

# ANALYTICAL REPORT

## PREPARED FOR

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## JOB DESCRIPTION

Ford LTP - On Site

## JOB NUMBER

240-189800-1

# Eurofins Cleveland

## Job Notes

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## Authorization



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# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Definitions/Glossary . . . . .	4
Case Narrative . . . . .	5
Method Summary . . . . .	6
Sample Summary . . . . .	7
Detection Summary . . . . .	8
Client Sample Results . . . . .	9
Surrogate Summary . . . . .	15
QC Sample Results . . . . .	16
QC Association Summary . . . . .	21
Lab Chronicle . . . . .	22
Certification Summary . . . . .	23
Chain of Custody . . . . .	24

# Definitions/Glossary

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

Job ID: 240-189800-1

## Qualifiers

### GC/MS VOA

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

## Glossary

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

# Case Narrative

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

Job ID: 240-189800-1

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**Job ID: 240-189800-1**

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**Laboratory: Eurofins Cleveland**

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**Narrative**

**Job Narrative  
240-189800-1**

**Receipt**

The samples were received on 8/9/2023 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 2.7°C and 4.4°C

**GC/MS VOA**

Method 8260D: NO MS/MSD reported due to sample carryover just previous to that analysis. TRIP BLANK\_41 (240-189800-1) and MW-65\_080423 (240-189800-2)

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): MW-38\_080423 (240-189800-6).

Method 8260D: The continuing calibration verification (CCV) associated with batch 584194 recovered above the upper control limit for 1,1-Dichloroethene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: MW-23\_080423 (240-189800-3) and DUP-01 (240-189800-4).

Method 8260D\_SIM: The MS/MSD for batch 240-583674 was not analyzed due to an instrument malfunction. The following samples were affected: MW-65\_080423 (240-189800-2), MW-23\_080423 (240-189800-3) and DUP-01 (240-189800-4)

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: 240-189800-1

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: 240-189800-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-189800-1	TRIP BLANK_41	Water	08/04/23 00:00	08/09/23 08:00
240-189800-2	MW-65_080423	Water	08/04/23 12:28	08/09/23 08:00
240-189800-3	MW-23_080423	Water	08/04/23 10:50	08/09/23 08:00
240-189800-4	DUP-01	Water	08/04/23 00:00	08/09/23 08:00
240-189800-5	MW-51_080423	Water	08/04/23 14:00	08/09/23 08:00
240-189800-6	MW-38_080423	Water	08/04/23 15:30	08/09/23 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: 240-189800-1

## Client Sample ID: TRIP BLANK\_41

Lab Sample ID: 240-189800-1

No Detections.

## Client Sample ID: MW-65\_080423

Lab Sample ID: 240-189800-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	3.3		1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	5.6		1.0	0.45	ug/L	1		8260D	Total/NA

## Client Sample ID: MW-23\_080423

Lab Sample ID: 240-189800-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	9800		500	230	ug/L	500		8260D	Total/NA
trans-1,2-Dichloroethene	480	J	500	260	ug/L	500		8260D	Total/NA
Trichloroethene	470	J	500	220	ug/L	500		8260D	Total/NA
Vinyl chloride	520		500	230	ug/L	500		8260D	Total/NA

## Client Sample ID: DUP-01

Lab Sample ID: 240-189800-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	11000		500	230	ug/L	500		8260D	Total/NA
trans-1,2-Dichloroethene	440	J	500	260	ug/L	500		8260D	Total/NA
Trichloroethene	580		500	220	ug/L	500		8260D	Total/NA
Vinyl chloride	570		500	230	ug/L	500		8260D	Total/NA

## Client Sample ID: MW-51\_080423

Lab Sample ID: 240-189800-5

No Detections.

## Client Sample ID: MW-38\_080423

Lab Sample ID: 240-189800-6

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: 240-189800-1

**Client Sample ID: TRIP BLANK\_41**

**Lab Sample ID: 240-189800-1**

Date Collected: 08/04/23 00:00

Matrix: Water

Date Received: 08/09/23 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			08/16/23 18:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/16/23 18:48	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 18:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/23 18:48	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 18:48	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/16/23 18:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		62 - 137		08/16/23 18:48	1
4-Bromofluorobenzene (Surr)	98		56 - 136		08/16/23 18:48	1
Toluene-d8 (Surr)	100		78 - 122		08/16/23 18:48	1
Dibromofluoromethane (Surr)	95		73 - 120		08/16/23 18:48	1

# Client Sample Results

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

Job ID: 240-189800-1

**Client Sample ID: MW-65\_080423**

**Lab Sample ID: 240-189800-2**

Date Collected: 08/04/23 12:28

Matrix: Water

Date Received: 08/09/23 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			08/11/23 18:53	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)	92		66 - 120					08/11/23 18:53	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			08/16/23 19:13	1
<b>cis-1,2-Dichloroethene</b>	<b>3.3</b>		1.0	0.46	ug/L			08/16/23 19:13	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 19:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/23 19:13	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 19:13	1
<b>Vinyl chloride</b>	<b>5.6</b>		1.0	0.45	ug/L			08/16/23 19:13	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)	99		62 - 137					08/16/23 19:13	1
4-Bromofluorobenzene (Surr)	98		56 - 136					08/16/23 19:13	1
Toluene-d8 (Surr)	99		78 - 122					08/16/23 19:13	1
Dibromofluoromethane (Surr)	95		73 - 120					08/16/23 19:13	1

# Client Sample Results

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

Job ID: 240-189800-1

**Client Sample ID: MW-23\_080423**

**Lab Sample ID: 240-189800-3**

Date Collected: 08/04/23 10:50

Matrix: Water

Date Received: 08/09/23 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			08/11/23 19:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		66 - 120					08/11/23 19:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	500	U	500	250	ug/L			08/17/23 21:44	500
<b>cis-1,2-Dichloroethene</b>	<b>9800</b>		500	230	ug/L			08/17/23 21:44	500
Tetrachloroethene	500	U	500	220	ug/L			08/17/23 21:44	500
<b>trans-1,2-Dichloroethene</b>	<b>480</b>	<b>J</b>	500	260	ug/L			08/17/23 21:44	500
<b>Trichloroethene</b>	<b>470</b>	<b>J</b>	500	220	ug/L			08/17/23 21:44	500
<b>Vinyl chloride</b>	<b>520</b>		500	230	ug/L			08/17/23 21:44	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		62 - 137					08/17/23 21:44	500
4-Bromofluorobenzene (Surr)	96		56 - 136					08/17/23 21:44	500
Toluene-d8 (Surr)	96		78 - 122					08/17/23 21:44	500
Dibromofluoromethane (Surr)	94		73 - 120					08/17/23 21:44	500

# Client Sample Results

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

Job ID: 240-189800-1

**Client Sample ID: DUP-01**

**Lab Sample ID: 240-189800-4**

Date Collected: 08/04/23 00:00

Matrix: Water

Date Received: 08/09/23 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			08/11/23 19:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		66 - 120					08/11/23 19:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	500	U	500	250	ug/L			08/17/23 18:37	500
<b>cis-1,2-Dichloroethene</b>	<b>11000</b>		500	230	ug/L			08/17/23 18:37	500
Tetrachloroethene	500	U	500	220	ug/L			08/17/23 18:37	500
<b>trans-1,2-Dichloroethene</b>	<b>440</b>	<b>J</b>	500	260	ug/L			08/17/23 18:37	500
<b>Trichloroethene</b>	<b>580</b>		500	220	ug/L			08/17/23 18:37	500
<b>Vinyl chloride</b>	<b>570</b>		500	230	ug/L			08/17/23 18:37	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		62 - 137					08/17/23 18:37	500
4-Bromofluorobenzene (Surr)	92		56 - 136					08/17/23 18:37	500
Toluene-d8 (Surr)	94		78 - 122					08/17/23 18:37	500
Dibromofluoromethane (Surr)	98		73 - 120					08/17/23 18:37	500

# Client Sample Results

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

Job ID: 240-189800-1

**Client Sample ID: MW-51\_080423**

**Lab Sample ID: 240-189800-5**

Date Collected: 08/04/23 14:00

Matrix: Water

Date Received: 08/09/23 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			08/14/23 17:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		66 - 120					08/14/23 17:25	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			08/16/23 17:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/16/23 17:08	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 17:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/23 17:08	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 17:08	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/16/23 17:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		62 - 137					08/16/23 17:08	1
4-Bromofluorobenzene (Surr)	97		56 - 136					08/16/23 17:08	1
Toluene-d8 (Surr)	95		78 - 122					08/16/23 17:08	1
Dibromofluoromethane (Surr)	95		73 - 120					08/16/23 17:08	1

# Client Sample Results

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

Job ID: 240-189800-1

**Client Sample ID: MW-38\_080423**

**Lab Sample ID: 240-189800-6**

Date Collected: 08/04/23 15:30

Matrix: Water

Date Received: 08/09/23 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			08/14/23 17:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		66 - 120					08/14/23 17:49	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			08/16/23 17:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/16/23 17:32	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 17:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/23 17:32	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 17:32	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/16/23 17:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		62 - 137					08/16/23 17:32	1
4-Bromofluorobenzene (Surr)	97		56 - 136					08/16/23 17:32	1
Toluene-d8 (Surr)	96		78 - 122					08/16/23 17:32	1
Dibromofluoromethane (Surr)	94		73 - 120					08/16/23 17:32	1

# Surrogate Summary

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

Job ID: 240-189800-1

## 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)
240-189694-F-4 MS	Matrix Spike	93	93	91	88
240-189694-F-4 MSD	Matrix Spike Duplicate	91	91	89	87
240-189800-1	TRIP BLANK_41	99	98	100	95
240-189800-2	MW-65_080423	99	98	99	95
240-189800-3	MW-23_080423	100	96	96	94
240-189800-4	DUP-01	93	92	94	98
240-189800-5	MW-51_080423	101	97	95	95
240-189800-6	MW-38_080423	99	97	96	94
240-190140-A-30 MSD	Matrix Spike Duplicate	95	100	100	93
240-190140-I-30 MS	Matrix Spike	88	98	97	89
LCS 240-584047/4	Lab Control Sample	98	99	102	98
LCS 240-584102/5	Lab Control Sample	97	97	96	95
LCS 240-584194/4	Lab Control Sample	102	95	100	107
MB 240-584047/7	Method Blank	97	97	101	97
MB 240-584102/8	Method Blank	97	96	96	92
MB 240-584194/7	Method Blank	105	92	96	109

### 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)
240-189782-B-2 MS	Matrix Spike	93
240-189782-B-2 MSD	Matrix Spike Duplicate	79
240-189800-2	MW-65_080423	92
240-189800-3	MW-23_080423	96
240-189800-4	DUP-01	98
240-189800-5	MW-51_080423	88
240-189800-6	MW-38_080423	87
LCS 240-583674/5	Lab Control Sample	90
LCS 240-583761/5	Lab Control Sample	87
MB 240-583674/7	Method Blank	91
MB 240-583761/7	Method Blank	91

### Surrogate Legend

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

# QC Sample Results

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

Job ID: 240-189800-1

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

Lab Sample ID: MB 240-584047/7

Matrix: Water

Analysis Batch: 584047

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			08/16/23 12:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/16/23 12:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 12:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/23 12:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 12:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/16/23 12:07	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	97		62 - 137		08/16/23 12:07	1
4-Bromofluorobenzene (Surr)	97		56 - 136		08/16/23 12:07	1
Toluene-d8 (Surr)	101		78 - 122		08/16/23 12:07	1
Dibromofluoromethane (Surr)	97		73 - 120		08/16/23 12:07	1

Lab Sample ID: LCS 240-584047/4

Matrix: Water

Analysis Batch: 584047

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	25.0	25.9		ug/L		104	77 - 123
Tetrachloroethene	25.0	26.4		ug/L		106	76 - 123
trans-1,2-Dichloroethene	25.0	25.2		ug/L		101	75 - 124
Trichloroethene	25.0	25.0		ug/L		100	70 - 122
Vinyl chloride	12.5	9.80		ug/L		78	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	98		62 - 137
4-Bromofluorobenzene (Surr)	99		56 - 136
Toluene-d8 (Surr)	102		78 - 122
Dibromofluoromethane (Surr)	98		73 - 120

Lab Sample ID: MB 240-584102/8

Matrix: Water

Analysis Batch: 584102

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			08/16/23 14:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/16/23 14:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 14:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/23 14:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/23 14:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/16/23 14:22	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	97		62 - 137		08/16/23 14:22	1
4-Bromofluorobenzene (Surr)	96		56 - 136		08/16/23 14:22	1
Toluene-d8 (Surr)	96		78 - 122		08/16/23 14:22	1

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# QC Sample Results

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

Job ID: 240-189800-1

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

**Lab Sample ID: MB 240-584102/8**  
**Matrix: Water**  
**Analysis Batch: 584102**

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane (Surr)	92		73 - 120		08/16/23 14:22	1

**Lab Sample ID: LCS 240-584102/5**  
**Matrix: Water**  
**Analysis Batch: 584102**

**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	27.2		ug/L		109	63 - 134	
cis-1,2-Dichloroethene	25.0	24.6		ug/L		98	77 - 123	
Tetrachloroethene	25.0	26.0		ug/L		104	76 - 123	
trans-1,2-Dichloroethene	25.0	25.4		ug/L		102	75 - 124	
Trichloroethene	25.0	25.3		ug/L		101	70 - 122	
Vinyl chloride	12.5	10.9		ug/L		88	60 - 144	

  

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	97		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	96		78 - 122
Dibromofluoromethane (Surr)	95		73 - 120

**Lab Sample ID: 240-189694-F-4 MS**  
**Matrix: Water**  
**Analysis Batch: 584102**

**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	7.7	J	250	260		ug/L		101	56 - 135	
cis-1,2-Dichloroethene	9.5	J	250	252		ug/L		97	66 - 128	
Tetrachloroethene	10	U	250	244		ug/L		98	62 - 131	
trans-1,2-Dichloroethene	10	U	250	243		ug/L		97	56 - 136	
Trichloroethene	540		250	719	E	ug/L		73	61 - 124	
Vinyl chloride	10	U	125	109		ug/L		87	43 - 157	

  

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	93		56 - 136
Toluene-d8 (Surr)	91		78 - 122
Dibromofluoromethane (Surr)	88		73 - 120

**Lab Sample ID: 240-189694-F-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 584102**

**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	7.7	J	250	255		ug/L		99	56 - 135	2	26	
cis-1,2-Dichloroethene	9.5	J	250	244		ug/L		94	66 - 128	3	14	
Tetrachloroethene	10	U	250	234		ug/L		94	62 - 131	4	20	
trans-1,2-Dichloroethene	10	U	250	236		ug/L		94	56 - 136	3	15	
Trichloroethene	540		250	694	E	ug/L		64	61 - 124	3	15	

Eurofins Cleveland

# QC Sample Results

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

Job ID: 240-189800-1

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

Lab Sample ID: 240-189694-F-4 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 584102

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl chloride	10	U	125	104		ug/L		83	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)	91		62 - 137								
4-Bromofluorobenzene (Surr)	91		56 - 136								
Toluene-d8 (Surr)	89		78 - 122								
Dibromofluoromethane (Surr)	87		73 - 120								

Lab Sample ID: MB 240-584194/7

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 584194

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			08/17/23 12:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/17/23 12:16	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 12:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/23 12:16	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 12:16	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/23 12:16	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)	105		62 - 137					08/17/23 12:16	1
4-Bromofluorobenzene (Surr)	92		56 - 136					08/17/23 12:16	1
Toluene-d8 (Surr)	96		78 - 122					08/17/23 12:16	1
Dibromofluoromethane (Surr)	109		73 - 120					08/17/23 12:16	1

Lab Sample ID: LCS 240-584194/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 584194

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	25.0	31.1		ug/L		124	63 - 134
cis-1,2-Dichloroethene	25.0	27.3		ug/L		109	77 - 123
Tetrachloroethene	25.0	27.0		ug/L		108	76 - 123
trans-1,2-Dichloroethene	25.0	28.6		ug/L		114	75 - 124
Trichloroethene	25.0	29.1		ug/L		117	70 - 122
Vinyl chloride	12.5	12.6		ug/L		101	60 - 144
<b>LCS LCS</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	102		62 - 137				
4-Bromofluorobenzene (Surr)	95		56 - 136				
Toluene-d8 (Surr)	100		78 - 122				
Dibromofluoromethane (Surr)	107		73 - 120				

# QC Sample Results

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

Job ID: 240-189800-1

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

Lab Sample ID: 240-190140-A-30 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 584194

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
1,1-Dichloroethene	1.0	U	25.0	25.5		ug/L		102	56 - 135	7	26
cis-1,2-Dichloroethene	1.0	U	25.0	22.9		ug/L		92	66 - 128	4	14
Tetrachloroethene	1.0	U	25.0	28.1		ug/L		112	62 - 131	6	20
trans-1,2-Dichloroethene	1.0	U	25.0	23.6		ug/L		94	56 - 136	8	15
Trichloroethene	1.0	U	25.0	24.0		ug/L		96	61 - 124	0	15
Vinyl chloride	3.0		12.5	13.3		ug/L		82	43 - 157	10	24
<b>MSD MSD</b>											
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	95		62 - 137								
4-Bromofluorobenzene (Surr)	100		56 - 136								
Toluene-d8 (Surr)	100		78 - 122								
Dibromofluoromethane (Surr)	93		73 - 120								

Lab Sample ID: 240-190140-I-30 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 584194

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
1,1-Dichloroethene	1.0	U	25.0	23.9		ug/L		96	56 - 135		
cis-1,2-Dichloroethene	1.0	U	25.0	22.0		ug/L		88	66 - 128		
Tetrachloroethene	1.0	U	25.0	26.5		ug/L		106	62 - 131		
trans-1,2-Dichloroethene	1.0	U	25.0	21.8		ug/L		87	56 - 136		
Trichloroethene	1.0	U	25.0	24.0		ug/L		96	61 - 124		
Vinyl chloride	3.0		12.5	12.0		ug/L		72	43 - 157		
<b>MS MS</b>											
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	88		62 - 137								
4-Bromofluorobenzene (Surr)	98		56 - 136								
Toluene-d8 (Surr)	97		78 - 122								
Dibromofluoromethane (Surr)	89		73 - 120								

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

Lab Sample ID: MB 240-583674/7

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 583674

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			08/11/23 14:54	1
<b>MB MB</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	91		66 - 120						

# QC Sample Results

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

Job ID: 240-189800-1

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

**Lab Sample ID: LCS 240-583674/5**  
**Matrix: Water**  
**Analysis Batch: 583674**

**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	10.6		ug/L		106	80 - 122
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	90		66 - 120				

**Lab Sample ID: MB 240-583761/7**  
**Matrix: Water**  
**Analysis Batch: 583761**

**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			08/14/23 11:05	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	91		66 - 120					08/14/23 11:05	1

**Lab Sample ID: LCS 240-583761/5**  
**Matrix: Water**  
**Analysis Batch: 583761**

**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	9.50		ug/L		95	80 - 122
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	87		66 - 120				

**Lab Sample ID: 240-189782-B-2 MS**  
**Matrix: Water**  
**Analysis Batch: 583761**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	2.0	U	10.0	9.16		ug/L		92	51 - 153
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	93		66 - 120						

**Lab Sample ID: 240-189782-B-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 583761**

**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	Limit
1,4-Dioxane	2.0	U	10.0	9.32		ug/L		93	51 - 153	2	16
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	79		66 - 120								

# QC Association Summary

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

Job ID: 240-189800-1

## GC/MS VOA

### Analysis Batch: 583674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-189800-2	MW-65_080423	Total/NA	Water	8260D SIM	
240-189800-3	MW-23_080423	Total/NA	Water	8260D SIM	
240-189800-4	DUP-01	Total/NA	Water	8260D SIM	
MB 240-583674/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-583674/5	Lab Control Sample	Total/NA	Water	8260D SIM	

### Analysis Batch: 583761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-189800-5	MW-51_080423	Total/NA	Water	8260D SIM	
240-189800-6	MW-38_080423	Total/NA	Water	8260D SIM	
MB 240-583761/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-583761/5	Lab Control Sample	Total/NA	Water	8260D SIM	
240-189782-B-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-189782-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

### Analysis Batch: 584047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-189800-1	TRIP BLANK_41	Total/NA	Water	8260D	
240-189800-2	MW-65_080423	Total/NA	Water	8260D	
MB 240-584047/7	Method Blank	Total/NA	Water	8260D	
LCS 240-584047/4	Lab Control Sample	Total/NA	Water	8260D	

### Analysis Batch: 584102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-189800-5	MW-51_080423	Total/NA	Water	8260D	
240-189800-6	MW-38_080423	Total/NA	Water	8260D	
MB 240-584102/8	Method Blank	Total/NA	Water	8260D	
LCS 240-584102/5	Lab Control Sample	Total/NA	Water	8260D	
240-189694-F-4 MS	Matrix Spike	Total/NA	Water	8260D	
240-189694-F-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

### Analysis Batch: 584194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-189800-3	MW-23_080423	Total/NA	Water	8260D	
240-189800-4	DUP-01	Total/NA	Water	8260D	
MB 240-584194/7	Method Blank	Total/NA	Water	8260D	
LCS 240-584194/4	Lab Control Sample	Total/NA	Water	8260D	
240-190140-A-30 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	
240-190140-I-30 MS	Matrix Spike	Total/NA	Water	8260D	

# Lab Chronicle

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

Job ID: 240-189800-1

## Client Sample ID: TRIP BLANK\_41

Lab Sample ID: 240-189800-1

Date Collected: 08/04/23 00:00

Matrix: Water

Date Received: 08/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	584047	LEE	EET CLE	08/16/23 18:48

## Client Sample ID: MW-65\_080423

Lab Sample ID: 240-189800-2

Date Collected: 08/04/23 12:28

Matrix: Water

Date Received: 08/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	584047	LEE	EET CLE	08/16/23 19:13
Total/NA	Analysis	8260D SIM		1	583674	MRL	EET CLE	08/11/23 18:53

## Client Sample ID: MW-23\_080423

Lab Sample ID: 240-189800-3

Date Collected: 08/04/23 10:50

Matrix: Water

Date Received: 08/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		500	584194	LEE	EET CLE	08/17/23 21:44
Total/NA	Analysis	8260D SIM		1	583674	MRL	EET CLE	08/11/23 19:17

## Client Sample ID: DUP-01

Lab Sample ID: 240-189800-4

Date Collected: 08/04/23 00:00

Matrix: Water

Date Received: 08/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		500	584194	LEE	EET CLE	08/17/23 18:37
Total/NA	Analysis	8260D SIM		1	583674	MRL	EET CLE	08/11/23 19:41

## Client Sample ID: MW-51\_080423

Lab Sample ID: 240-189800-5

Date Collected: 08/04/23 14:00

Matrix: Water

Date Received: 08/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	584102	CDG	EET CLE	08/16/23 17:08
Total/NA	Analysis	8260D SIM		1	583761	MRL	EET CLE	08/14/23 17:25

## Client Sample ID: MW-38\_080423

Lab Sample ID: 240-189800-6

Date Collected: 08/04/23 15:30

Matrix: Water

Date Received: 08/09/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	584102	CDG	EET CLE	08/16/23 17:32
Total/NA	Analysis	8260D SIM		1	583761	MRL	EET CLE	08/14/23 17:49

**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: 240-189800-1

## 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	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

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



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

Client Contact		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Company Name: Arcadis		Site Contact: Christina Weaver	
Address: 28550 Cabot Drive, Suite 500		Telephone: 248-994-2240	
City/State/Zip: Novi, MI, 48377		Email: kristoffer.hinskey@arcadis.com	
Phone: 248-994-2240		Analytical turnaround time	
Project Name: Ford LIP On-Site		IAT at different from below	
Project Number: 30167538.401.03		10 day <input type="checkbox"/> 3 weeks <input type="checkbox"/> 2 weeks <input checked="" type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day <input type="checkbox"/>	
PO # 30167538.401.03		Shipping/Tracking No:	

Client Project Manager: Kris Hinskey		Lab Contact: Mike DeMonico	
Telephone: 248-994-2240		Telephone: 330-497-9396	
Filtered Sample (Y/N)		Analyses	
Composite C / Grab G	1-1-DCE 8260D	Trans-1,2-DCE 8260D	PCE 8260D
			Vinyl Chloride 8260D
			1,4-Dioxane 8260D SIM

Sample Identification	Sample Date	Sample Time	Matrix						Containers & Preservatives						Filtered Sample (Y/N)	Date/Time	Company	Date/Time	Company													
			Air	Aqueous	Sediment	Solid	Other	H2SO4	HNO3	HCl	NaOH	ZnAc	NaOH	Impres						Other												
TRIP BLANK_41	---	---	1													X	X	X	X	1 Trip Blank												
MW-65-080423	8/4/23	12:28	6													X	X	X	X	3 VOAs for 8260D 3 VOAs for 8260D SIM												
MW-23-080423	8/4/23	10:50	6													X	X	X	X													
DUP-01-080423	8/4/23	---	6													X	X	X	X													
MW-51-080423	8/4/23	1400	6													X	X	X	X													
MW-38-080423	8/4/23	1530	6													X	X	X	X													



Possible Hazard Identification:  Non-Hazard  Irritant  Poison B  Unknown

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

Special Instructions/QC Requirements & Comments:

Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728

Level IV Reporting requested

Relinquished by: <i>[Signature]</i>	Company: Arcadis	Date/Time: 8/14/23 16:44	Received by: <i>[Signature]</i>	Company: Arcadis	Date/Time: 8/14/23 16:44
Relinquished by: <i>[Signature]</i>	Company: Arcadis	Date/Time: 8/17/23 12:05	Received by: <i>[Signature]</i>	Company: ECTA	Date/Time: 8/17/23 12:05
Relinquished by: <i>[Signature]</i>	Company: ECTA	Date/Time: 8/17/23 12:10	Received in Laboratory by: <i>[Signature]</i>	Company: ECTA	Date/Time: 8:00 8/17/23

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Barberton Facility

Client Arcadis

Site Name Michigan

Cooler unpacked by:

CMH

Cooler Received on \_\_\_\_\_

Opened on \_\_\_\_\_

FedEx: 1<sup>st</sup> Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

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

Eurofins Cooler # Blue 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 # 20 (CF 0.0 °C) Observed Cooler Temp. 2.3 °C Corrected Cooler Temp. 2.9 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Sufficient quantity received to perform indicated analyses? Yes No

12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory. CMH 8/19

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# 10BDH4321

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 # Le 285 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: \_\_\_\_\_

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

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



# DATA VERIFICATION REPORT



August 21, 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: 189800-1

Sample date: 2023-08-04

Report received by CADENA: 2023-08-21

Initial Data Verification completed by CADENA: 2023-08-21

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 - Sample -006 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 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.

GCMS VOC QC batch CCV response outliers 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.

# Qualified Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 189800-1

Sample Name: MW-38\_080423

Lab Sample ID: 2401898006

Sample Date: 8/4/2023

Analyte	Cas No.	Result	Report		Valid	
			Limit	Units	Qualifier	
GC/MS VOC						
<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: 189800-1

Analyte	Cas No.	Sample Name: TRIP BLANK_41				MW-65_080423				MW-23_080423				DUP-01				MW-51_080423				MW-38_080423			
		Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid 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	500	ug/l	---	ND	500	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	3.3	1.0	ug/l	---	9800	500	ug/l	---	11000	500	ug/l	---	ND	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	500	ug/l	---	ND	500	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	---	480	500	ug/l	J	440	500	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	UJ
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	470	500	ug/l	J	580	500	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	UJ
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	5.6	1.0	ug/l	---	520	500	ug/l	---	570	500	ug/l	---	ND	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	---