

ANALYTICAL REPORT

PREPARED FOR

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

Generated 11/29/2023 4:49:23 AM

JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-195686-1

Eurofins Cleveland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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



Generated
11/29/2023 4:49:23 AM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



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	20
Lab Chronicle	21
Certification Summary	22
Chain of Custody	23

Definitions/Glossary

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

Job ID: 240-195686-1

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: 240-195686-1

Job ID: 240-195686-1

Laboratory: Eurofins Cleveland

Narrative

**Job Narrative
240-195686-1**

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

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

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

Receipt

The samples were received on 11/17/2023 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.7°C, 2.9°C and 3.5°C

GC/MS VOA

Method 8260D: The MS/MSD for batch 240-595614 was not analyzed due to an instrument malfunction. The following sample was affected: MW-234_111423 (240-195686-6)

Method 8260D_SIM: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-234_111423 (240-195686-6). Elevated reporting limits (RLs) are provided.

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: 240-195686-1

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

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

Sample Summary

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

Job ID: 240-195686-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195686-1	TRIP BLANK_139	Water	11/13/23 00:00	11/17/23 09:40
240-195686-2	MW-53_111323	Water	11/13/23 11:45	11/17/23 09:40
240-195686-3	MW-62_111323	Water	11/13/23 13:25	11/17/23 09:40
240-195686-4	MW-212S_111423	Water	11/14/23 10:35	11/17/23 09:40
240-195686-5	MW-213S_111423	Water	11/14/23 14:20	11/17/23 09:40
240-195686-6	MW-234_111423	Water	11/14/23 15:45	11/17/23 09:40

- 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: 240-195686-1

Client Sample ID: TRIP BLANK_139

Lab Sample ID: 240-195686-1

No Detections.

Client Sample ID: MW-53_111323

Lab Sample ID: 240-195686-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.0	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	0.66	J	1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-62_111323

Lab Sample ID: 240-195686-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.4		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	1.3		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-212S_111423

Lab Sample ID: 240-195686-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.8		1.0	0.46	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.53	J	1.0	0.51	ug/L	1		8260D	Total/NA
Vinyl chloride	1.0		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-213S_111423

Lab Sample ID: 240-195686-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.0		1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	1.1		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-234_111423

Lab Sample ID: 240-195686-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cleveland

Client Sample Results

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

Job ID: 240-195686-1

Client Sample ID: TRIP BLANK_139

Lab Sample ID: 240-195686-1

Date Collected: 11/13/23 00:00

Matrix: Water

Date Received: 11/17/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/21/23 14:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/21/23 14:04	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 14:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/21/23 14:04	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 14:04	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/21/23 14:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		62 - 137		11/21/23 14:04	1
4-Bromofluorobenzene (Surr)	76		56 - 136		11/21/23 14:04	1
Toluene-d8 (Surr)	89		78 - 122		11/21/23 14:04	1
Dibromofluoromethane (Surr)	92		73 - 120		11/21/23 14:04	1

Client Sample Results

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

Job ID: 240-195686-1

Client Sample ID: MW-53_111323

Lab Sample ID: 240-195686-2

Date Collected: 11/13/23 11:45

Matrix: Water

Date Received: 11/17/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.0	J	2.0	0.86	ug/L			11/25/23 09:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		66 - 120					11/25/23 09:30	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			11/21/23 16:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/21/23 16:09	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 16:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/21/23 16:09	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 16:09	1
Vinyl chloride	0.66	J	1.0	0.45	ug/L			11/21/23 16:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		62 - 137					11/21/23 16:09	1
4-Bromofluorobenzene (Surr)	71		56 - 136					11/21/23 16:09	1
Toluene-d8 (Surr)	86		78 - 122					11/21/23 16:09	1
Dibromofluoromethane (Surr)	91		73 - 120					11/21/23 16:09	1

Client Sample Results

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

Job ID: 240-195686-1

Client Sample ID: MW-62_111323

Lab Sample ID: 240-195686-3

Date Collected: 11/13/23 13:25

Matrix: Water

Date Received: 11/17/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.4		2.0	0.86	ug/L			11/25/23 09:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		66 - 120					11/25/23 09:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/21/23 16:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/21/23 16:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 16:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/21/23 16:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 16:34	1
Vinyl chloride	1.3		1.0	0.45	ug/L			11/21/23 16:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		62 - 137					11/21/23 16:34	1
4-Bromofluorobenzene (Surr)	74		56 - 136					11/21/23 16:34	1
Toluene-d8 (Surr)	85		78 - 122					11/21/23 16:34	1
Dibromofluoromethane (Surr)	94		73 - 120					11/21/23 16:34	1

Client Sample Results

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

Job ID: 240-195686-1

Client Sample ID: MW-212S_111423

Lab Sample ID: 240-195686-4

Date Collected: 11/14/23 10:35

Matrix: Water

Date Received: 11/17/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/28/23 00:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		66 - 120					11/28/23 00:11	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			11/21/23 16:59	1
cis-1,2-Dichloroethene	2.8		1.0	0.46	ug/L			11/21/23 16:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 16:59	1
trans-1,2-Dichloroethene	0.53	J	1.0	0.51	ug/L			11/21/23 16:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 16:59	1
Vinyl chloride	1.0		1.0	0.45	ug/L			11/21/23 16:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137					11/21/23 16:59	1
4-Bromofluorobenzene (Surr)	73		56 - 136					11/21/23 16:59	1
Toluene-d8 (Surr)	90		78 - 122					11/21/23 16:59	1
Dibromofluoromethane (Surr)	96		73 - 120					11/21/23 16:59	1

Client Sample Results

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

Job ID: 240-195686-1

Client Sample ID: MW-213S_111423

Lab Sample ID: 240-195686-5

Date Collected: 11/14/23 14:20

Matrix: Water

Date Received: 11/17/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/28/23 00:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 120					11/28/23 00:35	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			11/21/23 17:24	1
cis-1,2-Dichloroethene	1.0		1.0	0.46	ug/L			11/21/23 17:24	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 17:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/21/23 17:24	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 17:24	1
Vinyl chloride	1.1		1.0	0.45	ug/L			11/21/23 17:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	134		62 - 137					11/21/23 17:24	1
4-Bromofluorobenzene (Surr)	94		56 - 136					11/21/23 17:24	1
Toluene-d8 (Surr)	90		78 - 122					11/21/23 17:24	1
Dibromofluoromethane (Surr)	120		73 - 120					11/21/23 17:24	1

Client Sample Results

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

Job ID: 240-195686-1

Client Sample ID: MW-234_111423

Lab Sample ID: 240-195686-6

Date Collected: 11/14/23 15:45

Matrix: Water

Date Received: 11/17/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.0	U	4.0	1.7	ug/L			11/28/23 01:47	2
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 120					11/28/23 01:47	2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/22/23 17:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 17:42	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 17:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 17:42	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 17:42	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 17:42	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124		62 - 137					11/22/23 17:42	1
4-Bromofluorobenzene (Surr)	84		56 - 136					11/22/23 17:42	1
Toluene-d8 (Surr)	98		78 - 122					11/22/23 17:42	1
Dibromofluoromethane (Surr)	106		73 - 120					11/22/23 17:42	1

Surrogate Summary

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

Job ID: 240-195686-1

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)
240-195686-1	TRIP BLANK_139	104	76	89	92
240-195686-2	MW-53_111323	103	71	86	91
240-195686-3	MW-62_111323	106	74	85	94
240-195686-4	MW-212S_111423	108	73	90	96
240-195686-5	MW-213S_111423	134	94	90	120
240-195686-5 MS	MW-213S-MS_111423	100	82	87	96
240-195686-5 MSD	MW-213S-MSD_111423	108	90	96	103
240-195686-6	MW-234_111423	124	84	98	106
LCS 240-595424/5	Lab Control Sample	93	78	84	89
LCS 240-595614/5	Lab Control Sample	100	82	87	86
MB 240-595424/8	Method Blank	102	76	88	92
MB 240-595614/8	Method Blank	100	75	87	91

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	DCA
		(66-120)
240-195686-2	MW-53_111323	97
240-195686-3	MW-62_111323	97
240-195686-4	MW-212S_111423	91
240-195686-5	MW-213S_111423	95
240-195686-5 MS	MW-213S-MS_111423	94
240-195686-5 MSD	MW-213S-MSD_111423	94
240-195686-6	MW-234_111423	92
500-242543-C-3 MS	Matrix Spike	99
500-242543-C-3 MSD	Matrix Spike Duplicate	100
LCS 240-595687/4	Lab Control Sample	97
LCS 240-595844/4	Lab Control Sample	98
MB 240-595687/6	Method Blank	97
MB 240-595844/6	Method Blank	98

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-195686-1

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

Lab Sample ID: MB 240-595424/8
Matrix: Water
Analysis Batch: 595424

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			11/21/23 13:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/21/23 13:39	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 13:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/21/23 13:39	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/21/23 13:39	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/21/23 13:39	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	102		62 - 137		11/21/23 13:39	1
4-Bromofluorobenzene (Surr)	76		56 - 136		11/21/23 13:39	1
Toluene-d8 (Surr)	88		78 - 122		11/21/23 13:39	1
Dibromofluoromethane (Surr)	92		73 - 120		11/21/23 13:39	1

Lab Sample ID: LCS 240-595424/5
Matrix: Water
Analysis Batch: 595424

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1-Dichloroethene	25.0	26.3		ug/L		105	63 - 134
cis-1,2-Dichloroethene	25.0	22.5		ug/L		90	77 - 123
Tetrachloroethene	25.0	25.6		ug/L		102	76 - 123
trans-1,2-Dichloroethene	25.0	23.6		ug/L		94	75 - 124
Trichloroethene	25.0	24.4		ug/L		97	70 - 122
Vinyl chloride	12.5	11.5		ug/L		92	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	78		56 - 136
Toluene-d8 (Surr)	84		78 - 122
Dibromofluoromethane (Surr)	89		73 - 120

Lab Sample ID: 240-195686-5 MS
Matrix: Water
Analysis Batch: 595424

Client Sample ID: MW-213S-MS_111423
Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U	25.0	24.5		ug/L		98	56 - 135
cis-1,2-Dichloroethene	1.0		25.0	22.9		ug/L		87	66 - 128
Tetrachloroethene	1.0	U	25.0	24.8		ug/L		99	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	22.6		ug/L		90	56 - 136
Trichloroethene	1.0	U	25.0	23.8		ug/L		95	61 - 124
Vinyl chloride	1.1		12.5	10.7		ug/L		77	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	82		56 - 136
Toluene-d8 (Surr)	87		78 - 122

QC Sample Results

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

Job ID: 240-195686-1

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

Lab Sample ID: 240-195686-5 MS

Matrix: Water

Analysis Batch: 595424

Client Sample ID: MW-213S-MS_111423

Prep Type: Total/NA

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	96		73 - 120

Lab Sample ID: 240-195686-5 MSD

Matrix: Water

Analysis Batch: 595424

Client Sample ID: MW-213S-MSD_111423

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
1,1-Dichloroethene	1.0	U	25.0	26.9		ug/L		107	56 - 135	9	26
cis-1,2-Dichloroethene	1.0		25.0	23.7		ug/L		91	66 - 128	3	14
Tetrachloroethene	1.0	U	25.0	26.2		ug/L		105	62 - 131	6	20
trans-1,2-Dichloroethene	1.0	U	25.0	24.1		ug/L		96	56 - 136	7	15
Trichloroethene	1.0	U	25.0	25.3		ug/L		101	61 - 124	6	15
Vinyl chloride	1.1		12.5	12.3		ug/L		90	43 - 157	14	24

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	108		62 - 137
4-Bromofluorobenzene (Surr)	90		56 - 136
Toluene-d8 (Surr)	96		78 - 122
Dibromofluoromethane (Surr)	103		73 - 120

Lab Sample ID: MB 240-595614/8

Matrix: Water

Analysis Batch: 595614

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/22/23 14:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 14:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 14:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 14:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 14:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 14:22	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		11/22/23 14:22	1
4-Bromofluorobenzene (Surr)	75		56 - 136		11/22/23 14:22	1
Toluene-d8 (Surr)	87		78 - 122		11/22/23 14:22	1
Dibromofluoromethane (Surr)	91		73 - 120		11/22/23 14:22	1

Lab Sample ID: LCS 240-595614/5

Matrix: Water

Analysis Batch: 595614

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec
		Result	Qualifier				Limits
1,1-Dichloroethene	25.0	26.8		ug/L		107	63 - 134
cis-1,2-Dichloroethene	25.0	24.1		ug/L		97	77 - 123
Tetrachloroethene	25.0	22.1		ug/L		89	76 - 123
trans-1,2-Dichloroethene	25.0	23.3		ug/L		93	75 - 124
Trichloroethene	25.0	26.1		ug/L		104	70 - 122

Eurofins Cleveland

QC Sample Results

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

Job ID: 240-195686-1

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

Lab Sample ID: LCS 240-595614/5

Matrix: Water

Analysis Batch: 595614

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	12.5	11.9		ug/L		95	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	82		56 - 136
Toluene-d8 (Surr)	87		78 - 122
Dibromofluoromethane (Surr)	86		73 - 120

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

Lab Sample ID: MB 240-595687/6

Matrix: Water

Analysis Batch: 595687

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/25/23 02:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		66 - 120		11/25/23 02:18	1

Lab Sample ID: LCS 240-595687/4

Matrix: Water

Analysis Batch: 595687

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	10.1		ug/L		101	80 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		66 - 120

Lab Sample ID: 500-242543-C-3 MS

Matrix: Water

Analysis Batch: 595687

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	0.90	J F1	30.0	11.7	F1	ug/L		36	51 - 153

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		66 - 120

Lab Sample ID: 500-242543-C-3 MSD

Matrix: Water

Analysis Batch: 595687

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	0.90	J F1	30.0	11.1	F1	ug/L		34	51 - 153	5	16

Eurofins Cleveland

QC Sample Results

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

Job ID: 240-195686-1

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

Lab Sample ID: 500-242543-C-3 MSD
Matrix: Water
Analysis Batch: 595687

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

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

Lab Sample ID: MB 240-595844/6
Matrix: Water
Analysis Batch: 595844

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/27/23 17:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		66 - 120		11/27/23 17:47	1

Lab Sample ID: LCS 240-595844/4
Matrix: Water
Analysis Batch: 595844

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	10.2		ug/L		102	80 - 122

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

Lab Sample ID: 240-195686-5 MS
Matrix: Water
Analysis Batch: 595844

Client Sample ID: MW-213S-MS_111423
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	11.1		ug/L		111	51 - 153

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		66 - 120

Lab Sample ID: 240-195686-5 MSD
Matrix: Water
Analysis Batch: 595844

Client Sample ID: MW-213S-MSD_111423
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	10.8		ug/L		108	51 - 153	3	16

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		66 - 120

QC Association Summary

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

Job ID: 240-195686-1

GC/MS VOA

Analysis Batch: 595424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195686-1	TRIP BLANK_139	Total/NA	Water	8260D	
240-195686-2	MW-53_111323	Total/NA	Water	8260D	
240-195686-3	MW-62_111323	Total/NA	Water	8260D	
240-195686-4	MW-212S_111423	Total/NA	Water	8260D	
240-195686-5	MW-213S_111423	Total/NA	Water	8260D	
MB 240-595424/8	Method Blank	Total/NA	Water	8260D	
LCS 240-595424/5	Lab Control Sample	Total/NA	Water	8260D	
240-195686-5 MS	MW-213S-MS_111423	Total/NA	Water	8260D	
240-195686-5 MSD	MW-213S-MSD_111423	Total/NA	Water	8260D	

Analysis Batch: 595614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195686-6	MW-234_111423	Total/NA	Water	8260D	
MB 240-595614/8	Method Blank	Total/NA	Water	8260D	
LCS 240-595614/5	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 595687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195686-2	MW-53_111323	Total/NA	Water	8260D SIM	
240-195686-3	MW-62_111323	Total/NA	Water	8260D SIM	
MB 240-595687/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-595687/4	Lab Control Sample	Total/NA	Water	8260D SIM	
500-242543-C-3 MS	Matrix Spike	Total/NA	Water	8260D SIM	
500-242543-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 595844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195686-4	MW-212S_111423	Total/NA	Water	8260D SIM	
240-195686-5	MW-213S_111423	Total/NA	Water	8260D SIM	
240-195686-6	MW-234_111423	Total/NA	Water	8260D SIM	
MB 240-595844/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-595844/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-195686-5 MS	MW-213S-MS_111423	Total/NA	Water	8260D SIM	
240-195686-5 MSD	MW-213S-MSD_111423	Total/NA	Water	8260D SIM	

Lab Chronicle

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

Job ID: 240-195686-1

Client Sample ID: TRIP BLANK_139

Lab Sample ID: 240-195686-1

Date Collected: 11/13/23 00:00

Matrix: Water

Date Received: 11/17/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595424	MRL	EET CLE	11/21/23 14:04

Client Sample ID: MW-53_111323

Lab Sample ID: 240-195686-2

Date Collected: 11/13/23 11:45

Matrix: Water

Date Received: 11/17/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595424	MRL	EET CLE	11/21/23 16:09
Total/NA	Analysis	8260D SIM		1	595687	CS	EET CLE	11/25/23 09:30

Client Sample ID: MW-62_111323

Lab Sample ID: 240-195686-3

Date Collected: 11/13/23 13:25

Matrix: Water

Date Received: 11/17/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595424	MRL	EET CLE	11/21/23 16:34
Total/NA	Analysis	8260D SIM		1	595687	CS	EET CLE	11/25/23 09:54

Client Sample ID: MW-212S_111423

Lab Sample ID: 240-195686-4

Date Collected: 11/14/23 10:35

Matrix: Water

Date Received: 11/17/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595424	MRL	EET CLE	11/21/23 16:59
Total/NA	Analysis	8260D SIM		1	595844	CS	EET CLE	11/28/23 00:11

Client Sample ID: MW-213S_111423

Lab Sample ID: 240-195686-5

Date Collected: 11/14/23 14:20

Matrix: Water

Date Received: 11/17/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595424	MRL	EET CLE	11/21/23 17:24
Total/NA	Analysis	8260D SIM		1	595844	CS	EET CLE	11/28/23 00:35

Client Sample ID: MW-234_111423

Lab Sample ID: 240-195686-6

Date Collected: 11/14/23 15:45

Matrix: Water

Date Received: 11/17/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595614	MRL	EET CLE	11/22/23 17:42
Total/NA	Analysis	8260D SIM		2	595844	CS	EET CLE	11/28/23 01:47

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: 240-195686-1

Laboratory: Eurofins Cleveland

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

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

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



Chain of Custody Record

THE LEADER IN ENVIRONMENTAL TESTING

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

Regulatory program: DW NPDES RCRA Other

Client Project Manager: Kris Hinskey
 Telephone: 248-994-2240
 Email: kristoffer.hinskey@arcadis.com

Site Contact: Christina Weaver
 Telephone: 248-994-2240

Lab Contact: Mike DelMonico
 Telephone: 330-497-9396

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

Project Name: Ford LTP On-Site
 Project Number: 30167538.401.03
 PO # 30167538.401.03

Sampler Name: Samantha Szwachler
 Method of Shipment/Carrier:
 Shipping/Tracking No:

Analysis Turnaround Time
 TAT (different from below)
 10 day
 3 weeks
 2 weeks
 1 week
 2 days
 1 day

Containers & Preservatives
 H2SO4
 HNO3
 HCl
 NaOH
 ZnAc
 Upret
 Other:

Matrix
 Aqueous
 Sediment
 Solid
 Other:

Sample Date
 Sample Time
 Sample Disposal (A fee may be a. Return to Client D)

Sample Identification
 TRIP BLANK_139
 MW-53-111323
 MW-62-111323
 MW-71-111323
 MW-2125-111423
 MW-2135-111423
 MW-2135-MS-111423
 MW-2135-MSD-111423
 MW-237-111423

Filtered Sample (Y/N)
 Composite (C/Grab-G)
 1-1-DCE 8260B
 cis-1,2-DCE 8260B
 Trans-1,2-DCE 8260B
 PCE 8260B
 TCE 8260B
 Vinyl Chloride 8260B
 1,4-Dioxane 8260B SIM

Sample Specific Notes / Special Instructions:
 1 Trip Blank
 3 VOAs for 8260B
 3 VOAs for 8260B SIM
 (run ms/msd)
 (run ms/msd)
 (run ms/msd)
 (SS)
 (run ms/msd)
 (run ms/msd)

Company: Arcadis
 Date/Time: 11/13/23 11:45
 Company: Arcadis
 Date/Time: 11/13/23 13:25
 Company: Arcadis
 Date/Time: 11/14/23 10:35
 Company: Arcadis
 Date/Time: 11/14/23 14:20
 Company: Arcadis
 Date/Time: 11/14/23 14:20
 Company: Arcadis
 Date/Time: 11/14/23 15:45

Company: Arcadis
 Date/Time: 11/13/23 11:30
 Company: Arcadis
 Date/Time: 11/13/23 08:45
 Company: Arcadis
 Date/Time: 11/16/23 10:20

Company: EETA
 Date/Time: 11/16/23 10:15
 Company: EETA
 Date/Time: 11/17/23 9:40

Company: EETA
 Date/Time: 11/17/23 9:40

Company: EETA
 Date/Time: 11/17/23 9:40

Eurofins - Cleveland Sample Receipt Form/Narrative
Barberton Facility

Login #: 195686

Client Arcadis

Site Name _____

Cooler unpacked by: _____

Cooler Received on 11-17-23

Opened on 11-17-23

FedEx: 1st 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 # 31 (CF 70.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 3 Yes No

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

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

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

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

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

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

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

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

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

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No

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

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

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

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC316719

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this.

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

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

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

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

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

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

Sample(s) _____ were received in a broken container.

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

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

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

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Eurofins - Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)				IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)		
EC	Client	Box	Other	IR GUN #: 22	1.8	2.9	Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: 22	1.6	2.7	Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: 22	2.4	3.5	Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice

See Temperature Excursion Form

DATA VERIFICATION REPORT



November 29, 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: 195686-1

Sample date: 2023-11-14 2023-11-13

Report received by CADENA: 2023-11-29

Initial Data Verification completed by CADENA: 2023-11-29

Number of Samples:6

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:

MS/MSD recovery outliers or sample duplicate RPD outliers were not determined using a client sample from this submittal for the test and QC batch noted so qualification was not required based on these sample-specific QC outliers: GCMS VOC-SIM QC batch 595687.

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 Valid Qualifiers

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

Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195686-1

Analyte	Cas No.	Sample Name: TRIP BLANK_139			MW-53_111323			MW-62_111323			MW-212S_111423			MW-213S_111423			MW-234_111423								
		Report	Valid	Qualifier	Report	Valid	Qualifier	Report	Valid	Qualifier	Report	Valid	Qualifier	Report	Valid	Qualifier	Report	Valid	Qualifier						
		Result	Limit	Units	Result	Limit	Units	Result	Limit	Units	Result	Limit	Units	Result	Limit	Units	Result	Limit	Units	Result	Limit	Units	Qualifier		
GC/MS VOC																									
<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	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	2.8	1.0	ug/l	---	1.0	1.0	ug/l	---	ND	1.0	ug/l	---
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	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	0.53	1.0	ug/l	J	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	0.66	1.0	ug/l	J	1.3	1.0	ug/l	---	1.0	1.0	ug/l	---	1.1	1.0	ug/l	---	ND	1.0	ug/l	---
<u>OSW-8260DSIM</u>																									
1,4-Dioxane	123-91-1					1.0	2.0	ug/l	J	3.4	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	4.0	ug/l	---