

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

Ford LTP

JOB NUMBER

240-205154-1

Eurofins Cleveland

Job Notes

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Authorization



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Definitions/Glossary

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

Job ID: 240-205154-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
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: 240-205154-1

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Job Narrative 240-205154-1

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 5/24/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C.

GC/MS VOA

Method 8260D_SIM: The following sample(s) was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The samples were analyzed outside the 7-day holding time specified for unpreserved samples but within the 14-day holding time specified for preserved samples: (240-205154-A-3 MS) and (240-205154-A-3 MSD).

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: 240-205154-1

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

Protocol References:

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

Laboratory References:

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

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- 10
- 11
- 12
- 13
- 14

Sample Summary

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

Job ID: 240-205154-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-205154-1	TRIP BLANK_76	Water	05/20/24 00:00	05/24/24 08:00
240-205154-2	MW-50_052024	Water	05/20/24 13:45	05/24/24 08:00
240-205154-3	MW-25_052224	Water	05/22/24 12:50	05/24/24 08:00
240-205154-4	MW-224S_052224	Water	05/22/24 13:50	05/24/24 08:00
240-205154-5	MW-44_052224	Water	05/22/24 14:55	05/24/24 08:00

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

Detection Summary

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

Job ID: 240-205154-1

Client Sample ID: TRIP BLANK_76

Lab Sample ID: 240-205154-1

No Detections.

Client Sample ID: MW-50_052024

Lab Sample ID: 240-205154-2

No Detections.

Client Sample ID: MW-25_052224

Lab Sample ID: 240-205154-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	2.8		2.0	0.86	ug/L	1			8260D SIM	Total/NA

Client Sample ID: MW-224S_052224

Lab Sample ID: 240-205154-4

No Detections.

Client Sample ID: MW-44_052224

Lab Sample ID: 240-205154-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	3.5		2.0	0.86	ug/L	1			8260D SIM	Total/NA
Vinyl chloride	57		1.0	0.45	ug/L	1			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: 240-205154-1

Client Sample ID: TRIP BLANK_76

Lab Sample ID: 240-205154-1

Date Collected: 05/20/24 00:00

Matrix: Water

Date Received: 05/24/24 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			05/31/24 10:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/31/24 10:51	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 10:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/31/24 10:51	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 10:51	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/31/24 10:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		62 - 137		05/31/24 10:51	1
4-Bromofluorobenzene (Surr)	94		56 - 136		05/31/24 10:51	1
Toluene-d8 (Surr)	99		78 - 122		05/31/24 10:51	1
Dibromofluoromethane (Surr)	104		73 - 120		05/31/24 10:51	1

Client Sample Results

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

Job ID: 240-205154-1

Client Sample ID: MW-50_052024

Lab Sample ID: 240-205154-2

Date Collected: 05/20/24 13:45

Matrix: Water

Date Received: 05/24/24 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	2.0	U	2.0	0.86	ug/L			06/03/24 04:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		68 - 127					06/03/24 04:06	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			05/31/24 13:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/31/24 13:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 13:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/31/24 13:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 13:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/31/24 13:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		62 - 137					05/31/24 13:22	1
4-Bromofluorobenzene (Surr)	92		56 - 136					05/31/24 13:22	1
Toluene-d8 (Surr)	101		78 - 122					05/31/24 13:22	1
Dibromofluoromethane (Surr)	104		73 - 120					05/31/24 13:22	1

Client Sample Results

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

Job ID: 240-205154-1

Client Sample ID: MW-25_052224

Lab Sample ID: 240-205154-3

Date Collected: 05/22/24 12:50

Matrix: Water

Date Received: 05/24/24 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	2.8		2.0	0.86	ug/L			06/03/24 07:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		68 - 127					06/03/24 07:14	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			05/31/24 13:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/31/24 13:46	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 13:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/31/24 13:46	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 13:46	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/31/24 13:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		62 - 137					05/31/24 13:46	1
4-Bromofluorobenzene (Surr)	92		56 - 136					05/31/24 13:46	1
Toluene-d8 (Surr)	100		78 - 122					05/31/24 13:46	1
Dibromofluoromethane (Surr)	106		73 - 120					05/31/24 13:46	1

Client Sample Results

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

Job ID: 240-205154-1

Client Sample ID: MW-224S_052224

Lab Sample ID: 240-205154-4

Date Collected: 05/22/24 13:50

Matrix: Water

Date Received: 05/24/24 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	2.0	U	2.0	0.86	ug/L			06/03/24 04:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		68 - 127					06/03/24 04:30	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			05/31/24 14:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/31/24 14:11	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 14:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/31/24 14:11	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 14:11	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/31/24 14:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		62 - 137					05/31/24 14:11	1
4-Bromofluorobenzene (Surr)	93		56 - 136					05/31/24 14:11	1
Toluene-d8 (Surr)	100		78 - 122					05/31/24 14:11	1
Dibromofluoromethane (Surr)	106		73 - 120					05/31/24 14:11	1

Client Sample Results

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

Job ID: 240-205154-1

Client Sample ID: MW-44_052224

Lab Sample ID: 240-205154-5

Date Collected: 05/22/24 14:55

Matrix: Water

Date Received: 05/24/24 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	3.5		2.0	0.86	ug/L			06/03/24 04:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		68 - 127					06/03/24 04:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/31/24 14:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/31/24 14:36	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 14:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/31/24 14:36	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 14:36	1
Vinyl chloride	57		1.0	0.45	ug/L			05/31/24 14:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		62 - 137					05/31/24 14:36	1
4-Bromofluorobenzene (Surr)	90		56 - 136					05/31/24 14:36	1
Toluene-d8 (Surr)	100		78 - 122					05/31/24 14:36	1
Dibromofluoromethane (Surr)	105		73 - 120					05/31/24 14:36	1

Surrogate Summary

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

Job ID: 240-205154-1

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)
240-205106-C-5 MS	Matrix Spike	107	110	103	102
240-205106-C-5 MSD	Matrix Spike Duplicate	107	110	103	102
240-205154-1	TRIP BLANK_76	115	94	99	104
240-205154-2	MW-50_052024	118	92	101	104
240-205154-3	MW-25_052224	119	92	100	106
240-205154-4	MW-224S_052224	119	93	100	106
240-205154-5	MW-44_052224	118	90	100	105
LCS 240-614997/4	Lab Control Sample	106	109	103	102
MB 240-614997/6	Method Blank	116	96	99	103

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)
240-205154-2	MW-50_052024	104
240-205154-3	MW-25_052224	106
240-205154-3 MS	MW-25_052224	101
240-205154-3 MSD	MW-25_052224	102
240-205154-4	MW-224S_052224	106
240-205154-5	MW-44_052224	104
LCS 240-615140/4	Lab Control Sample	103
MB 240-615140/6	Method Blank	101

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-205154-1

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

Lab Sample ID: MB 240-614997/6

Matrix: Water

Analysis Batch: 614997

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			05/31/24 10:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/31/24 10:26	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 10:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/31/24 10:26	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/31/24 10:26	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/31/24 10:26	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	116		62 - 137		05/31/24 10:26	1
4-Bromofluorobenzene (Surr)	96		56 - 136		05/31/24 10:26	1
Toluene-d8 (Surr)	99		78 - 122		05/31/24 10:26	1
Dibromofluoromethane (Surr)	103		73 - 120		05/31/24 10:26	1

Lab Sample ID: LCS 240-614997/4

Matrix: Water

Analysis Batch: 614997

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	26.9		ug/L		108	63 - 134
cis-1,2-Dichloroethene	25.0	25.3		ug/L		101	77 - 123
Tetrachloroethene	25.0	25.5		ug/L		102	76 - 123
trans-1,2-Dichloroethene	25.0	25.5		ug/L		102	75 - 124
Trichloroethene	25.0	24.8		ug/L		99	70 - 122
Vinyl chloride	12.5	9.60		ug/L		77	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	106		62 - 137
4-Bromofluorobenzene (Surr)	109		56 - 136
Toluene-d8 (Surr)	103		78 - 122
Dibromofluoromethane (Surr)	102		73 - 120

Lab Sample ID: 240-205106-C-5 MS

Matrix: Water

Analysis Batch: 614997

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Vinyl chloride	1.0	U	12.5	9.36		ug/L		75	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	107		62 - 137
4-Bromofluorobenzene (Surr)	110		56 - 136
Toluene-d8 (Surr)	103		78 - 122
Dibromofluoromethane (Surr)	102		73 - 120

QC Sample Results

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

Job ID: 240-205154-1

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

Lab Sample ID: 240-205106-C-5 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 614997

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl chloride	1.0	U	12.5	9.76		ug/L		78	43 - 157	4	24
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	107		62 - 137								
4-Bromofluorobenzene (Surr)	110		56 - 136								
Toluene-d8 (Surr)	103		78 - 122								
Dibromofluoromethane (Surr)	102		73 - 120								

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

Lab Sample ID: MB 240-615140/6

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 615140

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			06/02/24 23:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 127					06/02/24 23:25	1

Lab Sample ID: LCS 240-615140/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 615140

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	10.0	9.65		ug/L		97	75 - 121
Surrogate	%Recovery	Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	103		68 - 127				

Lab Sample ID: 240-205154-3 MS

Client Sample ID: MW-25_052224

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 615140

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	2.8		10.0	13.0		ug/L		103	20 - 180
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	101		68 - 127						

Lab Sample ID: 240-205154-3 MSD

Client Sample ID: MW-25_052224

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 615140

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	2.8		10.0	12.2		ug/L		95	20 - 180	6	20

Eurofins Cleveland

QC Sample Results

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

Job ID: 240-205154-1

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

Lab Sample ID: 240-205154-3 MSD

Matrix: Water

Analysis Batch: 615140

Client Sample ID: MW-25_052224

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)	102		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: 240-205154-1

GC/MS VOA

Analysis Batch: 614997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-205154-1	TRIP BLANK_76	Total/NA	Water	8260D	
240-205154-2	MW-50_052024	Total/NA	Water	8260D	
240-205154-3	MW-25_052224	Total/NA	Water	8260D	
240-205154-4	MW-224S_052224	Total/NA	Water	8260D	
240-205154-5	MW-44_052224	Total/NA	Water	8260D	
MB 240-614997/6	Method Blank	Total/NA	Water	8260D	
LCS 240-614997/4	Lab Control Sample	Total/NA	Water	8260D	
240-205106-C-5 MS	Matrix Spike	Total/NA	Water	8260D	
240-205106-C-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 615140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-205154-2	MW-50_052024	Total/NA	Water	8260D SIM	
240-205154-3	MW-25_052224	Total/NA	Water	8260D SIM	
240-205154-4	MW-224S_052224	Total/NA	Water	8260D SIM	
240-205154-5	MW-44_052224	Total/NA	Water	8260D SIM	
MB 240-615140/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-615140/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-205154-3 MS	MW-25_052224	Total/NA	Water	8260D SIM	
240-205154-3 MSD	MW-25_052224	Total/NA	Water	8260D SIM	

Lab Chronicle

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

Job ID: 240-205154-1

Client Sample ID: TRIP BLANK_76

Lab Sample ID: 240-205154-1

Date Collected: 05/20/24 00:00

Matrix: Water

Date Received: 05/24/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	614997	TJL2	EET CLE	05/31/24 10:51

Client Sample ID: MW-50_052024

Lab Sample ID: 240-205154-2

Date Collected: 05/20/24 13:45

Matrix: Water

Date Received: 05/24/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	614997	TJL2	EET CLE	05/31/24 13:22
Total/NA	Analysis	8260D SIM		1	615140	MDH	EET CLE	06/03/24 04:06

Client Sample ID: MW-25_052224

Lab Sample ID: 240-205154-3

Date Collected: 05/22/24 12:50

Matrix: Water

Date Received: 05/24/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	614997	TJL2	EET CLE	05/31/24 13:46
Total/NA	Analysis	8260D SIM		1	615140	MDH	EET CLE	06/03/24 07:14

Client Sample ID: MW-224S_052224

Lab Sample ID: 240-205154-4

Date Collected: 05/22/24 13:50

Matrix: Water

Date Received: 05/24/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	614997	TJL2	EET CLE	05/31/24 14:11
Total/NA	Analysis	8260D SIM		1	615140	MDH	EET CLE	06/03/24 04:30

Client Sample ID: MW-44_052224

Lab Sample ID: 240-205154-5

Date Collected: 05/22/24 14:55

Matrix: Water

Date Received: 05/24/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	614997	TJL2	EET CLE	05/31/24 14:36
Total/NA	Analysis	8260D SIM		1	615140	MDH	EET CLE	06/03/24 04:53

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: 240-205154-1

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 (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	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:											
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: <i>Alicia Pitterg</i>					TAT if different from below										Walk-in client											
Project Name: Ford LTP		Method of Shipment/Carrier:					10 day										Lab sampling											
Project Number: 30206169.0401.03		Shipping/Tracking No:					<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										Job/SDG No:											
PO # US3410018772		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:	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					
TRIP BLANK_76		---	---	1					1						NG	X	X	X	X	X	X			1 Trip Blank				
MW-50_052024		5/20/24	1345	6					6						NG	X	X	X	X	X	X			3 VOAs for 8260D 3 VOAs for 8260D SIM				
MW-25_052224		5/22/24	1250	6					6						NG	X	X	X	X	X	X							
MW-2245_052224		5/22/24	1350	6					6						NG	X	X	X	X	X	X							
MW-44 ⁵ _052224		5/22/24	1455	6					6						NG	X	X	X	X	X	X							
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 <input type="checkbox"/> Months																										
Special Instructions/QC Requirements & Comments:																												
Submit all results through Cadena at jtomalia@cadenaco.com . Cadena #E203728 Level IV Reporting requested. <i>Onsite</i>																												
Relinquished by: <i>Alicia Pitterg</i>				Company: <i>Arcadis</i>				Date/Time: <i>5/20/24 1540</i>				Received by: <i>Novi Cool Storage</i>				Company: <i>Arcadis</i>				Date/Time: <i>5/22/24 1540</i>								
Relinquished by: <i>Sam</i>				Company: <i>Arcadis</i>				Date/Time: <i>5/23/24 1620</i>				Received by: <i>WJ</i>				Company: <i>EETA</i>				Date/Time: <i>5/23/24</i>								
Relinquished by: <i>WJ</i>				Company: <i>EETA</i>				Date/Time: <i>5/23/24 1620</i>				Received in Laboratory by: TAMMY ROYER				Company: <i>EETNC</i>				Date/Time: <i>5-24-24 800</i>								



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Eurofins Cleveland Sample Receipt Form/Narrative
 Barberight Facility

Login #

205154

Cooler processed by
TAMMY ROYER

Client Accadis Site Name _____

Cooler Received on 5-24-24 Opened on 5-24-24

FedEx: 1st Grd Exp DPS FAS Wayport Client Drop Off Eurofins Courier Other _____

Receipt After-hours Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # LC Foam Box Client Cooler Box Other _____

Packing material used ~~Bubble Wrap~~ Foam Plastic Bag None Other _____

COOLANT: ~~Water~~ Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # 18 (CF 0.0 °C) Observed Cooler Temp 1.8 °C Corrected Cooler Temp 1.8 °C

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

-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 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 preservation (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 No NA

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

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

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 _____ Preservation(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>Added</u>	<u>Preservation</u> <u>Lot Number</u>
TRIP BLANK_76	240-205154-A-1	Voa Vial 40ml - Hydrochloric Acid				
MW-50_052024	240-205154-A-2	Voa Vial 40ml - Hydrochloric Acid				
MW-50_052024	240-205154-B-2	Voa Vial 40ml - Hydrochloric Acid				
MW-50_052024	240-205154-C-2	Voa Vial 40ml - Hydrochloric Acid				
MW-50_052024	240-205154 D-2	Voa Vial 40ml - Hydrochloric Acid				
MW-50_052024	240-205154-E-2	Voa Vial 40ml - Hydrochloric Acid				
MW-50_052024	240-205154-F-2	Voa Vial 40ml - Hydrochloric Acid				
MW-25_052024	240-205154-A-3	Voa Vial 40ml - Hydrochloric Acid				
MW-25_052024	240-205154-B-3	Voa Vial 40ml - Hydrochloric Acid				
MW-25_052024	240-205154-C-3	Voa Vial 40ml - Hydrochloric Acid				
MW-25_052024	240-205154-D-3	Voa Vial 40ml - Hydrochloric Acid				
MW-25_052024	240-205154-E-3	Voa Vial 40ml - Hydrochloric Acid				
MW-25_052024	240-205154-F-3	Voa Vial 40ml - Hydrochloric Acid				
MW-224S_052024	240-205154-A-4	Voa Vial 40ml - Hydrochloric Acid				
MW-224S_052024	240-205154-B-4	Voa Vial 40ml - Hydrochloric Acid				
MW-224S_052024	240-205154-C-4	Voa Vial 40ml - Hydrochloric Acid				
MW-224S_052024	240-205154-D-4	Voa Vial 40ml - Hydrochloric Acid				
MW-224S_052024	240-205154-E-4	Voa Vial 40ml - Hydrochloric Acid				
MW-224S_052024	240-205154-F-4	Voa Vial 40ml - Hydrochloric Acid				
MW-44_052024	240-205154-A-5	Voa Vial 40ml - Hydrochloric Acid				
MW-44_052024	240-205154-B-5	Voa Vial 40ml - Hydrochloric Acid				
MW-44_052024	240-205154-C-5	Voa Vial 40ml - Hydrochloric Acid				
MW-44_052024	240-205154-D-5	Voa Vial 40ml - Hydrochloric Acid				
MW-44_052024	240-205154-E-5	Voa Vial 40ml - Hydrochloric Acid				
MW-44_052024	240-205154-F-5	Voa Vial 40ml - Hydrochloric Acid				

DATA VERIFICATION REPORT



June 05, 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: 205154-1
Sample date: 2024-05-22 2024-05-20
Report received by CADENA: 2024-06-05
Initial Data Verification completed by CADENA: 2024-06-05
Number of Samples:5
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 sample -003MS/MSD preservation issues did not result in qualification of client sample data.

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.

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: 205154-1

Sample Name: TRIP BLANK_76	MW-50_052024	MW-25_052224	MW-224S_052224	MW-44_052224
Lab Sample ID: 2402051541	2402051542	2402051543	2402051544	2402051545
Sample Date: 5/20/2024	5/20/2024	5/22/2024	5/22/2024	5/22/2024

Analyte	Cas No.	Report				Valid				Report				Valid				Report				Valid			
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MSVOC																									
<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	---	ND	1.0	ug/l	---	ND	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	---	ND	1.0	ug/l	---	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	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	57	1.0	ug/l	---	57	1.0	ug/l	---
<u>OSW-8260DSIM</u>																									
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	2.8	2.0	ug/l	---	ND	2.0	ug/l	---	3.5	2.0	ug/l	---	3.5	2.0	ug/l	---