

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Megan Meckley
Arcadis U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Generated 8/22/2024 7:48:34 AM

JOB DESCRIPTION

Ford LTP

JOB NUMBER

240-209342-1

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
8/22/2024 7:48:34 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	11
QC Sample Results	12
QC Association Summary	16
Lab Chronicle	17
Certification Summary	18
Chain of Custody	19

Definitions/Glossary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
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 U.S., Inc.
Project: Ford LTP

Job ID: 240-209342-1

Job ID: 240-209342-1

Eurofins Cleveland

Job Narrative 240-209342-1

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 and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided 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 8/13/2024 9:30 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 3.6°C and 4.2°C.

GC/MS VOA

Method 8260D: The matrix spike/matrix spike duplicate (MS/MSD) for samples MW-234_080924 (240-209342-2) was not reported, because the analyte list for these samples did not match the analyte list for the MS/MSD parent sample.

Method 8260D_SIM: The surrogate failed in the MS, effected sample are (240-209337-E-2 MS). The MS was used for batch QC only.

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

Eurofins Cleveland

Method Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

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 U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-209342-1	TRIP BLANK_72	Water	08/09/24 00:00	08/13/24 09:30
240-209342-2	MW-234_080924	Water	08/09/24 12:40	08/13/24 09:30

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

Detection Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

Client Sample ID: TRIP BLANK_72

Lab Sample ID: 240-209342-1

No Detections.

Client Sample ID: MW-234_080924

Lab Sample ID: 240-209342-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.46	J	1.0	0.45	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cleveland

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

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

Client Sample ID: TRIP BLANK_72

Lab Sample ID: 240-209342-1

Date Collected: 08/09/24 00:00

Matrix: Water

Date Received: 08/13/24 09:30

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			08/16/24 14:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/16/24 14:58	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/24 14:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/24 14:58	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/24 14:58	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/16/24 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		08/16/24 14:58	1
4-Bromofluorobenzene (Surr)	93		56 - 136		08/16/24 14:58	1
Toluene-d8 (Surr)	97		78 - 122		08/16/24 14:58	1
Dibromofluoromethane (Surr)	95		73 - 120		08/16/24 14:58	1

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

Client Sample ID: MW-234_080924

Lab Sample ID: 240-209342-2

Date Collected: 08/09/24 12:40

Matrix: Water

Date Received: 08/13/24 09:30

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			08/19/24 15:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	123		68 - 127					08/19/24 15:07	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			08/19/24 14:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/19/24 14:51	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/19/24 14:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/19/24 14:51	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/19/24 14:51	1
Vinyl chloride	0.46	J	1.0	0.45	ug/L			08/19/24 14:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		62 - 137					08/19/24 14:51	1
4-Bromofluorobenzene (Surr)	89		56 - 136					08/19/24 14:51	1
Toluene-d8 (Surr)	91		78 - 122					08/19/24 14:51	1
Dibromofluoromethane (Surr)	96		73 - 120					08/19/24 14:51	1

Surrogate Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

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)
240-209342-1	TRIP BLANK_72	101	93	97	95
240-209342-2	MW-234_080924	97	89	91	96
240-209367-C-6 MS	Matrix Spike	92	97	92	95
240-209367-C-6 MSD	Matrix Spike Duplicate	95	99	97	100
LCS 240-623588/5	Lab Control Sample	92	97	92	96
LCS 240-623771/5	Lab Control Sample	96	101	97	103
MB 240-623588/9	Method Blank	95	82	86	88
MB 240-623771/9	Method Blank	95	93	93	92

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 (68-127)
240-209337-E-2 MS	Matrix Spike	131 S1+
240-209337-E-2 MSD	Matrix Spike Duplicate	127
240-209342-2	MW-234_080924	123
LCS 240-623779/4	Lab Control Sample	107
MB 240-623779/6	Method Blank	113

Surrogate Legend

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

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

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

Lab Sample ID: MB 240-623588/9

Matrix: Water

Analysis Batch: 623588

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			08/16/24 12:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/16/24 12:24	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/24 12:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/24 12:24	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/24 12:24	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/16/24 12:24	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	95		62 - 137		08/16/24 12:24	1
4-Bromofluorobenzene (Surr)	82		56 - 136		08/16/24 12:24	1
Toluene-d8 (Surr)	86		78 - 122		08/16/24 12:24	1
Dibromofluoromethane (Surr)	88		73 - 120		08/16/24 12:24	1

Lab Sample ID: LCS 240-623588/5

Matrix: Water

Analysis Batch: 623588

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	22.5		ug/L		90	77 - 123
Tetrachloroethene	25.0	23.9		ug/L		96	76 - 123
trans-1,2-Dichloroethene	25.0	21.7		ug/L		87	75 - 124
Trichloroethene	25.0	24.1		ug/L		97	70 - 122
Vinyl chloride	12.5	12.3		ug/L		98	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	92		78 - 122
Dibromofluoromethane (Surr)	96		73 - 120

Lab Sample ID: 240-209367-C-6 MS

Matrix: Water

Analysis Batch: 623588

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
	Result	Qualifier							
1,1-Dichloroethene	5.0	U	125	95.2		ug/L		76	56 - 135
cis-1,2-Dichloroethene	5.0	U	125	107		ug/L		86	66 - 128
Tetrachloroethene	100		125	203		ug/L		80	62 - 131
trans-1,2-Dichloroethene	5.0	U	125	102		ug/L		81	56 - 136
Trichloroethene	5.0	U	125	108		ug/L		86	61 - 124
Vinyl chloride	5.0	U	62.5	57.7		ug/L		92	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	92		78 - 122

Eurofins Cleveland

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

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

Lab Sample ID: 240-209367-C-6 MS
Matrix: Water
Analysis Batch: 623588

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

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	95		73 - 120

Lab Sample ID: 240-209367-C-6 MSD
Matrix: Water
Analysis Batch: 623588

Client Sample ID: Matrix Spike Duplicate
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	5.0	U	125	91.7		ug/L		73	56 - 135	4	26
cis-1,2-Dichloroethene	5.0	U	125	105		ug/L		84	66 - 128	2	14
Tetrachloroethene	100		125	192		ug/L		71	62 - 131	5	20
trans-1,2-Dichloroethene	5.0	U	125	97.6		ug/L		78	56 - 136	4	15
Trichloroethene	5.0	U	125	101		ug/L		81	61 - 124	6	15
Vinyl chloride	5.0	U	62.5	54.7		ug/L		87	43 - 157	5	24

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	95		62 - 137
4-Bromofluorobenzene (Surr)	99		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	100		73 - 120

Lab Sample ID: MB 240-623771/9
Matrix: Water
Analysis Batch: 623771

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		08/19/24 11:10	1	
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L		08/19/24 11:10	1	
Tetrachloroethene	1.0	U	1.0	0.44	ug/L		08/19/24 11:10	1	
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L		08/19/24 11:10	1	
Trichloroethene	1.0	U	1.0	0.44	ug/L		08/19/24 11:10	1	
Vinyl chloride	1.0	U	1.0	0.45	ug/L		08/19/24 11:10	1	

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	95		62 - 137		08/19/24 11:10	1
4-Bromofluorobenzene (Surr)	93		56 - 136		08/19/24 11:10	1
Toluene-d8 (Surr)	93		78 - 122		08/19/24 11:10	1
Dibromofluoromethane (Surr)	92		73 - 120		08/19/24 11:10	1

Lab Sample ID: LCS 240-623771/5
Matrix: Water
Analysis Batch: 623771

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	21.7		ug/L		87	63 - 134
cis-1,2-Dichloroethene	25.0	23.2		ug/L		93	77 - 123
Tetrachloroethene	25.0	24.7		ug/L		99	76 - 123
trans-1,2-Dichloroethene	25.0	22.4		ug/L		90	75 - 124
Trichloroethene	25.0	24.6		ug/L		99	70 - 122

Eurofins Cleveland

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

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

Lab Sample ID: LCS 240-623771/5
Matrix: Water
Analysis Batch: 623771

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	25.0	28.4		ug/L		113	60 - 144
Surrogate							
	%Recovery	Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	96		62 - 137				
4-Bromofluorobenzene (Surr)	101		56 - 136				
Toluene-d8 (Surr)	97		78 - 122				
Dibromofluoromethane (Surr)	103		73 - 120				

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

Lab Sample ID: MB 240-623779/6
Matrix: Water
Analysis Batch: 623779

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			08/19/24 10:25	1
Surrogate									
	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		68 - 127					08/19/24 10:25	1

Lab Sample ID: LCS 240-623779/4
Matrix: Water
Analysis Batch: 623779

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	7.84		ug/L		78	75 - 121
Surrogate							
	%Recovery	Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	107		68 - 127				

Lab Sample ID: 240-209337-E-2 MS
Matrix: Water
Analysis Batch: 623779

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	8.11		ug/L		81	20 - 180
Surrogate									
	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	131	S1+	68 - 127						

Lab Sample ID: 240-209337-E-2 MSD
Matrix: Water
Analysis Batch: 623779

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	9.36		ug/L		94	20 - 180	14	20

Eurofins Cleveland

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

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

Lab Sample ID: 240-209337-E-2 MSD

Matrix: Water

Analysis Batch: 623779

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
1,2-Dichloroethane-d4 (Surr)	127		68 - 127

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

QC Association Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

GC/MS VOA

Analysis Batch: 623588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-209342-1	TRIP BLANK_72	Total/NA	Water	8260D	
MB 240-623588/9	Method Blank	Total/NA	Water	8260D	
LCS 240-623588/5	Lab Control Sample	Total/NA	Water	8260D	
240-209367-C-6 MS	Matrix Spike	Total/NA	Water	8260D	
240-209367-C-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 623771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-209342-2	MW-234_080924	Total/NA	Water	8260D	
MB 240-623771/9	Method Blank	Total/NA	Water	8260D	
LCS 240-623771/5	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 623779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-209342-2	MW-234_080924	Total/NA	Water	8260D SIM	
MB 240-623779/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-623779/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-209337-E-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-209337-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Lab Chronicle

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

Client Sample ID: TRIP BLANK_72

Lab Sample ID: 240-209342-1

Date Collected: 08/09/24 00:00

Matrix: Water

Date Received: 08/13/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	623588	MDH	EET CLE	08/16/24 14:58

Client Sample ID: MW-234_080924

Lab Sample ID: 240-209342-2

Date Collected: 08/09/24 12:40

Matrix: Water

Date Received: 08/13/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	623771	LEE	EET CLE	08/19/24 14:51
Total/NA	Analysis	8260D SIM		1	623779	MS	EET CLE	08/19/24 15:07

Laboratory References:

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



Accreditation/Certification Summary

Client: Arcadis U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209342-1

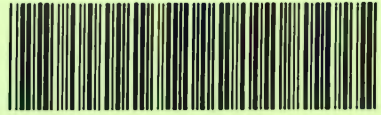
Laboratory: Eurofins Cleveland

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	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Chain of Custody Record

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

Client Contact		Regulatory program:		Analysis Turnaround Time		Analyses		For lab use only												
Company Name: Arcadis		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other		Analysis Turnaround Time		Analyses		For lab use only												
Address: 28550 Cabot Drive, Suite 500		Client Project Manager: Kris Hinskey		Site Contact: Christina Weaver		Lab Contact: Mike DelMonico		COC No:												
City/State/Zip: Novi, MI, 48377		Telephone: 248-994-2240		Telephone: 248-994-2240		Telephone: 330-497-9396		1 of 1 COCs												
Phone: 248-994-2240		Email: kristoffer.hinskey@arcadis.com		TAT if different from below: <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Filtered Sample (Y/N) Composite=C / Grab=G 1,1-DCE 8260D cis-1,2-DCE 8260D Trans-1,2-DCE 8260D PCE 8260D TCE 8260D Vinyl Chloride 8260D 1,4-Dioxane 8260D SIM		Walk-in client												
Project Name: Ford LTP		Sampler Name: <i>Garrett Link</i>						Job/SDG No:												
Project Number: 30206169.0401.03		Method of Shipment/Carrier:						Sample Specific Notes / Special Instructions:												
PO # US3410018772		Shipping/Tracking No:																		
Sample Identification	Sample Date	Sample Time	Matrix					Containers & Preservatives					Sample Specific Notes / Special Instructions:							
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc	NaOH	Unpres	Other:					
TRIP BLANK_72	---	---	1						1					NG	X	X	X	X	X	1 Trip Blank
MW-234-080924	8/9/24	12:40	6						6					N	G	X	X	X	X	3 VOAs for 8260D 3 VOAs for 8260D SIM
<div style="text-align: center;">  240-209342 Chain of Custody </div>																				
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> flammable <input type="checkbox"/> skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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>Garrett Link</i>	Company: ARCADIS	Date/Time: 8/9/24 1445	Received by: <i>Nov: cold storage</i>			Company: ARCADIS	Date/Time: 8/9/24 1445													
Relinquished by: <i>Kristoffer Hinskey</i>	Company: Arcadis	Date/Time: 8/12/24 1225	Received by: <i>James</i>			Company: EETA	Date/Time: 8/12/24 1225													
Relinquished by: <i>Kristoffer Hinskey</i>	Company: EETA	Date/Time: 8/12/24 1338	Received in Laboratory by: <i>[Signature]</i>			Company: EC	Date/Time: 8/13/24 900													

©2008 TestAmerica Laboratories, Inc. All rights reserved.
TestAmerica & Design™ are trademarks of TestAmerica Laboratories, Inc.

Eurofins - Cleveland Sample Receipt Form/Narrative Login # _____

Client Amadis Site Name _____ Cooler, unpacked by _____
 Barberton Facility

Cooler Received on 8-13-24 Opened on 8-13-24
 FedEx: 1st Grd Exp. UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____
 Receipt After-hours Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # FC 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 _____
 See Multiple Cooler Form

1 Cooler temperature upon receipt
 IR GUN # 22 (CF -0.1 °C) Observed Cooler Temp _____ °C Corrected Cooler Temp _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NO
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes NO
 -Were tamper/custody seals intact and uncompromised? Yes No NO
 3 Shippers' packing slip attached to the cooler(s)? Yes No NO
 4 Did custody papers accompany the sample(s)? Yes No NO
 5 Were the custody papers relinquished & signed in the appropriate place? Yes No NO
 6 Was/were the person(s) who collected the samples clearly identified on the COC? Yes No NO
 7 Did all bottles arrive in good condition (Unbroken)? Yes No NO
 8 Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No 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 NO
 10 Were correct bottle(s) used for the test(s) indicated? Yes No NO
 11 Sufficient quantity received to perform indicated analyses? Yes No NO
 12 Are these work share samples and all listed on the COC? Yes No NO
 13 Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC442471
 14. Were VOAs on the COC? Yes No NO
 15 Were air bubbles >6 mm in any VOA vials? Yes NO NA
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____
 17 Was a LL Hg or Me Hg trip blank present? Yes NO

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

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

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

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

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

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

Login # : _____

Cooler Description (Circle)			IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
EC Client	box	Other	IR GUN #: 22	3.7 4.3	3.6 4.2	Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client	box	Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None

See Temperature Excursion Form



Temperature readings

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> <u>pH</u>	<u>Preservation</u> <u>Temp</u>	<u>Preservation</u> <u>Added</u>	<u>Lot Number</u>
TRIP BLANK_72	240-209342-A-1	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-234_080924	240-209342-A-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-234_080924	240-209342-B-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-234_080924	240-209342-C-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-234_080924	240-209342-D-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-234_080924	240-209342-E-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-234_080924	240-209342-G-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____

DATA VERIFICATION REPORT



August 22, 2024

Megan Meckley
Arcadis
28550 Cabot Drive
Suite 500
Novi, MI US 48377

CADENA project ID: E203728

Project: Ford Livonia Transmission Plant - Soil Gas, Ground Water and Soil

Project number: 30206169.0401.04_WA-02

Event Specific Scope of Work References: Sample COC

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory submittal: 209342-1

Sample date: 2024-08-09

Report received by CADENA: 2024-08-22

Initial Data Verification completed by CADENA: 2024-08-22

Number of Samples:2

Sample Matrices:Water

Test Categories:GCMS VOC

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

The following minor QC exceptions or missing information were noted:

GCMS VOC SIM MS surrogate recovery outliers did not result in qualification of client sample data.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

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

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

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

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

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

CADENA Valid Qualifiers

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

Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 209342-1

Sample Name: TRIP BLANK_72 MW-234_080924
Lab Sample ID: 2402093421 2402093422
Sample Date: 8/9/2024 8/9/2024

Analyte	Cas No.	Report		Units	Valid Qualifier	Report		Units	Valid Qualifier
		Result	Limit			Result	Limit		
GC/MS VOC									
<u>OSW-8260D</u>									
1,1-Dichloroethene	75-35-4	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	---
Tetrachloroethene	127-18-4	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	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	0.46	1.0	ug/l	J
<u>OSW-8260DSIM</u>									
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---