

# ANALYTICAL REPORT

## PREPARED FOR

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## JOB DESCRIPTION

Ford LTP - On Site

## JOB NUMBER

240-176634-1

# Eurofins Canton

## Job Notes

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## Authorization



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# Definitions/Glossary

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

Job ID: 240-176634-1

## 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.
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

# Case Narrative

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

Job ID: 240-176634-1

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**Job ID: 240-176634-1**

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**Laboratory: Eurofins Canton**

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**Narrative**

**Job Narrative  
240-176634-1**

**Receipt**

The samples were received on 11/17/2022 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.1°C and 1.6°C

**GC/MS VOA**

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

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# Method Summary

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

Job ID: 240-176634-1

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

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# Sample Summary

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

Job ID: 240-176634-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-176634-1	TRIP BLANK_186	Water	11/15/22 00:00	11/17/22 08:00
240-176634-2	MW-67_111522	Water	11/15/22 08:50	11/17/22 08:00
240-176634-3	MW-58_111522	Water	11/15/22 12:15	11/17/22 08:00
240-176634-4	MW-46_111522	Water	11/15/22 13:50	11/17/22 08:00
240-176634-5	MW-63_111522	Water	11/15/22 14:50	11/17/22 08:00

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# Detection Summary

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

Job ID: 240-176634-1

## Client Sample ID: TRIP BLANK\_186

Lab Sample ID: 240-176634-1

No Detections.

## Client Sample ID: MW-67\_111522

Lab Sample ID: 240-176634-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.7		1.0	0.46	ug/L	1		8260D	Total/NA
Trichloroethene	55		1.0	0.44	ug/L	1		8260D	Total/NA

## Client Sample ID: MW-58\_111522

Lab Sample ID: 240-176634-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.5		2.0	0.86	ug/L	1		8260D SIM	Total/NA

## Client Sample ID: MW-46\_111522

Lab Sample ID: 240-176634-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.3		2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	5.6		1.0	0.46	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.65	J	1.0	0.51	ug/L	1		8260D	Total/NA
Vinyl chloride	35		1.0	0.45	ug/L	1		8260D	Total/NA

## Client Sample ID: MW-63\_111522

Lab Sample ID: 240-176634-5

No Detections.

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 240-176634-1

**Client Sample ID: TRIP BLANK\_186**

**Lab Sample ID: 240-176634-1**

**Date Collected: 11/15/22 00:00**

**Matrix: Water**

**Date Received: 11/17/22 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			11/29/22 16:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/22 16:16	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 16:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/22 16:16	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 16:16	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/22 16:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		62 - 137		11/29/22 16:16	1
4-Bromofluorobenzene (Surr)	99		56 - 136		11/29/22 16:16	1
Toluene-d8 (Surr)	99		78 - 122		11/29/22 16:16	1
Dibromofluoromethane (Surr)	78		73 - 120		11/29/22 16:16	1

# Client Sample Results

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

Job ID: 240-176634-1

**Client Sample ID: MW-67\_111522**

**Lab Sample ID: 240-176634-2**

Date Collected: 11/15/22 08:50

Matrix: Water

Date Received: 11/17/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/28/22 05:00	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	76		66 - 120					11/28/22 05:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/22 16:39	1
<b>cis-1,2-Dichloroethene</b>	<b>2.7</b>		1.0	0.46	ug/L			11/29/22 16:39	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 16:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/22 16:39	1
<b>Trichloroethene</b>	<b>55</b>		1.0	0.44	ug/L			11/29/22 16:39	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/22 16:39	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	90		62 - 137					11/29/22 16:39	1
4-Bromofluorobenzene (Surr)	103		56 - 136					11/29/22 16:39	1
Toluene-d8 (Surr)	100		78 - 122					11/29/22 16:39	1
Dibromofluoromethane (Surr)	83		73 - 120					11/29/22 16:39	1

# Client Sample Results

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

Job ID: 240-176634-1

**Client Sample ID: MW-58\_111522**

**Lab Sample ID: 240-176634-3**

Date Collected: 11/15/22 12:15

Matrix: Water

Date Received: 11/17/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.5		2.0	0.86	ug/L			11/28/22 05:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		66 - 120					11/28/22 05:25	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			11/29/22 17:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/22 17:02	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 17:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/22 17:02	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 17:02	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/22 17:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		62 - 137					11/29/22 17:02	1
4-Bromofluorobenzene (Surr)	102		56 - 136					11/29/22 17:02	1
Toluene-d8 (Surr)	99		78 - 122					11/29/22 17:02	1
Dibromofluoromethane (Surr)	79		73 - 120					11/29/22 17:02	1

# Client Sample Results

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

Job ID: 240-176634-1

**Client Sample ID: MW-46\_111522**

**Lab Sample ID: 240-176634-4**

Date Collected: 11/15/22 13:50

Matrix: Water

Date Received: 11/17/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.3		2.0	0.86	ug/L			11/28/22 11:46	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	78		66 - 120					11/28/22 11:46	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			11/29/22 17:25	1
cis-1,2-Dichloroethene	5.6		1.0	0.46	ug/L			11/29/22 17:25	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 17:25	1
trans-1,2-Dichloroethene	0.65	J	1.0	0.51	ug/L			11/29/22 17:25	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 17:25	1
Vinyl chloride	35		1.0	0.45	ug/L			11/29/22 17:25	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	84		62 - 137					11/29/22 17:25	1
4-Bromofluorobenzene (Surr)	93		56 - 136					11/29/22 17:25	1
Toluene-d8 (Surr)	94		78 - 122					11/29/22 17:25	1
Dibromofluoromethane (Surr)	77		73 - 120					11/29/22 17:25	1

# Client Sample Results

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

Job ID: 240-176634-1

**Client Sample ID: MW-63\_111522**

**Lab Sample ID: 240-176634-5**

Date Collected: 11/15/22 14:50

Matrix: Water

Date Received: 11/17/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/28/22 03:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		66 - 120		11/28/22 03:44	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			11/29/22 13:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/22 13:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 13:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/22 13:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 13:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/22 13:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		62 - 137		11/29/22 13:34	1
4-Bromofluorobenzene (Surr)	103		56 - 136		11/29/22 13:34	1
Toluene-d8 (Surr)	100		78 - 122		11/29/22 13:34	1
Dibromofluoromethane (Surr)	82		73 - 120		11/29/22 13:34	1

# Surrogate Summary

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

Job ID: 240-176634-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-176634-1	TRIP BLANK_186	85	99	99	78
240-176634-2	MW-67_111522	90	103	100	83
240-176634-3	MW-58_111522	92	102	99	79
240-176634-4	MW-46_111522	84	93	94	77
240-176634-5	MW-63_111522	91	103	100	82
240-176634-5 MS	MW-63-MS_111522	88	101	98	82
240-176634-5 MSD	MW-63-MSD_111522	84	100	97	78
LCS 240-553688/5	Lab Control Sample	86	97	95	79
MB 240-553688/8	Method Blank	93	107	101	84

**Surrogate Legend**

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (66-120)
240-176634-2	MW-67_111522	76
240-176634-3	MW-58_111522	80
240-176634-4	MW-46_111522	78
240-176634-5	MW-63_111522	78
240-176634-5 MS	MW-63-MS_111522	80
240-176634-5 MSD	MW-63-MSD_111522	80
240-176709-AA-1 MS	Matrix Spike	74
240-176709-AZ-1 MSD	Matrix Spike Duplicate	76
LCS 240-553480/3	Lab Control Sample	76
LCS 240-553482/3	Lab Control Sample	80
MB 240-553480/4	Method Blank	76
MB 240-553482/4	Method Blank	79

**Surrogate Legend**

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

# QC Sample Results

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

Job ID: 240-176634-1

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

**Lab Sample ID: MB 240-553688/8**  
**Matrix: Water**  
**Analysis Batch: 553688**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/22 10:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/22 10:53	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 10:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/22 10:53	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 10:53	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/22 10:53	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		11/29/22 10:53	1
4-Bromofluorobenzene (Surr)	107		56 - 136		11/29/22 10:53	1
Toluene-d8 (Surr)	101		78 - 122		11/29/22 10:53	1
Dibromofluoromethane (Surr)	84		73 - 120		11/29/22 10:53	1

**Lab Sample ID: LCS 240-553688/5**  
**Matrix: Water**  
**Analysis Batch: 553688**

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1-Dichloroethene	20.0	20.0		ug/L		100	63 - 134
cis-1,2-Dichloroethene	20.0	19.0		ug/L		95	77 - 123
Tetrachloroethene	20.0	18.2		ug/L		91	76 - 123
trans-1,2-Dichloroethene	20.0	21.0		ug/L		105	75 - 124
Trichloroethene	20.0	17.5		ug/L		87	70 - 122
Vinyl chloride	20.0	17.9		ug/L		89	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	86		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	95		78 - 122
Dibromofluoromethane (Surr)	79		73 - 120

**Lab Sample ID: 240-176634-5 MS**  
**Matrix: Water**  
**Analysis Batch: 553688**

**Client Sample ID: MW-63-MS\_111522**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U	20.0	18.2		ug/L		91	56 - 135
cis-1,2-Dichloroethene	1.0	U	20.0	17.8		ug/L		89	66 - 128
Tetrachloroethene	1.0	U	20.0	14.5		ug/L		72	62 - 131
trans-1,2-Dichloroethene	1.0	U	20.0	18.6		ug/L		93	56 - 136
Trichloroethene	1.0	U	20.0	14.6		ug/L		73	61 - 124
Vinyl chloride	1.0	U	20.0	16.4		ug/L		82	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	88		62 - 137
4-Bromofluorobenzene (Surr)	101		56 - 136
Toluene-d8 (Surr)	98		78 - 122

# QC Sample Results

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

Job ID: 240-176634-1

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

Lab Sample ID: 240-176634-5 MS  
Matrix: Water  
Analysis Batch: 553688

Client Sample ID: MW-63-MS\_111522  
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	82		73 - 120

Lab Sample ID: 240-176634-5 MSD  
Matrix: Water  
Analysis Batch: 553688

Client Sample ID: MW-63-MSD\_111522  
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	20.0	17.6		ug/L		88	56 - 135	4	26
cis-1,2-Dichloroethene	1.0	U	20.0	17.5		ug/L		88	66 - 128	1	14
Tetrachloroethene	1.0	U	20.0	14.2		ug/L		71	62 - 131	2	20
trans-1,2-Dichloroethene	1.0	U	20.0	18.3		ug/L		92	56 - 136	2	15
Trichloroethene	1.0	U	20.0	14.9		ug/L		74	61 - 124	2	15
Vinyl chloride	1.0	U	20.0	15.7		ug/L		79	43 - 157	4	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	78		73 - 120

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

Lab Sample ID: MB 240-553480/4  
Matrix: Water  
Analysis Batch: 553480

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			11/27/22 19:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	76		66 - 120		11/27/22 19:42	1

Lab Sample ID: LCS 240-553480/3  
Matrix: Water  
Analysis Batch: 553480

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	8.98		ug/L		90	80 - 122

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

Lab Sample ID: 240-176634-5 MS  
Matrix: Water  
Analysis Batch: 553480

Client Sample ID: MW-63-MS\_111522  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	2.0	U	10.0	10.2		ug/L		102	51 - 153

Eurofins Canton



# QC Sample Results

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

Job ID: 240-176634-1

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

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

**Lab Sample ID: 240-176634-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 553480**

**Client Sample ID: MW-63-MSD\_111522**  
**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	10.4		ug/L		104	51 - 153	2	16

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

**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

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

# QC Sample Results

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

Job ID: 240-176634-1

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

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

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

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
1,2-Dichloroethane-d4 (Surr)	76		66 - 120

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

# QC Association Summary

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

Job ID: 240-176634-1

## GC/MS VOA

### Analysis Batch: 553480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176634-2	MW-67_111522	Total/NA	Water	8260D SIM	
240-176634-3	MW-58_111522	Total/NA	Water	8260D SIM	
240-176634-5	MW-63_111522	Total/NA	Water	8260D SIM	
MB 240-553480/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-553480/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-176634-5 MS	MW-63-MS_111522	Total/NA	Water	8260D SIM	
240-176634-5 MSD	MW-63-MSD_111522	Total/NA	Water	8260D SIM	

### Analysis Batch: 553482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176634-4	MW-46_111522	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: 553688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176634-1	TRIP BLANK_186	Total/NA	Water	8260D	
240-176634-2	MW-67_111522	Total/NA	Water	8260D	
240-176634-3	MW-58_111522	Total/NA	Water	8260D	
240-176634-4	MW-46_111522	Total/NA	Water	8260D	
240-176634-5	MW-63_111522	Total/NA	Water	8260D	
MB 240-553688/8	Method Blank	Total/NA	Water	8260D	
LCS 240-553688/5	Lab Control Sample	Total/NA	Water	8260D	
240-176634-5 MS	MW-63-MS_111522	Total/NA	Water	8260D	
240-176634-5 MSD	MW-63-MSD_111522	Total/NA	Water	8260D	

# Lab Chronicle

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

Job ID: 240-176634-1

## Client Sample ID: TRIP BLANK\_186

Lab Sample ID: 240-176634-1

Date Collected: 11/15/22 00:00

Matrix: Water

Date Received: 11/17/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553688	TJL1	EET CAN	11/29/22 16:16

## Client Sample ID: MW-67\_111522

Lab Sample ID: 240-176634-2

Date Collected: 11/15/22 08:50

Matrix: Water

Date Received: 11/17/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553688	TJL1	EET CAN	11/29/22 16:39
Total/NA	Analysis	8260D SIM		1	553480	CS	EET CAN	11/28/22 05:00

## Client Sample ID: MW-58\_111522

Lab Sample ID: 240-176634-3

Date Collected: 11/15/22 12:15

Matrix: Water

Date Received: 11/17/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553688	TJL1	EET CAN	11/29/22 17:02
Total/NA	Analysis	8260D SIM		1	553480	CS	EET CAN	11/28/22 05:25

## Client Sample ID: MW-46\_111522

Lab Sample ID: 240-176634-4

Date Collected: 11/15/22 13:50

Matrix: Water

Date Received: 11/17/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553688	TJL1	EET CAN	11/29/22 17:25
Total/NA	Analysis	8260D SIM		1	553482	CS	EET CAN	11/28/22 11:46

## Client Sample ID: MW-63\_111522

Lab Sample ID: 240-176634-5

Date Collected: 11/15/22 14:50

Matrix: Water

Date Received: 11/17/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553688	TJL1	EET CAN	11/29/22 13:34
Total/NA	Analysis	8260D SIM		1	553480	CS	EET CAN	11/28/22 03:44

### 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: 240-176634-1

## 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



Eurofins - Canton Sample Receipt Form/Narrative

Login #: 176634

Barberton Facility

Client Arcadis Site Name

Cooler unpacked by:

Cooler Received on 11-17-22 Opened on 11-17-22

Rachelle Haidet

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

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

Eurofins Cooler # 74 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. °C Corrected Cooler Temp. °C

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

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

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 # 01042016 Yes No

17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.

Sample(s) were received in a broken container.

Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.

Time preserved: Preservative(s) added/Lot number(s):

VOA Sample Preservation - Date/Time VOAs Frozen:





# DATA VERIFICATION REPORT



December 02, 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: 176634-1

Sample date: 2022-11-15

Report received by CADENA: 2022-12-01

Initial Data Verification completed by CADENA: 2022-12-02

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.**

There were no significant QC anomalies or exceptions to report.

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

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

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

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

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

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

## CADENA Valid Qualifiers

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