

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-149243-1
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:
5/26/2021 2:20:12 PM

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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: 240-149243-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
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

Case Narrative

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

Job ID: 240-149243-1

Job ID: 240-149243-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative 240-149243-1

Comments

No additional comments.

Receipt

The samples were received on 5/12/2021 8:00 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 1.6° C and 1.7° C.

GC/MS VOA

Method 8260B: The continuing calibration verification (CCV) associated with batch 486521 recovered above the upper control limit for Vinyl Chloride. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The associated sample is impacted: TRIP BLANK_56 (240-149243-1).

Method 8260B: No MS/MSD in batch 486699 due to an incorrect dilution: MW-20_051021 (240-149243-2).

Method 8260B: The continuing calibration verification (CCV) associated with batch 486912 recovered above the upper control limit for Vinyl chloride and 1,1-Dichloroethene. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data have been reported. The associated sample is impacted: MW-18_051021 (240-149243-7).

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: 240-149243-1

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

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- 13
- 14

Sample Summary

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

Job ID: 240-149243-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-149243-1	TRIP BLANK_56	Water	05/10/21 00:00	05/12/21 08:00	
240-149243-2	MW-20_051021	Water	05/10/21 16:45	05/12/21 08:00	
240-149243-3	DUP-06	Water	05/10/21 00:00	05/12/21 08:00	
240-149243-4	MW-10_051021	Water	05/10/21 10:50	05/12/21 08:00	
240-149243-5	MW-04_051021	Water	05/10/21 12:00	05/12/21 08:00	
240-149243-6	MW-02_051021	Water	05/10/21 14:15	05/12/21 08:00	
240-149243-7	MW-18_051021	Water	05/10/21 18:20	05/12/21 08:00	

Detection Summary

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

Job ID: 240-149243-1

Client Sample ID: TRIP BLANK_56

Lab Sample ID: 240-149243-1

No Detections.

Client Sample ID: MW-20_051021

Lab Sample ID: 240-149243-2

No Detections.

Client Sample ID: DUP-06

Lab Sample ID: 240-149243-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	29	J	130	24	ug/L	125		8260B	Total/NA
cis-1,2-Dichloroethene	17000		500	80	ug/L	500		8260B	Total/NA
trans-1,2-Dichloroethene	550		130	24	ug/L	125		8260B	Total/NA
Trichloroethene	14000		500	50	ug/L	500		8260B	Total/NA
Vinyl chloride	1200		130	25	ug/L	125		8260B	Total/NA

Client Sample ID: MW-10_051021

Lab Sample ID: 240-149243-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.1		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	45	J	170	27	ug/L	166.667		8260B	Total/NA
Trichloroethene	27	J	170	17	ug/L	166.667		8260B	Total/NA
Vinyl chloride	4300		170	33	ug/L	166.667		8260B	Total/NA

Client Sample ID: MW-04_051021

Lab Sample ID: 240-149243-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	17000		500	80	ug/L	500		8260B	Total/NA
trans-1,2-Dichloroethene	590		500	95	ug/L	500		8260B	Total/NA
Trichloroethene	14000		500	50	ug/L	500		8260B	Total/NA
Vinyl chloride	1300		500	100	ug/L	500		8260B	Total/NA

Client Sample ID: MW-02_051021

Lab Sample ID: 240-149243-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.4		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	2900		130	20	ug/L	125		8260B	Total/NA
trans-1,2-Dichloroethene	750		130	24	ug/L	125		8260B	Total/NA
Trichloroethene	19	J	130	13	ug/L	125		8260B	Total/NA
Vinyl chloride	210		130	25	ug/L	125		8260B	Total/NA

Client Sample ID: MW-18_051021

Lab Sample ID: 240-149243-7

No Detections.

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: 240-149243-1

Client Sample ID: TRIP BLANK_56

Lab Sample ID: 240-149243-1

Date Collected: 05/10/21 00:00

Matrix: Water

Date Received: 05/12/21 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			05/19/21 20:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/19/21 20:00	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/19/21 20:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/19/21 20:00	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/19/21 20:00	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/19/21 20:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	127		75 - 130		05/19/21 20:00	1
4-Bromofluorobenzene (Surr)	66		47 - 134		05/19/21 20:00	1
Toluene-d8 (Surr)	82		69 - 122		05/19/21 20:00	1
Dibromofluoromethane (Surr)	107		78 - 129		05/19/21 20:00	1

Client Sample Results

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

Job ID: 240-149243-1

Client Sample ID: MW-20_051021

Lab Sample ID: 240-149243-2

Date Collected: 05/10/21 16:45

Matrix: Water

Date Received: 05/12/21 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			05/14/21 21:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 133		05/14/21 21:03	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			05/20/21 15:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/20/21 15:44	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/20/21 15:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/20/21 15:44	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/20/21 15:44	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/20/21 15:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		75 - 130		05/20/21 15:44	1
4-Bromofluorobenzene (Surr)	76		47 - 134		05/20/21 15:44	1
Toluene-d8 (Surr)	84		69 - 122		05/20/21 15:44	1
Dibromofluoromethane (Surr)	91		78 - 129		05/20/21 15:44	1

Client Sample Results

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

Job ID: 240-149243-1

Client Sample ID: DUP-06

Lab Sample ID: 240-149243-3

Date Collected: 05/10/21 00:00

Matrix: Water

Date Received: 05/12/21 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			05/14/21 21:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 133					05/14/21 21:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	29	J	130	24	ug/L			05/24/21 14:59	125
cis-1,2-Dichloroethene	17000		500	80	ug/L			05/24/21 19:35	500
Tetrachloroethene	130	U	130	19	ug/L			05/24/21 14:59	125
trans-1,2-Dichloroethene	550		130	24	ug/L			05/24/21 14:59	125
Trichloroethene	14000		500	50	ug/L			05/24/21 19:35	500
Vinyl chloride	1200		130	25	ug/L			05/24/21 14:59	125
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 130					05/24/21 14:59	125
1,2-Dichloroethane-d4 (Surr)	108		75 - 130					05/24/21 19:35	500
4-Bromofluorobenzene (Surr)	97		47 - 134					05/24/21 14:59	125
4-Bromofluorobenzene (Surr)	93		47 - 134					05/24/21 19:35	500
Toluene-d8 (Surr)	103		69 - 122					05/24/21 14:59	125
Toluene-d8 (Surr)	102		69 - 122					05/24/21 19:35	500
Dibromofluoromethane (Surr)	110		78 - 129					05/24/21 14:59	125
Dibromofluoromethane (Surr)	108		78 - 129					05/24/21 19:35	500

Client Sample Results

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

Job ID: 240-149243-1

Client Sample ID: MW-10_051021

Lab Sample ID: 240-149243-4

Date Collected: 05/10/21 10:50

Matrix: Water

Date Received: 05/12/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.1		2.0	0.86	ug/L			05/14/21 21:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 133					05/14/21 21:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	170	U	170	32	ug/L			05/24/21 15:24	166.667
cis-1,2-Dichloroethene	45	J	170	27	ug/L			05/24/21 15:24	166.667
Tetrachloroethene	170	U	170	25	ug/L			05/24/21 15:24	166.667
trans-1,2-Dichloroethene	170	U	170	32	ug/L			05/24/21 15:24	166.667
Trichloroethene	27	J	170	17	ug/L			05/24/21 15:24	166.667
Vinyl chloride	4300		170	33	ug/L			05/24/21 15:24	166.667
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 130					05/24/21 15:24	166.667
4-Bromofluorobenzene (Surr)	93		47 - 134					05/24/21 15:24	166.667
Toluene-d8 (Surr)	101		69 - 122					05/24/21 15:24	166.667
Dibromofluoromethane (Surr)	105		78 - 129					05/24/21 15:24	166.667

Client Sample Results

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

Job ID: 240-149243-1

Client Sample ID: MW-04_051021

Lab Sample ID: 240-149243-5

Date Collected: 05/10/21 12:00

Matrix: Water

Date Received: 05/12/21 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			05/14/21 22:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 133					05/14/21 22:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	500	U	500	95	ug/L			05/24/21 15:49	500
cis-1,2-Dichloroethene	17000		500	80	ug/L			05/24/21 15:49	500
Tetrachloroethene	500	U	500	75	ug/L			05/24/21 15:49	500
trans-1,2-Dichloroethene	590		500	95	ug/L			05/24/21 15:49	500
Trichloroethene	14000		500	50	ug/L			05/24/21 15:49	500
Vinyl chloride	1300		500	100	ug/L			05/24/21 15:49	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 130					05/24/21 15:49	500
4-Bromofluorobenzene (Surr)	94		47 - 134					05/24/21 15:49	500
Toluene-d8 (Surr)	101		69 - 122					05/24/21 15:49	500
Dibromofluoromethane (Surr)	107		78 - 129					05/24/21 15:49	500

Client Sample Results

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

Job ID: 240-149243-1

Client Sample ID: MW-02_051021

Lab Sample ID: 240-149243-6

Date Collected: 05/10/21 14:15

Matrix: Water

Date Received: 05/12/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.4		2.0	0.86	ug/L			05/18/21 14:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 133					05/18/21 14:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	130	U	130	24	ug/L			05/24/21 16:14	125
cis-1,2-Dichloroethene	2900		130	20	ug/L			05/24/21 16:14	125
Tetrachloroethene	130	U	130	19	ug/L			05/24/21 16:14	125
trans-1,2-Dichloroethene	750		130	24	ug/L			05/24/21 16:14	125
Trichloroethene	19	J	130	13	ug/L			05/24/21 16:14	125
Vinyl chloride	210		130	25	ug/L			05/24/21 16:14	125
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 130					05/24/21 16:14	125
4-Bromofluorobenzene (Surr)	90		47 - 134					05/24/21 16:14	125
Toluene-d8 (Surr)	100		69 - 122					05/24/21 16:14	125
Dibromofluoromethane (Surr)	108		78 - 129					05/24/21 16:14	125

Client Sample Results

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

Job ID: 240-149243-1

Client Sample ID: MW-18_051021

Lab Sample ID: 240-149243-7

Date Collected: 05/10/21 18:20

Matrix: Water

Date Received: 05/12/21 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			05/18/21 15:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 133					05/18/21 15:20	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			05/21/21 17:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/21/21 17:50	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/21/21 17:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/21/21 17:50	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/21/21 17:50	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/21/21 17:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	126		75 - 130					05/21/21 17:50	1
4-Bromofluorobenzene (Surr)	72		47 - 134					05/21/21 17:50	1
Toluene-d8 (Surr)	92		69 - 122					05/21/21 17:50	1
Dibromofluoromethane (Surr)	99		78 - 129					05/21/21 17:50	1

Surrogate Summary

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

Job ID: 240-149243-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-149235-A-2 MS	Matrix Spike	99	97	97	92
240-149235-C-2 MSD	Matrix Spike Duplicate	98	97	100	89
240-149243-1	TRIP BLANK_56	127	66	82	107
240-149243-2	MW-20_051021	78	76	84	91
240-149243-3	DUP-06	108	93	102	108
240-149243-3	DUP-06	108	97	103	110
240-149243-4	MW-10_051021	103	93	101	105
240-149243-5	MW-04_051021	105	94	101	107
240-149243-6	MW-02_051021	105	90	100	108
240-149243-7	MW-18_051021	126	72	92	99
240-149244-A-2 MS	Matrix Spike	109	97	100	89
240-149244-G-2 MSD	Matrix Spike Duplicate	111	94	99	92
240-149312-C-10 MS	Matrix Spike	104	105	103	111
240-149312-C-10 MSD	Matrix Spike Duplicate	109	109	107	110
LCS 240-486521/4	Lab Control Sample	96	98	96	90
LCS 240-486699/4	Lab Control Sample	79	84	90	95
LCS 240-486912/4	Lab Control Sample	111	96	101	93
LCS 240-487189/5	Lab Control Sample	100	102	106	106
MB 240-486521/7	Method Blank	111	70	86	99
MB 240-486699/6	Method Blank	77	81	89	91
MB 240-486912/7	Method Blank	122	81	94	96
MB 240-487189/7	Method Blank	100	95	99	107

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (70-133)
240-149111-H-2 MS	Matrix Spike	99
240-149111-N-2 MSD	Matrix Spike Duplicate	95
240-149243-2	MW-20_051021	98
240-149243-3	DUP-06	96
240-149243-4	MW-10_051021	96
240-149243-5	MW-04_051021	98
240-149243-6	MW-02_051021	93
240-149243-7	MW-18_051021	91
240-149329-H-3 MS	Matrix Spike	90
240-149329-N-3 MSD	Matrix Spike Duplicate	85
LCS 240-485808/4	Lab Control Sample	95
LCS 240-486344/4	Lab Control Sample	93
MB 240-485808/5	Method Blank	98
MB 240-486344/5	Method Blank	90

Surrogate Legend

Eurofins TestAmerica, Canton

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site
DCA = 1,2-Dichloroethane-d4 (Surr)

Job ID: 240-149243-1

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

QC Sample Results

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

Job ID: 240-149243-1

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

Lab Sample ID: MB 240-486521/7
Matrix: Water
Analysis Batch: 486521

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	0.19	ug/L			05/19/21 12:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/19/21 12:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/19/21 12:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/19/21 12:25	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/19/21 12:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/19/21 12:25	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	111		75 - 130		05/19/21 12:25	1
4-Bromofluorobenzene (Surr)	70		47 - 134		05/19/21 12:25	1
Toluene-d8 (Surr)	86		69 - 122		05/19/21 12:25	1
Dibromofluoromethane (Surr)	99		78 - 129		05/19/21 12:25	1

Lab Sample ID: LCS 240-486521/4
Matrix: Water
Analysis Batch: 486521

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	10.7		ug/L		107	73 - 129
cis-1,2-Dichloroethene	10.0	9.35		ug/L		93	75 - 124
Tetrachloroethene	10.0	9.52		ug/L		95	70 - 125
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	74 - 130
Trichloroethene	10.0	8.56		ug/L		86	71 - 121
Vinyl chloride	10.0	11.9		ug/L		119	61 - 134

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	96		75 - 130
4-Bromofluorobenzene (Surr)	98		47 - 134
Toluene-d8 (Surr)	96		69 - 122
Dibromofluoromethane (Surr)	90		78 - 129

Lab Sample ID: 240-149235-A-2 MS
Matrix: Water
Analysis Batch: 486521

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

Analyte	Sample Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U F2 F1	10.0	14.4	F1	ug/L		144	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.81		ug/L		88	68 - 121
Tetrachloroethene	1.0	U	10.0	9.26		ug/L		93	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.20		ug/L		92	69 - 126
Trichloroethene	1.0	U	10.0	8.08		ug/L		81	56 - 124
Vinyl chloride	1.0	U	10.0	12.8		ug/L		128	49 - 136

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	99		75 - 130
4-Bromofluorobenzene (Surr)	97		47 - 134
Toluene-d8 (Surr)	97		69 - 122

QC Sample Results

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

Job ID: 240-149243-1

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

Lab Sample ID: 240-149235-A-2 MS
Matrix: Water
Analysis Batch: 486521

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	92		78 - 129

Lab Sample ID: 240-149235-C-2 MSD
Matrix: Water
Analysis Batch: 486521

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 F2 F1	10.0	7.87	F2	ug/L		79	64 - 132	58	35
cis-1,2-Dichloroethene	1.0	U	10.0	8.69		ug/L		87	68 - 121	1	35
Tetrachloroethene	1.0	U	10.0	9.15		ug/L		92	52 - 129	1	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.21		ug/L		92	69 - 126	0	35
Trichloroethene	1.0	U	10.0	8.16		ug/L		82	56 - 124	1	35
Vinyl chloride	1.0	U	10.0	11.1		ug/L		111	49 - 136	14	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		75 - 130
4-Bromofluorobenzene (Surr)	97		47 - 134
Toluene-d8 (Surr)	100		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

Lab Sample ID: MB 240-486699/6
Matrix: Water
Analysis Batch: 486699

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			05/20/21 10:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/20/21 10:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/20/21 10:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/20/21 10:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/20/21 10:55	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/20/21 10:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		75 - 130		05/20/21 10:55	1
4-Bromofluorobenzene (Surr)	81		47 - 134		05/20/21 10:55	1
Toluene-d8 (Surr)	89		69 - 122		05/20/21 10:55	1
Dibromofluoromethane (Surr)	91		78 - 129		05/20/21 10:55	1

Lab Sample ID: LCS 240-486699/4
Matrix: Water
Analysis Batch: 486699

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	11.6		ug/L		116	73 - 129
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	75 - 124
Tetrachloroethene	10.0	10.2		ug/L		102	70 - 125
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	74 - 130
Trichloroethene	10.0	9.77		ug/L		98	71 - 121

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-149243-1

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

Lab Sample ID: LCS 240-486699/4
Matrix: Water
Analysis Batch: 486699

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	7.93		ug/L		79	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	79		75 - 130
4-Bromofluorobenzene (Surr)	84		47 - 134
Toluene-d8 (Surr)	90		69 - 122
Dibromofluoromethane (Surr)	95		78 - 129

Lab Sample ID: MB 240-486912/7
Matrix: Water
Analysis Batch: 486912

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			05/21/21 11:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/21/21 11:39	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/21/21 11:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/21/21 11:39	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/21/21 11:39	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/21/21 11:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		75 - 130		05/21/21 11:39	1
4-Bromofluorobenzene (Surr)	81		47 - 134		05/21/21 11:39	1
Toluene-d8 (Surr)	94		69 - 122		05/21/21 11:39	1
Dibromofluoromethane (Surr)	96		78 - 129		05/21/21 11:39	1

Lab Sample ID: LCS 240-486912/4
Matrix: Water
Analysis Batch: 486912

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	9.06		ug/L		91	73 - 129
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	75 - 124
Tetrachloroethene	10.0	10.2		ug/L		102	70 - 125
trans-1,2-Dichloroethene	10.0	10.0		ug/L		100	74 - 130
Trichloroethene	10.0	9.46		ug/L		95	71 - 121
Vinyl chloride	10.0	10.8		ug/L		108	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		75 - 130
4-Bromofluorobenzene (Surr)	96		47 - 134
Toluene-d8 (Surr)	101		69 - 122
Dibromofluoromethane (Surr)	93		78 - 129

QC Sample Results

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

Job ID: 240-149243-1

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

Lab Sample ID: 240-149244-A-2 MS

Matrix: Water

Analysis Batch: 486912

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	12.0		ug/L		120	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.95		ug/L		89	68 - 121
Tetrachloroethene	1.0	U	10.0	9.03		ug/L		90	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.00		ug/L		90	69 - 126
Trichloroethene	1.0	U	10.0	8.18		ug/L		82	56 - 124
Vinyl chloride	1.0	U F1	10.0	11.2		ug/L		112	49 - 136

Surrogate	MS %Recovery	MS Qualifier	MS Limits
1,2-Dichloroethane-d4 (Surr)	109		75 - 130
4-Bromofluorobenzene (Surr)	97		47 - 134
Toluene-d8 (Surr)	100		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

Lab Sample ID: 240-149244-G-2 MSD

Matrix: Water

Analysis Batch: 486912

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	8.53		ug/L		85	64 - 132	34	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.53		ug/L		95	68 - 121	6	35
Tetrachloroethene	1.0	U	10.0	9.50		ug/L		95	52 - 129	5	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.41		ug/L		94	69 - 126	4	35
Trichloroethene	1.0	U	10.0	8.60		ug/L		86	56 - 124	5	35
Vinyl chloride	1.0	U F1	10.0	14.8	F1	ug/L		148	49 - 136	28	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	111		75 - 130
4-Bromofluorobenzene (Surr)	94		47 - 134
Toluene-d8 (Surr)	99		69 - 122
Dibromofluoromethane (Surr)	92		78 - 129

Lab Sample ID: MB 240-487189/7

Matrix: Water

Analysis Batch: 487189

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			05/24/21 14:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/24/21 14:34	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/24/21 14:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/24/21 14:34	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/24/21 14:34	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/24/21 14:34	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 130		05/24/21 14:34	1
4-Bromofluorobenzene (Surr)	95		47 - 134		05/24/21 14:34	1
Toluene-d8 (Surr)	99		69 - 122		05/24/21 14:34	1

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-149243-1

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

Lab Sample ID: MB 240-487189/7
Matrix: Water
Analysis Batch: 487189

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane (Surr)	107		78 - 129		05/24/21 14:34	1

Lab Sample ID: LCS 240-487189/5
Matrix: Water
Analysis Batch: 487189

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	25.0	25.9		ug/L		104	73 - 129
cis-1,2-Dichloroethene	25.0	27.5		ug/L		110	75 - 124
Tetrachloroethene	25.0	27.2		ug/L		109	70 - 125
trans-1,2-Dichloroethene	25.0	27.5		ug/L		110	74 - 130
Trichloroethene	25.0	26.0		ug/L		104	71 - 121
Vinyl chloride	25.0	22.3		ug/L		89	61 - 134

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		75 - 130
4-Bromofluorobenzene (Surr)	102		47 - 134
Toluene-d8 (Surr)	106		69 - 122
Dibromofluoromethane (Surr)	106		78 - 129

Lab Sample ID: 240-149312-C-10 MS
Matrix: Water
Analysis Batch: 487189

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
cis-1,2-Dichloroethene	6800		4170	11200		ug/L		106	68 - 121
trans-1,2-Dichloroethene	85	J	4170	4500		ug/L		106	69 - 126
Trichloroethene	23000	E	4170	26300	E 4	ug/L		89	56 - 124
Vinyl chloride	170	U	4170	3850		ug/L		93	49 - 136

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	104		75 - 130
4-Bromofluorobenzene (Surr)	105		47 - 134
Toluene-d8 (Surr)	103		69 - 122
Dibromofluoromethane (Surr)	111		78 - 129

Lab Sample ID: 240-149312-C-10 MSD
Matrix: Water
Analysis Batch: 487189

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	
				Result	Qualifier					RPD	Limit
cis-1,2-Dichloroethene	6800		4170	11400		ug/L		111	68 - 121	2	35
trans-1,2-Dichloroethene	85	J	4170	4670		ug/L		110	69 - 126	4	35
Trichloroethene	23000	E	4170	26200	E 4	ug/L		85	56 - 124	1	35
Vinyl chloride	170	U	4170	3930		ug/L		94	49 - 136	2	35

QC Sample Results

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

Job ID: 240-149243-1

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

Lab Sample ID: 240-149312-C-10 MSD
Matrix: Water
Analysis Batch: 487189

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

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		75 - 130
4-Bromofluorobenzene (Surr)	109		47 - 134
Toluene-d8 (Surr)	107		69 - 122
Dibromofluoromethane (Surr)	110		78 - 129

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

Lab Sample ID: MB 240-485808/5
Matrix: Water
Analysis Batch: 485808

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			05/14/21 12:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 133		05/14/21 12:23	1

Lab Sample ID: LCS 240-485808/4
Matrix: Water
Analysis Batch: 485808

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	10.4		ug/L		104	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 133

Lab Sample ID: 240-149111-H-2 MS
Matrix: Water
Analysis Batch: 485808

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	2.6		10.0	13.1		ug/L		105	46 - 170

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 133

Lab Sample ID: 240-149111-N-2 MSD
Matrix: Water
Analysis Batch: 485808

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	2.6		10.0	13.1		ug/L		105	46 - 170	0	26

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 133

QC Sample Results

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

Job ID: 240-149243-1

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

Lab Sample ID: MB 240-486344/5
Matrix: Water
Analysis Batch: 486344

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			05/18/21 14:01	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		70 - 133					05/18/21 14:01	1

Lab Sample ID: LCS 240-486344/4
Matrix: Water
Analysis Batch: 486344

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	10.2		ug/L		102	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	93		70 - 133				

Lab Sample ID: 240-149329-H-3 MS
Matrix: Water
Analysis Batch: 486344

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)	90		70 - 133						

Lab Sample ID: 240-149329-N-3 MSD
Matrix: Water
Analysis Batch: 486344

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	Limit
1,4-Dioxane	2.0	U	10.0	10.2		ug/L		102	46 - 170	1	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	85		70 - 133								

QC Association Summary

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

Job ID: 240-149243-1

GC/MS VOA

Analysis Batch: 485808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149243-2	MW-20_051021	Total/NA	Water	8260B SIM	
240-149243-3	DUP-06	Total/NA	Water	8260B SIM	
240-149243-4	MW-10_051021	Total/NA	Water	8260B SIM	
240-149243-5	MW-04_051021	Total/NA	Water	8260B SIM	
MB 240-485808/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-485808/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-149111-H-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-149111-N-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 486344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149243-6	MW-02_051021	Total/NA	Water	8260B SIM	
240-149243-7	MW-18_051021	Total/NA	Water	8260B SIM	
MB 240-486344/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-486344/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-149329-H-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-149329-N-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 486521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149243-1	TRIP BLANK_56	Total/NA	Water	8260B	
MB 240-486521/7	Method Blank	Total/NA	Water	8260B	
LCS 240-486521/4	Lab Control Sample	Total/NA	Water	8260B	
240-149235-A-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-149235-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 486699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149243-2	MW-20_051021	Total/NA	Water	8260B	
MB 240-486699/6	Method Blank	Total/NA	Water	8260B	
LCS 240-486699/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 486912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149243-7	MW-18_051021	Total/NA	Water	8260B	
MB 240-486912/7	Method Blank	Total/NA	Water	8260B	
LCS 240-486912/4	Lab Control Sample	Total/NA	Water	8260B	
240-149244-A-2 MS	Matrix Spike	Total/NA	Water	8260B	
240-149244-G-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 487189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149243-3	DUP-06	Total/NA	Water	8260B	
240-149243-3	DUP-06	Total/NA	Water	8260B	
240-149243-4	MW-10_051021	Total/NA	Water	8260B	
240-149243-5	MW-04_051021	Total/NA	Water	8260B	
240-149243-6	MW-02_051021	Total/NA	Water	8260B	
MB 240-487189/7	Method Blank	Total/NA	Water	8260B	
LCS 240-487189/5	Lab Control Sample	Total/NA	Water	8260B	
240-149312-C-10 MS	Matrix Spike	Total/NA	Water	8260B	
240-149312-C-10 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Eurofins TestAmerica, Canton

Lab Chronicle

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

Job ID: 240-149243-1

Client Sample ID: TRIP BLANK_56

Lab Sample ID: 240-149243-1

Date Collected: 05/10/21 00:00

Matrix: Water

Date Received: 05/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	486521	05/19/21 20:00	LEE	TAL CAN

Client Sample ID: MW-20_051021

Lab Sample ID: 240-149243-2

Date Collected: 05/10/21 16:45

Matrix: Water

Date Received: 05/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	486699	05/20/21 15:44	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	485808	05/14/21 21:03	CS	TAL CAN

Client Sample ID: DUP-06

Lab Sample ID: 240-149243-3

Date Collected: 05/10/21 00:00

Matrix: Water

Date Received: 05/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		125	487189	05/24/21 14:59	SAM	TAL CAN
Total/NA	Analysis	8260B		500	487189	05/24/21 19:35	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	485808	05/14/21 21:28	CS	TAL CAN

Client Sample ID: MW-10_051021

Lab Sample ID: 240-149243-4

Date Collected: 05/10/21 10:50

Matrix: Water

Date Received: 05/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		166.667	487189	05/24/21 15:24	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	485808	05/14/21 21:53	CS	TAL CAN

Client Sample ID: MW-04_051021

Lab Sample ID: 240-149243-5

Date Collected: 05/10/21 12:00

Matrix: Water

Date Received: 05/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		500	487189	05/24/21 15:49	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	485808	05/14/21 22:18	CS	TAL CAN

Client Sample ID: MW-02_051021

Lab Sample ID: 240-149243-6

Date Collected: 05/10/21 14:15

Matrix: Water

Date Received: 05/12/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		125	487189	05/24/21 16:14	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	486344	05/18/21 14:55	CS	TAL CAN

Lab Chronicle

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

Job ID: 240-149243-1

Client Sample ID: MW-18_051021

Lab Sample ID: 240-149243-7

Date Collected: 05/10/21 18:20

Matrix: Water

Date Received: 05/12/21 08:00

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Analysis	8260B		1	486912	05/21/21 17:50	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	486344	05/18/21 15:20	CS	TAL CAN

Laboratory References:

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

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Accreditation/Certification Summary

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

Job ID: 240-149243-1

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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21 *
Kentucky (UST)	State	112225	02-23-22
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	03-31-22
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.

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

Regulatory program: DW NPDES RCRA Other

Client Project Manager: Kris Hinskey
Site Contact: Julia McClafferty
Telephone: 248-994-2240
Telephone: 734-644-5131

Analysis Turnaround Time
TAT if different from below
10 day

Sample Name: Emma Witherspoon
Method of Shipment/Carrier:
Shipping/Tracking No:

Company Name: 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: 30080642-401.03
PO # 30080642-401.03

Sample Identification	Sample Date	Sample Time	Matrix			Containers & Preservatives			Filtered Sample (Y/N)	Composite=C/Grab=G	Analyses						Sample Specific Notes / Special Instructions:			
			Air	Aqueous	Sediment	Solid	Other:	H2SO4			HNO3	HCl	ZnO	Unpres	Other:	1-DCE 8260B		cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B
TRIP BLANK-SG	---	---	X					1		N	G	X	X	X	X	X	X	X	X	1 Trip Blank
MW-20_051021	5/10/21	1645	X					6		N	G	X	X	X	X	X	X	X	X	3 VOAs for 8260B 3 VOAs for 8260B SIM
DUP-OG	5/10/21		X					6		N	G	X	X	X	X	X	X	X	X	
MW-10_051021	5/10/21	1050	X					6		N	G	X	X	X	X	X	X	X	X	
MW-04_051021	5/10/21	1200	X					6		N	G	X	X	X	X	X	X	X	X	
MW-02_051021	5/10/21	1415	X					6		N	G	X	X	X	X	X	X	X	X	
MW-18_051021	5/10/21	1820	X					6		N	G	X	X	X	X	X	X	X	X	



Possible Hazard Identification
 Non-Hazard
 Irritant
 Poison B
 Unknown

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

Relinquished by: Emma Witherspoon
 Relinquished by: [Signature]
 Relinquished by: [Signature]

Date/Time: 5/10/21 / 1930
 Date/Time: 5/10/21 / 1953
 Date/Time: 5/12/21 8:00

Company: Arcadis
 Company: ARCADIS
 Company: EJA

Received by: [Signature]
 Received by: [Signature]
 Received in Laboratory by: [Signature]

Company: Arcadis
 Company: EJA
 Company: EJA

Eurofins TestAmerica Canton Sample Receipt Form/Narrative		Login # : <u>149243</u>
Canton Facility		
Client <u>Arcadis</u>	Site Name _____	Cooler unpacked by: <u>Matt Snyder</u>
Cooler Received on <u>5-12-21</u>	Opened on <u>5-12-21</u>	
FedEx: 1 st Grd Exp <input type="checkbox"/> UPS <input type="checkbox"/> FAS <input checked="" type="checkbox"/> Clipper <input type="checkbox"/> Client Drop Off <input type="checkbox"/> TestAmerica Courier <input type="checkbox"/> Other <input type="checkbox"/>		
Receipt After-hours: Drop-off Date/Time		Storage Location
TestAmerica Cooler # <u>TA</u>	Foam Box <input type="checkbox"/>	Client Cooler <input type="checkbox"/>
Packing material used: Bubble Wrap	Foam <input type="checkbox"/>	Plastic Bag <input type="checkbox"/>
COOLANT: Wet Ice	Blue Ice <input type="checkbox"/>	Dry Ice <input type="checkbox"/>
1. Cooler temperature upon receipt <input checked="" type="checkbox"/> See Multiple Cooler Form IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °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 _____ -Were the seals on the outside of the cooler(s) signed & dated? <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA -Were tamper/custody seals intact and uncompromised? <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA		Tests that are not checked for pH by Receiving: VOAs Oil and Grease TOC
3. Shippers' packing slip attached to the cooler(s)? <input checked="" type="radio"/> Yes <input type="radio"/> No		
4. Did custody papers accompany the sample(s)? <input checked="" type="radio"/> Yes <input type="radio"/> No		
5. Were the custody papers relinquished & signed in the appropriate place? <input checked="" type="radio"/> Yes <input type="radio"/> No		
6. Was/were the person(s) who collected the samples clearly identified on the COC? <input checked="" type="radio"/> Yes <input type="radio"/> No		
7. Did all bottles arrive in good condition (Unbroken)? <input checked="" type="radio"/> Yes <input type="radio"/> No		
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? <input checked="" type="radio"/> Yes <input type="radio"/> No		
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? <input checked="" type="radio"/> Yes <input type="radio"/> No		
10. Were correct bottle(s) used for the test(s) indicated? <input checked="" type="radio"/> Yes <input type="radio"/> No		
11. Sufficient quantity received to perform indicated analyses? <input checked="" type="radio"/> Yes <input type="radio"/> No		
12. Are these work share samples and all listed on the COC? <input checked="" type="radio"/> Yes <input type="radio"/> 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? <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> NA		pH Strip Lot# <u>HC022887</u>
14. Were VOAs on the COC? <input checked="" type="radio"/> Yes <input type="radio"/> No		
15. Were air bubbles >6 mm in any VOA vials? <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA		
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # <u>NA</u> <input checked="" type="radio"/> Yes <input type="radio"/> No		
17. Was a LL Hg or Me Hg trip blank present? <input checked="" type="radio"/> Yes <input type="radio"/> No		
Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____		
Concerning _____		

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES <input type="checkbox"/> 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 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-11 IR-12	1.5	1.6	Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12	1.6	1.7	Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
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TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA	Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None

See Temperature Excursion Form

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