

February 24, 2025

Mr. Jim Schneider
HF Sinclair Puget Sound Refining LLC
8505 South Texas Road
Anacortes, WA 98221

**Re: 2024 Annual Reporting of Soil Pore Water and Groundwater Sampling Results at the SWMU-55 Site
HF Sinclair Puget Sound Refining LLC**

Dear Mr. Schneider:

ALL4 LLC has completed soil pore water and groundwater monitoring at the Solid Waste Management Unit 55 (SWMU-55) site located at the HF Sinclair Puget Sound Refinery (HFSPSR). HF Sinclair Puget Sound Refining LLC is located at 8505 South Texas Road in Anacortes, Washington. The site location is shown on Figure 1.

The lysimeters and groundwater wells at SWMU-55 are monitored annually per Section V.B of the PSR Permit for Land Treatment of Dangerous Waste (Permit No. WAD009276197). Sampling is now being completed as required per Agreed Order No. DE 16081 relating to construction activities occurring at the site.

Lysimeter L90-13 was removed as a result of construction activities at the site in 2019. The lysimeter was replaced when construction activities were completed in 2020 and renamed L90-13A. Monitoring well and lysimeter locations are shown on Figure 2.

SOIL PORE WATER SAMPLING METHODS

Soil pore water samples were collected from lysimeters L90-13A and L90-16E in November 2024. Samples were collected utilizing the lysimeter sample collection methodology in accordance with the procedures in Permit Attachment 11.

GROUNDWATER SAMPLING METHODS

Groundwater samples were collected from wells W-24 and W-46 in November 2024. The groundwater samples were collected from dedicated bladder pumps installed in each well using a controller with an internal mini compressor.

Water was pumped using a low-flow sampling technique recommended and approved by the U.S. Environmental Protection Agency (USEPA, 2017) with some modifications. The low-flow sampling technique minimizes the impact of the purging process on groundwater chemistry and provides an accurate representation of the groundwater's condition at the time of sampling. A YSI Model 556 multi-

parameter water meter (or equivalent) was used in conjunction with a flow-through cell to monitor groundwater chemistry during the low-flow purging process. Purging was considered adequate, and groundwater samples were collected when the water chemistry parameters stabilized. Water chemistry parameters include: Temperature, Electrical Conductivity (EC), Total Dissolved Solids (TDS), Salinity, Dissolved Oxygen (DO), pH, and Oxidation/Reduction Potential (ORP). If water chemistry parameters had not reached stabilization, after one hour of purging, then purging was considered adequate, and a water sample was collected. The water chemistry parameters, recorded at the time of sampling, are shown in Table 1.

Groundwater samples were collected in sample containers provided by the analytical laboratory and placed in a cooler with ice immediately after collection. Dissolved metals samples were filtered in the field using a disposable 0.45 µm in-line filter. One duplicate sample and one field equipment blank sample were also collected during the sampling event. Standard industry protocols regarding sample collection, preservation, chain-of-custody, and shipping were followed.

LABORATORY ANALYSIS

Samples collected in November 2024 were sent to ALS Laboratory Group in Everett, WA for analysis. ALS Laboratory Group is accredited by the Washington State Department of Ecology. All samples were analyzed for the principal dangerous constituents listed in the PSR Permit for Land Treatment of Dangerous Waste as well as contaminants of concern identified in the Agreed Order. Analytes included benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tert-butyl ether (MTBE), hexane, volatile petroleum hydrocarbons, extractable petroleum hydrocarbons, cPAHs, naphthalenes, chromium, nickel, vanadium, and mercury.

ANALYTICAL RESULTS

Dissolved nickel was detected in W-24 at 15 ug/L, below the MTCA Method B cleanup level of 320 ug/L. The only other detected analyte in W-24 was aromatic EC >16-21 at 40 ug/L. When all petroleum EC fraction detections for W-24 were summed (one half the laboratory reporting limit was used for non-detect values), the result was below the lowest applicable TPH Method A cleanup level for groundwater, 500 ug/L.

All analytes in W-46 were non-detect.

Dissolved nickel was detected in lysimeter L90-13a at 13 ug/L, which is below the MTCA Method B cleanup level of 320 ug/L. Dissolved vanadium was detected in lysimeter L90-13a at 11 ug/L, which is below the MTCA Method B cleanup level of 80 ug/L.

Dissolved nickel was detected in lysimeter L90-16E at 42 ug/L, which is below the MTCA Method B Cleanup level of 320 ug/L. The only other detected analyte in lysimeter L90-16E was aromatic EC >16-21 at 42 ug/L. When all petroleum EC fraction detections for lysimeter L90-16E were summed (one half the laboratory reporting limit was used for non-detect values), the result was below the lowest applicable TPH Method A cleanup level for groundwater, 500 ug/L.

Groundwater chemistry parameters for W-24 and W-46, recorded at the time of sampling, are shown on Table 1. A summary of the 2024 groundwater sampling results is provided in Table 2. The original laboratory data reports are provided in Attachment 1.

CONCLUSIONS

Based on the results of this investigation, there is no evidence of groundwater or soil pore water contamination above MTCA Method B residential groundwater cleanup levels at the SWMU-55 site.

ALL4 LLC appreciates the opportunity to assist the HF Sinclair Puget Sound Refining LLC with the SWMU-55 sampling project. If you have any questions regarding this report, please call Eric Libolt at (360) 752-9571 or elibolt@all4inc.com.

Sincerely,

ALL4 LLC



Eric Libolt
Washington Office Leader

cc: Jim Schneider (HF Sinclair)
Ava Gempler (ALL4)

Attachments:

Attachment 1 – Original Laboratory Analytical Data Reports

122°36'0"W

122°34'0"W

122°32'0"W

48°30'0"N

48°30'0"N

48°28'0"N

48°28'0"N

122°36'0"W

122°34'0"W

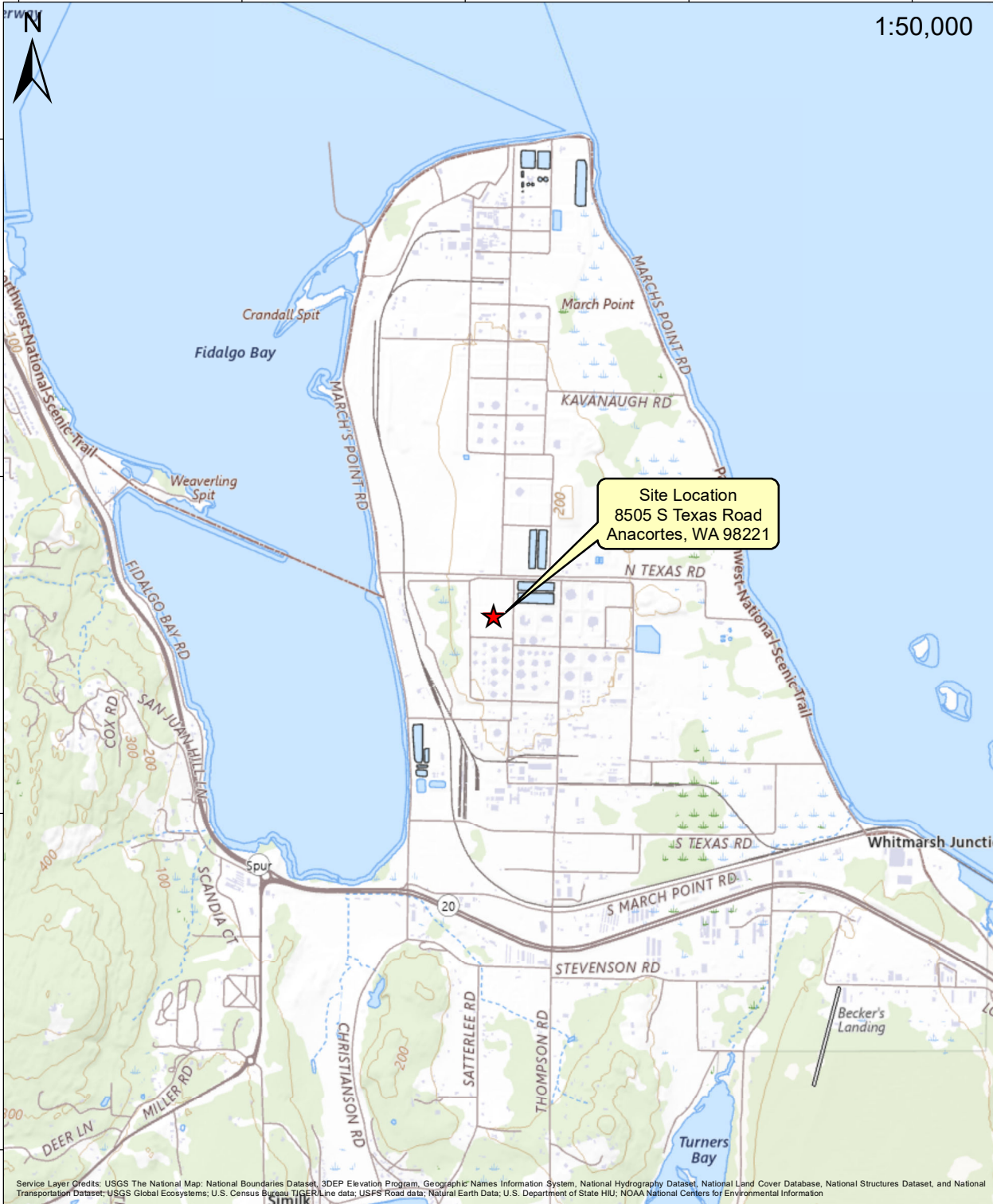
122°32'0"W

2,000 1,000 0 Meters

5,000 2,500 0 Feet

2 1 0 Miles

Service Layer Credits: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau Tiger/Line data; USPS Road data; Natural Earth Data; U.S. Department of State HUI; NOAA National Centers for Environmental Information



Prepared for:



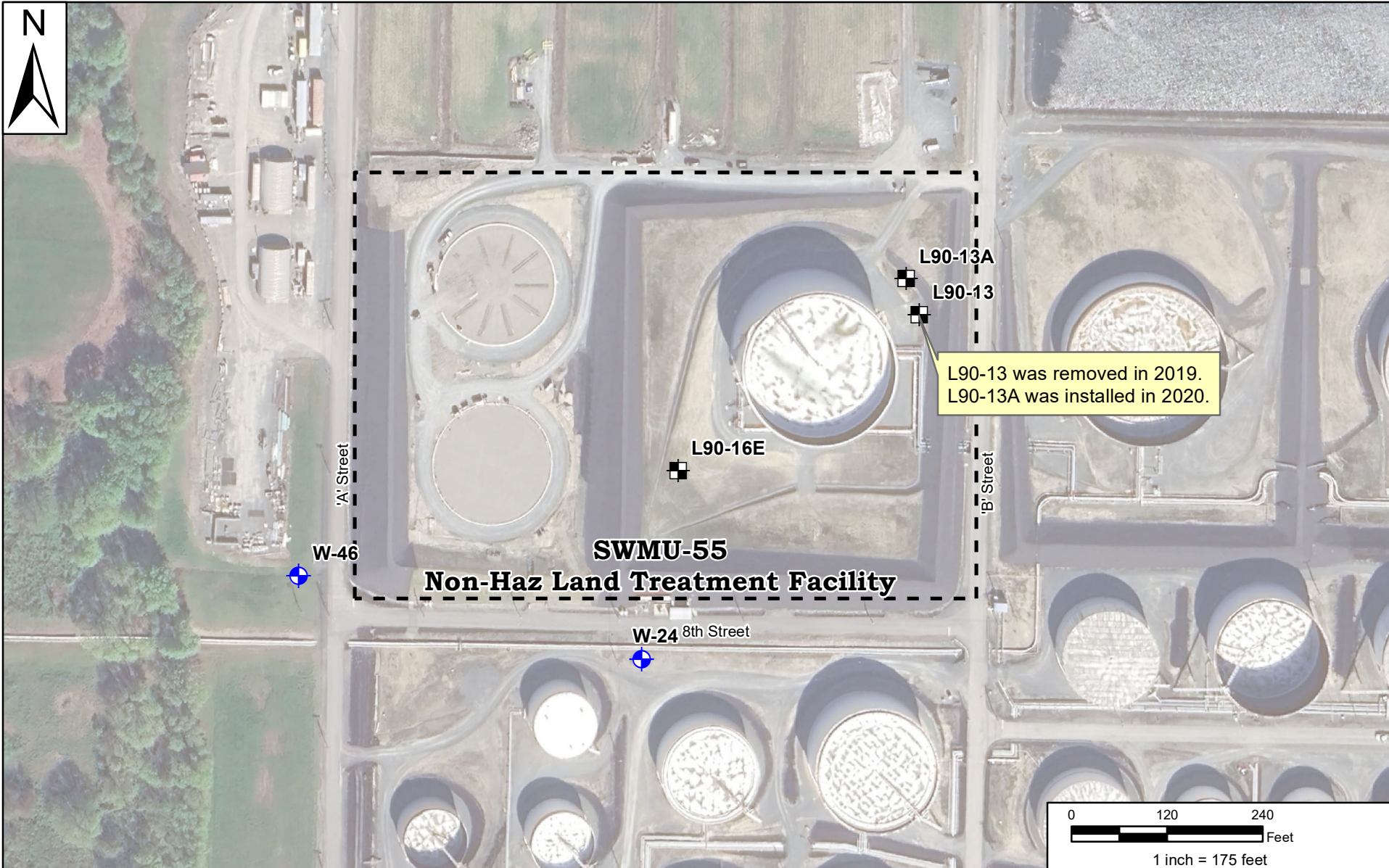
Prepared by:



Site Location Map

SWMU 55
2/25/2025

Figure 1



-  Groundwater Well
-  Lysimeter
-  Site Boundary

All data are approximate and should be used for relative location reference only.

2024 Aerial Photograph
(GoogleEarth)

Prepared for:



Prepared by:



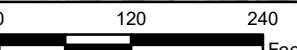
 1 inch = 175 feet	
Monitoring Well and Lysimeter Location Map	
HF Sinclair PSR SWMU-55 2/24/2025	Figure 2

Table 1
Groundwater Surface Elevation and Field Chemistry Parameters* - SWMU 55
HF Sinclair Puget Sound Refining LLC - Anacortes, WA

Well ID	Date	Depth to Water (ft bgs)	Groundwater Surface Elevation (ft msl)	Temperature (°C)	Conductivity (mS/cm)	Total Dissolved Solids (g/L)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH	Oxidation/Reduction Potential (mV)
W-24	11/20/2024	37.39	114.05	12.9	1.867	1.213	0.95	8.77	6.1	144.4
W-46	11/21/2024	51.2	81.30	12.2	1.213	0.8	0.62	14.2	6.56	132.4

* Groundwater chemistry parameters collected during purging using a YSI 556 MPS water meter, or equivalent, equipped with a flow-through cell.

Table 2
Soil Pore Water and Groundwater Data - SWMU 55
HF Sinclair Puget Sound Refining LLC - Anacortes, WA

Analyte	Method	Units	W-24	W-46	L90-13A		L90-16E	MTCA Method B
			11/20/2024	11/21/2024	11/20/2024	11/20/2024(dup.)	11/20/2024	Cleanup Level
Aliphatic EC 5-6	NWVPH	ug/L	ND(<50)	ND(<50)	ND(<50)	ND(<50)	ND(<50)	No Level
Aliphatic EC >6-8	NWVPH	ug/L	ND(<50)	ND(<50)	ND(<50)	ND(<50)	ND(<50)	No Level
Aliphatic EC >8-10	NWVPH	ug/L	ND(<50)	ND(<50)	ND(<50)	ND(<50)	ND(<50)	No Level
Aliphatic EC >10-12	NWEPH	ug/L	ND(<38)	ND(<38)	ND(<38)	ND(<38)	ND(<50)	No Level
Aliphatic EC >12-16	NWEPH	ug/L	ND(<38)	ND(<38)	ND(<38)	ND(<38)	ND(<38)	No Level
Aliphatic EC >16-21	NWEPH	ug/L	ND(<38)	ND(<38)	ND(<38)	ND(<38)	ND(<38)	No Level
Aliphatic EC >21-34	NWEPH	ug/L	ND(<38)	ND(<38)	ND(<38)	ND(<38)	ND(<38)	No Level
Aromatic EC >8-10	NWVPH	ug/L	ND(<50)	ND(<50)	ND(<50)	ND(<50)	ND(<50)	No Level
Aromatic EC >10-12	NWEPH	ug/L	ND(<38)	ND(<38)	ND(<38)	ND(<38)	ND(<38)	No Level
Aromatic EC >12-16	NWEPH	ug/L	ND(<38)	ND(<38)	ND(<38)	ND(<38)	ND(<38)	No Level
Aromatic EC >16-21	NWEPH	ug/L	40	ND(<38)	ND(<38)	ND(<38)	42	No Level
Aromatic EC >21-34	NWEPH	ug/L	ND(<38)	ND(<38)	ND(<38)	ND(<38)	ND(<38)	No Level
Benzene	EPA-8260	ug/L	ND(<2)	ND(<2)	ND(<2)	ND(<2)	ND(<2)	5 ^(a)
Toluene	EPA-8260	ug/L	ND(<2)	ND(<2)	ND(<2)	ND(<2)	ND(<2)	1,000 ^(a)
Ethylbenzene	EPA-8260	ug/L	ND(<2)	ND(<2)	ND(<2)	ND(<2)	ND(<2)	700 ^(a)
Xylenes	EPA-8260	ug/L	ND(<4)	ND(<4)	ND(<4)	ND(<4)	ND(<4)	1,600
Methyl tert-butyl ether	EPA-8260	ug/L	ND(<2)	ND(<2)	ND(<2)	ND(<2)	ND(<2)	24
Hexane	EPA-8260	ug/L	ND(<6.8)	ND(<6.8)	ND(<6.8)	ND(<6.8)	ND(<6.8)	480
Naphthalene	EPA-8270 SIM	ug/L	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	160 ^(b)
2-Methylnaphthalene	EPA-8270 SIM	ug/L	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	160 ^(b)
1-Methylnaphthalene	EPA-8270 SIM	ug/L	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	160 ^(b)
Benzo(A)Anthracene	EPA-8270 SIM	ug/L	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	--
Chrysene	EPA-8270 SIM	ug/L	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	--
Benzo(B)Fluoranthene	EPA-8270 SIM	ug/L	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	--
Benzo(K)Fluoranthene	EPA-8270 SIM	ug/L	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	--
Benzo(A)Pyrene	EPA-8270 SIM	ug/L	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.2 ^(c)
Indeno(1,2,3-Cd)Pyrene	EPA-8270 SIM	ug/L	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	--
Dibenz(A,H)Anthracene	EPA-8270 SIM	ug/L	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	--
Total Toxic Equivalent Concentration (Total TEQ)*		ug/L	ND(<0.015)	ND(<0.015)	ND(<0.015)	ND(<0.015)	ND(<0.015)	0.2 ^(c)
Total TMEQ*		ug/L	ND(<0.015)	ND(<0.015)	ND(<0.015)	ND(<0.015)	ND(<0.015)	0.2 ^(c)
Mercury(Dissolved)	EPA 245.1	ug/L	ND(<0.2)	ND(<0.2)	ND(<0.2)	ND(<0.2)	ND(<0.2)	2 ^(a)
Chromium (Dissolved)	EPA 200.8	ug/L	ND(<2)	ND(<2)	ND(<2)	ND(<2)	ND(<2)	100 ^(a)
Nickel (Dissolved)	EPA 200.8	ug/L	15	ND(<2)	13	ND(<2)	42	320
Vanadium (Dissolved)	EPA 200.8	ug/L	ND(<2)	ND(<2)	11	2.1	ND(<2)	80

ND indicates analyte was Not Detected at level above reporting limit. Reporting limit is given in parentheses.

TEQ = cPAH concentration * TEF, Total cPAH Equivalent.

TMEQ = cPAH concentration * TEF * RMF, Toxic Mobility Equivalent Concentration.

^(a) Indicates Washington Maximum Contaminant Level (MCL).

^(b) Includes the sum of Naphthalene, 2-Methylnaphthalene, and 1-Methylnaphthalene.

^(c) EPA/State Maximum Contaminant Level.

* cPAH level calculated using Toxicity equivalency methodology provided in WAC 173-340-708(8).

**ATTACHMENT 1 -
ORIGINAL LABORATORY ANALYTICAL DATA REPORTS**



December 20, 2024

Mr. Eric Libolt
ALL4 LLC
228 E. Champion St, Suite 101
Bellingham, WA 98225

Dear Mr. Libolt,

On November 22nd, 7 samples were received by our laboratory and assigned our laboratory project number EV24110167. The project was identified as your HF Sinclair: SWMU55 & West LTF-C. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Carl Nott
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC DATE: 12/20/2024
228 E. Champion St, Suite 101 ALS JOB#: EV24110167
Bellingham, WA 98225 ALS SAMPLE#: EV24110167-01
CLIENT CONTACT: Eric Libolt DATE RECEIVED: 11/22/2024
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C COLLECTION DATE: 11/20/2024 10:55:00 AM
CLIENT SAMPLE ID: L90-13a WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C6-C8 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C12-C13 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWEPH	U	75	1	UG/L	12/09/2024	FAL
>C10-C12 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C12-C16 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C16-C21 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C21-C34 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C8-C10 Aromatics	NWEPH	U	75	1	UG/L	12/09/2024	FAL
>C10-C12 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C12-C16 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C16-C21 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C21-C34 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	11/26/2024	DLC
Hexane	EPA-8260	U	6.8	1	UG/L	11/26/2024	DLC
Benzene	EPA-8260	U	2.0	1	UG/L	11/26/2024	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	11/26/2024	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	11/26/2024	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	11/26/2024	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	11/26/2024	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/09/2024	DS
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/09/2024	DS
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/09/2024	DS
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/09/2024	DS
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	12/09/2024	DS
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/09/2024	DS
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/09/2024	DS
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/09/2024	DS
Indeno[1,2,3-cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/09/2024	DS
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/09/2024	DS
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	11/26/2024	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS
Nickel (Dissolved)	EPA-200.8	13	2.0	1	UG/L	11/26/2024	EBS
Vanadium (Dissolved)	EPA-200.8	11	2.0	1	UG/L	11/26/2024	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	ALL4 LLC	DATE:	12/20/2024
	228 E. Champion St, Suite 101	ALS JOB#:	EV24110167
	Bellingham, WA 98225	ALS SAMPLE#:	EV24110167-01
CLIENT CONTACT:	Eric Libolt	DATE RECEIVED:	11/22/2024
CLIENT PROJECT:	HF Sinclair: SWMU55 & West LTF-C	COLLECTION DATE:	11/20/2024 10:55:00 AM
CLIENT SAMPLE ID	L90-13a	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWEPH	60.0	12/09/2024	FAL
p-Terphenyl	NWEPH	76.1	12/09/2024	FAL
Toluene-d8	EPA-8260	103	11/26/2024	DLC
Terphenyl-d14	EPA-8270 SIM	92.4	12/09/2024	DS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC DATE: 12/20/2024
228 E. Champion St, Suite 101 ALS JOB#: EV24110167
Bellingham, WA 98225 ALS SAMPLE#: EV24110167-02
CLIENT CONTACT: Eric Libolt DATE RECEIVED: 11/22/2024
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C COLLECTION DATE: 11/20/2024 11:55:00 AM
CLIENT SAMPLE ID L90-16E WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C6-C8 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C12-C13 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWEPH	U	75	1	UG/L	12/09/2024	FAL
>C10-C12 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C12-C16 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C16-C21 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C21-C34 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C8-C10 Aromatics	NWEPH	U	75	1	UG/L	12/09/2024	FAL
>C10-C12 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C12-C16 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C16-C21 Aromatics	NWEPH	42	38	1	UG/L	12/09/2024	FAL
>C21-C34 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Hexane	EPA-8260	U	6.8	1	UG/L	11/27/2024	DLC
Benzene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	11/27/2024	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	11/26/2024	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS
Nickel (Dissolved)	EPA-200.8	42	2.0	1	UG/L	11/26/2024	EBS
Vanadium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	ALL4 LLC	DATE:	12/20/2024
	228 E. Champion St, Suite 101	ALS JOB#:	EV24110167
	Bellingham, WA 98225	ALS SAMPLE#:	EV24110167-02
CLIENT CONTACT:	Eric Libolt	DATE RECEIVED:	11/22/2024
CLIENT PROJECT:	HF Sinclair: SWMU55 & West LTF-C	COLLECTION DATE:	11/20/2024 11:55:00 AM
CLIENT SAMPLE ID	L90-16E	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWEPH	70.3	12/09/2024	FAL
p-Terphenyl	NWEPH	74.3	12/09/2024	FAL
Toluene-d8	EPA-8260	104	11/27/2024	DLC
Terphenyl-d14	EPA-8270 SIM	85.9	12/10/2024	DS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC DATE: 12/20/2024
228 E. Champion St, Suite 101 ALS JOB#: EV24110167
Bellingham, WA 98225 ALS SAMPLE#: EV24110167-03
CLIENT CONTACT: Eric Libolt DATE RECEIVED: 11/22/2024
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C COLLECTION DATE: 11/20/2024 2:40:00 PM
CLIENT SAMPLE ID MW-24 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C6-C8 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C12-C13 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWEPH	U	76	1	UG/L	12/09/2024	FAL
>C10-C12 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C12-C16 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C16-C21 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C21-C34 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C8-C10 Aromatics	NWEPH	U	76	1	UG/L	12/09/2024	FAL
>C10-C12 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C12-C16 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C16-C21 Aromatics	NWEPH	40	38	1	UG/L	12/09/2024	FAL
>C21-C34 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Hexane	EPA-8260	U	6.8	1	UG/L	11/27/2024	DLC
Benzene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	11/27/2024	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	11/26/2024	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS
Nickel (Dissolved)	EPA-200.8	15	2.0	1	UG/L	11/26/2024	EBS
Vanadium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	ALL4 LLC	DATE:	12/20/2024
	228 E. Champion St, Suite 101	ALS JOB#:	EV24110167
	Bellingham, WA 98225	ALS SAMPLE#:	EV24110167-03
CLIENT CONTACT:	Eric Libolt	DATE RECEIVED:	11/22/2024
CLIENT PROJECT:	HF Sinclair: SWMU55 & West LTF-C	COLLECTION DATE:	11/20/2024 2:40:00 PM
CLIENT SAMPLE ID	MW-24	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWEPH	59.9	12/09/2024	FAL
p-Terphenyl	NWEPH	66.0	12/09/2024	FAL
Toluene-d8	EPA-8260	102	11/27/2024	DLC
Terphenyl-d14	EPA-8270 SIM	91.8	12/10/2024	DS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC DATE: 12/20/2024
228 E. Champion St, Suite 101 ALS JOB#: EV24110167
Bellingham, WA 98225 ALS SAMPLE#: EV24110167-04
CLIENT CONTACT: Eric Libolt DATE RECEIVED: 11/22/2024
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C COLLECTION DATE: 11/21/2024 10:40:00 AM
CLIENT SAMPLE ID MW-46 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C6-C8 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C12-C13 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWEPH	U	76	1	UG/L	12/09/2024	FAL
>C10-C12 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C12-C16 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C16-C21 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C21-C34 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C8-C10 Aromatics	NWEPH	U	76	1	UG/L	12/09/2024	FAL
>C10-C12 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C12-C16 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C16-C21 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C21-C34 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Hexane	EPA-8260	U	6.8	1	UG/L	11/27/2024	DLC
Benzene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	11/27/2024	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	11/26/2024	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS
Nickel (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS
Vanadium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	ALL4 LLC	DATE:	12/20/2024
	228 E. Champion St, Suite 101	ALS JOB#:	EV24110167
	Bellingham, WA 98225	ALS SAMPLE#:	EV24110167-04
CLIENT CONTACT:	Eric Libolt	DATE RECEIVED:	11/22/2024
CLIENT PROJECT:	HF Sinclair: SWMU55 & West LTF-C	COLLECTION DATE:	11/21/2024 10:40:00 AM
CLIENT SAMPLE ID	MW-46	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWEPH	70.9	12/09/2024	FAL
p-Terphenyl	NWEPH	78.1	12/09/2024	FAL
Toluene-d8	EPA-8260	103	11/27/2024	DLC
Terphenyl-d14	EPA-8270 SIM	86.5	12/10/2024	DS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC
228 E. Champion St, Suite 101
Bellingham, WA 98225
DATE: 12/20/2024
ALS JOB#: EV24110167
ALS SAMPLE#: EV24110167-05
CLIENT CONTACT: Eric Libolt
DATE RECEIVED: 11/22/2024
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C
COLLECTION DATE: 11/20/2024 10:35:00 AM
CLIENT SAMPLE ID: ALL4-FEB-1
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C6-C8 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C12-C13 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWEPH	U	75	1	UG/L	12/19/2024	FAL
>C10-C12 Aliphatics	NWEPH	U	38	1	UG/L	12/19/2024	FAL
>C12-C16 Aliphatics	NWEPH	U	38	1	UG/L	12/19/2024	FAL
>C16-C21 Aliphatics	NWEPH	U	38	1	UG/L	12/19/2024	FAL
>C21-C34 Aliphatics	NWEPH	U	38	1	UG/L	12/19/2024	FAL
>C8-C10 Aromatics	NWEPH	U	75	1	UG/L	12/19/2024	FAL
>C10-C12 Aromatics	NWEPH	U	38	1	UG/L	12/19/2024	FAL
>C12-C16 Aromatics	NWEPH	U	38	1	UG/L	12/19/2024	FAL
>C16-C21 Aromatics	NWEPH	U	38	1	UG/L	12/19/2024	FAL
>C21-C34 Aromatics	NWEPH	U	38	1	UG/L	12/19/2024	FAL
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Hexane	EPA-8260	U	6.8	1	UG/L	11/27/2024	DLC
Benzene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	11/27/2024	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	11/26/2024	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS
Nickel (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS
Vanadium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	ALL4 LLC	DATE:	12/20/2024
	228 E. Champion St, Suite 101	ALS JOB#:	EV24110167
	Bellingham, WA 98225	ALS SAMPLE#:	EV24110167-05
CLIENT CONTACT:	Eric Libolt	DATE RECEIVED:	11/22/2024
CLIENT PROJECT:	HF Sinclair: SWMU55 & West LTF-C	COLLECTION DATE:	11/20/2024 10:35:00 AM
CLIENT SAMPLE ID	ALL4-FEB-1	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWEPH	67.0	12/19/2024	FAL
p-Terphenyl	NWEPH	90.2	12/19/2024	FAL
Toluene-d8	EPA-8260	103	11/27/2024	DLC
Terphenyl-d14	EPA-8270 SIM	94.7	12/10/2024	DS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC
228 E. Champion St, Suite 101
Bellingham, WA 98225
DATE: 12/20/2024
ALS JOB#: EV24110167
ALS SAMPLE#: EV24110167-06
CLIENT CONTACT: Eric Libolt
DATE RECEIVED: 11/22/2024
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C
COLLECTION DATE: 11/20/2024 9:30:00 AM
CLIENT SAMPLE ID: ALL4-DUP-1
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C6-C8 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aliphatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C10-C12 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C12-C13 Aromatics	NWVPH	U	50	1	UG/L	11/27/2024	OSE
>C8-C10 Aliphatics	NWEPH	U	75	1	UG/L	12/09/2024	FAL
>C10-C12 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C12-C16 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C16-C21 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C21-C34 Aliphatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C8-C10 Aromatics	NWEPH	U	75	1	UG/L	12/09/2024	FAL
>C10-C12 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C12-C16 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C16-C21 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
>C21-C34 Aromatics	NWEPH	U	38	1	UG/L	12/09/2024	FAL
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Hexane	EPA-8260	U	6.8	1	UG/L	11/27/2024	DLC
Benzene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	11/27/2024	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	11/27/2024	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	12/10/2024	DS
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	11/26/2024	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS
Nickel (Dissolved)	EPA-200.8	U	2.0	1	UG/L	11/26/2024	EBS
Vanadium (Dissolved)	EPA-200.8	2.1	2.0	1	UG/L	11/26/2024	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	ALL4 LLC	DATE:	12/20/2024
	228 E. Champion St, Suite 101	ALS JOB#:	EV24110167
	Bellingham, WA 98225	ALS SAMPLE#:	EV24110167-06
CLIENT CONTACT:	Eric Libolt	DATE RECEIVED:	11/22/2024
CLIENT PROJECT:	HF Sinclair: SWMU55 & West LTF-C	COLLECTION DATE:	11/20/2024 9:30:00 AM
CLIENT SAMPLE ID	ALL4-DUP-1	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWEPH	53.1	12/09/2024	FAL
p-Terphenyl	NWEPH	67.1	12/09/2024	FAL
Toluene-d8	EPA-8260	103	11/27/2024	DLC
Terphenyl-d14	EPA-8270 SIM	100	12/10/2024	DS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	ALL4 LLC	DATE:	12/20/2024
	228 E. Champion St, Suite 101	ALS JOB#:	EV24110167
	Bellingham, WA 98225	ALS SAMPLE#:	EV24110167-07
CLIENT CONTACT:	Eric Libolt	DATE RECEIVED:	11/22/2024
CLIENT PROJECT:	HF Sinclair: SWMU55 & West LTF-C	COLLECTION DATE:	11/20/2024
CLIENT SAMPLE ID	Trip Blanks	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	12/02/2024	DLC
Hexane	EPA-8260	U	6.8	1	UG/L	12/02/2024	DLC
Benzene	EPA-8260	U	2.0	1	UG/L	12/02/2024	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	12/02/2024	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	12/02/2024	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	12/02/2024	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	12/02/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Toluene-d8	EPA-8260	105	12/02/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC
228 E. Champion St, Suite 101
Bellingham, WA 98225
DATE: 12/20/2024
ALS SDG#: EV24110167
WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Libolt
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C

LABORATORY BLANK RESULTS

MBLK-R501731 - Batch R501731 - Water by NWVPH

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	UG/L	50	11/27/2024	OSE
>C6-C8 Aliphatics	NWVPH	U	UG/L	50	11/27/2024	OSE
>C8-C10 Aliphatics	NWVPH	U	UG/L	50	11/27/2024	OSE
>C10-C12 Aliphatics	NWVPH	U	UG/L	50	11/27/2024	OSE
>C8-C10 Aromatics	NWVPH	U	UG/L	50	11/27/2024	OSE
>C10-C12 Aromatics	NWVPH	U	UG/L	50	11/27/2024	OSE
>C12-C13 Aromatics	NWVPH	U	UG/L	50	11/27/2024	OSE

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R502048 - Batch R502048 - Water by NWEPH

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	U	UG/L	80	12/09/2024	FAL
>C10-C12 Aliphatics	NWEPH	U	UG/L	40	12/09/2024	FAL
>C12-C16 Aliphatics	NWEPH	U	UG/L	40	12/09/2024	FAL
>C16-C21 Aliphatics	NWEPH	U	UG/L	40	12/09/2024	FAL
>C21-C34 Aliphatics	NWEPH	U	UG/L	40	12/09/2024	FAL
>C8-C10 Aromatics	NWEPH	U	UG/L	80	12/09/2024	FAL
>C10-C12 Aromatics	NWEPH	U	UG/L	40	12/09/2024	FAL
>C12-C16 Aromatics	NWEPH	U	UG/L	40	12/09/2024	FAL
>C16-C21 Aromatics	NWEPH	U	UG/L	40	12/09/2024	FAL
>C21-C34 Aromatics	NWEPH	U	UG/L	40	12/09/2024	FAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-112624W - Batch 221304 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Methyl T-Butyl Ether	EPA-8260	U	UG/L	2.0	11/26/2024	DLC
Hexane	EPA-8260	U	UG/L	6.8	11/26/2024	DLC
Benzene	EPA-8260	U	UG/L	2.0	11/26/2024	DLC
Toluene	EPA-8260	U	UG/L	2.0	11/26/2024	DLC
Ethylbenzene	EPA-8260	U	UG/L	2.0	11/26/2024	DLC
m,p-Xylene	EPA-8260	U	UG/L	4.0	11/26/2024	DLC
o-Xylene	EPA-8260	U	UG/L	2.0	11/26/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC DATE: 12/20/2024
228 E. Champion St, Suite 101 ALS SDG#: EV24110167
Bellingham, WA 98225 WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Libolt
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C

LABORATORY BLANK RESULTS

MB-120224W - Batch 221313 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Methyl T-Butyl Ether	EPA-8260	U	UG/L	2.0	12/02/2024	DLC
Hexane	EPA-8260	U	UG/L	6.8	12/02/2024	DLC
Benzene	EPA-8260	U	UG/L	2.0	12/02/2024	DLC
Toluene	EPA-8260	U	UG/L	2.0	12/02/2024	DLC
Ethylbenzene	EPA-8260	U	UG/L	2.0	12/02/2024	DLC
m,p-Xylene	EPA-8260	U	UG/L	4.0	12/02/2024	DLC
o-Xylene	EPA-8260	U	UG/L	2.0	12/02/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-112624W - Batch 221647 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	UG/L	0.020	12/09/2024	DS
2-Methylnaphthalene	EPA-8270 SIM	U	UG/L	0.020	12/09/2024	DS
1-Methylnaphthalene	EPA-8270 SIM	U	UG/L	0.020	12/09/2024	DS
Benzo[A]Anthracene	EPA-8270 SIM	U	UG/L	0.020	12/09/2024	DS
Chrysene	EPA-8270 SIM	U	UG/L	0.020	12/09/2024	DS
Benzo[B]Fluoranthene	EPA-8270 SIM	U	UG/L	0.020	12/09/2024	DS
Benzo[K]Fluoranthene	EPA-8270 SIM	U	UG/L	0.020	12/09/2024	DS
Benzo[A]Pyrene	EPA-8270 SIM	U	UG/L	0.020	12/09/2024	DS
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	UG/L	0.020	12/09/2024	DS
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	UG/L	0.020	12/09/2024	DS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R501141 - Batch R501141 - Water by EPA-245.1

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-245.1	U	UG/L	0.20	11/26/2024	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-112624W - Batch 221161 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Chromium (Dissolved)	EPA-200.8	U	UG/L	2.0	11/26/2024	EBS
Nickel (Dissolved)	EPA-200.8	U	UG/L	2.0	11/26/2024	EBS
Vanadium (Dissolved)	EPA-200.8	U	UG/L	2.0	11/26/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC
228 E. Champion St, Suite 101
Bellingham, WA 98225
DATE: 12/20/2024
ALS SDG#: EV24110167
WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Libolt
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R502048 - Water by NWEPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
>C8-C10 Aliphatics - BS	NWEPH	28.9			5	92.3	12/09/2024	FAL
>C8-C10 Aliphatics - BSD	NWEPH	29.4	2		5	92.3	12/09/2024	FAL
>C10-C12 Aliphatics - BS	NWEPH	49.3			12.8	95.6	12/09/2024	FAL
>C10-C12 Aliphatics - BSD	NWEPH	48.3	2		12.8	95.6	12/09/2024	FAL
>C12-C16 Aliphatics - BS	NWEPH	68.0			21.9	106	12/09/2024	FAL
>C12-C16 Aliphatics - BSD	NWEPH	66.1	3		21.9	106	12/09/2024	FAL
>C16-C21 Aliphatics - BS	NWEPH	75.7			20.7	113	12/09/2024	FAL
>C16-C21 Aliphatics - BSD	NWEPH	74.6	1		20.7	113	12/09/2024	FAL
>C21-C34 Aliphatics - BS	NWEPH	90.1			24.7	117	12/09/2024	FAL
>C21-C34 Aliphatics - BSD	NWEPH	90.9	1		24.7	117	12/09/2024	FAL
>C8-C10 Aromatics - BS	NWEPH	39.8			5	93.4	12/09/2024	FAL
>C8-C10 Aromatics - BSD	NWEPH	35.5	11		5	93.4	12/09/2024	FAL
>C10-C12 Aromatics - BS	NWEPH	66.7			40.3	116	12/09/2024	FAL
>C10-C12 Aromatics - BSD	NWEPH	60.6	10		40.3	116	12/09/2024	FAL
>C12-C16 Aromatics - BS	NWEPH	88.2			17.5	138	12/09/2024	FAL
>C12-C16 Aromatics - BSD	NWEPH	80.2	10		17.5	138	12/09/2024	FAL
>C16-C21 Aromatics - BS	NWEPH	104			55	132	12/09/2024	FAL
>C16-C21 Aromatics - BSD	NWEPH	90.2	15		55	132	12/09/2024	FAL
>C21-C34 Aromatics - BS	NWEPH	108			47.7	120	12/09/2024	FAL
>C21-C34 Aromatics - BSD	NWEPH	80.6	29	SR1	47.7	120	12/09/2024	FAL

SR1 - RPD outside of control limits.

ALS Test Batch ID: 221304 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Methyl T-Butyl Ether - BS	EPA-8260	101			50	150	11/26/2024	DLC
Methyl T-Butyl Ether - BSD	EPA-8260	99.8	2		50	150	11/26/2024	DLC
Hexane - BS	EPA-8260	134			50	150	11/26/2024	DLC
Hexane - BSD	EPA-8260	125	7		50	150	11/26/2024	DLC
Benzene - BS	EPA-8260	104			74.7	143	11/26/2024	DLC
Benzene - BSD	EPA-8260	98.6	5		74.7	143	11/26/2024	DLC
Toluene - BS	EPA-8260	104			71.7	139	11/26/2024	DLC
Toluene - BSD	EPA-8260	98.8	5		71.7	139	11/26/2024	DLC
Ethylbenzene - BS	EPA-8260	106			50	150	11/26/2024	DLC
Ethylbenzene - BSD	EPA-8260	100	6		50	150	11/26/2024	DLC
m,p-Xylene - BS	EPA-8260	107			50	150	11/26/2024	DLC
m,p-Xylene - BSD	EPA-8260	101	6		50	150	11/26/2024	DLC
o-Xylene - BS	EPA-8260	108			50	150	11/26/2024	DLC
o-Xylene - BSD	EPA-8260	102	5		50	150	11/26/2024	DLC

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ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626

ALS Group USA, Corp dba ALS Environmental

Environmental

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RIGHT SOLUTIONS RIGHT PARTNER



CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC DATE: 12/20/2024
228 E. Champion St, Suite 101 ALS SDG#: EV24110167
Bellingham, WA 98225 WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Libolt
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
ALS Test Batch ID: 221313 - Water by EPA-8260								
SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Methyl T-Butyl Ether - BS	EPA-8260	94.0			50	150	12/02/2024	DLC
Methyl T-Butyl Ether - BSD	EPA-8260	100	7		50	150	12/02/2024	DLC
Hexane - BS	EPA-8260	142			50	150	12/02/2024	DLC
Hexane - BSD	EPA-8260	140	1		50	150	12/02/2024	DLC
Benzene - BS	EPA-8260	97.2			74.7	143	12/02/2024	DLC
Benzene - BSD	EPA-8260	96.0	1		74.7	143	12/02/2024	DLC
Toluene - BS	EPA-8260	97.9			71.7	139	12/02/2024	DLC
Toluene - BSD	EPA-8260	98.4	0		71.7	139	12/02/2024	DLC
Ethylbenzene - BS	EPA-8260	98.7			50	150	12/02/2024	DLC
Ethylbenzene - BSD	EPA-8260	99.8	1		50	150	12/02/2024	DLC
m,p-Xylene - BS	EPA-8260	100			50	150	12/02/2024	DLC
m,p-Xylene - BSD	EPA-8260	102	1		50	150	12/02/2024	DLC
o-Xylene - BS	EPA-8260	100			50	150	12/02/2024	DLC
o-Xylene - BSD	EPA-8260	102	2		50	150	12/02/2024	DLC

ALS Test Batch ID: 221647 - Water by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Naphthalene - BS	EPA-8270 SIM	45.8			36	118	12/09/2024	DS
Naphthalene - BSD	EPA-8270 SIM	43.9	4		36	118	12/09/2024	DS
2-Methylnaphthalene - BS	EPA-8270 SIM	46.5			20	150	12/09/2024	DS
2-Methylnaphthalene - BSD	EPA-8270 SIM	46.6	0		20	150	12/09/2024	DS
1-Methylnaphthalene - BS	EPA-8270 SIM	48.6			20	150	12/09/2024	DS
1-Methylnaphthalene - BSD	EPA-8270 SIM	49.6	2		20	150	12/09/2024	DS
Benzo[A]Anthracene - BS	EPA-8270 SIM	80.0			20	150	12/09/2024	DS
Benzo[A]Anthracene - BSD	EPA-8270 SIM	80.1	0		20	150	12/09/2024	DS
Chrysene - BS	EPA-8270 SIM	82.1			20	150	12/09/2024	DS
Chrysene - BSD	EPA-8270 SIM	80.3	2		20	150	12/09/2024	DS
Benzo[B]Fluoranthene - BS	EPA-8270 SIM	85.1			20	150	12/09/2024	DS
Benzo[B]Fluoranthene - BSD	EPA-8270 SIM	81.5	4		20	150	12/09/2024	DS
Benzo[K]Fluoranthene - BS	EPA-8270 SIM	85.3			20	150	12/09/2024	DS
Benzo[K]Fluoranthene - BSD	EPA-8270 SIM	88.5	4		20	150	12/09/2024	DS
Benzo[A]Pyrene - BS	EPA-8270 SIM	80.7			20	150	12/09/2024	DS
Benzo[A]Pyrene - BSD	EPA-8270 SIM	85.1	5		20	150	12/09/2024	DS
Indeno[1,2,3-Cd]Pyrene - BS	EPA-8270 SIM	76.7			20	150	12/09/2024	DS
Indeno[1,2,3-Cd]Pyrene - BSD	EPA-8270 SIM	81.3	6		20	150	12/09/2024	DS

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ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626

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CERTIFICATE OF ANALYSIS

CLIENT: ALL4 LLC
 228 E. Champion St, Suite 101
 Bellingham, WA 98225
CLIENT CONTACT: Eric Libolt
CLIENT PROJECT: HF Sinclair: SWMU55 & West LTF-C

DATE: 12/20/2024
ALS SDG#: EV24110167
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Dibenz[A,H]Anthracene - BS	EPA-8270 SIM	70.9			20	150	12/09/2024	DS
Dibenz[A,H]Anthracene - BSD	EPA-8270 SIM	76.0	7		20	150	12/09/2024	DS

ALS Test Batch ID: R501141 - Water by EPA-245.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury (Dissolved) - BS	EPA-245.1	103			80.6	118	11/26/2024	RAL
Mercury (Dissolved) - BSD	EPA-245.1	105	2		80.6	118	11/26/2024	RAL

ALS Test Batch ID: 221161 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Chromium (Dissolved) - BS	EPA-200.8	96.8			86.2	107	11/26/2024	EBS
Chromium (Dissolved) - BSD	EPA-200.8	95.9	1		86.2	107	11/26/2024	EBS
Nickel (Dissolved) - BS	EPA-200.8	102			85.4	109	11/26/2024	EBS
Nickel (Dissolved) - BSD	EPA-200.8	101	1		85.4	109	11/26/2024	EBS
Vanadium (Dissolved) - BS	EPA-200.8	95.7			80.1	108	11/26/2024	EBS
Vanadium (Dissolved) - BSD	EPA-200.8	95.1	1		80.1	108	11/26/2024	EBS

APPROVED BY



 Carl Nott
 Laboratory Director



ALS Job# (Laboratory Use Only)

EY24110167

ANALYSIS REQUESTED

OTHER (Specify)

Date 11-22-24 Page 1 Of 1

PROJECT ID: HF Sinclair; SWMUS & West LTF - C					ANALYSIS REQUESTED										OTHER (Specify)				
REPORT TO COMPANY: ALL4 LLC																			
PROJECT MANAGER: Eric Libolt; Ava Gempeler																			
ADDRESS: 228 E Champion St #101 Bellingham, WA 98225																			
PHONE: 360-752-9571 PO. #: 004531-0014.00																			
E-MAIL: ericlibolt@aall4inc.com, agempeler@aall4inc.com																			
INVOICE TO COMPANY: ALL4 LLC																			
ATTENTION: Contact FinOPS at FinOPS@aall4inc.com, ADDRESS: 2393 Kimberlon Rd with the PO # 004531-0014.00																			
PO Box 299, Kimberlon, PA 19442-0299																			
SAMPLE ID.		DATE	TIME	TYPE	LAB#														
1. L90-13a	11-20-24	10:55	Ground water			NWTPH-HCID													
2. L90-16E	11-20-24	11:55				NWTPH-DX													
3. MW-24	11-20-24	14:40				NWTPH-GX													
4. MW-46	11-21-24	10:40				BTEX by EPA 8021 ☐ BTEX by EPA 8260 ☒													
5. ALL4-FEB-1	11-20-24	10:35				MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☒													
6. ALL4-DUP-1	11-20-24	9:30				Halogenated Volatiles by EPA 8260													
7. Trip Blanks						Volatile Organic Compounds by EPA 8260													
8. (Filled by lab)						EDB / EDC by EPA 8260 SIM (water)													
9.						EDB / EDC by EPA 8260 (soil)													
10.						Semivolatile Organic Compounds by EPA 8270													
						Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM													
						PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐													
						Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐													
						Metals Other (Specify) Cr, Ni, V (Diss.)													
						TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐													
						NWTPH - VPH													
						NWTPH - EPH													
						Hexane (8260)													
						Mercury (7471) (Diss.)													
						cPAHs + Naphthalenes (8270 SIM)													
						NUMBER OF CONTAINERS													
						RECEIVED IN GOOD CONDITION?													

Nitric bottles are field filtered.

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Chloe Becker, MUI, 11/1/11

2. Relinquished By: _____

Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis

SAME	1	2	3	5	10
------	---	---	---	---	---------------

Fuels & Hydrocarbon Analysis

Standard		C	I	DAY
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*Turnaround request less than standard may incur Bush Charges