

# ANALYTICAL REPORT

## PREPARED FOR

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Generated 12/1/2023 5:41:35 AM

## JOB DESCRIPTION

Ford LTP - On Site

## JOB NUMBER

240-195753-1

# 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: 240-195753-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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 US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195753-1

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## Job ID: 240-195753-1

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### Laboratory: Eurofins Cleveland

#### Narrative

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#### Job Narrative 240-195753-1

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 11/18/2023 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 4.7°C

#### GC/MS VOA

Method 8260D: The method requirement for no headspace was not met. The following volatile samples were analyzed with significant headspace in the sample container(s): MW-24\_111623 (240-195753-6), MW-24-MS\_111623 (240-195753-6[MS]) and MW-24-MSD\_111623 (240-195753-6[MSD]). Significant headspace is defined as a bubble greater than 6 mm in diameter.

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: 240-195753-1

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

**Protocol References:**

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

**Laboratory References:**

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



# Sample Summary

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

Job ID: 240-195753-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195753-1	TRIP BLANK_122	Water	11/16/23 00:00	11/18/23 08:00
240-195753-2	MW-36_111623	Water	11/16/23 09:30	11/18/23 08:00
240-195753-3	MW-07_111623	Water	11/16/23 10:55	11/18/23 08:00
240-195753-4	MW-222S_111623	Water	11/16/23 16:05	11/18/23 08:00
240-195753-5	MW-197S_111623	Water	11/16/23 12:30	11/18/23 08:00
240-195753-6	MW-24_111623	Water	11/16/23 14:35	11/18/23 08:00

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

# Detection Summary

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

Job ID: 240-195753-1

**Client Sample ID: TRIP BLANK\_122**

**Lab Sample ID: 240-195753-1**

No Detections.

**Client Sample ID: MW-36\_111623**

**Lab Sample ID: 240-195753-2**

No Detections.

**Client Sample ID: MW-07\_111623**

**Lab Sample ID: 240-195753-3**

No Detections.

**Client Sample ID: MW-222S\_111623**

**Lab Sample ID: 240-195753-4**

No Detections.

**Client Sample ID: MW-197S\_111623**

**Lab Sample ID: 240-195753-5**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.70	J	1.0	0.49	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	25		1.0	0.46	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	1.7		1.0	0.51	ug/L	1		8260D	Total/NA
Trichloroethene	120		4.0	1.8	ug/L	4		8260D	Total/NA
Vinyl chloride	2.4		1.0	0.45	ug/L	1		8260D	Total/NA

**Client Sample ID: MW-24\_111623**

**Lab Sample ID: 240-195753-6**

No Detections.

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: 240-195753-1

**Client Sample ID: TRIP BLANK\_122**

**Lab Sample ID: 240-195753-1**

Date Collected: 11/16/23 00:00

Matrix: Water

Date Received: 11/18/23 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			11/27/23 13:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/27/23 13:00	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 13:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/27/23 13:00	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 13:00	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/27/23 13:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		62 - 137		11/27/23 13:00	1
4-Bromofluorobenzene (Surr)	81		56 - 136		11/27/23 13:00	1
Toluene-d8 (Surr)	106		78 - 122		11/27/23 13:00	1
Dibromofluoromethane (Surr)	89		73 - 120		11/27/23 13:00	1

# Client Sample Results

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

Job ID: 240-195753-1

**Client Sample ID: MW-36\_111623**

**Lab Sample ID: 240-195753-2**

Date Collected: 11/16/23 09:30

Matrix: Water

Date Received: 11/18/23 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			11/29/23 00:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		66 - 120					11/29/23 00:43	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			11/27/23 13:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/27/23 13:25	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 13:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/27/23 13:25	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 13:25	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/27/23 13:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		62 - 137					11/27/23 13:25	1
4-Bromofluorobenzene (Surr)	83		56 - 136					11/27/23 13:25	1
Toluene-d8 (Surr)	103		78 - 122					11/27/23 13:25	1
Dibromofluoromethane (Surr)	89		73 - 120					11/27/23 13:25	1

# Client Sample Results

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

Job ID: 240-195753-1

**Client Sample ID: MW-07\_111623**

**Lab Sample ID: 240-195753-3**

Date Collected: 11/16/23 10:55

Matrix: Water

Date Received: 11/18/23 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			11/29/23 01:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		66 - 120					11/29/23 01:06	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			11/27/23 13:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/27/23 13:50	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 13:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/27/23 13:50	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 13:50	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/27/23 13:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		62 - 137					11/27/23 13:50	1
4-Bromofluorobenzene (Surr)	81		56 - 136					11/27/23 13:50	1
Toluene-d8 (Surr)	103		78 - 122					11/27/23 13:50	1
Dibromofluoromethane (Surr)	87		73 - 120					11/27/23 13:50	1

# Client Sample Results

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

Job ID: 240-195753-1

**Client Sample ID: MW-222S\_111623**

**Lab Sample ID: 240-195753-4**

Date Collected: 11/16/23 16:05

Matrix: Water

Date Received: 11/18/23 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			11/29/23 01:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		66 - 120					11/29/23 01:30	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			11/27/23 14:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/27/23 14:16	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 14:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/27/23 14:16	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 14:16	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/27/23 14:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		62 - 137					11/27/23 14:16	1
4-Bromofluorobenzene (Surr)	83		56 - 136					11/27/23 14:16	1
Toluene-d8 (Surr)	104		78 - 122					11/27/23 14:16	1
Dibromofluoromethane (Surr)	87		73 - 120					11/27/23 14:16	1

# Client Sample Results

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

Job ID: 240-195753-1

**Client Sample ID: MW-197S\_111623**

**Lab Sample ID: 240-195753-5**

Date Collected: 11/16/23 12:30

Matrix: Water

Date Received: 11/18/23 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			11/29/23 01:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		66 - 120					11/29/23 01:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.70	J	1.0	0.49	ug/L			11/27/23 14:41	1
cis-1,2-Dichloroethene	25		1.0	0.46	ug/L			11/27/23 14:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 14:41	1
trans-1,2-Dichloroethene	1.7		1.0	0.51	ug/L			11/27/23 14:41	1
Trichloroethene	120		4.0	1.8	ug/L			11/28/23 16:27	4
Vinyl chloride	2.4		1.0	0.45	ug/L			11/27/23 14:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		62 - 137					11/27/23 14:41	1
1,2-Dichloroethane-d4 (Surr)	102		62 - 137					11/28/23 16:27	4
4-Bromofluorobenzene (Surr)	81		56 - 136					11/27/23 14:41	1
4-Bromofluorobenzene (Surr)	91		56 - 136					11/28/23 16:27	4
Toluene-d8 (Surr)	104		78 - 122					11/27/23 14:41	1
Toluene-d8 (Surr)	106		78 - 122					11/28/23 16:27	4
Dibromofluoromethane (Surr)	87		73 - 120					11/27/23 14:41	1
Dibromofluoromethane (Surr)	97		73 - 120					11/28/23 16:27	4

# Client Sample Results

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

Job ID: 240-195753-1

**Client Sample ID: MW-24\_111623**

**Lab Sample ID: 240-195753-6**

Date Collected: 11/16/23 14:35

Matrix: Water

Date Received: 11/18/23 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			11/29/23 02:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		66 - 120					11/29/23 02:18	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			11/27/23 15:06	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/27/23 15:06	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 15:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/27/23 15:06	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 15:06	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/27/23 15:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		62 - 137					11/27/23 15:06	1
4-Bromofluorobenzene (Surr)	86		56 - 136					11/27/23 15:06	1
Toluene-d8 (Surr)	106		78 - 122					11/27/23 15:06	1
Dibromofluoromethane (Surr)	90		73 - 120					11/27/23 15:06	1

# Surrogate Summary

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

Job ID: 240-195753-1

## 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)
240-195556-C-9 MS	Matrix Spike	98	91	104	97
240-195556-C-9 MSD	Matrix Spike Duplicate	97	91	104	98
240-195753-1	TRIP BLANK_122	86	81	106	89
240-195753-2	MW-36_111623	85	83	103	89
240-195753-3	MW-07_111623	83	81	103	87
240-195753-4	MW-222S_111623	83	83	104	87
240-195753-5	MW-197S_111623	83	81	104	87
240-195753-5	MW-197S_111623	102	91	106	97
240-195753-6	MW-24_111623	86	86	106	90
240-195753-6 MS	MW-24-MS_111623	82	88	106	91
240-195753-6 MSD	MW-24-MSD_111623	83	86	104	89
LCS 240-595757/6	Lab Control Sample	81	90	106	89
LCS 240-595903/5	Lab Control Sample	96	92	104	95
MB 240-595757/10	Method Blank	84	84	105	88
MB 240-595903/9	Method Blank	99	90	106	96

### Surrogate Legend

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

## 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 (10-150)	BFB (10-150)	TOL (10-150)	DBFM (10-150)
MRL 240-595757/19	Lab Control Sample	82	86	105	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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (66-120)
240-195753-2	MW-36_111623	105
240-195753-3	MW-07_111623	106
240-195753-4	MW-222S_111623	105
240-195753-5	MW-197S_111623	99
240-195753-6	MW-24_111623	98
240-195753-6 MS	MW-24-MS_111623	100
240-195753-6 MSD	MW-24-MSD_111623	101
LCS 240-595988/4	Lab Control Sample	104
MB 240-595988/6	Method Blank	98

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# Surrogate Summary

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

Job ID: 240-195753-1

## Surrogate Legend

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

1

2

3

4

5

6

7

8

9

10

11

12

13

14



# QC Sample Results

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

Job ID: 240-195753-1

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

Lab Sample ID: MB 240-595757/10

Matrix: Water

Analysis Batch: 595757

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			11/27/23 12:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/27/23 12:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 12:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/27/23 12:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 12:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/27/23 12:34	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	84		62 - 137		11/27/23 12:34	1
4-Bromofluorobenzene (Surr)	84		56 - 136		11/27/23 12:34	1
Toluene-d8 (Surr)	105		78 - 122		11/27/23 12:34	1
Dibromofluoromethane (Surr)	88		73 - 120		11/27/23 12:34	1

Lab Sample ID: LCS 240-595757/6

Matrix: Water

Analysis Batch: 595757

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	20.3		ug/L		102	63 - 134
cis-1,2-Dichloroethene	20.0	19.5		ug/L		98	77 - 123
Tetrachloroethene	20.0	20.6		ug/L		103	76 - 123
trans-1,2-Dichloroethene	20.0	19.6		ug/L		98	75 - 124
Trichloroethene	20.0	18.5		ug/L		92	70 - 122
Vinyl chloride	20.0	16.9		ug/L		84	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	81		62 - 137
4-Bromofluorobenzene (Surr)	90		56 - 136
Toluene-d8 (Surr)	106		78 - 122
Dibromofluoromethane (Surr)	89		73 - 120

Lab Sample ID: MRL 240-595757/19

Matrix: Water

Analysis Batch: 595757

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL	MRL	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1-Dichloroethene	0.00500	0.00417		ng/uL		83	10 - 150
cis-1,2-Dichloroethene	0.00500	0.00414		ng/uL		83	10 - 150
Tetrachloroethene	0.00500	0.00432		ng/uL		86	10 - 150
trans-1,2-Dichloroethene	0.00500	0.00417		ng/uL		83	10 - 150
Trichloroethene	0.00500	0.00401		ng/uL		80	10 - 150

Surrogate	MRL	MRL	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	82		10 - 150
4-Bromofluorobenzene (Surr)	86		10 - 150
Toluene-d8 (Surr)	105		10 - 150
Dibromofluoromethane (Surr)	89		10 - 150

Eurofins Cleveland

# QC Sample Results

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

Job ID: 240-195753-1

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

Lab Sample ID: 240-195753-6 MS

Matrix: Water

Analysis Batch: 595757

Client Sample ID: MW-24-MS\_111623

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
1,1-Dichloroethene	1.0	U	20.0	18.9		ug/L		95	56 - 135
cis-1,2-Dichloroethene	1.0	U	20.0	18.2		ug/L		91	66 - 128
Tetrachloroethene	1.0	U	20.0	19.5		ug/L		98	62 - 131
trans-1,2-Dichloroethene	1.0	U	20.0	18.4		ug/L		92	56 - 136
Trichloroethene	1.0	U	20.0	17.2		ug/L		86	61 - 124
Vinyl chloride	1.0	U	20.0	15.1		ug/L		75	43 - 157

Surrogate	MS %Recovery	MS Qualifier	MS Limits
1,2-Dichloroethane-d4 (Surr)	82		62 - 137
4-Bromofluorobenzene (Surr)	88		56 - 136
Toluene-d8 (Surr)	106		78 - 122
Dibromofluoromethane (Surr)	91		73 - 120

Lab Sample ID: 240-195753-6 MSD

Matrix: Water

Analysis Batch: 595757

Client Sample ID: MW-24-MSD\_111623

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
1,1-Dichloroethene	1.0	U	20.0	20.8		ug/L		104	56 - 135	9	26
cis-1,2-Dichloroethene	1.0	U	20.0	19.9		ug/L		99	66 - 128	9	14
Tetrachloroethene	1.0	U	20.0	20.8		ug/L		104	62 - 131	7	20
trans-1,2-Dichloroethene	1.0	U	20.0	19.7		ug/L		99	56 - 136	7	15
Trichloroethene	1.0	U	20.0	19.0		ug/L		95	61 - 124	10	15
Vinyl chloride	1.0	U	20.0	17.2		ug/L		86	43 - 157	13	24

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	83		62 - 137
4-Bromofluorobenzene (Surr)	86		56 - 136
Toluene-d8 (Surr)	104		78 - 122
Dibromofluoromethane (Surr)	89		73 - 120

Lab Sample ID: MB 240-595903/9

Matrix: Water

Analysis Batch: 595903

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			11/28/23 12:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/23 12:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 12:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/23 12:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 12:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/23 12:41	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		62 - 137		11/28/23 12:41	1
4-Bromofluorobenzene (Surr)	90		56 - 136		11/28/23 12:41	1
Toluene-d8 (Surr)	106		78 - 122		11/28/23 12:41	1

Eurofins Cleveland

# QC Sample Results

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

Job ID: 240-195753-1

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

**Lab Sample ID: MB 240-595903/9**  
**Matrix: Water**  
**Analysis Batch: 595903**

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane (Surr)	96		73 - 120		11/28/23 12:41	1

**Lab Sample ID: LCS 240-595903/5**  
**Matrix: Water**  
**Analysis Batch: 595903**

**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	19.6		ug/L		98	63 - 134
cis-1,2-Dichloroethene	20.0	19.1		ug/L		96	77 - 123
Tetrachloroethene	20.0	21.3		ug/L		106	76 - 123
trans-1,2-Dichloroethene	20.0	19.5		ug/L		98	75 - 124
Trichloroethene	20.0	18.9		ug/L		95	70 - 122
Vinyl chloride	20.0	20.1		ug/L		101	60 - 144

  

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	96		62 - 137
4-Bromofluorobenzene (Surr)	92		56 - 136
Toluene-d8 (Surr)	104		78 - 122
Dibromofluoromethane (Surr)	95		73 - 120

**Lab Sample ID: 240-195556-C-9 MS**  
**Matrix: Water**  
**Analysis Batch: 595903**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
1,1-Dichloroethene	370	F2 F1	200	473	F1	ug/L		52	56 - 135
cis-1,2-Dichloroethene	15	F2 F1	200	189		ug/L		87	66 - 128
Tetrachloroethene	18	F2 F1	200	199		ug/L		90	62 - 131
trans-1,2-Dichloroethene	10	U F2	200	171		ug/L		86	56 - 136
Trichloroethene	42	F2 F1	200	197		ug/L		77	61 - 124
Vinyl chloride	10	U F2	200	203		ug/L		101	43 - 157

  

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	98		62 - 137
4-Bromofluorobenzene (Surr)	91		56 - 136
Toluene-d8 (Surr)	104		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120

**Lab Sample ID: 240-195556-C-9 MSD**  
**Matrix: Water**  
**Analysis Batch: 595903**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	
				Result	Qualifier					RPD	Limit
1,1-Dichloroethene	370	F2 F1	200	502		ug/L		66	56 - 135	6	26
cis-1,2-Dichloroethene	15	F2 F1	200	202		ug/L		94	66 - 128	7	14
Tetrachloroethene	18	F2 F1	200	214		ug/L		98	62 - 131	7	20
trans-1,2-Dichloroethene	10	U F2	200	183		ug/L		92	56 - 136	7	15
Trichloroethene	42	F2 F1	200	207		ug/L		82	61 - 124	5	15

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# QC Sample Results

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

Job ID: 240-195753-1

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

Lab Sample ID: 240-195556-C-9 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595903

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl chloride	10	U F2	200	212		ug/L		106	43 - 157	4	24
<b>MSD MSD</b>											
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	97		62 - 137								
4-Bromofluorobenzene (Surr)	91		56 - 136								
Toluene-d8 (Surr)	104		78 - 122								
Dibromofluoromethane (Surr)	98		73 - 120								

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

Lab Sample ID: MB 240-595988/6

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595988

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			11/28/23 19:09	1
<b>MB MB</b>									
<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)	98		66 - 120					11/28/23 19:09	1

Lab Sample ID: LCS 240-595988/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595988

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	10.0	9.51		ug/L		95	80 - 122
<b>LCS LCS</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	104		66 - 120				

Lab Sample ID: 240-195753-6 MS

Client Sample ID: MW-24-MS\_111623

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595988

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	2.0	U	10.0	10.0		ug/L		100	51 - 153
<b>MS MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	100		66 - 120						

Lab Sample ID: 240-195753-6 MSD

Client Sample ID: MW-24-MSD\_111623

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595988

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	9.75		ug/L		98	51 - 153	3	16

Eurofins Cleveland

# QC Sample Results

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

Job ID: 240-195753-1

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

Lab Sample ID: 240-195753-6 MSD

Matrix: Water

Analysis Batch: 595988

Client Sample ID: MW-24-MSD\_111623

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)	101		66 - 120

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

# QC Association Summary

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

Job ID: 240-195753-1

## GC/MS VOA

### Analysis Batch: 595757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195753-1	TRIP BLANK_122	Total/NA	Water	8260D	
240-195753-2	MW-36_111623	Total/NA	Water	8260D	
240-195753-3	MW-07_111623	Total/NA	Water	8260D	
240-195753-4	MW-222S_111623	Total/NA	Water	8260D	
240-195753-5	MW-197S_111623	Total/NA	Water	8260D	
240-195753-6	MW-24_111623	Total/NA	Water	8260D	
MB 240-595757/10	Method Blank	Total/NA	Water	8260D	
LCS 240-595757/6	Lab Control Sample	Total/NA	Water	8260D	
MRL 240-595757/19	Lab Control Sample	Total/NA	Water	8260D	
240-195753-6 MS	MW-24-MS_111623	Total/NA	Water	8260D	
240-195753-6 MSD	MW-24-MSD_111623	Total/NA	Water	8260D	

### Analysis Batch: 595903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195753-5	MW-197S_111623	Total/NA	Water	8260D	
MB 240-595903/9	Method Blank	Total/NA	Water	8260D	
LCS 240-595903/5	Lab Control Sample	Total/NA	Water	8260D	
240-195556-C-9 MS	Matrix Spike	Total/NA	Water	8260D	
240-195556-C-9 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

### Analysis Batch: 595988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195753-2	MW-36_111623	Total/NA	Water	8260D SIM	
240-195753-3	MW-07_111623	Total/NA	Water	8260D SIM	
240-195753-4	MW-222S_111623	Total/NA	Water	8260D SIM	
240-195753-5	MW-197S_111623	Total/NA	Water	8260D SIM	
240-195753-6	MW-24_111623	Total/NA	Water	8260D SIM	
MB 240-595988/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-595988/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-195753-6 MS	MW-24-MS_111623	Total/NA	Water	8260D SIM	
240-195753-6 MSD	MW-24-MSD_111623	Total/NA	Water	8260D SIM	

# Lab Chronicle

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

Job ID: 240-195753-1

**Client Sample ID: TRIP BLANK\_122**

**Lab Sample ID: 240-195753-1**

Date Collected: 11/16/23 00:00

Matrix: Water

Date Received: 11/18/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595757	HMB	EET CLE	11/27/23 13:00

**Client Sample ID: MW-36\_111623**

**Lab Sample ID: 240-195753-2**

Date Collected: 11/16/23 09:30

Matrix: Water

Date Received: 11/18/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595757	HMB	EET CLE	11/27/23 13:25
Total/NA	Analysis	8260D SIM		1	595988	CS	EET CLE	11/29/23 00:43

**Client Sample ID: MW-07\_111623**

**Lab Sample ID: 240-195753-3**

Date Collected: 11/16/23 10:55

Matrix: Water

Date Received: 11/18/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595757	HMB	EET CLE	11/27/23 13:50
Total/NA	Analysis	8260D SIM		1	595988	CS	EET CLE	11/29/23 01:06

**Client Sample ID: MW-222S\_111623**

**Lab Sample ID: 240-195753-4**

Date Collected: 11/16/23 16:05

Matrix: Water

Date Received: 11/18/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595757	HMB	EET CLE	11/27/23 14:16
Total/NA	Analysis	8260D SIM		1	595988	CS	EET CLE	11/29/23 01:30

**Client Sample ID: MW-197S\_111623**

**Lab Sample ID: 240-195753-5**

Date Collected: 11/16/23 12:30

Matrix: Water

Date Received: 11/18/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595757	HMB	EET CLE	11/27/23 14:41
Total/NA	Analysis	8260D		4	595903	HMB	EET CLE	11/28/23 16:27
Total/NA	Analysis	8260D SIM		1	595988	CS	EET CLE	11/29/23 01:54

**Client Sample ID: MW-24\_111623**

**Lab Sample ID: 240-195753-6**

Date Collected: 11/16/23 14:35

Matrix: Water

Date Received: 11/18/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595757	HMB	EET CLE	11/27/23 15:06
Total/NA	Analysis	8260D SIM		1	595988	CS	EET CLE	11/29/23 02:18

**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: 240-195753-1

### 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.





3.6/47

Chain of Custody Record



TestAmerica Laboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-239-2763

Regulatory program:  DW  NPDES  RCRA  Other

Client Contact: Arcadis  
 Address: 28550 Cabot Drive, Suite 500  
 City/State/Zip: Novi, MI, 48377  
 Phone: 248-994-2240

Client Project Manager: Kris Hinskey  
 Telephone: 248-994-2240  
 Email: kris@arcardis.com

Project Name: Ford LTP On-Site  
 Project Number: 30146655-401.03  
 Shipping/Tracking No: PO # 30146655-401.03

Sample Identification	Sample Date	Sample Time	Matrix							Containers & Preservation						Other:	Filtered Sample (Y/N)	Composite (C/Grab)	Analyses						1,4-Dioxane 8260B SIM	Sample Specific Notes / Special Instructions:
			Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc	Traps	Other:	10 day	2 weeks				1 week	2 days	1 day	1,1-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B		
TRIP BLANK_ 122		---	1																X	X	X	X	X	X		1 Trip Blank
MW-36-111623	11/16/23	0930	6																X	X	X	X	X	X		3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-07-111623	11/16/23	1055	6																X	X	X	X	X	X		
MW-2225-111623	11/16/23	1605	6																X	X	X	X	X	X		
MW-1975-111623	11/16/23	1230	6																X	X	X	X	X	X		
MW-24-111623	11/16/23	1435	6																X	X	X	X	X	X		
MW-24-MW-111623	11/16/23	1435	6																X	X	X	X	X	X		
MW-24-MSD-111623	11/16/23	1435	6																X	X	X	X	X	X		

MICHIGAN 190

Possible Hazard Identification:  Inflammable  Corrosive  Acute Toxic  Chronic Toxic  Poison B  Unknown

Special Instructions/QC Requirements & Comments: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

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

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Kent Karper	Arcadis	11/16/23 1730	Movi Cold Storage	Arcadis	11/16/23 1730
Janmerdy	Arcadis	11/17/23 1150	EEA	EEA	11/17/23 1150
Janmerdy	EEA	11/17/23 11:50	Alexa Kasper	EEA	11/18/23 8800

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Eurofins - Cleveland Sample Receipt Form/Narrative  
Barberton Facility

Login # : 195753

Client Arcadis Site Name \_\_\_\_\_

Cooler unpacked by:  
Alissa Atkinson

Cooler Received on 11-18-23 Opened on 11-18-23

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 # 22 (CPT 1.1 °C) Observed Cooler Temp. 3.6 °C Corrected Cooler Temp. 4.7 °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  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?  Yes  No  NA

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 62225  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: \_\_\_\_\_

5 vials of sample MW-36-111623 contained bubbles > 6mm, as did 2 vials of MW-1975-111623, as well as all vials (6 each) of samples MW-24-111623, MW-24-MS-111623, + MW-24-MSD-111623

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, 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: 195753-1  
Sample date: 2023-11-16  
Report received by CADENA: 2023-12-01  
Initial Data Verification completed by CADENA: 2023-12-01  
Number of Samples:6  
Sample Matrices:Water  
Test Categories:GCMS VOC

**Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.**

The following minor QC exceptions or missing information were noted:

SRN - Sample Receipt Non-conformance(headspace) - Sample -006 and its MS/MSD pair results for GCMS VOC should be considered to be estimated and qualified with UJ flags if non-detect due to sample receipt non-conformance that affects the integrity of the sample. See laboratory submittal sample receipt forms for details.

GCMS VOC QC batch MS/MSD recovery outliers were not determined using a client sample so qualification was not required based on these sample-specific QC outliers.

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.

# Qualified Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195753-1

Sample Name: MW-24\_111623

Lab Sample ID: 2401957536

Sample Date: 11/16/2023

Analyte	Cas No.	Result	Report		Valid	
			Limit	Units	Qualifier	
<b>GC/MS VOC</b>						
<u>OSW-8260D</u>						
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	UJ	
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	UJ	
Tetrachloroethene	127-18-4	ND	1.0	ug/l	UJ	
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	UJ	
Trichloroethene	79-01-6	ND	1.0	ug/l	UJ	
Vinyl chloride	75-01-4	ND	1.0	ug/l	UJ	

## Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195753-1

Analyte	Cas No.	Sample Name: TRIP BLANK_122				MW-36_111623				MW-07_111623				MW-222S_111623				MW-197S_111623				MW-24_111623			
		Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid				
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
<b>GC/MS VOC</b>																									
<u>OSW-8260D</u>																									
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	---	0.70	1.0	ug/l	J	ND	1.0	ug/l	UJ
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	---	25	1.0	ug/l	---	ND	1.0	ug/l	UJ
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	UJ
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	---	1.7	1.0	ug/l	---	ND	1.0	ug/l	UJ
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	120	4.0	ug/l	---	ND	1.0	ug/l	UJ
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	2.4	1.0	ug/l	---	ND	1.0	ug/l	UJ
<u>OSW-8260DSIM</u>																									
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---