550 Cabot Drive
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Novi, Michigan 48377

Generated 5/29/2024 8:21:38 AM

JOB DESCRIPTION

Ford LTP

JOB NUMBER

240-204563-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

myEOL

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
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Table of Contents

Client: Arcadis U.S., Inc.
Job ID: 240-204563-1
Project/Site: Ford LTP

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
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.
¤	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

Job Narrative
240-204563-1

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 5/16/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.3°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-614198 was outside the method criteria for the following analyte(s): Vinyl chloride. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples 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.

Method Summary

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

Job ID: 240-204563-1

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: 240-204563-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-204563-1	TRIP BLANK_62	Water	05/14/24 00:00	05/16/24 08:00
240-204563-2	MW-18_051424	Water	05/14/24 09:40	05/16/24 08:00
240-204563-3	MW-20_051424	Water	05/14/24 11:30	05/16/24 08:00
240-204563-4	MW-21_051424	Water	05/14/24 13:10	05/16/24 08:00
240-204563-5	MW-49_051424	Water	05/14/24 14:25	05/16/24 08:00

Detection Summary

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

Job ID: 240-204563-1

Client Sample ID: TRIP BLANK_62 — Lab Sample ID: 240-204563-1

No Detections.

Client Sample ID: MW-18_051424 — Lab Sample ID: 240-204563-2

No Detections.

Client Sample ID: MW-20_051424 — Lab Sample ID: 240-204563-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.97	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA

Client Sample ID: MW-21_051424 — Lab Sample ID: 240-204563-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.5		2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	14		1.0	0.46	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.89	J	1.0	0.51	ug/L	1		8260D	Total/NA
Vinyl chloride	37		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-49_051424 — Lab Sample ID: 240-204563-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	12		2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	40000		1000	460	ug/L	1000		8260D	Total/NA
Vinyl chloride	8800		1000	450	ug/L	1000		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-204563-1

Client Sample ID: TRIP BLANK_62

Lab Sample ID: 240-204563-1

Date Collected: 05/14/24 00:00

Matrix: Water

Date Received: 05/16/24 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			05/22/24 09:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/22/24 09:28	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/22/24 09:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/22/24 09:28	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/22/24 09:28	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/22/24 09:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*62 - 137*		*05/22/24 09:28*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*05/22/24 09:28*	*1*
Toluene-d8 (Surr)	*98*		*78 - 122*		*05/22/24 09:28*	*1*
Dibromofluoromethane (Surr)	*102*		*73 - 120*		*05/22/24 09:28*	*1*

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

Job ID: 240-204563-1

Client Sample ID: MW-18_051424
Date Collected: 05/14/24 09:40
Date Received: 05/16/24 08:00

Lab Sample ID: 240-204563-2
Matrix: Water

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			05/22/24 10:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*68 - 127*		*05/22/24 10:34*	*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			05/24/24 00:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/24/24 00:53	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/24/24 00:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/24/24 00:53	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/24/24 00:53	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/24 00:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*		*05/24/24 00:53*	*1*
4-Bromofluorobenzene (Surr)	*85*		*56 - 136*		*05/24/24 00:53*	*1*
Toluene-d8 (Surr)	*87*		*78 - 122*		*05/24/24 00:53*	*1*
Dibromofluoromethane (Surr)	*93*		*73 - 120*		*05/24/24 00:53*	*1*

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

Job ID: 240-204563-1

Client Sample ID: MW-20_051424

Date Collected: 05/14/24 11:30
Date Received: 05/16/24 08:00

Lab Sample ID: 240-204563-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.97	J	2.0	0.86	ug/L			05/22/24 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*68 - 127*		*05/22/24 17:36*	*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			05/23/24 21:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/23/24 21:03	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/23/24 21:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/23/24 21:03	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/23/24 21:03	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/24 21:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*		*05/23/24 21:03*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*05/23/24 21:03*	*1*
Toluene-d8 (Surr)	*97*		*78 - 122*		*05/23/24 21:03*	*1*
Dibromofluoromethane (Surr)	*103*		*73 - 120*		*05/23/24 21:03*	*1*

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

Job ID: 240-204563-1

Client Sample ID: MW-21_051424

Date Collected: 05/14/24 13:10
Date Received: 05/16/24 08:00

Lab Sample ID: 240-204563-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.5**		2.0	0.86	ug/L			05/22/24 10:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*68 - 127*		*05/22/24 10:57*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/24/24 01:16	1
cis-1,2-Dichloroethene	**14**		1.0	0.46	ug/L			05/24/24 01:16	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/24/24 01:16	1
trans-1,2-Dichloroethene	**0.89**	**J**	1.0	0.51	ug/L			05/24/24 01:16	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/24/24 01:16	1
Vinyl chloride	**37**		1.0	0.45	ug/L			05/24/24 13:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*		*05/24/24 01:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*		*05/24/24 13:20*	*1*
4-Bromofluorobenzene (Surr)	*87*		*56 - 136*		*05/24/24 01:16*	*1*
4-Bromofluorobenzene (Surr)	*89*		*56 - 136*		*05/24/24 13:20*	*1*
Toluene-d8 (Surr)	*88*		*78 - 122*		*05/24/24 01:16*	*1*
Toluene-d8 (Surr)	*90*		*78 - 122*		*05/24/24 13:20*	*1*
Dibromofluoromethane (Surr)	*94*		*73 - 120*		*05/24/24 01:16*	*1*
Dibromofluoromethane (Surr)	*95*		*73 - 120*		*05/24/24 13:20*	*1*

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

Job ID: 240-204563-1

Client Sample ID: MW-49_051424

Date Collected: 05/14/24 14:25
Date Received: 05/16/24 08:00

Lab Sample ID: 240-204563-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**12**		2.0	0.86	ug/L			05/22/24 11:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*68 - 127*		*05/22/24 11:21*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1000	U	1000	490	ug/L			05/24/24 12:57	1000
cis-1,2-Dichloroethene	**40000**		1000	460	ug/L			05/24/24 12:57	1000
Tetrachloroethene	1000	U	1000	440	ug/L			05/24/24 12:57	1000
trans-1,2-Dichloroethene	1000	U	1000	510	ug/L			05/24/24 12:57	1000
Trichloroethene	1000	U	1000	440	ug/L			05/24/24 12:57	1000
Vinyl chloride	**8800**		1000	450	ug/L			05/24/24 12:57	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*62 - 137*		*05/24/24 12:57*	*1000*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*		*05/24/24 12:57*	*1000*
Toluene-d8 (Surr)	*87*		*78 - 122*		*05/24/24 12:57*	*1000*
Dibromofluoromethane (Surr)	*90*		*73 - 120*		*05/24/24 12:57*	*1000*

Surrogate Summary

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

Job ID: 240-204563-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-204562-E-2 MS	Matrix Spike	95	101	100	95
240-204562-E-2 MSD	Matrix Spike Duplicate	98	101	97	100
240-204563-1	TRIP BLANK_62	103	94	98	102
240-204563-2	MW-18_051424	95	85	87	93
240-204563-3	MW-20_051424	106	94	97	103
240-204563-3 MS	MW-20-MS_051424	95	99	97	96
240-204563-3 MSD	MW-20-MSD_051424	88	93	93	93
240-204563-4	MW-21_051424	96	87	88	94
240-204563-4	MW-21_051424	96	89	90	95
240-204563-5	MW-49_051424	91	86	87	90
240-204563-5 MS	MW-49_051424	94	98	96	90
240-204563-5 MSD	MW-49_051424	93	98	96	93
240-204619-A-2 MS	Matrix Spike	96	99	96	96
240-204619-B-2 MSD	Matrix Spike Duplicate	91	99	93	93
LCS 240-613875/4	Lab Control Sample	96	99	101	96
LCS 240-614126/4	Lab Control Sample	100	102	101	96
LCS 240-614198/4	Lab Control Sample	99	99	103	95
LCS 240-614316/4	Lab Control Sample	94	100	104	94
MB 240-613875/7	Method Blank	102	94	96	98
MB 240-614126/7	Method Blank	99	94	94	95
MB 240-614198/7	Method Blank	94	87	90	90
MB 240-614316/7	Method Blank	95	94	96	93

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

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(68-127)
240-204563-2	MW-18_051424	96
240-204563-3	MW-20_051424	103
240-204563-3 MS	MW-20-MS_051424	104
240-204563-3 MSD	MW-20-MSD_051424	103
240-204563-4	MW-21_051424	103
240-204563-5	MW-49_051424	109
LCS 240-613937/4	Lab Control Sample	96
MB 240-613937/6	Method Blank	92

Surrogate Legend

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

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

Lab Sample ID: MB 240-613875/7
Matrix: Water
Analysis Batch: 613875

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/22/24 01:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/22/24 01:00	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/22/24 01:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/22/24 01:00	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/22/24 01:00	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/22/24 01:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*62 - 137*		*05/22/24 01:00*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*05/22/24 01:00*	*1*
Toluene-d8 (Surr)	*96*		*78 - 122*		*05/22/24 01:00*	*1*
Dibromofluoromethane (Surr)	*98*		*73 - 120*		*05/22/24 01:00*	*1*

Lab Sample ID: LCS 240-613875/4
Matrix: Water
Analysis Batch: 613875

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			25.0	21.5		ug/L		86	63 - 134		
cis-1,2-Dichloroethene			25.0	23.6		ug/L		94	77 - 123		
Tetrachloroethene			25.0	21.0		ug/L		84	76 - 123		
trans-1,2-Dichloroethene			25.0	20.1		ug/L		80	75 - 124		
Trichloroethene			25.0	22.7		ug/L		91	70 - 122		
Vinyl chloride			12.5	11.4		ug/L		91	60 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*
Toluene-d8 (Surr)	*101*		*78 - 122*
Dibromofluoromethane (Surr)	*96*		*73 - 120*

Lab Sample ID: 240-204562-E-2 MS
Matrix: Water
Analysis Batch: 613875

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		
1,1-Dichloroethene	1.0	U	25.0	17.1		ug/L		68	56 - 135		
cis-1,2-Dichloroethene	1.0	U	25.0	20.7		ug/L		83	66 - 128		
Tetrachloroethene	1.0	U	25.0	17.2		ug/L		69	62 - 131		
trans-1,2-Dichloroethene	1.0	U	25.0	17.2		ug/L		69	56 - 136		
Trichloroethene	1.0	U	25.0	16.5		ug/L		66	61 - 124		
Vinyl chloride	1.0	U	12.5	8.81		ug/L		70	43 - 157		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*
4-Bromofluorobenzene (Surr)	*101*		*56 - 136*
Toluene-d8 (Surr)	*100*		*78 - 122*

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

Lab Sample ID: 240-204562-E-2 MS
Matrix: Water
Analysis Batch: 613875

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	*95*		*73 - 120*

Lab Sample ID: 240-204562-E-2 MSD
Matrix: Water
Analysis Batch: 613875

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
1,1-Dichloroethene	1.0	U	25.0	18.0		ug/L		72	56 - 135	5	26
cis-1,2-Dichloroethene	1.0	U	25.0	22.4		ug/L		90	66 - 128	8	14
Tetrachloroethene	1.0	U	25.0	17.8		ug/L		71	62 - 131	3	20
trans-1,2-Dichloroethene	1.0	U	25.0	18.1		ug/L		72	56 - 136	5	15
Trichloroethene	1.0	U	25.0	18.1		ug/L		72	61 - 124	9	15
Vinyl chloride	1.0	U	12.5	9.41		ug/L		75	43 - 157	7	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*98*		*62 - 137*
4-Bromofluorobenzene (Surr)	*101*		*56 - 136*
Toluene-d8 (Surr)	*97*		*78 - 122*
Dibromofluoromethane (Surr)	*100*		*73 - 120*

Lab Sample ID: MB 240-614126/7
Matrix: Water
Analysis Batch: 614126

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/23/24 13:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/23/24 13:45	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/23/24 13:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/23/24 13:45	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/23/24 13:45	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/24 13:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*		*05/23/24 13:45*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*05/23/24 13:45*	*1*
Toluene-d8 (Surr)	*94*		*78 - 122*		*05/23/24 13:45*	*1*
Dibromofluoromethane (Surr)	*95*		*73 - 120*		*05/23/24 13:45*	*1*

Lab Sample ID: LCS 240-614126/4
Matrix: Water
Analysis Batch: 614126

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	25.0	23.6		ug/L		95	63 - 134
cis-1,2-Dichloroethene	25.0	24.5		ug/L		98	77 - 123
Tetrachloroethene	25.0	25.9		ug/L		104	76 - 123
trans-1,2-Dichloroethene	25.0	23.0		ug/L		92	75 - 124
Trichloroethene	25.0	22.1		ug/L		88	70 - 122

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

Lab Sample ID: LCS 240-614126/4
Matrix: Water
Analysis Batch: 614126

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Vinyl chloride			12.5	11.1		ug/L		89	60 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*
Toluene-d8 (Surr)	*101*		*78 - 122*
Dibromofluoromethane (Surr)	*96*		*73 - 120*

Lab Sample ID: 240-204563-3 MS
Matrix: Water
Analysis Batch: 614126

Client Sample ID: MW-20-MS_051424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene	1.0	U	25.0	22.1		ug/L		88	56 - 135		
cis-1,2-Dichloroethene	1.0	U	25.0	24.9		ug/L		100	66 - 128		
Tetrachloroethene	1.0	U	25.0	22.8		ug/L		91	62 - 131		
trans-1,2-Dichloroethene	1.0	U	25.0	22.8		ug/L		91	56 - 136		
Trichloroethene	1.0	U	25.0	21.6		ug/L		86	61 - 124		
Vinyl chloride	1.0	U	12.5	9.93		ug/L		79	43 - 157		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*
Toluene-d8 (Surr)	*97*		*78 - 122*
Dibromofluoromethane (Surr)	*96*		*73 - 120*

Lab Sample ID: 240-204563-3 MSD
Matrix: Water
Analysis Batch: 614126

Client Sample ID: MW-20-MSD_051424
Prep Type: Total/NA

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	25.0	21.9		ug/L		88	56 - 135	1	26
cis-1,2-Dichloroethene	1.0	U	25.0	23.0		ug/L		92	66 - 128	8	14
Tetrachloroethene	1.0	U	25.0	20.5		ug/L		82	62 - 131	10	20
trans-1,2-Dichloroethene	1.0	U	25.0	20.3		ug/L		81	56 - 136	12	15
Trichloroethene	1.0	U	25.0	20.4		ug/L		82	61 - 124	6	15
Vinyl chloride	1.0	U	12.5	10.2		ug/L		81	43 - 157	2	24

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*88*		*62 - 137*
4-Bromofluorobenzene (Surr)	*93*		*56 - 136*
Toluene-d8 (Surr)	*93*		*78 - 122*
Dibromofluoromethane (Surr)	*93*		*73 - 120*

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

Lab Sample ID: MB 240-614198/7
Matrix: Water
Analysis Batch: 614198

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/24/24 00:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/24/24 00:30	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/24/24 00:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/24/24 00:30	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/24/24 00:30	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/24 00:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*		*05/24/24 00:30*	*1*
4-Bromofluorobenzene (Surr)	*87*		*56 - 136*		*05/24/24 00:30*	*1*
Toluene-d8 (Surr)	*90*		*78 - 122*		*05/24/24 00:30*	*1*
Dibromofluoromethane (Surr)	*90*		*73 - 120*		*05/24/24 00:30*	*1*

Lab Sample ID: LCS 240-614198/4
Matrix: Water
Analysis Batch: 614198

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	25.0	22.9		ug/L		92	63 - 134
cis-1,2-Dichloroethene	25.0	25.1		ug/L		100	77 - 123
Tetrachloroethene	25.0	22.9		ug/L		92	76 - 123
trans-1,2-Dichloroethene	25.0	22.3		ug/L		89	75 - 124
Trichloroethene	25.0	23.3		ug/L		93	70 - 122
Vinyl chloride	12.5	11.3		ug/L		90	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*
Toluene-d8 (Surr)	*103*		*78 - 122*
Dibromofluoromethane (Surr)	*95*		*73 - 120*

Lab Sample ID: 240-204619-A-2 MS
Matrix: Water
Analysis Batch: 614198

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	25.0	23.6		ug/L		95	66 - 128
Tetrachloroethene	1.0	U	25.0	18.9		ug/L		76	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	19.2		ug/L		77	56 - 136
Trichloroethene	1.0	U	25.0	18.6		ug/L		74	61 - 124

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*
Toluene-d8 (Surr)	*96*		*78 - 122*
Dibromofluoromethane (Surr)	*96*		*73 - 120*

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

Lab Sample ID: 240-204619-B-2 MSD
Matrix: Water
Analysis Batch: 614198

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	25.0	22.2		ug/L		89	66 - 128	6	14
Tetrachloroethene	1.0	U	25.0	18.4		ug/L		74	62 - 131	3	20
trans-1,2-Dichloroethene	1.0	U	25.0	18.6		ug/L		75	56 - 136	3	15
Trichloroethene	1.0	U	25.0	17.8		ug/L		71	61 - 124	4	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*62 - 137*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*
Toluene-d8 (Surr)	*93*		*78 - 122*
Dibromofluoromethane (Surr)	*93*		*73 - 120*

Lab Sample ID: MB 240-614316/7
Matrix: Water
Analysis Batch: 614316

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/24/24 12:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/24/24 12:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/24/24 12:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/24/24 12:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/24/24 12:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/24 12:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*		*05/24/24 12:34*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*05/24/24 12:34*	*1*
Toluene-d8 (Surr)	*96*		*78 - 122*		*05/24/24 12:34*	*1*
Dibromofluoromethane (Surr)	*93*		*73 - 120*		*05/24/24 12:34*	*1*

Lab Sample ID: LCS 240-614316/4
Matrix: Water
Analysis Batch: 614316

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	25.0	23.1		ug/L		92	63 - 134
cis-1,2-Dichloroethene	25.0	25.1		ug/L		101	77 - 123
Tetrachloroethene	25.0	25.7		ug/L		103	76 - 123
trans-1,2-Dichloroethene	25.0	23.0		ug/L		92	75 - 124
Trichloroethene	25.0	21.7		ug/L		87	70 - 122
Vinyl chloride	12.5	11.8		ug/L		94	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*
4-Bromofluorobenzene (Surr)	*100*		*56 - 136*
Toluene-d8 (Surr)	*104*		*78 - 122*
Dibromofluoromethane (Surr)	*94*		*73 - 120*

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

Lab Sample ID: 240-204563-5 MS
Matrix: Water
Analysis Batch: 614316

Client Sample ID: MW-49_051424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1000	U	25000	20700		ug/L		83	56 - 135
cis-1,2-Dichloroethene	40000		25000	62900	E	ug/L		92	66 - 128
Tetrachloroethene	1000	U	25000	20900		ug/L		83	62 - 131
trans-1,2-Dichloroethene	1000	U	25000	20500		ug/L		82	56 - 136
Trichloroethene	1000	U	25000	19800		ug/L		79	61 - 124
Vinyl chloride	8800		12500	19500		ug/L		85	43 - 157

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*
Toluene-d8 (Surr)	*96*		*78 - 122*
Dibromofluoromethane (Surr)	*90*		*73 - 120*

Lab Sample ID: 240-204563-5 MSD
Matrix: Water
Analysis Batch: 614316

Client Sample ID: MW-49_051424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	1000	U	25000	22700		ug/L		91	56 - 135	9	26
cis-1,2-Dichloroethene	40000		25000	62600	E	ug/L		91	66 - 128	0	14
Tetrachloroethene	1000	U	25000	21300		ug/L		85	62 - 131	2	20
trans-1,2-Dichloroethene	1000	U	25000	21400		ug/L		86	56 - 136	4	15
Trichloroethene	1000	U	25000	20600		ug/L		82	61 - 124	4	15
Vinyl chloride	8800		12500	20300		ug/L		91	43 - 157	4	24

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*62 - 137*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*
Toluene-d8 (Surr)	*96*		*78 - 122*
Dibromofluoromethane (Surr)	*93*		*73 - 120*

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

Lab Sample ID: MB 240-613937/6
Matrix: Water
Analysis Batch: 613937

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			05/22/24 10:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*68 - 127*		*05/22/24 10:10*	*1*

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

Lab Sample ID: LCS 240-613937/4
Matrix: Water
Analysis Batch: 613937

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	9.48		ug/L		95	75 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*68 - 127*

Lab Sample ID: 240-204563-3 MS
Matrix: Water
Analysis Batch: 613937

Client Sample ID: MW-20-MS_051424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane	0.97	J	10.0	10.1		ug/L		91	20 - 180		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*68 - 127*

Lab Sample ID: 240-204563-3 MSD
Matrix: Water
Analysis Batch: 613937

Client Sample ID: MW-20-MSD_051424
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	0.97	J	10.0	10.5		ug/L		95	20 - 180	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*68 - 127*

GC/MS VOA

Analysis Batch: 613875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-204563-1	TRIP BLANK_62	Total/NA	Water	8260D	
MB 240-613875/7	Method Blank	Total/NA	Water	8260D	
LCS 240-613875/4	Lab Control Sample	Total/NA	Water	8260D	
240-204562-E-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-204562-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 613937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-204563-2	MW-18_051424	Total/NA	Water	8260D SIM	
240-204563-3	MW-20_051424	Total/NA	Water	8260D SIM	
240-204563-4	MW-21_051424	Total/NA	Water	8260D SIM	
240-204563-5	MW-49_051424	Total/NA	Water	8260D SIM	
MB 240-613937/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-613937/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-204563-3 MS	MW-20-MS_051424	Total/NA	Water	8260D SIM	
240-204563-3 MSD	MW-20-MSD_051424	Total/NA	Water	8260D SIM	

Analysis Batch: 614126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-204563-3	MW-20_051424	Total/NA	Water	8260D	
MB 240-614126/7	Method Blank	Total/NA	Water	8260D	
LCS 240-614126/4	Lab Control Sample	Total/NA	Water	8260D	
240-204563-3 MS	MW-20-MS_051424	Total/NA	Water	8260D	
240-204563-3 MSD	MW-20-MSD_051424	Total/NA	Water	8260D	

Analysis Batch: 614198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-204563-2	MW-18_051424	Total/NA	Water	8260D	
240-204563-4	MW-21_051424	Total/NA	Water	8260D	
MB 240-614198/7	Method Blank	Total/NA	Water	8260D	
LCS 240-614198/4	Lab Control Sample	Total/NA	Water	8260D	
240-204619-A-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-204619-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 614316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-204563-4	MW-21_051424	Total/NA	Water	8260D	
240-204563-5	MW-49_051424	Total/NA	Water	8260D	
MB 240-614316/7	Method Blank	Total/NA	Water	8260D	
LCS 240-614316/4	Lab Control Sample	Total/NA	Water	8260D	
240-204563-5 MS	MW-49_051424	Total/NA	Water	8260D	
240-204563-5 MSD	MW-49_051424	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-204563-1

Client Sample ID: TRIP BLANK_62

Lab Sample ID: 240-204563-1

Date Collected: 05/14/24 00:00

Matrix: Water

Date Received: 05/16/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	613875	LEE	EET CLE	05/22/24 09:28

Client Sample ID: MW-18_051424

Lab Sample ID: 240-204563-2

Date Collected: 05/14/24 09:40

Matrix: Water

Date Received: 05/16/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	614198	LEE	EET CLE	05/24/24 00:53
Total/NA	Analysis	8260D SIM		1	613937	MDH	EET CLE	05/22/24 10:34

Client Sample ID: MW-20_051424

Lab Sample ID: 240-204563-3

Date Collected: 05/14/24 11:30

Matrix: Water

Date Received: 05/16/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	614126	LEE	EET CLE	05/23/24 21:03
Total/NA	Analysis	8260D SIM		1	613937	MDH	EET CLE	05/22/24 17:36

Client Sample ID: MW-21_051424

Lab Sample ID: 240-204563-4

Date Collected: 05/14/24 13:10

Matrix: Water

Date Received: 05/16/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	614198	LEE	EET CLE	05/24/24 01:16
Total/NA	Analysis	8260D		1	614316	SAM	EET CLE	05/24/24 13:20
Total/NA	Analysis	8260D SIM		1	613937	MDH	EET CLE	05/22/24 10:57

Client Sample ID: MW-49_051424

Lab Sample ID: 240-204563-5

Date Collected: 05/14/24 14:25

Matrix: Water

Date Received: 05/16/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1000	614316	SAM	EET CLE	05/24/24 12:57
Total/NA	Analysis	8260D SIM		1	613937	MDH	EET CLE	05/22/24 11:21

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: 240-204563-1

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	07-31-24
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	06-30-24
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	08-31-24
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

MICHIGAN 190

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico	COC No:
Company Name: Arcadis	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	1 of 1 COCs
Address: 28550 Cabot Drive, Suite 500	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time		For lab use only
City/State/Zip: Novi, MI, 48377	Sampler Name: Kent Kasper	TAT if different from below: 10 day; ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Walk-in client: Lab sampling:
Phone: 248-994-2240	Method of Shipment/Carrier:			Job/SDG No:
Project Name: Ford LTP	Shipping/Tracking No:			
Project Number: 30206169.0401.03				
PO # US3410018772				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: 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	Sample Specific Notes / Special Instructions:
TRIP BLANK_62	----	---		1						1					N	G	X	X	X	X	X	X		1 Trip Blank
MW-18_051424	5/14/24	0940		6						6					N	G	X	X	X	X	X	X	X	3 VOAs for 8260D 3 VOAs for 8260D SIM
MW-20-051424	5/14/24	1130		6						6					N	G	X	X	X	X	X	X	X	
MW-20-MS_051424	5/14/24	1130		6						6					N	G	X	X	X	X	X	X	X	Run MS/MSD
MW-20-MSD_051424	5/14/24	1130		6						6					N	G	X	X	X	X	X	X	X	Run MS/MSD
MW-21_051424	5/14/24	1310		6						6					N	G	X	X	X	X	X	X	X	
MW-49_051424	5/14/24	1425		6						6					N	G	X	X	X	X	X	X	X	

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 jtomalia@cadenaco.com. Cadena #E203728
Level IV Reporting requested

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Arcadis	5/14/24 1544	Novi Cold Storage	Arcadis	5/14/24 1544
[signature]	Arcadis	5/15/24 1245	[signature]	EEA	5/15/24
[signature]	EEA	5/15/24	Received in Laboratory by: MALISSA LOAR	EQ	5-16-24 9:45

240-204563 Chain of Custody

Eurofins – Cleveland Sample Receipt Form/Narrative Login # _____
Barberton Facility

Client ARCADIS Site Name _____ Cooler unpacked by MALISSA LOAR

Cooler Received on 5.16.24 Opened on 5-16-24

FedEx 1st Grd Exp UPS FAC Waypoint Client Drop Off Eurofins Courier Other _____

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

Eurofins Cooler # CC 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 # 18 (CF 0 °C) Observed Cooler Temp 3.3 °C Corrected Cooler Temp 3.3 °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
	-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)?	
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# HC439975
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

Tests that are not checked for pH by Receiving

VOAs
Oil and Grease
TOC

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 _____

DATA VERIFICATION REPORT

May 30, 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: 30206169.401.03
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 204563-1
Sample date: 2024-05-14
Report received by CADENA: 2024-05-30
Initial Data Verification completed by CADENA: 2024-05-30
Number of Samples:5
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.

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 contaminates) 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 contaminates) 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: 204563-1

	Sample Name:	TRIP BLANK_62				MW-18_051424				MW-20_051424				MW-21_051424				MW-49_051424			
	Lab Sample ID:	2402045631				2402045632				2402045633				2402045634				2402045635			
	Sample Date:	5/14/2024				5/14/2024				5/14/2024				5/14/2024				5/14/2024			
Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier
GC/MS VOC																					
OSW-8260D																					
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1000	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	14	1.0	ug/l	---	40000	1000	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1000	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	0.89	1.0	ug/l	J	ND	1000	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1000	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	37	1.0	ug/l	---	8800	1000	ug/l	---
OSW-8260DSIM																					
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	0.97	2.0	ug/l	J	4.5	2.0	ug/l	---	12	2.0	ug/l	---