### PREPARED FOR

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

Generated 11/27/2023 10:01:14 AM

## **JOB DESCRIPTION**

Ford LTP - On Site

### **JOB NUMBER**

240-195410-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203

## **Eurofins Cleveland**

#### **Job Notes**

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## **Authorization**

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Authorized for release by Michael DelMonico, Project Manager I <u>Michael.DelMonico@et.eurofinsus.com</u> (330)497-9396 Client: ARCADIS US Inc Project/Site: Ford LTP - On Site Laboratory Job ID: 240-195410-1

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### **Definitions/Glossary**

Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

#### **Qualifiers**

#### **GC/MS VOA**

#### Qualifier Qualifier Description

4 MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

applicable.

B Compound was found in the blank and sample.

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.
n	Listed under the "D" column to designate that the result is reported on a dry weight basis

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

**Eurofins Cleveland** 

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#### **Case Narrative**

Client: ARCADIS US Inc Project/Site: Ford LTP - On Site Job ID: 240-195410-1

Job ID: 240-195410-1

**Laboratory: Eurofins Cleveland** 

Narrative

Job Narrative 240-195410-1

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 11/14/2023 10:00 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  $3.2^{\circ}$ C and  $3.4^{\circ}$ C

#### **GC/MS VOA**

Method 8260D: The method requirement for no headspace was not met. The following volatile samples were analyzed with headspace in the sample container(s): MW-49\_110923 (240-195410-2) and MW-20\_110923 (240-195410-3).

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

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### **Method Summary**

Client: ARCADIS US Inc

Project/Site: Ford LTP - On Site

Job ID: 240-195410-1

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

#### **Protocol References:**

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

#### Laboratory References:

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

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## **Sample Summary**

Client: ARCADIS US Inc

Project/Site: Ford LTP - On Site

Job ID: 240-195410-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195410-1	TRIP BLANK_87	Water	11/09/23 00:00	11/14/23 10:00
240-195410-2	MW-49_110923	Water	11/09/23 11:05	11/14/23 10:00
240-195410-3	MW-20_110923	Water	11/09/23 12:45	11/14/23 10:00

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### **Detection Summary**

Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

Client Sample ID: TRIP BLANK\_87 Lab Sample ID: 240-195410-1

No Detections.

Analyte	Result (	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	12		2.0	0.86	ug/L	1	_	8260D SIM	Total/NA
cis-1,2-Dichloroethene	51000		1000	460	ug/L	1000		8260D	Total/NA
Vinyl chloride	9300		500	230	ug/L	500		8260D	Total/NA

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
cis-1,2-Dichloroethene	0.53 JB	1.0	0.46 ug/L	1 8260D	Total/NA

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## **Client Sample Results**

Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

Client Sample ID: TRIP BLANK\_87

Date Collected: 11/09/23 00:00 Date Received: 11/14/23 10:00 Lab Sample ID: 240-195410-1

**Matrix: Water** 

Method: SW846 8260D - Vo Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/19/23 18:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/19/23 18:02	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 18:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/19/23 18:02	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 18:02	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/19/23 18:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		62 - 137					11/19/23 18:02	1
4-Bromofluorobenzene (Surr)	75		56 <sub>-</sub> 136					11/19/23 18:02	1
Toluene-d8 (Surr)	87		78 - 122					11/19/23 18:02	1
Dibromofluoromethane (Surr)	89		73 - 120					11/19/23 18:02	1

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## **Client Sample Results**

Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

Lab Sample ID: 240-195410-2 Client Sample ID: MW-49\_110923

Date Collected: 11/09/23 11:05 **Matrix: Water** 

Date Received: 11/14/23 10:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	12		2.0	0.86	ug/L			11/22/23 19:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		66 - 120					11/22/23 19:51	1
Method: SW846 8260D - Vo	latile Organic	Compoun	ds by GC/MS						
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	500	U	500	250	ug/L			11/19/23 20:30	500
cis-1,2-Dichloroethene	51000		1000	460	ug/L			11/20/23 18:20	1000
Tetrachloroethene	500	U	500	220	ug/L			11/19/23 20:30	500
trans-1,2-Dichloroethene	500	U	500	260	ug/L			11/19/23 20:30	500
Trichloroethene	500	U	500	220	ug/L			11/19/23 20:30	500
Vinyl chloride	9300		500	230	ug/L			11/19/23 20:30	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137					11/19/23 20:30	500
1,2-Dichloroethane-d4 (Surr)	118		62 - 137					11/20/23 18:20	1000
4-Bromofluorobenzene (Surr)	75		56 <sub>-</sub> 136					11/19/23 20:30	500
4-Bromofluorobenzene (Surr)	105		56 - 136					11/20/23 18:20	1000
Toluene-d8 (Surr)	91		78 - 122					11/19/23 20:30	500
Toluene-d8 (Surr)	107		78 - 122					11/20/23 18:20	1000
Dibromofluoromethane (Surr)	95		73 - 120					11/19/23 20:30	500
Dibromofluoromethane (Surr)	109		73 - 120					11/20/23 18:20	1000

## **Client Sample Results**

Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

Date Collected: 11/09/23 12:45 Matrix: Water

Date Received: 11/14/23 10:00

Toluene-d8 (Surr)

Dibromofluoromethane (Surr)

Method: SW846 8260D SIN	I - Volatile Orga	anic Comp	ounds (GC/M	S)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/22/23 20:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		66 - 120					11/22/23 20:15	1
- Method: SW846 8260D - Vo	olatile Organic	Compound	ds bv GC/MS						
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/19/23 20:54	1
cis-1,2-Dichloroethene	0.53	JB	1.0	0.46	ug/L			11/19/23 20:54	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 20:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/19/23 20:54	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 20:54	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/19/23 20:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137			,		11/19/23 20:54	1
4-Bromofluorobenzene (Surr)	74		56 <sub>-</sub> 136					11/19/23 20:54	1

78 - 122

73 - 120

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11/27/2023

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11/19/23 20:54

11/19/23 20:54

### **Surrogate Summary**

Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

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

**Matrix: Water Prep Type: Total/NA** 

			Pe	ercent Surre	ogate Reco
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
190-33133-F-10 MSD	Matrix Spike Duplicate		109	111	106
190-33133-G-10 MS	Matrix Spike	115	109	111	109
240-195326-E-2 MS	Matrix Spike	103	88	91	92
240-195326-I-2 MSD	Matrix Spike Duplicate	99	84	89	90
240-195410-1	TRIP BLANK_87	105	75	87	89
240-195410-2	MW-49_110923	108	75	91	95
240-195410-2	MW-49_110923	118	105	107	109
240-195410-3	MW-20_110923	108	74	90	92
LCS 240-595154/5	Lab Control Sample	105	87	94	97
LCS 240-595301/5	Lab Control Sample	114	115	114	111
MB 240-595154/8	Method Blank	110	75	90	95
MB 240-595301/8	Method Blank	108	103	106	103

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

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

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

**Matrix: Water** Prep Type: Total/NA

_			Percent Surrogate Recovery (Acceptance Limits)
		DCA	
Lab Sample ID	Client Sample ID	(66-120)	
240-195177-C-7 MS	Matrix Spike	98	
240-195177-D-7 MSD	Matrix Spike Duplicate	100	
240-195410-2	MW-49_110923	88	
240-195410-3	MW-20_110923	96	
LCS 240-595638/4	Lab Control Sample	101	
MB 240-595638/5	Method Blank	101	
Surrogate Legend			
DCA = 1,2-Dichloroeth	ane-d4 (Surr)		

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Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

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

Lab Sample ID: MB 240-595154/8

**Matrix: Water** 

Analysis Batch: 595154

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

MB MB Result Qualifier RL **MDL** Unit Analyzed Dil Fac Analyte D Prepared 0.49 ug/L 1,1-Dichloroethene 1.0 U 1.0 11/19/23 17:12 cis-1,2-Dichloroethene 0.605 J 1.0 0.46 ug/L 11/19/23 17:12 0.44 ug/L Tetrachloroethene 1.0 U 1.0 11/19/23 17:12 trans-1,2-Dichloroethene 1.0 0.51 ug/L 1.0 U 11/19/23 17:12 Trichloroethene 10 U 1.0 0.44 ug/L 11/19/23 17:12 Vinyl chloride 1.0 U 1.0 0.45 ug/L 11/19/23 17:12

MB MB Surrogate %Recovery Qualifier Limits Prepared Dil Fac Analyzed 62 - 137 1,2-Dichloroethane-d4 (Surr) 110 11/19/23 17:12 4-Bromofluorobenzene (Surr) 75 56 - 136 11/19/23 17:12 90 78 - 122 11/19/23 17:12 Toluene-d8 (Surr) Dibromofluoromethane (Surr) 95 73 - 120 11/19/23 17:12

Lab Sample ID: LCS 240-595154/5

**Matrix: Water** 

Analysis Batch: 595154

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

LCS LCS Spike %Rec Added Result Qualifier Analyte Unit D %Rec Limits 1,1-Dichloroethene 25.0 109 63 - 134 27.1 ug/L 25.0 cis-1,2-Dichloroethene 23.2 93 ug/L 77 - 123 Tetrachloroethene 25.0 24.1 96 76 - 123 ug/L 23.5 75 - 124 trans-1,2-Dichloroethene 25.0 ug/L 94 Trichloroethene 25.0 22.6 ug/L 90 70 - 122 Vinyl chloride 12.5 12.3 ug/L 98 60 - 144

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		62 - 137
4-Bromofluorobenzene (Surr)	87		56 <sub>-</sub> 136
Toluene-d8 (Surr)	94		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120

Lab Sample ID: 240-195326-E-2 MS

**Matrix: Water** 

Analysis Batch: 595154

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

-	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
cis-1,2-Dichloroethene	1.0	U	25.0	22.2		ug/L		89	66 - 128	
trans-1,2-Dichloroethene	1.0	U	25.0	22.7		ug/L		91	56 - 136	
Trichloroethene	1.0	U	25.0	22.6		ug/L		90	61 - 124	
Vinyl chloride	1.0	U	12.5	11.2		ug/L		90	43 - 157	

MS	MS
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Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	88		56 - 136
Toluene-d8 (Surr)	91		78 - 122
Dibromofluoromethane (Surr)	92		73 - 120

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Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

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

Lab Sample ID: 240-195326-I-2 MSD

**Matrix: Water** 

Analysis Batch: 595154

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

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
cis-1,2-Dichloroethene	1.0	U	25.0	21.5		ug/L		86	66 - 128	3	14
trans-1,2-Dichloroethene	1.0	U	25.0	22.6		ug/L		91	56 - 136	0	15
Trichloroethene	1.0	U	25.0	22.6		ug/L		90	61 - 124	0	15
Vinyl chloride	1.0	U	12.5	11.4		ug/L		91	43 - 157	2	24

MSD MSD %Recovery Qualifier Surrogate Limits 1,2-Dichloroethane-d4 (Surr) 99 62 - 137 4-Bromofluorobenzene (Surr) 84 56 - 136 Toluene-d8 (Surr) 89 78 - 122 Dibromofluoromethane (Surr) 90 73 - 120

Lab Sample ID: MB 240-595301/8

**Matrix: Water** 

Analysis Batch: 595301

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

MB MB Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 1,1-Dichloroethene 1.0 U 1.0 0.49 ug/L 11/20/23 16:44 1.0 U cis-1,2-Dichloroethene 1.0 0.46 ug/L 11/20/23 16:44 Tetrachloroethene 1.0 U 1.0 0.44 ug/L 11/20/23 16:44 trans-1,2-Dichloroethene 1.0 U 1.0 0.51 ug/L 11/20/23 16:44 0.44 ug/L Trichloroethene 1.0 11/20/23 16:44 1.0 U Vinyl chloride 1.0 U 1.0 0.45 ug/L 11/20/23 16:44

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108	62 - 137	11.	/20/23 16:44	1
4-Bromofluorobenzene (Surr)	103	56 - 136	11.	/20/23 16:44	1
Toluene-d8 (Surr)	106	78 - 122	11.	/20/23 16:44	1
Dibromofluoromethane (Surr)	103	73 - 120	11.	/20/23 16:44	1

Lab Sample ID: LCS 240-595301/5

**Matrix: Water** 

Analysis Batch: 595301

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

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits 1,1-Dichloroethene 25.0 24.4 ug/L 98 63 - 134 cis-1,2-Dichloroethene 25.0 23.2 77 - 123 ug/L 93 25.0 Tetrachloroethene 23.2 ug/L 93 76 - 123 trans-1,2-Dichloroethene 25.0 96 75 - 124 23.9 ug/L Trichloroethene 25.0 22.7 ug/L 91 70 - 122 Vinyl chloride 12.5 10.4 ug/L 83 60 - 144

LCS	LCS
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Surrogate	%Recovery	Qualifier	Limits	
1,2-Dichloroethane-d4 (Surr)	114		62 - 137	
4-Bromofluorobenzene (Surr)	115		56 - 136	
Toluene-d8 (Surr)	114		78 - 122	
Dibromofluoromethane (Surr)	111		73 - 120	

**Eurofins Cleveland** 

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Client: ARCADIS US Inc Job ID: 240-195410-1

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

Lab Sample ID: 190-33133-F-10 MSD

**Matrix: Water** 

Analysis Batch: 595301

Project/Site: Ford LTP - On Site

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

Allalysis Batch. 000001											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethene	1.0	U	25.0	21.8		ug/L		87	56 - 135	4	26
cis-1,2-Dichloroethene	1.0	U	25.0	22.1		ug/L		88	66 - 128	1	14
Tetrachloroethene	1.0	U	25.0	20.7		ug/L		83	62 - 131	5	20
trans-1,2-Dichloroethene	1.0	U	25.0	21.7		ug/L		87	56 - 136	3	15
Trichloroethene	1.0	U	25.0	20.6		ug/L		82	61 - 124	4	15
Vinyl chloride	1.0	U	12.5	8.98		ug/L		72	43 - 157	6	24

MSD MSD %Recovery Surrogate Qualifier Limits 62 - 137 1,2-Dichloroethane-d4 (Surr) 111 4-Bromofluorobenzene (Surr) 109 56 - 136 Toluene-d8 (Surr) 111 78 - 122 Dibromofluoromethane (Surr) 106 73 - 120

Lab Sample ID: 190-33133-G-10 MS

**Matrix: Water** 

Analysis Batch: 595301

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

Sample Sample Spike MS MS %Rec Result Qualifier Added Limits Analyte Result Qualifier Unit %Rec 1,1-Dichloroethene 1.0 U 25.0 22.8 91 56 - 135 ug/L 1.0 U cis-1,2-Dichloroethene 25.0 21.8 87 66 - 128 ug/L Tetrachloroethene 25.0 21.9 87 1.0 U ug/L 62 - 131trans-1.2-Dichloroethene 1.0 U 25.0 22.3 ug/L 89 56 - 136 Trichloroethene 1.0 U 25.0 21.5 ug/L 86 61 - 124 Vinyl chloride 77 1.0 U 12.5 9.57 ug/L 43 - 157

MS MS Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 115 62 - 137 4-Bromofluorobenzene (Surr) 109 56 - 136 78 - 122 Toluene-d8 (Surr) 111 109 73 - 120 Dibromofluoromethane (Surr)

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

Lab Sample ID: MB 240-595638/5 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 595638** 

MR MR Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 1,4-Dioxane 2.0 2.0 0.86 ug/L 11/22/23 15:25 MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 101 66 - 120 11/22/23 15:25

### **QC Sample Results**

Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

Lab Sample ID: LCS 240-595638/4

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

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

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**Matrix: Water** 

Analysis Batch: 595638

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,4-Dioxane	10.0	9.96		ug/L		100	80 - 122	

LCS LCS

Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 66 - 120 101

Lab Sample ID: 240-195177-C-7 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 595638

%Rec Sample Sample Spike MS MS Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 51 - 153 1,4-Dioxane 280 20.0 309 4 ug/L 121

MS MS

Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 66 - 120 98

Lab Sample ID: 240-195177-D-7 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 595638** 

Spike MSD MSD %Rec RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit 1,4-Dioxane 313 4 280 20.0 ug/L 144 51 - 153

MSD MSD Surrogate Qualifier Limits %Recovery 1,2-Dichloroethane-d4 (Surr) 100 66 - 120

**Eurofins Cleveland** 

11/27/2023

## **QC Association Summary**

Client: ARCADIS US Inc Job ID: 240-195410-1 Project/Site: Ford LTP - On Site

### **GC/MS VOA**

#### Analysis Batch: 595154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195410-1	TRIP BLANK_87	Total/NA	Water	8260D	_
240-195410-2	MW-49_110923	Total/NA	Water	8260D	
240-195410-3	MW-20_110923	Total/NA	Water	8260D	
MB 240-595154/8	Method Blank	Total/NA	Water	8260D	
LCS 240-595154/5	Lab Control Sample	Total/NA	Water	8260D	
240-195326-E-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-195326-I-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

#### **Analysis Batch: 595301**

Lab Sample ID 240-195410-2	Client Sample ID MW-49_110923	Prep Type Total/NA	Matrix Water	Method 8260D	Prep Batch
MB 240-595301/8	Method Blank	Total/NA	Water	8260D	
LCS 240-595301/5	Lab Control Sample	Total/NA	Water	8260D	
190-33133-F-10 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	
190-33133-G-10 MS	Matrix Spike	Total/NA	Water	8260D	

#### **Analysis Batch: 595638**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195410-2	MW-49_110923	Total/NA	Water	8260D SIM	<del></del>
240-195410-3	MW-20_110923	Total/NA	Water	8260D SIM	
MB 240-595638/5	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-595638/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-195177-C-7 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-195177-D-7 MSD	Matrix Snike Dunlicate	Total/NA	\Mater	8260D SIM	

11/27/2023

#### **Lab Chronicle**

Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

Client Sample ID: TRIP BLANK\_87

Lab Sample ID: 240-195410-1 Date Collected: 11/09/23 00:00 **Matrix: Water** 

Date Received: 11/14/23 10:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	595154	CDG	EET CLE	11/19/23 18:02

Client Sample ID: MW-49\_110923 Lab Sample ID: 240-195410-2

Date Collected: 11/09/23 11:05

Date Received: 11/14/23 10:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		500	595154	CDG	EET CLE	11/19/23 20:30
Total/NA	Analysis	8260D		1000	595301	CDG	EET CLE	11/20/23 18:20
Total/NA	Analysis	8260D SIM		1	595638	CS	EET CLE	11/22/23 19:51

Lab Sample ID: 240-195410-3 Client Sample ID: MW-20\_110923 **Matrix: Water** 

Date Collected: 11/09/23 12:45

Date Received: 11/14/23 10:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	595154	CDG	EET CLE	11/19/23 20:54
Total/NA	Analysis	8260D SIM		1	595638	CS	EET CLE	11/22/23 20:15

**Laboratory References:** 

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

**Matrix: Water** 

## **Accreditation/Certification Summary**

Client: ARCADIS US Inc Job ID: 240-195410-1

Project/Site: Ford LTP - On Site

### **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	<b>Expiration Date</b>
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
lowa	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

 $<sup>^{\</sup>star} \ \text{Accreditation/Certification renewal pending - accreditation/certification considered valid}.$ 

**TestAmerica** 

Chain of Custody Record

TestAmerica Laboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763 MICHIGAN 190

TestAmerica Laboratories, Inc COC No: 3 VOAs for 8260B 3 VOAs for 8260B SIM Sample Specific Notes / Special Instructions: 1 Trip Blank or lab use only Valk-in client ab sampling op/SDG No: X MIS 80628 Sinsxoid-4. Lab Contact: Mike DelMonico × Vinyl Chloride 82608 Telephone: 330-497-9396 又 X LCE 8500B  $\times$ X X SCE 85908  $\times$ × Lens-1,2-DCE 8260B  $\times$ 240-195410 Chain of Custody ス  $\overline{\times}$ × 8-1"S-DCE 8500B X  $\times$ × 1-DCE 8560B Other <u>り</u> ス Ū G Composite=C / Grab=C Filtered Sample (Y / N) Z 2 Site Contact: Christina Weaver Analysis Turnaround Ilime Sandail I ≥ 2 weeks l week 2 days 1 day 3 weeks Felephone: 248-994-2240 Na.V HOBN 3 IDH 0 10 day CONH FOSTH Other: Garret Link MO biloa inamiba 9 9 Jnknown mail: kristoffer.hinskey@arcadis.com snoonby <del>-</del> lient Project Manager: Kris Hinskey 1iA Regulatory program: Sample Time 11/00/13/1245 Method of Shipment/Carrier 11/04/23 1105 clephone: 248-994-2240 Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728 Shipping/Tracking No: Poison B Sample Date Sampler Name 11/01/23 sin Irritani Special Instructions/QC Requirements & Comments: TRIP BLANK 4466 87 Sample Identification MW-20-1109123 Client Contact MW-49-1109923 Address: 28550 Cabot Drive, Suite 500 Project Number: 30167538,401.03 Project Name: Ford LTP On-Site Possible Hazard Identification City/State/Zip: Novi, MI, 48377 Company Name: Arcadis PO# 30167538.401.03 Phone: 248-994-2240 • Page 20 of 22

ONSITE

11/09/23 15 00 Date/Time | 23 Date ([18]) Company: ARCADIS

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Refinquished by:

Level IV Reporting requested.

11/04/63 15:00

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11-14-23

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				n Sample Receipt M	ultiple Cooler Form	
Cooler		ption	IR Gun#	Observed	Corrected	Coolant
((	Circle)	-	(Circle)	Temp °C	Temp °C	(Circle) Welke Blue Ice Dryk
EC Clien	l Box	Other	IR GUN #: _21	3.2	3.9	Water None
EC Clien	f Box	Other	IR GUN #:,	3-0	3.2	Wellice Blue Ice Dry Ice Water Mone
EC Clen	l Box	Other	M GUN 0:			Wellce Blue Ice Dry ice Water Mone
EC Clien	Box	Other	IR GUN #:			Wellige Blue Ice Bry Ice Water Mone
EC Clien	Box	Other	IR GUN #:			Wet Ice Nee Ice By Ice Water Name
EC Clien	- Box	Other	IR GUN #:			Wellice Blue Ice By Ice Weller Mone
EC Clen	Box	Other	IR GUN #:			Wet ice Nee Ice By Ice Wetk Nees
EC Clea	Box	Other	R GUN #:		1	Wellice Blue Ice By Ice
EC Clos	Box	Other	R GUN #:		F #10	Wellice Sheelice Bytee Water Mana
EC Clien	Jox	Other	R GUN F:			Well to the to by to
EC Clien	Beat	Other	IR GUN 9:	ige.		Wellice More Bry to
IC Close	Bex	Other	R GON 6:	U.B.		Wellce Blue Ice Brylce Water Mane
EC Close	Bex	Other	IR GUN 6:			Wellice Nee Ice Bytes
BC Client	Ben	Other	E 6001 6:			Worker Bose
BC Clon	Box	Other	R GUN #:			Wet toe Physics Bryles Water Mone
BC Clerk	Box	Other	IR GUN 6:			Wellice Nee log By ice
EC Client	Bex	Other	IR GON #:		?:	Well too blue too Bry too
EC Clon	Beau	Other	R GUN #:		1	Wellce Need Brytch
BC Cloud	Ben	Other	R CON 6:			Worker None Bryles
RC Client	Box	Other	IR GON #:		1	Well toe the Ice By Ice
BC Client	Box	Other	R GUN #:			Weler Hope
RC Client	Box	Other	IR GUN F:	*		Wellie Hos to Bry to
EC Client	Box	Other	IR GUN F:		1.	Weller Need By Ice
BC Client	Beat	Other	R GUN F:		1 290	Wellice Nee ice Bylce
EC Client	Beec	Officer	IR GUN F:			Wolfer Mone
EC Client	Box	Other	R 60N 6:	•		Wellie Nee Ice Dry Ice
EC Client	Box	Other	IR GUN #:		7.	Well to the to thy to
EC Client	Box	Other	IR GUN 6:			The Ige She Ice Dry Ice
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EC Client	tox	Other	IR GUN 6:		1	Mad ice the ice by ice
EC Client	Box	Other	R GW 6:			Weller Blooks Byke
RC Client	Ben	Other	IR GUN 0:			Wefter Note: Day Ice
EC Client	Box	Other	IR GUN F:		' 3	Wellice Blue Ice, Dry Ice Water Make
EC Client	Sox	Other	IR GUN F:			Wellice Stue Ice Dry Ice
		-		,	See Tempe	rature Excursion Form

PI-NC-099 Cooler Receipt Form Page 2 - Multiple Cooler

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11/27/2023

### DATA VERIFICATION REPORT



November 28, 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: 195410-1 Sample date: 2023-11-09

Report received by CADENA: 2023-11-27

Initial Data Verification completed by CADENA: 2023-11-28

Number of Samples:3

Sample Matrices: Water and trip blank

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:

MBK - METHOD BLANKS had detections BELOW the Reporting Limit (RL) for these analytes. The listed client sample results had concentrations LESS than 5X the method blank levels so client sample results reported below the RL are considered non-detect at the RL and qualified with UB flags and results greater than the RL are non-detect at the sample concentration reported and qualified with B flags: GCMS VOC QC batch 595154 - CIS-1,2-DICHLOROETHYLENE - UB flag - sample -003.

HSP - GCMS VOC container was received with headspace according to the laboratory submittal case narrative and sample receipt documents. Client sample GCMS VOC results noted should be considered estimated and qualified with J flags if detected and UJ flags if non-detect. GCMS VOC samples -002, -003 - J/UJ flags.

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.

Qualifiers added during verification have been added to the electronic data which is available for download from the CADENA CLMS. Refer to the attached table of analytical results that have been qualified during verification.

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 <a href="http://clms.cadenaco.com/index.cfm">http://clms.cadenaco.com/index.cfm</a>.

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

# **Qualified Results Summary**

**CADENA Project ID:** E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

**Laboratory Submittal:** 195410-1

		Sample Name: Lab Sample ID: Sample Date:	MW-49_ 2401954 11/9/20	- 1102 23		V-1:-I	MW-20 2401954 11/9/20	V-1:-1		
	Analyte	Cas No.	Result	Report Result Limit Units		Valid Qualifier Resul		Report t Limit Units		Valid Qualifier
GC/MS VOC										
OSW-826	<u>0D</u>									
	1,1-Dichloroethene	75-35-4	ND	500	ug/l	UJ	ND	1.0	ug/l	UJ
	cis-1,2-Dichloroethene	156-59-2	51000	1000	ug/l	J	0.53	1.0	ug/l	UB
	Tetrachloroethene	127-18-4	ND	500	ug/l	UJ	ND	1.0	ug/l	UJ
	trans-1,2-Dichloroethene	156-60-5	ND	500	ug/l	UJ	ND	1.0	ug/l	UJ
	Trichloroethene	79-01-6	ND	500	ug/l	UJ	ND	1.0	ug/l	UJ
	Vinyl chloride	75-01-4	9300	500	ug/l	J	ND	1.0	ug/l	UJ

# **Analytical Results Summary**

**CADENA Project ID:** E203728

**Laboratory:** Eurofins Environment Testing LLC - Cleveland

**Laboratory Submittal:** 195410-1

		Sample Name:	TRIP BLANK_87				MW-49_	MW-20_110923						
		Lab Sample ID:	2401954	1101		2401954102								
		Sample Date:	11/9/20	23			11/9/2023			11/9/2023				
				Report		Valid	Report			Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC														
OSW-82	60D													
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	500	ug/l	UJ	ND	1.0	ug/l	UJ
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l		51000	1000	ug/l	J	0.53	1.0	ug/l	UB
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	500	ug/l	UJ	ND	1.0	ug/l	UJ
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l		ND	500	ug/l	UJ	ND	1.0	ug/l	UJ
	Trichloroethene	79-01-6	ND	1.0	ug/l		ND	500	ug/l	UJ	ND	1.0	ug/l	UJ
	Vinyl chloride	75-01-4	ND	1.0	ug/l		9300	500	ug/l	J	ND	1.0	ug/l	UJ
OSW-82	60DSIM													
	1,4-Dioxane	123-91-1					12	2.0	ug/l		ND	2.0	ug/l	