

ANALYTICAL REPORT

PREPARED FOR

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

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JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-190228-1

Eurofins Cleveland

Job Notes

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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



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Authorized for release by
Ann Maddux, Project Management Assistant I
ann.maddux@et.eurofinsus.com
Designee for
Michael DeIMonico, Project Manager I
Michael.DeIMonico@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	13
QC Sample Results	14
QC Association Summary	17
Lab Chronicle	18
Certification Summary	19
Chain of Custody	20

Definitions/Glossary

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

Job ID: 240-190228-1

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 US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-190228-1

Job ID: 240-190228-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative
240-190228-1

Receipt

The samples were received on 8/16/2023 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 0.3°C

GC/MS VOA

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

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

Method Summary

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

Job ID: 240-190228-1

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 US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-190228-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-190228-1	TRIP BLANK_62	Water	08/15/23 00:00	08/16/23 08:00
240-190228-2	MW-40_081523	Water	08/15/23 09:15	08/16/23 08:00
240-190228-3	MW-41_081523	Water	08/15/23 10:15	08/16/23 08:00
240-190228-4	MW-35_081523	Water	08/15/23 11:15	08/16/23 08:00

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Detection Summary

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

Job ID: 240-190228-1

Client Sample ID: TRIP BLANK_62

Lab Sample ID: 240-190228-1

No Detections.

Client Sample ID: MW-40_081523

Lab Sample ID: 240-190228-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.1		1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	0.97	J	1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-41_081523

Lab Sample ID: 240-190228-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	11		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	0.66	J	1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-35_081523

Lab Sample ID: 240-190228-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.4		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	1.6		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 US Inc
 Project/Site: Ford LTP - On Site

Job ID: 240-190228-1

Client Sample ID: TRIP BLANK_62

Lab Sample ID: 240-190228-1

Date Collected: 08/15/23 00:00

Matrix: Water

Date Received: 08/16/23 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			08/22/23 18:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/22/23 18:15	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/22/23 18:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/22/23 18:15	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/22/23 18:15	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/22/23 18:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		62 - 137		08/22/23 18:15	1
4-Bromofluorobenzene (Surr)	89		56 - 136		08/22/23 18:15	1
Toluene-d8 (Surr)	101		78 - 122		08/22/23 18:15	1
Dibromofluoromethane (Surr)	104		73 - 120		08/22/23 18:15	1

Client Sample Results

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

Job ID: 240-190228-1

Client Sample ID: MW-40_081523

Lab Sample ID: 240-190228-2

Date Collected: 08/15/23 09:15

Matrix: Water

Date Received: 08/16/23 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			08/23/23 14:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		66 - 120					08/23/23 14:17	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			08/22/23 22:26	1
cis-1,2-Dichloroethene	2.1		1.0	0.46	ug/L			08/22/23 22:26	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/22/23 22:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/22/23 22:26	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/22/23 22:26	1
Vinyl chloride	0.97	J	1.0	0.45	ug/L			08/22/23 22:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		62 - 137					08/22/23 22:26	1
4-Bromofluorobenzene (Surr)	82		56 - 136					08/22/23 22:26	1
Toluene-d8 (Surr)	104		78 - 122					08/22/23 22:26	1
Dibromofluoromethane (Surr)	103		73 - 120					08/22/23 22:26	1

Client Sample Results

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

Job ID: 240-190228-1

Client Sample ID: MW-41_081523

Lab Sample ID: 240-190228-3

Date Collected: 08/15/23 10:15

Matrix: Water

Date Received: 08/16/23 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	11		2.0	0.86	ug/L			08/23/23 14:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 120					08/23/23 14:41	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			08/22/23 22:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/22/23 22:51	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/22/23 22:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/22/23 22:51	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/22/23 22:51	1
Vinyl chloride	0.66	J	1.0	0.45	ug/L			08/22/23 22:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		62 - 137					08/22/23 22:51	1
4-Bromofluorobenzene (Surr)	84		56 - 136					08/22/23 22:51	1
Toluene-d8 (Surr)	104		78 - 122					08/22/23 22:51	1
Dibromofluoromethane (Surr)	105		73 - 120					08/22/23 22:51	1

Client Sample Results

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

Job ID: 240-190228-1

Client Sample ID: MW-35_081523

Lab Sample ID: 240-190228-4

Date Collected: 08/15/23 11:15

Matrix: Water

Date Received: 08/16/23 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	3.4		2.0	0.86	ug/L			08/23/23 15:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		66 - 120					08/23/23 15:05	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			08/22/23 23:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/22/23 23:16	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/22/23 23:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/22/23 23:16	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/22/23 23:16	1
Vinyl chloride	1.6		1.0	0.45	ug/L			08/22/23 23:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		62 - 137					08/22/23 23:16	1
4-Bromofluorobenzene (Surr)	85		56 - 136					08/22/23 23:16	1
Toluene-d8 (Surr)	101		78 - 122					08/22/23 23:16	1
Dibromofluoromethane (Surr)	102		73 - 120					08/22/23 23:16	1

Surrogate Summary

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

Job ID: 240-190228-1

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)
240-190226-E-2 MS	Matrix Spike	106	98	108	103
240-190226-H-2 MSD	Matrix Spike Duplicate	104	100	107	104
240-190228-1	TRIP BLANK_62	113	89	101	104
240-190228-2	MW-40_081523	113	82	104	103
240-190228-3	MW-41_081523	113	84	104	105
240-190228-4	MW-35_081523	112	85	101	102
LCS 240-584780/4	Lab Control Sample	105	99	106	105
MB 240-584780/7	Method Blank	110	89	103	102

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 (66-120)
240-190171-F-5 MS	Matrix Spike	115
240-190171-F-5 MSD	Matrix Spike Duplicate	102
240-190228-2	MW-40_081523	106
240-190228-3	MW-41_081523	108
240-190228-4	MW-35_081523	100
LCS 240-584837/5	Lab Control Sample	102
MB 240-584837/7	Method Blank	103

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-190228-1

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

Lab Sample ID: MB 240-584780/7
Matrix: Water
Analysis Batch: 584780

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			08/22/23 17:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/22/23 17:25	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/22/23 17:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/22/23 17:25	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/22/23 17:25	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/22/23 17:25	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	110		62 - 137		08/22/23 17:25	1
4-Bromofluorobenzene (Surr)	89		56 - 136		08/22/23 17:25	1
Toluene-d8 (Surr)	103		78 - 122		08/22/23 17:25	1
Dibromofluoromethane (Surr)	102		73 - 120		08/22/23 17:25	1

Lab Sample ID: LCS 240-584780/4
Matrix: Water
Analysis Batch: 584780

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	25.7		ug/L		103	63 - 134
cis-1,2-Dichloroethene	25.0	23.2		ug/L		93	77 - 123
Tetrachloroethene	25.0	24.8		ug/L		99	76 - 123
trans-1,2-Dichloroethene	25.0	24.0		ug/L		96	75 - 124
Trichloroethene	25.0	23.3		ug/L		93	70 - 122
Vinyl chloride	12.5	10.6		ug/L		85	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	105		62 - 137
4-Bromofluorobenzene (Surr)	99		56 - 136
Toluene-d8 (Surr)	106		78 - 122
Dibromofluoromethane (Surr)	105		73 - 120

Lab Sample ID: 240-190226-E-2 MS
Matrix: Water
Analysis Batch: 584780

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				
1,1-Dichloroethene	1.0	U	25.0	25.8		ug/L		103	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	22.7		ug/L		91	66 - 128
Tetrachloroethene	1.0	U	25.0	24.1		ug/L		97	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	23.5		ug/L		94	56 - 136
Trichloroethene	1.0	U	25.0	22.1		ug/L		88	61 - 124
Vinyl chloride	1.0	U	12.5	11.2		ug/L		89	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	106		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	108		78 - 122

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QC Sample Results

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

Job ID: 240-190228-1

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

Lab Sample ID: 240-190226-E-2 MS
Matrix: Water
Analysis Batch: 584780

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	103		73 - 120

Lab Sample ID: 240-190226-H-2 MSD
Matrix: Water
Analysis Batch: 584780

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
1,1-Dichloroethene	1.0	U	25.0	25.8		ug/L		103	56 - 135	0	26
cis-1,2-Dichloroethene	1.0	U	25.0	22.8		ug/L		91	66 - 128	0	14
Tetrachloroethene	1.0	U	25.0	23.9		ug/L		96	62 - 131	1	20
trans-1,2-Dichloroethene	1.0	U	25.0	23.6		ug/L		94	56 - 136	1	15
Trichloroethene	1.0	U	25.0	22.6		ug/L		90	61 - 124	2	15
Vinyl chloride	1.0	U	12.5	10.5		ug/L		84	43 - 157	6	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	107		78 - 122
Dibromofluoromethane (Surr)	104		73 - 120

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

Lab Sample ID: MB 240-584837/7
Matrix: Water
Analysis Batch: 584837

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			08/23/23 10:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		66 - 120		08/23/23 10:43	1

Lab Sample ID: LCS 240-584837/5
Matrix: Water
Analysis Batch: 584837

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	9.93		ug/L		99	80 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 120

Lab Sample ID: 240-190171-F-5 MS
Matrix: Water
Analysis Batch: 584837

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	10.7		ug/L		107	51 - 153

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QC Sample Results

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

Job ID: 240-190228-1

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	115		66 - 120

Lab Sample ID: 240-190171-F-5 MSD
 Matrix: Water
 Analysis Batch: 584837

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	11.5		ug/L		115	51 - 153	8	16

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	102		66 - 120

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- 2
- 3
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- 7
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- 9
- 10
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- 12
- 13
- 14

QC Association Summary

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

Job ID: 240-190228-1

GC/MS VOA

Analysis Batch: 584780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-190228-1	TRIP BLANK_62	Total/NA	Water	8260D	
240-190228-2	MW-40_081523	Total/NA	Water	8260D	
240-190228-3	MW-41_081523	Total/NA	Water	8260D	
240-190228-4	MW-35_081523	Total/NA	Water	8260D	
MB 240-584780/7	Method Blank	Total/NA	Water	8260D	
LCS 240-584780/4	Lab Control Sample	Total/NA	Water	8260D	
240-190226-E-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-190226-H-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 584837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-190228-2	MW-40_081523	Total/NA	Water	8260D SIM	
240-190228-3	MW-41_081523	Total/NA	Water	8260D SIM	
240-190228-4	MW-35_081523	Total/NA	Water	8260D SIM	
MB 240-584837/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-584837/5	Lab Control Sample	Total/NA	Water	8260D SIM	
240-190171-F-5 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-190171-F-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Lab Chronicle

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

Job ID: 240-190228-1

Client Sample ID: TRIP BLANK_62

Lab Sample ID: 240-190228-1

Date Collected: 08/15/23 00:00

Matrix: Water

Date Received: 08/16/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	584780	CDG	EET CLE	08/22/23 18:15

Client Sample ID: MW-40_081523

Lab Sample ID: 240-190228-2

Date Collected: 08/15/23 09:15

Matrix: Water

Date Received: 08/16/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	584780	CDG	EET CLE	08/22/23 22:26
Total/NA	Analysis	8260D SIM		1	584837	MRL	EET CLE	08/23/23 14:17

Client Sample ID: MW-41_081523

Lab Sample ID: 240-190228-3

Date Collected: 08/15/23 10:15

Matrix: Water

Date Received: 08/16/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	584780	CDG	EET CLE	08/22/23 22:51
Total/NA	Analysis	8260D SIM		1	584837	MRL	EET CLE	08/23/23 14:41

Client Sample ID: MW-35_081523

Lab Sample ID: 240-190228-4

Date Collected: 08/15/23 11:15

Matrix: Water

Date Received: 08/16/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	584780	CDG	EET CLE	08/22/23 23:16
Total/NA	Analysis	8260D SIM		1	584837	MRL	EET CLE	08/23/23 15:05

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 240-190228-1

Laboratory: Eurofins Cleveland

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

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

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

0.4/0.3

Chain of Custody Record

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

Regulatory program: DW NPDES RCRA Other

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

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

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

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

COC No: 1 of 1 COCs

Sampler Name: **JOE FOJTIK**

Method of Shipment/Carrier:

Shipping/Tracking No:

Analyses Turnaround Time:
 TAT in different from below:
 3 weeks
 2 weeks
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives				Filtered Sample (Y/N)	Composite C/Grab	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	Sample Specific Notes / Special Instructions:
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl										
TRIP BLANK_ 62	----	----	1																	1 Trip Blank
MW-40-081523	8-15-23	0915	6																	3 VOAs for 8260D 3 VOAs for 8260D SIM
MW-41-081523	8-15-23	1015	6																	"
MW-35-081523	8-15-23	1115	6																	"



Possible Hazard Identification: Non-Hazard Flammable Irritant Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month):
 Return to Client Disposal By Lab Archive For 1 Month

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

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
JOE FOJTIK	Arcadis	8-15-23 / 1300	NOVI COLD STORAGE	Arcadis	8-15-23 / 1300
<i>[Signature]</i>	Arcadis	8/15/23 1540	Jody Mr	PERA	8/15/23
<i>[Signature]</i>	PERA	8/15/23	<i>[Signature]</i>	PERA	8-16-23 800

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Client Arcaadis Site Name _____ Cooler unpacked by: Nancy Peyer
Cooler Received on 8-16-23 Opened on 8-16-23
FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

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

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # 22 (CF -0.1 °C) Observed Cooler Temp. 0.4 °C Corrected Cooler Temp. 0.3 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
 - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 - Were tamper/custody seals intact and uncompromised? Yes No NA
 3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
 10. Were correct bottle(s) used for the test(s) indicated? Yes No
 11. Sufficient quantity received to perform indicated analyses? Yes No
 12. Are these work share samples and all listed on the COC? Yes No
- If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC312502
 14. Were VOAs on the COC? Yes No
 15. Were air bubbles >6 mm in any VOA vials? Yes No NA
● ← Larger than this.
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Covered Yes No
 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: _____

DATA VERIFICATION REPORT



August 28, 2023

Kris Hinskey
Arcadis of Michigan
28550 Cabot Drive
Suite 500
Novi, MI US 48377

CADENA project ID: E203728

Project: Ford Livonia Transmission Plant - ON-SITE -Soil Gas, Ground water and Soil

Project number: 30167538.401.03- onsite groundwater

Event Specific Scope of Work References: Sample COC

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory submittal: 190228-1

Sample date: 2023-08-15

Report received by CADENA: 2023-08-28

Initial Data Verification completed by CADENA: 2023-08-28

Number of Samples:4

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, 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: 190228-1

Analyte	Cas No.	Sample Name: TRIP BLANK_62				MW-40_081523				MW-41_081523				MW-35_081523			
		Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier
		2401902281				2401902282				2401902283				2401902284			
		8/15/2023				8/15/2023				8/15/2023				8/15/2023			

GC/MS VOC

OSW-8260D

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	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	2.1	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	---
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	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	0.97	1.0	ug/l	J	0.66	1.0	ug/l	J	1.6	1.0	ug/l	---

OSW-8260DSIM

1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	11	2.0	ug/l	---	3.4	2.0	ug/l	---
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