

ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey
ARCADIS US Inc
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Generated 5/24/2023 9:37:32 PM

JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-185408-1

Eurofins Cleveland

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
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Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

Job ID: 240-185408-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-185408-1

Receipt

The samples were received on 5/16/2023 9:45 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 1.7°C and 1.8°C

GC/MS VOA

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

Method Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

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

Protocol References:

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

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-185408-1	TRIP BLANK_167	Water	05/11/23 00:00	05/16/23 09:45
240-185408-2	MW-200S_051123	Water	05/11/23 11:33	05/16/23 09:45

1

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Detection Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

Client Sample ID: TRIP BLANK_167

Lab Sample ID: 240-185408-1

No Detections.

Client Sample ID: MW-200S_051123

Lab Sample ID: 240-185408-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cleveland

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Client Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

Client Sample ID: TRIP BLANK_167

Lab Sample ID: 240-185408-1

Date Collected: 05/11/23 00:00

Matrix: Water

Date Received: 05/16/23 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/23/23 22:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/23/23 22:03	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/23/23 22:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/23/23 22:03	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/23/23 22:03	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/23 22:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 128		05/23/23 22:03	1
Dibromofluoromethane (Surr)	95		77 - 124		05/23/23 22:03	1
Toluene-d8 (Surr)	86		80 - 120		05/23/23 22:03	1
4-Bromofluorobenzene	89		76 - 120		05/23/23 22:03	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

Client Sample ID: MW-200S_051123

Lab Sample ID: 240-185408-2

Date Collected: 05/11/23 11:33

Matrix: Water

Date Received: 05/16/23 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/21/23 05:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	97		75 - 133					05/21/23 05:40	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/24/23 01:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/24/23 01:26	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/24/23 01:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/24/23 01:26	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/24/23 01:26	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/23 01:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 128					05/24/23 01:26	1
Dibromofluoromethane (Surr)	101		77 - 124					05/24/23 01:26	1
Toluene-d8 (Surr)	85		80 - 120					05/24/23 01:26	1
4-Bromofluorobenzene	86		76 - 120					05/24/23 01:26	1

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA	DBFM	TOL	BFB
		(70-128)	(77-124)	(80-120)	(76-120)
240-185408-1	TRIP BLANK_167	86	95	86	89
240-185408-2	MW-200S_051123	94	101	85	86
LCS 460-910908/3	Lab Control Sample	86	90	90	96
LCSD 460-910908/4	Lab Control Sample Dup	86	90	91	92
MB 460-910908/9	Method Blank	85	94	84	91
Surrogate Legend					
DCA = 1,2-Dichloroethane-d4 (Surr)					
DBFM = Dibromofluoromethane (Surr)					
TOL = Toluene-d8 (Surr)					
BFB = 4-Bromofluorobenzene					

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	BFB			
		(75-133)			
240-185408-2	MW-200S_051123	97			
LCS 460-910494/3	Lab Control Sample	100			
LCSD 460-910494/4	Lab Control Sample Dup	97			
MB 460-910494/7	Method Blank	97			
Surrogate Legend					
BFB = 4-Bromofluorobenzene					

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

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

Lab Sample ID: MB 460-910908/9

Matrix: Water

Analysis Batch: 910908

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			05/23/23 20:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/23/23 20:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/23/23 20:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/23/23 20:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/23/23 20:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/23 20:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		70 - 128		05/23/23 20:22	1
Dibromofluoromethane (Surr)	94		77 - 124		05/23/23 20:22	1
Toluene-d8 (Surr)	84		80 - 120		05/23/23 20:22	1
4-Bromofluorobenzene	91		76 - 120		05/23/23 20:22	1

Lab Sample ID: LCS 460-910908/3

Matrix: Water

Analysis Batch: 910908

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	17.3		ug/L		87	68 - 133
cis-1,2-Dichloroethene	20.0	16.6		ug/L		83	78 - 121
Tetrachloroethene	20.0	18.7		ug/L		93	70 - 127
trans-1,2-Dichloroethene	20.0	16.8		ug/L		84	74 - 126
Trichloroethene	20.0	17.8		ug/L		89	71 - 121
Vinyl chloride	20.0	15.8		ug/L		79	55 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		70 - 128
Dibromofluoromethane (Surr)	90		77 - 124
Toluene-d8 (Surr)	90		80 - 120
4-Bromofluorobenzene	96		76 - 120

Lab Sample ID: LCSD 460-910908/4

Matrix: Water

Analysis Batch: 910908

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	18.6		ug/L		93	68 - 133	7	30
cis-1,2-Dichloroethene	20.0	18.0		ug/L		90	78 - 121	8	30
Tetrachloroethene	20.0	20.5		ug/L		102	70 - 127	9	30
trans-1,2-Dichloroethene	20.0	18.6		ug/L		93	74 - 126	10	30
Trichloroethene	20.0	19.0		ug/L		95	71 - 121	7	30
Vinyl chloride	20.0	17.1		ug/L		86	55 - 144	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		70 - 128
Dibromofluoromethane (Surr)	90		77 - 124
Toluene-d8 (Surr)	91		80 - 120

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QC Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

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

Lab Sample ID: LCSD 460-910908/4

Matrix: Water

Analysis Batch: 910908

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	92		76 - 120

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

Lab Sample ID: MB 460-910494/7

Matrix: Water

Analysis Batch: 910494

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/20/23 22:49	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	97		75 - 133					05/20/23 22:49	1

Lab Sample ID: LCS 460-910494/3

Matrix: Water

Analysis Batch: 910494

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
1,4-Dioxane	5.00	4.92		ug/L		98	57 - 124
Surrogate	LCS	LCS	Limits				
4-Bromofluorobenzene	100		75 - 133				

Lab Sample ID: LCSD 460-910494/4

Matrix: Water

Analysis Batch: 910494

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	RPD
1,4-Dioxane	5.00	5.62		ug/L		112	57 - 124	13	30
Surrogate	LCSD	LCSD	Limits						
4-Bromofluorobenzene	97		75 - 133						

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

GC/MS VOA

Analysis Batch: 910494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-185408-2	MW-200S_051123	Total/NA	Water	8260D SIM	
MB 460-910494/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 460-910494/3	Lab Control Sample	Total/NA	Water	8260D SIM	
LCSD 460-910494/4	Lab Control Sample Dup	Total/NA	Water	8260D SIM	

Analysis Batch: 910908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-185408-1	TRIP BLANK_167	Total/NA	Water	8260D	
240-185408-2	MW-200S_051123	Total/NA	Water	8260D	
MB 460-910908/9	Method Blank	Total/NA	Water	8260D	
LCS 460-910908/3	Lab Control Sample	Total/NA	Water	8260D	
LCSD 460-910908/4	Lab Control Sample Dup	Total/NA	Water	8260D	

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

Client Sample ID: TRIP BLANK_167
Date Collected: 05/11/23 00:00
Date Received: 05/16/23 09:45

Lab Sample ID: 240-185408-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	910908	CJM	EET EDI	05/23/23 22:03

Client Sample ID: MW-200S_051123
Date Collected: 05/11/23 11:33
Date Received: 05/16/23 09:45

Lab Sample ID: 240-185408-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	910908	CJM	EET EDI	05/24/23 01:26
Total/NA	Analysis	8260D SIM		1	910494	KLB	EET EDI	05/21/23 05:40

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-185408-1

Laboratory: Eurofins Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0818	01-30-24
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24
Georgia	State	12028 (NJ)	06-30-23
Massachusetts	State	M-NJ312	06-30-23
New Jersey	NELAP	12028	06-30-23
New York	NELAP	11452	04-01-24
Pennsylvania	NELAP	68-00522	03-01-24
Rhode Island	State	LAO00376	12-30-23
USDA	US Federal Programs	P330-20-00244	11-03-23

Submit all results through Cadena at itomalia@cadenaco.com, Cadena #E203728

Level IV Reporting requested.

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Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : 185408

Client Alcadis Site Name _____ Cooler unpacked by: Rachelle H. Adet
Cooler Received on 5/16/23 Opened on 5/16/23
FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off Eurofins Courier Other _____
Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box (Bubble Wrap) Client Cooler (Plastic Bag) 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 # 13 (CF 42 °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
3. Shippers' packing slip attached to the cooler(s)? ☒ Yes ☐ No
4. Did custody papers accompany the sample(s)? ☒ Yes ☐ No
5. Were the custody papers relinquished & signed in the appropriate place? ☒ Yes ☐ No
6. Was/were the person(s) who collected the samples clearly identified on the COC? ☒ Yes ☐ No
7. Did all bottles arrive in good condition (Unbroken)? ☒ Yes ☐ No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? ☒ Yes ☐ No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? ☒ Yes ☐ No
11. Sufficient quantity received to perform indicated analyses? ☒ Yes ☐ No
12. Are these work share samples and all listed on the COC? ☒ Yes ☐ No
If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? ☒ Yes ☐ No NA pH Strip Lot# HC208070
14. Were VOAs on the COC? ☒ Yes ☐ No 16/23
15. Were air bubbles >6 mm in any VOA vials? ☒ Yes ☐ No NA RN
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____
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: _____

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

WI-NC-099 Cooler Receipt Form Page 2 - Multiple Coolers

Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 240-185408-1

Login Number: 185408

List Number: 2

Creator: Armbruster, Chris

List Source: Eurofins Edison

List Creation: 05/17/23 12:25 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



DATA VERIFICATION REPORT

May 30, 2023

Kris Hinskey
Arcadis of Michigan
28550 Cabot Drive
Suite 500
Novi, MI US 48377

CADENA project ID: E203728

Project: Ford Livonia Transmission Plant - ON-SITE -Soil Gas, Ground water and Soil

Project number: 30167538.401.03- onsite groundwater

Event Specific Scope of Work References: Sample COC

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory submittal: 185408-1

Sample date: 2023-05-11

Report received by CADENA: 2023-05-30

Initial Data Verification completed by CADENA: 2023-05-30

Number of Samples:2

Sample Matrices: Water and trip blank

Test Categories: GCMS VOC

Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.

There were no significant QC anomalies or exceptions to report.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, LCS/LCD RPD, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <http://clms.cadenaco.com/index.cfm>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

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CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.