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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 3/9/2023 5:22:48 AM

JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-181130-1

Eurofins Canton
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

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Authorization

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Table of Contents

Client: ARCADIS U.S., Inc.
Job ID: 240-181130-1
Project/Site: Ford LTP - On Site

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.
S1+	Surrogate recovery exceeds control limits, high biased.
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 ID: 240-181130-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-181130-1

Receipt

The samples were received on 3/1/2023 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.2°C, 1.0°C and 3.2°C

GC/MS VOA

Method 8260D: Batch analytical batch 240-564352 is reported without a matrix spike/matrix spike duplicate (MS/MSD). The batch MS/MSD was made on a sample that was canceled for re-analysis. This MS/MSD result does not have immediate bearing on any samples except for the actual sample spiked. The associated laboratory control sample (LCS) met acceptance criteria and provides long-term precision and accuracy for this batch.

Method 8260D_SIM: Surrogate recovery for the following sample was outside the upper control limit: MW-04_022723 (240-181130-5). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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.
Job ID: 240-181130-1
Project/Site: Ford LTP - On Site

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

Protocol References:

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

Laboratory References:

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

Sample Summary

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

Job ID: 240-181130-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-181130-1	TRIP BLANK_39	Water	02/27/23 00:00	03/01/23 09:50
240-181130-2	MW-03_022723	Water	02/27/23 10:35	03/01/23 09:50
240-181130-3	MW-05_022723	Water	02/27/23 11:40	03/01/23 09:50
240-181130-4	MW-02_022723	Water	02/27/23 13:15	03/01/23 09:50
240-181130-5	MW-04_022723	Water	02/27/23 14:15	03/01/23 09:50
240-181130-6	MW-10_022723	Water	02/27/23 15:28	03/01/23 09:50

Detection Summary

Client: ARCADIS U.S., Inc.
Job ID: 240-181130-1
Project/Site: Ford LTP - On Site

Client Sample ID: TRIP BLANK_39 — Lab Sample ID: 240-181130-1

No Detections.

Client Sample ID: MW-03_022723 — Lab Sample ID: 240-181130-2

No Detections.

Client Sample ID: MW-05_022723 — Lab Sample ID: 240-181130-3

No Detections.

Client Sample ID: MW-02_022723 — Lab Sample ID: 240-181130-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.3		2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	4100		100	46	ug/L	100		8260D	Total/NA
trans-1,2-Dichloroethene	760		100	51	ug/L	100		8260D	Total/NA
Vinyl chloride	290		100	45	ug/L	100		8260D	Total/NA

Client Sample ID: MW-04_022723 — Lab Sample ID: 240-181130-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.7	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	5500		140	66	ug/L	142.857		8260D	Total/NA
trans-1,2-Dichloroethene	160		140	73	ug/L	142.857		8260D	Total/NA
Trichloroethene	1300		140	63	ug/L	142.857		8260D	Total/NA
Vinyl chloride	2300		140	64	ug/L	142.857		8260D	Total/NA

Client Sample ID: MW-10_022723 — Lab Sample ID: 240-181130-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.8		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	5700		100	45	ug/L	100		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-181130-1

Client Sample ID: TRIP BLANK_39
Date Collected: 02/27/23 00:00
Date Received: 03/01/23 09:50

Lab Sample ID: 240-181130-1
Matrix: Water

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			03/06/23 19:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/06/23 19:09	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/06/23 19:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/06/23 19:09	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/06/23 19:09	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/06/23 19:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*62 - 137*		*03/06/23 19:09*	*1*
4-Bromofluorobenzene (Surr)	*124*		*56 - 136*		*03/06/23 19:09*	*1*
Toluene-d8 (Surr)	*95*		*78 - 122*		*03/06/23 19:09*	*1*
Dibromofluoromethane (Surr)	*116*		*73 - 120*		*03/06/23 19:09*	*1*

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

Job ID: 240-181130-1

Client Sample ID: MW-03_022723
Date Collected: 02/27/23 10:35
Date Received: 03/01/23 09:50

Lab Sample ID: 240-181130-2
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			03/03/23 10:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*66 - 120*		*03/03/23 10:45*	*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			03/06/23 19:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/06/23 19:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/06/23 19:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/06/23 19:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/06/23 19:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/06/23 19:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*62 - 137*		*03/06/23 19:34*	*1*
4-Bromofluorobenzene (Surr)	*119*		*56 - 136*		*03/06/23 19:34*	*1*
Toluene-d8 (Surr)	*92*		*78 - 122*		*03/06/23 19:34*	*1*
Dibromofluoromethane (Surr)	*115*		*73 - 120*		*03/06/23 19:34*	*1*

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

Job ID: 240-181130-1

Client Sample ID: MW-05_022723
Date Collected: 02/27/23 11:40
Date Received: 03/01/23 09:50

Lab Sample ID: 240-181130-3
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	2.0	U	2.0	0.86	ug/L			03/03/23 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*66 - 120*		*03/03/23 15:47*	*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			03/06/23 19:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/06/23 19:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/06/23 19:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/06/23 19:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/06/23 19:59	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/06/23 19:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*119*		*62 - 137*		*03/06/23 19:59*	*1*
4-Bromofluorobenzene (Surr)	*117*		*56 - 136*		*03/06/23 19:59*	*1*
Toluene-d8 (Surr)	*95*		*78 - 122*		*03/06/23 19:59*	*1*
Dibromofluoromethane (Surr)	*116*		*73 - 120*		*03/06/23 19:59*	*1*

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

Job ID: 240-181130-1

Client Sample ID: MW-02_022723
Date Collected: 02/27/23 13:15
Date Received: 03/01/23 09:50

Lab Sample ID: 240-181130-4
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	**4.3**		2.0	0.86	ug/L			03/03/23 16:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*66 - 120*		*03/03/23 16:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	100	U	100	49	ug/L			03/03/23 00:22	100
cis-1,2-Dichloroethene	**4100**		100	46	ug/L			03/03/23 00:22	100
Tetrachloroethene	100	U	100	44	ug/L			03/03/23 00:22	100
trans-1,2-Dichloroethene	**760**		100	51	ug/L			03/03/23 00:22	100
Trichloroethene	100	U	100	44	ug/L			03/03/23 00:22	100
Vinyl chloride	**290**		100	45	ug/L			03/03/23 00:22	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*		*03/03/23 00:22*	*100*
4-Bromofluorobenzene (Surr)	*84*		*56 - 136*		*03/03/23 00:22*	*100*
Toluene-d8 (Surr)	*91*		*78 - 122*		*03/03/23 00:22*	*100*
Dibromofluoromethane (Surr)	*96*		*73 - 120*		*03/03/23 00:22*	*100*

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

Job ID: 240-181130-1

Client Sample ID: MW-04_022723
Date Collected: 02/27/23 14:15
Date Received: 03/01/23 09:50

Lab Sample ID: 240-181130-5
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	**1.7**	**J**	2.0	0.86	ug/L			03/03/23 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*126*	*S1+*	*66 - 120*		*03/03/23 16:36*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	140	U	140	70	ug/L			03/03/23 22:58	142.857
cis-1,2-Dichloroethene	**5500**		140	66	ug/L			03/03/23 22:58	142.857
Tetrachloroethene	140	U	140	63	ug/L			03/03/23 22:58	142.857
trans-1,2-Dichloroethene	**160**		140	73	ug/L			03/03/23 22:58	142.857
Trichloroethene	**1300**		140	63	ug/L			03/03/23 22:58	142.857
Vinyl chloride	**2300**		140	64	ug/L			03/03/23 22:58	142.857

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*62 - 137*		*03/03/23 22:58*	*142.857*
4-Bromofluorobenzene (Surr)	*81*		*56 - 136*		*03/03/23 22:58*	*142.857*
Toluene-d8 (Surr)	*89*		*78 - 122*		*03/03/23 22:58*	*142.857*
Dibromofluoromethane (Surr)	*96*		*73 - 120*		*03/03/23 22:58*	*142.857*

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

Job ID: 240-181130-1

Client Sample ID: MW-10_022723
Date Collected: 02/27/23 15:28
Date Received: 03/01/23 09:50

Lab Sample ID: 240-181130-6
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	4.8		2.0	0.86	ug/L			03/03/23 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*66 - 120*		*03/03/23 17:00*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	100	U	100	49	ug/L			03/07/23 19:17	100
cis-1,2-Dichloroethene	100	U	100	46	ug/L			03/07/23 19:17	100
Tetrachloroethene	100	U	100	44	ug/L			03/07/23 19:17	100
trans-1,2-Dichloroethene	100	U	100	51	ug/L			03/07/23 19:17	100
Trichloroethene	100	U	100	44	ug/L			03/07/23 19:17	100
Vinyl chloride	5700		100	45	ug/L			03/07/23 19:17	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*62 - 137*		*03/07/23 19:17*	*100*
4-Bromofluorobenzene (Surr)	*117*		*56 - 136*		*03/07/23 19:17*	*100*
Toluene-d8 (Surr)	*94*		*78 - 122*		*03/07/23 19:17*	*100*
Dibromofluoromethane (Surr)	*119*		*73 - 120*		*03/07/23 19:17*	*100*

Surrogate Summary

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

Job ID: 240-181130-1

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)
240-181130-1	TRIP BLANK_39	117	124	95	116
240-181130-2	MW-03_022723	114	119	92	115
240-181130-3	MW-05_022723	119	117	95	116
240-181130-4	MW-02_022723	106	84	91	96
240-181130-4 MS	MW-02_022723	107	93	95	96
240-181130-4 MSD	MW-02_022723	103	88	91	100
240-181130-5	MW-04_022723	108	81	89	96
240-181130-5 MS	MW-04_022723	111	91	97	94
240-181130-5 MSD	MW-04_022723	102	90	93	90
240-181130-6	MW-10_022723	115	117	94	119
240-181151-E-9 MS	Matrix Spike	111	118	96	112
240-181151-E-9 MSD	Matrix Spike Duplicate	110	123	97	110
LCS 240-564060/5	Lab Control Sample	103	87	90	97
LCS 240-564175/5	Lab Control Sample	106	91	93	99
LCS 240-564352/5	Lab Control Sample	110	120	96	108
LCS 240-564467/5	Lab Control Sample	110	116	93	111
MB 240-564060/8	Method Blank	105	85	92	97
MB 240-564175/8	Method Blank	108	88	91	95
MB 240-564352/9	Method Blank	110	118	93	115
MB 240-564467/9	Method Blank	116	121	94	118

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	(66-120)
240-180869-B-2 MSD	Matrix Spike Duplicate	85
240-180869-D-2 MS	Matrix Spike	86
240-180978-K-2 MS	Matrix Spike	82
240-180978-L-2 MSD	Matrix Spike Duplicate	90
240-181130-2	MW-03_022723	82
240-181130-3	MW-05_022723	85
240-181130-4	MW-02_022723	109
240-181130-5	MW-04_022723	126 S1+
240-181130-6	MW-10_022723	89
LCS 240-564077/4	Lab Control Sample	86
LCS 240-564197/4	Lab Control Sample	89
MB 240-564077/6	Method Blank	86
MB 240-564197/6	Method Blank	83

Surrogate Legend

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

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

Lab Sample ID: MB 240-564060/8
Matrix: Water
Analysis Batch: 564060

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			03/02/23 16:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/02/23 16:51	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/02/23 16:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/02/23 16:51	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/02/23 16:51	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/02/23 16:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*		*03/02/23 16:51*	*1*
4-Bromofluorobenzene (Surr)	*85*		*56 - 136*		*03/02/23 16:51*	*1*
Toluene-d8 (Surr)	*92*		*78 - 122*		*03/02/23 16:51*	*1*
Dibromofluoromethane (Surr)	*97*		*73 - 120*		*03/02/23 16:51*	*1*

Lab Sample ID: LCS 240-564060/5
Matrix: Water
Analysis Batch: 564060

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			20.0	16.8		ug/L		84	63 - 134		
cis-1,2-Dichloroethene			20.0	18.1		ug/L		91	77 - 123		
Tetrachloroethene			20.0	19.3		ug/L		96	76 - 123		
trans-1,2-Dichloroethene			20.0	19.5		ug/L		97	75 - 124		
Trichloroethene			20.0	19.1		ug/L		95	70 - 122		
Vinyl chloride			20.0	21.0		ug/L		105	60 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*62 - 137*
4-Bromofluorobenzene (Surr)	*87*		*56 - 136*
Toluene-d8 (Surr)	*90*		*78 - 122*
Dibromofluoromethane (Surr)	*97*		*73 - 120*

Lab Sample ID: 240-181130-4 MS
Matrix: Water
Analysis Batch: 564060

Client Sample ID: MW-02_022723
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene	100	U	2000	1730		ug/L		86	56 - 135		
cis-1,2-Dichloroethene	4100		2000	5850		ug/L		88	66 - 128		
Tetrachloroethene	100	U	2000	1920		ug/L		96	62 - 131		
trans-1,2-Dichloroethene	760		2000	2790		ug/L		102	56 - 136		
Trichloroethene	100	U	2000	1860		ug/L		93	61 - 124		
Vinyl chloride	290		2000	2500		ug/L		111	43 - 157		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*62 - 137*
4-Bromofluorobenzene (Surr)	*93*		*56 - 136*
Toluene-d8 (Surr)	*95*		*78 - 122*

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

Lab Sample ID: 240-181130-4 MS
Matrix: Water
Analysis Batch: 564060

Client Sample ID: MW-02_022723
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	96		73 - 120

Lab Sample ID: 240-181130-4 MSD
Matrix: Water
Analysis Batch: 564060

Client Sample ID: MW-02_022723
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	100	U	2000	1670		ug/L		83	56 - 135	3	26
cis-1,2-Dichloroethene	4100		2000	5730		ug/L		82	66 - 128	2	14
Tetrachloroethene	100	U	2000	1790		ug/L		89	62 - 131	7	20
trans-1,2-Dichloroethene	760		2000	2700		ug/L		97	56 - 136	3	15
Trichloroethene	100	U	2000	1760		ug/L		88	61 - 124	6	15
Vinyl chloride	290		2000	2300		ug/L		100	43 - 157	8	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	88		56 - 136
Toluene-d8 (Surr)	91		78 - 122
Dibromofluoromethane (Surr)	100		73 - 120

Lab Sample ID: MB 240-564175/8
Matrix: Water
Analysis Batch: 564175

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			03/03/23 15:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/03/23 15:00	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/03/23 15:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/03/23 15:00	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/03/23 15:00	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/03/23 15:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137		03/03/23 15:00	1
4-Bromofluorobenzene (Surr)	88		56 - 136		03/03/23 15:00	1
Toluene-d8 (Surr)	91		78 - 122		03/03/23 15:00	1
Dibromofluoromethane (Surr)	95		73 - 120		03/03/23 15:00	1

Lab Sample ID: LCS 240-564175/5
Matrix: Water
Analysis Batch: 564175

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	20.0	17.8		ug/L		89	63 - 134
cis-1,2-Dichloroethene	20.0	18.5		ug/L		92	77 - 123
Tetrachloroethene	20.0	20.2		ug/L		101	76 - 123
trans-1,2-Dichloroethene	20.0	20.7		ug/L		103	75 - 124
Trichloroethene	20.0	19.3		ug/L		96	70 - 122

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

Lab Sample ID: LCS 240-564175/5
Matrix: Water
Analysis Batch: 564175

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Vinyl chloride			20.0	20.6		ug/L		103	60 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*
4-Bromofluorobenzene (Surr)	*91*		*56 - 136*
Toluene-d8 (Surr)	*93*		*78 - 122*
Dibromofluoromethane (Surr)	*99*		*73 - 120*

Lab Sample ID: 240-181130-5 MS
Matrix: Water
Analysis Batch: 564175

Client Sample ID: MW-04_022723
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene	140	U	2860	2420		ug/L		85	56 - 135		
cis-1,2-Dichloroethene	5500		2860	7950		ug/L		86	66 - 128		
Tetrachloroethene	140	U	2860	2910		ug/L		102	62 - 131		
trans-1,2-Dichloroethene	160		2860	3040		ug/L		101	56 - 136		
Trichloroethene	1300		2860	3920		ug/L		93	61 - 124		
Vinyl chloride	2300		2860	5280		ug/L		103	43 - 157		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*62 - 137*
4-Bromofluorobenzene (Surr)	*91*		*56 - 136*
Toluene-d8 (Surr)	*97*		*78 - 122*
Dibromofluoromethane (Surr)	*94*		*73 - 120*

Lab Sample ID: 240-181130-5 MSD
Matrix: Water
Analysis Batch: 564175

Client Sample ID: MW-04_022723
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	140	U	2860	2370		ug/L		83	56 - 135	2	26
cis-1,2-Dichloroethene	5500		2860	7820		ug/L		81	66 - 128	2	14
Tetrachloroethene	140	U	2860	2800		ug/L		98	62 - 131	4	20
trans-1,2-Dichloroethene	160		2860	2910		ug/L		96	56 - 136	4	15
Trichloroethene	1300		2860	3720		ug/L		86	61 - 124	5	15
Vinyl chloride	2300		2860	5200		ug/L		100	43 - 157	2	24

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*62 - 137*
4-Bromofluorobenzene (Surr)	*90*		*56 - 136*
Toluene-d8 (Surr)	*93*		*78 - 122*
Dibromofluoromethane (Surr)	*90*		*73 - 120*

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

Lab Sample ID: MB 240-564352/9
Matrix: Water
Analysis Batch: 564352

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			03/06/23 14:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/06/23 14:11	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/06/23 14:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/06/23 14:11	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/06/23 14:11	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/06/23 14:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*62 - 137*		*03/06/23 14:11*	*1*
4-Bromofluorobenzene (Surr)	*118*		*56 - 136*		*03/06/23 14:11*	*1*
Toluene-d8 (Surr)	*93*		*78 - 122*		*03/06/23 14:11*	*1*
Dibromofluoromethane (Surr)	*115*		*73 - 120*		*03/06/23 14:11*	*1*

Lab Sample ID: LCS 240-564352/5
Matrix: Water
Analysis Batch: 564352

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	20.0	19.1		ug/L		95	63 - 134
cis-1,2-Dichloroethene	20.0	18.1		ug/L		91	77 - 123
Tetrachloroethene	20.0	19.2		ug/L		96	76 - 123
trans-1,2-Dichloroethene	20.0	18.6		ug/L		93	75 - 124
Trichloroethene	20.0	19.6		ug/L		98	70 - 122
Vinyl chloride	20.0	16.2		ug/L		81	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*62 - 137*
4-Bromofluorobenzene (Surr)	*120*		*56 - 136*
Toluene-d8 (Surr)	*96*		*78 - 122*
Dibromofluoromethane (Surr)	*108*		*73 - 120*

Lab Sample ID: MB 240-564467/9
Matrix: Water
Analysis Batch: 564467

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			03/07/23 16:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/07/23 16:00	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/07/23 16:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/07/23 16:00	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/07/23 16:00	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/07/23 16:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*62 - 137*		*03/07/23 16:00*	*1*
4-Bromofluorobenzene (Surr)	*121*		*56 - 136*		*03/07/23 16:00*	*1*
Toluene-d8 (Surr)	*94*		*78 - 122*		*03/07/23 16:00*	*1*

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

Lab Sample ID: MB 240-564467/9
Matrix: Water
Analysis Batch: 564467

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*118*		*73 - 120*		*03/07/23 16:00*	*1*

Lab Sample ID: LCS 240-564467/5
Matrix: Water
Analysis Batch: 564467

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	20.0	20.1		ug/L		101	63 - 134
cis-1,2-Dichloroethene	20.0	20.1		ug/L		101	77 - 123
Tetrachloroethene	20.0	20.3		ug/L		102	76 - 123
trans-1,2-Dichloroethene	20.0	20.4		ug/L		102	75 - 124
Trichloroethene	20.0	20.6		ug/L		103	70 - 122
Vinyl chloride	20.0	17.8		ug/L		89	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*110*		*62 - 137*
4-Bromofluorobenzene (Surr)	*116*		*56 - 136*
Toluene-d8 (Surr)	*93*		*78 - 122*
Dibromofluoromethane (Surr)	*111*		*73 - 120*

Lab Sample ID: 240-181151-E-9 MS
Matrix: Water
Analysis Batch: 564467

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	25	U	500	516		ug/L		103	56 - 135
cis-1,2-Dichloroethene	82		500	601		ug/L		104	66 - 128
Tetrachloroethene	25	U	500	475		ug/L		95	62 - 131
trans-1,2-Dichloroethene	50		500	553		ug/L		101	56 - 136
Trichloroethene	1200		500	1590		ug/L		87	61 - 124
Vinyl chloride	25	U	500	457		ug/L		91	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*111*		*62 - 137*
4-Bromofluorobenzene (Surr)	*118*		*56 - 136*
Toluene-d8 (Surr)	*96*		*78 - 122*
Dibromofluoromethane (Surr)	*112*		*73 - 120*

Lab Sample ID: 240-181151-E-9 MSD
Matrix: Water
Analysis Batch: 564467

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	25	U	500	584		ug/L		117	56 - 135	12	26
cis-1,2-Dichloroethene	82		500	633		ug/L		110	66 - 128	5	14
Tetrachloroethene	25	U	500	513		ug/L		103	62 - 131	8	20
trans-1,2-Dichloroethene	50		500	585		ug/L		107	56 - 136	6	15
Trichloroethene	1200		500	1610		ug/L		89	61 - 124	1	15

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

Lab Sample ID: 240-181151-E-9 MSD
Matrix: Water
Analysis Batch: 564467

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
Vinyl chloride	25	U	500	489		ug/L		98	43 - 157	7	24

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*62 - 137*
4-Bromofluorobenzene (Surr)	*123*		*56 - 136*
Toluene-d8 (Surr)	*97*		*78 - 122*
Dibromofluoromethane (Surr)	*110*		*73 - 120*

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

Lab Sample ID: MB 240-564077/6
Matrix: Water
Analysis Batch: 564077

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			03/03/23 03:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*66 - 120*		*03/03/23 03:29*	*1*

Lab Sample ID: LCS 240-564077/4
Matrix: Water
Analysis Batch: 564077

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	9.38		ug/L		94	80 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*66 - 120*

Lab Sample ID: 240-180869-B-2 MSD
Matrix: Water
Analysis Batch: 564077

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	10.7		ug/L		107	51 - 153	7	16

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*85*		*66 - 120*

Lab Sample ID: 240-180869-D-2 MS
Matrix: Water
Analysis Batch: 564077

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	11.4		ug/L		114	51 - 153		

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

Lab Sample ID: 240-180869-D-2 MS
Matrix: Water
Analysis Batch: 564077

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

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		66 - 120

Lab Sample ID: MB 240-564197/6
Matrix: Water
Analysis Batch: 564197

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			03/03/23 15:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		66 - 120		03/03/23 15:22	1

Lab Sample ID: LCS 240-564197/4
Matrix: Water
Analysis Batch: 564197

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	8.65		ug/L		86	80 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	89		66 - 120

Lab Sample ID: 240-180978-K-2 MS
Matrix: Water
Analysis Batch: 564197

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	8.72		ug/L		87	51 - 153		

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	82		66 - 120

Lab Sample ID: 240-180978-L-2 MSD
Matrix: Water
Analysis Batch: 564197

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	9.66		ug/L		97	51 - 153	10	16

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		66 - 120

GC/MS VOA

Analysis Batch: 564060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181130-4	MW-02_022723	Total/NA	Water	8260D	
MB 240-564060/8	Method Blank	Total/NA	Water	8260D	
LCS 240-564060/5	Lab Control Sample	Total/NA	Water	8260D	
240-181130-4 MS	MW-02_022723	Total/NA	Water	8260D	
240-181130-4 MSD	MW-02_022723	Total/NA	Water	8260D	

Analysis Batch: 564077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181130-2	MW-03_022723	Total/NA	Water	8260D SIM	
MB 240-564077/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-564077/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-180869-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	
240-180869-D-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	

Analysis Batch: 564175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181130-5	MW-04_022723	Total/NA	Water	8260D	
MB 240-564175/8	Method Blank	Total/NA	Water	8260D	
LCS 240-564175/5	Lab Control Sample	Total/NA	Water	8260D	
240-181130-5 MS	MW-04_022723	Total/NA	Water	8260D	
240-181130-5 MSD	MW-04_022723	Total/NA	Water	8260D	

Analysis Batch: 564197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181130-3	MW-05_022723	Total/NA	Water	8260D SIM	
240-181130-4	MW-02_022723	Total/NA	Water	8260D SIM	
240-181130-5	MW-04_022723	Total/NA	Water	8260D SIM	
240-181130-6	MW-10_022723	Total/NA	Water	8260D SIM	
MB 240-564197/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-564197/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-180978-K-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-180978-L-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 564352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181130-1	TRIP BLANK_39	Total/NA	Water	8260D	
240-181130-2	MW-03_022723	Total/NA	Water	8260D	
240-181130-3	MW-05_022723	Total/NA	Water	8260D	
MB 240-564352/9	Method Blank	Total/NA	Water	8260D	
LCS 240-564352/5	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 564467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181130-6	MW-10_022723	Total/NA	Water	8260D	
MB 240-564467/9	Method Blank	Total/NA	Water	8260D	
LCS 240-564467/5	Lab Control Sample	Total/NA	Water	8260D	
240-181151-E-9 MS	Matrix Spike	Total/NA	Water	8260D	
240-181151-E-9 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-181130-1

Client Sample ID: TRIP BLANK_39

Lab Sample ID: 240-181130-1
Matrix: Water
Date Collected: 02/27/23 00:00
Date Received: 03/01/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564352	TJL1	EET CAN	03/06/23 19:09

Client Sample ID: MW-03_022723

Lab Sample ID: 240-181130-2
Matrix: Water
Date Collected: 02/27/23 10:35
Date Received: 03/01/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564352	TJL1	EET CAN	03/06/23 19:34
Total/NA	Analysis	8260D SIM		1	564077	BAJ	EET CAN	03/03/23 10:45

Client Sample ID: MW-05_022723

Lab Sample ID: 240-181130-3
Matrix: Water
Date Collected: 02/27/23 11:40
Date Received: 03/01/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564352	TJL1	EET CAN	03/06/23 19:59
Total/NA	Analysis	8260D SIM		1	564197	BAJ	EET CAN	03/03/23 15:47

Client Sample ID: MW-02_022723

Lab Sample ID: 240-181130-4
Matrix: Water
Date Collected: 02/27/23 13:15
Date Received: 03/01/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		100	564060	TES	EET CAN	03/03/23 00:22
Total/NA	Analysis	8260D SIM		1	564197	BAJ	EET CAN	03/03/23 16:11

Client Sample ID: MW-04_022723

Lab Sample ID: 240-181130-5
Matrix: Water
Date Collected: 02/27/23 14:15
Date Received: 03/01/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		142.857	564175	SAM	EET CAN	03/03/23 22:58
Total/NA	Analysis	8260D SIM		1	564197	BAJ	EET CAN	03/03/23 16:36

Client Sample ID: MW-10_022723

Lab Sample ID: 240-181130-6
Matrix: Water
Date Collected: 02/27/23 15:28
Date Received: 03/01/23 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		100	564467	HMB	EET CAN	03/07/23 19:17
Total/NA	Analysis	8260D SIM		1	564197	BAJ	EET CAN	03/03/23 17:00

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 240-181130-1

Laboratory: Eurofins Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23 *
Ohio VAP	State	CL0024	02-27-23 *
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

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

MICHIGAN 190

Chain of Custody Record

TestAmerica

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				
Company Name: Arcadis				COC No:
Address: 28550 Cabot Drive, Suite 500	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico	of COCs
City/State/Zip: Novi, MI, 48377	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	For lab use only
Phone: 248-994-2240	Email: kristoffer.hinskey@arcadis.com			Walk-in client
Project Name: Ford LTP On-Site	Sampler Name: Sommer Guy			Lab sampling
Project Number: 30167538.401.03	Method of Shipment/Carrier:			
PO # 30167538.401.03	Shipping/Tracking No:			Job/SDG No:

Analysis Turnaround Time: TAT if different from below: 10 day; ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day

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 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	Sample Specific Notes / Special Instructions:
TRIP BLANK_39	—	---		1						1					N	G	X	X	X	X	X	X		1 Trip Blank
MW-03_022723	2/27/23	1035		6						6					N	G	X	X	X	X	X	X	X	3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-05_022723	2/27/23	1140		6						6					N	G	X	X	X	X	X	X	X	
MW-02_022723	2/27/23	1315		6						6					N	G	X	X	X	X	X	X	X	
MW-04_022723	2/27/23	1415		6						6					N	G	X	X	X	X	X	X	X	
MW-10_022723	2/27/23	1528		6						6					N	G	X	X	X	X	X	X	X	

240-181130 Chain of Custody

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

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

Special Instructions/QC Requirements & Comments:

Submit all results through Cadena at jtomalla@cadenaco.com. Cadena #E203728
Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Sommer Guy	Arcadis	2/27/23 1635	Novi Cold Storage	Arcadis	2/27/23 1635
[signature]	ARCADIS	2/28/23 1200	[signature]	EETA	2/28/23 1200
[signature]	EETA	2/28/23 12:10	Received in Laboratory by: [signature] 559 Loc	[illegible]	3-2-23 950 (corrected) 3-1-23

Sample Receipt Form/Narrative Login # : 181130

Barberton Facility

Client ARCADIS Site Name

Cooler Received on 3-1-23 Opened on 3-1-23

Cooler unpacked by: M. Yoder

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

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

Eurofins Cooler # 9e Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

IR GUN # IR-16 (CF -0.1°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

IR GUN # IR-17 (CF -0.3°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity	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# HC203864
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 # covered up	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:

WI-NC-000

Login # : 181130

Eurofins - Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
(EC) Client Box Other	(IR-13) IR-16 IR-17	0.4	0.2	(Wet Ice) Blue Ice Dry Ice Water None
(EC) Client Box Other	(IR-13) IR-16 IR-17	3.4	3.2	(Wet Ice) Blue Ice Dry Ice Water None
(EC) Client Box Other	(IR-13) IR-16 IR-17	1.2	1.0	(Wet Ice) Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

DATA VERIFICATION REPORT

March 09, 2023

Kris Hinskey
Arcadis of Michigan
28550 Cabot Drive
Suite 500
Novi, MI US 48377

CADENA project ID: E203728
Project: Ford Livonia Transmission Plant - ON-SITE -Soil Gas, Ground water and Soil
Project number: 30167538.401.03- onsite groundwater
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Barberton
Laboratory submittal: 181130-1
Sample date: 2023-02-27
Report received by CADENA: 2023-03-09
Initial Data Verification completed by CADENA: 2023-03-09
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:

SUR - GCMS VOC sample -005 surrogate recovery was outlying biased high for 1 surrogate. These client sample results should be considered to be estimated and qualified with J flags if detected.

GCMS VOC QC batch MS/MSD issues 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.

Qualified Results Summary

CADENA Project ID: E203728
Laboratory: Eurofins Environment Testing LLC - Barberton
Laboratory Submittal: 181130-1

Sample Name: MW-04_022723
Lab Sample ID: 2401811305
Sample Date: 2/27/2023

Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier
GC/MS VOC					
OSW-8260DSIM					
1,4-Dioxane	123-91-1	1.7	2.0	ug/l	J

Analytical Results Summary

CADENA Project ID: E203728
Laboratory: Eurofins Environment Testing LLC - Barberton
Laboratory Submittal: 181130-1

		Sample Name:	TRIP BLANK_39				MW-03_022723				MW-05_022723				MW-02_022723				MW-04_022723				MW-10_022723			
		Lab Sample ID:	2401811301				2401811302				2401811303				2401811304				2401811305				2401811306			
		Sample Date:	2/27/2023				2/27/2023				2/27/2023				2/27/2023				2/27/2023				2/27/2023			
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	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	100	ug/l	---	ND	140	ug/l	---	ND	100	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	4100	100	ug/l	---	5500	140	ug/l	---	ND	100	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	100	ug/l	---	ND	140	ug/l	---	ND	100	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	760	100	ug/l	---	160	140	ug/l	---	ND	100	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	100	ug/l	---	1300	140	ug/l	---	ND	100	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	290	100	ug/l	---	2300	140	ug/l	---	5700	100	ug/l	---
OSW-8260DSIM																									
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	ND	2.0	ug/l	---	4.3	2.0	ug/l	---	1.7	2.0	ug/l	J	4.8	2.0	ug/l	---