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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Kristoffer Hinskey  
ARCADIS US Inc  
28550 Cabot Drive  
Suite 500  
Novi, Michigan 48377

Generated 12/5/2023 7:45:42 AM

## JOB DESCRIPTION

Ford LTP - On Site

## JOB NUMBER

240-195677-1

# Eurofins Cleveland

## Job Notes

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

## Authorization



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# Definitions/Glossary

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

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## Job ID: 240-195677-1

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### Laboratory: Eurofins Cleveland

#### Narrative

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#### Job Narrative 240-195677-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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

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

#### Receipt

The samples were received on 11/17/2023 9:40 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 2.7°C, 2.9°C and 3.5°C

#### GC/MS VOA

Method 8260D: NO MS/MSD in batch 595698 due to a sample failure: MW-50\_111523 (240-195677-2).

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

# Method Summary

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

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

**Protocol References:**

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

**Laboratory References:**

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

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# Sample Summary

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195677-1	TRIP BLANK_83	Water	11/15/23 00:00	11/17/23 09:40
240-195677-2	MW-50_111523	Water	11/15/23 11:40	11/17/23 09:40
240-195677-3	DUP-02	Water	11/15/23 00:00	11/17/23 09:40
240-195677-4	MW-71_111523	Water	11/15/23 13:10	11/17/23 09:40

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# Detection Summary

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

## Client Sample ID: TRIP BLANK\_83

Lab Sample ID: 240-195677-1

No Detections.

## Client Sample ID: MW-50\_111523

Lab Sample ID: 240-195677-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	8.0		1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	30		1.0	0.45	ug/L	1		8260D	Total/NA

## Client Sample ID: DUP-02

Lab Sample ID: 240-195677-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	11		1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	28		1.0	0.45	ug/L	1		8260D	Total/NA

## Client Sample ID: MW-71\_111523

Lab Sample ID: 240-195677-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.0	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	0.92	J	1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	0.59	J	1.0	0.45	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

**Client Sample ID: TRIP BLANK\_83**

**Lab Sample ID: 240-195677-1**

**Date Collected: 11/15/23 00:00**

**Matrix: Water**

**Date Received: 11/17/23 09:40**

**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			11/22/23 17:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 17:00	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 17:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 17:00	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 17:00	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 17:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		62 - 137		11/22/23 17:00	1
4-Bromofluorobenzene (Surr)	100		56 - 136		11/22/23 17:00	1
Toluene-d8 (Surr)	101		78 - 122		11/22/23 17:00	1
Dibromofluoromethane (Surr)	98		73 - 120		11/22/23 17:00	1

# Client Sample Results

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

**Client Sample ID: MW-50\_111523**

**Lab Sample ID: 240-195677-2**

Date Collected: 11/15/23 11:40

Matrix: Water

Date Received: 11/17/23 09:40

**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			11/28/23 21:37	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)	97		66 - 120					11/28/23 21:37	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			11/26/23 11:47	1
<b>cis-1,2-Dichloroethene</b>	<b>8.0</b>		1.0	0.46	ug/L			11/26/23 11:47	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/26/23 11:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/26/23 11:47	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/26/23 11:47	1
<b>Vinyl chloride</b>	<b>30</b>		1.0	0.45	ug/L			11/26/23 11:47	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)	93		62 - 137					11/26/23 11:47	1
4-Bromofluorobenzene (Surr)	97		56 - 136					11/26/23 11:47	1
Toluene-d8 (Surr)	106		78 - 122					11/26/23 11:47	1
Dibromofluoromethane (Surr)	83		73 - 120					11/26/23 11:47	1

# Client Sample Results

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

**Client Sample ID: DUP-02**  
**Date Collected: 11/15/23 00:00**  
**Date Received: 11/17/23 09:40**

**Lab Sample ID: 240-195677-3**  
**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			11/28/23 22:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		66 - 120					11/28/23 22:01	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			11/24/23 10:58	1
<b>cis-1,2-Dichloroethene</b>	<b>11</b>		1.0	0.46	ug/L			11/24/23 10:58	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 10:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/24/23 10:58	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 10:58	1
<b>Vinyl chloride</b>	<b>28</b>		1.0	0.45	ug/L			11/24/23 10:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		62 - 137					11/24/23 10:58	1
4-Bromofluorobenzene (Surr)	96		56 - 136					11/24/23 10:58	1
Toluene-d8 (Surr)	109		78 - 122					11/24/23 10:58	1
Dibromofluoromethane (Surr)	88		73 - 120					11/24/23 10:58	1

# Client Sample Results

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

**Client Sample ID: MW-71\_111523**

**Lab Sample ID: 240-195677-4**

Date Collected: 11/15/23 13:10

Matrix: Water

Date Received: 11/17/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.0	J	2.0	0.86	ug/L			11/28/23 22:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		66 - 120					11/28/23 22:25	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			11/24/23 11:23	1
cis-1,2-Dichloroethene	0.92	J	1.0	0.46	ug/L			11/24/23 11:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 11:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/24/23 11:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 11:23	1
Vinyl chloride	0.59	J	1.0	0.45	ug/L			11/24/23 11:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		62 - 137					11/24/23 11:23	1
4-Bromofluorobenzene (Surr)	94		56 - 136					11/24/23 11:23	1
Toluene-d8 (Surr)	106		78 - 122					11/24/23 11:23	1
Dibromofluoromethane (Surr)	91		73 - 120					11/24/23 11:23	1

# Surrogate Summary

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA	BFB	TOL	DBFM
		(62-137)	(56-136)	(78-122)	(73-120)
240-195499-C-1 MS	Matrix Spike	110	100	99	102
240-195499-C-1 MSD	Matrix Spike Duplicate	111	101	100	104
240-195677-1	TRIP BLANK_83	110	100	101	98
240-195677-2	MW-50_111523	93	97	106	83
240-195677-3	DUP-02	97	96	109	88
240-195677-4	MW-71_111523	90	94	106	91
240-195684-E-2 MS	Matrix Spike	90	101	110	88
240-195684-F-2 MSD	Matrix Spike Duplicate	93	104	107	89
LCS 240-595559/4	Lab Control Sample	110	98	98	107
LCS 240-595675/4	Lab Control Sample	89	98	110	92
LCS 240-595698/4	Lab Control Sample	92	98	102	84
MB 240-595559/7	Method Blank	111	100	103	98
MB 240-595675/7	Method Blank	87	96	104	81
MB 240-595698/7	Method Blank	90	95	104	89

#### 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)

Lab Sample ID	Client Sample ID	DCA
		(66-120)
240-195542-G-2 MS	Matrix Spike	97
240-195542-J-2 MSD	Matrix Spike Duplicate	98
240-195677-2	MW-50_111523	97
240-195677-3	DUP-02	98
240-195677-4	MW-71_111523	99
LCS 240-595979/4	Lab Control Sample	98
MB 240-595979/6	Method Blank	96

#### Surrogate Legend

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

# QC Sample Results

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

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

**Lab Sample ID: MB 240-595559/7**  
**Matrix: Water**  
**Analysis Batch: 595559**

**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			11/22/23 12:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 12:02	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 12:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 12:02	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 12:02	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 12:02	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	111		62 - 137		11/22/23 12:02	1
4-Bromofluorobenzene (Surr)	100		56 - 136		11/22/23 12:02	1
Toluene-d8 (Surr)	103		78 - 122		11/22/23 12:02	1
Dibromofluoromethane (Surr)	98		73 - 120		11/22/23 12:02	1

**Lab Sample ID: LCS 240-595559/4**  
**Matrix: Water**  
**Analysis Batch: 595559**

**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	25.0	23.4		ug/L		94	63 - 134
cis-1,2-Dichloroethene	25.0	25.1		ug/L		100	77 - 123
Tetrachloroethene	25.0	21.9		ug/L		88	76 - 123
trans-1,2-Dichloroethene	25.0	25.4		ug/L		102	75 - 124
Trichloroethene	25.0	24.6		ug/L		98	70 - 122
Vinyl chloride	12.5	10.9		ug/L		87	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	110		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	107		73 - 120

**Lab Sample ID: 240-195499-C-1 MS**  
**Matrix: Water**  
**Analysis Batch: 595559**

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

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	10	U	250	220		ug/L		88	56 - 135
cis-1,2-Dichloroethene	250		250	499		ug/L		98	66 - 128
Tetrachloroethene	10	U	250	208		ug/L		83	62 - 131
trans-1,2-Dichloroethene	20		250	245		ug/L		90	56 - 136
Trichloroethene	21		250	246		ug/L		90	61 - 124
Vinyl chloride	30		125	133		ug/L		83	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	110		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	99		78 - 122

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# QC Sample Results

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

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

**Lab Sample ID: 240-195499-C-1 MS**  
**Matrix: Water**  
**Analysis Batch: 595559**

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	102		73 - 120

**Lab Sample ID: 240-195499-C-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 595559**

**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	231		ug/L		93	56 - 135	5	26
cis-1,2-Dichloroethene	250		250	484		ug/L		92	66 - 128	3	14
Tetrachloroethene	10	U	250	226		ug/L		91	62 - 131	8	20
trans-1,2-Dichloroethene	20		250	258		ug/L		95	56 - 136	5	15
Trichloroethene	21		250	250		ug/L		92	61 - 124	2	15
Vinyl chloride	30		125	125		ug/L		77	43 - 157	6	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		62 - 137
4-Bromofluorobenzene (Surr)	101		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	104		73 - 120

**Lab Sample ID: MB 240-595675/7**  
**Matrix: Water**  
**Analysis Batch: 595675**

**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			11/24/23 10:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/24/23 10:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 10:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/24/23 10:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 10:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/24/23 10:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		62 - 137		11/24/23 10:07	1
4-Bromofluorobenzene (Surr)	96		56 - 136		11/24/23 10:07	1
Toluene-d8 (Surr)	104		78 - 122		11/24/23 10:07	1
Dibromofluoromethane (Surr)	81		73 - 120		11/24/23 10:07	1

**Lab Sample ID: LCS 240-595675/4**  
**Matrix: Water**  
**Analysis Batch: 595675**

**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	26.7		ug/L		107	63 - 134
cis-1,2-Dichloroethene	25.0	25.0		ug/L		100	77 - 123
Tetrachloroethene	25.0	28.9		ug/L		116	76 - 123
trans-1,2-Dichloroethene	25.0	26.2		ug/L		105	75 - 124
Trichloroethene	25.0	24.3		ug/L		97	70 - 122

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# QC Sample Results

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

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

**Lab Sample ID: LCS 240-595675/4**

**Matrix: Water**

**Analysis Batch: 595675**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	12.5	13.4		ug/L		107	60 - 144
<b>Surrogate</b>							
	<b>LCS %Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	89		62 - 137				
4-Bromofluorobenzene (Surr)	98		56 - 136				
Toluene-d8 (Surr)	110		78 - 122				
Dibromofluoromethane (Surr)	92		73 - 120				

**Lab Sample ID: 240-195684-E-2 MS**

**Matrix: Water**

**Analysis Batch: 595675**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.0	U	25.0	25.6		ug/L		102	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	25.9		ug/L		104	66 - 128
Tetrachloroethene	1.0	U	25.0	23.4		ug/L		94	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	25.1		ug/L		101	56 - 136
Trichloroethene	1.0	U	25.0	23.9		ug/L		96	61 - 124
Vinyl chloride	0.93	J	12.5	13.8		ug/L		103	43 - 157
<b>Surrogate</b>									
	<b>MS %Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	90		62 - 137						
4-Bromofluorobenzene (Surr)	101		56 - 136						
Toluene-d8 (Surr)	110		78 - 122						
Dibromofluoromethane (Surr)	88		73 - 120						

**Lab Sample ID: 240-195684-F-2 MSD**

**Matrix: Water**

**Analysis Batch: 595675**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	25.0	27.5		ug/L		110	56 - 135	7	26
cis-1,2-Dichloroethene	1.0	U	25.0	26.5		ug/L		106	66 - 128	2	14
Tetrachloroethene	1.0	U	25.0	27.0		ug/L		108	62 - 131	14	20
trans-1,2-Dichloroethene	1.0	U	25.0	23.0		ug/L		92	56 - 136	9	15
Trichloroethene	1.0	U	25.0	24.3		ug/L		97	61 - 124	2	15
Vinyl chloride	0.93	J	12.5	15.0		ug/L		113	43 - 157	8	24
<b>Surrogate</b>											
	<b>MSD %Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	93		62 - 137								
4-Bromofluorobenzene (Surr)	104		56 - 136								
Toluene-d8 (Surr)	107		78 - 122								
Dibromofluoromethane (Surr)	89		73 - 120								

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# QC Sample Results

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

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

**Lab Sample ID: MB 240-595698/7**  
**Matrix: Water**  
**Analysis Batch: 595698**

**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			11/26/23 11:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/26/23 11:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/26/23 11:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/26/23 11:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/26/23 11:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/26/23 11:22	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	90		62 - 137		11/26/23 11:22	1
4-Bromofluorobenzene (Surr)	95		56 - 136		11/26/23 11:22	1
Toluene-d8 (Surr)	104		78 - 122		11/26/23 11:22	1
Dibromofluoromethane (Surr)	89		73 - 120		11/26/23 11:22	1

**Lab Sample ID: LCS 240-595698/4**  
**Matrix: Water**  
**Analysis Batch: 595698**

**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	25.0	28.9		ug/L		115	63 - 134
cis-1,2-Dichloroethene	25.0	29.0		ug/L		116	77 - 123
Tetrachloroethene	25.0	29.7		ug/L		119	76 - 123
trans-1,2-Dichloroethene	25.0	27.7		ug/L		111	75 - 124
Trichloroethene	25.0	25.7		ug/L		103	70 - 122
Vinyl chloride	12.5	14.4		ug/L		115	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	102		78 - 122
Dibromofluoromethane (Surr)	84		73 - 120

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

**Lab Sample ID: MB 240-595979/6**  
**Matrix: Water**  
**Analysis Batch: 595979**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/28/23 17:37	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		66 - 120		11/28/23 17:37	1

# QC Sample Results

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

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

**Lab Sample ID: LCS 240-595979/4**  
**Matrix: Water**  
**Analysis Batch: 595979**

**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	10.3		ug/L		103	80 - 122
<b>Surrogate</b>							
	%Recovery	LCS Qualifier	LCS Limits				
1,2-Dichloroethane-d4 (Surr)	98		66 - 120				

**Lab Sample ID: 240-195542-G-2 MS**  
**Matrix: Water**  
**Analysis Batch: 595979**

**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	2.7		10.0	14.0		ug/L		112	51 - 153
<b>Surrogate</b>									
	%Recovery	MS Qualifier	MS Limits						
1,2-Dichloroethane-d4 (Surr)	97		66 - 120						

**Lab Sample ID: 240-195542-J-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 595979**

**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	2.7		10.0	14.8		ug/L		121	51 - 153	6	16
<b>Surrogate</b>											
	%Recovery	MSD Qualifier	MSD Limits								
1,2-Dichloroethane-d4 (Surr)	98		66 - 120								

# QC Association Summary

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

## GC/MS VOA

### Analysis Batch: 595559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195677-1	TRIP BLANK_83	Total/NA	Water	8260D	
MB 240-595559/7	Method Blank	Total/NA	Water	8260D	
LCS 240-595559/4	Lab Control Sample	Total/NA	Water	8260D	
240-195499-C-1 MS	Matrix Spike	Total/NA	Water	8260D	
240-195499-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

### Analysis Batch: 595675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195677-3	DUP-02	Total/NA	Water	8260D	
240-195677-4	MW-71_111523	Total/NA	Water	8260D	
MB 240-595675/7	Method Blank	Total/NA	Water	8260D	
LCS 240-595675/4	Lab Control Sample	Total/NA	Water	8260D	
240-195684-E-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-195684-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

### Analysis Batch: 595698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195677-2	MW-50_111523	Total/NA	Water	8260D	
MB 240-595698/7	Method Blank	Total/NA	Water	8260D	
LCS 240-595698/4	Lab Control Sample	Total/NA	Water	8260D	

### Analysis Batch: 595979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195677-2	MW-50_111523	Total/NA	Water	8260D SIM	
240-195677-3	DUP-02	Total/NA	Water	8260D SIM	
240-195677-4	MW-71_111523	Total/NA	Water	8260D SIM	
MB 240-595979/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-595979/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-195542-G-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-195542-J-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

# Lab Chronicle

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

**Client Sample ID: TRIP BLANK\_83**

**Lab Sample ID: 240-195677-1**

**Date Collected: 11/15/23 00:00**

**Matrix: Water**

**Date Received: 11/17/23 09:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595559	LEE	EET CLE	11/22/23 17:00

**Client Sample ID: MW-50\_111523**

**Lab Sample ID: 240-195677-2**

**Date Collected: 11/15/23 11:40**

**Matrix: Water**

**Date Received: 11/17/23 09:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595698	LEE	EET CLE	11/26/23 11:47
Total/NA	Analysis	8260D SIM		1	595979	CS	EET CLE	11/28/23 21:37

**Client Sample ID: DUP-02**

**Lab Sample ID: 240-195677-3**

**Date Collected: 11/15/23 00:00**

**Matrix: Water**

**Date Received: 11/17/23 09:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595675	LEE	EET CLE	11/24/23 10:58
Total/NA	Analysis	8260D SIM		1	595979	CS	EET CLE	11/28/23 22:01

**Client Sample ID: MW-71\_111523**

**Lab Sample ID: 240-195677-4**

**Date Collected: 11/15/23 13:10**

**Matrix: Water**

**Date Received: 11/17/23 09:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595675	LEE	EET CLE	11/24/23 11:23
Total/NA	Analysis	8260D SIM		1	595979	CS	EET CLE	11/28/23 22:25

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195677-1

## Laboratory: Eurofins Cleveland


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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

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

**Chain of Custody Record**

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

<b>Client Contact</b> Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford LTP On-Site Project Number: 30167538-401.03 PO # 30167538-401.03		<b>Regulatory program:</b> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other <input type="checkbox"/>	
<b>Client Project Manager:</b> Kris Hinskey Telephone: 248-994-2240 Email: kristoffer.hinskey@arcadis.com		<b>Site Contact:</b> Christina Weaver Telephone: 248-994-2240	
<b>Lab Contact:</b> Mike DelMonico Telephone: 330-497-9396		TestAmerica Laboratories, Inc. COC No:	
<b>Sampler Name:</b> Sementa Sparaculer		For lab use only Walk-in client Lab sampling Job/SDG No:	
<b>Method of Shipment/Carrier:</b> Shipping/Tracking No:		Sample Specific Notes / Special Instructions: 1 Trip Blank 3 VOAs for 8260B 3 VOAs for 8260B SIM	
<b>Sample Identification</b> TRIP BLANK_83 MW-50-111523 Dup-02 MW-71-111523		Analytes 1,4-Dioxane 8260B SIM Vinyl Chloride 8260B TCE 8260B PCE 8260B Trans-1,2-DCE 8260B cis-1,2-DCE 8260B 1,1-DCE 8260B Composite=C / Grab=G	
Sample Date    Sample Time ---    --- 11/15/23    1140 11/15/23    --- 11/15/23    1310		Filled Sample (Y/N) NG    X    X    X    X    X    X NG    X    X    X    X    X    X NG    X    X    X    X    X    X NG    X    X    X    X    X    X	
<b>Matrix</b> Air    Aqueous    Sediment    Solid    Other: 1    6    6    6    1		Containers & Preservatives H2SO4    HNO3    HCl    NaOH    ZnAc/NaOH    Other: ---    ---    ---    ---    ---    ---	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Special Instructions/QC Requirements & Comments: Submit all results through Cadena at tomalia@cadenaco.com. Cadena #E203728 Level IV Reporting requested.		240-195677 Chain of Custody 	
Relinquished by: <i>[Signature]</i> Relinquished by: <i>[Signature]</i> Relinquished by: <i>[Signature]</i>		Received by: <i>[Signature]</i> Received by: <i>[Signature]</i> Received in Laboratory by: <i>[Signature]</i>	
Company: Arcadis Date/Time: 11/16/23 0845 Company: Arcadis Date/Time: 11/16/23 Company: EETA Date/Time: 11/16/23 10120		Company: EETA Date/Time: 11/16/23 1015 Company: EETA Date/Time: 11/16/23 1015 Company: EETA Date/Time: 11/16/23 9940	

*Onsite*

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Eurofins - Cleveland Sample Receipt Form/Narrative  
Barberton Facility

Login # : 195677

Client Arcadis Site Name \_\_\_\_\_ Cooler unpacked by: [Signature]  
Cooler Received on 11-17-23 Opened on 11-17-23  
FedEx: 1<sup>st</sup> Grd  Exp  UPS  FAS  Waypoint  Client Drop Off  Eurofins Courier  Other

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

Eurofins Cooler # EC Foam Box  Client Cooler  Box  Other \_\_\_\_\_  
Packing material used: Bubble Wrap Foam  Plastic Bag  None  Other \_\_\_\_\_  
COOLANT: Wet Ice Blue Ice  Dry Ice  Water  None

1. Cooler temperature upon receipt  See Multiple Cooler Form  
IR GUN # 21 (CF 70.2 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 3 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 NA  
-Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? 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# HC316719
- 14. Were VOAs on the COC? Yes No
- 15. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # \_\_\_\_\_ Yes No
- 17. Was a LL Hg or Me Hg trip blank present? Yes No

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

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_  
Concerning \_\_\_\_\_

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES  additional next page Samples processed by: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

19. SAMPLE CONDITION  
Sample(s) \_\_\_\_\_ were received after the recommended holding time had expired.  
Sample(s) \_\_\_\_\_ were received in a broken container.  
Sample(s) \_\_\_\_\_ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION  
Sample(s) \_\_\_\_\_ were further preserved in the laboratory.  
Time preserved: \_\_\_\_\_ Preservative(s) added/Lot number(s): \_\_\_\_\_  
VOA Sample Preservation - Date/Time VOAs Frozen: \_\_\_\_\_



Eurofins - Canton Sample Receipt Multiple Cooler Form									
Cooler Description (Circle)				IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)		
<input checked="" type="radio"/> EC	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR GUN #: <u>22</u>	<u>1.8</u>	<u>2.9</u>	<input checked="" type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
							<input type="radio"/> Water	<input type="radio"/> None	
<input checked="" type="radio"/> EC	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR GUN #: <u>22</u>	<u>1.6</u>	<u>2.7</u>	<input checked="" type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
							<input type="radio"/> Water	<input type="radio"/> None	
<input checked="" type="radio"/> EC	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR GUN #: <u>22</u>	<u>2.4</u>	<u>3.5</u>	<input checked="" type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
							<input type="radio"/> Water	<input type="radio"/> None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
							Water	None	

See Temperature Excursion Form



# DATA VERIFICATION REPORT



December 05, 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 - Cleveland  
Laboratory submittal: 195677-1  
Sample date: 2023-11-15  
Report received by CADENA: 2023-12-05  
Initial Data Verification completed by CADENA: 2023-12-05  
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.**

The following minor QC exceptions or missing information were noted:

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, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

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

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

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

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

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

## CADENA Valid Qualifiers

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

## Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195677-1

Analyte	Cas No.	Sample Name: TRIP BLANK_83				MW-50_111523				DUP-02				MW-71_111523			
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
		2401956771				2401956772				2401956773				2401956774			
		11/15/2023				11/15/2023				11/15/2023				11/15/2023			

### 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	---	8.0	1.0	ug/l	---	11	1.0	ug/l	---	0.92	1.0	ug/l	J
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	---	30	1.0	ug/l	---	28	1.0	ug/l	---	0.59	1.0	ug/l	J

#### OSW-8260DSIM

1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	ND	2.0	ug/l	---	1.0	2.0	ug/l	J
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