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ANALYTICAL REPORT

PREPARED FOR

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Novi, Michigan 48377

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JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-176711-1

Eurofins Canton
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

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Authorization

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Table of Contents

Definitions/Glossary

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

Job ID: 240-176711-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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 ID: 240-176711-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-176711-1

Receipt
The samples were received on 11/18/2022 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 1.8°C

GC/MS VOA
Method 8260D_SIM: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MW-55D_111622 (240-176711-2) and MW-55_111622 (240-176711-3). Elevated reporting limits (RLs) are provided.

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 - On Site

Job ID: 240-176711-1

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: 240-176711-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-176711-1	TRIP BLANK_174	Water	11/16/22 00:00	11/18/22 08:00
240-176711-2	MW-55D_111622	Water	11/16/22 08:50	11/18/22 08:00
240-176711-3	MW-55_111622	Water	11/16/22 10:10	11/18/22 08:00
240-176711-4	MW-48R_111622	Water	11/16/22 11:25	11/18/22 08:00

Detection Summary

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

Job ID: 240-176711-1

Client Sample ID: TRIP BLANK_174 — Lab Sample ID: 240-176711-1

No Detections.

Client Sample ID: MW-55D_111622 — Lab Sample ID: 240-176711-2

No Detections.

Client Sample ID: MW-55_111622 — Lab Sample ID: 240-176711-3

No Detections.

Client Sample ID: MW-48R_111622 — Lab Sample ID: 240-176711-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	8.6		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	0.61	J	1.0	0.45	ug/L	1		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: 240-176711-1

Client Sample ID: TRIP BLANK_174

Date Collected: 11/16/22 00:00
Date Received: 11/18/22 08:00

Lab Sample ID: 240-176711-1

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			11/28/22 15:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/22 15:19	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 15:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/22 15:19	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 15:19	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/22 15:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*		*11/28/22 15:19*	*1*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*11/28/22 15:19*	*1*
Toluene-d8 (Surr)	*100*		*78 - 122*		*11/28/22 15:19*	*1*
Dibromofluoromethane (Surr)	*90*		*73 - 120*		*11/28/22 15:19*	*1*

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

Job ID: 240-176711-1

Client Sample ID: MW-55D_111622
Date Collected: 11/16/22 08:50
Date Received: 11/18/22 08:00

Lab Sample ID: 240-176711-2
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	4.0	U	4.0	1.7	ug/L			11/28/22 16:25	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*66 - 120*		*11/28/22 16:25*	*2*

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			11/28/22 15:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/22 15:44	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 15:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/22 15:44	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 15:44	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/22 15:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*62 - 137*		*11/28/22 15:44*	*1*
4-Bromofluorobenzene (Surr)	*90*		*56 - 136*		*11/28/22 15:44*	*1*
Toluene-d8 (Surr)	*98*		*78 - 122*		*11/28/22 15:44*	*1*
Dibromofluoromethane (Surr)	*89*		*73 - 120*		*11/28/22 15:44*	*1*

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

Job ID: 240-176711-1

Client Sample ID: MW-55_111622
Date Collected: 11/16/22 10:10
Date Received: 11/18/22 08:00

Lab Sample ID: 240-176711-3
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	4.0	U	4.0	1.7	ug/L			11/28/22 16:51	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*77*		*66 - 120*		*11/28/22 16:51*	*2*

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			11/28/22 16:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/22 16:09	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 16:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/22 16:09	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 16:09	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/22 16:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*		*11/28/22 16:09*	*1*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*11/28/22 16:09*	*1*
Toluene-d8 (Surr)	*99*		*78 - 122*		*11/28/22 16:09*	*1*
Dibromofluoromethane (Surr)	*90*		*73 - 120*		*11/28/22 16:09*	*1*

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

Job ID: 240-176711-1

Client Sample ID: MW-48R_111622
Date Collected: 11/16/22 11:25
Date Received: 11/18/22 08:00

Lab Sample ID: 240-176711-4
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	8.6		2.0	0.86	ug/L			11/28/22 17:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*79*		*66 - 120*		*11/28/22 17:16*	*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			11/28/22 16:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/22 16:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 16:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/22 16:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 16:34	1
Vinyl chloride	0.61	J	1.0	0.45	ug/L			11/28/22 16:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*		*11/28/22 16:34*	*1*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*11/28/22 16:34*	*1*
Toluene-d8 (Surr)	*101*		*78 - 122*		*11/28/22 16:34*	*1*
Dibromofluoromethane (Surr)	*88*		*73 - 120*		*11/28/22 16:34*	*1*

Surrogate Summary

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

Job ID: 240-176711-1

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)
240-176711-1	TRIP BLANK_174	97	88	100	90
240-176711-2	MW-55D_111622	98	90	98	89
240-176711-3	MW-55_111622	99	88	99	90
240-176711-4	MW-48R_111622	99	88	101	88
240-176712-B-3 MS	Matrix Spike	97	91	98	91
240-176712-B-3 MSD	Matrix Spike Duplicate	97	92	98	93
LCS 240-553589/4	Lab Control Sample	92	91	97	94
MB 240-553589/7	Method Blank	96	90	99	90

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)
240-176709-AA-1 MS	Matrix Spike	74
240-176709-AZ-1 MSD	Matrix Spike Duplicate	76
240-176711-2	MW-55D_111622	76
240-176711-3	MW-55_111622	77
240-176711-4	MW-48R_111622	79
LCS 240-553482/3	Lab Control Sample	80
MB 240-553482/4	Method Blank	79

Surrogate Legend

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

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

Lab Sample ID: MB 240-553589/7

Matrix: Water
Analysis Batch: 553589

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			11/28/22 14:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/22 14:54	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 14:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/22 14:54	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 14:54	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/22 14:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*		*11/28/22 14:54*	*1*
4-Bromofluorobenzene (Surr)	*90*		*56 - 136*		*11/28/22 14:54*	*1*
Toluene-d8 (Surr)	*99*		*78 - 122*		*11/28/22 14:54*	*1*
Dibromofluoromethane (Surr)	*90*		*73 - 120*		*11/28/22 14:54*	*1*

Lab Sample ID: LCS 240-553589/4

Matrix: Water
Analysis Batch: 553589

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	23.7		ug/L		95	77 - 123
Tetrachloroethene	25.0	24.7		ug/L		99	76 - 123
trans-1,2-Dichloroethene	25.0	23.6		ug/L		95	75 - 124
Trichloroethene	25.0	23.4		ug/L		94	70 - 122
Vinyl chloride	12.5	10.1		ug/L		81	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*62 - 137*
4-Bromofluorobenzene (Surr)	*91*		*56 - 136*
Toluene-d8 (Surr)	*97*		*78 - 122*
Dibromofluoromethane (Surr)	*94*		*73 - 120*

Lab Sample ID: 240-176712-B-3 MS

Matrix: Water
Analysis Batch: 553589

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	10	U	250	207		ug/L		83	56 - 135
cis-1,2-Dichloroethene	370		250	599		ug/L		91	66 - 128
Tetrachloroethene	10	U	250	207		ug/L		83	62 - 131
trans-1,2-Dichloroethene	110		250	358		ug/L		98	56 - 136
Trichloroethene	590		250	885	E	ug/L		118	61 - 124
Vinyl chloride	10	U	125	91.1		ug/L		73	43 - 157

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*
4-Bromofluorobenzene (Surr)	*91*		*56 - 136*
Toluene-d8 (Surr)	*98*		*78 - 122*

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

Lab Sample ID: 240-176712-B-3 MS
Matrix: Water
Analysis Batch: 553589

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

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*91*		*73 - 120*

Lab Sample ID: 240-176712-B-3 MSD
Matrix: Water
Analysis Batch: 553589

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	10	U	250	229		ug/L		91	56 - 135	10	26
cis-1,2-Dichloroethene	370		250	603		ug/L		93	66 - 128	1	14
Tetrachloroethene	10	U	250	217		ug/L		87	62 - 131	5	20
trans-1,2-Dichloroethene	110		250	356		ug/L		97	56 - 136	1	15
Trichloroethene	590		250	816	E	ug/L		90	61 - 124	8	15
Vinyl chloride	10	U	125	104		ug/L		83	43 - 157	13	24

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*
4-Bromofluorobenzene (Surr)	*92*		*56 - 136*
Toluene-d8 (Surr)	*98*		*78 - 122*
Dibromofluoromethane (Surr)	*93*		*73 - 120*

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

Lab Sample ID: MB 240-553482/4
Matrix: Water
Analysis Batch: 553482

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			11/28/22 07:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*79*		*66 - 120*		*11/28/22 07:32*	*1*

Lab Sample ID: LCS 240-553482/3
Matrix: Water
Analysis Batch: 553482

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	9.77		ug/L		98	80 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*80*		*66 - 120*

Lab Sample ID: 240-176709-AA-1 MS
Matrix: Water
Analysis Batch: 553482

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	55		10.0	62.1	4	ug/L		69	51 - 153

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

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*74*		*66 - 120*

Lab Sample ID: 240-176709-AZ-1 MSD
Matrix: Water
Analysis Batch: 553482

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	55		10.0	62.4	4	ug/L		72	51 - 153	1	16

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*76*		*66 - 120*

QC Association Summary

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

Job ID: 240-176711-1

GC/MS VOA

Analysis Batch: 553482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176711-2	MW-55D_111622	Total/NA	Water	8260D SIM	
240-176711-3	MW-55_111622	Total/NA	Water	8260D SIM	
240-176711-4	MW-48R_111622	Total/NA	Water	8260D SIM	
MB 240-553482/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-553482/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-176709-AA-1 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-176709-AZ-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 553589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176711-1	TRIP BLANK_174	Total/NA	Water	8260D	
240-176711-2	MW-55D_111622	Total/NA	Water	8260D	
240-176711-3	MW-55_111622	Total/NA	Water	8260D	
240-176711-4	MW-48R_111622	Total/NA	Water	8260D	
MB 240-553589/7	Method Blank	Total/NA	Water	8260D	
LCS 240-553589/4	Lab Control Sample	Total/NA	Water	8260D	
240-176712-B-3 MS	Matrix Spike	Total/NA	Water	8260D	
240-176712-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-176711-1

Client Sample ID: TRIP BLANK_174

Lab Sample ID: 240-176711-1

Date Collected: 11/16/22 00:00

Matrix: Water

Date Received: 11/18/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553589	LEE	EET CAN	11/28/22 15:19

Client Sample ID: MW-55D_111622

Lab Sample ID: 240-176711-2

Date Collected: 11/16/22 08:50

Matrix: Water

Date Received: 11/18/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553589	LEE	EET CAN	11/28/22 15:44
Total/NA	Analysis	8260D SIM		2	553482	CS	EET CAN	11/28/22 16:25

Client Sample ID: MW-55_111622

Lab Sample ID: 240-176711-3

Date Collected: 11/16/22 10:10

Matrix: Water

Date Received: 11/18/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553589	LEE	EET CAN	11/28/22 16:09
Total/NA	Analysis	8260D SIM		2	553482	CS	EET CAN	11/28/22 16:51

Client Sample ID: MW-48R_111622

Lab Sample ID: 240-176711-4

Date Collected: 11/16/22 11:25

Matrix: Water

Date Received: 11/18/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553589	LEE	EET CAN	11/28/22 16:34
Total/NA	Analysis	8260D SIM		1	553482	CS	EET CAN	11/28/22 17:16

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: 240-176711-1

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	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
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	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

MICHIGAN 190

Chain of Custody Record

1-8-18

TestAmerica

THE EATON 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: 248-994-2293	Telephone: 330-497-9396	of 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: Sommer Guy	TAT if different from below: 10 day (✓) 3 weeks, 2 weeks, 1 week, 2 days, 1 day		Walk-in client
Phone: 248-994-2240	Method of Shipment/Carrier:			Lab sampling
Project Name: Ford LTP On-Site	Shipping/Tracking No:			Job/SDG No:
Project Number: 30146655.401.03				
PO # 30146655.401.03				

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_174	—	---		1						1					N	G	X	X	X	X	X	X		1 Trip Blank
MW-55D_111622	11/16/22	0850		6						6					N	G	X	X	X	X	X	X	X	3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-55_111622	11/16/22	1010		6						6					N	G	X	X	X	X	X	X	X	
MW-48R_111622	11/16/22	1125		6						6					N	G	X	X	X	X	X	X	X	

240-176711 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 jtomalia@cadenaco.com. Cadena #E203728
Level IV Reporting requested

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Sommer Guy	Arcadis	11/16/22 1220	Novi Cold Storage	Arcadis	11/16/22 1720
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	ARCADIS	11/17/22 0935		EEA	11/17/22 0935
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
	EEA	11/17/22 941	M. D.	EEC	1/18/22 8:00

11/30/2022

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client ARCADIS Site Name _____ Cooler unpacked by: M. D. D.

Cooler Received on 11/18/22 Opened on 11/18/22

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

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

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

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

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-13 (CF +0.7 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp. 1.8 °C Corrected Cooler Temp. 1.8 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes) No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes) No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes (No)
-Were tamper/custody seals intact and uncompromised?	(Yes) No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes (No)
4. Did custody papers accompany the sample(s)?	(Yes) No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes) No
7. Did all bottles arrive in good condition (Unbroken)?	(Yes) No
8. Could all bottle labels (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# **HC286797**
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 #010420IG	(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

December 01, 2022

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: 30146655.401.03- onsite groundwater
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Barberton
Laboratory submittal: 176711-1
Sample date: 2022-11-16
Report received by CADENA: 2022-11-30
Initial Data Verification completed by CADENA: 2022-12-01
Number of Samples:4
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.

There were no significant QC anomalies or exceptions to report.

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

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

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

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

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

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

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab 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 - Barberton
Laboratory Submittal: 176711-1

		Sample Name:	TRIP BLANK_174				MW-55D_111622				MW-55_111622				MW-48R_111622			
		Lab Sample ID:	2401767111				2401767112				2401767113				2401767114			
		Sample Date:	11/16/2022				11/16/2022				11/16/2022				11/16/2022			
	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
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	---
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	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	---
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	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	---
	Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	0.61	1.0	ug/l	J
	OSW-8260DSIM																	
	1,4-Dioxane	123-91-1					ND	4.0	ug/l	---	ND	4.0	ug/l	---	8.6	2.0	ug/l	---