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ANALYTICAL REPORT

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Tel: (330)497-9396

Laboratory Job ID: 240-162581-1
Client Project/Site: Ford LTP - On-Site

For:
ARCADIS U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Attn: Kristoffer Hinskey

Authorized for release by:
2/24/2022 8:27:17 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: 240-162581-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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

Job ID: 240-162581-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-162581-1

Comments
No additional comments.

Receipt
The samples were received on 2/10/2022 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 4.1º C.

GC/MS VOA
Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-517982.

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 - On-Site

Job ID: 240-162581-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

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

Laboratory References:

TAL 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: 240-162581-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-162581-1	TRIP BLANK_71	Water	02/08/22 00:00	02/10/22 11:00
240-162581-2	MW-20_020822	Water	02/08/22 11:35	02/10/22 11:00
240-162581-3	MW-220S_020822	Water	02/08/22 12:30	02/10/22 11:00
240-162581-4	MW-64_020822	Water	02/08/22 13:40	02/10/22 11:00
240-162581-5	MW-69_020822	Water	02/08/22 14:50	02/10/22 11:00

Detection Summary

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

Job ID: 240-162581-1

Client Sample ID: TRIP BLANK_71 — Lab Sample ID: 240-162581-1

No Detections.

Client Sample ID: MW-20_020822 — Lab Sample ID: 240-162581-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	25		1.0	0.46	ug/L	1		8260B	Total/NA
Vinyl chloride	4.0		1.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: MW-220S_020822 — Lab Sample ID: 240-162581-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	10		1.0	0.46	ug/L	1		8260B	Total/NA
Vinyl chloride	1.8		1.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: MW-64_020822 — Lab Sample ID: 240-162581-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.7		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	68		2.0	0.92	ug/L	2		8260B	Total/NA
trans-1,2-Dichloroethene	2.0		1.0	0.51	ug/L	1		8260B	Total/NA
Vinyl chloride	11		1.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: MW-69_020822 — Lab Sample ID: 240-162581-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.8		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	50		1.0	0.46	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.3		1.0	0.51	ug/L	1		8260B	Total/NA
Vinyl chloride	7.9		1.0	0.45	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-162581-1

Client Sample ID: TRIP BLANK_71

Date Collected: 02/08/22 00:00
Date Received: 02/10/22 11:00

Lab Sample ID: 240-162581-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (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			02/11/22 13:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			02/11/22 13:08	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 13:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/11/22 13:08	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 13:08	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/11/22 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*		*02/11/22 13:08*	*1*
4-Bromofluorobenzene (Surr)	*101*		*56 - 136*		*02/11/22 13:08*	*1*
Toluene-d8 (Surr)	*92*		*78 - 122*		*02/11/22 13:08*	*1*
Dibromofluoromethane (Surr)	*93*		*73 - 120*		*02/11/22 13:08*	*1*

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

Job ID: 240-162581-1

Client Sample ID: MW-20_020822
Date Collected: 02/08/22 11:35
Date Received: 02/10/22 11:00

Lab Sample ID: 240-162581-2
Matrix: Water

Method: 8260B 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			02/11/22 17:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*66 - 120*		*02/11/22 17:18*	*1*

Method: 8260B - Volatile Organic Compounds (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			02/11/22 13:31	1
cis-1,2-Dichloroethene	**25**		1.0	0.46	ug/L			02/11/22 13:31	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 13:31	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/11/22 13:31	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 13:31	1
Vinyl chloride	**4.0**		1.0	0.45	ug/L			02/11/22 13:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*		*02/11/22 13:31*	*1*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*		*02/11/22 13:31*	*1*
Toluene-d8 (Surr)	*91*		*78 - 122*		*02/11/22 13:31*	*1*
Dibromofluoromethane (Surr)	*94*		*73 - 120*		*02/11/22 13:31*	*1*

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

Job ID: 240-162581-1

Client Sample ID: MW-220S_020822
Date Collected: 02/08/22 12:30
Date Received: 02/10/22 11:00

Lab Sample ID: 240-162581-3
Matrix: Water

Method: 8260B 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			02/11/22 17:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*66 - 120*		*02/11/22 17:43*	*1*

Method: 8260B - Volatile Organic Compounds (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			02/11/22 13:53	1
cis-1,2-Dichloroethene	**10**		1.0	0.46	ug/L			02/11/22 13:53	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 13:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/11/22 13:53	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 13:53	1
Vinyl chloride	**1.8**		1.0	0.45	ug/L			02/11/22 13:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*		*02/11/22 13:53*	*1*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*		*02/11/22 13:53*	*1*
Toluene-d8 (Surr)	*91*		*78 - 122*		*02/11/22 13:53*	*1*
Dibromofluoromethane (Surr)	*95*		*73 - 120*		*02/11/22 13:53*	*1*

Client Sample ID: MW-64_020822

Date Collected: 02/08/22 13:40
Date Received: 02/10/22 11:00

Lab Sample ID: 240-162581-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.7**		2.0	0.86	ug/L			02/11/22 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*66 - 120*		*02/11/22 18:08*	*1*

Method: 8260B - Volatile Organic Compounds (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			02/11/22 14:16	1
cis-1,2-Dichloroethene	**68**		2.0	0.92	ug/L			02/14/22 12:46	2
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 14:16	1
trans-1,2-Dichloroethene	**2.0**		1.0	0.51	ug/L			02/11/22 14:16	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 14:16	1
Vinyl chloride	**11**		1.0	0.45	ug/L			02/11/22 14:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*62 - 137*		*02/11/22 14:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*		*02/14/22 12:46*	*2*
4-Bromofluorobenzene (Surr)	*100*		*56 - 136*		*02/11/22 14:16*	*1*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*		*02/14/22 12:46*	*2*
Toluene-d8 (Surr)	*94*		*78 - 122*		*02/11/22 14:16*	*1*
Toluene-d8 (Surr)	*95*		*78 - 122*		*02/14/22 12:46*	*2*
Dibromofluoromethane (Surr)	*95*		*73 - 120*		*02/11/22 14:16*	*1*
Dibromofluoromethane (Surr)	*96*		*73 - 120*		*02/14/22 12:46*	*2*

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

Job ID: 240-162581-1

Client Sample ID: MW-69_020822
Date Collected: 02/08/22 14:50
Date Received: 02/10/22 11:00

Lab Sample ID: 240-162581-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.8**		2.0	0.86	ug/L			02/11/22 18:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*83*		*66 - 120*		*02/11/22 18:33*	*1*

Method: 8260B - Volatile Organic Compounds (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			02/11/22 14:38	1
cis-1,2-Dichloroethene	**50**		1.0	0.46	ug/L			02/11/22 14:38	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 14:38	1
trans-1,2-Dichloroethene	**1.3**		1.0	0.51	ug/L			02/11/22 14:38	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 14:38	1
Vinyl chloride	**7.9**		1.0	0.45	ug/L			02/11/22 14:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*		*02/11/22 14:38*	*1*
4-Bromofluorobenzene (Surr)	*101*		*56 - 136*		*02/11/22 14:38*	*1*
Toluene-d8 (Surr)	*94*		*78 - 122*		*02/11/22 14:38*	*1*
Dibromofluoromethane (Surr)	*94*		*73 - 120*		*02/11/22 14:38*	*1*

Surrogate Summary

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

Job ID: 240-162581-1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-162581-1	TRIP BLANK_71	94	101	92	93
240-162581-2	MW-20_020822	94	99	91	94
240-162581-3	MW-220S_020822	97	98	91	95
240-162581-4	MW-64_020822	98	100	94	95
240-162581-4	MW-64_020822	96	102	95	96
240-162581-5	MW-69_020822	95	101	94	94
240-162582-E-2 MS	Matrix Spike	99	102	96	99
240-162582-H-2 MSD	Matrix Spike Duplicate	95	101	93	95
LCS 240-517868/5	Lab Control Sample	92	99	91	95
LCS 240-517982/5	Lab Control Sample	98	104	95	98
LCSD 240-517868/6	Lab Control Sample Dup	94	100	92	95
LCSD 240-517982/6	Lab Control Sample Dup	97	102	93	97
MB 240-517868/9	Method Blank	94	98	92	94
MB 240-517982/9	Method Blank	95	99	94	94

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(66-120)
240-162581-2	MW-20_020822	82
240-162581-3	MW-220S_020822	80
240-162581-4	MW-64_020822	82
240-162581-5	MW-69_020822	83
240-162582-I-2 MS	Matrix Spike	81
240-162582-O-2 MSD	Matrix Spike Duplicate	81
LCS 240-517921/4	Lab Control Sample	82
MB 240-517921/5	Method Blank	82

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(10-150)
MRL 240-517921/6	Lab Control Sample	80

Surrogate Legend

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

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

Lab Sample ID: MB 240-517868/9
Matrix: Water
Analysis Batch: 517868

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			02/11/22 12:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			02/11/22 12:14	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 12:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/11/22 12:14	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/11/22 12:14	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/11/22 12:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*		*02/11/22 12:14*	*1*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*		*02/11/22 12:14*	*1*
Toluene-d8 (Surr)	*92*		*78 - 122*		*02/11/22 12:14*	*1*
Dibromofluoromethane (Surr)	*94*		*73 - 120*		*02/11/22 12:14*	*1*

Lab Sample ID: LCS 240-517868/5
Matrix: Water
Analysis Batch: 517868

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			20.0	19.9		ug/L		99	63 - 134		
cis-1,2-Dichloroethene			20.0	18.0		ug/L		90	77 - 123		
Tetrachloroethene			20.0	16.8		ug/L		84	76 - 123		
trans-1,2-Dichloroethene			20.0	18.2		ug/L		91	75 - 124		
Trichloroethene			20.0	17.9		ug/L		89	70 - 122		
Vinyl chloride			20.0	17.6		ug/L		88	60 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*62 - 137*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*
Toluene-d8 (Surr)	*91*		*78 - 122*
Dibromofluoromethane (Surr)	*95*		*73 - 120*

Lab Sample ID: LCSD 240-517868/6
Matrix: Water
Analysis Batch: 517868

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene			20.0	22.1		ug/L		110	63 - 134	10	35
cis-1,2-Dichloroethene			20.0	19.9		ug/L		99	77 - 123	10	35
Tetrachloroethene			20.0	18.7		ug/L		93	76 - 123	10	35
trans-1,2-Dichloroethene			20.0	20.4		ug/L		102	75 - 124	12	35
Trichloroethene			20.0	19.8		ug/L		99	70 - 122	10	35
Vinyl chloride			20.0	19.6		ug/L		98	60 - 144	11	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*
4-Bromofluorobenzene (Surr)	*100*		*56 - 136*
Toluene-d8 (Surr)	*92*		*78 - 122*

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

Lab Sample ID: LCSD 240-517868/6
Matrix: Water
Analysis Batch: 517868

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	95		73 - 120

Lab Sample ID: 240-162582-E-2 MS
Matrix: Water
Analysis Batch: 517868

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	20.0	20.8		ug/L		104	56 - 135
cis-1,2-Dichloroethene	0.73	J	20.0	18.7		ug/L		90	66 - 128
Tetrachloroethene	1.0	U	20.0	16.7		ug/L		84	62 - 131
trans-1,2-Dichloroethene	1.0	U	20.0	18.6		ug/L		93	56 - 136
Trichloroethene	1.0	U	20.0	17.2		ug/L		86	61 - 124
Vinyl chloride	1.0	U	20.0	21.3		ug/L		107	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		62 - 137
4-Bromofluorobenzene (Surr)	102		56 - 136
Toluene-d8 (Surr)	96		78 - 122
Dibromofluoromethane (Surr)	99		73 - 120

Lab Sample ID: 240-162582-H-2 MSD
Matrix: Water
Analysis Batch: 517868

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	20.0	22.3		ug/L		112	56 - 135	7	26
cis-1,2-Dichloroethene	0.73	J	20.0	20.4		ug/L		99	66 - 128	9	14
Tetrachloroethene	1.0	U	20.0	17.8		ug/L		89	62 - 131	6	20
trans-1,2-Dichloroethene	1.0	U	20.0	20.5		ug/L		102	56 - 136	10	15
Trichloroethene	1.0	U	20.0	18.8		ug/L		94	61 - 124	9	15
Vinyl chloride	1.0	U	20.0	21.3		ug/L		106	43 - 157	0	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		62 - 137
4-Bromofluorobenzene (Surr)	101		56 - 136
Toluene-d8 (Surr)	93		78 - 122
Dibromofluoromethane (Surr)	95		73 - 120

Lab Sample ID: MB 240-517982/9
Matrix: Water
Analysis Batch: 517982

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			02/14/22 12:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			02/14/22 12:01	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/14/22 12:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/14/22 12:01	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/14/22 12:01	1

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

Lab Sample ID: MB 240-517982/9
Matrix: Water
Analysis Batch: 517982

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/14/22 12:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*		*02/14/22 12:01*	*1*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*		*02/14/22 12:01*	*1*
Toluene-d8 (Surr)	*94*		*78 - 122*		*02/14/22 12:01*	*1*
Dibromofluoromethane (Surr)	*94*		*73 - 120*		*02/14/22 12:01*	*1*

Lab Sample ID: LCS 240-517982/5
Matrix: Water
Analysis Batch: 517982

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			20.0	23.1		ug/L		116	63 - 134		
cis-1,2-Dichloroethene			20.0	20.4		ug/L		102	77 - 123		
Tetrachloroethene			20.0	18.9		ug/L		95	76 - 123		
trans-1,2-Dichloroethene			20.0	20.9		ug/L		104	75 - 124		
Trichloroethene			20.0	20.2		ug/L		101	70 - 122		
Vinyl chloride			20.0	20.5		ug/L		103	60 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*62 - 137*
4-Bromofluorobenzene (Surr)	*104*		*56 - 136*
Toluene-d8 (Surr)	*95*		*78 - 122*
Dibromofluoromethane (Surr)	*98*		*73 - 120*

Lab Sample ID: LCSD 240-517982/6
Matrix: Water
Analysis Batch: 517982

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene			20.0	22.1		ug/L		110	63 - 134	5	35
cis-1,2-Dichloroethene			20.0	20.2		ug/L		101	77 - 123	1	35
Tetrachloroethene			20.0	18.7		ug/L		94	76 - 123	1	35
trans-1,2-Dichloroethene			20.0	20.3		ug/L		102	75 - 124	2	35
Trichloroethene			20.0	20.1		ug/L		100	70 - 122	0	35
Vinyl chloride			20.0	19.9		ug/L		99	60 - 144	3	35

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

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

Lab Sample ID: MB 240-517921/5
Matrix: Water
Analysis Batch: 517921

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			02/11/22 16:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*66 - 120*		*02/11/22 16:28*	*1*

Lab Sample ID: LCS 240-517921/4
Matrix: Water
Analysis Batch: 517921

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	9.73		ug/L		97	80 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*82*		*66 - 120*

Lab Sample ID: MRL 240-517921/6
Matrix: Water
Analysis Batch: 517921

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			0.00100	0.000899	J	ng/uL		90	10 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*80*		*10 - 150*

Lab Sample ID: 240-162582-I-2 MS
Matrix: Water
Analysis Batch: 517921

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	10.3		ug/L		103	51 - 153		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*81*		*66 - 120*

Lab Sample ID: 240-162582-O-2 MSD
Matrix: Water
Analysis Batch: 517921

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	10.7		ug/L		107	51 - 153	3	16

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*81*		*66 - 120*

GC/MS VOA

Analysis Batch: 517868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-162581-1	TRIP BLANK_71	Total/NA	Water	8260B	
240-162581-2	MW-20_020822	Total/NA	Water	8260B	
240-162581-3	MW-220S_020822	Total/NA	Water	8260B	
240-162581-4	MW-64_020822	Total/NA	Water	8260B	
240-162581-5	MW-69_020822	Total/NA	Water	8260B	
MB 240-517868/9	Method Blank	Total/NA	Water	8260B	
LCS 240-517868/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 240-517868/6	Lab Control Sample Dup	Total/NA	Water	8260B	
240-162582-E-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-162582-H-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 517921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-162581-2	MW-20_020822	Total/NA	Water	8260B SIM	
240-162581-3	MW-220S_020822	Total/NA	Water	8260B SIM	
240-162581-4	MW-64_020822	Total/NA	Water	8260B SIM	
240-162581-5	MW-69_020822	Total/NA	Water	8260B SIM	
MB 240-517921/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-517921/4	Lab Control Sample	Total/NA	Water	8260B SIM	
MRL 240-517921/6	Lab Control Sample	Total/NA	Water	8260B SIM	
240-162582-I-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-162582-O-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 517982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-162581-4	MW-64_020822	Total/NA	Water	8260B	
MB 240-517982/9	Method Blank	Total/NA	Water	8260B	
LCS 240-517982/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 240-517982/6	Lab Control Sample Dup	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-162581-1

Client Sample ID: TRIP BLANK_71
Date Collected: 02/08/22 00:00
Date Received: 02/10/22 11:00

Lab Sample ID: 240-162581-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	517868	02/11/22 13:08	HMB	TAL CAN

Client Sample ID: MW-20_020822
Date Collected: 02/08/22 11:35
Date Received: 02/10/22 11:00

Lab Sample ID: 240-162581-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	517868	02/11/22 13:31	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	517921	02/11/22 17:18	CS	TAL CAN

Client Sample ID: MW-220S_020822
Date Collected: 02/08/22 12:30
Date Received: 02/10/22 11:00

Lab Sample ID: 240-162581-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	517868	02/11/22 13:53	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	517921	02/11/22 17:43	CS	TAL CAN

Client Sample ID: MW-64_020822
Date Collected: 02/08/22 13:40
Date Received: 02/10/22 11:00

Lab Sample ID: 240-162581-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	517868	02/11/22 14:16	HMB	TAL CAN
Total/NA	Analysis	8260B		2	517982	02/14/22 12:46	TJL1	TAL CAN
Total/NA	Analysis	8260B SIM		1	517921	02/11/22 18:08	CS	TAL CAN

Client Sample ID: MW-69_020822
Date Collected: 02/08/22 14:50
Date Received: 02/10/22 11:00

Lab Sample ID: 240-162581-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	517868	02/11/22 14:38	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	517921	02/11/22 18:33	CS	TAL CAN

Laboratory References:
TAL 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 - On-Site

Job ID: 240-162581-1

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	02-23-22
Connecticut	State	PH-0590	12-31-21 *
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
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	11-06-22
New York	NELAP	10975	03-31-22
Ohio	State	8303	02-23-23
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-21-14	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

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

MICHIGAN 190

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager: Kris Hinskey	Site Contact: Julia McClafferty	Lab Contact: Mike DelMonico	COC No:
Company Name: Arcadis				
Address: 28550 Cabot Drive, Suite 500	Telephone: 248-994-2240	Telephone: 734-644-5131	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: Seth Turner	TAT if different from below: ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Walk-in client:
Project Name: Ford LTP On-Site	Method of Shipment/Carrier:	10 day		Lab sampling:
Project Number: 30080642.401.03	Shipping/Tracking No:			Job/SDG No:
PO # 30080642.401.03				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y / N)	Composite=C / Grab=G	1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	Sample Specific Notes / Special Instructions:
TRIP BLANK_ 71				X						1 X	AH				N	G	X	X	X	X	X	X		1 Trip Blank
mw-20_020822	2/8/22	1135								6	AH												X	3 VOAs for 8260B 3 VOAs for 8260B SIM
mw-220S_020822		1230								6	AH												X	
mw-64_020822		1340								6	AH												X	
mw-69_020822		1450								6	AH												X	

240-162581 Chain of Custody

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:

Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728
Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Seth Turner	Arcadis	2/8/22/1530	Novi Cold Storage	Arcadis	2/8/22/1530
Novi Cold Storage	Arcadis	2/9/22 1315		Eurofins	2-9-22 1315
	Eurofins	2-9-22 1414	Received in Laboratory by:		Date/Time: 2-10-22 1100

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 162581
Canton Facility

Client Arcadis Site Name

Cooler Received on 2-10-22 Opened on 2-10-22

Cooler unpacked by: Brandon

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other

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

TestAmerica Cooler # 7 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-14 (CF +0.1 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN #IR-15 (CF +0.2°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	(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.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No (NA) pH Strip Lot# HC157842
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 #_____	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: _____

WI-NC-099

Login # : 162581

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-14 IR-15	4.0	4.1	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	1-8	1-9	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	