MTCA 10 SITE

2024 GROUNDWATER MONITORING REPORT

HF SINCLAIR PUGET SOUND REFINING LLC

2024

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1. INTRODUCTION

This report summarizes the groundwater monitoring and remedial activities completed during 2024 at the HF Sinclair Puget Sound Refining LLC MTCA 10 site. MTCA 10 is a surface impoundment (East Impounding Basin) located in the central portion of the HF Sinclair Puget Sound Refinery at the south end of the facility tank farm between "B" and "C" Streets. The site location is shown in Figure 1. All Figures are included in Appendix A, and all Tables are included in Appendix B.

The 2024 remedial actions at the MTCA 10 site consisted of the semi-annual collection and analysis of groundwater samples from the monitoring well network and the operation and maintenance of a fluid recovery system in two wells. The current MTCA 10 monitoring well network consists of 21 wells with depths ranging from 17 feet to 67 feet, which includes a fluid recovery system that consists of two total fluids pumps operating in wells MW-115 and MW-116. The pumping system removes light non-aqueous phase liquid (LNAPL, i.e., floating volatile range petroleum compounds) and contaminated groundwater from the MTCA 10 site. Historical analytical results indicated that the groundwater in the vicinity of several of the monitoring well locations was not contaminated. The Department of Ecology approved a revised sampling schedule in 2012 and groundwater sample collection was reduced to a network of 7 wells (MW-54, MW-55, MW-56, MW-103, MW-104, MW-107, and MW-111).

2. SITE ACTIVITIES

Groundwater samples were collected at the MTCA 10 site in May and October of 2024. The groundwater monitoring well system was sampled for benzene, toluene, ethylbenzene, and xylenes (BTEX) and volatile (gasoline) range total petroleum hydrocarbons (TPH-Gx).

Depths-to-water at the site were near or greater than 30 ft. below ground surface (bgs). This is near or greater than the maximum depth that a peristaltic pump is capable of pulling water, therefore groundwater samples were collected using disposable bailers. Before collecting each sample, 1 to 3 well volumes of groundwater were purged from each well, depending on well recovery time and initial volume. Following well purging, samples were collected using the disposable bailer and transferred to sample containers provided by the analytical laboratory. Samples were not collected from well MW-57 due to an obstruction in the well. The samples were stored in a cooler with ice and sent to Eurofins Environmental Testing Northwest (Eurofins) Laboratory in Tacoma, Washington for analysis.

A duplicate sample and an equipment blank sample were collected during each sampling event in 2024. The duplicate samples were labeled MTCA 10-DUP-1 and ALL4-DUP-1. The field equipment blank samples were collected using distilled water and labeled MTCA 10-FEB-1 and ALL4-FEB-1.

Depth-to-water measurements were collected from all wells prior to sampling using a water level meter. LNAPL thickness and depth-to-water measurements were collected from wells MW-55 and MW-104 using an oil/water interface meter due to historic LNAPL accumulations in these wells. Samples were not collected from wells with measurable LNAPL.

The fluid recovery system installed at wells MW-115 and MW-116 removes LNAPL and contaminated groundwater from the MTCA 10 site. During maintenance to the fluid recovery pumps, performed in July 2023, a leak was discovered in the total fluids piping upstream of well MW-116. The total fluid piping was isolated, and pumps were disconnected. Repairs were completed by HF Sinclair in the first quarter of 2024. The pumps were returned to service shortly after the October 2024 sampling event, when it was discovered that MW-115 and MW-116 flow meter readings had not changed since October 2023; upon investigation it was discovered that the pumps were not reconnected properly following the repairs.

Follow up visits in November and December to check the flow meter readings confirmed that the pumps were properly reconnected. Between the date of the October 15, 2024 sampling event and the December 13, 2024 follow up visit, 4,241 gallons were extracted from MW-115 and 1,369 gallons were extracted from MW-116.

Data from the recovery pump flow meters are recorded during each sampling event. LNAPL thickness measurements, depth-to-water measurements, and groundwater samples cannot be collected from wells MW-115 and MW-116 due to the pumps obstructing access to the groundwater.

3. GROUNDWATER MONITORING RESULTS

3.1 FIELD MEASUREMENTS

LNAPL was observed in wells MW-55 and MW-104 during the May and October sampling events. In well MW-55, 0.01 feet of LNAPL was measured in May, and 0.02 feet was measured in October. In well MW-104, 0.71 feet of LNAPL was measured in May, and 0.33 feet was measured in October. No other wells contained measurable amounts of LNAPL during either sampling event.

Depth-to-water measurements and LNAPL thickness measurements collected in 2024 are presented in Tables 1 and 2. The groundwater monitoring well locations, groundwater elevations at each measured well, and the groundwater surface contours for the May and October sampling events are included as Figures 2 and 3, respectively.

Flow meter readings indicate the fluid recovery system removed approximately 4,241 gallons from MW-115 and approximately 1,369 gallons from MW-116 during 2024. Cumulatively, approximately 3,137,710 gallons have been extracted from the site since installation of the fluid recovery system in 1992. A graph of the cumulative quantity of liquids pumped from the site is included in Figure 4.

3.2 ANALYTICAL RESULTS

Wells MW-55 and MW-104 contained measurable LNAPL on the water table during both monitoring events in 2024. Samples were not collected from those wells since the groundwater at those locations was visibly contaminated.

During the May and October 2024 sampling events, the samples collected from well MW-111 contained TPH-Gx at a concentration that exceeded the MTCA Method A groundwater cleanup level. Samples collected from wells MW-56, MW-103, and MW-107 did not contain detectable concentrations of BTEX constituents or TPH-Gx above laboratory reporting limits.

The May and October 2024 groundwater analytical data are summarized in Table 3. A complete table of all historical groundwater analytical data is included in Appendix C. The original May sample laboratory analytical data report and chain of custody forms are included in Appendix D. The original October sample laboratory analytical data report and chain of custody forms are included in Appendix E.

4. CONCLUSIONS

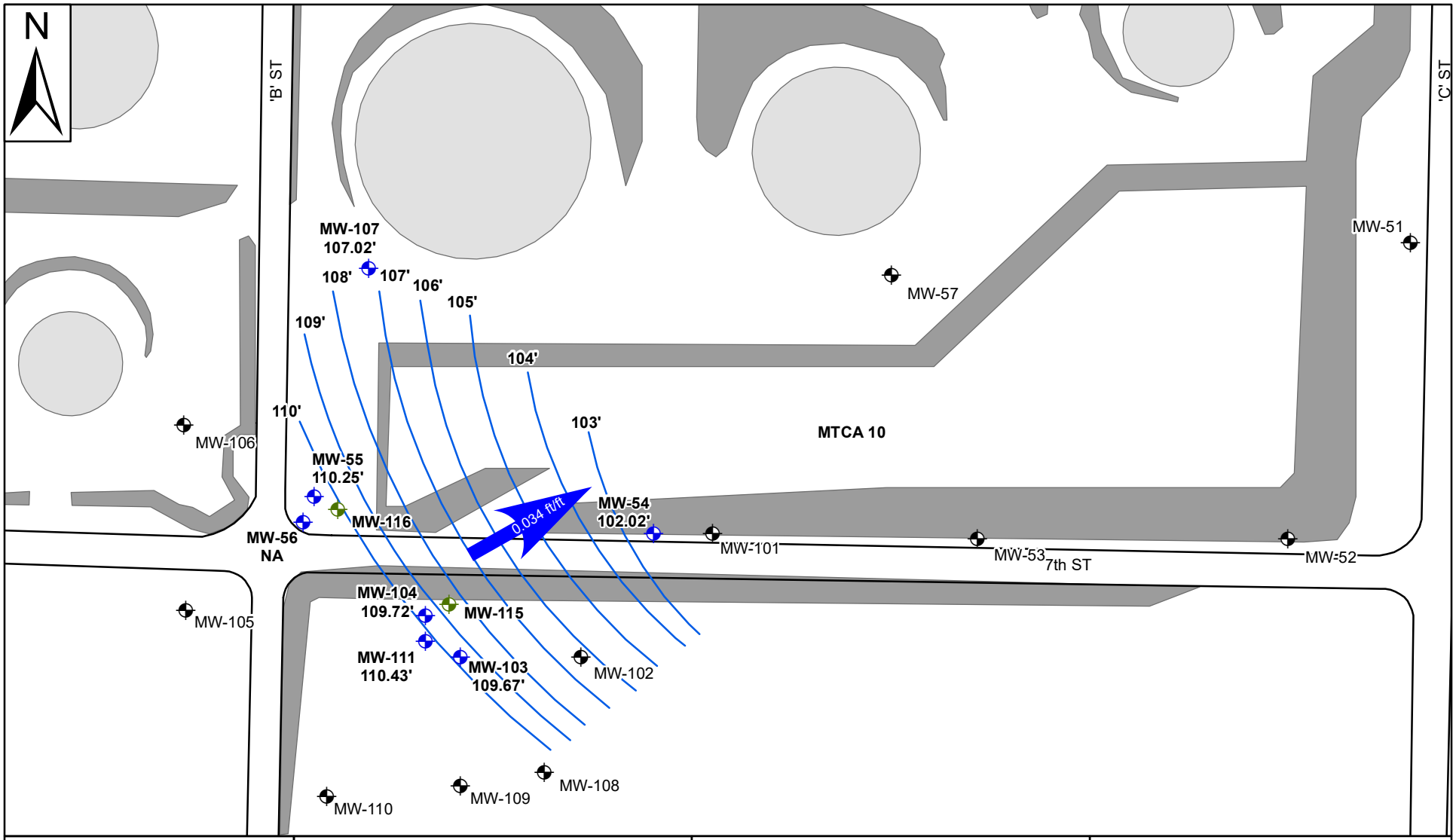
LNAPL continues to be observed on groundwater in monitoring wells MW-55 and MW-104. The fluid recovery system at wells MW-115 and MW-116 continues to remove LNAPL and contaminated groundwater from the MTCA 10 site. Approximately 3,137,710 gallons of fluid have been removed from the site since installation of the fluid recovery system in 1992. LNAPL and contaminated groundwater extraction at the site will continue.

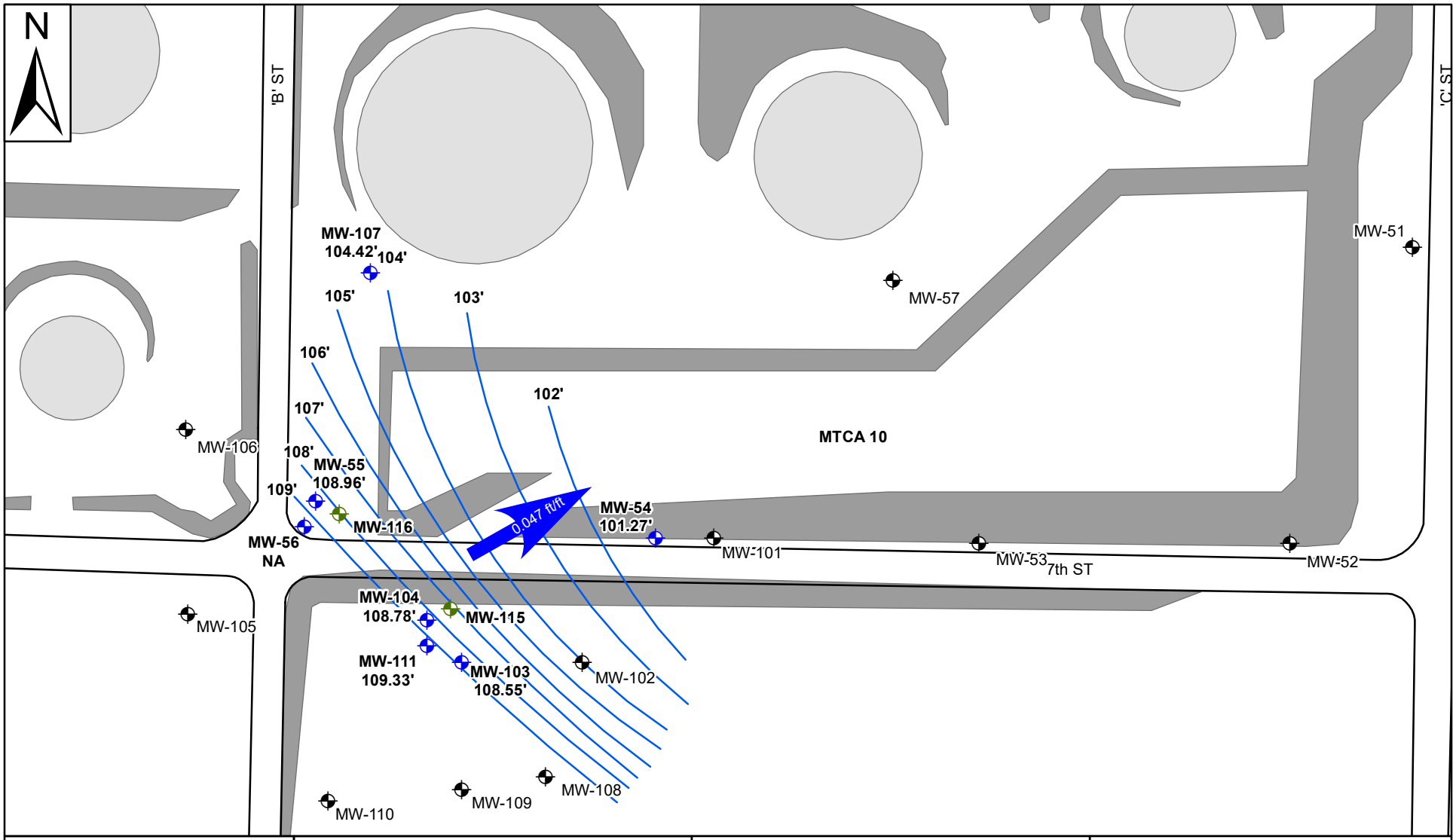
Components of the fluid recovery system at well MW-116 were repaired following the final sampling event in 2023. The repairs were completed in the first quarter of 2024. The pumps were returned to service shortly after the October 2024 sampling event.

The extent of the contaminated groundwater plume has been delineated, and the groundwater monitoring well system will continue to be sampled on a semi-annual schedule in 2025.

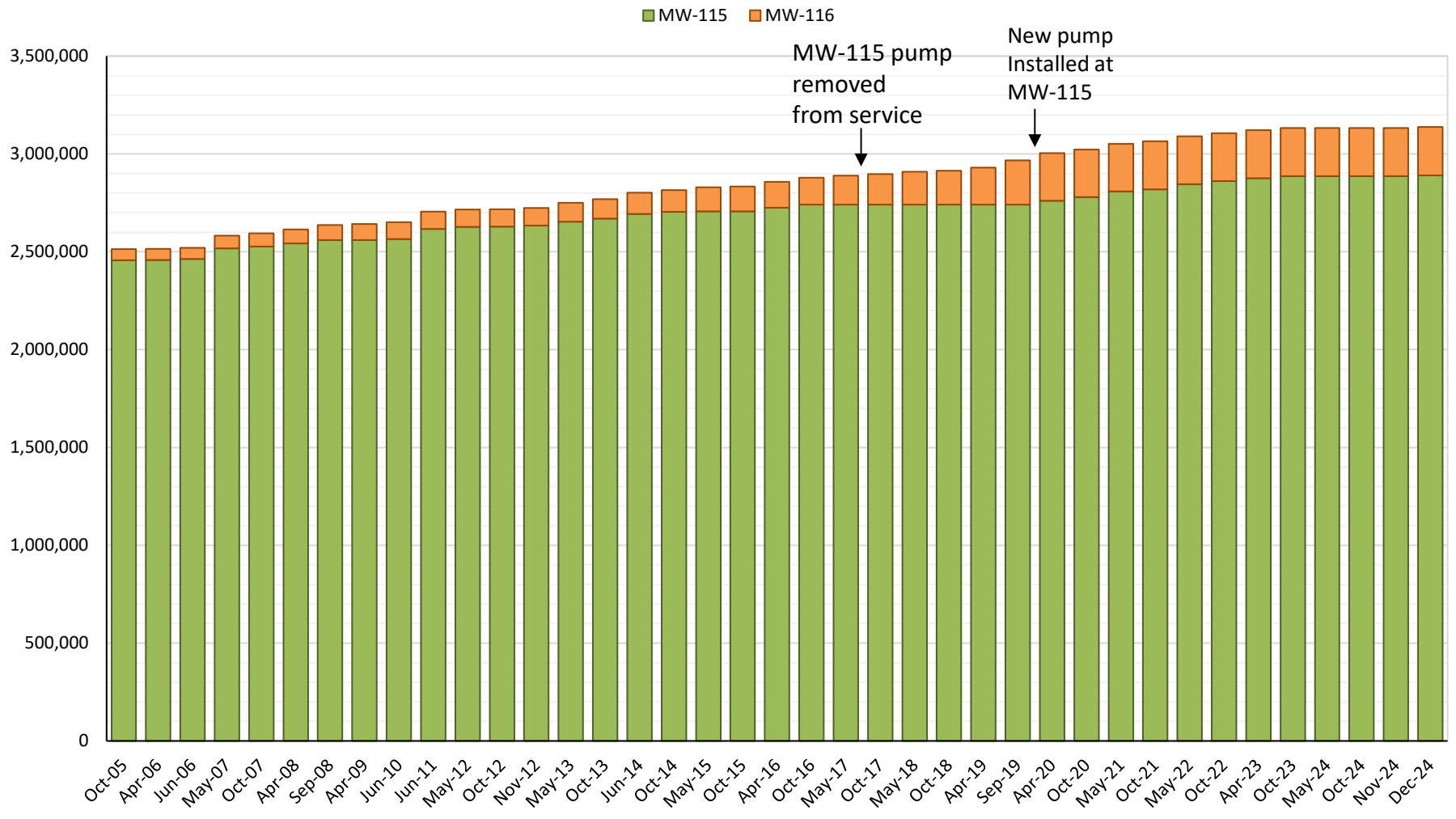
APPENDIX A -
FIGURES

Prepared for:	Prepared by:	Site Location Map	
HF Sinclair	ALL4	MTCA 10 5/30/2024	Figure A-1


N
'B' ST
'C' ST
MW-107
107.02'
108'
107'
106'
105'
109'
104'
110'
103'
MW-106
MW-55
110.25'
MW-116
MW-56
NA
0.034 ft/ft
MW-54
102.02'
MW-101
MW-53
7th ST
MW-52
MW-51
MW-57
MTCA 10
MW-105
MW-104
109.72'
MW-115
MW-111
110.43'
MW-103
109.67'
MW-102
MW-110
MW-109
MW-108
Groundwater Flow Direction
103.0' Groundwater Elevation (ft.)
103' Groundwater Contours (ft.)
Monitoring Wells
Currently Sampled
No Longer Sampled
Recovery Well
All data are approximate and should be used for relative location reference only. Well MW-56 not included in groundwater contour estimation.
0 50 100 150 200
Feet
1 inch = 100 feet
Prepared for:
HF Sinclair
Prepared by:
ALL4
Groundwater Elevation Contours (5/6/2024)
8505 South Texas Road
Anacortes, WA 98221
MTCA 10
5/30/2024
Figure A-2


N
'B' ST
'C' ST
MW-107
104.42'
104'
105'
103'
106'
107'
102'
108'
109'
MW-55
108.96'
MW-116
MW-56
NA
0.047 ft/ft
MW-54
101.27'
MW-101
MW-53
MW-52
7th ST
MW-51
MW-57
MTCA 10
MW-106
MW-105
MW-104
108.78'
MW-115
MW-111
109.33'
MW-103
108.55'
MW-102
MW-110
MW-109
MW-108
Groundwater Flow Direction
103.0' Groundwater Elevation (ft.)
103' Groundwater Contours (ft.)
Monitoring Wells
Currently Sampled
No Longer Sampled
Recovery Well
All data are approximate and should be used for relative location reference only. Well MW-56 not included in groundwater contour estimation.
0 50 100 150 200
Feet
1 inch = 100 feet
Prepared for:
HF Sinclair
Prepared by:
ALL4
Groundwater Elevation Contours (10/15/2024)
8505 South Texas Road
Anacortes, WA 98221
MTCA 10
10/29/2024
Figure A-3

Total Fluids Recovered: 1992-2024 (Cumulative Gallons)



Note: This stacked column chart shows the cumulative quantity of fluids recovered from both wells since the fluid recovery system began operating in 1992.

Prepared for:	Prepared by:	MTCA 10 Fluids Recovery	
HF Sinclair	ALL4	MTCA 10 4/11/25	Figure A-4

APPENDIX B -
TABLES

Table B-1
MTCA 10 Groundwater Elevation Data
Monday, May 6, 2024
HF Sinclair Puget Sound Refining LLC - Anacortes, WA

Well No.	Depth to Water	Depth to Product	PVC Mark Elevation	Water Surface Elevation	Apparent Product Thickness	Total Well Depth	Well Diameter	Water Vol. in Well	Purge Volume
Units:	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(gal.)	(gal.)
MW-54	27.06	--	129.08	102.02	--	30.13	0.17	0.50	1.49
MW-55	21.99	21.98	132.24	110.25	0.01	30.60	0.17	1.39	4.18
MW-56	27.26	--	132.45	105.19	--	45.08	0.17	2.89	8.66
MW-103	9.90	--	119.57	109.67	--	25.48	0.17	2.52	7.57
MW-104	10.44	9.73	120.16	109.72	0.71	17.68	0.17	1.17	3.52
MW-107	27.32	--	134.34	107.02	--	34.93	0.17	1.23	3.70
MW-111	9.14	--	119.57	110.43	--	16.95	0.17	1.26	3.79
MW-115*	NS	NS	120.20	NA	NA	22.20	0.50	NA	NA
MW-116*	NS	NS	133.75	NA	NA	33.00	0.50	NA	NA

NS indicates well was Not Sampled

NA indicates Not Applicable

-- indicates the absence of free product

* Well access is obstructed by product recovery pump in well

Table B-2
MTCA 10 Groundwater Elevation Data
Tuesday, October 15, 2024
HF Sinclair Puget Sound Refining LLC - Anacortes, WA

Well No.	Depth to Water	Depth to Product	PVC Mark Elevation	Water Surface Elevation	Apparent Product Thickness	Total Well Depth	Well Diameter	Water Vol. in Well	Purge Volume
Units:	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(gal.)	(gal.)
MW-54	27.81	--	129.08	101.27	--	30.13	0.17	0.38	1.13
MW-55	23.28	23.26	132.24	108.96	0.02	30.60	0.17	1.19	3.56
MW-56	28.49	--	132.45	103.96	--	45.08	0.17	2.69	8.06
MW-103	11.02	--	119.57	108.55	--	25.48	0.17	2.34	7.02
MW-104	11.38	11.05	120.16	108.78	0.33	17.68	0.17	1.02	3.06
MW-107	29.92	--	134.34	104.42	--	34.93	0.17	0.81	2.43
MW-111	10.24	--	119.57	109.33	--	16.95	0.17	1.09	3.26
MW-115*	NS	NS	120.20	NA	NA	22.20	0.50	NA	NA
MW-116*	NS	NS	133.75	NA	NA	33.00	0.50	NA	NA

NS indicates well was Not Sampled

NA indicates Not Applicable

-- indicates the absence of free product

* Well access is obstructed by product recovery pump in well

Table B-3

MTCA 10 Groundwater Analytical Data Results

HF Sinclair Puget Sound Refining LLC - Anacortes, WA

Well ID / Date	Benzene	Toluene	Ethylbenzene	Xylenes	Volatile Range	Comments
	8260C	8260C	8260C	8260C	NWTPH-Gx	
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	
MTCA Method-A Clean-up Level:	5	1,000	700	1,000	800/1,000*	
MW-54						
05/07/24	NS	NS	NS	NS	NS	Well was dry
10/15/24	NS	NS	NS	NS	NS	Well was dry
MW-55						
05/07/24	NS	NS	NS	NS	NS	Free Product
10/15/24	NS	NS	NS	NS	NS	Free Product
MW-56						
05/07/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	
05/07/24 (dup.)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	(labeled MTCA 10-DUP-1)
10/15/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	
MW-103						
05/07/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	
10/15/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	
10/15/24 (dup.)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	(labeled ALL4-DUP-1)
MW-104						
05/07/24	NS	NS	NS	NS	NS	Free Product
10/15/24	NS	NS	NS	NS	NS	Free Product
MW-107						
05/07/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	
10/16/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	

Well ID / Date	Benzene	Toluene	Ethylbenzene	Xylenes	Volatile Range	Comments
	8260C	8260C	8260C	8260C	NWTPH-Gx	
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	
MTCA Method-A Clean-up Level:	5	1,000	700	1,000	800/1,000*	
MW-111						
05/07/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	**2,200**	Trace of free product
10/15/24	1.1	ND(<1.0)	1.6	ND(<2.0)	**4,000**	
Equipment Blank						
05/07/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	(labeled MTCA 10-FEB-1)
10/15/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	(labeled ALL4-FEB-1)

BOLD indicates that the concentration in the sample exceeds MTCA Method A groundwater cleanup levels. These cleanup levels are provided for purposes of comparison only, and do not represent target cleanup levels at the site.

ND indicates analyte was Not Detected at level above reporting limit shown in parentheses

NS indicates well was Not Sampled

* Cleanup level is dependent on detection of benzene

Note:

Wells containing free product were presumed to be contaminated and were not sampled

APPENDIX C -
HISTORICAL MTCA 10 GROUNDWATER ANALYTICAL DATA RESULTS TABLE

Table C-1
Historical MTCA 10 Groundwater Analytical Data Results Table
HF Sinclair Puget Sound Refining LLC - Anacortes, WA

Well ID / Date	Benzene	Toluene	Ethylbenzene	Xylenes	Volatile Range	Comments
	8260C	8260C	8260C	8260C	NWTPH-Gx	
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	
MTCA Method-A Clean-up Level:	5	1,000	700	1,000	800/1,000*	
MW-54						
05/05/09	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/10/09	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	
05/18/10	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/18/10	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	
05/12/11**	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
10/18/11**	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
05/11/12	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/05/12	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<2.0)	ND (<50)	
05/02/13	ND (<0.5)	0.59	ND (<0.5)	ND (<1.0)	ND (<50)	
10/08/13	NS	NS	NS	NS	NS	Well was dry
06/03/14	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
10/16/14	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
05/13/15	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	ND (<50)	
10/14/15	NS	NS	NS	NS	NS	Well was dry
04/26/16	0.23	1.1	ND(<0.20)	1.2	94	
10/11/16	ND(<2.0)	ND(<2.0)	ND<3.0)	ND(<3.0)	ND(50)	
05/03/17	NS	NS	NS	NS	NS	Well was dry
10/09/17	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
05/09/18	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
10/15/18	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
04/09/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
09/23/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
04/28/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
10/07/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
10/07/20 (dup.)	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	(labeled WES-DUP-1)
05/18/21	NS	NS	NS	NS	NS	Well was dry
10/12/21	NS	NS	NS	NS	NS	Well was dry
05/16/22	NS	NS	NS	NS	NS	Well was dry
10/25/22	NS	NS	NS	NS	NS	Well was dry
04/17/23	NS	NS	NS	NS	NS	Well was dry
10/09/23	NS	NS	NS	NS	NS	Well was dry
05/07/24	NS	NS	NS	NS	NS	Well was dry
10/15/24	NS	NS	NS	NS	NS	Well was dry
MW-55						
05/05/09	NS	NS	NS	NS	NS	Free Product
11/10/09	NS	NS	NS	NS	NS	Free Product
05/18/10	NS	NS	NS	NS	NS	Free Product
10/21/10	NS	NS	NS	NS	NS	No free product noted
05/12/11	NS	NS	NS	NS	NS	No free product noted
10/18/11**	**420**	82	130	**1,400**	**9,300**	No free product noted
05/08/12	NS	NS	NS	NS	NS	Free Product
11/05/12	NS	NS	NS	NS	NS	Free Product
05/02/13	NS	NS	NS	NS	NS	Free Product
10/08/13	NS	NS	NS	NS	NS	Free Product
06/02/14	NS	NS	NS	NS	NS	Free Product
10/16/14	NS	NS	NS	NS	NS	Free Product
05/13/15	NS	NS	NS	NS	NS	Free Product
10/14/15	NS	NS	NS	NS	NS	Free Product
04/26/16	NS	NS	NS	NS	NS	Free Product
10/11/16	NS	NS	NS	NS	NS	Free Product
05/03/17	NS	NS	NS	NS	NS	Free Product
10/09/17	NS	NS	NS	NS	NS	Free Product
05/09/18	NS	NS	NS	NS	NS	Free Product
10/15/18	NS	NS	NS	NS	NS	Free Product

Well ID / Date	Benzene	Toluene	Ethylbenzene	Xylenes	Volatile Range	Comments
	8260C	8260C	8260C	8260C	NWTPH-Gx	
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	
MTCA Method-A Clean-up Level:	5	1,000	700	1,000	800/1,000*	
MW-55 (cont.)						
04/09/19	NS	NS	NS	NS	NS	Free Product
09/23/19	NS	NS	NS	NS	NS	Free Product
04/28/20	NS	NS	NS	NS	NS	Free Product
10/07/20	NS	NS	NS	NS	NS	Free Product
05/18/21	NS	NS	NS	NS	NS	Free Product
10/12/21	NS	NS	NS	NS	NS	Free Product
05/16/22	NS	NS	NS	NS	NS	Free Product
10/25/22	NS	NS	NS	NS	NS	Free Product
04/17/23	NS	NS	NS	NS	NS	Free Product
10/09/23	NS	NS	NS	NS	NS	Free Product
05/07/24	NS	NS	NS	NS	NS	Free Product
10/15/24	NS	NS	NS	NS	NS	Free Product
MW-56						
05/05/09	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/10/09	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	
05/18/10	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/19/10**	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	
05/12/11**	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
10/17/11	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
05/08/12**	1.6	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/05/12	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<2.0)	ND (<50)	
11/05/12 (dup.)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<2.0)	ND (<50)	(labeled MW-100)
05/02/13	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
05/02/13 (dup.)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-100)
10/08/13	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
10/08/13 (dup.)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-100)
06/02/14	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
10/16/14	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
10/16/14 (dup.)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-100)
05/13/15	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	ND (<50)	
10/14/15	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	ND (<50)	
04/26/16	ND(<0.2)	ND(<0.2)	ND(<0.2)	ND(<0.5)	ND (<50)	
10/11/16	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	ND (<50)	
10/11/16 (dup.)	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	ND (<50)	(labeled WES-1)
05/03/17	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	ND (<50)	
10/09/17	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
05/09/18	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
10/15/18	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
04/09/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
09/24/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
04/28/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
10/07/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
05/18/21	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<250)	
10/12/21	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<250)	
05/16/22	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<5.0)	ND(<250)	
10/25/22	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<50)	
04/17/23	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<50)	
10/09/23	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND (<100)	
05/07/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	
05/07/24 (dup.)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	(labeled MTCA 10-DUP-1)
10/15/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	
MW-103						
05/05/09	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/10/09	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	
05/18/10	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/22/10**	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	
05/13/11**	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	110	
10/18/11**	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	

Well ID / Date	Benzene	Toluene	Ethylbenzene	Xylenes	Volatile Range	Comments
	8260C	8260C	8260C	8260C	NWTPH-Gx	
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	
MTCA Method-A Clean-up Level:	5	1,000	700	1,000	800/1,000*	
MW-103 (cont.)						
05/08/12**	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	
11/05/12	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<2.0)	ND (<50)	
05/02/13	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
10/08/13	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	82	
06/02/14	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	140	
10/16/14	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND(<50)	
05/13/15	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	180	
10/14/15	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	370	
10/14/15 (re-analysis)	NA	NA	NA	NA	88	
04/26/16	ND(<0.2)	0.54	ND(<0.2)	ND(<0.5)	69	
04/26/16 (dup.)	ND(<0.2)	ND(<0.2)	ND(<0.2)	ND(<0.5)	120	
04/26/16 (dup.) (re-analysis)	NA	NA	NA	NA	67	
10/11/16	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	ND(<50)	
05/03/17	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	ND(<50)	
10/09/17	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
05/09/18	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
5/9/2018 (dup)	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	(labeled WES-DUP-1)
10/15/18	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
04/09/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
09/23/19	ND(<3.0)	ND(<3.0)	ND(<3.0)	ND(<3.0)	ND(<3.0)	
9/23/2019 (dup.)	ND(<3.0)	ND(<3.0)	ND(<3.0)	ND(<3.0)	ND(<3.0)	(labeled WES-DUP-1)
04/29/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
10/08/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
05/18/21	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<250)	
10/12/21	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<250)	
10/12/21 (dup.)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<250)	(labeled WES-DUP-1)
05/16/22	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<5.0)	ND(<250)	
05/16/22 (dup.)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<5.0)	ND(<250)	(labeled WES-DUP-1)
10/25/22	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<50)	
10/25/2022 (dup.)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<50)	(labeled WES-DUP-1)
04/17/23	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<50)	
04/17/23 (dup.)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<50)	(labeled WES-DUP-1)
10/09/23	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND (<100)	
10/09/2023 (dup.)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND (<100)	(labeled WES-DUP-1)
05/07/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND (<150)	
10/15/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND (<150)	
10/15/24 (dup.)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND (<150)	(labeled ALL4-DUP-1)
MW-104						
05/05/09	NS	NS	NS	NS	NS	Free Product
11/10/09	NS	NS	NS	NS	NS	Free Product
05/18/10	NS	NS	NS	NS	NS	Free Product
10/21/10	NS	NS	NS	NS	NS	Free Product
05/12/11	NS	NS	NS	NS	NS	Free Product
10/13/11	NS	NS	NS	NS	NS	Free Product
05/08/12	NS	NS	NS	NS	NS	Free Product
11/05/12	NS	NS	NS	NS	NS	Free Product
05/02/13	NS	NS	NS	NS	NS	Free Product
10/08/13	NS	NS	NS	NS	NS	Free Product
06/02/14	NS	NS	NS	NS	NS	Free Product
10/16/14	NS	NS	NS	NS	NS	Free Product
05/13/15	NS	NS	NS	NS	NS	Free Product
10/14/15	NS	NS	NS	NS	NS	Free Product
04/26/16	NS	NS	NS	NS	NS	Free Product
10/11/16	NS	NS	NS	NS	NS	Free Product
05/03/17	NS	NS	NS	NS	NS	Free Product
10/09/17	NS	NS	NS	NS	NS	Free Product
05/09/18	NS	NS	NS	NS	NS	Free Product
10/15/18	NS	NS	NS	NS	NS	Free Product

Well ID / Date	Benzene	Toluene	Ethylbenzene	Xylenes	Volatile Range	Comments
	8260C	8260C	8260C	8260C	NWTPH-Gx	
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	
MTCA Method-A Clean-up Level:	5	1,000	700	1,000	800/1,000*	
MW-104 (cont.)						
04/09/19	NS	NS	NS	NS	NS	Free Product
09/23/19	NS	NS	NS	NS	NS	Free Product
04/28/20	NS	NS	NS	NS	NS	Free Product
10/07/20	NS	NS	NS	NS	NS	Free Product
05/18/21	NS	NS	NS	NS	NS	Free Product
10/12/21	NS	NS	NS	NS	NS	Free Product
05/16/22	NS	NS	NS	NS	NS	Free Product
10/25/22	NS	NS	NS	NS	NS	Free Product
04/17/23	NS	NS	NS	NS	NS	Free Product
10/09/23	NS	NS	NS	NS	NS	Free Product
05/07/24	NS	NS	NS	NS	NS	Free Product
10/15/24	NS	NS	NS	NS	NS	Free Product
MW-107						
05/05/09	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/10/09	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	
05/18/10	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/18/10	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	
05/13/11**	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
05/13/11 (dup.)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-100)
10/17/11	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
05/08/12**	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/05/12	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<2.0)	ND (<50)	
05/02/13	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
10/08/13	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
06/02/14	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
10/16/14	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
05/13/15	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	ND (<50)	
10/15/15	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	72	
10/15/15 (re-analysis)	NA	NA	NA	NA	ND(<50)	
04/26/16	0.52	0.84	ND(<0.2)	ND(<0.5)	ND(<50)	
10/11/16	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	ND(<50)	
05/03/17	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	ND(<50)	
10/09/17	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
05/09/18	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
10/15/18	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	
04/09/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
09/24/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
04/28/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
4/28/20 (dup.)	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	(labeled WES-DUP-1)
10/08/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	
05/18/21	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<250)	
5/18/21 (dup.)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<250)	(labeled WES-DUP-1)
10/12/21	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<250)	
05/16/22	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<5.0)	ND(<250)	
10/25/22	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<50)	
04/17/23	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<50)	
10/09/23	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<100)	
05/07/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	
10/16/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	
MW-111						
05/05/09	NS	NS	NS	NS	NS	Free Product
11/10/09	NS	NS	NS	NS	NS	Free Product
05/18/10	NS	NS	NS	NS	NS	Free Product
10/21/10	NS	NS	NS	NS	NS	Free Product
05/12/11	NS	NS	NS	NS	NS	No free product noted
10/18/11**	**33**	ND (<0.5)	2.8	1.2	**2,000**	No free product noted
05/08/12**	**23**	ND (<0.5)	1.8	6.7	**2,500**	No free product noted
05/08/12** (dup.)	**22**	ND (<0.5)	1.9	7.2	**2,600**	(labeled MW-100)

Well ID / Date	Benzene	Toluene	Ethylbenzene	Xylenes	Volatile Range	Comments
	8260C	8260C	8260C	8260C	NWTPH-Gx	
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	
MTCA Method-A Clean-up Level:	5	1,000	700	1,000	800/1,000*	
MW-111 (cont.)						
11/05/12	NS	NS	NS	NS	NS	Free Product
05/02/13	**10**	ND (<0.5)	1.1	ND (<1.0)	**3,600**	No free product noted
10/08/13	**7**	ND (<0.5)	ND (<0.5)	ND (<1.0)	**6,900**	Trace of free product
06/02/14	**15**	ND (<0.5)	ND (<0.5)	1.9	**2,900**	No free product noted
06/02/14 (dup.)	**17**	ND (<0.5)	ND (<0.5)	2.6	**2,600**	(labeled MW-100)
10/16/14	**9**	ND (<0.5)	ND (<0.5)	ND (<1.0)	**3,000**	Trace of free product
05/13/15	**13**	ND (<2.0)	ND (<3.0)	ND (<3.0)	**3,300**	
05/13/15 (dup.)	**13**	ND (<2.0)	ND (<3.0)	ND (<3.0)	**3,400**	(labeled MW-100)
10/14/15	4.0	ND (<2.0)	ND (<3.0)	ND (<3.0)	**3,200**	
10/14/15 (dup.)	4.1	ND (<2.0)	ND (<3.0)	ND (<3.0)	**3,400**	(labeled MW-100)
04/26/16	**6.5**	0.4	0.3	ND(<0.5)	**1,900**	
10/11/16	NS	NS	NS	NS	NS	Free Product
05/03/17	**7.8**	ND (<2.0)	ND (<3.0)	ND (<3.0)	**4,100**	
05/03/17 (dup.)	**8.3**	ND (<2.0)	ND (<3.0)	ND (<3.0)	**4,700**	(labeled WES-DUP-1)
10/09/17	2.5	ND(<2.0)	ND(<3.0)	ND(<5.0)	**1,700**	
10/09/17 (dup)	2.2	ND(<2.0)	ND(<3.0)	ND(<5.0)	**1,800**	(labeled WES-DUP-1)
05/09/18	**13.0**	ND(<2.0)	5.6	6.3	410	
10/15/18	ND(<3.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	**1,500**	
10/15/2018 (dup.)	ND(<3.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	**1,500**	(labeled WES-DUP-1)
04/09/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	**3,500**	
4/9/2019 (dup.)	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	**2,600**	(labeled WES-DUP-1)
09/23/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	**2,200**	
04/29/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	**5,000**	
10/08/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	**4,900**	
05/18/21	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	**3,500**	Trace of free product
10/12/21	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	**3,300**	
05/16/22	ND (<1.0)	ND(<1.0)	ND(<1.0)	ND(<5.0)	**2,400**	Trace of free product
10/25/22	ND (<1.0)	ND(<1.0)	2.5	ND(<2.0)	**5,600**	Free Product
04/17/23	ND (<1.0)	ND(<1.0)	3.5	ND(<2.0)	**6,300**	
10/09/23	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND(<2.0)	**3,800**	Trace of free product
05/07/24	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND(<2.0)	**2,200**	Trace of free product
10/15/24	1.1	ND (<1.0)	1.6	ND(<2.0)	**4,000**	
Equipment Blank						
05/05/09	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/10/09	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	
05/18/10	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	
11/19/10	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<50)	(labeled MWES-02)
05/13/11	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-99)
10/18/11	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-99)
05/08/12	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-99)
11/05/12	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<2.0)	ND (<50)	(labeled MW-99)
05/02/13	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-99)
10/08/13	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-110)
06/02/14	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-110)
10/16/14	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<1.0)	ND (<50)	(labeled MW-110)
05/13/15	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	ND (<50)	(labeled MW-110)
10/14/15	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	93	(labeled MW-110)
10/14/15 (re-analysis)	NA	NA	NA	NA	ND(<50)	
04/26/16	ND(<0.2)	0.29	ND(<0.2)	ND(<0.5)	ND (<50)	(labeled WES-2)
10/11/16	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	ND(<50)	(labeled WES-2)
05/03/17	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<3.0)	ND(<50)	(labeled WES-FB-1)
10/09/17	ND(<2.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	(labeled WES-FB-1)
05/09/18	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	(labeled WES-FEB-1)
10/15/18	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND(<5.0)	ND(<250)	(labeled WES-FEB-1)
04/09/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	(labeled WES-FEB-1)
09/24/19	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	(labeled WES-FEB-1)
04/28/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	(labeled WES-FEB-1)
10/07/20	ND(<3.0)	ND(<2.0)	ND(<3.0)	ND (<3.0)	ND(<250)	(labeled WES-FEB-1)

Well ID / Date	Benzene	Toluene	Ethylbenzene	Xylenes	Volatile Range	Comments
	8260C	8260C	8260C	8260C	NWTPH-Gx	
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	
MTCA Method-A Clean-up Level:	**5**	**1,000**	**700**	**1,000**	**800/1,000***	
Equipment Blank (cont.)						
05/18/21	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<250)	(labeled WES-FEB-1)
10/12/21	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<250)	(labeled WES-FEB-1)
05/16/22	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<5.0)	ND(<250)	(labeled WES-FEB-1)
10/25/22	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<50)	(labeled WES-FEB-1)
04/17/23	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<50)	(labeled WES-FEB-1)
10/09/23	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<100)	(labeled WES-FEB-1)
05/07/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	(labeled MTCA 10-FEB-1)
10/15/24	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2.0)	ND(<150)	(labeled ALL4-FEB-1)

BOLD indicates that the concentration in the sample exceeds MTCA Method A groundwater cleanup levels. These cleanup levels are provided for purposes of comparison only, and do not represent target cleanup levels at the site.

ND indicates analyte was Not Detected at level above reporting limit shown in parentheses

NS indicates well was Not Sampled

* Cleanup level is dependent on detection of benzene

** Sampling event conducted via low-flow method

Note:

Wells containing free product were presumed to be contaminated and were not sampled

Well MW-57 is not sampled due to an obstruction in the well

APPENDIX D -
MAY 2024 LABORATORY DATA REPORT

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Eric Libolt
ALL 4, LLC
228 East Champion Street #101
Bellingham, Washington 98225

Generated 5/13/2024 1:48:20 PM

JOB DESCRIPTION

HFS GW Monitoring-C
Washington

JOB NUMBER

580-139875-1

Eurofins Seattle
5755 8th Street East
Tacoma WA 98424

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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 Northwest, LLC Project Manager.

Authorization

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5/13/2024 1:48:20 PM

Authorized for release by
Laura Schick, Project Manager
Laura.Schick@et.eurofinsus.com
(253)922-2310

Table of Contents

Job ID: 580-139875-1 Eurofins Seattle

Job Narrative
580-139875-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/9/2024 8:45 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 time was -0.4°C.

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

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

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Client Sample ID: MW-56
Date Collected: 05/07/24 11:15
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/10/24 16:44	1
Toluene	ND		1.0		ug/L			05/10/24 16:44	1
Ethylbenzene	ND		1.0		ug/L			05/10/24 16:44	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/10/24 16:44	1
o-Xylene	ND		1.0		ug/L			05/10/24 16:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/10/24 16:44*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*05/10/24 16:44*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*05/10/24 16:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*80 - 120*		*05/10/24 16:44*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			05/10/24 16:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*77 - 123*		*05/10/24 16:44*	*1*

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Client Sample ID: MW-103

Date Collected: 05/07/24 10:30
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/10/24 17:08	1
Toluene	ND		1.0		ug/L			05/10/24 17:08	1
Ethylbenzene	ND		1.0		ug/L			05/10/24 17:08	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/10/24 17:08	1
o-Xylene	ND		1.0		ug/L			05/10/24 17:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/10/24 17:08*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*05/10/24 17:08*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*05/10/24 17:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 120*		*05/10/24 17:08*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			05/10/24 17:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*77 - 123*		*05/10/24 17:08*	*1*

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Client Sample ID: MW-107
Date Collected: 05/07/24 11:25
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/10/24 17:54	1
Toluene	ND		1.0		ug/L			05/10/24 17:54	1
Ethylbenzene	ND		1.0		ug/L			05/10/24 17:54	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/10/24 17:54	1
o-Xylene	ND		1.0		ug/L			05/10/24 17:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/10/24 17:54*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*05/10/24 17:54*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*05/10/24 17:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*80 - 120*		*05/10/24 17:54*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			05/10/24 17:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*77 - 123*		*05/10/24 17:54*	*1*

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Client Sample ID: MW-111
Date Collected: 05/07/24 10:25
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/10/24 18:17	1
Toluene	ND		1.0		ug/L			05/10/24 18:17	1
Ethylbenzene	ND		1.0		ug/L			05/10/24 18:17	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/10/24 18:17	1
o-Xylene	ND		1.0		ug/L			05/10/24 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*110*		*80 - 120*		*05/10/24 18:17*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*05/10/24 18:17*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*05/10/24 18:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*05/10/24 18:17*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2.2**		0.15		mg/L			05/10/24 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*77 - 123*		*05/10/24 18:17*	*1*

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Client Sample ID: MTCA 10-FEB-1
Date Collected: 05/07/24 10:15
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/10/24 18:41	1
Toluene	ND		1.0		ug/L			05/10/24 18:41	1
Ethylbenzene	ND		1.0		ug/L			05/10/24 18:41	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/10/24 18:41	1
o-Xylene	ND		1.0		ug/L			05/10/24 18:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/10/24 18:41*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*05/10/24 18:41*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*05/10/24 18:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*		*05/10/24 18:41*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			05/10/24 18:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*77 - 123*		*05/10/24 18:41*	*1*

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Client Sample ID: MTCA 10-DUP-1

Lab Sample ID: 580-139875-6

Date Collected: 05/07/24 10:00

Matrix: Water

Date Received: 05/09/24 08:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/10/24 19:04	1
Toluene	ND		1.0		ug/L			05/10/24 19:04	1
Ethylbenzene	ND		1.0		ug/L			05/10/24 19:04	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/10/24 19:04	1
o-Xylene	ND		1.0		ug/L			05/10/24 19:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/10/24 19:04*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*05/10/24 19:04*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*05/10/24 19:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*80 - 120*		*05/10/24 19:04*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			05/10/24 19:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*77 - 123*		*05/10/24 19:04*	*1*

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Client Sample ID: Trip Blanks
Date Collected: 05/07/24 10:05
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/10/24 15:58	1
Toluene	ND		1.0		ug/L			05/10/24 15:58	1
Ethylbenzene	ND		1.0		ug/L			05/10/24 15:58	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/10/24 15:58	1
o-Xylene	ND		1.0		ug/L			05/10/24 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/10/24 15:58*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*05/10/24 15:58*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*05/10/24 15:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*80 - 120*		*05/10/24 15:58*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			05/10/24 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*77 - 123*		*05/10/24 15:58*	*1*

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

Lab Sample ID: MB 580-459068/11
Matrix: Water
Analysis Batch: 459068

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			05/10/24 15:35	1
Toluene	ND		1.0		ug/L			05/10/24 15:35	1
Ethylbenzene	ND		1.0		ug/L			05/10/24 15:35	1
m-Xylene & p-Xylene	ND		2.0		ug/L			05/10/24 15:35	1
o-Xylene	ND		1.0		ug/L			05/10/24 15:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/10/24 15:35*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*05/10/24 15:35*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*05/10/24 15:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*80 - 120*		*05/10/24 15:35*	*1*

Lab Sample ID: LCS 580-459068/6
Matrix: Water
Analysis Batch: 459068

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			5.00	4.89		ug/L		98	80 - 122		
Toluene			5.00	5.09		ug/L		102	80 - 120		
Ethylbenzene			5.00	5.38		ug/L		108	80 - 120		
m-Xylene & p-Xylene			5.00	5.17		ug/L		103	80 - 120		
o-Xylene			5.00	5.28		ug/L		106	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 580-459068/7
Matrix: Water
Analysis Batch: 459068

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
Benzene			5.00	5.00		ug/L		100	80 - 122	2	14
Toluene			5.00	5.12		ug/L		102	80 - 120	1	13
Ethylbenzene			5.00	5.42		ug/L		108	80 - 120	1	14
m-Xylene & p-Xylene			5.00	5.19		ug/L		104	80 - 120	0	14
o-Xylene			5.00	5.36		ug/L		107	80 - 120	2	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 580-459069/11
Matrix: Water
Analysis Batch: 459069

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			05/10/24 15:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*77 - 123*		*05/10/24 15:35*	*1*

Lab Sample ID: LCS 580-459069/8
Matrix: Water
Analysis Batch: 459069

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			0.500	0.534		mg/L		107	55 - 148		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*77 - 123*

Lab Sample ID: LCSD 580-459069/9
Matrix: Water
Analysis Batch: 459069

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
Gasoline			0.500	0.534		mg/L		107	55 - 148	0	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*77 - 123*

Lab Chronicle

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Client Sample ID: MW-56
Date Collected: 05/07/24 11:15
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	459068	AA	EET SEA	05/10/24 16:44
Total/NA	Analysis	NWTPH-Gx		1	459069	K1K	EET SEA	05/10/24 16:44

Client Sample ID: MW-103
Date Collected: 05/07/24 10:30
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	459068	AA	EET SEA	05/10/24 17:08
Total/NA	Analysis	NWTPH-Gx		1	459069	K1K	EET SEA	05/10/24 17:08

Client Sample ID: MW-107
Date Collected: 05/07/24 11:25
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	459068	AA	EET SEA	05/10/24 17:54
Total/NA	Analysis	NWTPH-Gx		1	459069	K1K	EET SEA	05/10/24 17:54

Client Sample ID: MW-111
Date Collected: 05/07/24 10:25
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	459068	AA	EET SEA	05/10/24 18:17
Total/NA	Analysis	NWTPH-Gx		1	459069	K1K	EET SEA	05/10/24 18:17

Client Sample ID: MTCA 10-FEB-1
Date Collected: 05/07/24 10:15
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	459068	AA	EET SEA	05/10/24 18:41
Total/NA	Analysis	NWTPH-Gx		1	459069	K1K	EET SEA	05/10/24 18:41

Client Sample ID: MTCA 10-DUP-1
Date Collected: 05/07/24 10:00
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	459068	AA	EET SEA	05/10/24 19:04
Total/NA	Analysis	NWTPH-Gx		1	459069	K1K	EET SEA	05/10/24 19:04

Lab Chronicle

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Client Sample ID: Trip Blanks

Date Collected: 05/07/24 10:05
Date Received: 05/09/24 08:45

Lab Sample ID: 580-139875-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	459068	AA	EET SEA	05/10/24 15:58
Total/NA	Analysis	NWTPH-Gx		1	459069	K1K	EET SEA	05/10/24 15:58

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-24

Sample Summary

Client: ALL 4, LLC
Project/Site: HFS GW Monitoring-C

Job ID: 580-139875-1
SDG: Washington

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-139875-1	MW-56	Water	05/07/24 11:15	05/09/24 08:45
580-139875-2	MW-103	Water	05/07/24 10:30	05/09/24 08:45
580-139875-3	MW-107	Water	05/07/24 11:25	05/09/24 08:45
580-139875-4	MW-111	Water	05/07/24 10:25	05/09/24 08:45
580-139875-5	MTCA 10-FEB-1	Water	05/07/24 10:15	05/09/24 08:45
580-139875-6	MTCA 10-DUP-1	Water	05/07/24 10:00	05/09/24 08:45
580-139875-7	Trip Blanks	Water	05/07/24 10:05	05/09/24 08:45

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: ALL4	Lab PM: Laura Schick	Carrier Tracking No(s): FedEx	COC No: 1
Client Contact: Jim Schneider	Phone: 360-752-9571	E-Mail: Laura.Schick@ET.EurofinsUS.com	State of Origin: WA	Page: Page 1 of 1
Company: HF Sinclair Puget Sound Refining LLC	PWSID:	Analysis Requested		Job #:

Address: 8505 S Texas Road	Due Date Requested:	
City: Anacortes	TAT Requested (days): Standard	
State, Zip: WA, 98221	Compliance Project: Δ Yes Δ No	
Phone: (360) 293-0800	PO #: Bill to ALL4	
Email: jim.schneider@hfsinclair.com	WO #:	
Project Name: HFS GW Monitoring-C	Project #:	
Site: Washington	SSOW#:	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH-Gx	BTEX (8260D)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-56	5/7/24	11:15	G	Water	No		X	X	6	
MW-103		10:30	G	Water	No		X	X	6	
MW-107		11:25	G	Water	No		X	X	6	Please send results to HFPSR (jim.schneider@hfsinclair.com) and ALL4 (elibolt@all4inc.com, agempler@all4inc.com).
MW-111		10:25	G	Water	No		X	X	6	
MTCA 10-FEB-1		10:15	G	Water	No		X	X	6	
MTCA 10-DUP-1		10:00	G	Water	No		X	X	6	
Trip Blanks		10:05	G	Water	No		X	X	4	

580-139875 Chain of Custody

Possible Hazard Identification
■ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Gigi Hewitt	Date/Time: 5/8/24 3:30	Company ~~WES~~ ALL4	Received by:	Date/Time: 5/9/24 0845	Company ETTN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

MB/wet/bub/FPO IR13 -0.4/0.7

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: ALL 4, LLC

Job Number: 580-139875-1
SDG Number: Washington

Login Number: 139875
List Number: 1
Creator: Martinez, Lanea

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX E -
OCTOBER 2024 LABORATORY DATA REPORT

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ANALYTICAL REPORT

PREPARED FOR

Attn: Eric Libolt
ALL4, Inc.
228 East Champion Street #101
Bellingham, Washington 98225

Generated 10/22/2024 11:12:46 PM

JOB DESCRIPTION

HFS GW Monitoring-C

JOB NUMBER

580-144974-1

Eurofins Seattle
5755 8th Street East
Tacoma WA 98424

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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 Northwest, LLC Project Manager.

Authorization

Generated
10/22/2024 11:12:46 PM

Authorized for release by
Laura Schick, Project Manager
Laura.Schick@et.eurofinsus.com
(253)922-2310

Table of Contents

Job ID: 580-144974-1 Eurofins Seattle

Job Narrative
580-144974-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/18/2024 9:50 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 time was 3.5°C.

Receipt Exceptions
The following trip blank sample was received at the laboratory without a sample collection date/ time documented on the chain of custody: Trip Blanks (580-144974-7). The laboratory logged the sample using date/time of 10/16/2024 at 00:00.

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

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

Client: ALL4, Inc.
Job ID: 580-144974-1
Project/Site: HFS GW Monitoring-C

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

Client: ALL4, Inc.
Project/Site: HFS GW Monitoring-C

Job ID: 580-144974-1

Client Sample ID: MW-56
Date Collected: 10/15/24 16:00
Date Received: 10/18/24 09:50

Lab Sample ID: 580-144974-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/18/24 23:18	1
Toluene	ND		1.0		ug/L			10/18/24 23:18	1
Ethylbenzene	ND		1.0		ug/L			10/18/24 23:18	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/18/24 23:18	1
o-Xylene	ND		1.0		ug/L			10/18/24 23:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/18/24 23:18*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/18/24 23:18*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*10/18/24 23:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*10/18/24 23:18*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			10/18/24 23:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*77 - 123*		*10/18/24 23:18*	*1*

Client: ALL4, Inc.
Project/Site: HFS GW Monitoring-C

Job ID: 580-144974-1

Client Sample ID: MW-103
Date Collected: 10/15/24 15:00
Date Received: 10/18/24 09:50

Lab Sample ID: 580-144974-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/18/24 23:42	1
Toluene	ND		1.0		ug/L			10/18/24 23:42	1
Ethylbenzene	ND		1.0		ug/L			10/18/24 23:42	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/18/24 23:42	1
o-Xylene	ND		1.0		ug/L			10/18/24 23:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/18/24 23:42*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/18/24 23:42*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*10/18/24 23:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*10/18/24 23:42*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			10/18/24 23:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*77 - 123*		*10/18/24 23:42*	*1*

Client: ALL4, Inc.
Project/Site: HFS GW Monitoring-C

Job ID: 580-144974-1

Client Sample ID: MW-107
Date Collected: 10/16/24 13:00
Date Received: 10/18/24 09:50

Lab Sample ID: 580-144974-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/22/24 08:19	1
Toluene	ND		1.0		ug/L			10/22/24 08:19	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 08:19	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/22/24 08:19	1
o-Xylene	ND		1.0		ug/L			10/22/24 08:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/22/24 08:19*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/22/24 08:19*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*10/22/24 08:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*10/22/24 08:19*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			10/22/24 08:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*77 - 123*		*10/22/24 08:19*	*1*

Client: ALL4, Inc.
Project/Site: HFS GW Monitoring-C

Job ID: 580-144974-1

Client Sample ID: MW-111
Date Collected: 10/15/24 15:25
Date Received: 10/18/24 09:50

Lab Sample ID: 580-144974-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.1**		1.0		ug/L			10/19/24 00:05	1
Toluene	ND		1.0		ug/L			10/19/24 00:05	1
Ethylbenzene	**1.6**		1.0		ug/L			10/19/24 00:05	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/19/24 00:05	1
o-Xylene	ND		1.0		ug/L			10/19/24 00:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*107*		*80 - 120*		*10/19/24 00:05*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*10/19/24 00:05*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*10/19/24 00:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*10/19/24 00:05*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**4.0**		0.15		mg/L			10/19/24 00:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*77 - 123*		*10/19/24 00:05*	*1*

Client: ALL4, Inc.
Project/Site: HFS GW Monitoring-C

Job ID: 580-144974-1

Client Sample ID: ALL4-FEB-1
Date Collected: 10/15/24 14:40
Date Received: 10/18/24 09:50

Lab Sample ID: 580-144974-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/19/24 00:28	1
Toluene	ND		1.0		ug/L			10/19/24 00:28	1
Ethylbenzene	ND		1.0		ug/L			10/19/24 00:28	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/19/24 00:28	1
o-Xylene	ND		1.0		ug/L			10/19/24 00:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/19/24 00:28*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/19/24 00:28*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*10/19/24 00:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*10/19/24 00:28*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			10/19/24 00:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*77 - 123*		*10/19/24 00:28*	*1*

Client: ALL4, Inc.
Project/Site: HFS GW Monitoring-C

Job ID: 580-144974-1

Client Sample ID: ALL4-DUP-1

Date Collected: 10/15/24 12:00
Date Received: 10/18/24 09:50

Lab Sample ID: 580-144974-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/19/24 00:51	1
Toluene	ND		1.0		ug/L			10/19/24 00:51	1
Ethylbenzene	ND		1.0		ug/L			10/19/24 00:51	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/19/24 00:51	1
o-Xylene	ND		1.0		ug/L			10/19/24 00:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/19/24 00:51*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*10/19/24 00:51*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*10/19/24 00:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*10/19/24 00:51*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			10/19/24 00:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*77 - 123*		*10/19/24 00:51*	*1*

Client: ALL4, Inc.
Project/Site: HFS GW Monitoring-C

Job ID: 580-144974-1

Client Sample ID: Trip Blanks
Date Collected: 10/16/24 00:00
Date Received: 10/18/24 09:50

Lab Sample ID: 580-144974-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/22/24 04:50	1
Toluene	ND		1.0		ug/L			10/22/24 04:50	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 04:50	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/22/24 04:50	1
o-Xylene	ND		1.0		ug/L			10/22/24 04:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/22/24 04:50*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*10/22/24 04:50*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*10/22/24 04:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*10/22/24 04:50*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			10/22/24 04:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*77 - 123*		*10/22/24 04:50*	*1*

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

Lab Sample ID: MB 580-475295/10
Matrix: Water
Analysis Batch: 475295

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/18/24 19:50	1
Toluene	ND		1.0		ug/L			10/18/24 19:50	1
Ethylbenzene	ND		1.0		ug/L			10/18/24 19:50	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/18/24 19:50	1
o-Xylene	ND		1.0		ug/L			10/18/24 19:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/18/24 19:50*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/18/24 19:50*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*10/18/24 19:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*10/18/24 19:50*	*1*

Lab Sample ID: LCS 580-475295/5
Matrix: Water
Analysis Batch: 475295

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			5.00	5.51		ug/L		110	80 - 122		
Toluene			5.00	5.17		ug/L		103	80 - 120		
Ethylbenzene			5.00	5.23		ug/L		105	80 - 120		
m-Xylene & p-Xylene			5.00	5.32		ug/L		106	80 - 120		
o-Xylene			5.00	5.29		ug/L		106	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 580-475295/6
Matrix: Water
Analysis Batch: 475295

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
Benzene			5.00	5.46		ug/L		109	80 - 122	1	14
Toluene			5.00	5.13		ug/L		103	80 - 120	1	13
Ethylbenzene			5.00	5.27		ug/L		105	80 - 120	1	14
m-Xylene & p-Xylene			5.00	5.23		ug/L		105	80 - 120	2	14
o-Xylene			5.00	5.26		ug/L		105	80 - 120	1	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*

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

Lab Sample ID: MB 580-475466/11
Matrix: Water
Analysis Batch: 475466

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/22/24 04:03	1
Toluene	ND		1.0		ug/L			10/22/24 04:03	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 04:03	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/22/24 04:03	1
o-Xylene	ND		1.0		ug/L			10/22/24 04:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/22/24 04:03*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*10/22/24 04:03*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*10/22/24 04:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*10/22/24 04:03*	*1*

Lab Sample ID: LCS 580-475466/6
Matrix: Water
Analysis Batch: 475466

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			5.00	4.93		ug/L		99	80 - 122		
Toluene			5.00	4.95		ug/L		99	80 - 120		
Ethylbenzene			5.00	5.07		ug/L		101	80 - 120		
m-Xylene & p-Xylene			5.00	5.05		ug/L		101	80 - 120		
o-Xylene			5.00	5.22		ug/L		104	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 580-475466/7
Matrix: Water
Analysis Batch: 475466

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
Benzene			5.00	4.78		ug/L		96	80 - 122	3	14
Toluene			5.00	4.83		ug/L		97	80 - 120	3	13
Ethylbenzene			5.00	4.94		ug/L		99	80 - 120	2	14
m-Xylene & p-Xylene			5.00	4.86		ug/L		97	80 - 120	4	14
o-Xylene			5.00	5.03		ug/L		101	80 - 120	4	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 580-475291/10
Matrix: Water
Analysis Batch: 475291

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			10/18/24 19:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*77 - 123*		*10/18/24 19:50*	*1*

Lab Sample ID: LCS 580-475291/7
Matrix: Water
Analysis Batch: 475291

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			0.999	1.04		mg/L		104	55 - 148		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*77 - 123*

Lab Sample ID: LCSD 580-475291/8
Matrix: Water
Analysis Batch: 475291

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
Gasoline			0.999	1.05		mg/L		106	55 - 148	1	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*77 - 123*

Lab Sample ID: MB 580-475467/11
Matrix: Water
Analysis Batch: 475467

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.15		mg/L			10/22/24 04:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*77 - 123*		*10/22/24 04:03*	*1*

Lab Sample ID: LCS 580-475467/8
Matrix: Water
Analysis Batch: 475467

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			0.999	1.07		mg/L		107	55 - 148		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*77 - 123*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: LCSD 580-475467/9
Matrix: Water
Analysis Batch: 475467

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
Gasoline			0.999	1.05		mg/L		105	55 - 148	2	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*77 - 123*

Lab Chronicle

Client: ALL4, Inc.
Project/Site: HFS GW Monitoring-C

Job ID: 580-144974-1

Client Sample ID: MW-56
Lab Sample ID: 580-144974-1
Date Collected: 10/15/24 16:00
Matrix: Water
Date Received: 10/18/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	475295	K1K	EET SEA	10/18/24 23:18
Total/NA	Analysis	NWTPH-Gx		1	475291	K1K	EET SEA	10/18/24 23:18

Client Sample ID: MW-103
Lab Sample ID: 580-144974-2
Date Collected: 10/15/24 15:00
Matrix: Water
Date Received: 10/18/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	475295	K1K	EET SEA	10/18/24 23:42
Total/NA	Analysis	NWTPH-Gx		1	475291	K1K	EET SEA	10/18/24 23:42

Client Sample ID: MW-107
Lab Sample ID: 580-144974-3
Date Collected: 10/16/24 13:00
Matrix: Water
Date Received: 10/18/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	475466	JBT	EET SEA	10/22/24 08:19
Total/NA	Analysis	NWTPH-Gx		1	475467	JBT	EET SEA	10/22/24 08:19

Client Sample ID: MW-111
Lab Sample ID: 580-144974-4
Date Collected: 10/15/24 15:25
Matrix: Water
Date Received: 10/18/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	475295	K1K	EET SEA	10/19/24 00:05
Total/NA	Analysis	NWTPH-Gx		1	475291	K1K	EET SEA	10/19/24 00:05

Client Sample ID: ALL4-FEB-1
Lab Sample ID: 580-144974-5
Date Collected: 10/15/24 14:40
Matrix: Water
Date Received: 10/18/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	475295	K1K	EET SEA	10/19/24 00:28
Total/NA	Analysis	NWTPH-Gx		1	475291	K1K	EET SEA	10/19/24 00:28

Client Sample ID: ALL4-DUP-1
Lab Sample ID: 580-144974-6
Date Collected: 10/15/24 12:00
Matrix: Water
Date Received: 10/18/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	475295	K1K	EET SEA	10/19/24 00:51
Total/NA	Analysis	NWTPH-Gx		1	475291	K1K	EET SEA	10/19/24 00:51

Lab Chronicle

Client: ALL4, Inc.
Job ID: 580-144974-1
Project/Site: HFS GW Monitoring-C

Client Sample ID: Trip Blanks
Lab Sample ID: 580-144974-7
Date Collected: 10/16/24 00:00
Matrix: Water
Date Received: 10/18/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	475466	JBT	EET SEA	10/22/24 04:50
Total/NA	Analysis	NWTPH-Gx		1	475467	JBT	EET SEA	10/22/24 04:50

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ALL4, Inc.
Job ID: 580-144974-1
Project/Site: HFS GW Monitoring-C

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788-24	07-13-25

Sample Summary

Client: ALL4, Inc.
Job ID: 580-144974-1
Project/Site: HFS GW Monitoring-C

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-144974-1	MW-56	Water	10/15/24 16:00	10/18/24 09:50
580-144974-2	MW-103	Water	10/15/24 15:00	10/18/24 09:50
580-144974-3	MW-107	Water	10/16/24 13:00	10/18/24 09:50
580-144974-4	MW-111	Water	10/15/24 15:25	10/18/24 09:50
580-144974-5	ALL4-FEB-1	Water	10/15/24 14:40	10/18/24 09:50
580-144974-6	ALL4-DUP-1	Water	10/15/24 12:00	10/18/24 09:50
580-144974-7	Trip Blanks	Water	10/16/24 00:00	10/18/24 09:50

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

580-144974 Chain of Custody

eurofins | Environment Testing America

Client Information	Sampler: Vanessa Spinoy	Lab PM: Laura Schick	Carrier Tracking No(s): FedEx	COC No:
Client Contact: Jim Schneider	Phone: 360-752-9571	E-Mail: Laura.Schick@ET.EurofinsUS.com	State of Origin: WA	Page: Page 1 of 1
Company: HF Sinclair Puget Sound Refining LLC	PWSID:	**Analysis Requested**		Job #:
Address: 8505 S Texas Road	Due Date Requested:			**Preservation Codes:**
City: Anacortes	TAT Requested (days): Standard			A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA
State, Zip: WA, 98221	Compliance Project: Δ Yes Δ No			M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
Phone: (360) 293-0800	PO #: Bill to ALL4 (FinOPs@all4inc.com, Project#: 004531-0010.00)			
Email: jim.schneider@hfsinclair.com	WO #:			
Project Name: HFS GW Monitoring-C	Project #:			
Site: Washington	SSOW#:			Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	…rm MS/MS… or No	NWTPH-Gx	BTEX (8260D)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-56	10/15/24	1600	G	Water	No		X	X	6	
MW-103	10/15/24	1500	G	Water	No		X	X	6	
MW-107	10/16/24	1300	G	Water	No		X	X	6	Please send results to HFPSR (jim.schneider@hfsinclair.com) and ALL4 (elibolt@all4inc.com, agempler@all4inc.com).
MW-111	10/15/24	1525	G	Water	No		X	X	6	
ALL4-FEB-1	10/15/24	1440	G	Water	No		X	X	6	
ALL4-DUP-1	10/15/24	1200	G	Water	No		X	X	6	
Trip Blanks			G	Water	No		X	X	4	

Possible Hazard Identification
■ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:	Method of Shipment:	
Relinquished by: Megan Evenson ALL4	Date/Time: 10/17/24 1521	Company WES	Received by: [signature]	Date/Time: 10/18/24 9:50	Company FEET
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Ver: 01/16/2019

Therm. ID: N Cor: 3.5° Unc: 4.1°
Cooler Dsc: M Red
Packing: None
Cust. Seal: Yes ✓ No ___
Blue Ice, Wet, Dry, None
FedEx: FPO
UPS: ___
Lab Cour: ___
Other: ___

Login Sample Receipt Checklist

Client: ALL4, Inc.

Job Number: 580-144974-1

Login Number: 144974

List Source: Eurofins Seattle

List Number: 1

Creator: Prigge, Madison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	