

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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Tel: (330)497-9396

Laboratory Job ID: 240-144566-1
Client Project/Site: Ford LTP - On Site

For:
ARCADIS U.S., Inc.
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Attn: Kristoffer Hinskey



Authorized for release by:
3/3/2021 10:12:08 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: 240-144566-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
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, low 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 - On Site

Job ID: 240-144566-1

Job ID: 240-144566-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative 240-144566-1

Comments

No additional comments.

Receipt

The samples were received on 2/17/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.5° C.

GC/MS VOA

Method 8260B: The laboratory control sample (LCS) for analytical batch 240-474305 recovered outside control limits for the following analyte: Tetrachloroethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data has been reported: TRIP BLANK (240-144566-1) and (LCS 240-474305/4).

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: 240-144566-1

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 TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396



Sample Summary

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

Job ID: 240-144566-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-144566-1	TRIP BLANK	Water	02/15/21 00:00	02/17/21 08:00	
240-144566-2	MW-48_021521	Water	02/15/21 13:28	02/17/21 08:00	
240-144566-3	MW-67_021521	Water	02/15/21 14:25	02/17/21 08:00	

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

Detection Summary

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

Job ID: 240-144566-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144566-1

No Detections.

Client Sample ID: MW-48_021521

Lab Sample ID: 240-144566-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.6		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	1.7		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-67_021521

Lab Sample ID: 240-144566-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	5.6		2.5	0.40	ug/L	2.5		8260B	Total/NA
trans-1,2-Dichloroethene	0.79	J	2.5	0.48	ug/L	2.5		8260B	Total/NA
Trichloroethene	44		2.5	0.25	ug/L	2.5		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-144566-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144566-1

Date Collected: 02/15/21 00:00

Matrix: Water

Date Received: 02/17/21 08:00

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	0.19	ug/L			02/24/21 21:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/24/21 21:30	1
Tetrachloroethene	1.0	U **	1.0	0.15	ug/L			02/24/21 21:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/24/21 21:30	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/24/21 21:30	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/24/21 21:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 130		02/24/21 21:30	1
4-Bromofluorobenzene (Surr)	60		47 - 134		02/24/21 21:30	1
Toluene-d8 (Surr)	80		69 - 122		02/24/21 21:30	1
Dibromofluoromethane (Surr)	113		78 - 129		02/24/21 21:30	1

Client Sample Results

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

Job ID: 240-144566-1

Client Sample ID: MW-48_021521

Lab Sample ID: 240-144566-2

Date Collected: 02/15/21 13:28

Matrix: Water

Date Received: 02/17/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.6		2.0	0.86	ug/L			02/24/21 17:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		70 - 133					02/24/21 17:20	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	0.19	ug/L			02/26/21 16:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 16:10	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 16:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 16:10	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 16:10	1
Vinyl chloride	1.7		1.0	0.20	ug/L			02/26/21 16:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130					02/26/21 16:10	1
4-Bromofluorobenzene (Surr)	97		47 - 134					02/26/21 16:10	1
Toluene-d8 (Surr)	96		69 - 122					02/26/21 16:10	1
Dibromofluoromethane (Surr)	85		78 - 129					02/26/21 16:10	1

Client Sample Results

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

Job ID: 240-144566-1

Client Sample ID: MW-67_021521

Lab Sample ID: 240-144566-3

Date Collected: 02/15/21 14:25

Matrix: Water

Date Received: 02/17/21 08:00

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			02/24/21 17:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 133		02/24/21 17:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.5	U	2.5	0.48	ug/L			02/25/21 19:26	2.5
cis-1,2-Dichloroethene	5.6		2.5	0.40	ug/L			02/25/21 19:26	2.5
Tetrachloroethene	2.5	U	2.5	0.38	ug/L			02/25/21 19:26	2.5
trans-1,2-Dichloroethene	0.79	J	2.5	0.48	ug/L			02/25/21 19:26	2.5
Trichloroethene	44		2.5	0.25	ug/L			02/25/21 19:26	2.5
Vinyl chloride	2.5	U	2.5	0.50	ug/L			02/25/21 19:26	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130		02/25/21 19:26	2.5
4-Bromofluorobenzene (Surr)	96		47 - 134		02/25/21 19:26	2.5
Toluene-d8 (Surr)	95		69 - 122		02/25/21 19:26	2.5
Dibromofluoromethane (Surr)	86		78 - 129		02/25/21 19:26	2.5

Surrogate Summary

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

Job ID: 240-144566-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-144566-1	TRIP BLANK	96	60	80	113
240-144566-2	MW-48_021521	86	97	96	85
240-144566-2 MS	MW-48_021521	82	97	93	84
240-144566-2 MSD	MW-48_021521	84	100	95	86
240-144566-3	MW-67_021521	86	96	95	86
240-144568-B-3 MS	Matrix Spike	71 S1-	86	92	87
240-144568-E-3 MSD	Matrix Spike Duplicate	69 S1-	91	93	88
240-144661-D-2 MS	Matrix Spike	84	99	93	86
240-144661-E-2 MSD	Matrix Spike Duplicate	84	99	94	87
LCS 240-474305/4	Lab Control Sample	88	87	89	91
LCS 240-474500/4	Lab Control Sample	85	101	93	86
LCS 240-474673/4	Lab Control Sample	85	99	92	88
MB 240-474305/7	Method Blank	98	67	84	103
MB 240-474500/7	Method Blank	86	98	94	86
MB 240-474673/7	Method Blank	84	96	97	86

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)

Lab Sample ID	Client Sample ID	DCA
		(70-133)
240-144566-2	MW-48_021521	85
240-144566-3	MW-67_021521	86
240-144568-J-2 MS	Matrix Spike	81
240-144568-J-2 MSD	Matrix Spike Duplicate	82
240-144586-J-4 MS	Matrix Spike	83
240-144586-J-4 MSD	Matrix Spike Duplicate	84
LCS 240-474283/4	Lab Control Sample	84
MB 240-474283/5	Method Blank	86

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-144566-1

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

Lab Sample ID: MB 240-474305/7
Matrix: Water
Analysis Batch: 474305

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	0.19	ug/L			02/24/21 14:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/24/21 14:13	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/24/21 14:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/24/21 14:13	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/24/21 14:13	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/24/21 14:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 130		02/24/21 14:13	1
4-Bromofluorobenzene (Surr)	67		47 - 134		02/24/21 14:13	1
Toluene-d8 (Surr)	84		69 - 122		02/24/21 14:13	1
Dibromofluoromethane (Surr)	103		78 - 129		02/24/21 14:13	1

Lab Sample ID: LCS 240-474305/4
Matrix: Water
Analysis Batch: 474305

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	10.0	10.8		ug/L		108	73 - 129
cis-1,2-Dichloroethene	10.0	9.69		ug/L		97	75 - 124
Tetrachloroethene	10.0	12.6	*+	ug/L		126	70 - 125
trans-1,2-Dichloroethene	10.0	11.0		ug/L		110	74 - 130
Trichloroethene	10.0	10.3		ug/L		103	71 - 121
Vinyl chloride	10.0	9.04		ug/L		90	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		75 - 130
4-Bromofluorobenzene (Surr)	87		47 - 134
Toluene-d8 (Surr)	89		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

Lab Sample ID: 240-144568-B-3 MS
Matrix: Water
Analysis Batch: 474305

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	10.0	9.41		ug/L		94	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.71		ug/L		87	68 - 121
Tetrachloroethene	1.0	U *+	10.0	11.6		ug/L		116	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.81		ug/L		98	69 - 126
Trichloroethene	1.0	U	10.0	9.03		ug/L		90	56 - 124
Vinyl chloride	1.0	U	10.0	8.44		ug/L		84	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	71	S1-	75 - 130
4-Bromofluorobenzene (Surr)	86		47 - 134
Toluene-d8 (Surr)	92		69 - 122

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QC Sample Results

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

Job ID: 240-144566-1

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

Lab Sample ID: 240-144568-B-3 MS
Matrix: Water
Analysis Batch: 474305

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	87		78 - 129

Lab Sample ID: 240-144568-E-3 MSD
Matrix: Water
Analysis Batch: 474305

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	10.0	9.22		ug/L		92	64 - 132	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	8.56		ug/L		86	68 - 121	2	35
Tetrachloroethene	1.0	U*+	10.0	11.0		ug/L		110	52 - 129	6	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.16		ug/L		92	69 - 126	7	35
Trichloroethene	1.0	U	10.0	8.83		ug/L		88	56 - 124	2	35
Vinyl chloride	1.0	U	10.0	8.72		ug/L		87	49 - 136	3	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	69	S1-	75 - 130
4-Bromofluorobenzene (Surr)	91		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	88		78 - 129

Lab Sample ID: MB 240-474500/7
Matrix: Water
Analysis Batch: 474500

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	0.19	ug/L			02/25/21 14:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/25/21 14:52	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/25/21 14:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/25/21 14:52	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/25/21 14:52	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/25/21 14:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130		02/25/21 14:52	1
4-Bromofluorobenzene (Surr)	98		47 - 134		02/25/21 14:52	1
Toluene-d8 (Surr)	94		69 - 122		02/25/21 14:52	1
Dibromofluoromethane (Surr)	86		78 - 129		02/25/21 14:52	1

Lab Sample ID: LCS 240-474500/4
Matrix: Water
Analysis Batch: 474500

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	10.0	8.93		ug/L		89	73 - 129
cis-1,2-Dichloroethene	10.0	9.08		ug/L		91	75 - 124
Tetrachloroethene	10.0	9.68		ug/L		97	70 - 125
trans-1,2-Dichloroethene	10.0	9.29		ug/L		93	74 - 130
Trichloroethene	10.0	8.87		ug/L		89	71 - 121

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QC Sample Results

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

Job ID: 240-144566-1

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

Lab Sample ID: LCS 240-474500/4
Matrix: Water
Analysis Batch: 474500

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	10.7		ug/L		107	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		75 - 130
4-Bromofluorobenzene (Surr)	101		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	86		78 - 129

Lab Sample ID: 240-144661-D-2 MS
Matrix: Water
Analysis Batch: 474500

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	1.0	U	10.0	8.81		ug/L		88	68 - 121
Tetrachloroethene	1.0	U	10.0	8.35		ug/L		84	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.36		ug/L		84	69 - 126
Trichloroethene	1.0	U	10.0	8.22		ug/L		82	56 - 124
Vinyl chloride	20		10.0	30.2		ug/L		102	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		75 - 130
4-Bromofluorobenzene (Surr)	99		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	86		78 - 129

Lab Sample ID: 240-144661-E-2 MSD
Matrix: Water
Analysis Batch: 474500

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	1.0	U	10.0	8.80		ug/L		88	68 - 121	0	35
Tetrachloroethene	1.0	U	10.0	8.53		ug/L		85	52 - 129	2	35
trans-1,2-Dichloroethene	1.0	U	10.0	8.64		ug/L		86	69 - 126	3	35
Trichloroethene	1.0	U	10.0	8.36		ug/L		84	56 - 124	2	35
Vinyl chloride	20		10.0	29.8		ug/L		98	49 - 136	1	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		75 - 130
4-Bromofluorobenzene (Surr)	99		47 - 134
Toluene-d8 (Surr)	94		69 - 122
Dibromofluoromethane (Surr)	87		78 - 129

Lab Sample ID: MB 240-474673/7
Matrix: Water
Analysis Batch: 474673

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	0.19	ug/L			02/26/21 15:45	1

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-144566-1

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

Lab Sample ID: MB 240-474673/7
Matrix: Water
Analysis Batch: 474673

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/26/21 15:45	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/26/21 15:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/26/21 15:45	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/26/21 15:45	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/26/21 15:45	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	84		75 - 130		02/26/21 15:45	1
4-Bromofluorobenzene (Surr)	96		47 - 134		02/26/21 15:45	1
Toluene-d8 (Surr)	97		69 - 122		02/26/21 15:45	1
Dibromofluoromethane (Surr)	86		78 - 129		02/26/21 15:45	1

Lab Sample ID: LCS 240-474673/4
Matrix: Water
Analysis Batch: 474673

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	10.0	8.93		ug/L		89	73 - 129
cis-1,2-Dichloroethene	10.0	9.18		ug/L		92	75 - 124
Tetrachloroethene	10.0	9.50		ug/L		95	70 - 125
trans-1,2-Dichloroethene	10.0	8.71		ug/L		87	74 - 130
Trichloroethene	10.0	8.89		ug/L		89	71 - 121
Vinyl chloride	10.0	11.2		ug/L		112	61 - 134

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	85		75 - 130
4-Bromofluorobenzene (Surr)	99		47 - 134
Toluene-d8 (Surr)	92		69 - 122
Dibromofluoromethane (Surr)	88		78 - 129

Lab Sample ID: 240-144566-2 MS
Matrix: Water
Analysis Batch: 474673

Client Sample ID: MW-48_021521
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
1,1-Dichloroethene	1.0	U	10.0	9.23		ug/L		92	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.70		ug/L		97	68 - 121
Tetrachloroethene	1.0	U	10.0	9.70		ug/L		97	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.53		ug/L		95	69 - 126
Trichloroethene	1.0	U	10.0	9.41		ug/L		94	56 - 124
Vinyl chloride	1.7		10.0	13.1		ug/L		114	49 - 136

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	82		75 - 130
4-Bromofluorobenzene (Surr)	97		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	84		78 - 129

QC Sample Results

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

Job ID: 240-144566-1

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

Lab Sample ID: 240-144566-2 MSD
Matrix: Water
Analysis Batch: 474673

Client Sample ID: MW-48_021521
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	10.0	9.08		ug/L		91	64 - 132	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	8.95		ug/L		89	68 - 121	8	35
Tetrachloroethene	1.0	U	10.0	9.65		ug/L		97	52 - 129	1	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.18		ug/L		92	69 - 126	4	35
Trichloroethene	1.0	U	10.0	8.72		ug/L		87	56 - 124	8	35
Vinyl chloride	1.7		10.0	13.0		ug/L		112	49 - 136	1	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		75 - 130
4-Bromofluorobenzene (Surr)	100		47 - 134
Toluene-d8 (Surr)	95		69 - 122
Dibromofluoromethane (Surr)	86		78 - 129

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

Lab Sample ID: MB 240-474283/5
Matrix: Water
Analysis Batch: 474283

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			02/24/21 11:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 133		02/24/21 11:01	1

Lab Sample ID: LCS 240-474283/4
Matrix: Water
Analysis Batch: 474283

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	10.5		ug/L		105	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		70 - 133

Lab Sample ID: 240-144568-J-2 MS
Matrix: Water
Analysis Batch: 474283

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	9.90		ug/L		99	46 - 170

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	81		70 - 133

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-144566-1

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

Lab Sample ID: 240-144568-J-2 MSD
Matrix: Water
Analysis Batch: 474283

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	9.89		ug/L		99	46 - 170	0	26
Surrogate	MSD %Recovery		MSD Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	82		U	70 - 133							

Lab Sample ID: 240-144586-J-4 MS
Matrix: Water
Analysis Batch: 474283

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	46 - 170		
Surrogate	MS %Recovery		MS Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	83		U	70 - 133							

Lab Sample ID: 240-144586-J-4 MSD
Matrix: Water
Analysis Batch: 474283

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	10.1		ug/L		101	46 - 170	2	26
Surrogate	MSD %Recovery		MSD Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	84		U	70 - 133							

QC Association Summary

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

Job ID: 240-144566-1

GC/MS VOA

Analysis Batch: 474283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144566-2	MW-48_021521	Total/NA	Water	8260B SIM	
240-144566-3	MW-67_021521	Total/NA	Water	8260B SIM	
MB 240-474283/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-474283/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144568-J-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-144568-J-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	
240-144586-J-4 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-144586-J-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 474305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144566-1	TRIP BLANK	Total/NA	Water	8260B	
MB 240-474305/7	Method Blank	Total/NA	Water	8260B	
LCS 240-474305/4	Lab Control Sample	Total/NA	Water	8260B	
240-144568-B-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-144568-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 474500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144566-3	MW-67_021521	Total/NA	Water	8260B	
MB 240-474500/7	Method Blank	Total/NA	Water	8260B	
LCS 240-474500/4	Lab Control Sample	Total/NA	Water	8260B	
240-144661-D-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-144661-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 474673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144566-2	MW-48_021521	Total/NA	Water	8260B	
MB 240-474673/7	Method Blank	Total/NA	Water	8260B	
LCS 240-474673/4	Lab Control Sample	Total/NA	Water	8260B	
240-144566-2 MS	MW-48_021521	Total/NA	Water	8260B	
240-144566-2 MSD	MW-48_021521	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-144566-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144566-1

Date Collected: 02/15/21 00:00

Matrix: Water

Date Received: 02/17/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474305	02/24/21 21:30	LRW	TAL CAN

Client Sample ID: MW-48_021521

Lab Sample ID: 240-144566-2

Date Collected: 02/15/21 13:28

Matrix: Water

Date Received: 02/17/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474673	02/26/21 16:10	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	474283	02/24/21 17:20	SAM	TAL CAN

Client Sample ID: MW-67_021521

Lab Sample ID: 240-144566-3

Date Collected: 02/15/21 14:25

Matrix: Water

Date Received: 02/17/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	474500	02/25/21 19:26	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	474283	02/24/21 17:45	SAM	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

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

Job ID: 240-144566-1

Laboratory: Eurofins TestAmerica, 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	02-23-21 *
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21 *
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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



04/6.5

Chain of Custody Record

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

Regulatory program: DW NPDES RCRA Other

Client Contact: Arcadis
Address: 28550 Cabot Drive, Suite 500
City/State/Zip: Novi, MI, 48377
Phone: 248-994-2240
Project Name: Ford LTP On-Site
Project Number: 30050315.401.03
PO # 30050315.401.03

Client Project Manager: Kris Hinskey
Telephone: 248-994-2240
Email: kristoffer.hinskey@arcadis.com
Site Contact: Julia McClafferty
Telephone: 734-644-5131

Sampler Name: **CHRISTINA WEAVER**
Method of Shipment/Carrier:
Shipping/Tracking No.:

TAT if different from below: 3 weeks 2 weeks 1 week 2 days 1 day
Analysis Turnaround Time: **10 day**

Containers & Preservatives:
HCl HNO3 H2SO4 Other:

Matrix:
Air Aqueous Sediment Solid Other:

Sample Date	Sample Time	Sample Identification
2/15/21	---	TRIP BLANK
2/15/21	1328	MW-48-021521
2/15/21	1425	MW-67-021521

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

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

Walk-in client
Lab sampling
Job/SDG No.:

Sample Specific Notes / Special Instructions:
TRIP BLANK
3 VOAS METHOD 8260B
3 VOAS METHOD 8260B
L

of / COCs
for lab use only

TestAmerica Laboratories, Inc.
COC No.:



Possible Hazard Identification: Non-Hazard Flammable 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: *Christina Weaver* Company: ARCADIS Date/Time: 2/15/21 / 1600
Relinquished by: *Christina Weaver* Company: ARCADIS Date/Time: 2/16/21 / 1009
Relinquished by: *Mwendu Ballew* Company: ETA Date/Time: 2/16/21 12:40

Received by: *Mwendu Ballew* Company: ARCADIS Date/Time: 2/15/21 / 1600
Received by: *Mwendu Ballew* Company: ETA Date/Time: 2/16/21 / 10:09
Received by: *Mwendu Ballew* Company: ETA Date/Time: 2-17-21 800

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**Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility**

Login # : 144566

Client Arcadis Site Name _____
Cooler Received on 2-17-21 Opened on 2-17-21
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Cooler unpacked by:
Math Smg

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

TestAmerica Cooler # 7A 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-11 (CF +0.1 °C) Observed Cooler Temp. 0.4 °C Corrected Cooler Temp. 0.5 °C
IR GUN #IR-12 (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 NA
-Were tamper/custody seals intact and uncompromised? Yes No NA

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

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# HC907861
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 # _____ 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) _____ 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: _____

Eurofins TestAmerica Billing Sheet

Client: Arcadis

Field Personnel: Amanda Battershell

Site: _____

Date: 2/16/21

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Pickup | <input type="checkbox"/> City Split Pickup | <input type="checkbox"/> City Split Pickup & Pour Up |
| <input type="checkbox"/> Sampling | <input type="checkbox"/> Rush TAT | <input type="checkbox"/> Same Day TAT |
| <input type="checkbox"/> Composite | <input type="checkbox"/> Grab | <input type="checkbox"/> Available CN (field) |
| <input type="checkbox"/> On Site (Hrs.) | <input type="checkbox"/> Drive Time (Hrs.) | |
| <input type="checkbox"/> Truck Fee | <input type="checkbox"/> Mileage (out of area) | |

Equipment Used

- | | |
|--|---|
| <input type="checkbox"/> ISCO/Composite Sampler | <input type="checkbox"/> Tyvek Suit |
| <input type="checkbox"/> Flow Meter | <input type="checkbox"/> SS Auger |
| <input type="checkbox"/> Tubing (Ft.) | <input type="checkbox"/> SS Shovel |
| <input type="checkbox"/> Rope (Ft.) | <input type="checkbox"/> Disposable Slot Sampler |
| <input type="checkbox"/> Coliwasa | <input type="checkbox"/> Drum Coring Bit |
| <input type="checkbox"/> pH Meter | <input type="checkbox"/> Air Comp. & Control Box |
| <input type="checkbox"/> Disposable Bailer | <input type="checkbox"/> 3ft. <input type="checkbox"/> 6ft. <input type="checkbox"/> 7ft. |
| <input type="checkbox"/> Misc. /Other Equipment: _____ | |

