

 **ANALYTICAL REPORT****PREPARED FOR**

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JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-175891-1



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Definitions/Glossary

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

Job ID: 240-175891-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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 - Off Site

Job ID: 240-175891-1

Job ID: 240-175891-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-175891-1

Comments

No additional comments.

Receipt

The samples were received on 11/4/2022 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.9° C, 1.2° C and 1.3° C.

GC/MS VOA

Method 8260D SIM: Surrogate recovery for the following sample was outside the upper control limit: MW-72_103122 (240-175891-2). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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

VOA Prep

No 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 - Off Site

Job ID: 240-175891-1

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 - Off Site

Job ID: 240-175891-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-175891-1	TRIP BLANK_01	Water	10/31/22 00:00	11/04/22 09:40
240-175891-2	MW-72_103122	Water	10/31/22 10:45	11/04/22 09:40
240-175891-3	MW-72S_103122	Water	10/31/22 11:50	11/04/22 09:40
240-175891-4	MW-73SR_103122	Water	10/31/22 12:50	11/04/22 09:40
240-175891-5	MW-73D_103122	Water	10/31/22 13:55	11/04/22 09:40
240-175891-6	MW-214S_110122	Water	11/01/22 14:35	11/04/22 09:40
240-175891-7	MW-74S_110122	Water	11/01/22 12:00	11/04/22 09:40
240-175891-8	MW-74_110122	Water	11/01/22 10:40	11/04/22 09:40

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Detection Summary

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

Job ID: 240-175891-1

Client Sample ID: TRIP BLANK_01

Lab Sample ID: 240-175891-1

No Detections.

Client Sample ID: MW-72_103122

Lab Sample ID: 240-175891-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.81	J	1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-72S_103122

Lab Sample ID: 240-175891-3

No Detections.

Client Sample ID: MW-73SR_103122

Lab Sample ID: 240-175891-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.9		1.0	0.46	ug/L	1		8260D	Total/NA

Client Sample ID: MW-73D_103122

Lab Sample ID: 240-175891-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.2		2.0	0.86	ug/L	1		8260D SIM	Total/NA

Client Sample ID: MW-214S_110122

Lab Sample ID: 240-175891-6

No Detections.

Client Sample ID: MW-74S_110122

Lab Sample ID: 240-175891-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.3		1.0	0.46	ug/L	1		8260D	Total/NA

Client Sample ID: MW-74_110122

Lab Sample ID: 240-175891-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.1		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	3.5		1.0	0.45	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: TRIP BLANK_01

Lab Sample ID: 240-175891-1

Date Collected: 10/31/22 00:00

Matrix: Water

Date Received: 11/04/22 09:40

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			11/10/22 11:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 11:32	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 11:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 11:32	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 11:32	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 11:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		62 - 137		11/10/22 11:32	1
4-Bromofluorobenzene (Surr)	100		56 - 136		11/10/22 11:32	1
Toluene-d8 (Surr)	96		78 - 122		11/10/22 11:32	1
Dibromofluoromethane (Surr)	92		73 - 120		11/10/22 11:32	1

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: MW-72_103122

Lab Sample ID: 240-175891-2

Date Collected: 10/31/22 10:45

Matrix: Water

Date Received: 11/04/22 09:40

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			11/12/22 18:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122	S1+	66 - 120					11/12/22 18:20	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			11/10/22 11:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 11:57	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 11:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 11:57	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 11:57	1
Vinyl chloride	0.81	J	1.0	0.45	ug/L			11/10/22 11:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		62 - 137					11/10/22 11:57	1
4-Bromofluorobenzene (Surr)	101		56 - 136					11/10/22 11:57	1
Toluene-d8 (Surr)	98		78 - 122					11/10/22 11:57	1
Dibromofluoromethane (Surr)	93		73 - 120					11/10/22 11:57	1

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: MW-72S_103122

Lab Sample ID: 240-175891-3

Date Collected: 10/31/22 11:50

Matrix: Water

Date Received: 11/04/22 09:40

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			11/13/22 08:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		66 - 120		11/13/22 08:44	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			11/10/22 12:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 12:21	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 12:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 12:21	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 12:21	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 12:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		62 - 137		11/10/22 12:21	1
4-Bromofluorobenzene (Surr)	101		56 - 136		11/10/22 12:21	1
Toluene-d8 (Surr)	98		78 - 122		11/10/22 12:21	1
Dibromofluoromethane (Surr)	94		73 - 120		11/10/22 12:21	1

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: MW-73SR_103122

Lab Sample ID: 240-175891-4

Date Collected: 10/31/22 12:50

Matrix: Water

Date Received: 11/04/22 09:40

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			11/13/22 09:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		66 - 120					11/13/22 09:08	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			11/10/22 12:45	1
cis-1,2-Dichloroethene	1.9		1.0	0.46	ug/L			11/10/22 12:45	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 12:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 12:45	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 12:45	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 12:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		62 - 137					11/10/22 12:45	1
4-Bromofluorobenzene (Surr)	99		56 - 136					11/10/22 12:45	1
Toluene-d8 (Surr)	95		78 - 122					11/10/22 12:45	1
Dibromofluoromethane (Surr)	93		73 - 120					11/10/22 12:45	1

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: MW-73D_103122

Lab Sample ID: 240-175891-5

Date Collected: 10/31/22 13:55

Matrix: Water

Date Received: 11/04/22 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.2		2.0	0.86	ug/L			11/13/22 09:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		66 - 120		11/13/22 09:32	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			11/10/22 13:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 13:10	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 13:10	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:10	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 13:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		62 - 137		11/10/22 13:10	1
4-Bromofluorobenzene (Surr)	99		56 - 136		11/10/22 13:10	1
Toluene-d8 (Surr)	94		78 - 122		11/10/22 13:10	1
Dibromofluoromethane (Surr)	92		73 - 120		11/10/22 13:10	1

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: MW-214S_110122

Lab Sample ID: 240-175891-6

Date Collected: 11/01/22 14:35

Matrix: Water

Date Received: 11/04/22 09:40

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			11/13/22 09:57	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		66 - 120					11/13/22 09:57	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			11/10/22 13:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 13:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 13:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 13:34	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		62 - 137					11/10/22 13:34	1
4-Bromofluorobenzene (Surr)	100		56 - 136					11/10/22 13:34	1
Toluene-d8 (Surr)	97		78 - 122					11/10/22 13:34	1
Dibromofluoromethane (Surr)	94		73 - 120					11/10/22 13:34	1

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: MW-74S_110122

Lab Sample ID: 240-175891-7

Date Collected: 11/01/22 12:00

Matrix: Water

Date Received: 11/04/22 09:40

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			11/13/22 10:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 120					11/13/22 10:21	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			11/10/22 13:59	1
cis-1,2-Dichloroethene	1.3		1.0	0.46	ug/L			11/10/22 13:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 13:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:59	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 13:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		62 - 137					11/10/22 13:59	1
4-Bromofluorobenzene (Surr)	101		56 - 136					11/10/22 13:59	1
Toluene-d8 (Surr)	99		78 - 122					11/10/22 13:59	1
Dibromofluoromethane (Surr)	95		73 - 120					11/10/22 13:59	1

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: MW-74_110122

Lab Sample ID: 240-175891-8

Date Collected: 11/01/22 10:40

Matrix: Water

Date Received: 11/04/22 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.1		2.0	0.86	ug/L			11/13/22 10:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		66 - 120					11/13/22 10:45	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			11/10/22 14:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 14:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 14:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 14:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 14:23	1
Vinyl chloride	3.5		1.0	0.45	ug/L			11/10/22 14:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		62 - 137					11/10/22 14:23	1
4-Bromofluorobenzene (Surr)	102		56 - 136					11/10/22 14:23	1
Toluene-d8 (Surr)	100		78 - 122					11/10/22 14:23	1
Dibromofluoromethane (Surr)	96		73 - 120					11/10/22 14:23	1

Surrogate Summary

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

Job ID: 240-175891-1

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)
240-175891-1	TRIP BLANK_01	89	100	96	92
240-175891-2	MW-72_103122	88	101	98	93
240-175891-3	MW-72S_103122	90	101	98	94
240-175891-4	MW-73SR_103122	89	99	95	93
240-175891-5	MW-73D_103122	89	99	94	92
240-175891-6	MW-214S_110122	88	100	97	94
240-175891-7	MW-74S_110122	89	101	99	95
240-175891-8	MW-74_110122	91	102	100	96
240-175891-8 MS	MW-74_110122	93	104	101	96
240-175891-8 MSD	MW-74_110122	92	102	98	97
LCS 240-551304/5	Lab Control Sample	88	102	97	93
MB 240-551304/8	Method Blank	88	101	95	93

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)
240-175790-G-5 MS	Matrix Spike	114
240-175790-M-5 MSD	Matrix Spike Duplicate	119
240-175891-2	MW-72_103122	122 S1+
240-175891-3	MW-72S_103122	109
240-175891-4	MW-73SR_103122	113
240-175891-5	MW-73D_103122	114
240-175891-6	MW-214S_110122	104
240-175891-7	MW-74S_110122	108
240-175891-8	MW-74_110122	114
240-175891-8 MS	MW-74_110122	106
240-175891-8 MSD	MW-74_110122	112
LCS 240-551688/3	Lab Control Sample	117
LCS 240-551689/3	Lab Control Sample	119
MB 240-551688/4	Method Blank	118
MB 240-551689/4	Method Blank	118

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-175891-1

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

Lab Sample ID: MB 240-551304/8
Matrix: Water
Analysis Batch: 551304

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			11/10/22 11:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 11:08	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 11:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 11:08	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 11:08	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 11:08	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	88		62 - 137		11/10/22 11:08	1
4-Bromofluorobenzene (Surr)	101		56 - 136		11/10/22 11:08	1
Toluene-d8 (Surr)	95		78 - 122		11/10/22 11:08	1
Dibromofluoromethane (Surr)	93		73 - 120		11/10/22 11:08	1

Lab Sample ID: LCS 240-551304/5
Matrix: Water
Analysis Batch: 551304

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	20.0	16.6		ug/L		83	63 - 134
cis-1,2-Dichloroethene	20.0	17.6		ug/L		88	77 - 123
Tetrachloroethene	20.0	18.4		ug/L		92	76 - 123
trans-1,2-Dichloroethene	20.0	17.0		ug/L		85	75 - 124
Trichloroethene	20.0	17.7		ug/L		89	70 - 122
Vinyl chloride	20.0	17.2		ug/L		86	60 - 144

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	88		62 - 137
4-Bromofluorobenzene (Surr)	102		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	93		73 - 120

Lab Sample ID: 240-175891-8 MS
Matrix: Water
Analysis Batch: 551304

Client Sample ID: MW-74_110122
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	20.0	17.9		ug/L		89	56 - 135
cis-1,2-Dichloroethene	1.0	U	20.0	18.3		ug/L		91	66 - 128
Tetrachloroethene	1.0	U	20.0	19.7		ug/L		99	62 - 131
trans-1,2-Dichloroethene	1.0	U	20.0	17.7		ug/L		89	56 - 136
Trichloroethene	1.0	U	20.0	18.2		ug/L		91	61 - 124
Vinyl chloride	3.5		20.0	22.3		ug/L		94	43 - 157

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	104		56 - 136
Toluene-d8 (Surr)	101		78 - 122

QC Sample Results

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

Job ID: 240-175891-1

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

Lab Sample ID: 240-175891-8 MS
Matrix: Water
Analysis Batch: 551304

Client Sample ID: MW-74_110122
Prep Type: Total/NA

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	96		73 - 120

Lab Sample ID: 240-175891-8 MSD
Matrix: Water
Analysis Batch: 551304

Client Sample ID: MW-74_110122
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	20.0	19.6		ug/L		98	56 - 135	9	26
cis-1,2-Dichloroethene	1.0	U	20.0	20.1		ug/L		100	66 - 128	9	14
Tetrachloroethene	1.0	U	20.0	20.9		ug/L		105	62 - 131	6	20
trans-1,2-Dichloroethene	1.0	U	20.0	19.5		ug/L		98	56 - 136	9	15
Trichloroethene	1.0	U	20.0	20.2		ug/L		101	61 - 124	10	15
Vinyl chloride	3.5		20.0	23.7		ug/L		101	43 - 157	6	24

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		62 - 137
4-Bromofluorobenzene (Surr)	102		56 - 136
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120

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

Lab Sample ID: MB 240-551688/4
Matrix: Water
Analysis Batch: 551688

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			11/12/22 17:07	1

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		66 - 120		11/12/22 17:07	1

Lab Sample ID: LCS 240-551688/3
Matrix: Water
Analysis Batch: 551688

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	9.52		ug/L		95	80 - 122

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	117		66 - 120

Lab Sample ID: 240-175790-G-5 MS
Matrix: Water
Analysis Batch: 551688

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	9.82		ug/L		98	51 - 153

Eurofins Canton

QC Sample Results

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

Job ID: 240-175891-1

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

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	114		66 - 120

Lab Sample ID: 240-175790-M-5 MSD
Matrix: Water
Analysis Batch: 551688

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	2.0	U	10.0	10.9		ug/L		109	51 - 153	10	16

	<i>MSD</i>	<i>MSD</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	119		66 - 120

Lab Sample ID: MB 240-551689/4
Matrix: Water
Analysis Batch: 551689

Client Sample ID: Method Blank
Prep Type: Total/NA

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/13/22 05:54	1

	<i>MB</i>	<i>MB</i>		<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
1,2-Dichloroethane-d4 (Surr)	118		66 - 120		11/13/22 05:54	1

Lab Sample ID: LCS 240-551689/3
Matrix: Water
Analysis Batch: 551689

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
1,4-Dioxane	10.0	9.78		ug/L		98	80 - 122

	<i>LCS</i>	<i>LCS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	119		66 - 120

Lab Sample ID: 240-175891-8 MS
Matrix: Water
Analysis Batch: 551689

Client Sample ID: MW-74_110122
Prep Type: Total/NA

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
1,4-Dioxane	2.1		10.0	11.7		ug/L		96	51 - 153

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	106		66 - 120

Lab Sample ID: 240-175891-8 MSD
Matrix: Water
Analysis Batch: 551689

Client Sample ID: MW-74_110122
Prep Type: Total/NA

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	2.1		10.0	11.5		ug/L		94	51 - 153	1	16

QC Sample Results

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

Job ID: 240-175891-1

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

Lab Sample ID: 240-175891-8 MSD
Matrix: Water
Analysis Batch: 551689

Client Sample ID: MW-74_110122
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)	112		66 - 120

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QC Association Summary

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

Job ID: 240-175891-1

GC/MS VOA

Analysis Batch: 551304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175891-1	TRIP BLANK_01	Total/NA	Water	8260D	
240-175891-2	MW-72_103122	Total/NA	Water	8260D	
240-175891-3	MW-72S_103122	Total/NA	Water	8260D	
240-175891-4	MW-73SR_103122	Total/NA	Water	8260D	
240-175891-5	MW-73D_103122	Total/NA	Water	8260D	
240-175891-6	MW-214S_110122	Total/NA	Water	8260D	
240-175891-7	MW-74S_110122	Total/NA	Water	8260D	
240-175891-8	MW-74_110122	Total/NA	Water	8260D	
MB 240-551304/8	Method Blank	Total/NA	Water	8260D	
LCS 240-551304/5	Lab Control Sample	Total/NA	Water	8260D	
240-175891-8 MS	MW-74_110122	Total/NA	Water	8260D	
240-175891-8 MSD	MW-74_110122	Total/NA	Water	8260D	

Analysis Batch: 551688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175891-2	MW-72_103122	Total/NA	Water	8260D SIM	
MB 240-551688/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-551688/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-175790-G-5 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-175790-M-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 551689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175891-3	MW-72S_103122	Total/NA	Water	8260D SIM	
240-175891-4	MW-73SR_103122	Total/NA	Water	8260D SIM	
240-175891-5	MW-73D_103122	Total/NA	Water	8260D SIM	
240-175891-6	MW-214S_110122	Total/NA	Water	8260D SIM	
240-175891-7	MW-74S_110122	Total/NA	Water	8260D SIM	
240-175891-8	MW-74_110122	Total/NA	Water	8260D SIM	
MB 240-551689/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-551689/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-175891-8 MS	MW-74_110122	Total/NA	Water	8260D SIM	
240-175891-8 MSD	MW-74_110122	Total/NA	Water	8260D SIM	

Lab Chronicle

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

Job ID: 240-175891-1

Client Sample ID: TRIP BLANK_01

Lab Sample ID: 240-175891-1

Date Collected: 10/31/22 00:00

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551304	HMB	EET CAN	11/10/22 11:32

Client Sample ID: MW-72_103122

Lab Sample ID: 240-175891-2

Date Collected: 10/31/22 10:45

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551304	HMB	EET CAN	11/10/22 11:57
Total/NA	Analysis	8260D SIM		1	551688	CS	EET CAN	11/12/22 18:20

Client Sample ID: MW-72S_103122

Lab Sample ID: 240-175891-3

Date Collected: 10/31/22 11:50

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551304	HMB	EET CAN	11/10/22 12:21
Total/NA	Analysis	8260D SIM		1	551689	CS	EET CAN	11/13/22 08:44

Client Sample ID: MW-73SR_103122

Lab Sample ID: 240-175891-4

Date Collected: 10/31/22 12:50

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551304	HMB	EET CAN	11/10/22 12:45
Total/NA	Analysis	8260D SIM		1	551689	CS	EET CAN	11/13/22 09:08

Client Sample ID: MW-73D_103122

Lab Sample ID: 240-175891-5

Date Collected: 10/31/22 13:55

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551304	HMB	EET CAN	11/10/22 13:10
Total/NA	Analysis	8260D SIM		1	551689	CS	EET CAN	11/13/22 09:32

Client Sample ID: MW-214S_110122

Lab Sample ID: 240-175891-6

Date Collected: 11/01/22 14:35

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551304	HMB	EET CAN	11/10/22 13:34
Total/NA	Analysis	8260D SIM		1	551689	CS	EET CAN	11/13/22 09:57

Lab Chronicle

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

Job ID: 240-175891-1

Client Sample ID: MW-74S_110122

Lab Sample ID: 240-175891-7

Date Collected: 11/01/22 12:00

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551304	HMB	EET CAN	11/10/22 13:59
Total/NA	Analysis	8260D SIM		1	551689	CS	EET CAN	11/13/22 10:21

Client Sample ID: MW-74_110122

Lab Sample ID: 240-175891-8

Date Collected: 11/01/22 10:40

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551304	HMB	EET CAN	11/10/22 14:23
Total/NA	Analysis	8260D SIM		1	551689	CS	EET CAN	11/13/22 10:45

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 240-175891-1

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	02-27-23
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	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

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

Regulatory program: DW NPDES RCRA Other

Client Project Manager: Kris Hinskey
 Telephone: 248-994-2240
 Email: kritoff@hinskey@arcadis.com

Site Contact: Christina Weaver
 Telephone: 248-994-2293

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

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

Sampler Name: **Sam Sukanda**
 Method of Shipment/Carrier:
 Shipping/Tracking No:

Analysis Turnaround Time
 TAT if different from below
 3 weeks
 2 weeks
 1 week
 2 days
 1 day

Filtered Sample (Y/N) Y N
 Composite=C/Grab=G C G

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives							Sample Specific Notes / Special Instructions:		
			Air	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Uppers	Other:			
TRIP BLANK_01		---	1													1 Trip Blank
MW-72-103122	10/31/22	1045	6													3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-72S-103122		1150	6													
MW-73SR-103122		1250	4													
MW-73D-103122		1355	5													
MW-214S-110122	11/1/22	1435	6													
MW-74S-110122		1200	5													
MW-74-110122		1040	6													
MW-74-MS-110122		1040	6													Run MS/MSD
MW-74-MSD-110122		1040	6													Run MS/MSD

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown

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

Special Instructions/QC Requirements & Comments:
Beiden Ct ROW
 Submit all results through Cadena at jtomalia@cedenaco.com. Cadena #E203631
 Level IV Reporting requested.

Relinquished by: **Sams** Date/Time: 11/1/22 1550 Company: Arcadis
 Relinquished by: **Summer Huj** Date/Time: 11/3/22 1500 Company: Arcadis
 Relinquished by: **DeH** Date/Time: 11/3/22 1530 Company: Arcadis

Received by: **NOVI Cold storage** Date/Time: 11/1/22 1550 Company: Arcadis
 Received by: **DeH** Date/Time: 11/3/22 1500 Company: Arcadis
 Received in Laboratory by:

TestAmerica Laboratories, Inc. 1 of 1 COCs
 For lab use only
 Walk-in client
 Lab sampling
 Job/SDG No:

Barcode: 

240-175891 Chain of Custody

Eurofins - Canton Sample Receipt Form/Narrative Login #: 175891
Barberton Facility

Client Accudis Site Name LTP Cooler unpacked by: AME

Cooler Received on _____ Opened on _____

FedEx: 1st Grd (Exp) UPS FAS Clipper 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# 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. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea 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
 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)?
 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# HC286771
 14. Were VOAs on the COC? Yes No
 15. Were air bubbles >6 mm in any VOA vials? Yes ← 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

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) 1x40TB01 ; 2x40 MW73D ; 1x40ml MW74 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: _____

Login #: 175891

Eurofins - Canton Sample Receipt Multiple Cooler Form									
Cooler Description (Circle)				IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)		
<input checked="" type="radio"/> TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	<input checked="" type="radio"/> IR-13 <input type="radio"/> IR-15	0.5	1.2	<input checked="" type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
<input checked="" type="radio"/> FA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	<input checked="" type="radio"/> IR-13 <input type="radio"/> IR-15	0.6	1.3	<input checked="" type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
<input checked="" type="radio"/> TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	<input checked="" type="radio"/> IR-13 <input type="radio"/> IR-15	0.2	0.9	<input checked="" type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR-13 IR-15			<input type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
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TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR-13 IR-15			<input type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR-13 IR-15			<input type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR-13 IR-15			<input type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice

See Temperature Excursion Form

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

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
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396

DATA VERIFICATION REPORT



November 17, 2022

Kris Hinskey
Arcadis Inc
10559 Citation Ave
Suite 100
Brighton, MI 48116

CADENA project ID: E203631
Project: Ford Livonia Transmission Project - OFF-SITE - Soil Gas and Groundwater
Project number: 30146655.402.04 off-site
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Barberton
Laboratory submittal: 175891-1
Sample date: 2022-11-01 2022-10-31
Report received by CADENA: 2022-11-16
Initial Data Verification completed by CADENA: 2022-11-17

Number of Samples:8

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:

SIM GCMS VOC sample -002 surrogate recovery outliers 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.

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: E203631

Laboratory: Eurofins Environment Testing LLC - Barberton

Laboratory Submittal: 175891-1

Analyte	Cas No.	TRIP BLANK_01			MW-72_103122			MW-72S_103122			MW-73SR_103122			MW-73D_103122			MW-214S_110122			MW-74S_110122			MW-74_110122						
		Result	Limit	Units	Result	Limit	Units	Result	Limit	Units	Result	Limit	Units	Result	Limit	Units	Result	Limit	Units	Result	Limit	Units	Result	Limit	Units				
GC/MS VOC																													
<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	---	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	---	1.9	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	1.3	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	---	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	---	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	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	0.81	1.0	ug/l	J	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	---
<u>OSW-8260DSIM</u>																													
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	3.2	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---

Ford Motor Company – Livonia Transmission Project

DATA REVIEW

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-175891-1

CADENA Verification Report: 2022-11-17

Analyses Performed By:

TestAmerica

North Canton, Ohio

Report # 47763R

Review Level: Tier III

Project: 30146655.402.02



DATA REVIEW

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-175891-1 for samples collected in association with the Ford – Livonia, Michigan site. The review was conducted as a Tier III validation in addition to a verification/Tier II validation review performed by CADENA Inc. and included review of level IV laboratory data package completeness. Only elements of a Tier III validation effort (Tier III) include a detailed review of laboratory raw data to check for errors in calculation, calibration review, internal standard review and compound identification) and omitted deviations from the CADENA verification/Tier II report are documented in this report. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis	
					VOC	VOC SIM
TRIP BLANK_01	240-175891-1	Water	10/31/22		X	
MW-72_103122	240-175891-2	Water	10/31/22		X	X
MW-72S_103122	240-175891-3	Water	10/31/22		X	X
MW-73SR_103122	240-175891-4	Water	10/31/22		X	X
MW-73D_103122	240-175891-5	Water	10/31/22		X	X
MW-214S_110122	240-175891-6	Water	11/01/22		X	X
MW-74S_110122	240-175891-7	Water	11/01/22		X	X
MW-74_110122	240-175891-8	Water	11/01/22		X	X

DATA REVIEW

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

DATA REVIEW

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260D and 8260D SIM. Data were reviewed in accordance with USEPA National Functional Guidelines for Organic Superfund Methods Data Review, EPA 540-R-20-005, November 2020 (with reference to the historical USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999), as appropriate.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 - UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260D/8260D-SIM	Water	14 days from collection to analysis	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

2. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

All compounds associated with the initial calibrations were within the specified control limits.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

4. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate sample was not collected for samples from this SDG.

DATA REVIEW

6. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D/8260D-SIM	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times/Preservation		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Field Duplicate RPD	X				X
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW

VALIDATION PERFORMED BY: Hrishikesh Upadhyaya

SIGNATURE: 

DATE: December 02, 2022

PEER REVIEW: Andrew Korycinski

DATE: December 02, 2022

**NO CORRECTIONS/QUALIFIERS ADDED
TO SAMPLE ANALYSIS DATA SHEETS**



**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



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: 248-994-2293					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: Sam Sukaria					TAT if different from below					<input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day					Walk-in client							
Project Name: Ford LTP Off-Site			Method of Shipment/Carrier:					10 day											Lab sampling						
Project Number: 30146655.402.04			Shipping/Tracking No:					Filtered Sample (Y/N)					Composite=C / Grab=G 1,1-DCE 8260B cis-1,2-DCE 8260B Trans-1,2-DCE 8260B PCE 8260B TOE 8260B Vinyl Chloride 8260B 1,4-Dioxane 8260B SIM					Job/SDG No:							
PO # 30146655.402.04			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	Composite	1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TOE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	
TRIP BLANK_01										1						NG		X	X	X	X	X	X		1 Trip Blank
MW-72-103122			10/31/22	1045	6					6								X	X	X	X	X	X		3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-725-103122				1150	6					6								X	X	X	X	X	X		
MW-73SR-103122				1250	4					6								X	X	X	X	X	X		
MW-73D-103122				1355	5					6								X	X	X	X	X	X		
MW-214S-110122			11/1/22	1435	6					6								X	X	X	X	X	X		
MW-74S-110122				1200	5					6								X	X	X	X	X	X		
MW-74-110122				1040	6					6								X	X	X	X	X	X		
MW-74-MS-110122				1040	6					6								X	X	X	X	X	X		RunMS/MSD
MW-74-MSD-110122				1040	6					6								X	X	X	X	X	X		RunMS/MSD
Possible Hazard Identification										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)															
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown										<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months															
Special Instructions/QC Requirements & Comments:																									
Sample Address: Belden Ct ROW																									
Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203631																									
Level IV Reporting requested.																									
Relinquished by: Sams			Company: Arcadis			Date/Time: 11/1/22 1550			Received by: Novi Cold Storage			Company: Arcadis			Date/Time: 11/1/22 1550										
Relinquished by: Tommy Guy			Company: Arcadis			Date/Time: 11/3/22 1500			Received by: Obell			Company: FAA			Date/Time: 11/3/22 1500										
Relinquished by: Obell			Company: FAA			Date/Time: 11/3/22 1530			Received in Laboratory by:			Company:			Date/Time:										

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3:14 PM

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240-175891 Chain of Custody

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: TRIP BLANK_01

Lab Sample ID: 240-175891-1

Date Collected: 10/31/22 00:00

Matrix: Water

Date Received: 11/04/22 09:40

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			11/10/22 11:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 11:32	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 11:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 11:32	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 11:32	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 11:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		62 - 137		11/10/22 11:32	1
4-Bromofluorobenzene (Surr)	100		56 - 136		11/10/22 11:32	1
Toluene-d8 (Surr)	96		78 - 122		11/10/22 11:32	1
Dibromofluoromethane (Surr)	92		73 - 120		11/10/22 11:32	1

Client Sample ID: MW-72_103122

Lab Sample ID: 240-175891-2

Date Collected: 10/31/22 10:45

Matrix: Water

Date Received: 11/04/22 09:40

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			11/12/22 18:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122	S1+	66 - 120		11/12/22 18:20	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			11/10/22 11:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 11:57	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 11:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 11:57	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 11:57	1
Vinyl chloride	0.81	J	1.0	0.45	ug/L			11/10/22 11:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		62 - 137		11/10/22 11:57	1
4-Bromofluorobenzene (Surr)	101		56 - 136		11/10/22 11:57	1
Toluene-d8 (Surr)	98		78 - 122		11/10/22 11:57	1
Dibromofluoromethane (Surr)	93		73 - 120		11/10/22 11:57	1

Client Sample ID: MW-72S_103122

Lab Sample ID: 240-175891-3

Date Collected: 10/31/22 11:50

Matrix: Water

Date Received: 11/04/22 09:40

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			11/13/22 08:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		66 - 120		11/13/22 08:44	1

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: MW-72S_103122

Lab Sample ID: 240-175891-3

Date Collected: 10/31/22 11:50

Matrix: Water

Date Received: 11/04/22 09:40

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			11/10/22 12:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 12:21	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 12:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 12:21	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 12:21	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 12:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		62 - 137		11/10/22 12:21	1
4-Bromofluorobenzene (Surr)	101		56 - 136		11/10/22 12:21	1
Toluene-d8 (Surr)	98		78 - 122		11/10/22 12:21	1
Dibromofluoromethane (Surr)	94		73 - 120		11/10/22 12:21	1

Client Sample ID: MW-73SR_103122

Lab Sample ID: 240-175891-4

Date Collected: 10/31/22 12:50

Matrix: Water

Date Received: 11/04/22 09:40

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			11/13/22 09:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		66 - 120		11/13/22 09:08	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			11/10/22 12:45	1
cis-1,2-Dichloroethene	1.9		1.0	0.46	ug/L			11/10/22 12:45	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 12:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 12:45	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 12:45	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 12:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		62 - 137		11/10/22 12:45	1
4-Bromofluorobenzene (Surr)	99		56 - 136		11/10/22 12:45	1
Toluene-d8 (Surr)	95		78 - 122		11/10/22 12:45	1
Dibromofluoromethane (Surr)	93		73 - 120		11/10/22 12:45	1

Client Sample ID: MW-73D_103122

Lab Sample ID: 240-175891-5

Date Collected: 10/31/22 13:55

Matrix: Water

Date Received: 11/04/22 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.2		2.0	0.86	ug/L			11/13/22 09:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		66 - 120		11/13/22 09:32	1

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: MW-73D_103122

Lab Sample ID: 240-175891-5

Date Collected: 10/31/22 13:55

Matrix: Water

Date Received: 11/04/22 09:40

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			11/10/22 13:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 13:10	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 13:10	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:10	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 13:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		62 - 137		11/10/22 13:10	1
4-Bromofluorobenzene (Surr)	99		56 - 136		11/10/22 13:10	1
Toluene-d8 (Surr)	94		78 - 122		11/10/22 13:10	1
Dibromofluoromethane (Surr)	92		73 - 120		11/10/22 13:10	1

Client Sample ID: MW-214S_110122

Lab Sample ID: 240-175891-6

Date Collected: 11/01/22 14:35

Matrix: Water

Date Received: 11/04/22 09:40

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			11/13/22 09:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		66 - 120		11/13/22 09:57	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			11/10/22 13:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 13:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 13:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 13:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		62 - 137		11/10/22 13:34	1
4-Bromofluorobenzene (Surr)	100		56 - 136		11/10/22 13:34	1
Toluene-d8 (Surr)	97		78 - 122		11/10/22 13:34	1
Dibromofluoromethane (Surr)	94		73 - 120		11/10/22 13:34	1

Client Sample ID: MW-74S_110122

Lab Sample ID: 240-175891-7

Date Collected: 11/01/22 12:00

Matrix: Water

Date Received: 11/04/22 09:40

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			11/13/22 10:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 120		11/13/22 10:21	1

Client Sample Results

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

Job ID: 240-175891-1

Client Sample ID: MW-74S_110122

Lab Sample ID: 240-175891-7

Date Collected: 11/01/22 12:00

Matrix: Water

Date Received: 11/04/22 09:40

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			11/10/22 13:59	1
cis-1,2-Dichloroethene	1.3		1.0	0.46	ug/L			11/10/22 13:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 13:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 13:59	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/22 13:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		62 - 137		11/10/22 13:59	1
4-Bromofluorobenzene (Surr)	101		56 - 136		11/10/22 13:59	1
Toluene-d8 (Surr)	99		78 - 122		11/10/22 13:59	1
Dibromofluoromethane (Surr)	95		73 - 120		11/10/22 13:59	1

Client Sample ID: MW-74_110122

Lab Sample ID: 240-175891-8

Date Collected: 11/01/22 10:40

Matrix: Water

Date Received: 11/04/22 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.1		2.0	0.86	ug/L			11/13/22 10:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		66 - 120		11/13/22 10:45	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			11/10/22 14:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/22 14:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 14:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/22 14:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/22 14:23	1
Vinyl chloride	3.5		1.0	0.45	ug/L			11/10/22 14:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		62 - 137		11/10/22 14:23	1
4-Bromofluorobenzene (Surr)	102		56 - 136		11/10/22 14:23	1
Toluene-d8 (Surr)	100		78 - 122		11/10/22 14:23	1
Dibromofluoromethane (Surr)	96		73 - 120		11/10/22 14:23	1