Phase II Report of Findings

Medford Office, Bulk Plant, and CFN Cardlock
1890 S. Pacific Highway
Medford, Oregon

Prepared for:

Hays Oil Company

March 2024

224002.201

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Reference: 224002.201

March 29, 2024

Craig Randolph
Vice President
191 Bateman Drive
Central Point, OR 97502

Subject: Phase II Report of Findings, Medford Office, Bulk Plant, and CFN Cardlock, 1890 S. Pacific Highway, Medford, Oregon

Dear Craig Randolph:

SHN is providing you with this Phase II report of findings for your Medford Office, Bulk Plant, and CFN Cardlock facility, located at 1890 S. Pacific Highway, Medford, Oregon. SHN has determined that further action may be necessary at the site based on the results of the recent investigation. SHN recommends submitting this Phase II report to the Oregon Department of Environmental Quality for review.

If you have any questions, comments, or concerns regarding this report, please call me at (530) 221-5424.

Sincerely,

SHN

Robert W. Hess, RG
Project Manager

RWH/DMW:ame

Enclosure: Report

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1890 S. Pacific Highway
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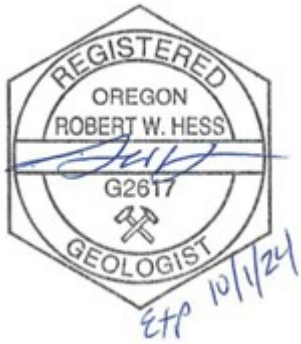

Robert W. Hess, RG

signed 3/29/24

Prepared by:

803 Main Street, Ste 401
Klamath Falls, OR 97601
(541) 827-7855

March 2024

QA/QC: RMR RR
Reference: 224002.201

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Abbreviations and Acronyms

Units of Measure

<	"less than" the stated laboratory reporting limit
eV	electron volts
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
ug/L	micrograms per liter

Additional Terms

AST	aboveground storage tank
B	benzene
B#	soil boring identification number
BB&A	BB&A Environmental
BGS	below ground surface
DEQ	Department of Environmental Quality (Oregon)
E	ethylbenzene
EDB	1,2-dibromoethane
EDC	1,2-dichloroethane
EPA	U.S. Environmental Protection Agency
GPRD	GPR Data, Inc.
I-G	City of Medford General Industrial zoning
LUST	Leaking underground storage tank database
MTBE	methyl tertiary-butyl ether
NA	not available
NR	no reference
NWTPH-DX	Northwest total petroleum hydrocarbons as diesel
NWTPH-GX	Northwest total petroleum hydrocarbons as gasoline
ORELAP	State of Oregon Environmental Laboratory Accreditation Program
PID	photoionization detector
PVC	polyvinyl chloride
RBC	risk-based concentration
RBCss	risk-based concentrations–residential soil ingestion, dermal contact, and inhalation values
RBCw	risk-based concentrations–residential ingestion & inhalation from tap water
T	toluene
TPH	total petroleum hydrocarbons
VOCs	volatile organic compounds
X	xylenes

1.0 Introduction

On behalf of Hays Oil Company, SHN prepared this Phase II report of findings for the Medford Office, Bulk Plant, and CFN Cardlock facility, located at 1890 S. Pacific Highway, Medford, Oregon (Figure 1). This report presents the site investigation results, including a human health risk-based screening level assessment based on current and likely future site uses.

The site is not listed in the Oregon Department of Environmental Quality (DEQ) leaking underground storage tank (LUST) database.

2.0 Site Setting

2.1 Site Description and Vicinity

The site is located in Medford, Jackson County, Oregon. The approximate 1.55-acre site is situated at an elevation of approximately 1,413 feet above sea level along S. Pacific Highway (Figure 1) and is currently operated as a bulk petroleum fuel storage, corporate office, and CFN branded cardlock facility. The site is zoned General Industrial (I-G) and supports a two-story office building, two warehouse buildings, an aboveground storage tank (AST) farm, a loading rack, and cardlock fuel sales. The site is paved with asphalt, concrete, and gravel-surfaced areas (Figure 2), and there are occupational workers at this facility.

The site is bordered to the northeast by railroad tracks beyond which is S. Pacific Highway and a Walmart Supercenter, to the southeast by railroad tracks beyond which is S. Pacific Highway and Rogue Credit Union, to the southwest by a construction staging area for new construction, and to the west and northwest by new construction, residential properties, and a golf course.

2.2 Geology and Hydrology

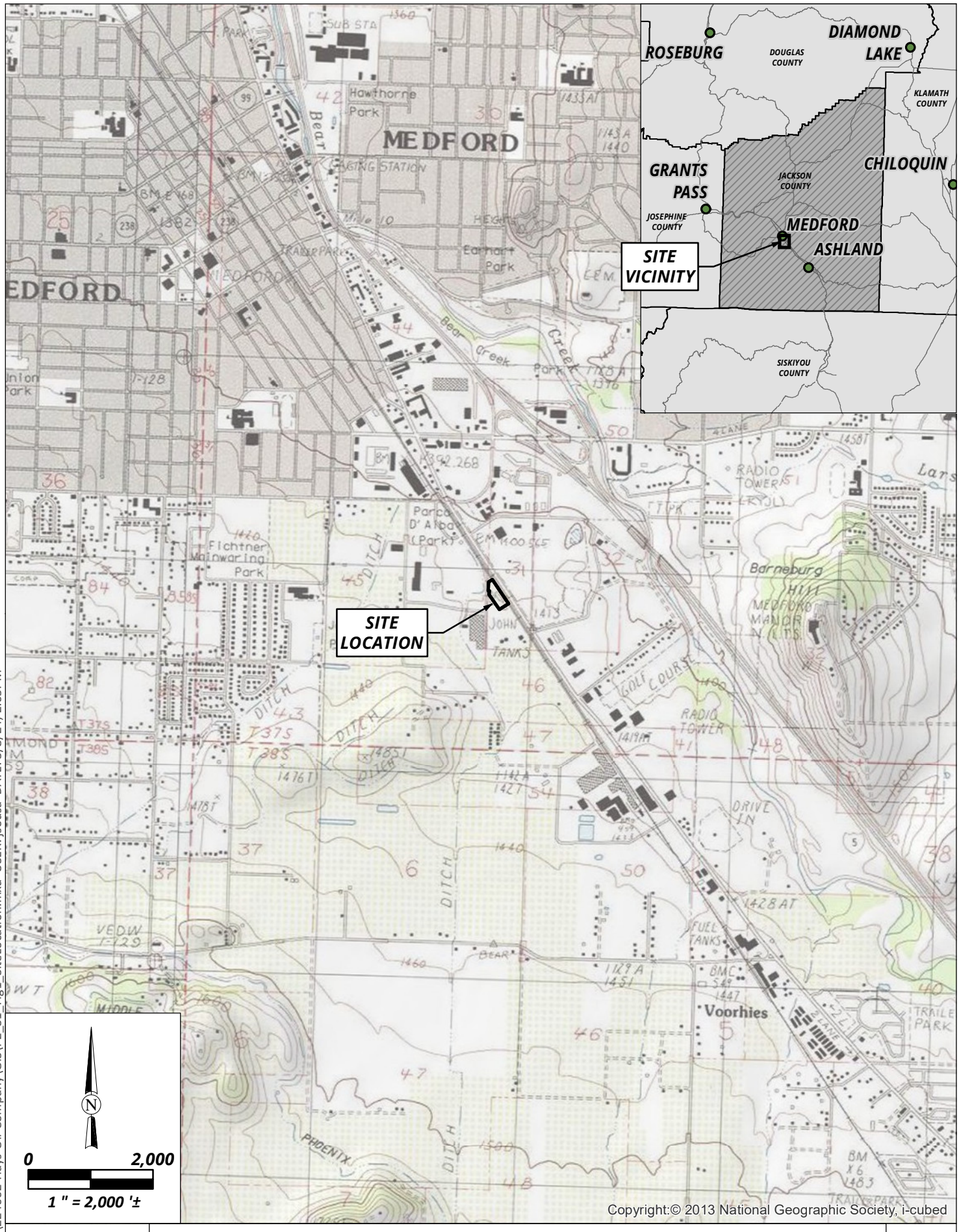
General surficial geology of the site consists of Quaternary alluvium mapped as Qoa3, described as older alluvium (Pleistocene) gravel, sand, silt, and clay locally cemented as conglomerate, sandstone, and mudstone (USGS, 1993). Soil borings from the 2024 investigation indicate brown to greenish gray, silty sandy gravels and well graded to poorly graded sands to a total depth explored of 20 feet below ground surface (BGS). See Appendix 1 for soil boring logs from the recent investigation. Data from the U.S. Department of Agriculture describe the soil as the agate loam with very slow infiltration rates.

Groundwater was encountered between 2.0 feet and 16.0 feet BGS in 10 of the 16 soil borings installed. Regional groundwater flow direction is northwest toward the Rogue River.

3.0 2024 Phase II Field Program

3.1 Objective

The objective of the work was to collect soil and groundwater samples to assess the current conditions near features of interest at the site. These features include, but are not limited to, underground storage tanks, above ground storage tanks, fuel dispensers, loading racks, and underground product lines.



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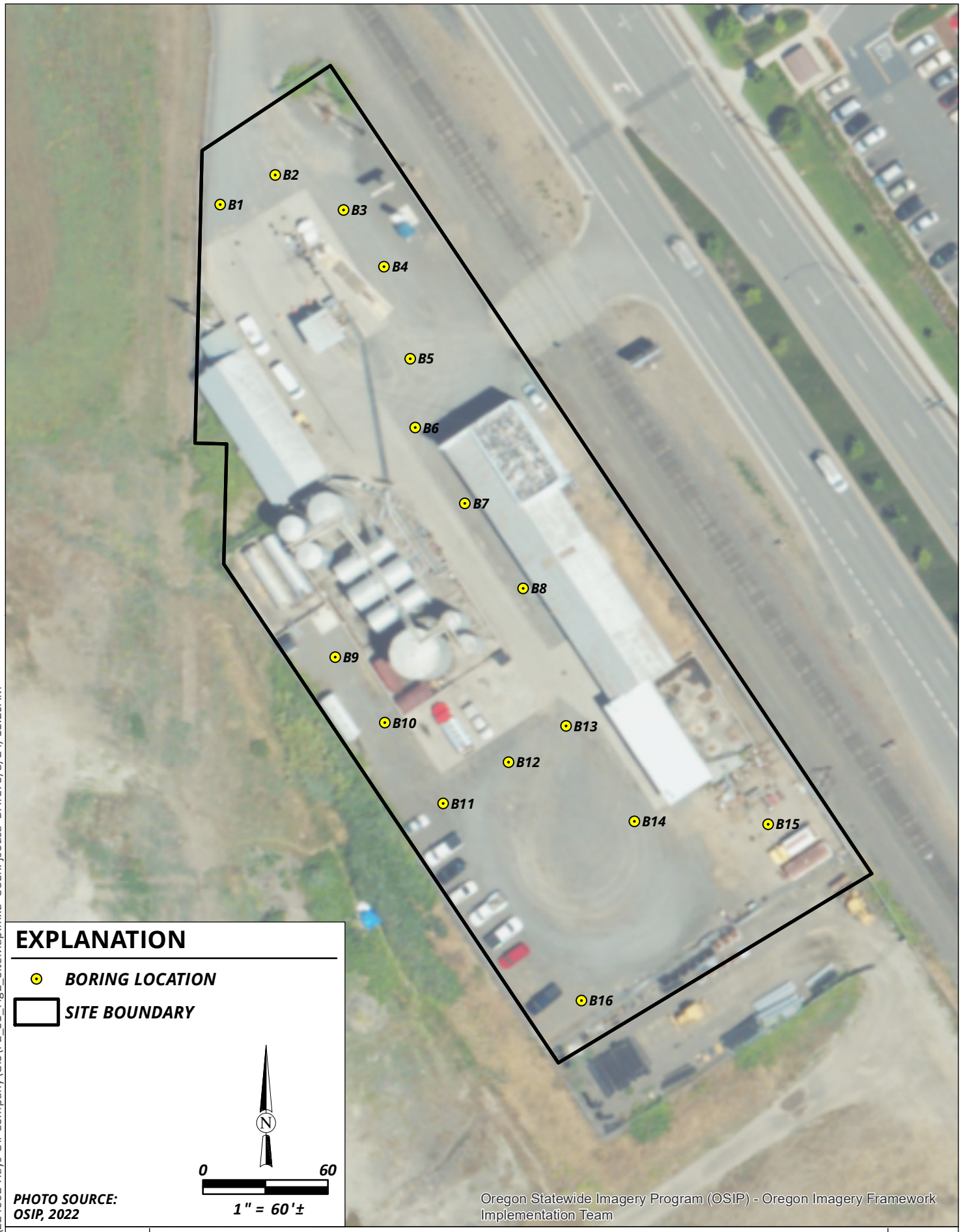
Hays Oil Company
Medford Office and Bulk Plant and CFN Cardlock
1890 S Pacific Highway, Medford, Oregon

Site Location
Phase II Site Assessment
March 2024 - 224002.201

Figure
1



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Hays Oil Company
Medford Office and Bulk Plant and CFN Cardlock
1890 S Pacific Highway, Medford, Oregon

Site Map
Phase II Site Assessment
March 2024 - 224002.201

Figure
2

3.2 Scope of Work

The scope of work was designed to provide the information needed to meet the objective of this investigation, and was as follows:

- Conduct project implementation/management tasks.
- Field program:
  - Install soil borings using a Geoprobe®.
  - Collect soil and groundwater samples.
  - Submit the soil and groundwater samples for laboratory analysis.
  - Properly dispose of investigation-derived waste.
- Prepare this report of findings.

3.3 Project Implementation

SHN coordinated and scheduled the activities related to the site investigation. SHN notified the Oregon Utility Notification Center to mark out any public utilities near the work area. In addition, a private utility-locating company, GPR Data of Happy Valley, Oregon (GPRD), conducted a utility scan, including the use of ground-penetrating radar, to confirm that the proposed boring locations were clear of underground utilities or other subsurface features.

3.4 Field Program

3.4.1 Soil Boring Installation and Sampling

On February 26-28, 2024, SHN supervised BB&A Environmental of Eugene, Oregon (BB&A), in the installation of 16 continuous core soil borings at the approximate locations shown on Figure 2. The soil borings were advanced with a truck-mounted Geoprobe® direct-push drill rig to approximately 5 feet below first encountered groundwater or refusal. Total depths ranged from 10 feet to 20 feet BGS.

Soil samples were collected from each boring at 5-foot intervals, as well as obviously stained sections, and field screened using a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp. The sample with the highest PID reading was placed into laboratory-supplied sample containers, labeled according to sample location, and placed in an iced cooler for shipment to the analytical laboratory under chain-of-custody documentation. In the event the PID did not detect volatile organic compounds (VOCs) in any of the samples collected from a particular boring, the 5-foot sample was submitted to the testing laboratory.

Soil was described in accordance with the Unified Soil Classification System under the direction of an Oregon-licensed geologist. Field boring logs are included in Appendix 1.

Groundwater was encountered in 10 of the 16 borings at depths ranging from 2 feet BGS to 16 feet BGS. Upon reaching the target depth or refusal, a temporary ¾-inch diameter polyvinyl chloride (PVC) well with 10 feet of 0.010-foot slotted PVC screen was installed in each borehole for the collection of groundwater samples if sufficient water was present. Groundwater was collected with a peristaltic pump equipped with new Teflon tubing and decanted into new, laboratory supplied sample bottles, labeled according to sample location, and placed in an iced cooler for shipment to the analytical laboratory under chain-of-custody documentation.

Soil and groundwater samples were analyzed according to Section 3.4.4: Laboratory Analysis.

Following sample collection, the PVC screen was removed, and the borings abandoned by pouring a Portland cement grout slurry into each open borehole.

3.4.2 Equipment Decontamination Procedures

All boring and sample equipment was cleaned prior to its use onsite and between each boring installation using a Liquinox® solution, followed by two rinses with distilled water.

3.4.3 Investigation-Derived Waste Management

All investigation-derived waste was placed into one 55-gallon steel drum and staged onsite pending pickup and proper disposal. BB&A will coordinate waste disposal and provide disposal documentation under separate cover.

3.4.4 Laboratory Analysis

Soil and groundwater samples were analyzed for one or more of the following constituents:

- Diesel range and lube oil range organics were analyzed in general accordance with Northwest Total Petroleum Hydrocarbons as Diesel (NWTPH-DX) methodology.
- Gasoline range organics were analyzed in general accordance with Northwest Total Petroleum Hydrocarbons as Gasoline (NWTPH-GX) methodology.
- Volatile organic compounds (VOCs) including, but not limited to, benzene (B), toluene (T), ethylbenzene (E), total xylenes (X), and naphthalene were analyzed in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 8260B.

Sample analyses were conducted by Neilson Research Corporation, an Oregon Environmental Laboratory Accreditation Program (ORELAP)-certified analytical laboratory (OR100016-027) located in Medford, Oregon.

3.5 Soil and Groundwater Analytical Results

Table 1 presents the soil sample analytical results, and Table 2 presents the groundwater sample analytical results from the recent subsurface investigation. Certified analytical results from this investigation are included in Appendix 2. The sample results are compared to the risk-based concentrations (RBC) for individual chemicals (DEQ table Revised May 2018 and amended August 2023) that is included in Appendix 3 to determine if the site is protective of human health and the environment.

Table 1. Soil Analytical Results, February 26-28, 2024
Medford Office, Bulk Plant, and CFN Cardlock, 1890 S Pacific Hwy, Medford, Oregon
(in mg/kg)[a]

Analyte	RBCss[b]	B1[c] (7.5 feet-8.5 feet)[d]	B2 (7.5 feet - 8.5 feet)	B3 (7.5 feet - 8.5 feet)	B4 (4.5 feet - 5.5 feet)	B5 (3.0 feet - 4.0 feet)	B6 (3.0 feet - 4.0 feet)
TPH as Diesel	1,100	231	<14.4[e]	70.3	<13.9	339	**6,490[f]**
TPH as Lube Oil	1,100	<29.4	<28.8	<28.8	62.1	<30.1	**2,530**
TPH as Gasoline	1,200	<4.68	<6.45	<4.75	<3.91	50.4	**1,760**
1,1,1-Trichloroethane	53,000	<0.123	<0.118	<0.137	<0.114	<0.117	<0.110
1,1-Dichloroethane	58	<0.0245	<0.0236	<0.0274	<0.0229	<0.0233	<0.0219
1,2,4-Trimethylbenzene	430	<0.0245	<0.0236	<0.0274	<0.0229	<0.0233	130
1,2-Dibromoethane (EDB)	0.16	<0.0245	<0.0236	<0.0274	<0.0229	<0.0233	<0.0219
1,2-Dichloroethane (EDC)	3.6	<0.0245	<0.0236	<0.0274	<0.0229	<0.0233	<0.0219
1,3,5-Trimethylbenzene	430	<0.0491	<0.0473	<0.0549	<0.0457	<0.0467	6.51
Benzene	8.2	<0.0245	<0.0236	<0.0274	<0.0229	<0.0233	7.66
cis-1,2-Dichloroethylene	160	<0.0245	<0.0236	<0.0274	<0.0229	<0.0233	<0.0219
Ethylbenzene	34	<0.0245	<0.0236	<0.0274	<0.0229	0.0359	14.7
Isopropylbenzene	3,500	<0.0245	<0.0236	<0.0274	<0.0229	0.393	12.7
Methyl tert-butyl ether	250	<0.0245	<0.0236	<0.0274	<0.0229	<0.0233	<0.0219
n-Propylbenzene	NA[g]	<0.0245	<0.0236	<0.0274	<0.0229	0.690	22.2
Naphthalene	5.3	<0.123	<0.118	<0.137	<0.114	2.17	**56.2**
Tetrachloroethene (PCE)	220	<0.0245	<0.0236	<0.0274	<0.0229	<0.0233	<0.0219
Toluene	5,800	<0.0491	<0.0473	<0.0549	<0.0457	<0.0467	4.26
trans-1,2-Dichloroethylene	1,600	<0.0245	<0.0236	<0.0274	<0.0229	<0.0233	<0.0219
Vinyl chloride	0.36	<0.491	<0.473	<0.549	<0.457	<0.467	<0.438
Xylenes, Total	1,400	<0.0981	<0.0946	<0.110	<0.0915	<0.0934	65.5

Table 1. Soil Analytical Results, February 26-28, 2024
Cont. Medford Office, Bulk Plant, and CFN Cardlock, 1890 S Pacific Hwy, Medford, Oregon
(in mg/kg)

Analyte	RBCss	B7 (14 feet - 15 feet)	B8 (4.5 feet - 5.5 feet)	B9 (6.5 feet - 7.5 feet)	B10 (4.5 feet - 5.5 feet)	B11 (4.5 feet - 5.5 feet)
TPH as Diesel	1,100	**5,760**	<13.7	**1,380**	28.6	<15.8
TPH as Lube Oil	1,100	<29.6	132	<28.7	<28.6	<31.5
TPH as Gasoline	1,200	665	<3.77	<5.22	<4.30	<5.69
1,1,1-Trichloroethane	53,000	<0.119	<0.0831	<0.113	<0.107	<0.117
1,1-Dichloroethane	58	<0.0238	<0.0166	<0.0226	<0.0215	<0.0233
1,2,4-Trimethylbenzene	430	<0.0238	<0.0166	<0.0226	<0.0215	<0.0233
1,2-Dibromoethane (EDB)	0.16	<0.0238	<0.0166	<0.0226	<0.0215	<0.0233
1,2-Dichloroethane (EDC)	3.6	<0.0238	<0.0166	<0.0226	<0.0215	<0.0233
1,3,5-Trimethylbenzene	430	<0.0477	<0.0332	<0.0452	<0.0429	<0.0466
Benzene	8.2	0.195	<0.0166	<0.0226	<0.0215	<0.0233
cis-1,2-Dichloroethylene	160	<0.0238	<0.0166	<0.0226	<0.0215	<0.0233
Ethylbenzene	34	<0.0238	<0.0166	<0.0226	<0.0215	<0.0233
Isopropylbenzene	3,500	0.489	<0.0166	<0.0226	<0.0215	<0.0233
Methyl tert-butyl ether	250	<0.0238	<0.0166	<0.0226	<0.0215	<0.0233
n-Propylbenzene	NA	0.376	<0.0166	<0.0226	<0.0215	<0.0233
Naphthalene	5.3	0.276	<0.0831	<0.113	<0.107	<0.117
Tetrachloroethene (PCE)	220	<0.0238	<0.0166	<0.0226	<0.0215	<0.0233
Toluene	5,800	<0.0477	<0.0332	<0.0452	<0.0429	<0.0466
trans-1,2-Dichloroethylene	1,600	<0.0238	<0.0166	<0.0226	<0.0215	<0.0233
Vinyl chloride	0.36	<0.477	<0.332	<0.452	<0.429	<0.466
Xylenes, Total	1,400	<0.0953	<0.0665	<0.0903	<0.0859	<0.0932

Table 1. Soil Analytical Results, February 26-28, 2024
Cont. Medford Office, Bulk Plant, and CFN Cardlock, 1890 S Pacific Hwy, Medford, Oregon
(in mg/kg)

Analyte	RBCss	B12 (4.5 feet - 5.5 feet)	B13 (4.5 feet - 5.5 feet)	B14 (4.5 feet - 5.5 feet)	B15 (4.5 feet - 5.5 feet)	B16 (4.5 feet - 5.5 feet)
TPH as Diesel	1,100	<13.7	<15.2	<15.6	<15.8	<15.2
TPH as Lube Oil	1,100	<27.4	<30.4	<31.2	<31.5	<30.3
TPH as Gasoline	1,200	<5.07	<4.58	<5.38	<5.42	<4.76
1,1,1-Trichloroethane	53,000	<0.102	<0.101	<0.120	<0.168	<0.121
1,1-Dichloroethane	58	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
1,2,4-Trimethylbenzene	430	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
1,2-Dibromoethane (EDB)	0.16	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
1,2-Dichloroethane (EDC)	3.6	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
1,3,5-Trimethylbenzene	430	<0.0410	<0.0404	<0.0479	<0.0671	<0.0484
Benzene	8.2	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
cis-1,2-Dichloroethylene	160	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
Ethylbenzene	34	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
Isopropylbenzene	3,500	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
Methyl tert-butyl ether	250	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
n-Propylbenzene	NA	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
Naphthalene	5.3	<0.102	<0.101	<0.120	<0.168	<0.121
Tetrachloroethene (PCE)	220	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
Toluene	5,800	<0.0410	<0.0404	<0.0479	<0.0671	<0.0484
trans-1,2-Dichloroethylene	1,600	<0.0205	<0.0202	<0.0240	<0.0335	<0.0242
Vinyl chloride	0.36	<0.410	<0.404	<0.479	<0.671	<0.484
Xylenes, Total	1,400	<0.0820	<0.0807	<0.0959	<0.134	<0.0969

a. mg/kg: milligrams per kilogram
b. RBCss: residential Risk-Based Concentrations
c. B1: boring ID
d. approximate sample depth
e. <: less than the stated reporting limit
f. Bold: exceeds residential RBCs
g. NA: not available

Table 2. Groundwater Analytical Results, February 26-28, 2024
Medford Office, Bulk Plant, and CFN Cardlock, 1890 S Pacific Hwy, Medford, Oregon
(in ug/L[a]) unless stated otherwise

Analyte	RBCw[b]	B1[c]	B2	B3	B5	B7
TPH as Diesel (mg/L)[d]	0.100	<0.0500[e]	**1.48[f]**	<0.0515	**36.0**	**211**
TPH as Lube Oil (mg/L)	0.100	**0.792**	<0.100	**0.853**	<0.105	<0.111
TPH as Gasoline (mg/L)	0.110	**0.569**	0.0604	0.0823	**25.1**	**3.04**
1,1,1-Trichloroethane	8,000	<0.500	<0.500	<0.500	<0.500	<0.500
1,1-Dichloroethane	2.8	<0.500	<0.500	<0.500	<0.500	<0.500
1,2,4-Trimethylbenzene	54	<0.500	<0.500	<0.500	1.53	3.81
1,2-Dibromoethane (EDB)	0.0075	<0.500	<0.500	<0.500	<0.500	<0.500
1,2-Dichloroethane (EDC)	0.17	<0.500	<0.500	<0.500	<0.500	<0.500
1,3,5-Trimethylbenzene	59	<0.500	<0.500	<0.500	2.03	0.680
Benzene	0.46	<0.350	<0.350	<0.350	**62.2**	**484**
cis-1,2-Dichloroethylene	36	<0.500	<0.500	<0.500	<0.500	1.14
Ethylbenzene	1.5	<0.500	<0.500	<0.500	**7.57**	**5.34**
Isopropylbenzene	440	4.27	<0.500	<0.500	71.9	30.1
Methyl tert-butyl ether	14	<0.500	<0.500	<0.500	<0.500	**84.8**
n-Propylbenzene	NA[g]	1.45	<0.500	<0.500	98.2	24.3
Naphthalene	0.17	<2.00	<2.00	<2.00	**472**	**26.5**
Tetrachloroethene (PCE)	12	<0.500	<0.500	<0.500	<0.500	<0.500
Toluene	1,100	<0.500	<0.500	<0.500	15.9	4.58
trans-1,2-Dichloroethylene	360	<0.500	<0.500	<0.500	<0.500	<0.500
Vinyl chloride	0.027	<0.500	<0.500	<0.500	<0.500	<0.500
Xylenes, Total	190	<0.500	<0.500	<0.500	29.9	4.73

Table 2. Groundwater Analytical Results, February 26-28, 2024
Cont. Medford Office, Bulk Plant, and CFN Cardlock, 1890 S Pacific Hwy, Medford, Oregon
(in ug/L[a]) unless stated otherwise

Analyte	RBCw[b]	B8[c]	B11	B12	B13	B15
TPH as Diesel (mg/L)[d]	0.100	**4.72**	<0.0526	<0.0500	**1.25**	<0.0581
TPH as Lube Oil (mg/L)	0.100	<0.108	**0.592**	<0.100	<0.103	**0.779**
TPH as Gasoline (mg/L)	0.110	<0.0500	<0.0500	0.0873	<0.0500	<0.0500
1,1,1-Trichloroethane	8,000	<0.500	<0.500	<0.500	<0.500	<0.500
1,1-Dichloroethane	2.8	<0.500	<0.500	<0.500	<0.500	<0.500
1,2,4-Trimethylbenzene	54	<0.500	<0.500	<0.500	<0.500	<0.500
1,2-Dibromoethane (EDB)	0.0075	<0.500	<0.500	<0.500	<0.500	<0.500
1,2-Dichloroethane (EDC)	0.17	<0.500	<0.500	<0.500	<0.500	<0.500
1,3,5-Trimethylbenzene	59	<0.500	<0.500	<0.500	<0.500	<0.500
Benzene	0.46	<0.350	<0.350	<0.350	<0.350	<0.350
cis-1,2-Dichloroethylene	36	<0.500	<0.500	<0.500	<0.500	<0.500
Ethylbenzene	1.5	<0.500	<0.500	<0.500	0.790	<0.500
Isopropylbenzene	440	<0.500	<0.500	<0.500	<0.500	<0.500
Methyl tert-butyl ether	14	<0.500	<0.500	1.05	<0.500	<0.500
n-Propylbenzene	NA[g]	<0.500	<0.500	<0.500	<0.500	<0.500
Naphthalene	0.17	<2.00	<2.00	<2.00	<2.00	<2.00
Tetrachloroethene (PCE)	12	<0.500	<0.500	<0.500	<0.500	<0.500
Toluene	1,100	<0.500	<0.500	<0.500	<0.500	0.860
trans-1,2-Dichloroethylene	360	<0.500	<0.500	<0.500	<0.500	<0.500
Vinyl chloride	0.027	<0.500	<0.500	<0.500	<0.500	<0.500
Xylenes, Total	190	<0.500	<0.500	<0.500	5.60	<0.500

a. ug/L: micrograms per liter
b. RBCw: residential Risk-Based Concentrations
c. B1: boring ID
d. mg/L: milligrams per liter
e. <: less than the stated reporting limit
f. Bold: exceeds residential RBCs
g. NA: not available

4.0 Investigation Summary

Contaminant concentrations in soil and groundwater samples collected during this investigation are summarized as follows:

- A total of 16 soil samples and 10 groundwater samples were collected as part of this investigation.
- Boring depths ranged from approximately 10 to 20 feet BGS.
- Groundwater depths ranged from 2.0 feet to 16.0 feet BGS.
- 3 of the 16 soil samples submitted for chemical analysis exceeded various risk-based concentration (RBC) scenarios.
    - Boring B6 exceeded residential soil RBC guidelines for total petroleum hydrocarbons (TPH) as diesel, lube oil, TPH as gasoline, and naphthalene. Boring B6 exceeded the urban residential RBC guideline for TPH as diesel, lube oil, and naphthalene. Boring B6 exceeded the occupational RBC guideline for naphthalene and exceeded the construction worker RBC guideline for TPH as diesel.
    - Boring B7 exceeded the residential soil, urban residential soil, and construction worker soil RBC guidelines for TPH as diesel; however, B7 did not exceed the occupational or excavation worker receptor scenarios.
    - Boring B9 exceeded the residential soil RBC guidelines for TPH as diesel, but did not exceed the urban residential, occupational, construction or excavation worker receptor scenarios.
- 9 of the 10 groundwater samples submitted for chemical analysis exceeded various RBC scenarios.
    - Residential, urban residential, and occupational groundwater RBCs for TPH as diesel were exceeded in borings B2, B5, B7, B8, and B13.
    - Residential, urban residential, and occupational groundwater RBCs for lube oil (TPH as diesel RBC) were exceeded in borings B1, B3, B11, and B15.
    - Residential, urban residential, and occupational groundwater RBCs for TPH as gasoline were exceeded in borings B1, B5, and B7.
    - Residential, urban residential, and occupational groundwater RBCs for benzene and naphthalene were exceeded in borings B5 and B7.
    - Residential, urban residential, and occupational groundwater RBCs for methyl tertiary-butyl ether (MTBE) were exceeded in boring B7.
    - Occupational groundwater RBC for ethylbenzene was exceeded in Boring B5.

5.0 Recommendations

SHN concludes that further action may be necessary at the site based on the results of the recent investigation. SHN recommends submitting this Phase II report to the Oregon DEQ for review.

6.0 References

State of Oregon Department of Environmental Quality, Environmental Cleanup Program. (Revised 2018; amended June 2023). “Appendix A: Table of Risk-Based Concentrations (RBCS),” in “Risk-Based Decision Making for the Remediation of Contaminated Sites.” Portland, OR:DEQ.

United States Geologic Survey (1993) Preliminary Geologic Map of the Medford East, Medford West, Eagle Point, and Sam’s Valley Quadrangles, Jackson County Oregon. NR:USGS

Field Notes 1

BORING LOG

BORING NO. B1

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klaiken
CONTRACTOR	BB&A	DATE &TIME STARTED	12:45 2/26/24
DRILLER	Carbe Dancy	DATE &TIME FINISHED	13:40

Elevation	ft.	Datum	Boring Location						
Item	Casing	Sampler	Core Barrel	Rig Make & Model			Hammer Type	Drilling Mud	Total Depth
Type		MC	NA	☐ Truck ☐ Tripod	☐ Cat-Head		☐ Safety	☐ Bentonite	20
Inside Diameter (in.)		2	NA	☐ ATV ☒ Geoprobe	☐ Winch		☐ Doughnut	☐ Polymer	
Hammer Weight (lb.)	NA			☒ Track ☐ Air Track	☐ Roller Bit		☐ Automatic	☒ None	
Hammer Fall (in.)	NA			☐ Skid ☐ Hand Auger	☐ Cutting Head		Drilling Notes:		

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2/5				0.0	GW	well graded gravel with sand, Loose, Angular, Lt gray, Dry	65		30			T			N	
					0.0	ML	(Fill) 1.3										
					0.0		silt with sand, Angular gravel Dk brown, soft, moist	10		15			75			N	
5					0.0												
	5/5				0.0		6.0										
			7.5-8.5	13:40	5.2	SW-SM	well graded sand with silt and gravel, Angular, yellowish orange, Loose, Dry 7.2	10		80			10			N	
						GW-GM	well graded gravel with sand and silt, Angular, Loose, greenish-gray, Dry 9.5	70		20			10			N	
10	3/5				0.0	SW-SM	well graded sand with silt, angular, loose, greenish-gray Dry 11.0	10		80			10			N	
					4.9												
					0.0	SW-SM	well graded sand with silt and gravel, Angular, Loose, yellowish-orange, Dry 16.0	40		50			10			N	
15	4/5	▽ 16.0			0.0												
					0.0	SW	well graded sand with gravel, Sub-angular, Loose, greenish-gray, Saturated,	10		85			T			N	
					0.0												
20								C	F	C	M	F	FS	D	T	P	S

Water Level Data				
Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water
			16.0	
				16.0

Sample ID		Well Diagram	
CC	Cont. Core		Riser Pipe
T	Thin Wall Tube		Screen
U	Undisturbed Sample		Filter Sand
S	Split Spoon Sample		Cuttings
G	Geoprobe		Grout
			Concrete
			Bentonite Seal

Summary	
Boring Depth (Linear ft.)	20
Sample Method	grab
Number of Samples	1
BORING NO.	B1

Field Tests Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High

Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B2

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klakken
CONTRACTOR	BB&A	DATE &TIME STARTED	14:15 2/26/24
DRILLER	Cabe Darcy	DATE &TIME FINISHED	14:50

Elevation ft. Datum Boring Location

Item	Casing	Sampler	Core Barrel
Type			NA
Inside Diameter (in.)			NA
Hammer Weight (lb.)	NA		
Hammer Fall (in.)	NA		

Rig Make & Model: ☐ Truck ☐ ATV ☐ Track ☐ Skid ☐ Tripod ☐ Geoprobe ☐ Air Track ☐ Hand Auger ☐ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☐ Automatic

Drilling Mud: ☐ Bentonite ☐ Polymer ☐ None

Total Depth: 10

Drilling Notes:

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2/5	▽ 2.0			0.0	GW	well graded gravel, Angular Dk brown, Loose, wet (Fill)	85		10			T			N	
					0.0		increasing fines 3.0										
						ML	Silt with sand, med stiff, greenish gray, wet		T	10			35			L	
5					0.0		5.0										
	4/5		7.5 8.5	14:40	0.0	SW GW SW	well graded sand, Brown, very loose, Saturated				100						
					0.0		5.4										
							Sandy gravel, Sub-angular Loose, Brwn, Saturated	45		45			10			N	
10																	
15																	
20																	
								C	F	C	M	F	FS	D	T	P	S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water
			2.0	

Sample ID

CC	Cont. Core
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Well Diagram

Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary

Boring Depth (Linear ft.) 10
Sample Method grab
Number of Samples 1

BORING NO.

Field Tests

Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B3

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klakken
CONTRACTOR	BB&A	DATE &TIME STARTED	15:15 2/26/24
DRILLER	Cabe Darcy	DATE &TIME FINISHED	15:55

Elevation ft. Datum Boring Location

Item	Casing	Sampler	Core Barrel
Type		mc	NA
Inside Diameter (in.)		2	NA
Hammer Weight (lb.)	NA		
Hammer Fall (in.)	NA		

Rig Make & Model: ☐ Truck ☐ Tripod ☐ Cat-Head; ☐ ATV ☒ Geoprobe ☐ Winch; ☒ Track ☐ Air Track ☐ Roller Bit; ☐ Skid ☐ Hand Auger ☐ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☐ Automatic

Drilling Mud: ☐ Bentonite ☐ Polymer ☒ None

Total Depth: 15

Drilling Notes:

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2/5				0.0	GW	well graded gravel with Sand, Angular, Loose, DK brown, Dry	75	25								
						ML	1.5 — Silt, trace Coarse Sand and fine gravel, Rounded, Soft, DK brown moist		5	5			90			L	
					0.0												
5							5.0										
	2/5		7.5 8.5	15:40	0.0	GM	Silty gravel with Sand, angular Loose/soft, Brown mixed with greenish-gray spots,	45		30			25			L	
					4.2												
					0.0												
10																	
	4/5	▽ 11.0			0.0		— Saturated 11-12, Dry below										
					0.0		— Shattered rock, (quartzite)										
					0.0												
15																	
20																	
								C	F	C	M	F	FS	D	T	P	S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water
			11.0	
				4.0

Sample ID

CC	Cont. Core
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Well Diagram

Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary

Boring Depth (Linear ft.) 15
Sample Method grab
Number of Samples 1

BORING NO.

Field Tests

Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B4

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klakken
CONTRACTOR	BB&A	DATE &TIME STARTED	2/27/24 15:50
DRILLER	Justin Warner	DATE &TIME FINISHED	16:15

Elevation ft. Datum Boring Location

Item	Casing	Sampler	Core Barrel
Type		MC	NA
Inside Diameter (in.)		2	NA
Hammer Weight (lb.)	NA		
Hammer Fall (in.)	NA		

Rig Make & Model: ☐ Truck ☐ Tripod ☐ Cat-Head ☒ Track ☐ Air Track ☐ Roller Bit ☐ Skid ☐ Hand Auger ☐ ATV ☒ Geoprobe ☐ Winch

Hammer Type: ☐ Safety ☐ Doughnut ☐ Automatic

Drilling Mud: ☐ Bentonite ☐ Polymer ☒ None

Total Depth: 15

Drilling Notes:

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1/5				1.1	GW	well graded gravel with sand, sub-angular - angular, loose, lt-gray, dry.	60		35			T			N	
			4.5	16:15	0.0												
5			5.5														
	4/5				0.0	CL-ML	6.7 clayey silt, trace small gravel, rounded, trace med sand, med-plastic, black, moist, med. stiff		5		5		95			M	
					0.0	GW	7.0 well graded gravel with sand, angular, (crushed rock) brown, med-dense, dry	70		30							
10	3/5				0.0												
					0.0												
15																	
20																	

C F C M F FS D T P S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water

Sample ID

CC Cont. Core
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Boring Depth (Linear ft.) 15
Sample Method grab
Number of Samples 1

BORING NO. B4

Field Tests

Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

SHN CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash Eureka, CA 95501
707-441-8855
707-441-8877

WELL LOG

WELL ID: B-5 PAGE 1 OF 1

PROJECT NAME Hays oil Phase II
PROJECT NUMBER 224002.201
LOCATION Medford, OR
DATE 2/27 START 14:41 FINISH 15:20
DRILLING METHOD Direct Push
DRILLER J. Warner LOGGED BY R. Klakken
SAMPLER TYPE mc
TOTAL DEPTH OF BORING 15
TOTAL DEPTH OF WELL
GROUND ELEV.
TOC ELEV.
BOREHOLE DIAMETER 2.5

LOCATION MAP

REMARKS	OVA	SAMPLE INTERVAL	% RECOVERY	DEPTH (ft.)	USCS CLASS	LITHOLOGIC DESCRIPTION
			2/5	0	SM	35% f-m gravel, SR-A, 40% m-c Sand, 25% fine, loose Brown, Dry
				1.2		
				2	ML	T Small gravel, SR, T-fine Sand, 90% fines, med Plastic Black, moist, med stiff
@ 15:00	54.7	X		4		
				4.3		
	26.5		3/5	5	GW	70% crushed rock, 30% course Sand, Brown, Dry Angular, loose
				9.0		
				9	▽	9.8 - 10.4 Saturated
	3.5		3/5	10	SM	35% f-m gravel, SR-SA, 40% m-c Sand, 25% fines greenish gray, Loose - med dense, & moist
				15		Bottom

WELL CONSTRUCTION DETAILS
WELL COMPLETION TYPE
CASING TYPE/DIA.

COMMENTS

SHN CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash
Eureka, CA 95501
707-441-8855
707-441-8877

WELL LOG

WELL ID: B-6 PAGE 1 OF 1

PROJECT NAME Hays oil Phase II
PROJECT NUMBER 224002.201
LOCATION medford, OR
DATE 2/27 START 1355 FINISH 14:30
DRILLING METHOD Direct Push
DRILLER J. warner LOGGED BY R. Heinlein
SAMPLER TYPE grab
TOTAL DEPTH OF BORING 12.5
TOTAL DEPTH OF WELL
GROUND ELEV.
TOC ELEV.
BOREHOLE DIAMETER 2.5

LOCATION MAP

REMARKS	OVA	SAMPLE INTERVAL	% RECOVERY	DEPTH (ft.)	USCS CLASS	LITHOLOGIC DESCRIPTION
			4/5	1	GW	51% s-m gravel, SA-A, 40% m-c sand, 10% fines, NP, Lt Brwn loose, Dry 1.2
@ 14:30	774.1	X		3	ML	15% sm gvl, A-SA, 15% c sand, 90% fines, NP, DK Brwn, med dense, Dry 3.6
Decreasing gravel and sand	614.5		4/5	6	GM/SM	40% s-m gravel, SA-A, 45% c sand, 15% fines; loose greenish gray, Dry 6.8
Color grading To greenish-Gray				8	SM	50% f-Sand, 50% fines, med dence, greenish gray, Dry 7.4
			0/5	12	SM	20% s-m gravel, SA-A, 60% m-c Sand, 20% fines, med dense, Brwn w/green spots, Dry 12.5 Refusal
Hole collapsed at 12', attempted to reboare to 15 but hit refusal at 12.5						

WELL CONSTRUCTION DETAILS
WELL COMPLETION TYPE
CASING TYPE/DIA.

COMMENTS

BORING LOG

BORING NO. B7

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Ickleheimer
CONTRACTOR	BB&A	DATE &TIME STARTED	2/27/24 12:40
DRILLER	Justin Wagner	DATE &TIME FINISHED	13:40

Elevation	ft.	Datum	Boring Location				
Item	Casing	Sampler	Core Barrel	Rig Make & Model	Hammer Type	Drilling Mud	Total Depth
Type		MC	NA	☐ Truck ☐ Tripod ☐ Cat-Head	☐ Safety	☐ Bentonite	15
Inside Diameter (in.)		2	NA	☐ ATV ☒ Geoprobe ☐ Winch	☐ Doughnut	☐ Polymer	
Hammer Weight (lb.)	NA			☒ Track ☐ Air Track ☐ Roller Bit	☐ Automatic	☒ None	
Hammer Fall (in.)	NA			☐ Skid ☐ Hand Auger ☐ Cutting Head	Drilling Notes:		

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	4/5				0.0	SM	Silty sand with gravel, angular-sub-rounded, Brown, Loose, Dry	25		55			20			N	
					52.1		2.8										
					37.1	ML	Silt with sand, trace small gravel rounded, greenish-gray, med-stiff, Dry		T		15		80			L	
5	4/5				142.8		6.7										
						GW-GM	well graded gravel with sand, Sub-rounded-angular, Loose, Brown with greenish Patches,	45		15			10			N	
					96.1												
					80.4												
10	3/5				63.4		9.0										
						SP	Poorly graded fine sand, trace fines, greenish-gray, med-dense Dry					95	T				
					5.1	GW-SW											
						ML	9.5										
			14.0-15.0	13:27	174.8	SP	Sandy gravel, well graded, sub-rounded-angular, Non-Plastic fines, Loose, Brown with greenish Patches, Dry	45		45			10			N	
15							13.7										
							Silt, low plasticity, trace small gravel and coarse sand, rounded, med dense, greenish-gray, Dry		T		T		90			L	
							14.2										
							Poorly graded coarse sand, Sub-Rounded, Loose, greenish gray, wet		T	90			T				
20							15.0										
								C	F	C	M	F	FS	D	T	P	S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water
	13:35		14.0	
		13:40		11.0

Sample ID

CC	Cont. Core
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Well Diagram

Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary

Boring Depth (Linear ft.)	15.0
Sample Method	grab
Number of Samples	7
BORING NO.	B7

Field Tests

Dilatancy: R - Rapid S - Slow N - None

Toughness: L - Low M - Medium H - High

Plasticity: N - Nonplastic L - Low M - Medium H - High

Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B8

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R.Klinkken
CONTRACTOR	BB&A	DATE &TIME STARTED	2/27/24 11:30
DRILLER	Cabe Darcy	DATE &TIME FINISHED	12:55

Elevation ft. Datum — Boring Location

Item	Casing	Sampler	Core Barrel
Type		MC	NA
Inside Diameter (in.)		2	NA
Hammer Weight (lb.)	NA		
Hammer Fall (in.)	NA		

Rig Make & Model: ☐ Truck ☐ Tripod ☐ Cat-Head ☒ Geoprobe ☐ Winch ☐ ATV ☐ Air Track ☐ Roller Bit ☒ Track ☐ Skid ☐ Hand Auger ☐ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☐ Automatic

Drilling Mud: ☐ Bentonite ☐ Polymer ☒ None

Total Depth: 10.0

Drilling Notes:

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2/5				0.0	SM	Silty Sand with gravel, Sub-angular -angular, loose, Brown, Dry	35		45			20			N	
					0.0												
5	1/5	▽ 5.2	4.5 5.5	11:45	0.0	ML	Silt with sand, coarse sand with Trace small gravel, sub angular, Soft, Brwn, wet (4.9)		T	15			80			L	
					0.0												
10						CL-ML	Clayey silt, stiff, Dk gray, wet (9.0)						100			M	
15																	
20																	
								C	F	C	M	F	FS	D	T	P	S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water
			5.2	

Sample ID

CC	Cont. Core
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Well Diagram

Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary

Boring Depth (Linear ft.)	10.0
Sample Method	grab
Number of Samples	1

BORING NO.

Field Tests

Dilatancy: R - Rapid S - Slow N - None

Toughness: L - Low M - Medium H - High

Plasticity: N - Nonplastic L - Low M - Medium H - High

Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B9

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klaiklein
CONTRACTOR	BB&A	DATE &TIME STARTED	1035 2/28/24
DRILLER	Cabe Darcy	DATE &TIME FINISHED	1145

Elevation	ft.	Datum	Boring Location				
Item	Casing	Sampler	Core Barrel	Rig Make & Model	Hammer Type	Drilling Mud	Total Depth
Type		DMC	NA	☐ Truck ☐ Tripod ☐ Cat-Head	☐ Safety	☐ Bentonite	15
Inside Diameter (in.)		2	NA	☐ ATV ☒ Geoprobe ☐ Winch	☐ Doughnut	☐ Polymer	
Hammer Weight (lb.)	NA			☒ Track ☐ Air Track	☐ Automatic	☒ None	
Hammer Fall (in.)	NA			☐ Skid ☐ Hand Auger ☐ Roller Bit ☐ Cutting Head	Drilling Notes:		

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	4/5				0.0	SM	45% med-CS Sand, 30% gm-med gravel, SA-SR ('/8-1), 25% fines, NP, Loose, Brwn Dry										
							1.1										
						ML	90% fines, NP, med stiff, T-med sand, T-sm gravel, Red Brwn, moist										
5	4/5		6.5 7.5	11:45	13.2		Color change to greenish gray @ 7.2										
					6.3		9.1										
						ML	Silt, stiff, greenish-gray, LP, moist										
10					9.9		9.9										
	4/5				2.8	SW-SM	60% coarse sand, 30% gm-med gravel ('/8-2) R-SA, 10% fines, NP, Brwn, med dense, Damp, 12.4										
15						SP	Coarse Sand, SA-SR, T-fines & yellowish brown, Dense, 13.0										
						SW-SM	60% coarse sand, 30% gm-med gravel, ('/8-1 3/4), R-SA, 10% fines, NP, Brwn, med dense, Damp 15.0										
20																	
								C	F	C	M	F	FS	D	T	P	S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water

Sample ID

CC	Cont. Core
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Well Diagram

Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary

Boring Depth (Linear ft.) 15
Sample Method Geoprobe
Number of Samples 1

BORING NO.

Field Tests

Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B10

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klaeker
CONTRACTOR	BB&A	DATE &TIME STARTED	09:40 2/28/24
DRILLER	Justin Warner	DATE &TIME FINISHED	10:20

Elevation	ft.	Datum	Boring Location

Item	Casing	Sampler	Core Barrel
Type			NA
Inside Diameter (in.)			NA
Hammer Weight (lb.)	NA		
Hammer Fall (in.)	NA		

Rig Make & Model

- ☐ Truck ☐ Tripod ☐ Cat-Head
- ☐ ATV ☒ Geoprobe ☐ Winch
- ☒ Track ☐ Air Track ☐ Roller Bit
- ☐ Skid ☐ Hand Auger ☐ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☐ Automatic

Drilling Mud: ☐ Bentonite ☐ Polymer ☐ None

Total Depth: 12.5

Drilling Notes:

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	3/5				0.0	SM	45% Coarse Sand, 40% f-m gravel SA-SR, (1/8 - 2), 15% fines, lt Brn Dry, Loose,										
							1.0										
			4.5 5.5	10:20		ML	90% fines, LP, T-small gravel, R, T-Fine Sand, Brn, Stiff, moist,										
5		~~4/5~~					5.2										
	3/5					GM	60% f-m gravel, SA (1/8-2) (Sh (Shattered Quartzite), ~~15%~~ 15% Coarse Sand, 25% fines, Loose, Brown Dry										
					0.0		9.4										
10						ML	80% fines, LP, 15% sm-med gravel, Rounded (1/8-2), T-Sand greenish-gray, moist										
	2/5						9.8 med										
R						SW SM	75% Coarse Sand, 15% sm gravel (1/4 - 1), SA, 10% fines, NP, grn-gry, Dense, Dry										
Refusal @ 12.5							12.5										
15																	
20																	
								C	F	C	M	F	FS	D	T	P	S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water

Sample ID

- CC Cont. Core
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Boring Depth (Linear ft.)	12.5
Sample Method	grab
Number of Samples	1

BORING NO.

Field Tests

Dilatancy: R - Rapid S - Slow N - None

Toughness: L - Low M - Medium H - High

Plasticity: N - Nonplastic L - Low M - Medium H - High

Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B11

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Ickleheimer
CONTRACTOR	BB&A	DATE &TIME STARTED	0840 2/28/24
DRILLER	Justin Warner	DATE &TIME FINISHED	09:15

Elevation ft. Datum Boring Location

Item	Casing	Sampler	Core Barrel
Type		MC	NA
Inside Diameter (in.)		2	NA
Hammer Weight (lb.)	NA		
Hammer Fall (in.)	NA		

Rig Make & Model: ☐ Truck ☐ Tripod ☐ Cat-Head; ☐ ATV ☒ Geoprobe ☐ Winch; ☒ Track ☐ Air Track ☐ Roller Bit; ☐ Skid ☐ Hand Auger ☐ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☐ Automatic

Drilling Mud: ☐ Bentonite ☐ Polymer ☒ None

Total Depth: 15.0'

Drilling Notes:

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	4/5				0.0	GM SM	40% Coarse Sand, 40% S-M gravel A-SA, (1/8-1), 20% fines, NP, Lt Brwn, loose, Dry										
							1.7										
			4.5 5.5	9:15		ML	90% Silt, NP, T-Small gravel, R T. med Sand, Dk gray, stiff, Dry										
5							4.1										
	4/5				0.0	GM SM	33% S-M gravel (shattered rock) Ang, 33% M-C Sand, 33% fines NP, med dense, olive gray, Dry										
							5.1										
10						SM	50% M-C Sand, 30% S-M gravel, SR-SA, (1/8-1 1/4), 20% fines, NP, yellow-orange, Moist Dense,										
							9.2										
	14.3					ML	90% fines, LP, 10% f-Sand, yellow-orange, soft, moist										
15							9.5										
	4/5				0.0	GW	Shattered Rock and Silt										
							9.5-9.8										
						SM	45% M-C Sand, 35% S-M gravel SA-SR, (1/8-2), 20% fines, NP, yellow-orange, Dense, moist										
20							15.0	C	F	C	M	F	FS	D	T	P	S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water
	09:00		14.3	
	09:15			13.3

Sample ID

CC	Cont. Core
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Well Diagram

Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary

Boring Depth (Linear ft.) 15
Sample Method grab
Number of Samples 1

BORING NO.

Field Tests

Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B12

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klaiber
CONTRACTOR	BB&A	DATE &TIME STARTED	7:35 2/28/24
DRILLER	Justin Warner	DATE &TIME FINISHED	08:20

Elevation ft.	Datum	Boring Location						
Item	Casing	Sampler	Core Barrel	Rig Make & Model			Hammer Type	Drilling Mud	Total Depth
Type			NA	☐ Truck ☐ Tripod	☐ Cat-Head		☐ Safety	☐ Bentonite	
Inside Diameter (in.)			NA	☐ ATV ☐ Geoprobe	☐ Winch		☐ Doughnut	☐ Polymer	
Hammer Weight (lb.)	NA			☐ Track ☐ Air Track	☐ Roller Bit		☐ Automatic	☐ None	
Hammer Fall (in.)	NA			☐ Skid ☐ Hand Auger	☐ Cutting Head		Drilling Notes:		

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	4/5				0.0	GM	Brwn, Loose, Gravel SA-A, 1B-1, sand course, D	25	15	20	10		20			N	
							1.2										
						ML	Trace small gravel, 10% med sand 85% fines, Low Plasticity, olive gray, Stiff, moist										
5		4.25	4.5-5.5	0810			Color Change at 2.6 to yellow orange,										
	3/5						3.7										
					0.0	SW-SM	60% course Sand, 30% small-med gravel, SA-A, 10% fines, med dense, yellow orange, with red Patches, Dry										
10							10.2										
	2/5					ML	70% fines, No Plasticity, 30% Poorly sorted fine sand, Light brown, Soft, moist										
							12.7										
						SW-SM	60% course sand, Ang, 30% small-med gravel, Angular, 10% finer, yellow-orange, Dense, Dry										
15							13.6										
						ML	70% fines, NP, 30% fine sand, Light brown, moist, Dense,										
							15.0										
20																	
								C	F	C	M	F	FS	D	T	P	S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water
	07:40		4.25	

Sample ID

CC	Cont. Core
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Well Diagram

Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary

Boring Depth (Linear ft.)	15.0
Sample Method	grab
Number of Samples	1

BORING NO.

Field Tests

Dilatancy: R - Rapid S - Slow N - None

Toughness: L - Low M - Medium H - High

Plasticity: N - Nonplastic L - Low M - Medium H - High

Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. 1313

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klakken
CONTRACTOR	BB&A	DATE &TIME STARTED	2/27/24 09:43
DRILLER	Cabe Darcy	DATE &TIME FINISHED	10:40

Elevation ft. Datum Boring Location

Item	Casing	Sampler	Core Barrel	Rig Make & Model				Hammer Type	Drilling Mud	Total Depth
Type		ME	NA	☐ Truck	☐ Tripod	☐ Cat-Head		☐ Safety	☐ Bentonite	14.0
Inside Diameter (in.)		2	NA	☐ ATV	☒ Geoprobe	☐ Winch		☐ Doughnut	☐ Polymer	
Hammer Weight (lb.)	NA			☒ Track	☐ Air Track	☐ Roller Bit		☐ Automatic	☒ None	
Hammer Fall (in.)	NA			☐ Skid	☐ Hand Auger	☐ Cutting Head		Drilling Notes:		

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	4/5				0.0	GM/SM	Silty Sand and gravel, angular-Subrounded, Loose, Brwn, Dry	40	40				20			N	
					0.0												
5			4.5 5.5	10:20	0.0												
	5/5				0.0	ML	7.8 Sandy Silt with gravel, angular-Subrounded, Stiff, Brwn, Dry 8.5		20	25			55			L	
					0.0	GM/SM	Silty Sand and gravel, angular-Subrounded, Dense, Brwn, Dry	40	40				20			N	
10					0.0												
	2/5	▽ 12.4				ML	12.4 Sandy Silt, Trace Small gravel, Rounded, Soft, Saturated, Brwn, 13.0		T			45	55			N	
					0.0	GM/SM	Silty Sand and gravel, angular-Sub rounded, very dense, Brwn, Dry	40	40				20			N	
15							Refusal at 14.0										
20																	
								C	F	C	M	F	FS	D	T	P	S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water
			12.4	
				11.4

Sample ID

CC	Cont. Core
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Well Diagram

Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary

Boring Depth (Linear ft.)	14.0
Sample Method	G
Number of Samples	1

BORING NO.

Field Tests

Dilatancy: R - Rapid S - Slow N - None

Toughness: L - Low M - Medium H - High

Plasticity: N - Nonplastic L - Low M - Medium H - High

Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B14

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klaiken
CONTRACTOR	BB&A	DATE &TIME STARTED	2/27/24 0840
DRILLER	Cade Darcy	DATE &TIME FINISHED	09:05

Elevation ft. Datum Boring Location

Item	Casing	Sampler	Core Barrel
Type		MC	NA
Inside Diameter (in.)		2	NA
Hammer Weight (lb.)	NA		
Hammer Fall (in.)	NA		

Rig Make & Model: ☐ Truck ☐ Tripod ☐ Cat-Head; ☐ ATV ☒ Geoprobe ☐ Winch; ☒ Track ☐ Air Track ☐ Roller Bit; ☐ Skid ☐ Hand Auger ☐ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☐ Automatic

Drilling Mud: ☐ Bentonite ☐ Polymer ☒ None

Total Depth: 10.5

Drilling Notes:

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2/5				0.0	GW	Sandy gravel, subrounded - subangular, loose, Brwn, Dry	60		35			T			N	
					0.0												
					0.0												
			4.5 5.5	09:05	0.0	ML	4.0 Silt, trace small gravel, rounded, Trace med-coarse sand, med stiff DK Brwn w/greenish spots, Dry 5.5		T		T		90			L	
5	2/5				0.0	GW	Silty gravel with sand, subrounded to subangular, Loose, Brown, Dry	50		35			15			N	
					0.0												
10							Shattered rock, quartzite 10.5										
	3/5				0.0		Refusal at 10.5										
					0.0												
15																	
20																	
								C	F	C	M	F	FS	D	T	P	S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water

Sample ID

CC	Cont. Core
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Well Diagram

Riser Pipe; Screen; Filter Sand; Cuttings; Grout; Concrete; Bentonite Seal

Summary

Boring Depth (Linear ft.) 10.5
Sample Method G
Number of Samples 1

BORING NO.

Field Tests

Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B15

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klaiken
CONTRACTOR	BB&A	DATE &TIME STARTED	2/27/24 08:25
DRILLER	Justin Warner	DATE &TIME FINISHED	09:20

Elevation ft. Datum — Boring Location

Item	Casing	Sampler	Core Barrel
Type		MC	NA
Inside Diameter (in.)		2	NA
Hammer Weight (lb.)	NA		
Hammer Fall (in.)	NA		

Rig Make & Model: ☐ Truck ☐ Tripod ☐ Cat-Head; ☐ ATV ☒ Geoprobe ☐ Winch; ☒ Track ☐ Air Track ☐ Roller Bit; ☐ Skid ☐ Hand Auger ☐ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☐ Automatic

Drilling Mud: ☐ Bentonite ☐ Polymer ☒ None

Total Depth: 12.5

Drilling Notes:

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	3/5				0.0	GW	Sandy gravel, angular, loose, Dk brown, Dry (fill) 2.5	15		25			T			N	
					0.0	SM	Silty Sand and gravel, angular, Dense greenish-gray, moist 3.7	35		35			30			N	
5	2/5		4.5 5.5	09:25	0.0	GW/SW	well graded Sand and gravel with Silt, angular, Dense, yellowish-orange with greenish-gray spots, Dry	45		45			10			N	
					0.0												
10	0/5	P 11.4					12.5 Refusal										
15																	
20																	

C F C M F FS D T P S

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water

Sample ID

CC Cont. Core
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Boring Depth (Linear ft.) 12.5
Sample Method G
Number of Samples 1

BORING NO.

Field Tests

Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

BORING LOG

BORING NO. B16

Page 1 of

PROJECT	Hays Oil	SHN JOB NO.	224002.201
LOCATION	1890 S Pacific Hwy, Medford, OR	PROJECT MGR.	RWH
CLIENT	Hays Oil	FIELD REP.	R. Klaklech
CONTRACTOR	BB&A	DATE &TIME STARTED	12:05 2/28/24
DRILLER		DATE &TIME FINISHED	12:30

Elevation	ft.	Datum	Boring Location						
Item	Casing	Sampler	Core Barrel	Rig Make & Model			Hammer Type	Drilling Mud	Total Depth
Type			NA	☐ Truck ☐ Tripod	☐ Cat-Head		☐ Safety	☐ Bentonite	12.5
Inside Diameter (in.)			NA	☐ ATV ☐ Geoprobe	☐ Winch		☐ Doughnut	☐ Polymer	
Hammer Weight (lb.)	NA			☐ Track ☐ Air Track	☐ Roller Bit		☐ Automatic	☐ None	
Hammer Fall (in.)	NA			☐ Skid ☐ Hand Auger	☐ Cutting Head		Drilling Notes:		

Depth (ft.)	Recovery %	Blow Counts	Sample Depth (ft.)	Sample Time	PID (ppm)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	5/5				0.1	ML	Silt, MP T-sm-med gravel, A, DK gray, moist										
					0.0		color change to yellowish-orng @ 3.5										
							5.7										
5	3/5		4.5 5.5	12:30	0.0	SM	45% med.-coarse sand, 35% sm-med gravel, SR-SA ('/8-2), 20% fines, MP, yellowish orange, med dense, Dry										
					0.0												
10					0.0												
					0.0		12.5										
	Refusal @ 12.5																
15																	
20																	
								C	F	C	M	F	FS	D	T	P	S

Water Level Data					Sample ID		Well Diagram		Summary	
Date	Time	Elapsed Time (hr.)	Depth in feet to: First Water	Depth in feet to: Stabilized Water	CC Cont. Core		Riser Pipe		Boring Depth (Linear ft.)	12.5
					T Thin Wall Tube		Screen		Sample Method	S
					U Undisturbed Sample		Filter Sand		Number of Samples	1
					S Split Spoon Sample		Cuttings			
					G Geoprobe		Grout			
							Concrete		BORING NO.	
							Bentonite Seal			

Field Tests Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Meduim H - High V - Very High

NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on ASTM Method D2248 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

NEILSON RESEARCH CORPORATION

Chain of Custody Record

This Chain of Custody is a LEGAL DOCUMENT and must be filled out accurately.

Section A — Required Client Information

Company: SHN	
Address: 803 Main Street, Suite 401	
Klamath Falls, OR 97601	
Email: rhess@shn-engr.com	
Phone: 530-221-5424 Fax: 530-221-0135	
Collected By (Print):	
Collected By (Sign):	
Email Report ☑ Mail Report ☐ Fax Report ☐	

Section B — Required Project Information

Project Name: Hays Oil
Project Number: 224002.201
Report To: Robert Hess
Copy To:

Section C — Invoice Information

Attention: Accounts Payable
Company Name: SHN
Address: 812 W Wabash Ave
Eureka, CA 95501
P.O. # 224002.202

Section D — Rush Status (Subject to Scheduling)

- ☑ Standard: 10 Business Days
- ☐ Priority: 5 Business Days (List × 1.50)
- ☐ Express: 3 Business Days (List × 1.75)
- ☐ Rush: 2 Business Days (List × 2.00)
- ☐ Rush: 1 Business Day (List × 2.50)
- ☐ Rush: Same Day (List × 3.00)

Authorized ☐ Yes ☐ No

Section E — Sample Information

Sample ID	Comp/Grab	Matrix*	Date Collected	Time Collected	No. of Containers	NWTPHDX	NWTPHGX	8260 RBDM							Remarks / Field Data	NRC Sample # (Lab Use Only)
B1 @ 7.5-8.5	Grab	S	2/26/24	13:40	5	x	x	x								
B1	Grab	GW	2/26/24	13:45	3	x	x	x								
B2 @ 7.5-8.5	Grab	S	2/26/24	14:40	5	x	x	x								
B2	Grab	GW	2/26/24	14:50	3	x	x	x								
B3 @ 7.5-8.5	Grab	S	2/26/24	15:40	5	x	x	x								
B3	Grab	GW	2/26/24	15:55	3	x	x	x								
B15 @ 4.5-5.5	Grab	S	2/27/24	08:25	5	x	x	x								
B14 @ 4.5-5.5	Grab	S	2/27/24	09:05	5	x	x	x								
B15	Grab	GW	2/27/24	09:20	~~4~~ 7	x	x	x								
B13 @ 4.5-5.5	Grab	S	2/27/24	10:20	~~4~~ 5	x	x	x								

NRC Workorder # (Lab Use Only)

*Matrix: **DW** - Drinking Water **WW** - Wastewater **W** - Water **S** - Soil/Solid **SL** - Sludge **O** - Oil **WP** - Wipe **OT** - Other

IR m

Section F — Relinquish/Receive

	Sign	Print	Date	Time
Relinquished By:	Rogan Klarkken	R. Klarkken	2/28/24	13:00
Received By:				
Relinquished By:				
Received By:				
Relinquished By:				
Received By Laboratory:	Jana Schmedeman	Jana Schmedeman	2/29/24	13:00

Section G — Lab Use Only

Temp: 4.2, 3.1
≤6°C: X Yes ___ No
Received on Ice: ___ Yes ___ No
Number of Bottles Received:
pH Checked: N/A
COC Seals Intact: ___ Yes ___ No X NA
Field Blank Included: ___ Yes X No
Received Via ___ UPS ___ FedEX ___ Other X Hand
Payment: X Invoice ___ Cash ___ VISA, M/C ___ Check # ___ Amount ___

NEILSON RESEARCH CORPORATION

Chain of Custody Record

This Chain of Custody is a LEGAL DOCUMENT and must be filled out accurately.

Section A
Required Client Information

Company: SHN
Address: 803 Main Street, Suite 401
Klamath Falls, OR 97601
Email: rhess@shn-engr.com
Phone: 530-221-5424 Fax: 530-221-0135
Collected By (Print):
Collected By (Sign):
Email Report ☑ Mail Report ☐ Fax Report ☐

Section B
Required Project Information

Project Name: Hays Oil
Project Number: 224002.201
Report To: Robert Hess
Copy To:

Section C
Invoice Information

Attention: Accounts Payable
Company Name: SHN
Address: 812 W Wabash Ave
Eureka, CA 95501
P.O. # 224002.201

Section D
Rush Status (Subject to Scheduling)

☑ Standard: 10 Business Days
☐ Priority: 5 Business Days (List × 1.50)
☐ Express: 3 Business Days (List × 1.75)
☐ Rush: 2 Business Days (List × 2.00)
☐ Rush: 1 Business Day (List × 2.50)
☐ Rush: Same Day (List × 3.00)

Authorized ☐ Yes ☐ No

Section E
Sample Information

Sample ID	Comp/Grab	Matrix*	Date Collected	Time Collected	No. of Containers	NWTPHDX	NWTPHGX	8260 RBDM							NRC Workorder # (Lab Use Only) Remarks / Field Data	NRC Sample # (Lab Use Only)
B13	Grab	GW	2/27/24	10:40	9	x	x	x								
B8 @ 4.5-5.5	Grab	S	2/27/24	11:45	5	x	x	x								
B8	Grab	GW	2/27/24	12:00	9	x	x	x								
B7 @ 14-15 13:27	Grab	S	2/27/24	~~14:27~~	5	x	x	x								
B7	Grab	GW	2/27/24	13:40	9	x	x	x								
B6 @ 3-4	Grab	S	2/27/24	14:30	5	x	x	x								
B5 @ 3-4	Grab	S	2/27/24	15:00	5	x	x	x								
B5	Grab	GW	2/27/24	15:20	9	x	x	x								
B4 @ 4.5-5.5	Grab	S	2/27/24	16:15	5	x	x	x								
B12 @ 4.5-5.5	Grab	S	2/28/24	0810	5	x	x	x								

*Matrix: **DW** - Drinking Water **WW** - Wastewater **W** - Water **S** - Soil/Solid **SL** - Sludge **O** - Oil **WP** - Wipe **OT** - Other

Section F
Relinquish/Receive

	Sign	Print	Date	Time
Relinquished By:	Roger Klokken	Roger Klokken	2/28/24	13:00
Received By:				
Relinquished By:				
Received By:				
Relinquished By:				
Received By Laboratory:	Tami Schmedeman	Tami Schmedeman	2/28/24	13:00

IRM

Section G
Lab Use Only

Temp: 4.2 5.6
≤6°C: X Yes ___ No
Received on Ice: ___ Yes ___ No
Number of Bottles Received:
pH Checked: N/A
COC Seals Intact: ___ Yes ___ No X NA
Field Blank Included: ___ Yes X No
Received Via ___ UPS ___ FedEX ___ Other X Hand
Payment: X Invoice ___ Cash ___ VISA, M/C ___ Check # ___ Amount ___

Effective 6/19/2020

NEILSON RESEARCH CORPORATION

Chain of Custody Record

This Chain of Custody is a LEGAL DOCUMENT and must be filled out accurately.

Section A — Required Client Information

Company: SHN	
Address: 803 Main Street, Suite 401	
Klamath Falls, OR 97601	
Email: rhess@shn-engr.com	
Phone: 530-221-5424	Fax: 530-221-0135
Collected By (Print):	
Collected By (Sign):	
Email Report ☑ Mail Report ☐ Fax Report ☐	

Section B — Required Project Information

Project Name: Hays Oil
Project Number: 224002.201
Report To: Robert Hess
Copy To:

Section C — Invoice Information

Attention: Accounts Payable
Company Name: SHN
Address: 812 W Wabash Ave
Eureka, CA 95501
P.O. # 224002.201

Section D — Rush Status (Subject to Scheduling)

- ☑ Standard: 10 Business Days
- ☐ Priority: 5 Business Days (List × 1.50)
- ☐ Express: 3 Business Days (List × 1.75)
- ☐ Rush: 2 Business Days (List × 2.00)
- ☐ Rush: 1 Business Day (List × 2.50)
- ☐ Rush: Same Day (List × 3.00)

Authorized ☐ Yes ☐ No

Section E — Sample Information

Sample ID	Comp/Grab	Matrix*	Date Collected	Time Collected	No. of Containers	NWTPHDX	NWTPHGX	8260 RBDM							NRC Workorder # (Lab Use Only)	NRC Sample # (Lab Use Only)
															Remarks / Field Data	
B12	Grab	GW	2/28/24	0820	4	X	X	X								
B11 @ 4.5-5.5	Grab	S	2/28/24	0915	4	X	X	X								
B11	Grab	GW	2/28/24	09:20	4	X	X	X								
B10 @ 4.5-5.5	Grab	S	2/28/24	10:20	4	X	X	X								
B9 @ 6.5-7.5	Grab	S	2/28/24	11:45	5	X	X	X								
B16 @ 4.5-5.5	Grab	S	2/28/24	12:30	5	X	X	X								

*Matrix: **DW** - Drinking Water **WW** - Wastewater **W** - Water **S** - Soil/Solid **SL** - Sludge **O** - Oil **WP** - Wipe **OT** - Other

Section F — Relinquish/Receive

	Sign	Print	Date	Time
Relinquished By:	Roger Klakken	Roger Klakken	2/28/24	13:00
Received By:				
Relinquished By:				
Received By:				
Relinquished By:				
Received By Laboratory:	Tamra Schneider	Tamra Schneider	2/28/24	13:00

Section G — Lab Use Only

Temp:	4.2 3.6
≤6°C:	☑ Yes ☐ No
Received on Ice:	☐ Yes ☐ No
Number of Bottles Received:	
pH Checked:	NA
COC Seals Intact:	☐ Yes ☐ No ☑ NA
Field Blank Included:	☐ Yes ☑ No

Received Via ☐ UPS ☐ FedEX ☐ Other ☑ Hand

Payment ☑ Invoice ☐ Cash ☐ VISA, M/C ☐ Check # _____ Amount _____

Analytical Laboratory Reports

2

Neilson Research Corporation
245 S Grape St
Medford, OR 97501
TEL: (541) 770-5678 FAX: (541) 770-2901
Website: www.nrclabs.com

March 08, 2024

Robert Hess
SHN Civil Engineering, Env Services
350 Hartnell Ave, Ste B
Redding, CA 96002-1875
TEL: (530) 221-5424
FAX

RE: 224002.201 Hays Oil Order No.: 24021127

Dear Robert Hess:

Neilson Research Corporation received 27 sample(s) on 2/28/2024 for the analyses presented in the following report.

The results relate only to the parameters tested or to the sample as received by the laboratory. This report shall not be reproduced except in full, without the written approval of Neilson Research Corporation. If you have any questions regarding these test results, please feel free to call.

Sincerely,
Neilson Research Corporation

Tamra Schmedemann
Senior Project Manager
245 S Grape St
Medford, OR 97501

Original

Neilson Research Corporation
245 S Grape St
Medford, OR 97501
TEL: (541) 770-5678 FAX: (541) 770-2901
Website: www.nrclabs.com

Case Narrative

WO#: **24021127**
Date: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

The analyses were performed according to the guidelines in the Neilson Research Corporation Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Neilson Research Corporation certifies that this report is in compliance with the requirements of NELAP. No unusual difficulties were experienced during analysis of this batch except as noted below or qualified with data flags on the reports.

Analytical Comments for EPA8260_5035_S, Sample 24021127-16B, Batch ID 24513 : Three vials were submitted for volatiles analysis. It was noted that each vial extract had varying colors which may indicate inconsistent sample cores. The 1,2,4-Trimethylbenzene and Naphthalene were out of the calibration range in the first vial that was used for analysis. A second vial was used for a dilution and the results for the analytes that are present were higher than the first vial. The third vial was analyzed to verify which results were correct. However, the results in the third vial were even higher for the analytes present in the sample. It is confirmed that these analytes are present in each sample vial but the concentrations vary between them. The highest result has been reported for each analyte and the results are estimated values. The 1,2,4-Trimethylbenzene may be higher because this result is out of calibration range.

NEILSON RESEARCH CORPORATION

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Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-01
Client Sample ID B1 @ 7.5-8.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 1:40:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.123	mg/Kg-dry		02/29/24 12:25 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0491	mg/Kg-dry		02/29/24 12:25 TCB
Benzene	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
Naphthalene	EPA 8260 B	A	ND		1	0.123	mg/Kg-dry		02/29/24 12:25 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
Toluene	EPA 8260 B	A	ND		1	0.0491	mg/Kg-dry		02/29/24 12:25 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0245	mg/Kg-dry		02/29/24 12:25 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.491	mg/Kg-dry		02/29/24 12:25 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0981	mg/Kg-dry		02/29/24 12:25 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		76.7		1	10 - 152	%Rec		02/29/24 12:25 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		87.4		1	35 - 122	%Rec		02/29/24 12:25 TCB
Surr: Dibromofluoromethane	EPA 8260 B		101		1	28 - 148	%Rec		02/29/24 12:25 TCB
Surr: Toluene-d8	EPA 8260 B		108		1	41 - 144	%Rec		02/29/24 12:25 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		15		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

NEILSON RESEARCH CORPORATION

Neilson Research Corporation
245 S Grape St
Medford, OR 97501
TEL: (541) 770-5678 FAX: (541) 770-2901
Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-01
Client Sample ID B1 @ 7.5-8.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 1:40:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	231		1	14.7	mg/Kg-dry		03/01/24 20:27 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	29.4	mg/Kg-dry		03/01/24 20:27 TJW
Surr: o-Terphenyl	NWTPH-DX		120		1	50 - 150	%Rec		03/01/24 20:27 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	4.68	mg/Kg-dry		02/29/24 11:19 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		95.4		1	50 - 150	%Rec		02/29/24 11:19 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

NEILSON RESEARCH CORPORATION

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Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-02
Client Sample ID B1
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 1:45:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND	MI	1	0.500	µg/L		03/01/24 11:53 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
Benzene	EPA 8260 B	A	ND		1	0.350	µg/L		03/01/24 11:53 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
Isopropylbenzene	EPA 8260 B	A	4.27		1	0.500	µg/L		03/01/24 11:53 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
n-Propylbenzene	EPA 8260 B	A	1.45		1	0.500	µg/L		03/01/24 11:53 TCB
Naphthalene	EPA 8260 B	A	ND		1	2.00	µg/L		03/01/24 11:53 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
Toluene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 11:53 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		95.9		1	80 - 120	%Rec		03/01/24 11:53 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		105		1	80 - 120	%Rec		03/01/24 11:53 TCB
Surr: Dibromofluoromethane	EPA 8260 B		95.8		1	80 - 120	%Rec		03/01/24 11:53 TCB
Surr: Toluene-d8	EPA 8260 B		100		1	80 - 120	%Rec		03/01/24 11:53 TCB
NORTHWEST TPH DX IN WATER									
TPH as Diesel	NWTPH-DX	A	ND		1	0.0500	mg/L		03/01/24 8:28 TJW
Lube Oil Range (C24 - C40)	NWTPH-DX	A	0.792		1	0.100	mg/L		03/01/24 8:28 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

NEILSON RESEARCH CORPORATION

Neilson Research Corporation
245 S Grape St
Medford, OR 97501
TEL: (541) 770-5678 FAX: (541) 770-2901
Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-02
Client Sample ID B1
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 1:45:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NORTHWEST TPH DX IN WATER									
Surr: o-Terphenyl	NWTPH-DX		20.5	MI	1	50 - 150	%Rec		03/01/24 8:28 TJW
NORTHWEST TPH GASOLINE IN WATER									
Gasoline Range (C6 - C12)	NWTPH-GX	A	0.569		1	0.0500	mg/L		02/28/24 15:37 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		102		1	50 - 150	%Rec		02/28/24 15:37 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

NEILSON RESEARCH CORPORATION

Neilson Research Corporation
245 S Grape St
Medford, OR 97501
TEL: (541) 770-5678 FAX: (541) 770-2901
Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-03
Client Sample ID B2 @ 7.5-8.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 2:40:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.118	mg/Kg-dry		02/29/24 12:51 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0473	mg/Kg-dry		02/29/24 12:51 TCB
Benzene	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
Naphthalene	EPA 8260 B	A	ND		1	0.118	mg/Kg-dry		02/29/24 12:51 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
Toluene	EPA 8260 B	A	ND		1	0.0473	mg/Kg-dry		02/29/24 12:51 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0236	mg/Kg-dry		02/29/24 12:51 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.473	mg/Kg-dry		02/29/24 12:51 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0946	mg/Kg-dry		02/29/24 12:51 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		85.3		1	10 - 152	%Rec		02/29/24 12:51 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		98.3		1	35 - 122	%Rec		02/29/24 12:51 TCB
Surr: Dibromofluoromethane	EPA 8260 B		110		1	28 - 148	%Rec		02/29/24 12:51 TCB
Surr: Toluene-d8	EPA 8260 B		121		1	41 - 144	%Rec		02/29/24 12:51 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		14		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-03
Client Sample ID B2 @ 7.5-8.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 2:40:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	ND		1	14.4	mg/Kg-dry		03/01/24 20:47 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	28.8	mg/Kg-dry		03/01/24 20:47 TJW
Surr: o-Terphenyl	NWTPH-DX		97.0		1	50 - 150	%Rec		03/01/24 20:47 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	6.45	mg/Kg-dry		02/29/24 12:41 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		101		1	50 - 150	%Rec		02/29/24 12:41 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-04
Client Sample ID B2
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 2:50:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
Benzene	EPA 8260 B	A	ND		1	0.350	µg/L		03/01/24 13:14 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
Naphthalene	EPA 8260 B	A	ND		1	2.00	µg/L		03/01/24 13:14 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
Toluene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:14 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		91.4		1	80 - 120	%Rec		03/01/24 13:14 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		102		1	80 - 120	%Rec		03/01/24 13:14 TCB
Surr: Dibromofluoromethane	EPA 8260 B		94.8		1	80 - 120	%Rec		03/01/24 13:14 TCB
Surr: Toluene-d8	EPA 8260 B		98.7		1	80 - 120	%Rec		03/01/24 13:14 TCB
NORTHWEST TPH DX IN WATER									
Diesel Range (C12 - C24)	NWTPH-DX	A	1.48		1	0.0500	mg/L		03/01/24 9:43 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	0.100	mg/L		03/01/24 9:43 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-04
Client Sample ID B2
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 2:50:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NORTHWEST TPH DX IN WATER									
Surr: o-Terphenyl	NWTPH-DX		51.3		1	50 - 150	%Rec		03/01/24 9:43 TJW
NORTHWEST TPH GASOLINE IN WATER									
Gasoline Range (C6 - C12)	NWTPH-GX	A	0.0604		1	0.0500	mg/L		02/28/24 16:05 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		96.4		1	50 - 150	%Rec		02/28/24 16:05 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-05
Client Sample ID B3 @ 7.5-8.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 3:40:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.137	mg/Kg-dry		02/29/24 13:18 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0549	mg/Kg-dry		02/29/24 13:18 TCB
Benzene	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
Naphthalene	EPA 8260 B	A	ND		1	0.137	mg/Kg-dry		02/29/24 13:18 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
Toluene	EPA 8260 B	A	ND		1	0.0549	mg/Kg-dry		02/29/24 13:18 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0274	mg/Kg-dry		02/29/24 13:18 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.549	mg/Kg-dry		02/29/24 13:18 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.110	mg/Kg-dry		02/29/24 13:18 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		78.3		1	10 - 152	%Rec		02/29/24 13:18 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		89.8		1	35 - 122	%Rec		02/29/24 13:18 TCB
Surr: Dibromofluoromethane	EPA 8260 B		109		1	28 - 148	%Rec		02/29/24 13:18 TCB
Surr: Toluene-d8	EPA 8260 B		113		1	41 - 144	%Rec		02/29/24 13:18 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		16		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-05
Client Sample ID B3 @ 7.5-8.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 3:40:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
Diesel Range (C12 - C24)	NWTPH-DX	A	70.3		1	14.4	mg/Kg-dry		03/01/24 21:45 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	28.8	mg/Kg-dry		03/01/24 21:45 TJW
Surr: o-Terphenyl	NWTPH-DX		105		1	50 - 150	%Rec		03/01/24 21:45 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	4.75	mg/Kg-dry		02/29/24 13:08 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		101		1	50 - 150	%Rec		02/29/24 13:08 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-06
Client Sample ID B3
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 3:55:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
Benzene	EPA 8260 B	A	ND		1	0.350	µg/L		03/01/24 13:41 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
Naphthalene	EPA 8260 B	A	ND		1	2.00	µg/L		03/01/24 13:41 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
Toluene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 13:41 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		93.0		1	80 - 120	%Rec		03/01/24 13:41 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		103		1	80 - 120	%Rec		03/01/24 13:41 TCB
Surr: Dibromofluoromethane	EPA 8260 B		99.8		1	80 - 120	%Rec		03/01/24 13:41 TCB
Surr: Toluene-d8	EPA 8260 B		100		1	80 - 120	%Rec		03/01/24 13:41 TCB
NORTHWEST TPH DX IN WATER									
TPH as Diesel	NWTPH-DX	A	ND		1	0.0515	mg/L		03/01/24 10:08 TJW
Lube Oil Range (C24 - C40)	NWTPH-DX	A	0.853		1	0.103	mg/L		03/01/24 10:08 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-06
Client Sample ID B3
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 3:55:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NORTHWEST TPH DX IN WATER									
Surr: o-Terphenyl	NWTPH-DX		7.92	MI	1	50 - 150	%Rec		03/01/24 10:08 TJW
NORTHWEST TPH GASOLINE IN WATER									
Gasoline Range (C6 - C12)	NWTPH-GX	A	0.0823		1	0.0500	mg/L		02/28/24 16:32 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		113		1	50 - 150	%Rec		02/28/24 16:32 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-07
Client Sample ID B15 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 8:25:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst	
VOLATILE ORGANICS BY EPA 8260B										
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.168	mg/Kg-dry		02/29/24 13:45	TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0671	mg/Kg-dry		02/29/24 13:45	TCB
Benzene	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
Naphthalene	EPA 8260 B	A	ND		1	0.168	mg/Kg-dry		02/29/24 13:45	TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
Toluene	EPA 8260 B	A	ND		1	0.0671	mg/Kg-dry		02/29/24 13:45	TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0335	mg/Kg-dry		02/29/24 13:45	TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.671	mg/Kg-dry		02/29/24 13:45	TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.134	mg/Kg-dry		02/29/24 13:45	TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		78.1		1	10 - 152	%Rec		02/29/24 13:45	TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		90.4		1	35 - 122	%Rec		02/29/24 13:45	TCB
Surr: Dibromofluoromethane	EPA 8260 B		101		1	28 - 148	%Rec		02/29/24 13:45	TCB
Surr: Toluene-d8	EPA 8260 B		112		1	41 - 144	%Rec		02/29/24 13:45	TCB
NWTPHDX_S										
PERCENT MOISTURE										
Percent Moisture	NWTPH		21		1	1.0	% Wt		02/28/24 16:58	EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

NEILSON RESEARCH CORPORATION

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Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-07
Client Sample ID B15 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 8:25:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	ND		1	15.8	mg/Kg-dry		03/01/24 22:04 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	31.5	mg/Kg-dry		03/01/24 22:04 TJW
Surr: o-Terphenyl	NWTPH-DX		94.4		1	50 - 150	%Rec		03/01/24 22:04 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	5.42	mg/Kg-dry		02/29/24 13:36 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		110		1	50 - 150	%Rec		02/29/24 13:36 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-08
Client Sample ID B14 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 9:05:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.120	mg/Kg-dry		02/29/24 14:12 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0479	mg/Kg-dry		02/29/24 14:12 TCB
Benzene	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
Naphthalene	EPA 8260 B	A	ND		1	0.120	mg/Kg-dry		02/29/24 14:12 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
Toluene	EPA 8260 B	A	ND		1	0.0479	mg/Kg-dry		02/29/24 14:12 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0240	mg/Kg-dry		02/29/24 14:12 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.479	mg/Kg-dry		02/29/24 14:12 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0959	mg/Kg-dry		02/29/24 14:12 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		83.5		1	10 - 152	%Rec		02/29/24 14:12 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		93.5		1	35 - 122	%Rec		02/29/24 14:12 TCB
Surr: Dibromofluoromethane	EPA 8260 B		106		1	28 - 148	%Rec		02/29/24 14:12 TCB
Surr: Toluene-d8	EPA 8260 B		112		1	41 - 144	%Rec		02/29/24 14:12 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		20		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-08
Client Sample ID B14 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 9:05:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	ND		1	15.6	mg/Kg-dry		03/01/24 22:23 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	31.2	mg/Kg-dry		03/01/24 22:23 TJW
Surr: o-Terphenyl	NWTPH-DX		103		1	50 - 150	%Rec		03/01/24 22:23 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	5.38	mg/Kg-dry		02/29/24 14:03 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		113		1	50 - 150	%Rec		02/29/24 14:03 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-09
Client Sample ID B15
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 9:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
Benzene	EPA 8260 B	A	ND		1	0.350	µg/L		03/01/24 14:08 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
Naphthalene	EPA 8260 B	A	ND		1	2.00	µg/L		03/01/24 14:08 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
Toluene	EPA 8260 B	A	0.860		1	0.500	µg/L		03/01/24 14:08 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:08 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		94.5		1	80 - 120	%Rec		03/01/24 14:08 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		103		1	80 - 120	%Rec		03/01/24 14:08 TCB
Surr: Dibromofluoromethane	EPA 8260 B		104		1	80 - 120	%Rec		03/01/24 14:08 TCB
Surr: Toluene-d8	EPA 8260 B		97.9		1	80 - 120	%Rec		03/01/24 14:08 TCB
NORTHWEST TPH DX IN WATER									
TPH as Diesel	NWTPH-DX	A	ND		1	0.0581	mg/L		03/01/24 10:34 TJW
Lube Oil Range (C24 - C40)	NWTPH-DX	A	0.779		1	0.116	mg/L		03/01/24 10:34 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-09
Client Sample ID B15
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 9:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NORTHWEST TPH DX IN WATER									
Surr: o-Terphenyl	NWTPH-DX		106		1	50 - 150	%Rec		03/01/24 10:34 TJW
NORTHWEST TPH GASOLINE IN WATER									
TPH as Gasoline	NWTPH-GX	A	ND		1	0.0500	mg/L		02/28/24 17:00 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		95.8		1	50 - 150	%Rec		02/28/24 17:00 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-10
Client Sample ID B13 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 10:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.101	mg/Kg-dry		02/29/24 14:39 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0404	mg/Kg-dry		02/29/24 14:39 TCB
Benzene	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
Naphthalene	EPA 8260 B	A	ND		1	0.101	mg/Kg-dry		02/29/24 14:39 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
Toluene	EPA 8260 B	A	ND		1	0.0404	mg/Kg-dry		02/29/24 14:39 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0202	mg/Kg-dry		02/29/24 14:39 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.404	mg/Kg-dry		02/29/24 14:39 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0807	mg/Kg-dry		02/29/24 14:39 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		106		1	10 - 152	%Rec		02/29/24 14:39 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		122		1	35 - 122	%Rec		02/29/24 14:39 TCB
Surr: Dibromofluoromethane	EPA 8260 B		139		1	28 - 148	%Rec		02/29/24 14:39 TCB
Surr: Toluene-d8	EPA 8260 B		142		1	41 - 144	%Rec		02/29/24 14:39 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		18		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-10
Client Sample ID B13 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 10:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	ND		1	15.2	mg/Kg-dry		03/01/24 22:43 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	30.4	mg/Kg-dry		03/01/24 22:43 TJW
Surr: o-Terphenyl	NWTPH-DX		93.0		1	50 - 150	%Rec		03/01/24 22:43 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	4.58	mg/Kg-dry		02/29/24 14:30 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		95.7		1	50 - 150	%Rec		02/29/24 14:30 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-11
Client Sample ID B13
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 10:40:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
Benzene	EPA 8260 B	A	ND		1	0.350	µg/L		03/01/24 14:36 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
Ethylbenzene	EPA 8260 B	A	0.790		1	0.500	µg/L		03/01/24 14:36 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
Naphthalene	EPA 8260 B	A	ND		1	2.00	µg/L		03/01/24 14:36 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
Toluene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 14:36 TCB
Xylenes, Total	EPA 8260 B	A	5.60		1	0.500	µg/L		03/01/24 14:36 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		92.6		1	80 - 120	%Rec		03/01/24 14:36 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		103		1	80 - 120	%Rec		03/01/24 14:36 TCB
Surr: Dibromofluoromethane	EPA 8260 B		96.8		1	80 - 120	%Rec		03/01/24 14:36 TCB
Surr: Toluene-d8	EPA 8260 B		94.6		1	80 - 120	%Rec		03/01/24 14:36 TCB
NORTHWEST TPH DX IN WATER									
Diesel Range (C12 - C24)	NWTPH-DX	A	1.25		1	0.0515	mg/L		03/01/24 11:00 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	0.103	mg/L		03/01/24 11:00 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-11
Client Sample ID B13
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 10:40:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NORTHWEST TPH DX IN WATER									
Surr: o-Terphenyl	NWTPH-DX		80.9		1	50 - 150	%Rec		03/01/24 11:00 TJW
NORTHWEST TPH GASOLINE IN WATER									
TPH as Gasoline	NWTPH-GX	A	ND		1	0.0500	mg/L		02/28/24 17:29 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		106		1	50 - 150	%Rec		02/28/24 17:29 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-12
Client Sample ID B8 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 11:45:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst	
VOLATILE ORGANICS BY EPA 8260B										
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.0831	mg/Kg-dry		02/29/24 15:06	TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0332	mg/Kg-dry		02/29/24 15:06	TCB
Benzene	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
Naphthalene	EPA 8260 B	A	ND		1	0.0831	mg/Kg-dry		02/29/24 15:06	TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
Toluene	EPA 8260 B	A	ND		1	0.0332	mg/Kg-dry		02/29/24 15:06	TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0166	mg/Kg-dry		02/29/24 15:06	TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.332	mg/Kg-dry		02/29/24 15:06	TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0665	mg/Kg-dry		02/29/24 15:06	TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		84.6		1	10 - 152	%Rec		02/29/24 15:06	TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		97.4		1	35 - 122	%Rec		02/29/24 15:06	TCB
Surr: Dibromofluoromethane	EPA 8260 B		115		1	28 - 148	%Rec		02/29/24 15:06	TCB
Surr: Toluene-d8	EPA 8260 B		117		1	41 - 144	%Rec		02/29/24 15:06	TCB
NWTPHDX_S										
PERCENT MOISTURE										
Percent Moisture	NWTPH		9.3		1	1.0	% Wt		02/28/24 16:58	EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-12
Client Sample ID B8 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 11:45:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	ND		1	13.7	mg/Kg-dry		03/01/24 23:02 TJW
Lube Oil Range (C24 - C40)	NWTPH-DX	A	132		1	27.4	mg/Kg-dry		03/01/24 23:02 TJW
Surr: o-Terphenyl	NWTPH-DX		102		1	50 - 150	%Rec		03/01/24 23:02 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	3.77	mg/Kg-dry		02/29/24 14:57 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		103		1	50 - 150	%Rec		02/29/24 14:57 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-13
Client Sample ID B8
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 12:00:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
Benzene	EPA 8260 B	A	ND		1	0.350	µg/L		03/01/24 15:03 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
Naphthalene	EPA 8260 B	A	ND		1	2.00	µg/L		03/01/24 15:03 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
Toluene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:03 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		94.0		1	80 - 120	%Rec		03/01/24 15:03 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		104		1	80 - 120	%Rec		03/01/24 15:03 TCB
Surr: Dibromofluoromethane	EPA 8260 B		97.7		1	80 - 120	%Rec		03/01/24 15:03 TCB
Surr: Toluene-d8	EPA 8260 B		95.8		1	80 - 120	%Rec		03/01/24 15:03 TCB
NORTHWEST TPH DX IN WATER									
Diesel Range (C12 - C24)	NWTPH-DX	A	4.72		1	0.0538	mg/L		03/01/24 11:26 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	0.108	mg/L		03/01/24 11:26 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-13
Client Sample ID B8
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 12:00:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NORTHWEST TPH DX IN WATER									
Surr: o-Terphenyl	NWTPH-DX		97.2		1	50 - 150	%Rec		03/01/24 11:26 TJW
NORTHWEST TPH GASOLINE IN WATER									
TPH as Gasoline	NWTPH-GX	A	ND		1	0.0500	mg/L		02/29/24 6:38 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		101		1	50 - 150	%Rec		02/29/24 6:38 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-14
Client Sample ID B7 @ 14-15
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 1:27:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.119	mg/Kg-dry		02/29/24 15:33 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0477	mg/Kg-dry		02/29/24 15:33 TCB
Benzene	EPA 8260 B	A	0.195		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
Isopropylbenzene	EPA 8260 B	A	0.489		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
n-Propylbenzene	EPA 8260 B	A	0.376		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
Naphthalene	EPA 8260 B	A	0.276		1	0.119	mg/Kg-dry		02/29/24 15:33 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
Toluene	EPA 8260 B	A	ND		1	0.0477	mg/Kg-dry		02/29/24 15:33 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0238	mg/Kg-dry		02/29/24 15:33 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.477	mg/Kg-dry		02/29/24 15:33 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0953	mg/Kg-dry		02/29/24 15:33 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		83.4		1	10 - 152	%Rec		02/29/24 15:33 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		104		1	35 - 122	%Rec		02/29/24 15:33 TCB
Surr: Dibromofluoromethane	EPA 8260 B		121		1	28 - 148	%Rec		02/29/24 15:33 TCB
Surr: Toluene-d8	EPA 8260 B		139		1	41 - 144	%Rec		02/29/24 15:33 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		16		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-14
Client Sample ID B7 @ 14-15
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 1:27:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	5760		20	296	mg/Kg-dry		03/04/24 21:02 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	29.6	mg/Kg-dry		03/01/24 23:21 TJW
Surr: o-Terphenyl	NWTPH-DX		367	MI	20	50 - 150	%Rec		03/04/24 21:02 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	665		10	48.1	mg/Kg-dry		02/29/24 17:37 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		269	MI	10	50 - 150	%Rec		02/29/24 17:37 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-15
Client Sample ID B7
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 1:40:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:30 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:30 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	3.81		1	0.500	µg/L		03/01/24 15:30 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:30 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:30 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	0.680		1	0.500	µg/L		03/01/24 15:30 TCB
Benzene	EPA 8260 B	A	484		30	10.5	µg/L		03/05/24 15:31 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	1.14		1	0.500	µg/L		03/01/24 15:30 TCB
Ethylbenzene	EPA 8260 B	A	5.34		1	0.500	µg/L		03/01/24 15:30 TCB
Isopropylbenzene	EPA 8260 B	A	30.1		1	0.500	µg/L		03/01/24 15:30 TCB
Methyl tert-butyl ether	EPA 8260 B	A	84.8		1	0.500	µg/L		03/01/24 15:30 TCB
n-Propylbenzene	EPA 8260 B	A	24.3		1	0.500	µg/L		03/01/24 15:30 TCB
Naphthalene	EPA 8260 B	A	26.5		1	2.00	µg/L		03/01/24 15:30 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:30 TCB
Toluene	EPA 8260 B	A	4.58		1	0.500	µg/L		03/01/24 15:30 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:30 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:30 TCB
Xylenes, Total	EPA 8260 B	A	4.73		1	0.500	µg/L		03/01/24 15:30 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		89.0		1	80 - 120	%Rec		03/01/24 15:30 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		110		1	80 - 120	%Rec		03/01/24 15:30 TCB
Surr: Dibromofluoromethane	EPA 8260 B		98.0		1	80 - 120	%Rec		03/01/24 15:30 TCB
Surr: Toluene-d8	EPA 8260 B		95.7		30	80 - 120	%Rec		03/05/24 15:31 TCB
NORTHWEST TPH DX IN WATER									
TPH as Diesel	NWTPH-DX	A	211		20	1.11	mg/L		03/01/24 11:51 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	0.111	mg/L		03/01/24 12:16 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

NEILSON RESEARCH CORPORATION

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-15
Client Sample ID B7
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 1:40:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NORTHWEST TPH DX IN WATER									
Surr: o-Terphenyl	NWTPH-DX		0	MI	1	50 - 150	%Rec		03/01/24 12:16 TJW
NORTHWEST TPH GASOLINE IN WATER									
Gasoline Range (C6 - C12)	NWTPH-GX	A	3.04		1	0.0500	mg/L		02/29/24 7:05 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		67.0		1	50 - 150	%Rec		02/29/24 7:05 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-16
Client Sample ID B6 @ 3-4
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 2:30:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.110	mg/Kg-dry		02/29/24 16:00 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0219	mg/Kg-dry		02/29/24 16:00 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	130	E N	20	0.480	mg/Kg-dry		03/06/24 16:11 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0219	mg/Kg-dry		02/29/24 16:00 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0219	mg/Kg-dry		02/29/24 16:00 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	6.51	E N	20	0.960	mg/Kg-dry		03/06/24 16:11 TCB
Benzene	EPA 8260 B	A	7.66	E N	20	0.480	mg/Kg-dry		03/06/24 16:11 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0219	mg/Kg-dry		02/29/24 16:00 TCB
Ethylbenzene	EPA 8260 B	A	14.7	E N	20	0.480	mg/Kg-dry		03/06/24 16:11 TCB
Isopropylbenzene	EPA 8260 B	A	12.7	E N	20	0.480	mg/Kg-dry		03/06/24 16:11 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0219	mg/Kg-dry		02/29/24 16:00 TCB
n-Propylbenzene	EPA 8260 B	A	22.2	E N	20	0.480	mg/Kg-dry		03/06/24 16:11 TCB
Naphthalene	EPA 8260 B	A	56.2	E N	20	2.40	mg/Kg-dry		03/06/24 16:11 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0219	mg/Kg-dry		02/29/24 16:00 TCB
Toluene	EPA 8260 B	A	4.26	E N	20	0.960	mg/Kg-dry		03/06/24 16:11 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0219	mg/Kg-dry		02/29/24 16:00 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.438	mg/Kg-dry		02/29/24 16:00 TCB
Xylenes, Total	EPA 8260 B	A	65.5	E N	20	1.92	mg/Kg-dry		03/06/24 16:11 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		73.0		1	10 - 152	%Rec		02/29/24 16:00 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		124	MI	1	35 - 122	%Rec		02/29/24 16:00 TCB
Surr: Dibromofluoromethane	EPA 8260 B		114		1	28 - 148	%Rec		02/29/24 16:00 TCB
Surr: Toluene-d8	EPA 8260 B		176	MI	1	41 - 144	%Rec		02/29/24 16:00 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		17		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-16
Client Sample ID B6 @ 3-4
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 2:30:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
Diesel Range (C12 - C24)	NWTPH-DX	A	6490		10	149	mg/Kg-dry		03/01/24 23:41 TJW
Lube Oil Range (C24 - C40)	NWTPH-DX	A	2530		10	298	mg/Kg-dry		03/01/24 23:41 TJW
Surr: o-Terphenyl	NWTPH-DX		263	MI	10	50 - 150	%Rec		03/01/24 23:41 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	1760		20	99.2	mg/Kg-dry		02/29/24 18:05 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		713	MI	20	50 - 150	%Rec		02/29/24 18:05 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-17
Client Sample ID B5 @ 3-4
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 3:00:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst	
VOLATILE ORGANICS BY EPA 8260B										
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.117	mg/Kg-dry		02/29/24 16:27	TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0467	mg/Kg-dry		02/29/24 16:27	TCB
Benzene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
Ethylbenzene	EPA 8260 B	A	0.0359		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
Isopropylbenzene	EPA 8260 B	A	0.393		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
n-Propylbenzene	EPA 8260 B	A	0.690		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
Naphthalene	EPA 8260 B	A	2.17		1	0.117	mg/Kg-dry		02/29/24 16:27	TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
Toluene	EPA 8260 B	A	ND		1	0.0467	mg/Kg-dry		02/29/24 16:27	TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 16:27	TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.467	mg/Kg-dry		02/29/24 16:27	TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0934	mg/Kg-dry		02/29/24 16:27	TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		81.6		1	10 - 152	%Rec		02/29/24 16:27	TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		104		1	35 - 122	%Rec		02/29/24 16:27	TCB
Surr: Dibromofluoromethane	EPA 8260 B		108		1	28 - 148	%Rec		02/29/24 16:27	TCB
Surr: Toluene-d8	EPA 8260 B		129		1	41 - 144	%Rec		02/29/24 16:27	TCB
NWTPHDX_S										
PERCENT MOISTURE										
Percent Moisture	NWTPH		17		1	1.0	% Wt		02/28/24 16:58	EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-17
Client Sample ID B5 @ 3-4
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 3:00:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst	
NWTPHDX_S NORTHWEST TPH DX IN SOIL										
Diesel Range (C12 - C24)	NWTPH-DX	A	339		1	15.1	mg/Kg-dry		03/02/24 0:00	TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	30.1	mg/Kg-dry		03/02/24 0:00	TJW
Surr: o-Terphenyl	NWTPH-DX		119		1	50 - 150	%Rec		03/02/24 0:00	TJW
NORTHWEST TPH GASOLINE IN SOIL										
Gasoline Range (C6 - C12)	NWTPH-GX	A	50.4		1	4.19	mg/Kg-dry		02/29/24 16:31	TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		109		1	50 - 150	%Rec		02/29/24 16:31	TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-18
Client Sample ID B5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 3:20:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:57 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:57 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	1.53		1	0.500	µg/L		03/01/24 15:57 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:57 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:57 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	2.03		1	0.500	µg/L		03/01/24 15:57 TCB
Benzene	EPA 8260 B	A	62.2		1	0.350	µg/L		03/01/24 15:57 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:57 TCB
Ethylbenzene	EPA 8260 B	A	7.57		1	0.500	µg/L		03/01/24 15:57 TCB
Isopropylbenzene	EPA 8260 B	A	71.9		1	0.500	µg/L		03/01/24 15:57 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:57 TCB
n-Propylbenzene	EPA 8260 B	A	98.2		1	0.500	µg/L		03/01/24 15:57 TCB
Naphthalene	EPA 8260 B	A	472		30	60.0	µg/L		03/05/24 15:57 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:57 TCB
Toluene	EPA 8260 B	A	15.9		1	0.500	µg/L		03/01/24 15:57 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:57 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 15:57 TCB
Xylenes, Total	EPA 8260 B	A	29.9		1	0.500	µg/L		03/01/24 15:57 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		93.3		1	80 - 120	%Rec		03/01/24 15:57 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		120		1	80 - 120	%Rec		03/01/24 15:57 TCB
Surr: Dibromofluoromethane	EPA 8260 B		99.8		1	80 - 120	%Rec		03/01/24 15:57 TCB
Surr: Toluene-d8	EPA 8260 B		118		1	80 - 120	%Rec		03/01/24 15:57 TCB
NORTHWEST TPH DX IN WATER									
Diesel Range (C12 - C24)	NWTPH-DX	A	36.0		20	1.05	mg/L		03/04/24 22:18 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	0.105	mg/L		03/01/24 12:41 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-18
Client Sample ID B5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 3:20:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NORTHWEST TPH DX IN WATER									
Surr: o-Terphenyl	NWTPH-DX		116		1	50 - 150	%Rec		03/01/24 12:41 TJW
NORTHWEST TPH GASOLINE IN WATER									
TPH as Gasoline	NWTPH-GX	A	25.1		10	0.500	mg/L		03/04/24 9:51 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		1110	MI	10	50 - 150	%Rec		03/04/24 9:51 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-19
Client Sample ID B4 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 4:15:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.114	mg/Kg-dry		02/29/24 16:54 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0457	mg/Kg-dry		02/29/24 16:54 TCB
Benzene	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
Naphthalene	EPA 8260 B	A	ND		1	0.114	mg/Kg-dry		02/29/24 16:54 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
Toluene	EPA 8260 B	A	ND		1	0.0457	mg/Kg-dry		02/29/24 16:54 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0229	mg/Kg-dry		02/29/24 16:54 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.457	mg/Kg-dry		02/29/24 16:54 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0915	mg/Kg-dry		02/29/24 16:54 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		87.5		1	10 - 152	%Rec		02/29/24 16:54 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		106		1	35 - 122	%Rec		02/29/24 16:54 TCB
Surr: Dibromofluoromethane	EPA 8260 B		119		1	28 - 148	%Rec		02/29/24 16:54 TCB
Surr: Toluene-d8	EPA 8260 B		126		1	41 - 144	%Rec		02/29/24 16:54 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		12		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

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TEL: (541) 770-5678 FAX: (541) 770-2901
Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-19
Client Sample ID B4 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/27/2024 4:15:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	ND		1	13.9	mg/Kg-dry		03/02/24 0:19 TJW
Lube Oil Range (C24 - C40)	NWTPH-DX	A	62.1		1	27.9	mg/Kg-dry		03/02/24 0:19 TJW
Surr: o-Terphenyl	NWTPH-DX		102		1	50 - 150	%Rec		03/02/24 0:19 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	3.91	mg/Kg-dry		03/01/24 8:04 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		115		1	50 - 150	%Rec		03/01/24 8:04 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-20
Client Sample ID B12 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 8:10:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.102	mg/Kg-dry		02/29/24 17:21 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0410	mg/Kg-dry		02/29/24 17:21 TCB
Benzene	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
Naphthalene	EPA 8260 B	A	ND		1	0.102	mg/Kg-dry		02/29/24 17:21 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
Toluene	EPA 8260 B	A	ND		1	0.0410	mg/Kg-dry		02/29/24 17:21 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0205	mg/Kg-dry		02/29/24 17:21 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.410	mg/Kg-dry		02/29/24 17:21 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0820	mg/Kg-dry		02/29/24 17:21 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		74.8		1	10 - 152	%Rec		02/29/24 17:21 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		90.0		1	35 - 122	%Rec		02/29/24 17:21 TCB
Surr: Dibromofluoromethane	EPA 8260 B		103		1	28 - 148	%Rec		02/29/24 17:21 TCB
Surr: Toluene-d8	EPA 8260 B		110		1	41 - 144	%Rec		02/29/24 17:21 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		9.3		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

NEILSON RESEARCH CORPORATION

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-20
Client Sample ID B12 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 8:10:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	ND		1	13.7	mg/Kg-dry		03/02/24 0:39 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	27.4	mg/Kg-dry		03/02/24 0:39 TJW
Surr: o-Terphenyl	NWTPH-DX		92.2		1	50 - 150	%Rec		03/02/24 0:39 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	5.07	mg/Kg-dry		03/01/24 9:29 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		111		1	50 - 150	%Rec		03/01/24 9:29 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-21
Client Sample ID B12
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 8:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
Benzene	EPA 8260 B	A	ND		1	0.350	µg/L		03/01/24 16:24 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
Methyl tert-butyl ether	EPA 8260 B	A	1.05		1	0.500	µg/L		03/01/24 16:24 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
Naphthalene	EPA 8260 B	A	ND		1	2.00	µg/L		03/01/24 16:24 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
Toluene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:24 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		90.9		1	80 - 120	%Rec		03/01/24 16:24 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		104		1	80 - 120	%Rec		03/01/24 16:24 TCB
Surr: Dibromofluoromethane	EPA 8260 B		98.9		1	80 - 120	%Rec		03/01/24 16:24 TCB
Surr: Toluene-d8	EPA 8260 B		95.6		1	80 - 120	%Rec		03/01/24 16:24 TCB
NORTHWEST TPH DX IN WATER									
TPH as Diesel	NWTPH-DX	A	ND		1	0.0500	mg/L		03/01/24 13:05 TJW
Lube Oil Range (C24 - C40)	NWTPH-DX	A	0.822		1	0.100	mg/L		03/01/24 13:05 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-21
Client Sample ID B12
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 8:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NORTHWEST TPH DX IN WATER									
Surr: o-Terphenyl	NWTPH-DX		85.1		1	50 - 150	%Rec		03/01/24 13:05 TJW
NORTHWEST TPH GASOLINE IN WATER									
Gasoline Range (C6 - C12)	NWTPH-GX	A	0.0873		1	0.0500	mg/L		02/29/24 8:29 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		95.6		1	50 - 150	%Rec		02/29/24 8:29 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-22
Client Sample ID B11 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 9:15:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst	
VOLATILE ORGANICS BY EPA 8260B										
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.117	mg/Kg-dry		02/29/24 17:48	TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0466	mg/Kg-dry		02/29/24 17:48	TCB
Benzene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
Naphthalene	EPA 8260 B	A	ND		1	0.117	mg/Kg-dry		02/29/24 17:48	TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
Toluene	EPA 8260 B	A	ND		1	0.0466	mg/Kg-dry		02/29/24 17:48	TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0233	mg/Kg-dry		02/29/24 17:48	TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.466	mg/Kg-dry		02/29/24 17:48	TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0932	mg/Kg-dry		02/29/24 17:48	TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		69.6		1	10 - 152	%Rec		02/29/24 17:48	TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		83.6		1	35 - 122	%Rec		02/29/24 17:48	TCB
Surr: Dibromofluoromethane	EPA 8260 B		91.3		1	28 - 148	%Rec		02/29/24 17:48	TCB
Surr: Toluene-d8	EPA 8260 B		97.7		1	41 - 144	%Rec		02/29/24 17:48	TCB
NWTPHDX_S										
PERCENT MOISTURE										
Percent Moisture	NWTPH		23		1	1.0	% Wt		02/28/24 16:58	EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-22
Client Sample ID B11 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 9:15:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	ND		1	15.8	mg/Kg-dry		03/04/24 18:48 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	31.5	mg/Kg-dry		03/04/24 18:48 TJW
Surr: o-Terphenyl	NWTPH-DX		79.5		1	50 - 150	%Rec		03/04/24 18:48 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	5.69	mg/Kg-dry		03/01/24 10:05 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		108		1	50 - 150	%Rec		03/01/24 10:05 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-23
Client Sample ID B11
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 9:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
Benzene	EPA 8260 B	A	ND		1	0.350	µg/L		03/01/24 16:51 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
Naphthalene	EPA 8260 B	A	ND		1	2.00	µg/L		03/01/24 16:51 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
Toluene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 16:51 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		95.0		1	80 - 120	%Rec		03/01/24 16:51 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		109		1	80 - 120	%Rec		03/01/24 16:51 TCB
Surr: Dibromofluoromethane	EPA 8260 B		97.0		1	80 - 120	%Rec		03/01/24 16:51 TCB
Surr: Toluene-d8	EPA 8260 B		96.4		1	80 - 120	%Rec		03/01/24 16:51 TCB
NORTHWEST TPH DX IN WATER									
TPH as Diesel	NWTPH-DX	A	ND		1	0.0526	mg/L		03/04/24 21:40 TJW
Lube Oil Range (C24 - C40)	NWTPH-DX	A	0.592		1	0.105	mg/L		03/04/24 21:40 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

NEILSON RESEARCH CORPORATION

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Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-23
Client Sample ID B11
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 9:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: AQUEOUS

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NORTHWEST TPH DX IN WATER									
Surr: o-Terphenyl	NWTPH-DX		76.0		1	50 - 150	%Rec		03/04/24 21:40 TJW
NORTHWEST TPH GASOLINE IN WATER									
TPH as Gasoline	NWTPH-GX	A	ND		1	0.0500	mg/L		02/29/24 8:56 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		95.4		1	50 - 150	%Rec		02/29/24 8:56 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-24
Client Sample ID B10 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 10:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.107	mg/Kg-dry		02/29/24 18:14 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0429	mg/Kg-dry		02/29/24 18:14 TCB
Benzene	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
Naphthalene	EPA 8260 B	A	ND		1	0.107	mg/Kg-dry		02/29/24 18:14 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
Toluene	EPA 8260 B	A	ND		1	0.0429	mg/Kg-dry		02/29/24 18:14 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0215	mg/Kg-dry		02/29/24 18:14 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.429	mg/Kg-dry		02/29/24 18:14 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0859	mg/Kg-dry		02/29/24 18:14 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		71.2		1	10 - 152	%Rec		02/29/24 18:14 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		86.7		1	35 - 122	%Rec		02/29/24 18:14 TCB
Surr: Dibromofluoromethane	EPA 8260 B		98.3		1	28 - 148	%Rec		02/29/24 18:14 TCB
Surr: Toluene-d8	EPA 8260 B		106		1	41 - 144	%Rec		02/29/24 18:14 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		14		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-24
Client Sample ID B10 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 10:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
Diesel Range (C12 - C24)	NWTPH-DX	A	28.6		1	14.3	mg/Kg-dry		03/04/24 19:07 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	28.6	mg/Kg-dry		03/04/24 19:07 TJW
Surr: o-Terphenyl	NWTPH-DX		91.3		1	50 - 150	%Rec		03/04/24 19:07 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	4.30	mg/Kg-dry		03/01/24 10:33 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		105		1	50 - 150	%Rec		03/01/24 10:33 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-25
Client Sample ID B9 @ 6.5-7.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 11:45:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.113	mg/Kg-dry		02/29/24 18:41 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0452	mg/Kg-dry		02/29/24 18:41 TCB
Benzene	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
Naphthalene	EPA 8260 B	A	ND		1	0.113	mg/Kg-dry		02/29/24 18:41 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
Toluene	EPA 8260 B	A	ND		1	0.0452	mg/Kg-dry		02/29/24 18:41 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0226	mg/Kg-dry		02/29/24 18:41 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.452	mg/Kg-dry		02/29/24 18:41 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0903	mg/Kg-dry		02/29/24 18:41 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		73.5		1	10 - 152	%Rec		02/29/24 18:41 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		91.1		1	35 - 122	%Rec		02/29/24 18:41 TCB
Surr: Dibromofluoromethane	EPA 8260 B		99.9		1	28 - 148	%Rec		02/29/24 18:41 TCB
Surr: Toluene-d8	EPA 8260 B		110		1	41 - 144	%Rec		02/29/24 18:41 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		13		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Website: www.nrclabs.com

Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-25
Client Sample ID B9 @ 6.5-7.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 11:45:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	1380		1	14.3	mg/Kg-dry		03/04/24 19:26 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	28.7	mg/Kg-dry		03/04/24 19:26 TJW
Surr: o-Terphenyl	NWTPH-DX		147		1	50 - 150	%Rec		03/04/24 19:26 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	5.22	mg/Kg-dry		03/01/24 11:00 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		96.3		1	50 - 150	%Rec		03/01/24 11:00 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-26
Client Sample ID B16 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 12:30:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS BY EPA 8260B									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.121	mg/Kg-dry		03/05/24 15:30 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.0484	mg/Kg-dry		03/05/24 15:30 TCB
Benzene	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
Naphthalene	EPA 8260 B	A	ND		1	0.121	mg/Kg-dry		03/05/24 15:30 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
Toluene	EPA 8260 B	A	ND		1	0.0484	mg/Kg-dry		03/05/24 15:30 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.0242	mg/Kg-dry		03/05/24 15:30 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.484	mg/Kg-dry		03/05/24 15:30 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.0969	mg/Kg-dry		03/05/24 15:30 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		114		1	10 - 152	%Rec		03/05/24 15:30 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		138	MI	1	35 - 122	%Rec		03/05/24 15:30 TCB
Surr: Dibromofluoromethane	EPA 8260 B		171	MI	1	28 - 148	%Rec		03/05/24 15:30 TCB
Surr: Toluene-d8	EPA 8260 B		175	MI	1	41 - 144	%Rec		03/05/24 15:30 TCB
NWTPHDX_S									
PERCENT MOISTURE									
Percent Moisture	NWTPH		19		1	1.0	% Wt		02/28/24 16:58 EA

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-26
Client Sample ID B16 @ 4.5-5.5
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/28/2024 12:30:00 PM
Received Date: 2/28/2024 1:00:00 PM
Matrix: SOLID

Sample Location: Grab

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
NWTPHDX_S NORTHWEST TPH DX IN SOIL									
TPH as Diesel	NWTPH-DX	A	ND		1	15.2	mg/Kg-dry		03/04/24 19:45 TJW
TPH as Lube Oil	NWTPH-DX	A	ND		1	30.3	mg/Kg-dry		03/04/24 19:45 TJW
Surr: o-Terphenyl	NWTPH-DX		75.3		1	50 - 150	%Rec		03/04/24 19:45 TJW
NORTHWEST TPH GASOLINE IN SOIL									
TPH as Gasoline	NWTPH-GX	A	ND		1	4.76	mg/Kg-dry		03/01/24 11:28 TJW
Surr: 4-Bromofluorobenzene	NWTPH-GX		98.4		1	50 - 150	%Rec		03/01/24 11:28 TJW

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	MI	Recovery outside comtrol limits due to Matrix Interference
ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits		

Original

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Analytical Report

WO#: **24021127**
Date Reported: **3/8/2024**

CLIENT: SHN Civil Engineering, Env Services
Lab ID: 24021127-27
Client Sample ID Trip Blank
Project: 224002.201 Hays Oil
Sample Address:

Collection Date: 2/26/2024 9:20:00 AM
Received Date: 2/28/2024 1:00:00 PM
Matrix: WATER

Sample Location: Lab Water

Analyses	Method	NELAP Status	Result	Qual	DF	RL	Units	MCL	Date Analyzed/Analyst
VOLATILE ORGANICS									
1,1,1-Trichloroethane (1,1,1-TCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
1,1-Dichloroethane (1,1-DCA)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
1,2,4-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
1,2-Dibromoethane (EDB)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
1,2-Dichloroethane (EDC)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
1,3,5-Trimethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
Benzene	EPA 8260 B	A	ND		1	0.350	µg/L		03/01/24 10:32 TCB
cis-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
Ethylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
Isopropylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
Methyl tert-butyl ether	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
n-Propylbenzene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
Naphthalene	EPA 8260 B	A	ND		1	2.00	µg/L		03/01/24 10:32 TCB
Tetrachloroethene (PCE)	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
Toluene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
trans-1,2-Dichloroethylene	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
Vinyl chloride	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
Xylenes, Total	EPA 8260 B	A	ND		1	0.500	µg/L		03/01/24 10:32 TCB
Surr: 1,2-Dichlorobenzene-d4	EPA 8260 B		94.5		1	80 - 120	%Rec		03/01/24 10:32 TCB
Surr: 4-Bromofluorobenzene	EPA 8260 B		104		1	80 - 120	%Rec		03/01/24 10:32 TCB
Surr: Dibromofluoromethane	EPA 8260 B		91.5		1	80 - 120	%Rec		03/01/24 10:32 TCB
Surr: Toluene-d8	EPA 8260 B		96.0		1	80 - 120	%Rec		03/01/24 10:32 TCB

QUALIFIERS

C1	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
E	Value above quantitation range
MI	Recovery outside comtrol limits due to Matrix Interference
PL	Permit Limit

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NELAP NELAP A Accredited in accordance with NELAP ORELAP 100016, OR-028

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services

Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **MB-24467**	SampType: **MBLK**	TestCode: **EPA8260_503**	Units: **mg/Kg**	Prep Date: **2/29/2024**	RunNo: **47672**
Client ID: **PBS**	Batch ID: **24467**	TestNo: **SW8260B**	**E5035**	Analysis Date: **2/29/2024**	SeqNo: **781945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	ND	0.125									
1,1-Dichloroethane (1,1-DCA)	ND	0.0250									
1,2,4-Trimethylbenzene	ND	0.0250									
1,2-Dibromoethane (EDB)	ND	0.0250									
1,2-Dichloroethane (EDC)	ND	0.0250									
1,3,5-Trimethylbenzene	ND	0.0500									
Benzene	ND	0.0250									
cis-1,2-Dichloroethylene	ND	0.0250									
Ethylbenzene	ND	0.0250									
Isopropylbenzene	ND	0.0250									
Methyl tert-butyl ether	ND	0.0250									
n-Propylbenzene	ND	0.0250									
Naphthalene	ND	0.125									
Tetrachloroethene (PCE)	ND	0.0250									
Toluene	ND	0.0500									
trans-1,2-Dichloroethylene	ND	0.0250									
Vinyl chloride	ND	0.500									
Xylenes, Total	ND	0.100									
Surr: 1,2-Dichlorobenzene-d4	1.58		2.000		78.9	52	92				
Surr: 4-Bromofluorobenzene	1.84		2.000		91.8	58	106				
Surr: Dibromofluoromethane	2.09		2.000		105	63	127				
Surr: Toluene-d8	2.25		2.000		112	67	130				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services

Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **LCS-24467** SampType: **LCS** TestCode: **EPA8260_503** Units: **mg/Kg** Prep Date: **2/29/2024** RunNo: **47672**

Client ID: **LCSS** Batch ID: **24467** TestNo: **SW8260B** **E5035** Analysis Date: **2/29/2024** SeqNo: **781946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	0.975	0.125	1.000	0	97.5	66	115				
1,1-Dichloroethane (1,1-DCA)	0.907	0.0250	1.000	0	90.7	70	114				
1,2,4-Trimethylbenzene	0.954	0.0250	1.000	0	95.4	80	109				
1,2-Dibromoethane (EDB)	0.935	0.0250	1.000	0	93.5	74	107				
1,2-Dichloroethane (EDC)	1.04	0.0250	1.000	0	104	74	115				
1,3,5-Trimethylbenzene	0.959	0.0500	1.000	0	95.9	76	111				
Benzene	1.04	0.0250	1.000	0	104	65	118				
cis-1,2-Dichloroethylene	0.945	0.0250	1.000	0	94.5	71	112				
Ethylbenzene	0.997	0.0250	1.000	0	99.7	81	107				
Isopropylbenzene	0.929	0.0250	1.000	0	92.9	76	111				
Methyl tert-butyl ether	0.929	0.0250	1.000	0	92.9	74	107				
n-Propylbenzene	1.00	0.0250	1.000	0	100	82	110				
Naphthalene	0.917	0.125	1.000	0	91.7	67	118				
Tetrachloroethene (PCE)	1.02	0.0250	1.000	0	102	74	112				
Toluene	0.979	0.0500	1.000	0	97.9	80	111				
trans-1,2-Dichloroethylene	0.919	0.0250	1.000	0	91.9	67	115				
Vinyl chloride	0.760	0.500	1.000	0	76.0	50	103				
Xylenes, Total	3.02	0.100	3.000	0	101	80	108				
Surr: 1,2-Dichlorobenzene-d4	1.55		2.000		77.6	52	92				
Surr: 4-Bromofluorobenzene	1.82		2.000		91.1	58	106				
Surr: Dibromofluoromethane	2.25		2.000		113	63	127				
Surr: Toluene-d8	2.37		2.000		118	67	130				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services

Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **24021041-01BMS** SampType: **MS** TestCode: **EPA8260_503** Units: **mg/Kg-dry** Prep Date: **2/29/2024** RunNo: **47672**

Client ID: **BatchQC** Batch ID: **24467** TestNo: **SW8260B** **E5035** Analysis Date: **2/29/2024** SeqNo: **781948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	1.06	0.147	1.176	0	89.8	53	131				
1,1-Dichloroethane (1,1-DCA)	1.04	0.0294	1.176	0	88.1	54	135				
1,2,4-Trimethylbenzene	1.13	0.0294	1.176	0	96.3	65	131				
1,2-Dibromoethane (EDB)	1.12	0.0294	1.176	0	94.9	65	126				
1,2-Dichloroethane (EDC)	1.18	0.0294	1.176	0	100	56	140				
1,3,5-Trimethylbenzene	1.15	0.0588	1.176	0	98.1	49	147				
Benzene	1.12	0.0294	1.176	0	95.5	53	138				
cis-1,2-Dichloroethylene	1.07	0.0294	1.176	0	90.6	53	137				
Ethylbenzene	1.20	0.0294	1.176	0	102	64	127				
Isopropylbenzene	1.09	0.0294	1.176	0	92.8	60	139				
Methyl tert-butyl ether	1.09	0.0294	1.176	0	92.3	62	129				
n-Propylbenzene	1.20	0.0294	1.176	0	102	48	146				
Naphthalene	1.14	0.147	1.176	0	96.7	60	152				
Tetrachloroethene (PCE)	1.19	0.0294	1.176	0	101	61	135				
Toluene	1.12	0.0588	1.176	0	95.0	59	139				
trans-1,2-Dichloroethylene	1.09	0.0294	1.176	0	92.3	52	138				
Vinyl chloride	0.835	0.588	1.176	0	71.0	33	149				
Xylenes, Total	3.60	0.118	3.529	0	102	65	129				
Surr: 1,2-Dichlorobenzene-d4	1.96		2.353		83.5	10	152				
Surr: 4-Bromofluorobenzene	2.27		2.353		96.5	35	122				
Surr: Dibromofluoromethane	2.64		2.353		112	28	148				
Surr: Toluene-d8	2.79		2.353		118	41	144				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **24021041-01BMSD** SampType: **MSD** TestCode: **EPA8260_503** Units: **mg/Kg-dry** Prep Date: **2/29/2024** RunNo: **47672**
Client ID: **BatchQC** Batch ID: **24467** TestNo: **SW8260B** **E5035** Analysis Date: **2/29/2024** SeqNo: **781949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	1.07	0.147	1.176	0	91.3	53	131	1.056	1.60	36	
1,1-Dichloroethane (1,1-DCA)	1.04	0.0294	1.176	0	88.5	54	135	1.036	0.453	36	
1,2,4-Trimethylbenzene	1.07	0.0294	1.176	0	90.7	65	131	1.133	5.99	40	
1,2-Dibromoethane (EDB)	1.07	0.0294	1.176	0	90.9	65	126	1.116	4.25	38	
1,2-Dichloroethane (EDC)	1.03	0.0294	1.176	0	88.0	56	140	1.177	12.9	35	
1,3,5-Trimethylbenzene	1.10	0.0588	1.176	0	93.3	49	147	1.153	5.02	39	
Benzene	1.05	0.0294	1.176	0	89.2	53	138	1.123	6.82	46	
cis-1,2-Dichloroethylene	1.10	0.0294	1.176	0	93.4	53	137	1.065	3.05	35	
Ethylbenzene	1.16	0.0294	1.176	0	98.5	64	127	1.199	3.49	46	
Isopropylbenzene	1.06	0.0294	1.176	0	90.4	60	139	1.092	2.62	38	
Methyl tert-butyl ether	1.05	0.0294	1.176	0	88.9	62	129	1.086	3.81	37	
n-Propylbenzene	1.18	0.0294	1.176	0	100	48	146	1.199	1.78	41	
Naphthalene	1.12	0.147	1.176	0	95.4	60	152	1.137	1.35	39	
Tetrachloroethene (PCE)	1.16	0.0294	1.176	0	98.2	61	135	1.190	3.01	40	
Toluene	1.10	0.0588	1.176	0	93.2	59	139	1.117	1.97	46	
trans-1,2-Dichloroethylene	1.07	0.0294	1.176	0	91.1	52	138	1.086	1.36	35	
Vinyl chloride	0.828	0.588	1.176	0	70.4	33	149	0.8346	0.849	50	
Xylenes, Total	3.45	0.118	3.529	0	97.7	65	129	3.595	4.24	46	
Surr: 1,2-Dichlorobenzene-d4	1.88		2.353		80.1	10	152		0	0	
Surr: 4-Bromofluorobenzene	2.18		2.353		92.9	35	122		0	0	
Surr: Dibromofluoromethane	2.63		2.353		112	28	148		0	0	
Surr: Toluene-d8	2.76		2.353		117	41	144		0	0	

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services

Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **LCS-24499**	SampType: **LCS**	TestCode: **EPA8260_503**	Units: **mg/Kg**	Prep Date: **3/5/2024**	RunNo: **47792**
Client ID: **LCSS**	Batch ID: **24499**	TestNo: **SW8260B**	**E5035**	Analysis Date: **3/5/2024**	SeqNo: **783101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	0.959	0.125	1.000	0	95.9	66	115				
1,1-Dichloroethane (1,1-DCA)	0.940	0.0250	1.000	0	94.0	70	114				
1,2,4-Trimethylbenzene	0.912	0.0250	1.000	0	91.2	80	109				
1,2-Dibromoethane (EDB)	0.954	0.0250	1.000	0	95.4	74	107				
1,2-Dichloroethane (EDC)	0.920	0.0250	1.000	0	92.0	74	115				
1,3,5-Trimethylbenzene	0.950	0.0500	1.000	0	95.0	76	111				
Benzene	0.954	0.0250	1.000	0	95.4	65	118				
cis-1,2-Dichloroethylene	0.940	0.0250	1.000	0	94.0	71	112				
Ethylbenzene	0.980	0.0250	1.000	0	98.0	81	107				
Isopropylbenzene	0.920	0.0250	1.000	0	92.0	76	111				
Methyl tert-butyl ether	0.890	0.0250	1.000	0	89.0	74	107				
n-Propylbenzene	0.969	0.0250	1.000	0	96.9	82	110				
Naphthalene	0.880	0.125	1.000	0	88.0	67	118				
Tetrachloroethene (PCE)	0.948	0.0250	1.000	0	94.8	74	112				
Toluene	1.01	0.0500	1.000	0	101	80	111				
trans-1,2-Dichloroethylene	0.967	0.0250	1.000	0	96.7	67	115				
Vinyl chloride	0.886	0.500	1.000	0	88.6	50	103				
Xylenes, Total	2.89	0.100	3.000	0	96.4	80	108				
Surr: 1,2-Dichlorobenzene-d4	1.42		2.000		71.1	52	92				
Surr: 4-Bromofluorobenzene	1.66		2.000		83.0	58	106				
Surr: Dibromofluoromethane	2.19		2.000		109	63	127				
Surr: Toluene-d8	2.37		2.000		119	67	130				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **MB-24499** SampType: **MBLK** TestCode: **EPA8260_503** Units: **mg/Kg** Prep Date: **3/5/2024** RunNo: **47792**
Client ID: **PBS** Batch ID: **24499** TestNo: **SW8260B** **E5035** Analysis Date: **3/5/2024** SeqNo: **783218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	ND	0.125									
1,1-Dichloroethane (1,1-DCA)	ND	0.0250									
1,2,4-Trimethylbenzene	ND	0.0250									
1,2-Dibromoethane (EDB)	ND	0.0250									
1,2-Dichloroethane (EDC)	ND	0.0250									
1,3,5-Trimethylbenzene	ND	0.0500									
Benzene	ND	0.0250									
cis-1,2-Dichloroethylene	ND	0.0250									
Ethylbenzene	ND	0.0250									
Isopropylbenzene	ND	0.0250									
Methyl tert-butyl ether	ND	0.0250									
n-Propylbenzene	ND	0.0250									
Naphthalene	ND	0.125									
Tetrachloroethene (PCE)	ND	0.0250									
Toluene	ND	0.0500									
trans-1,2-Dichloroethylene	ND	0.0250									
Vinyl chloride	ND	0.500									
Xylenes, Total	ND	0.100									
Surr: 1,2-Dichlorobenzene-d4	1.44		2.000		72.0	52	92				
Surr: 4-Bromofluorobenzene	1.66		2.000		83.1	58	106				
Surr: Dibromofluoromethane	2.22		2.000		111	63	127				
Surr: Toluene-d8	2.25		2.000		113	67	130				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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Website: www.nrclabs.com

QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services

Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **24021166-01BMS** SampType: **MS** TestCode: **EPA8260_503** Units: **mg/Kg-dry** Prep Date: **3/5/2024** RunNo: **47792**

Client ID: **BatchQC** Batch ID: **24499** TestNo: **SW8260B** **E5035** Analysis Date: **3/5/2024** SeqNo: **783225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	0.804	0.102	0.8152	0	98.6	53	131				
1,1-Dichloroethane (1,1-DCA)	0.780	0.0204	0.8152	0	95.7	54	135				
1,2,4-Trimethylbenzene	0.785	0.0204	0.8152	0	96.2	65	131				
1,2-Dibromoethane (EDB)	0.784	0.0204	0.8152	0	96.1	65	126				
1,2-Dichloroethane (EDC)	0.753	0.0204	0.8152	0	92.4	56	140				
1,3,5-Trimethylbenzene	0.819	0.0408	0.8152	0	100	49	147				
Benzene	0.778	0.0204	0.8152	0	95.4	53	138				
cis-1,2-Dichloroethylene	0.790	0.0204	0.8152	0	96.8	53	137				
Ethylbenzene	0.813	0.0204	0.8152	0	99.7	64	127				
Isopropylbenzene	0.785	0.0204	0.8152	0	96.2	60	139				
Methyl tert-butyl ether	0.770	0.0204	0.8152	0	94.4	62	129				
n-Propylbenzene	0.839	0.0204	0.8152	0	103	48	146				
Naphthalene	0.778	0.102	0.8152	0	95.5	60	152				
Tetrachloroethene (PCE)	0.794	0.0204	0.8152	0	97.3	61	135				
Toluene	0.818	0.0408	0.8152	0	100	59	139				
trans-1,2-Dichloroethylene	0.794	0.0204	0.8152	0	97.4	52	138				
Vinyl chloride	0.701	0.408	0.8152	0	86.0	33	149				
Xylenes, Total	2.44	0.0815	2.446	0	99.9	65	129				
Surr: 1,2-Dichlorobenzene-d4	1.24		1.630		76.3	10	152				
Surr: 4-Bromofluorobenzene	1.44		1.630		88.2	35	122				
Surr: Dibromofluoromethane	1.91		1.630		117	28	148				
Surr: Toluene-d8	2.00		1.630		123	41	144				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **24021166-01BMSD** SampType: **MSD** TestCode: **EPA8260_503** Units: **mg/Kg-dry** Prep Date: **3/5/2024** RunNo: **47792**
Client ID: **BatchQC** Batch ID: **24499** TestNo: **SW8260B** **E5035** Analysis Date: **3/5/2024** SeqNo: **783265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	0.828	0.102	0.8152	0	102	53	131	0.8038	2.95	36	
1,1-Dichloroethane (1,1-DCA)	0.802	0.0204	0.8152	0	98.4	54	135	0.7801	2.78	36	
1,2,4-Trimethylbenzene	0.806	0.0204	0.8152	0	98.9	65	131	0.7846	2.72	40	
1,2-Dibromoethane (EDB)	0.804	0.0204	0.8152	0	98.6	65	126	0.7838	2.57	38	
1,2-Dichloroethane (EDC)	0.779	0.0204	0.8152	0	95.5	56	140	0.7532	3.35	35	
1,3,5-Trimethylbenzene	0.848	0.0408	0.8152	0	104	49	147	0.8189	3.52	39	
Benzene	0.786	0.0204	0.8152	0	96.4	53	138	0.7781	0.990	46	
cis-1,2-Dichloroethylene	0.817	0.0204	0.8152	0	100	53	137	0.7895	3.40	35	
Ethylbenzene	0.821	0.0204	0.8152	0	101	64	127	0.8131	0.998	46	
Isopropylbenzene	0.807	0.0204	0.8152	0	99.0	60	139	0.7846	2.87	38	
Methyl tert-butyl ether	0.770	0.0204	0.8152	0	94.4	62	129	0.7699	0.0530	37	
n-Propylbenzene	0.867	0.0204	0.8152	0	106	48	146	0.8388	3.34	41	
Naphthalene	0.798	0.102	0.8152	0	97.9	60	152	0.7785	2.53	39	
Tetrachloroethene (PCE)	0.812	0.0204	0.8152	0	99.5	61	135	0.7936	2.23	40	
Toluene	0.832	0.0408	0.8152	0	102	59	139	0.8176	1.73	46	
trans-1,2-Dichloroethylene	0.797	0.0204	0.8152	0	97.8	52	138	0.7944	0.359	35	
Vinyl chloride	0.716	0.408	0.8152	0	87.8	33	149	0.7015	2.07	50	
Xylenes, Total	2.44	0.0815	2.446	0	99.9	65	129	2.444	0.0334	46	
Surr: 1,2-Dichlorobenzene-d4	1.29		1.630		79.0	10	152		0	0	
Surr: 4-Bromofluorobenzene	1.51		1.630		92.8	35	122		0	0	
Surr: Dibromofluoromethane	1.94		1.630		119	28	148		0	0	
Surr: Toluene-d8	1.99		1.630		122	41	144		0	0	

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **MB-24513** SampType: **MBLK** TestCode: **EPA8260_503** Units: **mg/Kg** Prep Date: **3/6/2024** RunNo: **47827**
Client ID: **PBS** Batch ID: **24513** TestNo: **SW8260B** **E5035** Analysis Date: **3/6/2024** SeqNo: **783833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	ND	0.0250									
1,3,5-Trimethylbenzene	ND	0.0500									
Benzene	ND	0.0250									
Ethylbenzene	ND	0.0250									
Isopropylbenzene	ND	0.0250									
n-Propylbenzene	ND	0.0250									
Naphthalene	ND	0.125									
Toluene	ND	0.0500									
Xylenes, Total	ND	0.100									
Surr: 1,2-Dichlorobenzene-d4	1.38		2.000		69.1	52	92				
Surr: 4-Bromofluorobenzene	1.68		2.000		83.8	58	106				
Surr: Dibromofluoromethane	2.11		2.000		106	63	127				
Surr: Toluene-d8	2.31		2.000		116	67	130				

Sample ID: **LCS-24513** SampType: **LCS** TestCode: **EPA8260_503** Units: **mg/Kg** Prep Date: **3/6/2024** RunNo: **47827**
Client ID: **LCSS** Batch ID: **24513** TestNo: **SW8260B** **E5035** Analysis Date: **3/6/2024** SeqNo: **783834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	0.886	0.0250	1.000	0	88.6	80	109				
1,3,5-Trimethylbenzene	0.956	0.0500	1.000	0	95.6	76	111				
Benzene	0.891	0.0250	1.000	0	89.1	65	118				
Ethylbenzene	0.917	0.0250	1.000	0	91.7	81	107				
Isopropylbenzene	0.890	0.0250	1.000	0	89.0	76	111				
n-Propylbenzene	0.955	0.0250	1.000	0	95.5	82	110				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **LCS-24513** SampType: **LCS** TestCode: **EPA8260_503** Units: **mg/Kg** Prep Date: **3/6/2024** RunNo: **47827**
Client ID: **LCSS** Batch ID: **24513** TestNo: **SW8260B** **E5035** Analysis Date: **3/6/2024** SeqNo: **783834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	0.858	0.125	1.000	0	85.8	67	118				
Toluene	0.934	0.0500	1.000	0	93.4	80	111				
Xylenes, Total	2.77	0.100	3.000	0	92.3	80	108				
Surr: 1,2-Dichlorobenzene-d4	1.40		2.000		69.9	52	92				
Surr: 4-Bromofluorobenzene	1.63		2.000		81.4	58	106				
Surr: Dibromofluoromethane	2.10		2.000		105	63	127				
Surr: Toluene-d8	2.22		2.000		111	67	130				

Sample ID: **24030083-01BMS** SampType: **MS** TestCode: **EPA8260_503** Units: **mg/Kg-dry** Prep Date: **3/6/2024** RunNo: **47827**
Client ID: **BatchQC** Batch ID: **24513** TestNo: **SW8260B** **E5035** Analysis Date: **3/6/2024** SeqNo: **783841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	1.06	0.0258	1.034	0	102	65	131				
1,3,5-Trimethylbenzene	1.07	0.0517	1.034	0	103	49	147				
Benzene	0.939	0.0258	1.034	0	90.8	53	138				
Ethylbenzene	1.02	0.0258	1.034	0	98.9	64	127				
Isopropylbenzene	1.06	0.0258	1.034	0	102	60	139				
n-Propylbenzene	1.15	0.0258	1.034	0	111	48	146				
Naphthalene	1.05	0.129	1.034	0	102	60	152				
Toluene	0.988	0.0517	1.034	0	95.5	59	139				
Xylenes, Total	2.93	0.103	3.102	0	94.5	65	129				
Surr: 1,2-Dichlorobenzene-d4	1.85		2.068		89.3	10	152				
Surr: 4-Bromofluorobenzene	2.25		2.068		109	35	122				
Surr: Dibromofluoromethane	2.24		2.068		108	28	148				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_5035_S**

Sample ID: **24030083-01BMS** SampType: **MS** TestCode: **EPA8260_503** Units: **mg/Kg-dry** Prep Date: **3/6/2024** RunNo: **47827**
Client ID: **BatchQC** Batch ID: **24513** TestNo: **SW8260B** **E5035** Analysis Date: **3/6/2024** SeqNo: **783841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	2.57		2.068		124	41	144				

Sample ID: **24030083-01BMSD** SampType: **MSD** TestCode: **EPA8260_503** Units: **mg/Kg-dry** Prep Date: **3/6/2024** RunNo: **47827**
Client ID: **BatchQC** Batch ID: **24513** TestNo: **SW8260B** **E5035** Analysis Date: **3/6/2024** SeqNo: **783842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	1.02	0.0258	1.034	0	98.7	65	131	1.056	3.44	40	
1,3,5-Trimethylbenzene	1.03	0.0517	1.034	0	99.1	49	147	1.067	3.95	39	
Benzene	0.952	0.0258	1.034	0	92.1	53	138	0.9394	1.37	46	
Ethylbenzene	1.05	0.0258	1.034	0	101	64	127	1.023	2.59	46	
Isopropylbenzene	1.05	0.0258	1.034	0	101	60	139	1.055	0.540	38	
n-Propylbenzene	1.13	0.0258	1.034	0	109	48	146	1.151	2.09	41	
Naphthalene	1.01	0.129	1.034	0	98.1	60	152	1.054	3.75	39	
Toluene	1.03	0.0517	1.034	0	99.6	59	139	0.9879	4.20	46	
Xylenes, Total	3.00	0.103	3.102	0	96.6	65	129	2.932	2.21	46	
Surr: 1,2-Dichlorobenzene-d4	1.68		2.068		81.3	10	152		0	0	
Surr: 4-Bromofluorobenzene	2.06		2.068		99.6	35	122		0	0	
Surr: Dibromofluoromethane	2.16		2.068		104	28	148		0	0	
Surr: Toluene-d8	2.54		2.068		123	41	144		0	0	

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_W**

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA8260_W**	Units: **µg/L**	Prep Date: **3/1/2024**	RunNo: **47706**
Client ID: **PBW**	Batch ID: **R47706**	TestNo: **SW8260B**		Analysis Date: **3/1/2024**	SeqNo: **782272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	ND	0.500									
1,1-Dichloroethane (1,1-DCA)	ND	0.500									
1,2,4-Trimethylbenzene	ND	0.500									
1,2-Dibromoethane (EDB)	ND	0.500									
1,2-Dichloroethane (EDC)	ND	0.500									
1,3,5-Trimethylbenzene	ND	0.500									
Benzene	ND	0.350									
cis-1,2-Dichloroethylene	ND	0.500									
Ethylbenzene	ND	0.500									
Isopropylbenzene	ND	0.500									
Methyl tert-butyl ether	ND	0.500									
n-Propylbenzene	ND	0.500									
Naphthalene	ND	2.00									
Tetrachloroethene (PCE)	ND	0.500									
Toluene	ND	0.500									
trans-1,2-Dichloroethylene	ND	0.500									
Vinyl chloride	ND	0.500									
Xylenes, Total	ND	0.500									
Surr: 1,2-Dichlorobenzene-d4	37.4		40.00		93.4	80	120				
Surr: 4-Bromofluorobenzene	43.8		40.00		110	80	120				
Surr: Dibromofluoromethane	37.7		40.00		94.3	80	120				
Surr: Toluene-d8	40.4		40.00		101	80	120				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_W**

Sample ID: **24021127-02BMS** SampType: **MS** TestCode: **EPA8260_W** Units: **µg/L** Prep Date: **3/1/2024** RunNo: **47706**
Client ID: **B1** Batch ID: **R47706** TestNo: **SW8260B** Analysis Date: **3/1/2024** SeqNo: **782280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	18.9	0.500	20.00	0	94.4	70	130				
1,1-Dichloroethane (1,1-DCA)	18.6	0.500	20.00	0	92.8	70	130				
1,2,4-Trimethylbenzene	19.7	0.500	20.00	0	98.5	70	130				
1,2-Dibromoethane (EDB)	18.2	0.500	20.00	0	91.1	70	130				
1,2-Dichloroethane (EDC)	18.8	0.500	20.00	0	93.8	70	130				
1,3,5-Trimethylbenzene	19.3	0.500	20.00	0	96.6	70	130				
Benzene	19.6	0.350	20.00	0	98.0	70	130				
cis-1,2-Dichloroethylene	18.8	0.500	20.00	0	94.0	70	130				
Ethylbenzene	19.7	0.500	20.00	0	98.4	70	130				
Isopropylbenzene	23.8	0.500	20.00	4.270	97.9	70	130				
Methyl tert-butyl ether	18.1	0.500	20.00	0	90.3	70	130				
n-Propylbenzene	21.9	0.500	20.00	1.450	102	70	130				
Naphthalene	17.5	2.00	20.00	0	87.6	70	130				
Tetrachloroethene (PCE)	19.1	0.500	20.00	0	95.4	70	125				
Toluene	19.3	0.500	20.00	0	96.4	70	130				
trans-1,2-Dichloroethylene	18.8	0.500	20.00	0	94.2	70	130				
Vinyl chloride	17.1	0.500	20.00	0	85.7	70	130				
Xylenes, Total	59.4	0.500	60.00	0	99.0	70	130				
Surr: 1,2-Dichlorobenzene-d4	38.7		40.00		96.7	80	120				
Surr: 4-Bromofluorobenzene	41.8		40.00		104	80	120				
Surr: Dibromofluoromethane	37.8		40.00		94.4	80	120				
Surr: Toluene-d8	40.6		40.00		102	80	120				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_W**

Sample ID: **24021127-02BMSD** SampType: **MSD** TestCode: **EPA8260_W** Units: **µg/L** Prep Date: **3/1/2024** RunNo: **47706**
Client ID: **B1** Batch ID: **R47706** TestNo: **SW8260B** Analysis Date: **3/1/2024** SeqNo: **782281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	17.5	0.500	20.00	0	87.6	70	130	18.88	7.53	20	
1,1-Dichloroethane (1,1-DCA)	16.4	0.500	20.00	0	82.0	70	130	18.57	12.5	20	
1,2,4-Trimethylbenzene	19.4	0.500	20.00	0	97.0	70	130	19.70	1.59	20	
1,2-Dibromoethane (EDB)	17.8	0.500	20.00	0	88.8	70	130	18.21	2.50	20	
1,2-Dichloroethane (EDC)	23.8	0.500	20.00	0	119	70	130	18.77	23.5	20	MI
1,3,5-Trimethylbenzene	19.5	0.500	20.00	0	97.7	70	130	19.32	1.13	20	
Benzene	21.3	0.350	20.00	0	106	70	130	19.60	8.22	20	
cis-1,2-Dichloroethylene	16.8	0.500	20.00	0	84.2	70	130	18.79	10.9	20	
Ethylbenzene	19.7	0.500	20.00	0	98.4	70	130	19.69	0.0508	20	
Isopropylbenzene	23.7	0.500	20.00	4.270	97.2	70	130	23.85	0.631	20	
Methyl tert-butyl ether	17.5	0.500	20.00	0	87.5	70	130	18.06	3.15	20	
n-Propylbenzene	21.8	0.500	20.00	1.450	102	70	130	21.94	0.457	20	
Naphthalene	18.1	2.00	20.00	0	90.3	70	130	17.51	3.09	20	
Tetrachloroethene (PCE)	19.1	0.500	20.00	0	95.4	70	125	19.07	0.0524	20	
Toluene	18.6	0.500	20.00	0	93.0	70	130	19.27	3.59	20	
trans-1,2-Dichloroethylene	17.6	0.500	20.00	0	88.0	70	130	18.83	6.81	20	
Vinyl chloride	15.3	0.500	20.00	0	76.5	70	130	17.13	11.4	20	
Xylenes, Total	59.1	0.500	60.00	0	98.5	70	130	59.37	0.439	20	
Surr: 1,2-Dichlorobenzene-d4	39.4		40.00		98.4	80	120		0	0	
Surr: 4-Bromofluorobenzene	42.5		40.00		106	80	120		0	0	
Surr: Dibromofluoromethane	36.6		40.00		91.5	80	120		0	0	
Surr: Toluene-d8	38.5		40.00		96.4	80	120		0	0	

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_W**

Sample ID: **LCS 20 - 15039** SampType: **LCS** TestCode: **EPA8260_W** Units: **µg/L** Prep Date: **3/1/2024** RunNo: **47706**
Client ID: **LCSW** Batch ID: **R47706** TestNo: **SW8260B** Analysis Date: **3/1/2024** SeqNo: **782309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane (1,1,1-TCA)	17.2	0.500	20.00	0	86.0	70	130				
1,1-Dichloroethane (1,1-DCA)	19.0	0.500	20.00	0	95.1	70	130				
1,2,4-Trimethylbenzene	19.3	0.500	20.00	0	96.4	70	130				
1,2-Dibromoethane (EDB)	17.7	0.500	20.00	0	88.3	70	130				
1,2-Dichloroethane (EDC)	17.4	0.500	20.00	0	87.0	70	130				
1,3,5-Trimethylbenzene	19.7	0.500	20.00	0	98.4	70	130				
Benzene	17.8	0.350	20.00	0	88.8	70	130				
cis-1,2-Dichloroethylene	18.8	0.500	20.00	0	93.8	70	130				
Ethylbenzene	19.6	0.500	20.00	0	98.2	70	130				
Isopropylbenzene	19.2	0.500	20.00	0	96.0	70	130				
Methyl tert-butyl ether	19.1	0.500	20.00	0	95.6	70	130				
n-Propylbenzene	20.3	0.500	20.00	0	102	70	130				
Naphthalene	17.2	2.00	20.00	0	86.0	70	130				
Tetrachloroethene (PCE)	20.0	0.500	20.00	0	99.9	70	125				
Toluene	18.6	0.500	20.00	0	92.8	70	130				
trans-1,2-Dichloroethylene	19.0	0.500	20.00	0	94.8	70	130				
Vinyl chloride	17.7	0.500	20.00	0	88.3	70	130				
Xylenes, Total	58.8	0.500	60.00	0	98.0	70	130				
Surr: 1,2-Dichlorobenzene-d4	38.9		40.00		97.2	80	120				
Surr: 4-Bromofluorobenzene	43.6		40.00		109	80	120				
Surr: Dibromofluoromethane	36.7		40.00		91.8	80	120				
Surr: Toluene-d8	39.9		40.00		99.7	80	120				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

Original

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Website: www.nrclabs.com

QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil **TestCode:** **EPA8260_W**

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA8260_W** Units: **µg/L** Prep Date: **3/5/2024** RunNo: **47793**
Client ID: **PBW** Batch ID: **R47793** TestNo: **SW8260B** Analysis Date: **3/5/2024** SeqNo: **783427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.350									
Naphthalene	ND	2.00									
Surr: 1,2-Dichlorobenzene-d4	37.1		40.00		92.6	80	120				
Surr: 4-Bromofluorobenzene	37.3		40.00		93.2	80	120				
Surr: Dibromofluoromethane	36.3		40.00		90.7	80	120				
Surr: Toluene-d8	34.7		40.00		86.7	80	120				

Sample ID: **24030001-03BMS** SampType: **MS** TestCode: **EPA8260_W** Units: **µg/L** Prep Date: **3/5/2024** RunNo: **47793**
Client ID: **BatchQC** Batch ID: **R47793** TestNo: **SW8260B** Analysis Date: **3/5/2024** SeqNo: **783433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.2	0.350	20.00	0	101	70	130				
Naphthalene	18.9	2.00	20.00	0	94.4	70	130				
Surr: 1,2-Dichlorobenzene-d4	38.1		40.00		95.3	80	120				
Surr: 4-Bromofluorobenzene	39.1		40.00		97.9	80	120				
Surr: Dibromofluoromethane	38.7		40.00		96.8	80	120				
Surr: Toluene-d8	39.0		40.00		97.6	80	120				

Sample ID: **24030001-03BMSD** SampType: **MSD** TestCode: **EPA8260_W** Units: **µg/L** Prep Date: **3/5/2024** RunNo: **47793**
Client ID: **BatchQC** Batch ID: **R47793** TestNo: **SW8260B** Analysis Date: **3/5/2024** SeqNo: **783434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.3	0.350	20.00	0	102	70	130	20.21	0.592	20	

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **EPA8260_W**

Sample ID: **24030001-03BMSD** SampType: **MSD** TestCode: **EPA8260_W** Units: **µg/L** Prep Date: **3/5/2024** RunNo: **47793**
Client ID: **BatchQC** Batch ID: **R47793** TestNo: **SW8260B** Analysis Date: **3/5/2024** SeqNo: **783434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	18.8	2.00	20.00	0	93.8	70	130	18.89	0.691	20	
Surr: 1,2-Dichlorobenzene-d4	38.5		40.00		96.3	80	120		0	0	
Surr: 4-Bromofluorobenzene	39.9		40.00		99.8	80	120		0	0	
Surr: Dibromofluoromethane	39.6		40.00		99.1	80	120		0	0	
Surr: Toluene-d8	39.9		40.00		99.7	80	120		0	0	

Sample ID: **LCS - 15040 / 1** SampType: **LCS** TestCode: **EPA8260_W** Units: **µg/L** Prep Date: **3/5/2024** RunNo: **47793**
Client ID: **LCSW** Batch ID: **R47793** TestNo: **SW8260B** Analysis Date: **3/5/2024** SeqNo: **783722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.9	0.350	20.00	0	104	70	130				
Naphthalene	20.0	2.00	20.00	0	99.8	70	130				
Surr: 1,2-Dichlorobenzene-d4	39.7		40.00		99.3	80	120				
Surr: 4-Bromofluorobenzene	40.9		40.00		102	80	120				
Surr: Dibromofluoromethane	40.1		40.00		100	80	120				
Surr: Toluene-d8	40.6		40.00		101	80	120				

Sample ID: **LCS - 15040 / 1** SampType: **LCS** TestCode: **EPA8260_W** Units: **µg/L** Prep Date: **3/5/2024** RunNo: **47793**
Client ID: **LCSW** Batch ID: **R47793** TestNo: **SW8260B** Analysis Date: **3/5/2024** SeqNo: **783723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.9	0.350	20.00	0	104	70	130				
Naphthalene	20.0	2.00	20.00	0	99.8	70	130				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services

Project: 224002.201 Hays Oil

TestCode: **EPA8260_W**

Sample ID: **LCS - 15040 / 1**	SampType: **LCS**	TestCode: **EPA8260_W**	Units: **µg/L**	Prep Date: **3/5/2024**	RunNo: **47793**
Client ID: **LCSW**	Batch ID: **R47793**	TestNo: **SW8260B**		Analysis Date: **3/5/2024**	SeqNo: **783723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1,2-Dichlorobenzene-d4	39.7		40.00		99.3	80	120				
Surr: 4-Bromofluorobenzene	40.9		40.00		102	80	120				
Surr: Dibromofluoromethane	40.1		40.00		100	80	120				
Surr: Toluene-d8	40.6		40.00		101	80	120				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **NWTPHDX_S**

Sample ID: **MB-24477** SampType: **MBLK** TestCode: **NWTPHDX_S** Units: **mg/Kg** Prep Date: **3/1/2024** RunNo: **47732**
Client ID: **PBS** Batch ID: **24477** TestNo: **NWTPHDX** **NWTPHDX** Analysis Date: **3/1/2024** SeqNo: **782140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	ND	12.5									
TPH as Lube Oil	ND	25.0									
Surr: o-Terphenyl	4.48		5.000		89.6	50	150				

Sample ID: **LCS-24477** SampType: **LCS** TestCode: **NWTPHDX_S** Units: **mg/Kg** Prep Date: **3/1/2024** RunNo: **47732**
Client ID: **LCSS** Batch ID: **24477** TestNo: **NWTPHDX** **NWTPHDX** Analysis Date: **3/1/2024** SeqNo: **782141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	223	12.5	250.0	0	89.1	50	150				
Surr: o-Terphenyl	6.79		5.000		136	50	150				

Sample ID: **24020941-16AMS** SampType: **MS** TestCode: **NWTPHDX_S** Units: **mg/Kg-dry** Prep Date: **3/1/2024** RunNo: **47732**
Client ID: **BatchQC** Batch ID: **24477** TestNo: **NWTPHDX** **NWTPHDX** Analysis Date: **3/1/2024** SeqNo: **782144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	267	15.0	300.5	0	88.8	50	150				
Surr: o-Terphenyl	8.19		6.009		136	50	150				

Sample ID: **24020941-16AMSD** SampType: **MSD** TestCode: **NWTPHDX_S** Units: **mg/Kg-dry** Prep Date: **3/1/2024** RunNo: **47732**
Client ID: **BatchQC** Batch ID: **24477** TestNo: **NWTPHDX** **NWTPHDX** Analysis Date: **3/1/2024** SeqNo: **782145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **NWTPHDX_S**

Sample ID: **24020941-16AMSD** SampType: **MSD** TestCode: **NWTPHDX_S** Units: **mg/Kg-dry** Prep Date: **3/1/2024** RunNo: **47732**
Client ID: **BatchQC** Batch ID: **24477** TestNo: **NWTPHDX** **NWTPHDX** Analysis Date: **3/1/2024** SeqNo: **782145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	255	14.8	296.8	0	86.0	50	150	266.9	4.41	25	
Surr: o-Terphenyl	7.75		5.937		130	50	150		0	0	

Sample ID: **MB-24489** SampType: **MBLK** TestCode: **NWTPHDX_S** Units: **mg/Kg** Prep Date: **3/4/2024** RunNo: **47801**
Client ID: **PBS** Batch ID: **24489** TestNo: **NWTPHDX** **NWTPHDX** Analysis Date: **3/4/2024** SeqNo: **783246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	ND	12.5									
TPH as Lube Oil	ND	25.0									
Surr: o-Terphenyl	4.12		5.000		82.3	50	150				

Sample ID: **LCS-24489** SampType: **LCS** TestCode: **NWTPHDX_S** Units: **mg/Kg** Prep Date: **3/4/2024** RunNo: **47801**
Client ID: **LCSS** Batch ID: **24489** TestNo: **NWTPHDX** **NWTPHDX** Analysis Date: **3/4/2024** SeqNo: **783247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	214	12.5	250.0	0	85.7	50	150				
Surr: o-Terphenyl	5.52		5.000		110	50	150				

Sample ID: **24021166-02AMS** SampType: **MS** TestCode: **NWTPHDX_S** Units: **mg/Kg-dry** Prep Date: **3/4/2024** RunNo: **47801**
Client ID: **BatchQC** Batch ID: **24489** TestNo: **NWTPHDX** **NWTPHDX** Analysis Date: **3/4/2024** SeqNo: **783249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services

Project: 224002.201 Hays Oil

TestCode: **NWTPHDX_S**

Sample ID: **24021166-02AMS** SampType: **MS** TestCode: **NWTPHDX_S** Units: **mg/Kg-dry** Prep Date: **3/4/2024** RunNo: **47801**

Client ID: **BatchQC** Batch ID: **24489** TestNo: **NWTPHDX** **NWTPHDX** Analysis Date: **3/4/2024** SeqNo: **783249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	227	14.5	290.1	0	78.3	50	150				
Surr: o-Terphenyl	5.60		5.801		96.5	50	150				

Sample ID: **24021166-02AMSD** SampType: **MSD** TestCode: **NWTPHDX_S** Units: **mg/Kg-dry** Prep Date: **3/4/2024** RunNo: **47801**

Client ID: **BatchQC** Batch ID: **24489** TestNo: **NWTPHDX** **NWTPHDX** Analysis Date: **3/4/2024** SeqNo: **783250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	222	14.6	292.0	0	76.0	50	150	227.2	2.27	25	
Surr: o-Terphenyl	5.33		5.840		91.3	50	150		0	0	

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **NWTPHDX_W**

Sample ID: **MB-24468**	SampType: **MBLK**	TestCode: **NWTPHDX_W**	Units: **mg/L**	Prep Date: **2/29/2024**	RunNo: **47804**
Client ID: **PBW**	Batch ID: **24468**	TestNo: **NWTPHDX**	**NWHCID**	Analysis Date: **3/1/2024**	SeqNo: **783267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	ND	0.0500									
TPH as Lube Oil	ND	0.100									
Surr: o-Terphenyl	0.0155		0.02000		77.3	50	150				

Sample ID: **LCS-24468**	SampType: **LCS**	TestCode: **NWTPHDX_W**	Units: **mg/L**	Prep Date: **2/29/2024**	RunNo: **47804**
Client ID: **LCSW**	Batch ID: **24468**	TestNo: **NWTPHDX**	**NWHCID**	Analysis Date: **3/1/2024**	SeqNo: **783268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	0.830	0.0500	1.000	0	83.0	50	150				
Surr: o-Terphenyl	0.0235		0.02000		118	50	150				

Sample ID: **24021127-02AMS**	SampType: **MS**	TestCode: **NWTPHDX_W**	Units: **mg/L**	Prep Date: **2/29/2024**	RunNo: **47804**
Client ID: **B1**	Batch ID: **24468**	TestNo: **NWTPHDX**	**NWHCID**	Analysis Date: **3/1/2024**	SeqNo: **783270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	0.683	0.0500	1.000	0	68.3	50	150				
Surr: o-Terphenyl	0.00718		0.02000		35.9	50	150				MI

Sample ID: **24021127-02AMSD**	SampType: **MSD**	TestCode: **NWTPHDX_W**	Units: **mg/L**	Prep Date: **2/29/2024**	RunNo: **47804**
Client ID: **B1**	Batch ID: **24468**	TestNo: **NWTPHDX**	**NWHCID**	Analysis Date: **3/1/2024**	SeqNo: **783271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **NWTPHDX_W**

Sample ID: **24021127-02AMSD** SampType: **MSD** TestCode: **NWTPHDX_W** Units: **mg/L** Prep Date: **2/29/2024** RunNo: **47804**
Client ID: **B1** Batch ID: **24468** TestNo: **NWTPHDX** **NWHCID** Analysis Date: **3/1/2024** SeqNo: **783271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	0.668	0.0500	1.000	0	66.8	50	150	0.6826	2.19	20	
Surr: o-Terphenyl	0.00676		0.02000		33.8	50	150		0	20	MI

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **NWTPHGX_5035_S**

Sample ID: **MB-24476** SampType: **MBLK** TestCode: **NWTPHGX_5** Units: **mg/Kg** Prep Date: **3/1/2024** RunNo: **47738**
Client ID: **PBS** Batch ID: **24476** TestNo: **NWTPHGX** **EPA 5035** Analysis Date: **3/1/2024** SeqNo: **782189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	ND	5.00									
Surr: 4-Bromofluorobenzene	2.15		2.000		107	50	150				

Sample ID: **LCS-24476** SampType: **LCS** TestCode: **NWTPHGX_5** Units: **mg/Kg** Prep Date: **3/1/2024** RunNo: **47738**
Client ID: **LCSS** Batch ID: **24476** TestNo: **NWTPHGX** **EPA 5035** Analysis Date: **3/1/2024** SeqNo: **782191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	23.6	5.00	25.00	0	94.6	70	130				
Surr: 4-Bromofluorobenzene	2.11		2.000		106	50	150				

Sample ID: **24021127-19BMS** SampType: **MS** TestCode: **NWTPHGX_5** Units: **mg/Kg-dry** Prep Date: **3/1/2024** RunNo: **47738**
Client ID: **B4 @ 4.5-5.5** Batch ID: **24476** TestNo: **NWTPHGX** **EPA 5035** Analysis Date: **3/1/2024** SeqNo: **782193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	20.0	3.91	19.53	0	103	70	130				
Surr: 4-Bromofluorobenzene	1.75		1.562		112	50	150				

Sample ID: **24021127-19BMSD** SampType: **MSD** TestCode: **NWTPHGX_5** Units: **mg/Kg-dry** Prep Date: **3/1/2024** RunNo: **47738**
Client ID: **B4 @ 4.5-5.5** Batch ID: **24476** TestNo: **NWTPHGX** **EPA 5035** Analysis Date: **3/1/2024** SeqNo: **782194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	23.4	4.56	22.81	0	103	70	130	20.02	15.6	25	

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

Original

NEILSON RESEARCH CORPORATION

Neilson Research Corporation
245 S Grape St
Medford, OR 97501
TEL: (541) 770-5678 FAX: (541) 770-2901
Website: www.nrclabs.com

QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **NWTPHGX_5035_S**

Sample ID: **24021127-19BMSD** SampType: **MSD** TestCode: **NWTPHGX_5** Units: **mg/Kg-dry** Prep Date: **3/1/2024** RunNo: **47738**
Client ID: **B4 @ 4.5-5.5** Batch ID: **24476** TestNo: **NWTPHGX** **EPA 5035** Analysis Date: **3/1/2024** SeqNo: **782194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	2.00		1.825		110	50	150		0	0	

Sample ID: **MB-24469** SampType: **MBLK** TestCode: **NWTPHGX_5** Units: **mg/Kg** Prep Date: **2/29/2024** RunNo: **47773**
Client ID: **PBS** Batch ID: **24469** TestNo: **NWTPHGX** **EPA 5035** Analysis Date: **2/29/2024** SeqNo: **782768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	ND	5.00									
Surr: 4-Bromofluorobenzene	2.30		2.000		115	50	150				

Sample ID: **LCS-24469** SampType: **LCS** TestCode: **NWTPHGX_5** Units: **mg/Kg** Prep Date: **2/29/2024** RunNo: **47773**
Client ID: **LCSS** Batch ID: **24469** TestNo: **NWTPHGX** **EPA 5035** Analysis Date: **2/29/2024** SeqNo: **782769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	24.5	5.00	25.00	0	97.9	70	130				
Surr: 4-Bromofluorobenzene	1.96		2.000		98.0	50	150				

Sample ID: **24021127-01BMS** SampType: **MS** TestCode: **NWTPHGX_5** Units: **mg/Kg-dry** Prep Date: **2/29/2024** RunNo: **47773**
Client ID: **B1 @ 7.5-8.5** Batch ID: **24469** TestNo: **NWTPHGX** **EPA 5035** Analysis Date: **2/29/2024** SeqNo: **782771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	22.2	4.68	23.40	0	94.8	70	130				
Surr: 4-Bromofluorobenzene	1.77		1.872		94.8	50	150				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

Original

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **NWTPHGX_5035_S**

Sample ID:	**24021127-01BMS**	SampType:	**MS**	TestCode:	**NWTPHGX_5**	Units:	**mg/Kg-dry**	Prep Date:	**2/29/2024**	RunNo:	**47773**
Client ID:	**B1 @ 7.5-8.5**	Batch ID:	**24469**	TestNo:	**NWTPHGX**	**EPA 5035**		Analysis Date:	**2/29/2024**	SeqNo:	**782771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID:	**24021127-01BMSD**	SampType:	**MSD**	TestCode:	**NWTPHGX_5**	Units:	**mg/Kg-dry**	Prep Date:	**2/29/2024**	RunNo:	**47773**
Client ID:	**B1 @ 7.5-8.5**	Batch ID:	**24469**	TestNo:	**NWTPHGX**	**EPA 5035**		Analysis Date:	**2/29/2024**	SeqNo:	**782772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	25.6	4.68	23.40	0	109	70	130	22.19	14.2	25	
Surr: 4-Bromofluorobenzene	1.78		1.872		94.9	50	150		0	0	

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**
08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **NWTPHGX_W**

Sample ID: **LCSD**	SampType: **LCSD**	TestCode: **NWTPHGX_**	Units: **mg/L**	Prep Date: **2/28/2024**	RunNo: **47728**
Client ID: **LCSS02**	Batch ID: **R47728**	TestNo: **NWTPHGX**		Analysis Date: **2/28/2024**	SeqNo: **782079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	0.519	0.0500	0.5000	0	104	70	130	0.5317	2.51	20	
Surr: 4-Bromofluorobenzene	0.0381		0.04000		95.4	50	150		0	0	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **NWTPHGX_**	Units: **mg/L**	Prep Date: **2/28/2024**	RunNo: **47728**
Client ID: **PBW**	Batch ID: **R47728**	TestNo: **NWTPHGX**		Analysis Date: **2/28/2024**	SeqNo: **782080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	ND	0.0500									
Surr: 4-Bromofluorobenzene	0.0368		0.04000		92.0	50	150				

Sample ID: **24020941-18BMS**	SampType: **MS**	TestCode: **NWTPHGX_**	Units: **mg/L**	Prep Date: **2/28/2024**	RunNo: **47728**
Client ID: **BatchQC**	Batch ID: **R47728**	TestNo: **NWTPHGX**		Analysis Date: **2/28/2024**	SeqNo: **782082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	0.525	0.0500	0.5000	0	105	70	130				
Surr: 4-Bromofluorobenzene	0.0400		0.04000		100	50	150				

Sample ID: **LCS**	SampType: **LCS**	TestCode: **NWTPHGX_**	Units: **mg/L**	Prep Date: **2/28/2024**	RunNo: **47728**
Client ID: **LCSW**	Batch ID: **R47728**	TestNo: **NWTPHGX**		Analysis Date: **2/28/2024**	SeqNo: **782103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	0.532	0.0500	0.5000	0	106	70	130				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **NWTPHGX_W**

Sample ID: **LCS**	SampType: **LCS**	TestCode: **NWTPHGX_**	Units: **mg/L**	Prep Date: **2/28/2024**	RunNo: **47728**
Client ID: **LCSW**	Batch ID: **R47728**	TestNo: **NWTPHGX**		Analysis Date: **2/28/2024**	SeqNo: **782103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.0395		0.04000		98.7	50	150				

Sample ID: **LCSD**	SampType: **LCSD**	TestCode: **NWTPHGX_**	Units: **mg/L**	Prep Date: **3/4/2024**	RunNo: **47768**
Client ID: **LCSS02**	Batch ID: **R47768**	TestNo: **NWTPHGX**		Analysis Date: **3/4/2024**	SeqNo: **782717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	0.511	0.0500	0.5000	0	102	70	130	0.5264	2.99	20	
Surr: 4-Bromofluorobenzene	0.0364		0.04000		90.9	50	150		0	0	

Sample ID: **MB**	SampType: **MBLK**	TestCode: **NWTPHGX_**	Units: **mg/L**	Prep Date: **3/4/2024**	RunNo: **47768**
Client ID: **PBW**	Batch ID: **R47768**	TestNo: **NWTPHGX**		Analysis Date: **3/4/2024**	SeqNo: **782718**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	ND	0.0500									
Surr: 4-Bromofluorobenzene	0.0376		0.04000		94.0	50	150				

Sample ID: **24021166-05BMS**	SampType: **MS**	TestCode: **NWTPHGX_**	Units: **mg/L**	Prep Date: **3/4/2024**	RunNo: **47768**
Client ID: **BatchQC**	Batch ID: **R47768**	TestNo: **NWTPHGX**		Analysis Date: **3/4/2024**	SeqNo: **782723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	0.469	0.0500	0.5000	0	93.9	70	130				
Surr: 4-Bromofluorobenzene	0.0397		0.04000		99.2	50	150				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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QC SUMMARY REPORT

WO#: **24021127**

08-Mar-24

Client: SHN Civil Engineering, Env Services
Project: 224002.201 Hays Oil

TestCode: **NWTPHGX_W**

Sample ID:	**24021166-05BMS**	SampType:	**MS**	TestCode:	**NWTPHGX_**	Units:	**mg/L**	Prep Date:	**3/4/2024**	RunNo:	**47768**
Client ID:	**BatchQC**	Batch ID:	**R47768**	TestNo:	**NWTPHGX**			Analysis Date:	**3/4/2024**	SeqNo:	**782723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID:	**LCS**	SampType:	**LCS**	TestCode:	**NWTPHGX_**	Units:	**mg/L**	Prep Date:	**3/4/2024**	RunNo:	**47768**
Client ID:	**LCSW**	Batch ID:	**R47768**	TestNo:	**NWTPHGX**			Analysis Date:	**3/4/2024**	SeqNo:	**783705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	0.526	0.0500	0.5000	0	105	70	130				
Surr: 4-Bromofluorobenzene	0.0400		0.04000		99.9	50	150				

Qualifiers:

C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceede
MI	Recovery outside comtrol limits due to Matrix Interference	ND	Not Detected at the Reporting Limit	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		

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TEL: (541) 770-5678 FAX: (541) 770-2901
Website: www.nrclabs.com

Sample Log-In Check List

Client Name: **SHNCONSULTING_RED** Work Order Number: **24021127** RcptNo: **1**

Logged by:	**Tamra Schmedemann**	**2/28/2024 1:00:00 PM**	Tamra Schmedemann
Completed By:	**Tamra Schmedemann**	**3/7/2024 8:31:29 AM**	Tamra Schmedemann
Reviewed By:	**Tamra Schmedemann**	**3/7/2024 8:31:32 AM**	Tamra Schmedemann

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
	No. Seal Date: Signed By:			
5.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
6.	Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
7.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
8.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
9.	Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
10.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
11.	Is the headspace in the VOA vials less than 1/4 inch or 6 mm?	Yes ☑	No ☐	No VOA Vials ☐
12.	Were any sample containers received broken?	Yes ☐	No ☑	
13.	Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
14.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
15.	Is it clear what analyses were requested?	Yes ☑	No ☐	
16.	Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Cooler Information

Cooler No	Temp ºC	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.2	Good				DE
2	3.6	Good				DE
3	4.2	Good				DE

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Website: www.nrclabs.com

Sample Log-In Check List

Client Name: **SHNCONSULTING_RED** Work Order Number: **24021127** RcptNo: **1**

4	3.6	Good				DE
5	4.2	Good				DE
6	3.6	Good				DE

NEILSON RESEARCH CORPORATION

Chain of Custody Record

This Chain of Custody is a LEGAL DOCUMENT and must be filled out accurately.

Section A Required Client Information

Company: SHN	
Address: 803 Main Street, Suite 401	
Klamath Falls, OR 97601	
Email: rhess@shn-engr.com	
Phone: 530-221-5424 Fax: 530-221-0135	
Collected By (Print):	
Collected By (Sign):	
Email Report ☑ Mail Report ☐ Fax Report ☐	

Section B Required Project Information

Project Name: Hays Oil
Project Number: 224002.201
Report To: Robert Hess
Copy To:

Section C Invoice Information

Attention: Accounts Payable
Company Name: SHN
Address: 812 W Wabash Ave
Eureka, CA 95501
P.O. # 224002.202

Section D Rush Status (Subject to Scheduling)

- ☑ Standard: 10 Business Days
- ☐ Priority: 5 Business Days (List × 1.50)
- ☐ Express: 3 Business Days (List × 1.75)
- ☐ Rush: 2 Business Days (List × 2.00)
- ☐ Rush: 1 Business Day (List × 2.50)
- ☐ Rush: Same Day (List × 3.00)

Authorized ☐ Yes ☐ No

Section E Sample Information

Sample ID	Comp/Grab	Matrix*	Date Collected	Time Collected	No. of Containers	NWTPHDX	NWTPHGX	8260 RBDM							Remarks / Field Data	NRC Sample # (Lab Use Only)
B1 @ 7.5-8.5	Grab	S	2/26/24	13:40	5	x	x	x								01
B1	Grab	GW	2/26/24	13:45	3	x	x	x								02
B2 @ 7.5-8.5	Grab	S	2/26/24	14:40	5	x	x	x								03
B2	Grab	GW	2/26/24	14:50	3	x	x	x								04
B3 @ 7.5-8.5	Grab	S	2/26/24	15:40	5	x	x	x								05
B3	Grab	GW	2/26/24	15:55	3	x	x	x								06
B15 @ 4.5-5.5	Grab	S	2/27/24	08:25	5	x	x	x								07
B14 @ 4.5-5.5	Grab	S	2/27/24	09:05	5	x	x	x								08
B15	Grab	GW	2/27/24	09:20	7	x	x	x								09
B13 @ 4.5-5.5	Grab	S	2/27/24	10:20	5	x	x	x								10

NRC Workorder # (Lab Use Only): 24021127

IR m

*Matrix: **DW** - Drinking Water **WW** - Wastewater **W** - Water **S** - Soil/Solid **SL** - Sludge **O** - Oil **WP** - Wipe **OT** - Other

Section F Relinquish/Receive

	Sign	Print	Date	Time
Relinquished By:	Rogan Klarkken	R. klarkken	2/28/24	13:00
Received By:				
Relinquished By:				
Received By:				
Relinquished By:				
Received By Laboratory:	Tama Schmedeman	Tama Schmedeman	2/28/24	13:00

Section G Lab Use Only

Temp: 4.2, 3.1
≤6°C: X Yes ___ No
Received on Ice: ___ Yes ___ No
Number of Bottles Received:
pH Checked: N/A
COC Seals Intact: ___ Yes ___ No X NA
Field Blank Included: ___ Yes X No
Received Via ___ UPS ___ FedEX ___ Other X Hand
Payment: X Invoice ___ Cash ___ VISA, M/C ___ Check # ___ Amount ___

NEILSON RESEARCH CORPORATION

Chain of Custody Record

This Chain of Custody is a LEGAL DOCUMENT and must be filled out accurately.

Section A Required Client Information

Company: SHN	
Address: 803 Main Street, Suite 401	
Klamath Falls, OR 97601	
Email: rhess@shn-engr.com	
Phone: 530-221-5424 Fax: 530-221-0135	
Collected By (Print):	
Collected By (Sign):	
Email Report ☑ Mail Report ☐ Fax Report ☐	

Section B Required Project Information

Project Name: Hays Oil
Project Number: 224002.201
Report To: Robert Hess
Copy To:

Section C Invoice Information

Attention: Accounts Payable
Company Name: SHN
Address: 812 W Wabash Ave
Eureka, CA 95501
P.O. # 224002.201

Section D Rush Status (Subject to Scheduling)

- ☑ Standard: 10 Business Days
- ☐ Priority: 5 Business Days (List × 1.50)
- ☐ Express: 3 Business Days (List × 1.75)
- ☐ Rush: 2 Business Days (List × 2.00)
- ☐ Rush: 1 Business Day (List × 2.50)
- ☐ Rush: Same Day (List × 3.00)

Authorized ☐ Yes ☐ No

Section E Sample Information

NRC Workorder # (Lab Use Only): 24021127

Sample ID	Comp/Grab	Matrix*	Date Collected	Time Collected	No. of Containers	NWTPHDX	NWTPHGX	8260 RBDM	Remarks / Field Data	NRC Sample # (Lab Use Only)
B13	Grab	GW	2/27/24	10:40	9	x	x	x		11
B8 @ 4.5-5.5	Grab	S	2/27/24	11:45	5	x	x	x		12
B8	Grab	GW	2/27/24	12:00	9	x	x	x		13
B7 @ 14-15 13:27	Grab	S	2/27/24	~~14:27~~	5	x	x	x		14
B7	Grab	GW	2/27/24	13:40	9	x	x	x		15
B6 @ 3-4	Grab	S	2/27/24	14:30	5	x	x	x		16
B5 @ 3-4	Grab	S	2/27/24	15:00	5	x	x	x		17
B5	Grab	GW	2/27/24	15:20	9	x	x	x		18
B4 @ 4.5-5.5	Grab	S	2/27/24	16:15	5	x	x	x		19
B12 @ 4.5-5.5	Grab	S	2/28/24	0810	5	x	x	x		20

*Matrix: **DW** - Drinking Water **WW** - Wastewater **W** - Water **S** - Soil/Solid **SL** - Sludge **O** - Oil **WP** - Wipe **OT** - Other

IRM

Section F Relinquish/Receive

	Sign	Print	Date	Time
Relinquished By:	Roger Klokken	Roger Klokken	2/28/24	13:00
Received By:				
Relinquished By:				
Received By:				
Relinquished By:				
Received By Laboratory:	Tami Schmedeman	Tamra Schmedeman	2/28/24	13:00

Section G Lab Use Only

Temp: 4.2 5.6
≤6°C: ☑ Yes ☐ No
Received on Ice: ☐ Yes ☐ No
Number of Bottles Received:
pH Checked: N/A
COC Seals Intact: ☐ Yes ☐ No ☒ NA
Field Blank Included: ☐ Yes ☑ No
Received Via ☐ UPS ☐ FedEX ☐ Other ☑ Hand
Payment: ☑ Invoice ☐ Cash ☐ VISA, M/C ☐ Check # _____ Amount _____

Effective 6/19/2020

NEILSON RESEARCH CORPORATION

Chain of Custody Record

This Chain of Custody is a LEGAL DOCUMENT and must be filled out accurately.

Section A
Required Client Information

Company: SHN	
Address: 803 Main Street, Suite 401	
Klamath Falls, OR 97601	
Email: rhess@shn-engr.com	
Phone: 530-221-5424 Fax: 530-221-0135	
Collected By (Print):	
Collected By (Sign):	
Email Report ☑ Mail Report ☐ Fax Report ☐	

Section B
Required Project Information

Project Name: Hays Oil
Project Number: 224002.201
Report To: Robert Hess
Copy To:

Section C
Invoice Information

Attention: Accounts Payable
Company Name: SHN
Address: 812 W Wabash Ave
Eureka, CA 95501
P.O. # 224002.201

Section D
Rush Status (Subject to Scheduling)

- ☑ Standard: 10 Business Days
- ☐ Priority: 5 Business Days (List × 1.50)
- ☐ Express: 3 Business Days (List × 1.75)
- ☐ Rush: 2 Business Days (List × 2.00)
- ☐ Rush: 1 Business Day (List × 2.50)
- ☐ Rush: Same Day (List × 3.00)

Authorized ☐ Yes ☐ No

Section E
Sample Information

Analysis Requested

Sample ID	Comp/Grab	Matrix*	Date Collected	Time Collected	No. of Containers	NWTPHDX	NWTPHGX	8260 RBDM								Remarks / Field Data	NRC Sample # (Lab Use Only)
B12	Grab	GW	2/28/24	0820	x	x	x	x									21
B11 @ 4.5-5.5	Grab	S	2/28/24	0915	x	x	x	x									22
B11	Grab	GW	2/28/24	09:20	x	x	x	x									23
B10 @ 4.5-5.5	Grab	S	2/28/24	10:20	x	x	x	x									24
B9 @ 6.5-7.5	Grab	S	2/28/24	11:45	5	x	x	x									25
B16 @ 4.5-5.5	Grab	S	2/28/24	12:30	5	x	x	x									26

NRC Workorder # (Lab Use Only) 24021127

*Matrix: **DW** - Drinking Water **WW** - Wastewater **W** - Water **S** - Soil/Solid **SL** - Sludge **O** - Oil **WP** - Wipe **OT** - Other

Section F

Relinquish/Receive	Sign	Print	Date	Time
Relinquished By:	Roger Klakken	Roger Klakken	2/28/24	13:00
Received By:				
Relinquished By:				
Received By:				
Relinquished By:				
Received By Laboratory:	Tamra Schneeberger	Tamra Schneeberger	2/28/24	13:00

Section G
Lab Use Only

Temp:	4.2° 3.6
≤6°C:	☑ Yes ☐ No
Received on Ice:	☐ Yes ☐ No
Number of Bottles Received:	
pH Checked:	NA
COC Seals Intact:	☐ Yes ☐ No ☑ NA
Field Blank Included:	☐ Yes ☒ No
Received Via	☐ UPS ☐ FedEX ☐ Other ☒ Hand
Payment: ☒	Invoice ☐ Cash ☐ VISA, M/C ☐ Check # _____ Amount _____

Effective 6/19/2020

NEILSON RESEARCH CORPORATION

Neilson Research Corporation
245 S Grape St
Medford, OR 97501
TEL: (541) 770-5678 FAX: (541) 770-2901
Website: www.nrclabs.com

Data Flags

WO#: **24021127**
Date: **3/8/2024**

A Total Alkalinity and Bicarbonate Alkalinity results are to a pH endpoint of 4.5. Carbonate Alkalinity result is to a pH endpoint of 8.3.
A-LL The total low level alkalinity results are to a pH endpoint of 4.3-4.7 pH units per SM 2320B-2011.
B Analyte detected in the associated method blank.
C Sample(s) does not meet NELAP/ORELAP sample acceptance criteria. See Case Narrative.
C1 Sample(s) does not meet NELAP/ORELAP sample acceptance criteria for temperature.
CF Results confirmed by re-analysis.
CU Cleanup performed as specified by method.
E Estimated value.
ER Elevated reporting limit due to matrix. Report limits (MDLs, MRLs & PQLs) are adjusted based on variations in sample preparation amounts, analytical dilutions, and percent solids, where applicable.
FC Fecal Coliforms: Sample(s) received past 40 CFR Part 136 specified holding time. Results reported as estimated values.
HP Sample re-analysis performed outside of method specified holding time.
HR Sample received outside of method specified holding time.
HS Sample analyzed for volatile organics contained headspace.
HT At the client's request, the sample was analyzed outside of method specified holding time.
H Analysis performed outside of method specified holding time.
J Analyte detected below the Minimum Reporting Limit (MRL) and above the Method Detection Limit (MDL). The J flag result is an estimated value and the user should be aware that this data is of limited reliability.
L Dissolved metals were not filtered within 15 minutes of collection per 40 CFR Part 136.
MI Surrogate, Duplicate Sample (DUP) or Matrix Spikes recoveries are out of control limits due to matrix interference. Sample results may be biased.
N See Case Narrative on page 2 of report.
Q Initial calibration verification (ICV), continuing calibration verification (CCV) or laboratory control sample (LCS), and/or matrix spikes exceeded high recovery limits, but associated samples are non-detect and the sample results are not affected. Data meets EPA/NELAP requirements.
R Relative percent difference (RPD) is outside of the accepted recovery limits.
R1 The numerical difference between the parent sample and the duplicate (DUP) is outside of the accepted recovery limits. Greater than 5 degrees for Flashpoint, or greater than 0.1 pH units for pH.
R3 The relative percent difference (RPD) and/or percent recovery for the duplicate (DUP) or matrix spike (MS)/matrix spike duplicate (MSD) cannot be accurately calculated due to the concentration of analyte already present in the sample.
R4 The Relative percent difference (RPD) is not within control limits because the concentration of the sample result is too low to represent proper statistical error.
R5 The difference between the BOD/CBOD results for the highest and lowest dilution used for the calculation is >30% because the results are too low to represent proper statistical error. The BOD/CBOD sample result is an average of all qualified bottles for each dilution series. The sample results are not affected.
R6 The difference between the BOD/CBOD results for the highest and lowest dilution used for the calculation is >30%. This may indicate a possible matrix interference. The BOD/CBOD sample result is an average of all qualified bottles for each dilution series.
S Surrogate and/or matrix spike recovery is outside of the accepted recovery limits. Sample results may be biased.
S1 Surrogate or matrix spike recovery is outside of control limits due to dilution necessary for analysis.
SC Sub-contracted to another laboratory for analysis.
SP Sample(s) were not collected per EPA Method 5035A protocols. The results are considered minimum values.

* Value exceeds Maximum Contaminant Level or is outside the acceptable range.<<>>

DEQ Risk-Based Concentration Tables

3

State of Oregon Department of Environmental Quality

RISK-BASED CONCENTRATIONS **FOR INDIVIDUAL CHEMICALS** (This table shows the lower of non-carcinogenic and carcinogenic RBCs and should be used for most screening purposes instead of the Excel version.)

Contaminated Medium →		SOIL mg/Kg (ppm)										SOIL mg/Kg (ppm)						SOIL mg/Kg (ppm)						SOIL mg/Kg (ppm)						GROUNDWATER (µg/L (ppb))					
Exposure Pathway →		Soil Ingestion, Dermal Contact, and Inhalation (RBC_{ss})										Volatilization to Outdoor Air (RBC_{so})						Vapor Intrusion into Buildings (RBCsi) No longer applicable Ø						Leaching to Groundwater (RBC_{sw})						Ingestion & Inhalation from Tapwater (RBC_{tw})					
Receptor Scenario →		Residential		Urban Residential		Occupational		Construction Worker		Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational	
Direct or Indirect Pathway (see notes)		DC		DC		DC		DC		DC		IVS		IVS		IVS		IVS		IVS		IVS		IS		IS		IS		DS		DS		DS	
Contaminant	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note
Acenaphthene	nc, v	4,700	>Csat	9,400	>Csat	70,000	>Csat	21,000	>Csat	590,000	>Csat	-	>Max	-	>Max	-	>Max							-	>Csat	-	>Csat	-	>Csat	510		2,400		2,500	
Acrylonitrile	c, v	0.86		2.5		4.0		40		1,100		1.3		3.1		5.8								0.00036		0.0016		0.0017		0.052		0.23		0.25	
Aldrin	c, v	0.031		0.078		0.13		1.1		30	>Csat	-	>Csat	-	>Csat	-	>Csat							0.023		0.10		0.10		0.00092		0.0042		0.0042	
Anthracene	nc, v	23,000	>Csat	47,000	>Csat	350,000	>Csat	110,000	>Csat	-	>Max	-	>Max	-	>Max	-	>Max							-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	>S
Arsenic	c, nv	0.43		1.0		1.9		15		420		-	NV	-	NV	-	NV							*		*		*		0.052		0.21		0.31	
Barium	nc, nv	15,000		31,000		220,000		69,000		-	>Max	-	NV	-	NV	-	NV							*		*		*		4,000		15,000		33,000	
Benz[a]anthracene	c, nv	1.1		2.5		21	>Csat	170	>Csat	4,800	>Csat	-	>Csat	-	>Csat	-	>Csat							1.6		6.0		-	>Csat	0.030		0.11		0.38	
Benzene	c, v	8.2		24		37		380		11,000	>Csat	11		27		50								0.023		0.10		0.10		0.46		2.0		2.1	
Benzidine	c, nv	0.00052		0.0012		0.01		0.082		2.3		-	NV	-	NV	-	NV							0.000038		0.00012		0.0007		0.00011		0.00034		0.00190	
Benzo[a]pyrene (BaP equivalents) **	c*, nv	0.11		0.25		2.1		17	>Csat	490	>Csat	-	NV	-	NV	-	NV							4.4		-	>Csat	-	>Csat	0.025		0.080		0.47	
Benzo[b]fluoranthene	c, v	1.1		2.5		21	>Csat	170	>Csat	4,900	>Csat	-	NV	-	NV	-	NV							-	>Csat	-	>Csat	-	>Csat	0.25		0.80		-	>S
Benzo[k]fluoranthene	c, nv	11	>Csat	25	>Csat	210	>Csat	1,700	>Csat	49,000	>Csat	-	NV	-	NV	-	NV							-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	>S
Beryllium	c*, nv	160		310		2,300		700		19,000		-	NV	-	NV	-	NV							*		*		*		40		150		330	
Bis(2-ethylhexyl)phthalate	c, nv	39		97		160	>Csat	1,300	>Csat	37,000	>Csat	-	NV	-	NV	-	NV							-	>Csat	-	>Csat	-	>Csat	5.6		22		33	
Bromodichloromethane	c, v	3.4		12		15		230		6,300	>Csat	2.4		5.7		11								0.0020		0.0091		0.0088		0.13		0.62		0.6	
Bromoform	c, v	57		170		260		2,700	>Csat	74,000	>Csat	81		190		360								0.046		0.20		0.22		3.3		15		16	
Bromomethane	nc, v	46		92		750		370		10,000	>Csat	170		170		700								0.083		0.30		0.40		7.5		28		36	
Cadmium	c*, nv	78		160		1,100		350		9,700		-	NV	-	NV	-	NV							*		*		*		20		73		160	
Carbon tetrachloride	c, v	7.5		21		34		320		8,900	>Csat	15		35		65								0.013		0.055		0.058		0.46		2.0		2.1	
Chlorobenzene	nc, v	530		1,100	>Csat	8,700	>Csat	4,700	>Csat	130,000	>Csat	-	>Csat	-	>Csat	-	>Csat							5.8		22		27		77		290		350	
Chlorodibromomethane (dibromochloromethane)	c, v	3.7		12		17		210		5,800	>Csat	3.3		7.8		14								0.0024		0.011		0.011		0.17		0.77		0.77	
Chloroethane (ethyl chloride)	nc, v	160,000	>Csat	320,000	>Csat	-	>Max	-	>Max	-	>Max	-	>Csat	-	>Csat	-	>Csat							310		1,100		1,300		21,000		76,000		88,000	
Chloroform	c, v	5.8		22		26		410		11,000	>Csat	3.9		9.2		17								0.0034		0.016		0.015		0.22		1.0		0.98	
Chloromethane	nc, v	1,400	>Csat	2,900	>Csat	25,000	>Csat	25,000	>Csat	700,000	>Csat	-	>Csat	-	>Csat	-	>Csat							2.2		7.9		9.1		190		690		790	
Chlordane	c, v	1.7		4.2		7.4		61	>Csat	1,700	>Csat	-	>Csat	-	>Csat	-	>Csat							0.45		2.1		2.1		0.045		0.20		0.21	
Chromium (III)	nc, nv	120,000		230,000		-	>Max	530,000		-	>Max	-	NV	-	NV	-	NV							*		*		*		30,000		110,000		250,000	
Chromium (VI)	c, nv	0.30		0.67		6.3		49		1,400		-	NV	-	NV	-	NV							*		*		*		0.05		0.16		0.90	
Chrysene	c, nv	110	>Csat	250	>Csat	2,100	>Csat	17,000	>Csat	490,000	>Csat	-	NV	-	NV	-	NV							-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	>S
Copper	nc, nv	3,100		6,200		47,000		14,000		390,000		-	NV	-	NV	-	NV							*		*		*		800		2,900		6,500	
Cyanide (hydrogen cyanide) ^	nc, v	14		28		170		110		3,000		80		80		340								0.88		3.2		3.9		1.5		5.4		6.5	
DDD (4,4'-Dichlorodiphenyldichloroethane)	c*, nv	2.2		4.4		12		9.7		270		-	NV	-	NV	-	NV							1.1		3.7		2.6		0.031		0.10		0.074	
DDE (4,4'-Dichlorodiphenyldichloroethene)	c, v	1.8		4.5		8.2		66		1,800		-	>Csat	-	>Csat	-	>Csat							1.6		7.4		7.5		0.046		0.21		0.21	
DDT (4,4'-Dichlorodiphenyltrichloroethane)	c, nv	1.9		4.6		8.5		66		1,800		-	NV	-	NV	-	NV							12		46		70		0.23		0.92		1.4	
Dibenz[a,h]anthracene	c, nv	0.11		0.25		2.1		17	>Csat	490	>Csat	-	NV	-	NV	-	NV							-	>Csat	-	>Csat	-	>Csat	0.025		0.080		0.47	
1,2-Dichlorobenzene	nc, v	2,200	>Csat	4,400	>Csat	36,000	>Csat	20,000	>Csat	560,000	>Csat	-	>Csat	-	>Csat	-	>Csat							36		140		160		300		1,200		1,400	
1,4-Dichlorobenzene	c, v	14		62		64		1,300	>Csat	36,000	>Csat	8.1		19		36								0.057		0.27		0.25		0.48		2.3		2.1	
3,3-Dichlorobenzidine	c, nv	1.2		3.0		5.1		42	>Csat	1,200	>Csat	-	NV	-	NV	-	NV							0.17		0.67		1.0		0.17		0.69		1.0	
1,1-Dichloroethane	c, v	58		190		260		3,200	>Csat	89,000	>Max	56		130		240								0.044		0.20		0.20		2.8		13		13	
1,1-Dichloroethene	nc, v	1,800	>Csat	3,500	>Csat	29,000	>Csat	13,000	>Csat	370,000	>Csat	-	>Csat	-	>Csat	-	>Csat							6.7		25		32		280		1,100		1,400	
cis-1,2-Dichloroethene	nc, v	160		310		2,300	>Csat	710		20,000	>Csat	-	>Max	-	>Max	-	>Max							0.63		2.4		4.5		36		140		260	
trans-1,2-Dichloroethene	nc, v	1,600	>Csat	3,100	>Csat	23,000	>Csat	7,100	>Csat	200,000	>Csat	-	>Max	-	>Max	-	>Max							7.0		27		51		360		1400		2,600	
Dichloroethylether	c, v	0.29		0.96		1.3		16		450		0.53		1.2		6.9								0.00019		0.00087		0.00087		0.014		0.062		0.063	
Dichloromethane	c, v	76		170		1,600		2,100	>Csat	58,000	>Csat	-	>Csat	-	>Csat	-	>Csat							0.14		0.44		2.4		11		37		200	
Dichlorophenoxyacetic acid, 2,4- (2,4-D)	nc, nv	630	>Csat	1,300	>Csat	8,200	>Csat	2,700	>Csat	74,000	>Csat	-	NV	-	NV	-	NV							2.3		8.8		16		170		670		1,200	
Dieldrin	c, nv	0.034		0.085		0.14		1.2		33	>Csat	-	NV	-	NV	-	NV							0.010		0.037		0.030		0.0017		0.0061		0.005	
Dinitrotoluene, 2,6-	c, nv	0.36		0.90		1.5		13		350	>Csat	-	NV	-	NV	-	NV							0.0089		0.035		0.049		0.049		0.19		0.27	
Di-N-propylnitrosamine (N-nitroso-di-N-propylamine)	c, nv	0.078		0.19		0.33		2.7		74		-	NV	-	NV	-	NV							0.00094		0.0038		0.0054		0.011		0.043		0.062	

Contaminated Medium →	SOIL mg/Kg (ppm)										SOIL mg/Kg (ppm)						SOIL mg/Kg (ppm)						SOIL mg/Kg (ppm)						GROUNDWATER (µg/L (ppb))					
Exposure Pathway →	Soil Ingestion, Dermal Contact, and Inhalation (RBC_{ss})										Volatilization to Outdoor Air (RBC_{so})						Vapor Intrusion into Buildings (RBCsi) No longer applicable Ø						Leaching to Groundwater (RBC_{sw})						Ingestion & Inhalation from Tapwater (RBC_{tw})					
Receptor Scenario →	Residential		Urban Residential		Occupational		Construction Worker		Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational	
Direct or Indirect Pathway (see notes)	DC		DC		DC		DC		DC		IVS		IVS		IVS		IVS		IVS		IVS		IS		IS		IS		DS		DS		DS	
Contaminant	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note	
Dioxane, 1,4-	c, v	5.4		14		24		210		5,900		28		67		370								0.0023		0.0099		0.012		0.46		2.0		2.4	
Diphenylnitrosamine	c, nv	110		280	>Csat	470	>Csat	3,800	>Csat	110,000	>Csat	-	NV	-	NV	-	NV							10		39		45		13		49		57	
EDB (1,2-dibromoethane)	c, v	0.16		0.53		0.73		9.0		250		0.15		0.35		0.65								0.00012		0.00056		0.00056		0.0075		0.034		0.034	
EDC (1,2-dichloroethane)	c, v	3.6		12		16		200		5,600	>Csat	3.4		8.1		15								0.0028		0.013		0.013		0.17		0.78		0.78	
Endosulfan, (alpha-beta)	nc, v	380	>Csat	760	>Csat	4,900	>Csat	1,600	>Csat	45,000	>Csat	-	>Max	-	>Max	-	>Max							-	>Csat	-	>Csat	-	>Csat	98		-	>S	-	>S
Endrin	nc, nv	19	>Csat	38	>Csat	250	>Csat	80	>Csat	2,200	>Csat	-	NV	-	NV	-	NV							11		-	>Csat	-	>Csat	1.9		9.5		8.6	
Ethylbenzene	c, v	34		110		150		1,700	>Csat	49,000	>Csat	36		85		160								0.22		0.94		0.90		1.5		6.7		6.4	
Fluoranthene	nc, nv	2,400	>Csat	4,800	>Csat	30,000	>Csat	10,000	>Csat	280,000	>Csat	-	NV	-	NV	-	NV							-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	>S
Fluorene	nc, v	3,100	>Csat	6,300	>Csat	47,000	>Csat	14,000	>Csat	390,000	>Csat	-	>Max	-	>Max	-	>Max							-	>Csat	-	>Csat	-	>Csat	280		1,400		1,300	
Formaldehyde	c*, v	15		69		64		1,600		44,000	>Csat	48		110		630								0.0020		0.0093		0.0086		0.43		2.0		1.0	
Heptachlor	c, v	0.11		0.28		0.45		4.0		110		18		42		230								0.017		0.063		0.048		0.0014		0.0051		0.0039	
Heptachlor Epoxide	c, v	0.055		0.14		0.24		2.0		56		28		66		-	>Csat							0.0042		0.018		0.016		0.0014		0.0059		0.0053	
Hexachlorobenzene	c, v	0.21		0.67		0.93		11		320		1.0		2.4		13								0.018		0.083		0.084		0.0098		0.045		0.045	
Hexachlorocyclohexane, alpha- (alpha-HCH)	c, nv	0.086		0.21		0.36		3.0		83	>Csat	-	NV	-	NV	-	NV							0.0063		0.024		0.023		0.0075		0.028		0.027	
Hexachlorocyclohexane, gamma- (Lindane)	c, nv	0.49		1.2		2.1		17		470	>Csat	-	NV	-	NV	-	NV							0.036		0.13		0.13		0.043		0.16		0.16	
Hexachloroethane	c*, v	7.4		24		32		180		5,100	>Csat	8.1		19		36								0.022		0.095		0.087		0.34		1.5		1.3	
Indeno[1,2,3-cd]pyrene	c, nv	1.1	>Csat	2.5	>Csat	21	>Csat	170	>Csat	4,900	>Csat	-	NV	-	NV	-	NV							-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	>S
Lead	nc, nv	400	L	400	L	800	L	800	L	800	L	L	NV	-	NV	-	NV							30	L	30	L	30	L	15	L	15	L	15	L
Manganese	nc, nv	1,800		3,600		25,000		8,200		230,000		-	NV	-	NV	-	NV							*		*		*		480		1,800		3,900	
MCPA ((4-chloro-2-methylphenoxy)acetic acid)	nc, nv	32		63		410	>Csat	130		3,700	>Csat	-	NV	-	NV	-	NV							0.097		0.40		0.61		7.4		30		47	
Mercury	nc, nv	23		47		350		110		2,900		-	NV	-	NV	-	NV							*		*		*		6.0		22		49	
MTBE (methyl t-butyl ether)	c, v	250		730		1,100		12,000	>Csat	320,000	>Csat	340		810		1,500								0.11		0.50		0.54		14		64		68	
Naphthalene	c, v	5.3		25		23		580		16,000	>Csat	6.4		15		83								0.077		0.37		0.34		0.17		0.78		0.72	
Nickel	c*, nv	1,500		3,100		22,000		7,000		190,000		-	NV	-	NV	-	NV							*		*		*		400		1,500		3,300	
Pentachlorophenol	c, nv	1.0		2.6		4.0		34		960		-	NV	-	NV	-	NV							0.066		0.23		0.17		0.044		0.15		0.12	
Polychlorinated biphenyls (Total PCBs)**	c*, v	0.23		0.33		0.59		4.9	>Csat	140	>Csat	-	>Csat	-	>Csat	-	>Csat							0.24		1.1		1.1		0.006		0.028		0.028	
iso-Propylbenzene (cumene)	nc, v	3,500	>Csat	7,000	>Csat	57,000	>Csat	27,000	>Csat	750,000	>Csat	-	>Csat	-	>Csat	-	>Csat							96		-	>Csat	-	>Csat	440		1,800		2,000	
Pyrene	nc, v	1,800	>Csat	3,600	>Csat	23,000	>Csat	7,500	>Csat	210,000	>Csat	-	>Max	-	>Max	-	>Max							-	>Csat	-	>Csat	-	>Csat	110	>S	-	>S	-	>S
Silver	nc, nv	390		780		5,800		1,800		49,000		-	NV	-	NV	-	NV							*		*		*		100		370		820	
Styrene	nc, v	7,900	>Csat	16,000	>Csat	130,000	>Csat	56,000	>Csat	-	>Max	-	>Csat	-	>Csat	-	>Csat							170		640		800		1,200		4,600		5,700	
2,3,7,8-TCDD (dioxin) equivalents **	c, v	0.0000047		0.000012		0.000016		0.00017		0.0048		0.010		0.024		0.13								6.8E-06		0.000031		0.000031		0.000000091		0.00000042		0.00000042	
Tetrachloroethene (PCE)	c*, v	220	>Csat	540	>Csat	1,000	>Csat	1,800	>Csat	50,000	>Csat	-	>Csat	-	>Csat	-	>Csat							0.46		1.9		1.9		12		49		48	
Toluene	nc, v	5,800	>Csat	12,000	>Csat	88,000	>Csat	28,000	>Csat	770,000	>Csat	-	>Csat	-	>Csat	-	>Csat							84		340		490		1,100		4,400		6,300	
Toxaphene	c, nv	0.49		1.2		2.1		17		470		-	NV	-	NV	-	NV							0.36		1.2		0.93		0.015		0.053		0.04	
Trichloro-1,2,2-trifluoroethane, 1,1,2- (Freon 113)	nc, v	400,000	>Csat	800,000	>Csat	-	>Max	-	>Max	-	>Max	-	>Csat	-	>Csat	-	>Csat							-	>Csat	-	>Csat	-	>Csat	55,000		-	>S	-	>S
Trichloroethane, 1,1,1-	c, v	53,000	>Csat	110,000	>Csat	870,000	>Csat	470,000	>Csat	-	>Max	-	>Csat	-	>Csat	-	>Csat							190		710		880		8,000		30,000		37,000	
Trichloroethane, 1,1,2-	c*, v	3.2		6.3		26		54		1,500	>Csat	5.6		6.7		24								0.0063		0.029		0.029		0.28		1.3		1.3	
Trichloroethene	c*, v	6.7		17		51		130		3,700	>Csat	15		33		96								0.013		0.053		0.087		0.49		2.0		3.3	
Trichlorofluoromethane (Freon 11)	nc, v	7,600	>Csat	15,000	>Csat	130,000	>Csat	69,000	>Csat	-	>Max	-	>Csat	-	>Csat	-	>Csat							61		230		280		1,100		4,200		5,200	
Trichlorophenol, 2,4,6-	c*, nv	49		120		210		270		7,400	>Csat	-	NV	-	NV	-	NV							2.4		8.9		8.9		4.4		17		16	
Trimethylbenzene, 1,2,4-	nc, v	430		860		6,900	>Csat	2,900	>Csat	81,000	>Csat	-	>Csat	-	>Csat	-	>Csat							10		43		48		54		230		250	
Trimethylbenzene, 1,3,5-	nc, v	430	>Csat	860	>Csat	6,900	>Csat	2,900	>Csat	81,000	>Csat	-	>Csat	-	>Csat	-	>Csat							11		45		53		59		240		280	
Vinyl chloride	c, v	0.36		0.80		4.4		34		950	>Csat	5.3		6.5		89								0.00057		0.0014		0.010		0.027		0.066		0.49	
Xylenes	nc, v	1,400	>Csat	2,900	>Csat	25,000	>Csat	20,000	>Csat	560,000	>Csat	-	>Csat	-	>Csat	-	>Csat							23		87		100		190		710		830	
Generic Gasoline	nc, v	1,200		2,500		20,000		9,700		>Max		5,900		5,900		69,000								31		31		130		110		110		450	
Generic Diesel/Heating Oil	nc, v	1,100		2,200		14,000		4,600		>Max		>Max		>Max		>Max								9,500		9,500		>Max		100		100		430	
Generic Mineral/Insulating Oil	nc, nv	2,800		5,700		36,000		11,000		>Max		>Max		>Max		>Max								>Max		>Max		>Max		300		300		1,300	

Contaminated Medium →		GROUNDWATER (µg/L (ppb))						GROUNDWATER (µg/L (ppb))						GROUNDWATER (µg/L (ppb))		Soil Vapor (µg/m³)						AIR (µg/m³)					
Exposure Pathway →		Volatilization to Outdoor Air (RBC_{wo})						Vapor Intrusion into Buildings (RBCwi) **Use Separate DEQ VI RBCs ô**						GW in Excavation (RBC_{we})		Vapor Intrusion into Buildings (RBCsv) **Use Separate DEQ VI RBCs ô**						INHALATION (RBC_{air})					
Receptor Scenario →		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Construction & Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational	
Direct or Indirect Pathway (see notes)		IVW		IVW		IVW		IVW		IVW		IVW		DS		ICA		ICA		ICA		DCA		DCA		DCA	
Contaminant	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note
Acenaphthene	nc, v	-	>S	-	>S	-	>S							-	>S							-	>Pv	-	>Pv	-	>Pv
Acrylonitrile	c, v	2,200		5,300		9,800								250								0.041		0.098		0.18	
Aldrin	c, v	-	>S	-	>S	-	>S							3.5								0.00057		0.0014		0.0025	
Anthracene	nc, v	-	>S	-	>S	-	>S							-	>S							-	>Pv	-	>Pv	-	>Pv
Arsenic	c, nv	-	NV	-	NV	-	NV							6,300								0.00065		0.0015		0.0029	
Barium	nc, nv	-	NV	-	NV	-	NV							-	>S							0.52		0.52		2.2	
Benz[a]anthracene	c, v	-	>S	-	>S	-	>S							-	>S							0.017		0.033		0.20	
Benzene	c, v	3,100		7,400		14,000								1,800								0.36		0.85		1.6	
Benzidine	c, nv	-	NV	-	NV	-	NV							17								0.000015		0.000029		0.00018	
Benzo[a]pyrene (BaP equivalents) **	c*, nv	-	NV	-	NV	-	NV							-	>S							0.0017		0.0021		0.0088	
Benzo[b]fluoranthene	c, nv	-	NV	-	NV	-	NV							-	>S							0.017		0.033		0.20	
Benzo[k]fluoranthene	c, nv	-	NV	-	NV	-	NV							-	>S							-	>Pv	-	>Pv	-	>Pv
Beryllium	c*, nv	-	NV	-	NV	-	NV							270,000								0.0012		0.0028		0.0051	
Bis(2-ethylhexyl)phthalate	c, nv	-	NV	-	NV	-	NV							-	>S							-	>Pv	-	>Pv	-	>Pv
Bromodichloromethane	c, v	1,400		3,200		6,000								450								0.076		0.18		0.33	
Bromoform	c, v	130,000		300,000		550,000								14,000								2.6		6.0		11	
Bromomethane	nc, v	32,000		32,000		130,000								1,200								5.2		5.2		22	
Cadmium	c*, nv	-	NV	-	NV	-	NV							130,000								0.0016		0.0037		0.0068	
Carbon tetrachloride	c, v	1,800		4,200		7,700								1,800								0.47		1.1		2.0	
Chlorobenzene	nc, v	-	>S	-	>S	-	>S							10,000								52		52		220	
Chlorodibromomethane (dibromochloromethane)	c, v	3,900		9,300		17,000								610								0.10		0.25		0.45	
Chloroethane (ethyl chloride)	nc, v	-	>S	-	>S	-	>S							2,400,000								10000		10000		44000	
Chloroform	c, v	1,400		3,400		6,300								720								0.12		0.29		0.53	
Chloromethane	nc, v	440,000		440,000		1,800,000								22,000								94		94		390	
Chlordane	c, v	-	>S	-	>S	-	>S							-	>S							0.028		0.066		0.12	
Chromium (III)	nc, nv	-	NV	-	NV	-	NV							-	>S							-	>Pv	-	>Pv	-	>Pv
Chromium (VI)	c, nv	-	NV	-	NV	-	NV							9,400								0.000012		0.000023		0.00015	
Chrysene	c, nv	-	NV	-	NV	-	NV							-	>S							1.7		3.3		-	>Pv
Copper	nc, nv	-	NV	-	NV	-	NV							5,400,000								-	>Pv	-	>Pv	-	>Pv
Cyanide (hydrogen cyanide) ^	nc, v	32,000		32,000		140,000								190								0.83		0.83		3.5	
DDD (4,4'-Dichlorodiphenyldichloroethane)	c*, nv	-	NV	-	NV	-	NV							3.2								0.041		0.096		0.18	
DDE (4,4'-Dichlorodiphenyldichloroethene)	c, v	-	>S	-	>S	-	>S							-	>S							0.029		0.068		0.13	
DDT (4,4'-Dichlorodiphenyltrichloroethane)	c, nv	-	NV	-	NV	-	NV							-	>S							0.029		0.068		0.13	
Dibenz[a,h]anthracene	c, nv	-	NV	-	NV	-	NV							-	>S							-	>Pv	-	>Pv	-	>Pv
1,2-Dichlorobenzene	nc, v	-	>S	-	>S	-	>S							37,000								210		210		880	
1,4-Dichlorobenzene	c, v	4,900		12,000		21,000								1,500								0.26		0.6		1.1	
3,3-Dichlorobenzidine	c, nv	-	NV	-	NV	-	NV							-	>S							0.0083		0.020		0.036	
1,1-Dichloroethane	c, v	16,000		37,000		68,000								10,000								1.8		4.1		7.7	
1,1-Dichloroethene	c, v	570,000		570,000		2,400,000								44,000								210		210		880	
cis-1,2-Dichloroethene	nc, v	-	>S	-	>S	-	>S							18,000								-	>Pv	-	>Pv	-	>Pv
trans-1,2-Dichloroethene	nc, v	-	>S	-	>S	-	>S							180,000								-	>Pv	-	>Pv	-	>Pv
Dichloroethylether	c, v	5,700		13,000		30,000								51								0.0085		0.02		0.037	
Dichloromethane	c, v	1,000,000	>S	2,000,000	>S	1.3E+07	>S							79,000								100		190		1200	
Dichlorophenoxyacetic acid, 2,4- (2,4-D)	nc, nv	-	NV	-	NV	-	NV							77,000								-	>Pv	-	>Pv	-	>Pv
Dieldrin	c, v	-	NV	-	NV	-	NV							2.4								0.00061		0.0014		0.0027	
Dinitrotoluene, 2,6-	nc, nv	-	NV	-	NV	-	NV							830								-	>Pv	-	>Pv	-	>Pv
Di-N-propylnitrosamine (N-nitroso-di-N-propylamine)	c, nv	-	NV	-	NV	-	NV							370								0.0014		0.0033		0.0061	
Dioxane, 1,4-	c, nv	820,000		1,900,000		4,500,000								3,400								0.56		1.3		2.5	
Diphenylnitrosamine	c, nv	-	NV	-	NV	-	NV							-	>S							1.1		2.6		4.7	
EDB (1,2-dibromoethane)	c, v	180		430		790								27								0.0047		0.011		0.020	
EDC (1,2-dichloroethane)	c, v	2,100		4,900		9,000								630								0.11		0.26		0.47	
Endosulfan, (alpha-beta)	nc, v	-	>S	-	>S	-	>S							-	>S							-	>Pv	-	>Pv	-	>Pv
Endrin	nc, nv	-	NV	-	NV	-	NV							170								-	>Pv	-	>Pv	-	>Pv

Contaminated Medium →		GROUNDWATER (µg/L (ppb))						GROUNDWATER (µg/L (ppb))						GROUNDWATER (µg/L (ppb))		Soil Vapor (µg/m³)						AIR (µg/m³)					
Exposure Pathway →		Volatilization to Outdoor Air (RBC_{wo})						Vapor Intrusion into Buildings (RBCwi) **Use Separate DEQ VI RBCs ô**						GW in Excavation (RBC_{we})		Vapor Intrusion into Buildings (RBCsv) **Use Separate DEQ VI RBCs ô**						INHALATION (RBC_{air})					
Receptor Scenario →		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Construction & Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational	
Direct or Indirect Pathway (see notes)		IVW		IVW		IVW		IVW		IVW		IVW		DS		ICA		ICA		ICA		DCA		DCA		DCA	
Contaminant	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note
Ethylbenzene	c, v	9,900	>S	23,000	>S	43,000	>S							4,500								1.1		2.7		4.9	
Fluoranthene	nc, nv	-	NV	-	NV	-	NV							-	>S							-	>Pv	-	>Pv	-	>Pv
Fluorene	nc, v	-	>S	-	>S	-	>S							-	>S							-	>Pv	-	>Pv	-	>Pv
Formaldehyde	c*, nv	1,500,000		3,700,000		8,500,000								1,300								0.22		0.51		0.94	
Heptachlor	c, v	-	>S	-	>S	-	>S							1.8								0.0022		0.0051		0.0094	
Heptachlor Epoxide	c, v	-	>S	-	>S	-	>S							3.2								0.0011		0.0026		0.0047	
Hexachlorobenzene	c, v	-	>S	-	>S	-	>S							-	>S							0.0061		0.014		0.027	
Hexachlorocyclohexane, alpha- (alpha-HCH)	c, nv	-	NV	-	NV	-	NV							18	>S							0.0016		0.0037		0.0068	
Hexachlorocyclohexane, gamma- (Lindane)	c, nv	-	NV	-	NV	-	NV							100								0.0091		0.021		0.040	
Hexachloroethane	c*, v	5,000		12,000		22,000								700								0.26		0.60		1.1	
Indeno[1,2,3-cd]pyrene	c, nv	-	NV	-	NV	-	NV							-	>S							-	>Pv	-	>Pv	-	>Pv
Lead	nc, nv	-	NV	-	NV	-	NV							-	>S							-	>Pv	-	>Pv	-	>Pv
Manganese	nc, nv	-	NV	-	NV	-	NV							3,200,000								0.052		0.052		0.22	
MCPA ((4-chloro-2-methylphenoxy)acetic acid)	nc, nv	-	NV	-	NV	-	NV							1,700								-	>Pv	-	>Pv	-	>Pv
Mercury	nc, nv	-	NV	-	NV	-	NV							-	>S							0.31		0.31		1.3	
MTBE (methyl t-butyl ether)	c, v	350,000		830,000		1,500,000								63,000								11		26		47	
Naphthalene	c, v	3,600		8,500		16,000	>S							500								0.083		0.20		0.36	
Nickel	c*, nv	-	NV	-	NV	-	NV							-	>S							0.011		0.026		0.047	
Pentachlorophenol	c, nv	-	NV	-	NV	-	NV							53								0.55		1.3		2.4	
Polychlorinated biphenyls (Total PCBs) **	c*, v	-	>S	-	>S	-	>S							30								0.0038		0.0090		0.017	
iso-Propylbenzene (cumene)	nc, v	-	>S	-	>S	-	>S							51,000								420		420		1800	
Pyrene	nc, v	-	>S	-	>S	-	>S							-	>S							-	>Pv	-	>Pv	-	>Pv
Silver	nc, nv	-	NV	-	NV	-	NV							1,100,000								-		-		-	
Styrene	nc, v	-	>S	-	>S	-	>S							170,000								1000		1000		4400	
2,3,7,8-TCDD (dioxin) equivalents **	c, v	0.022		0.052		0.11								0.00045								5.6E-8		1.3E-7		2.5E-7	
Tetrachloroethene (PCE)	c*, v	64,000		150,000		-	>S							5,600								11		26		47	
Toluene	nc, v	-	>S	-	>S	-	>S							220,000								5200		5200		22000	
Toxaphene	c, nv	-	NV	-	NV	-	NV							18								0.0088		0.021		0.038	
Trichloro-1,2,2-trifluoroethane, 1,1,2- (Freon 113)	nc, v	-	>S	-	>S	-	>S							-	>S							31000		31000		130000	
Trichloroethane, 1,1,1-	nc, v	-	>S	-	>S	-	>S							1,100,000								5200		5200		22000	
Trichloroethane, 1,1,2-	c*, v	4,700		5,600		21,000								49								0.18		0.21		0.77	
Trichloroethene	c*, v	3,300		6,900		20,000								430								0.47		1.0		2.9	
Trichlorofluoromethane (Freon 11)	nc, v	780,000		780,000		-	>S							160,000								730		730		3,100	
Trichlorophenol, 2,4,6-	c*, nv	-	NV	-	NV	-	NV							1,700								0.91		2.1		4.0	
Trimethylbenzene, 1,2,4-	nc, v	-	>S	-	>S	-	>S							6,300								63		63		260	
Trimethylbenzene, 1,3,5-	nc, v	-	>S	-	>S	-	>S							7,500								63		63		260	
Vinyl chloride	c, v	350		430		5,900								960								0.17		0.20		2.8	
Xylenes	nc, v	-	>S	-	>S	-	>S							23,000								100		100		440	
Generic Gasoline	nc, v	>S		>S		>S								14,000								390		390		1,700	
Generic Diesel/Heating Oil	nc, v	>S		>S		>S								>S								100		100		440	
Generic Mineral/Insulating Oil	nc, nv	>S		>S		>S								>S								150		150		620	

NOTES:

Direct or Indirect Pathway Codes have the following meanings: DC means it is a direct contact pathway with a limiting value of Csat. IVS means it is an indirect pathway with a limiting value of Csat. DS means it is a direct contact pathway with a limiting value equal to the solubility, S. IVW means it is an indirect pathway with a limiting value equal to the solubility, S. DCA means it is a direct contact pathway with a limiting value equal to the vapor pressure, Pv.

The symbols in the "Note" columns are explained below. The references can be found in *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (DEQ, 2003)

c This chemical is a known or suspected carcinogen. The RBCs in this row were calculated using equations for carcinogens.

c* The RBCs in this row were calculated using equations for both carcinogens and noncarcinogens (where lower). For some scenarios the RBCs based on non-carcinogenic effects are lower than RBCs based on cancer effects for these chemicals. You should use the lower of the calculated RBCs for each exposure scenario, as shown in this table.

>Csat This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to "ChemData" page for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present. See Section B.2.1.4 for additional information.

L The values for lead reported in this table are not calculated. See Section B.3.4 for the source of the lead numbers and information on applying them.

>Max The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.

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NA	Not Available.
nc	This chemical is a noncarcinogen. The RBCs in this row were calculated using equations for noncarcinogens. When carcinogenic RBCs can be calculated and the noncancer RBC is lower, (nc) is shown in the notes.
nv	This chemical is considered “nonvolatile” for purposes of the exposure calculations. A chemical is defined as nonvolatile if the Henry’s law constant is less than 1 x 10^{-5} atm/m^3-mole and vapor pressure less than one mm mercury.
>Pv	The air concentration reported for the RBC exceeds the vapor pressure of the pure chemical. It can be assumed that this constituent cannot create an unacceptable risk by this pathway. See Section B.2.1.4 for additional information.
>S	This groundwater RBC exceeds the solubility limit. Refer to Appendix D for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present. See Section B.2.1.4 for additional information.
v	This chemical is classified as “volatile” for purposes of the exposure calculations in this document. A chemical is defined as volatile if the Henry’s law constant is greater than or equal to 1 x 10^{-5} atm/m^3-mole or vapor pressure greater than or equal to one mm mercury.
*	Leaching-to-Groundwater RBCs are not provided for inorganic chemicals. If this pathway is of concern, then site-specific leaching tests must be performed.
**	Compounds in this category are considered in aggregate as a chemical class and should be evaluated as single substances. See notes to accompany Risk-Based Concentrations for Individual Chemicals, November 1, 2015.
-	When "Show All Values" is not selected on the Main Menu, all RBC values for indirect pathways that exceed a limit (Csat, S, or Pv) are removed from the table and replaced with "-". If you suspect that a chemical may be present at high concentrations on airborne dust rather than vapor, the vapor pressure limit does not apply, so use the RBCair value.
Ø	DEQ no longer screens vapor intrusion risks based on soil data.
ô	Vapor intrusion RBCs are now in a separate DEQ RBC table for screening vapor intrusion risk from groundwater and soil vapor.