

ANALYTICAL REPORT

Eurofins Canton
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Laboratory Job ID: 240-171521-1
Client Project/Site: Ford LTP - On Site

For:
ARCADIS U.S., Inc.
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8/29/2022 11:15:14 AM
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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

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/Site: Ford LTP - On Site

Job ID: 240-171521-1

Job ID: 240-171521-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-171521-1

Comments

No additional comments.

Receipt

The samples were received on 8/13/2022 9:45 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 was 4.0° C.

GC/MS VOA

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

VOA Prep

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

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

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

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-171521-1	TRIP BLANK_78	Water	08/10/22 00:00	08/13/22 09:45
240-171521-2	MW-20_081022	Water	08/10/22 10:10	08/13/22 09:45
240-171521-3	MW-44_081022	Water	08/10/22 11:45	08/13/22 09:45
240-171521-4	MW-23_081022	Water	08/10/22 14:03	08/13/22 09:45
240-171521-5	DUP-02	Water	08/10/22 00:00	08/13/22 09:45

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

Client Sample ID: TRIP BLANK_78

Lab Sample ID: 240-171521-1

No Detections.

Client Sample ID: MW-20_081022

Lab Sample ID: 240-171521-2

No Detections.

Client Sample ID: MW-44_081022

Lab Sample ID: 240-171521-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	7.9		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	150		6.3	2.8	ug/L	6.25		8260D	Total/NA

Client Sample ID: MW-23_081022

Lab Sample ID: 240-171521-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	13000		330	150	ug/L	333.333		8260D	Total/NA
trans-1,2-Dichloroethene	450		330	170	ug/L	333.333		8260D	Total/NA
Trichloroethene	1100		330	150	ug/L	333.333		8260D	Total/NA
Vinyl chloride	550		330	150	ug/L	333.333		8260D	Total/NA

Client Sample ID: DUP-02

Lab Sample ID: 240-171521-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	8.4		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	160		6.3	2.8	ug/L	6.25		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 - On Site

Job ID: 240-171521-1

Client Sample ID: TRIP BLANK_78

Lab Sample ID: 240-171521-1

Date Collected: 08/10/22 00:00

Matrix: Water

Date Received: 08/13/22 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/16/22 15:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/16/22 15:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/22 15:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/22 15:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/22 15:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/16/22 15:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		62 - 137		08/16/22 15:22	1
4-Bromofluorobenzene (Surr)	89		56 - 136		08/16/22 15:22	1
Toluene-d8 (Surr)	95		78 - 122		08/16/22 15:22	1
Dibromofluoromethane (Surr)	85		73 - 120		08/16/22 15:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

Client Sample ID: MW-20_081022

Lab Sample ID: 240-171521-2

Date Collected: 08/10/22 10:10

Matrix: Water

Date Received: 08/13/22 09:45

Method: 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			08/20/22 19:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	75		66 - 120					08/20/22 19:29	1

Method: 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			08/17/22 15:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/17/22 15:29	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/22 15:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/22 15:29	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/22 15:29	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/22 15:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137					08/17/22 15:29	1
4-Bromofluorobenzene (Surr)	89		56 - 136					08/17/22 15:29	1
Toluene-d8 (Surr)	95		78 - 122					08/17/22 15:29	1
Dibromofluoromethane (Surr)	85		73 - 120					08/17/22 15:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

Client Sample ID: MW-44_081022

Lab Sample ID: 240-171521-3

Date Collected: 08/10/22 11:45

Matrix: Water

Date Received: 08/13/22 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	7.9		2.0	0.86	ug/L			08/20/22 19:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	69		66 - 120					08/20/22 19:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	6.3	U	6.3	3.1	ug/L			08/16/22 21:13	6.25
cis-1,2-Dichloroethene	6.3	U	6.3	2.9	ug/L			08/16/22 21:13	6.25
Tetrachloroethene	6.3	U	6.3	2.8	ug/L			08/16/22 21:13	6.25
trans-1,2-Dichloroethene	6.3	U	6.3	3.2	ug/L			08/16/22 21:13	6.25
Trichloroethene	6.3	U	6.3	2.8	ug/L			08/16/22 21:13	6.25
Vinyl chloride	150		6.3	2.8	ug/L			08/16/22 21:13	6.25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		62 - 137					08/16/22 21:13	6.25
4-Bromofluorobenzene (Surr)	90		56 - 136					08/16/22 21:13	6.25
Toluene-d8 (Surr)	95		78 - 122					08/16/22 21:13	6.25
Dibromofluoromethane (Surr)	84		73 - 120					08/16/22 21:13	6.25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

Client Sample ID: MW-23_081022

Lab Sample ID: 240-171521-4

Date Collected: 08/10/22 14:03

Matrix: Water

Date Received: 08/13/22 09:45

Method: 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			08/20/22 20:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		66 - 120					08/20/22 20:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	330	U	330	160	ug/L			08/17/22 22:10	333.333
cis-1,2-Dichloroethene	13000		330	150	ug/L			08/17/22 22:10	333.333
Tetrachloroethene	330	U	330	150	ug/L			08/17/22 22:10	333.333
trans-1,2-Dichloroethene	450		330	170	ug/L			08/17/22 22:10	333.333
Trichloroethene	1100		330	150	ug/L			08/17/22 22:10	333.333
Vinyl chloride	550		330	150	ug/L			08/17/22 22:10	333.333
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		62 - 137					08/17/22 22:10	333.333
4-Bromofluorobenzene (Surr)	88		56 - 136					08/17/22 22:10	333.333
Toluene-d8 (Surr)	97		78 - 122					08/17/22 22:10	333.333
Dibromofluoromethane (Surr)	87		73 - 120					08/17/22 22:10	333.333

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

Client Sample ID: DUP-02

Lab Sample ID: 240-171521-5

Date Collected: 08/10/22 00:00

Matrix: Water

Date Received: 08/13/22 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	8.4		2.0	0.86	ug/L			08/20/22 20:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	72		66 - 120					08/20/22 20:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/16/22 19:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/16/22 19:58	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/22 19:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/22 19:58	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/22 19:58	1
Vinyl chloride	160		6.3	2.8	ug/L			08/17/22 21:45	6.25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		62 - 137					08/16/22 19:58	1
1,2-Dichloroethane-d4 (Surr)	101		62 - 137					08/17/22 21:45	6.25
4-Bromofluorobenzene (Surr)	86		56 - 136					08/16/22 19:58	1
4-Bromofluorobenzene (Surr)	88		56 - 136					08/17/22 21:45	6.25
Toluene-d8 (Surr)	93		78 - 122					08/16/22 19:58	1
Toluene-d8 (Surr)	95		78 - 122					08/17/22 21:45	6.25
Dibromofluoromethane (Surr)	81		73 - 120					08/16/22 19:58	1
Dibromofluoromethane (Surr)	86		73 - 120					08/17/22 21:45	6.25

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

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)
240-171520-F-3 MS	Matrix Spike	91	97	96	85
240-171520-O-3 MSD	Matrix Spike Duplicate	90	96	98	83
240-171521-1	TRIP BLANK_78	95	89	95	85
240-171521-2	MW-20_081022	96	89	95	85
240-171521-3	MW-44_081022	97	90	95	84
240-171521-4	MW-23_081022	101	88	97	87
240-171521-5	DUP-02	94	86	93	81
240-171521-5	DUP-02	101	88	95	86
240-171526-D-11 MS	Matrix Spike	93	96	98	84
240-171526-I-11 MSD	Matrix Spike Duplicate	92	96	97	85
LCS 240-539087/4	Lab Control Sample	89	97	97	85
LCS 240-539235/4	Lab Control Sample	88	96	96	82
MB 240-539087/6	Method Blank	93	88	92	83
MB 240-539235/6	Method Blank	96	90	97	85

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)			
240-171520-G-3 MS	Matrix Spike	75			
240-171520-N-3 MSD	Matrix Spike Duplicate	70			
240-171521-2	MW-20_081022	75			
240-171521-3	MW-44_081022	69			
240-171521-4	MW-23_081022	98			
240-171521-5	DUP-02	72			
LCS 240-539584/3	Lab Control Sample	75			
MB 240-539584/5	Method Blank	77			

Surrogate Legend

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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

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

Lab Sample ID: MB 240-539087/6

Matrix: Water

Analysis Batch: 539087

Client Sample ID: Method Blank

Prep Type: Total/NA

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			08/16/22 13:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/16/22 13:42	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/16/22 13:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/16/22 13:42	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/16/22 13:42	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/16/22 13:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		08/16/22 13:42	1
4-Bromofluorobenzene (Surr)	88		56 - 136		08/16/22 13:42	1
Toluene-d8 (Surr)	92		78 - 122		08/16/22 13:42	1
Dibromofluoromethane (Surr)	83		73 - 120		08/16/22 13:42	1

Lab Sample ID: LCS 240-539087/4

Matrix: Water

Analysis Batch: 539087

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	25.0	23.1		ug/L		92	63 - 134
cis-1,2-Dichloroethene	25.0	24.2		ug/L		97	77 - 123
Tetrachloroethene	25.0	23.3		ug/L		93	76 - 123
trans-1,2-Dichloroethene	25.0	24.2		ug/L		97	75 - 124
Trichloroethene	25.0	22.9		ug/L		92	70 - 122
Vinyl chloride	12.5	11.1		ug/L		89	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	89		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	85		73 - 120

Lab Sample ID: 240-171520-F-3 MS

Matrix: Water

Analysis Batch: 539087

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
1,1-Dichloroethene	1.0	U	25.0	23.1		ug/L		93	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	22.1		ug/L		88	66 - 128
Tetrachloroethene	1.0	U	25.0	20.8		ug/L		83	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	22.0		ug/L		88	56 - 136
Trichloroethene	1.0	U	25.0	20.6		ug/L		82	61 - 124
Vinyl chloride	1.0	U	12.5	11.9		ug/L		95	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	96		78 - 122

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

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

Lab Sample ID: 240-171520-F-3 MS

Matrix: Water

Analysis Batch: 539087

Client Sample ID: Matrix Spike

Prep Type: Total/NA

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	85		73 - 120

Lab Sample ID: 240-171520-O-3 MSD

Matrix: Water

Analysis Batch: 539087

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	23.3		ug/L		93	56 - 135	0	26
cis-1,2-Dichloroethene	1.0	U	25.0	22.5		ug/L		90	66 - 128	2	14
Tetrachloroethene	1.0	U	25.0	21.9		ug/L		87	62 - 131	5	20
trans-1,2-Dichloroethene	1.0	U	25.0	22.7		ug/L		91	56 - 136	3	15
Trichloroethene	1.0	U	25.0	21.1		ug/L		84	61 - 124	3	15
Vinyl chloride	1.0	U	12.5	12.3		ug/L		98	43 - 157	3	24

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		62 - 137
4-Bromofluorobenzene (Surr)	96		56 - 136
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	83		73 - 120

Lab Sample ID: MB 240-539235/6

Matrix: Water

Analysis Batch: 539235

Client Sample ID: Method Blank

Prep Type: Total/NA

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			08/17/22 13:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/17/22 13:49	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/22 13:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/22 13:49	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/22 13:49	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/22 13:49	1

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		08/17/22 13:49	1
4-Bromofluorobenzene (Surr)	90		56 - 136		08/17/22 13:49	1
Toluene-d8 (Surr)	97		78 - 122		08/17/22 13:49	1
Dibromofluoromethane (Surr)	85		73 - 120		08/17/22 13:49	1

Lab Sample ID: LCS 240-539235/4

Matrix: Water

Analysis Batch: 539235

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	25.0	22.7		ug/L		91	63 - 134
cis-1,2-Dichloroethene	25.0	21.7		ug/L		87	77 - 123
Tetrachloroethene	25.0	21.6		ug/L		87	76 - 123
trans-1,2-Dichloroethene	25.0	21.8		ug/L		87	75 - 124
Trichloroethene	25.0	20.7		ug/L		83	70 - 122

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

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

Lab Sample ID: LCS 240-539235/4

Matrix: Water

Analysis Batch: 539235

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	12.5	11.0		ug/L		88	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		62 - 137
4-Bromofluorobenzene (Surr)	96		56 - 136
Toluene-d8 (Surr)	96		78 - 122
Dibromofluoromethane (Surr)	82		73 - 120

Lab Sample ID: 240-171526-D-11 MS

Matrix: Water

Analysis Batch: 539235

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
cis-1,2-Dichloroethene	1.0	U	25.0	22.3		ug/L		89	66 - 128
Tetrachloroethene	1.0	U	25.0	20.1		ug/L		80	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	21.7		ug/L		87	56 - 136
Trichloroethene	1.0	U	25.0	19.8		ug/L		79	61 - 124
Vinyl chloride	1.0	U	12.5	11.9		ug/L		95	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	96		56 - 136
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	84		73 - 120

Lab Sample ID: 240-171526-I-11 MSD

Matrix: Water

Analysis Batch: 539235

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
cis-1,2-Dichloroethene	1.0	U	25.0	23.2		ug/L		93	66 - 128	4	14
Tetrachloroethene	1.0	U	25.0	22.0		ug/L		88	62 - 131	9	20
trans-1,2-Dichloroethene	1.0	U	25.0	23.0		ug/L		92	56 - 136	6	15
Trichloroethene	1.0	U	25.0	21.5		ug/L		86	61 - 124	8	15
Vinyl chloride	1.0	U	12.5	12.1		ug/L		97	43 - 157	2	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		62 - 137
4-Bromofluorobenzene (Surr)	96		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	85		73 - 120

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

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

Lab Sample ID: MB 240-539584/5

Matrix: Water

Analysis Batch: 539584

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			08/20/22 16:19	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		66 - 120					08/20/22 16:19	1

Lab Sample ID: LCS 240-539584/3

Matrix: Water

Analysis Batch: 539584

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	10.4		ug/L		104	80 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	75		66 - 120				

Lab Sample ID: 240-171520-G-3 MS

Matrix: Water

Analysis Batch: 539584

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	10.4		ug/L		104	51 - 153
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	75		66 - 120						

Lab Sample ID: 240-171520-N-3 MSD

Matrix: Water

Analysis Batch: 539584

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	10.1		ug/L		101	51 - 153	3	16
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	70		66 - 120								

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

GC/MS VOA

Analysis Batch: 539087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171521-1	TRIP BLANK_78	Total/NA	Water	8260D	
240-171521-3	MW-44_081022	Total/NA	Water	8260D	
240-171521-5	DUP-02	Total/NA	Water	8260D	
MB 240-539087/6	Method Blank	Total/NA	Water	8260D	
LCS 240-539087/4	Lab Control Sample	Total/NA	Water	8260D	
240-171520-F-3 MS	Matrix Spike	Total/NA	Water	8260D	
240-171520-O-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 539235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171521-2	MW-20_081022	Total/NA	Water	8260D	
240-171521-4	MW-23_081022	Total/NA	Water	8260D	
240-171521-5	DUP-02	Total/NA	Water	8260D	
MB 240-539235/6	Method Blank	Total/NA	Water	8260D	
LCS 240-539235/4	Lab Control Sample	Total/NA	Water	8260D	
240-171526-D-11 MS	Matrix Spike	Total/NA	Water	8260D	
240-171526-I-11 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 539584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171521-2	MW-20_081022	Total/NA	Water	8260D SIM	
240-171521-3	MW-44_081022	Total/NA	Water	8260D SIM	
240-171521-4	MW-23_081022	Total/NA	Water	8260D SIM	
240-171521-5	DUP-02	Total/NA	Water	8260D SIM	
MB 240-539584/5	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-539584/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-171520-G-3 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-171520-N-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

Client Sample ID: TRIP BLANK_78

Lab Sample ID: 240-171521-1

Date Collected: 08/10/22 00:00

Matrix: Water

Date Received: 08/13/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	539087	SAM	EET CAN	08/16/22 15:22

Client Sample ID: MW-20_081022

Lab Sample ID: 240-171521-2

Date Collected: 08/10/22 10:10

Matrix: Water

Date Received: 08/13/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	539235	SAM	EET CAN	08/17/22 15:29
Total/NA	Analysis	8260D SIM		1	539584	SAM	EET CAN	08/20/22 19:29

Client Sample ID: MW-44_081022

Lab Sample ID: 240-171521-3

Date Collected: 08/10/22 11:45

Matrix: Water

Date Received: 08/13/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		6.25	539087	SAM	EET CAN	08/16/22 21:13
Total/NA	Analysis	8260D SIM		1	539584	SAM	EET CAN	08/20/22 19:53

Client Sample ID: MW-23_081022

Lab Sample ID: 240-171521-4

Date Collected: 08/10/22 14:03

Matrix: Water

Date Received: 08/13/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		333.333	539235	SAM	EET CAN	08/17/22 22:10
Total/NA	Analysis	8260D SIM		1	539584	SAM	EET CAN	08/20/22 20:16

Client Sample ID: DUP-02

Lab Sample ID: 240-171521-5

Date Collected: 08/10/22 00:00

Matrix: Water

Date Received: 08/13/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	539087	SAM	EET CAN	08/16/22 19:58
Total/NA	Analysis	8260D		6.25	539235	SAM	EET CAN	08/17/22 21:45
Total/NA	Analysis	8260D SIM		1	539584	SAM	EET CAN	08/20/22 20:40

Laboratory References:

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

Eurofins Canton

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-171521-1

Laboratory: Eurofins Canton

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	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-23-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

Company Name: Arcadis Address: 24550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford LTP On-Site Project Number: 30080642.401.03 PO # 30080642.401.03		Client Contact Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other		TestAmerica Laboratories, Inc. COC No: 1 of 1 COCs For lab use only Walk-in client Lab sampling Job/SDG No:	
Client Project Manager: Kris Hinsley Telephone: 269-832-7478 Email: Kristoffer.Hinsley@arcadis.com Sampler Name: Sommer Guy Method of Shipment/Carrier: Shipping/Tracking No:		Site Contact: Christina Weaver Telephone: 248-994-2329 Lab Contact: Mike DelMonico Telephone: 330-966-9783		Analyses 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 Identification TRIP BLANK_78 MW-20-081022 MW-44-081022 MW-23-081022 MW-23-081022 DUP-02		Analysis turnaround time TAT (different from below) 10 day ☒ 3 weeks 2 weeks ☐ 1 week 2 days ☐ 1 day		Containers & Preservatives H2SO4 HNO3 HCl NaOH NaOH Unpres Other:	
Matrix Air Aqueous Sediment Solid Other:		Filtered Sample (Y / N) Composite=C / Grab=G		Sample Specific Notes / Special Instructions: 1 Trip Blank 3 VOAs for 8260D 3 VOAs for 8260D SIM	
Possible Hazard Identification ☒ Non-Hazard ☐ Irritable ☐ Corrosive ☐ Flammable ☐ Toxic ☐ Other		Sample Disposal (A fee may be assessed to samples not returned longer than 1 month) ☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months		Barcode 240-171521 Chain of Custody	
Relinquished by: Sommer Guy Relinquished by: Kristoffer Hinsley Relinquished by: Kristoffer Hinsley		Company: Arcadis Company: Arcadis Company: Arcadis		Date/Time: 8/10/22 1630 Date/Time: 8/10/22 1630 Date/Time: 8/12/22 956	
Relinquished by: Kristoffer Hinsley Relinquished by: Kristoffer Hinsley		Company: EETA Company: EETA		Date/Time: 8/12/22 956 Date/Time: 8-13-22 094	

Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : 71521

Client Arcadis

Site Name Livonia

Cooler unpacked by:

Cooler Received on 8-13-22

Opened on 8-13-22

me

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time

Storage Location

Eurofins Cooler # TA 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# IR-13 (CF +0.7 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

IR GUN #IR-15 (CF 0.0 °C) Observed Cooler Temp. 4.0 °C Corrected Cooler Temp. 4.0 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1

Yes No

-Were the seals on the outside of the cooler(s) signed & dated?

Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?

Yes No

-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.

me 8-13-22

13. Were all preserved sample(s) at the correct pH upon receipt?

Yes No NA pH Strip Lot# HC286797

14. Were VOAs on the COC?

Yes No

15. Were air bubbles >6 mm in any VOA vials?  Larger than this.

Yes No NA

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: _____