

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

Ford LTP

JOB NUMBER

240-204319-1

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Job Notes

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Authorization



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Definitions/Glossary

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

Job ID: 240-204319-1

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.
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.
α	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: 240-204319-1

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Job Narrative 240-204319-1

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 5/11/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.2°C and 3.9°C.

GC/MS VOA

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

Job ID: 240-204319-1

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: 240-204319-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-204319-1	TRIP BLANK_38	Water	05/06/24 00:00	05/11/24 08:00
240-204319-2	MW-22_050624	Water	05/06/24 14:15	05/11/24 08:00

- 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: 240-204319-1

Client Sample ID: TRIP BLANK_38

Lab Sample ID: 240-204319-1

No Detections.

Client Sample ID: MW-22_050624

Lab Sample ID: 240-204319-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	55		2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	0.59	J	1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	1400		100	45	ug/L	100		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 240-204319-1

Client Sample ID: TRIP BLANK_38

Lab Sample ID: 240-204319-1

Date Collected: 05/06/24 00:00

Matrix: Water

Date Received: 05/11/24 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/16/24 18:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/24 18:01	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/24 18:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/24 18:01	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/24 18:01	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/24 18:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		62 - 137		05/16/24 18:01	1
4-Bromofluorobenzene (Surr)	93		56 - 136		05/16/24 18:01	1
Toluene-d8 (Surr)	98		78 - 122		05/16/24 18:01	1
Dibromofluoromethane (Surr)	100		73 - 120		05/16/24 18:01	1

Client Sample Results

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

Job ID: 240-204319-1

Client Sample ID: MW-22_050624

Lab Sample ID: 240-204319-2

Date Collected: 05/06/24 14:15

Matrix: Water

Date Received: 05/11/24 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	55		2.0	0.86	ug/L			05/16/24 22:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 127					05/16/24 22:03	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			05/16/24 18:24	1
cis-1,2-Dichloroethene	0.59	J	1.0	0.46	ug/L			05/16/24 18:24	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/24 18:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/24 18:24	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/24 18:24	1
Vinyl chloride	1400		100	45	ug/L			05/17/24 12:35	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		62 - 137					05/16/24 18:24	1
1,2-Dichloroethane-d4 (Surr)	102		62 - 137					05/17/24 12:35	100
4-Bromofluorobenzene (Surr)	90		56 - 136					05/16/24 18:24	1
4-Bromofluorobenzene (Surr)	92		56 - 136					05/17/24 12:35	100
Toluene-d8 (Surr)	99		78 - 122					05/16/24 18:24	1
Toluene-d8 (Surr)	94		78 - 122					05/17/24 12:35	100
Dibromofluoromethane (Surr)	102		73 - 120					05/16/24 18:24	1
Dibromofluoromethane (Surr)	98		73 - 120					05/17/24 12:35	100

Surrogate Summary

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

Job ID: 240-204319-1

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)
240-204319-1	TRIP BLANK_38	103	93	98	100
240-204319-2	MW-22_050624	104	90	99	102
240-204319-2	MW-22_050624	102	92	94	98
240-204319-2 MS	MW-22_050624	93	94	97	91
240-204319-2 MSD	MW-22_050624	95	99	99	92
240-204389-B-3 MS	Matrix Spike	94	101	99	95
240-204389-B-3 MSD	Matrix Spike Duplicate	95	100	98	95
LCS 240-613272/4	Lab Control Sample	94	98	100	97
LCS 240-613411/4	Lab Control Sample	96	99	100	94
MB 240-613272/7	Method Blank	100	94	97	97
MB 240-613411/7	Method Blank	100	93	95	97

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)
240-204316-C-2 MS	Matrix Spike	102
240-204316-C-2 MSD	Matrix Spike Duplicate	101
240-204319-2	MW-22_050624	101
LCS 240-613351/4	Lab Control Sample	98
MB 240-613351/6	Method Blank	100

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-204319-1

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

Lab Sample ID: MB 240-613272/7

Matrix: Water

Analysis Batch: 613272

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			05/16/24 11:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/24 11:52	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/24 11:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/24 11:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/24 11:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/24 11:52	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		05/16/24 11:52	1
4-Bromofluorobenzene (Surr)	94		56 - 136		05/16/24 11:52	1
Toluene-d8 (Surr)	97		78 - 122		05/16/24 11:52	1
Dibromofluoromethane (Surr)	97		73 - 120		05/16/24 11:52	1

Lab Sample ID: LCS 240-613272/4

Matrix: Water

Analysis Batch: 613272

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	23.6		ug/L		94	63 - 134
cis-1,2-Dichloroethene	25.0	24.7		ug/L		99	77 - 123
Tetrachloroethene	25.0	24.0		ug/L		96	76 - 123
trans-1,2-Dichloroethene	25.0	22.2		ug/L		89	75 - 124
Trichloroethene	25.0	23.0		ug/L		92	70 - 122
Vinyl chloride	12.5	11.5		ug/L		92	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	94		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120

Lab Sample ID: 240-204319-2 MS

Matrix: Water

Analysis Batch: 613272

Client Sample ID: MW-22_050624

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	22.2		ug/L		89	56 - 135
cis-1,2-Dichloroethene	0.59	J	25.0	24.6		ug/L		96	66 - 128
Tetrachloroethene	1.0	U	25.0	22.3		ug/L		89	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	20.9		ug/L		84	56 - 136
Trichloroethene	1.0	U	25.0	20.3		ug/L		81	61 - 124

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	94		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	91		73 - 120

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QC Sample Results

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

Job ID: 240-204319-1

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

Lab Sample ID: 240-204319-2 MSD

Client Sample ID: MW-22_050624

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 613272

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	25.0	23.3		ug/L		93	56 - 135	5	26
cis-1,2-Dichloroethene	0.59	J	25.0	24.2		ug/L		94	66 - 128	2	14
Tetrachloroethene	1.0	U	25.0	23.9		ug/L		96	62 - 131	7	20
trans-1,2-Dichloroethene	1.0	U	25.0	22.0		ug/L		88	56 - 136	5	15
Trichloroethene	1.0	U	25.0	21.3		ug/L		85	61 - 124	5	15

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		62 - 137
4-Bromofluorobenzene (Surr)	99		56 - 136
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	92		73 - 120

Lab Sample ID: MB 240-613411/7

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 613411

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/17/24 11:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/17/24 11:48	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/17/24 11:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/17/24 11:48	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/17/24 11:48	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/17/24 11:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		05/17/24 11:48	1
4-Bromofluorobenzene (Surr)	93		56 - 136		05/17/24 11:48	1
Toluene-d8 (Surr)	95		78 - 122		05/17/24 11:48	1
Dibromofluoromethane (Surr)	97		73 - 120		05/17/24 11:48	1

Lab Sample ID: LCS 240-613411/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 613411

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	25.0	23.8		ug/L		95	63 - 134
cis-1,2-Dichloroethene	25.0	24.8		ug/L		99	77 - 123
Tetrachloroethene	25.0	24.5		ug/L		98	76 - 123
trans-1,2-Dichloroethene	25.0	22.3		ug/L		89	75 - 124
Trichloroethene	25.0	22.7		ug/L		91	70 - 122
Vinyl chloride	12.5	11.7		ug/L		93	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		62 - 137
4-Bromofluorobenzene (Surr)	99		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120

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QC Sample Results

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

Job ID: 240-204319-1

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

Lab Sample ID: 240-204389-B-3 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 613411

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits	
	Result	Qualifier	Added	Result	Qualifier						
1,1-Dichloroethene	1.0	U	25.0	21.6		ug/L		86		56 - 135	
cis-1,2-Dichloroethene	1.0	U	25.0	23.1		ug/L		92		66 - 128	
Tetrachloroethene	1.0	U	25.0	21.4		ug/L		86		62 - 131	
trans-1,2-Dichloroethene	1.0	U	25.0	20.4		ug/L		82		56 - 136	
Trichloroethene	1.0	U	25.0	19.9		ug/L		80		61 - 124	
Vinyl chloride	1.0	U	12.5	11.5		ug/L		92		43 - 157	
MS MS											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	94		62 - 137								
4-Bromofluorobenzene (Surr)	101		56 - 136								
Toluene-d8 (Surr)	99		78 - 122								
Dibromofluoromethane (Surr)	95		73 - 120								

Lab Sample ID: 240-204389-B-3 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 613411

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						RPD	Limit
1,1-Dichloroethene	1.0	U	25.0	22.8		ug/L		91		56 - 135	5	26
cis-1,2-Dichloroethene	1.0	U	25.0	23.2		ug/L		93		66 - 128	1	14
Tetrachloroethene	1.0	U	25.0	23.5		ug/L		94		62 - 131	9	20
trans-1,2-Dichloroethene	1.0	U	25.0	21.1		ug/L		84		56 - 136	3	15
Trichloroethene	1.0	U	25.0	21.2		ug/L		85		61 - 124	6	15
Vinyl chloride	1.0	U	12.5	11.4		ug/L		91		43 - 157	1	24
MSD MSD												
Surrogate	%Recovery	Qualifier	Limits									
1,2-Dichloroethane-d4 (Surr)	95		62 - 137									
4-Bromofluorobenzene (Surr)	100		56 - 136									
Toluene-d8 (Surr)	98		78 - 122									
Dibromofluoromethane (Surr)	95		73 - 120									

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

Lab Sample ID: MB 240-613351/6

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 613351

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/16/24 18:56	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	100		68 - 127						
						Prepared	Analyzed	Dil Fac	
							05/16/24 18:56	1	

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QC Sample Results

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

Job ID: 240-204319-1

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

Lab Sample ID: LCS 240-613351/4

Matrix: Water

Analysis Batch: 613351

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	10.0		ug/L		100	75 - 121
Surrogate		LCS %Recovery	LCS Qualifier				Limits
1,2-Dichloroethane-d4 (Surr)		98					68 - 127

Lab Sample ID: 240-204316-C-2 MS

Matrix: Water

Analysis Batch: 613351

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	10.5		ug/L		105	20 - 180
Surrogate		MS %Recovery		MS Qualifier					Limits
1,2-Dichloroethane-d4 (Surr)		102							68 - 127

Lab Sample ID: 240-204316-C-2 MSD

Matrix: Water

Analysis Batch: 613351

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	10.2		ug/L		102	20 - 180	3	20
Surrogate		MSD %Recovery		MSD Qualifier					Limits		
1,2-Dichloroethane-d4 (Surr)		101							68 - 127		

QC Association Summary

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

Job ID: 240-204319-1

GC/MS VOA

Analysis Batch: 613272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-204319-1	TRIP BLANK_38	Total/NA	Water	8260D	
240-204319-2	MW-22_050624	Total/NA	Water	8260D	
MB 240-613272/7	Method Blank	Total/NA	Water	8260D	
LCS 240-613272/4	Lab Control Sample	Total/NA	Water	8260D	
240-204319-2 MS	MW-22_050624	Total/NA	Water	8260D	
240-204319-2 MSD	MW-22_050624	Total/NA	Water	8260D	

Analysis Batch: 613351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-204319-2	MW-22_050624	Total/NA	Water	8260D SIM	
MB 240-613351/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-613351/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-204316-C-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-204316-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 613411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-204319-2	MW-22_050624	Total/NA	Water	8260D	
MB 240-613411/7	Method Blank	Total/NA	Water	8260D	
LCS 240-613411/4	Lab Control Sample	Total/NA	Water	8260D	
240-204389-B-3 MS	Matrix Spike	Total/NA	Water	8260D	
240-204389-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-204319-1

Client Sample ID: TRIP BLANK_38

Lab Sample ID: 240-204319-1

Date Collected: 05/06/24 00:00

Matrix: Water

Date Received: 05/11/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	613272	LEE	EET CLE	05/16/24 18:01

Client Sample ID: MW-22_050624

Lab Sample ID: 240-204319-2

Date Collected: 05/06/24 14:15

Matrix: Water

Date Received: 05/11/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	613272	LEE	EET CLE	05/16/24 18:24
Total/NA	Analysis	8260D		100	613411	LEE	EET CLE	05/17/24 12:35
Total/NA	Analysis	8260D SIM		1	613351	CS	EET CLE	05/16/24 22:03

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: 240-204319-1

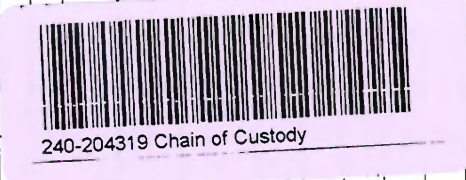
Laboratory: Eurofins Cleveland

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	07-31-24
Iowa	State	421	06-01-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
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	08-31-24
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: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other										TestAmerica Laboratories, Inc.											
Company Name: Arcadis		Client Project Manager: Kris Hinskey			Site Contact: Christina Weaver			Lab Contact: Mike DelMonico			COC No: 11/1												
Address: 28550 Cabot Drive, Suite 500		Telephone: 248-994-2240			Telephone: 248-994-2240			Telephone: 330-497-9396			1 of 1 COCs												
City/State/Zip: Novi, MI, 48377		Email: kristoffer.hinskey@arcadis.com			Analysis Turnaround Time			Analyses			For lab use only												
Phone: 248-994-2240		Sampler Name:			TAT if different from below						Walk-in client												
Project Name: Ford LTP		Method of Shipment/Carrier:			<input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 10 day <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day						Lab sampling												
Project Number: 30206169.0401.03		Shipping/Tracking No:									Job SDG No:												
PO # US3410018772																							
Sample Identification	Sample Date	Sample Time	Matrix					Containers & Preservatives					Filtered Sample (Y/N)	Composite=C / Grab=G	Sample Specific Notes / Special Instructions:								
			Air	Aqueous	Sediment	Soil	Other	H2SO4	HN03	HCl	NaOH	ZnAc				NaOH	Unpres	Other	1,1-DCE 8260D	cis-1,2-DCE 8260D	Trans-1,2-DCE 8260D	PCE 8260D	TCE 8260D
TRIP BLANK_38	---	---	1					1						NG	X	X	X	X	X	X			1 Trip Blank
MW-22_050624	5/6/24	1415	G					G						NG	X	X	X	X	X	X			3 VOAs for 8260D 3 VOAs for 8260D SIM
													MICHIGAN 190										

Possible Hazard Identification
 Non-Hazard Flammable Irritant Poison B Unknown
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements & Comments:
 Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728
 Level IV Reporting requested. ONSHE

Relinquished by: <i>Heaven Piller</i>	Company: Arcadis	Date/Time: 5/8/24 1530	Received by: <i>Natasha Storage</i>	Company: Arcadis	Date/Time: 5/8/24 1530
Relinquished by: <i>[Signature]</i>	Company: Arcadis	Date/Time: 5/9/24 0900	Received by: <i>[Signature]</i>	Company: EETA	Date/Time: 5/10/24 0900
Relinquished by: <i>[Signature]</i>	Company: EETA	Date/Time: 5/10/24 1245	Received in Laboratory by: TAMMY ROYER	Company: EETNC	Date/Time: 5-11-24 800

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Burofins Cleveland Sample Receipt Form
 Burofins Facility _____
 Burofins Counter _____
 Other _____

Client Arcadis Site Name _____
 Cooler Received on 5-11-24 Opened on 5-11-24
 Burofins Counter _____ Other _____

Redbx: 1st Grd Exp UPS BAS Waypoint Client Drop Off Burofins Counter _____ Other _____
 -Receipt-After hours-Drop-off Date/Time _____ Storage Location _____

Burofins Cooler # LC Room Box Client Cooler Box Other _____
 Packing material used. Bubble Wrap Room Plastic Bag None Other _____

COOLANT Water Blue Ice Dry Ice Water None
 1. Cooler temperature upon receipt See Multiple Cooler Room

IR GUN # 18 (CR 80 °C) Observed Cooler Temp _____ °C Corrected Cooler Temp _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity each
 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/McHg)? Yes No NA
 Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shipper's packing slip attached to the cooler(s)? Yes No NA
 4. Did custody papers accompany the sample(s)? Yes No NA

5. Were the custody papers relinquished & signed in the appropriate place? Yes No NA
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No NA

7. Did all bottles arrive in good condition (Unbroken)? Yes No NA
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No NA

9. For each sample, does the COC specify preservative(s) (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No NA
 10. Were correct bottle(s) used for the test(s) indicated? Yes No NA

11. Sufficient quantity received to perform indicated analyses? Yes No NA
 12. Are these work share samples and all listed on the COC? Yes No NA

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
 14. Were VOAs on the COC? Yes No NA

15. Were air bubbles >6 mm in any VOA vials? Yes Larger than 6mm
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 2098
 17. Was a LL Hg or Mc Hg trip blank present? Yes No

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

Concerning _____

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

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

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

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



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>Preservation</u> <u>Lot Number</u>
TRIP BLANK_38	240-204319-A-1	Voa Vial 40ml - Hydrochloric Acid				
MW-22_050624	240-204319-A-2	Voa Vial 40ml Hydrochloric Acid				
MW-22_050624	240-204319-B-2	Voa Vial 40ml - Hydrochloric Acid				
MW-22_050624	240-204319-C-2	Voa Vial 40ml - Hydrochloric Acid				
MW-22_050624	240-204319-D-2	Voa Vial 40ml - Hydrochloric Acid				
MW-22_050624	240-204319-E-2	Voa Vial 40ml - Hydrochloric Acid				
MW-22_050624	240-204319-F-2	Voa Vial 40ml Hydrochloric Acid				

DATA VERIFICATION REPORT



May 21, 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: 30206169.401.03
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 204319-1
Sample date: 2024-05-06
Report received by CADENA: 2024-05-20
Initial Data Verification completed by CADENA: 2024-05-20
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.

There were no significant QC anomalies or exceptions to report.

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: 204319-1

Sample Name:	TRIP BLANK_38	MW-22_050624
Lab Sample ID:	2402043191	2402043192
Sample Date:	5/6/2024	5/6/2024

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	---	0.59	1.0	ug/l	J	
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	---	1400	100	ug/l	---	
<u>OSW-8260DSIM</u>										
1,4-Dioxane	123-91-1					55	2.0	ug/l	---	