

MEMORANDUM

DATE: April 24, 2019

TO: Dale Myers, Ecology NWRO

FROM: Mike Ehlebracht, Hart Crowser

RE: Newman's Chevron Background Summary

19500-10

The purpose of this memorandum is to present a summary of historic and current environmental conditions at the Newman's Chevron site (Site). The Site is located at 2021 6th Street in Bremerton, Washington (see Leidos Figure 1 included in Attachment A). The 0.39-acre Newman's Chevron Site is a former fuel service station that is located approximately 0.7 miles north of Sinclair Inlet in a mixed-use area. A fuel station and convenience store operated at the Site from approximately 1928 until 2008. The Site has remained vacant since 2008 but the retail building and fuel dispensers are still present as well as three underground storage tanks (USTs).

The Site is bounded to the north by 6th Street and commercial businesses, Naval Avenue and an ARCO service station to the west, a private residence to the east, and a paved alley and a tire shop and private residences to the south (see Leidos Figure 3 included in Attachment A). The ARCO station received a No Further Action (NFA) determination in 2013.

Site Operating History

Title records for the Newman's Chevron property indicate that the current parcel was formerly three separate parcels. Texaco began leasing the westernmost parcel in 1928 and purchased it in 1943 for use as a service station. In 1961, Texaco began leasing the other two parcels and the service station was reconfigured to occupy all three parcels. As noted in the Leidos Remedial Investigation Work Plan (dated July 2018), the existing service station and canopy were constructed at this time. According to Leidos, Texaco sold the western parcel in 1981 and assigned its interest in the leases of the other two parcels to Wilkins Distributing Company (Wilkins), now known as Nordic Properties. Wilkins leased the property to Robert and Karin Newman in 1981 for continued use as a service station.

The Newmans purchased the property in 1990 and continued to operate the service station as Newman's Chevron until 2004 when it was sold to SJ-N-SJ Corporation (SJ-N-SJ). The service station was operated by SJ-N-SJ until 2006 when it was sold to Chang S. Choe, who ran the fueling facility until it was

Washington State Department of Ecology April 24, 2019

19500-10 Page 2

closed in 2008. The property was subsequently foreclosed and later purchased by the current owner Victory Business Park LLC.

The property has not operated as a service station since 2008 and has remained vacant. In 2013 and 2015, the Washington State Department of Ecology (Ecology) conducted inspections of the USTs and determined that they were empty. The retail store, USTs, product lines, and canopy remain in place.

Summary of Historical Environmental Investigations

In 1990, six USTs (including one 6,000-gallon gasoline, four 4,000-gallon gasoline, and one 550-gallon waste oil tanks) and a small quantity of petroleum-contaminated soil were removed from the Site and replaced with new USTs. A leak in the tank piping, located in the southeast corner of the main tank excavation, was observed along with the presence of gasoline product in an electrical conduit running across the middle of the excavation. Consultants providing oversight of the UST removal activities also noted apparent holes in the waste oil UST along with a limited volume of oil-impacted soil that was excavated and disposed of. Gasoline-range hydrocarbon (TPH-G) concentrations in soil exceeded MTCA cleanup levels at the limits of the excavation, with the highest concentrations (up to 10,230 mg/kg) along the southeastern excavation sidewall. A large quantity of gasoline-contaminated soil was left on-site due to the proximity of the service station building. No groundwater was encountered during the removal activities. The top of the regional groundwater table beneath the Site was estimated at 70 to 75 feet below ground surface, although perched groundwater zones could also occur.

In 2000, seven borings were installed by GeoScience Management at the limits of the UST excavation to assess the extent of petroleum contamination and conduct a site-specific risk evaluation. Most of the soil borings did not detect gasoline-range hydrocarbons at concentrations exceeding MTCA cleanup levels, but at one location along the southeastern sidewall of the 1990 UST excavation, elevated concentrations of gasoline-range hydrocarbons and BTEX compounds were detected. Approximately 20 cubic yards of contaminated soil was excavated from this area and removed for off-site disposal. Three soil samples collected at the limits of the excavation contained TPH-G concentrations ranging from 19 to 179 mg/kg. GeoScience Management concluded that based on their risk evaluation conducted in accordance with the Interim TPH Policy, no further remedial actions were necessary.

In 2009 and 2010, Pinnacle Environmental Inc. (PEI) performed Phase I and Phase II environmental site assessments at the Newman's Chevron Site. PEI noted that historic service station operations were conducted on the western portion of the property while more recent operations were conducted on the east side of the property. PEI conducted a geophysical survey that identified three anomalies that were interpreted as USTs along the western edge of the property. However, soil borings installed and sampled near these anomalies did not contain elevated petroleum hydrocarbon concentrations. Elevated concentrations of TPH-G and BTEX (benzene, toluene, ethylbenzene, and xylene) compounds were encountered in soil sampled in the vicinity of the dispenser island located along the northcentral portion

Washington State Department of Ecology April 24, 2019

19500-10

Page 3

of the Site. PEI recommended that additional investigation be conducted in this area to evaluate the vertical extent of gasoline contamination in soil and possibly in groundwater (if present). PEI also recommended that the potential locations of historic USTs along the western property boundary be further evaluated.

In 2010, a Site Hazard Assessment (SHA) was conducted at Newman's Chevron by the Kitsap County Health District (KCHD). The Site was given a ranking of 5 (1 represents the highest relative risk and 5 the lowest).

We understand that in 2018, Ecology entered into an Agreed Order with the Potential Liable Persons (PLPs) including Chevron Environmental Management Company, Nordic Properties, and Victory Business Park, to conduct a Remedial Investigation/Feasibility Study (RI/FS), and to prepare a Draft Cleanup Action Plan (DCAP). The PLPs and their consultant, Leidos, Inc. (Leidos), developed an RI Work Plan that was reviewed by Ecology and finalized in July 2018. Field investigations began the following month including:

- Installation and sampling of 20 soil borings on the Newman's Chevron property at locations shown on Leidos Figure 1 (included in Attachment A). The borings were installed to depths ranging from 7 to 50 feet below ground surface. Three of the borings (identified as SVP-1,-2, and -3) were completed as shallow soil vapor sampling probes.
- Groundwater was not encountered in any of the borings including SB-1 which was installed to a depth of 51.5 feet (as noted previously, the top of the regional groundwater table beneath the Site was estimated at 70 to 75 feet below ground surface). Because groundwater was not encountered in any of the borings, monitoring wells were not installed as part of the RI investigation.
- Three USTs were discovered in the western edge of the property in the area where PEI's geophysical survey identified three anomalies that were suspected to be USTs. The top of each of the three USTs was encountered at a depth of 3 feet or less. The contents of the USTs have not yet been evaluated. Leidos installed ten borings (identified as UST-1 through UST-10) along the sides and ends of the tanks using air-knife and hand augers. The borings were advanced to 8 feet (approximate bottom depth for the USTs) except for borings UST-9 and UST-10 located along the western boundary which hit refusal and could not be sampled.

Preliminary Results of 2018 RI Field Investigation

Although a draft RI report has not yet been developed, Leidos summarized the results of the 2018 field investigation in their November 2018 Progress Report (dated December 17, 2018) and during a meeting with Ecology held on December 12, 2018. Draft RI figures and tables provided by Leidos which summarize the RI data are included in Attachment A to this memo.

Washington State Department of Ecology April 24, 2019 19500-10

Page 4

Soil Sampling Results

Petroleum hydrocarbon concentrations in Site soil were generally below MTCA Method A cleanup levels except in several borings (UST-2 and UST-4) installed adjacent to the newly discovered USTs located along the western edge of Site and in borings installed along the eastern property boundary (SB-4 and SB-5). Benzene concentrations exceeding the MTCA Method A cleanup level were also detected in boring SB-7 located along the northwest corner of the former retail building. Locations of MTCA Method A soil cleanup level exceedances are shown on Figure 1 and Table 1 (Attachment A).

Elevated concentrations of gasoline- and diesel-range hydrocarbons were encountered in soils sampled adjacent to the newly discovered USTs with concentrations ranging up to 670 mg/kg and 2,800 mg/kg, respectively. Relatively low concentrations of heavy oil-range hydrocarbons were detected in the western UST area. All soil samples collected in this area were obtained from the 8-foot depth interval, so the vertical extent of contamination is not known.

Gasoline-range hydrocarbon concentrations along the eastern Newman's property boundary exceed the Method A cleanup level at the 12-foot depth interval in boring SB-4 and within the 14- and 17.5-foot depth intervals in boring SB-5. The vertical extent of petroleum contamination in these borings appears to be defined but the lateral extent off-property to the east and south is not known. Of particular concern is potential impacts to the residential property to the east which appears to be roughly 5 to 10 feet below the grade of the Newman's property. If gasoline-impacted soil is encountered on the residential property, the contamination will likely be fairly shallow and could potentially extend below or in close proximity to the residential buildings.

Concentrations of benzene exceed the MTCA Method A cleanup level in two samples collected from boring SB-7 (Table 1) located in the central portion of the Site. The extent of the elevated benzene concentrations appears to be delineated vertically and laterally except to the south.

A number of soil samples were also analyzed for lead and volatile organic fuel additives, PAHs, and fractionated hydrocarbon analysis (VPH/EPH). Results of this testing are shown in Tables 2, 3, and 4 included in Attachment A. Lead concentrations appear to be at or near background levels and are well below the MTCA Method A cleanup level. Carcinogenic PAHs (cPAHs) and organic fuel additives also do not appear to be of concern in the samples analyzed in the central (SB-7) and eastern portions (SB-5) of the Site (although detection limits for EDB and EDC were fairly high in the SB-5 sample). However, no cPAH or organic fuel additive analyses were performed on samples collected from the UST area located along the western property boundary. PCBs and chlorinated volatile organics (which possibly could have included testing for EDB and EDC) were analyzed in several of the soil samples collected from the western UST area and from the three soil vapor probe borings. Both PCBs and chlorinated volatile organics were generally not detected (Table 4).

Washington State Department of Ecology April 24, 2019

19500-10 Page 5

Soil Gas Sampling Results

Results of the soil gas sampling conducted on the Newman's property at locations SVP-1, SVP-2, and SVP-3 are summarized on Tables 5 and 6 (Attachment A). Based on the results presented on Table 5 for individual volatile compounds including BTEX and naphthalene, soil gas concentrations in the three samples were all well below MTCA Method B sub-slab screening levels. While it appears unlikely that the vapor intrusion pathway will pose a significant risk to the existing or future buildings on the Newman's property, total petroleum concentrations are not presented in Table 5 and are needed to evaluate compliance with the generic sub-slab screening level developed by Ecology in Implementation Memo No. 18 (dated January 10, 2018).

Based on the potential presence of relatively shallow occurrences of gasoline-range hydrocarbons on the adjacent residential property to the east, we recommend that sub-slab or shallow subsurface vapor samples be collected on this property.

Future Supplemental RI Field Investigation

We understand that the PLPs and Leidos plan to conduct additional investigations of the UST area on the west side of the Newman's property to evaluate the vertical and lateral extent of petroleum soil impacts along with removal of the three recently discovered USTs. We agree that this warrants further investigation.

Leidos also indicated that additional soil borings are proposed to delineate soil contamination on the eastern and southern portions of Site (as shown in Figure 3 in Attachment A). We agree that the extent of gasoline-related impacts should be evaluated on the residential property to the east and the alley to the south. We also suggest that sub-slab or subsurface soil gas samples be collected on the eastern residential property to confirm that the indoor pathway is not of concern. If it can be demonstrated that the vapor intrusion pathway is not of concern (we agree that groundwater is not a media of concern based on current data), petroleum cleanup levels may be based on Method B direct contact.

Attachment A:

Table 1 – Summary of Soil Analytical Results – TPHs and Volatile Petroleum Compounds (Leidos)

Table 2 – Summary of Soil Analytical Results – Fuel Additives, Naphthalenes, and PAHS (Leidos)

Table 3 – Summary of Soil Analytical Results – EPH and VPH (Leidos)

Table 4 – Summary of Soil Analytical Results – Metals and Other Non-Petroleum Contaminants (Leidos)

Table 5 – Summary of Soil Gas Analytical Data (Leidos)

Table 6 – Summary of Soil Analytical Data (Fixed Gases) (Leidos)

Figure 1 – Site Map with Historical and 2018 RI Sampling Locations (Leidos)

Figure 3 – Aerial Photo of Site and Adjacent Properties (Leidos)

\seafs\Projects\Notebooks\1950010_Newmans_Chevron Cleanup_Site\Deliverables\Memos\Background Summary\Background_Summary_Memo.docx

ATTACHMENT A
Tables 1 thru 6, Figures 1 and 3
Provided by Leidos
December 10, 2018



TABLE 1 SUMMARY OF SOIL ANALYTICAL RESULTS - TPHs and Volatile Petroleum Compounds NEWMAN'S CHEVRON

2021 6th Street

Bremerton, Washington Concentrations reported in mg/kg

			Total Pet	roleum Hyd	rocarbons	Vola	tile Petroleu	ım Hydrocai	rbons
Boring ID	Depth (ft)	Sample Date	GRO	DRO	HRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes
	6	08/23/18	0.4	<3.2	<11	0.002	0.004	0.0008	0.006
	12	08/27/18	< 0.2	<3.3	<11	< 0.0005	0.001	< 0.0004	< 0.001
SB-1	14	08/27/18	0.3	<3.3	<11	< 0.0004	0.001	< 0.0004	< 0.0009
	16	08/27/18	0.3	<3.2	<11	< 0.0005	0.001	< 0.0004	< 0.0009
	51	08/27/18	< 0.2	<3.1	<10	< 0.0005	0.0007	< 0.0004	< 0.0009
	6	08/24/18	1.4	<3.3	<11	0.0009	0.003	0.0004	0.009
	8	08/28/18	< 0.2	13	49	< 0.0005	0.0009	< 0.0004	< 0.0009
SB-2	11	08/28/18	6.3	<3.3	<11	< 0.0004	0.001	< 0.0003	0.001
	15	08/28/18	0.3	<3.3	<11	< 0.0005	0.0006	< 0.0004	< 0.001
	20	08/28/18	0.2	<3.2	<11	< 0.0005	< 0.0006	< 0.0004	< 0.0009
	10	08/28/18	< 0.3	<3.8	<13	< 0.0005	< 0.0006	< 0.0004	< 0.0009
GD 2	12	08/28/18	< 0.2	<3.3	<11	< 0.0004	< 0.0005	< 0.0003	< 0.0008
SB-3	16	08/28/18	< 0.2	<3.3	<11	< 0.0004	< 0.0005	< 0.0003	< 0.0009
	24	08/28/18	< 0.2	<3.2	<11	< 0.0005	< 0.0006	< 0.0004	< 0.0009
	6	08/23/18	< 0.2	3.2	<11	< 0.0004	< 0.0005	< 0.0003	< 0.0008
	12	08/29/18	550	<3.7	<12	< 0.0005	0.001	0.002	< 0.0009
SB-4	12 (D)	08/29/18	410	6.7	<12	< 0.0005	0.001	0.0005	< 0.001
	14	08/29/18	< 0.2	< 3.2	<11	< 0.0005	0.0008	< 0.0004	< 0.0009
	25	08/29/18	0.8	<3.1	<10	0.0005	0.001	< 0.0004	< 0.001
	6	08/23/18	< 0.1	< 3.2	<11	< 0.0004	< 0.0005	< 0.0004	< 0.0009
	12	08/28/18	0.5	< 3.9	<13	< 0.0005	< 0.0006	< 0.0004	< 0.0009
CD 5	14	08/28/18	420	<3.7	<12	< 0.029	< 0.035	< 0.023	< 0.058
SB-5	17.5	08/28/18	1,100	23	<11	< 0.023	0.042	0.67	9.8
	24	08/28/18	0.7	<3.3	<11	< 0.0005	0.001	< 0.0004	0.004
	30	08/29/18	0	<3.2	<11	0.0006	0.002	< 0.0004	0.002
SB-6	2	08/24/18	< 0.2	<3.2	<11	< 0.0005	< 0.0005	< 0.0004	< 0.0009
2B-0	6	08/24/18	< 0.2	<3.1	<10	< 0.0004	< 0.0004	< 0.0003	< 0.0007
	6	08/23/18	0.3	<3.1	14	< 0.0005	< 0.0006	< 0.0004	< 0.001
	10	08/27/18	2.5	<3.8	<13	0.46	0.15	0.16	0.38
SB-7	14	08/27/18	3.0	<3.4	<11	0.18	0.38	0.056	0.28
	22	08/27/18	< 0.2	< 3.2	<11	0.001	0.002	< 0.0003	< 0.0008
	28	08/27/18	< 0.2	< 3.2	<11	< 0.0005	0.001	< 0.0004	< 0.001
	2	08/29/18	2.1	<3.4	45	< 0.0005	0.0006	< 0.0004	< 0.001
CD 0	12	08/29/18	0.4	<3.3	<11	< 0.0005	0.001	< 0.0004	< 0.0009
SB-8	14	08/29/18	< 0.2	<3.1	<10	< 0.0005	< 0.0006	< 0.0004	< 0.001
	25	08/29/18	< 0.2	<3.3	<11	< 0.0005	< 0.0006	< 0.0004	< 0.001
CD O	7	08/31/18	0.8	<3.5	13	< 0.0005	< 0.0006	< 0.0004	< 0.001
SB-9	11.5	08/31/18	< 0.3	<3.5	14	< 0.0005	< 0.0006	< 0.0004	< 0.001

SUMMARY OF SOIL ANALYTICAL RESULTS - TPHs and Volatile Petroleum Compounds NEWMAN'S CHEVRON

2021 6th Street

Bremerton, Washington

Concentrations reported in mg/kg

			Total Pet	roleum Hydi	rocarbons	Vola	tile Petroleu	m Hydrocar	bons
Boring ID	Depth (ft)	Sample Date	GRO	DRO	HRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes
UST-1	8	08/28/18	< 0.2	5.7	59	< 0.0004	< 0.0005	< 0.0003	< 0.0009
UST-2	8	08/28/18	670	2,800	<110	< 0.026	< 0.031	< 0.021	< 0.051
031-2	8 (D)	08/28/18	530	2,500	<220	< 0.026	< 0.031	< 0.020	< 0.051
UST-3	8	08/29/18	0.5	480	<21	< 0.0004	< 0.0005	< 0.0004	< 0.0009
UST-4	8	08/29/18	130	1,700	140	< 0.025	< 0.030	< 0.020	< 0.050
UST-5	8	08/29/18	0.8	230	73	< 0.0005	0.001	< 0.0004	< 0.001
UST-6	8	08/29/18	0.2	160	47	0.0008	0.002	< 0.0004	0.001
UST-7	8	08/29/18	< 0.2	4.1	39	< 0.0005	< 0.0005	< 0.0004	< 0.0009
UST-8	8	08/29/18	< 0.3	60	14	< 0.0005	0.002	< 0.0004	< 0.001
SVP-1	8	08/30/18	0.3	11	35	0.0008	0.0006	< 0.0004	< 0.0009
341-1	10	08/30/18	< 0.3	<3.8	<13	0.0006	0.001	< 0.0004	< 0.001
SVP-2	8	08/30/18	0.4	<3.7	<12	< 0.0005	0.0007	< 0.0004	< 0.001
3 V F-2	10	08/30/18	< 0.3	< 0.8	<13	< 0.0005	< 0.0006	< 0.0004	< 0.001
SVP-3	8	08/30/18	< 0.3	4.9	13	< 0.0005	< 0.0006	< 0.0004	< 0.001
3 v P-3	10	08/30/18	< 0.3	<4.0	<13	< 0.0005	< 0.0006	< 0.0004	< 0.001
MTCA M	ethod A Cle	anup Level:	30	2,000	2,000	0.03	7	6	9

EXPLANATIONS:

Bold results indicate compound detected above MTCA Method A Cleanup Level.

GRO = Gasoline-range organics

DRO = Diesel-range organics

HRO = Heavy oil-range organics

 $D = Duplicate \ sample$

ft = feet

mg/kg = milligrams per kilogram

MTCA = Model Toxics Control Act

USEPA = United States Environmental Protection Agency

< = Analyte not detected at or above method detection limit; value represents limit.

ANALYTICAL METHODS:

GRO analyzed by NWTPH-Gx DRO and HRO anayzed by NWTPH-Dx BTEX analyzed by USEPA 8260C



SUMMARY OF SOIL ANALYTICAL RESULTS - Fuel Additives, Naphthalenes, and PAHs

NEWMAN'S CHEVRON

2021 6th Street

Bremerton, Washington Concentrations reported in mg/kg

	_		F	uel Additiv	es		Napht	halenes					Carcinoge	enic PAHs		_	
Boring ID	Depth (ft)	Sample Date	MTBE	EDB	EDC	Naphthalene	1-Methyl naphthalene	2-Methyl naphthalene	Total Naphthalenes	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz[a,h] anthracene	Indeno (1,2,3- cd) pyrene	Naphthalene
	6	08/23/18				< 0.007			< 0.007								
	12	08/27/18				< 0.007			< 0.007								
SB-1	14	08/27/18				< 0.007			< 0.007								
	16	08/27/18				< 0.007			< 0.007								
	51	08/27/18		-		< 0.007			< 0.007	-							
	6	08/24/18		-	-	< 0.007			< 0.007	-							
	8	08/28/18		-	-	< 0.007			< 0.007	-							
SB-2	11	08/28/18		-		< 0.007			< 0.007	-				-			
	15	08/28/18				< 0.007			< 0.007								
	20	08/28/18				< 0.007			< 0.007								
	10	08/28/18				< 0.009			< 0.009								
SB-3	12	08/28/18				< 0.007			< 0.007								
SD-3	16	08/28/18				< 0.007			< 0.007								
	24	08/28/18				< 0.007			< 0.007								
	6	08/23/18				< 0.007			< 0.007								
	12	08/29/18				< 0.007			< 0.007								
SB-4	12 (D)	08/29/18				< 0.008			< 0.008								
	14	08/29/18				< 0.007			< 0.007								
	25	08/29/18				< 0.007			< 0.007								
	6	08/23/18				< 0.007			< 0.007								
	12	08/28/18				< 0.009			< 0.009								
SB-5	14	08/28/18	< 0.029	< 0.023	< 0.035	0.020			0.020	< 0.0008	< 0.0008	<0.0008	< 0.0008	0.0005	< 0.0008	<0.0008	0.0005
	17.5	08/28/18	< 0.023	< 0.018	< 0.027	0.34			0.34	0.0008	< 0.0007	< 0.0007	< 0.0007	0.002	< 0.0007	< 0.0007	0.0028
	24	08/28/18				0.012			0.012								
	30	08/29/18				<0.007			< 0.007								
SB-6	2	08/24/18				<0.007			< 0.007								
	6	08/24/18				<0.007			< 0.007								
	6	08/23/18	 -0.000 <i>5</i>			<0.007			<0.007								
SB-7	10	08/27/18 08/27/18	< 0.0005	< 0.0004	< 0.0006	0.034 0.015			0.034 0.015	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0004	< 0.0009	< 0.0009	< 0.0009
SD-/	14																
	22 28	08/27/18				<0.007 <0.007			<0.007 <0.007								
		08/27/18															
	12	08/29/18				0.033 <0.007			0.033								
SB-8	12	08/29/18							<0.007								
	14 25	08/29/18 08/29/18				0.011 <0.007			0.011 <0.007								
	7	08/29/18				0.040			0.040								
SB-9	11.5	08/31/18				0.040			0.040								
	11.5	08/31/18				0.009			0.009								

SUMMARY OF SOIL ANALYTICAL RESULTS - Fuel Additives, Naphthalenes, and PAHs

NEWMAN'S CHEVRON

2021 6th Street

Bremerton, Washington Concentrations reported in mg/kg

			F	uel Additiv	es		Napht	halenes					Carcinogo	enic PAHs			
Boring ID	Depth (ft)	Sample Date	МТВЕ	EDB	EDC	Naphthalene	1-Methyl naphthalene	2-Methyl naphthalene	Total Naphthalenes	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz[a,h] anthracene	Indeno (1,2,3- cd) pyrene	Naphthalene
UST-1	8	08/28/18			-	< 0.007			< 0.007								
UST-2	8	08/28/18		I		< 0.007			< 0.007	-					-		1
031-2	8 (D)	08/28/18		1	-	0.1			0.1								-
UST-3	8	08/29/18		1	-	< 0.007			< 0.007								-
UST-4	8	08/29/18		1	-	< 0.007			< 0.007								-
UST-5	8	08/29/18		1	-	< 0.007			< 0.007								-
UST-6	8	08/29/18		1	-	< 0.007			< 0.007								-
UST-7	8	08/29/18		-	-	< 0.007			< 0.007								
UST-8	8	08/29/18		1	-	< 0.007			< 0.007								-
SVP-1	8	08/30/18		I		< 0.007			< 0.007	-					-		1
3 V I - I	10	08/30/18		-	-	0.011			0.011								-
SVP-2	8	08/30/18		-	-	0.017			0.017								-
3 V I - Z	10	08/30/18		-	-	< 0.008			< 0.008								
SVP-3	8	08/30/18		-	-	0.64			0.64								
3 41-3	10	08/30/18		-	-	< 0.009			< 0.009								
MTCA Method A Cleanup Level: 0.1 0.005 See Total Naphthalenes 5 See Total Carcinogenic PAHs (Total cPAHs)										0.1							

EXPLANATIONS:

ft = feet

D = Duplicate sample

mg/kg = milligrams per kilogram EDB = Ethylene dibromide

EDC = Ethylene dichloride

MTBE = Methyl tertiary-butyl ether

MTCA = Model Toxics Control Act

PAHs = Polynuclear aromatic hydrocarbons

USEPA = United States Environmental Protection Agency

< = Analyte not detected at or above method detection limit; value represents limit.

ANALYTICAL METHODS:

MTBE, EDB, and EDC analyzed by USEPA 8260C

PAHs analyzed by USEPA 8270D SIM

Naphthalenes analyzed by USEPA 8270D



TABLE 3 SUMMARY OF SOIL ANALYTICAL RESULTS - EPH and VPH NEWMAN'S CHEVRON

2021 6th Street

Bremerton, Washington Concentrations reported in mg/kg

				EPH											VI	PH				
Boring ID	Depth (ft)	Sample Date	>C10-C12 Aliphatic	>C10-C12 Aromatic	>C12-C16 Aliphatic	>C12-C16 Aromatic	>C16-C21 Aliphatic	>C16-C21 Aromatic	>C21-C34 Aliphatic	>C21-C34 Aromatic	C5-C6 Aliphatic	C6-C8 Aliphatic	C8-C10 Aliphatic	C8-C10 Aromatic	Benzene	Ethylbenzene	MTBE	Toluene	o-Xylenes	m,p-Xylenes
SB-1	6 12 14 16	08/23/18 08/27/18 08/27/18 08/27/18	 							 							 		 	
SB-2	51 6 8 11 15	08/27/18 08/24/18 08/28/18 08/28/18 08/28/18	 		 	 		 	 	 	 	 	 	 	 	 	 	 	 	
SB-3	20 10 12 16 24	08/28/18 08/28/18 08/28/18 08/28/18 08/28/18	 	 	 	 	 	 		 	 			 		 	 	 	 	
SB-4	6 12 12 (D) 14 25	08/23/18 08/29/18 08/29/18 08/29/18 08/29/18									 								 	
SB-5	6 12 14 17.5 24 30	08/23/18 08/28/18 08/28/18 08/28/18 08/28/18 08/29/18	6.4 8.3	 <1.2 3 	 <1.2 2.1 	 <1.2 4.4 	 <3.7 <3.2 	 <2.5 <2.1 	 <7.5 <6.3 	 <2.5 <2.1 	 <2.97 <2.49 	52.8 9.67	32.7 108	10.9 93.0	 <0.0594 <0.0498 	 <0.0594 0.751 	 <0.0594 <0.0498 	 <0.0594 <0.0498 	 0.155 2.57 	 <0.119 5.45
SB-6	2 6	08/24/18 08/24/18																		
SB-7	6 10 14 22 28	08/23/18 08/27/18 08/27/18 08/27/18 08/27/18	<1.3 	<1.3 	<1.3 	<1.3 	<3.9 	<2.6 	 <7.7 	<2.6 	<3.16 	<3.16 	<3.16 	<3.16 	 0.654 	0.177	 <0.0632 	0.214	 0.0997 	0.449
SB-8	2 12 14 25	08/29/18 08/29/18 08/29/18 08/29/18				 											 	 	 	
SB-9	7 11.5	08/31/18 08/31/18																		



TABLE 3 SUMMARY OF SOIL ANALYTICAL RESULTS - EPH and VPH NEWMAN'S CHEVRON

2021 6th Street

Bremerton, Washington **Concentrations reported in mg/kg**

						El	PH								V]	PH				
Boring ID	Depth (ft)	Sample Date	>C10-C12 Aliphatic	>C10-C12 Aromatic	>C12-C16 Aliphatic	>C12-C16 Aromatic	>C16-C21 Aliphatic	>C16-C21 Aromatic	>C21-C34 Aliphatic	>C21-C34 Aromatic	C5-C6 Aliphatic	C6-C8 Aliphatic	C8-C10 Aliphatic	C8-C10 Aromatic	Benzene	Ethylbenzene	MTBE	Toluene	o-Xylenes	m,p-Xylenes
UST-1	8	08/28/18																		
UST-2	8	08/28/18	69	3.5	550	96	340	210	32	16	< 2.76	<2.76	12.7	9.74	< 0.0552	< 0.0552	< 0.0552	< 0.0552	< 0.0552	< 0.110
	8 (D)	08/28/18																		
UST-3	8	08/29/18	<1.1	<1.1	29	1.1	130	37	15	6.3	< 2.60	<2.60	< 2.60	< 2.60	< 0.0519	< 0.0519	< 0.0519	< 0.0519	< 0.0519	< 0.104
UST-4	8	08/29/18																		
UST-5	8	08/29/18	<1.1	<1.1	5.0	<1.1	66	13	29	14	< 2.89	<2.89	< 2.89	< 2.89	< 0.0578	< 0.0578	< 0.0578	< 0.0578	< 0.0578	< 0.116
UST-6	8	08/29/18																		
UST-7	8	08/29/18																		
UST-8	8	08/29/18																		
SVP-1	8	08/30/18	<1.1	<1.1	<1.1	<1.1	<3.2	<2.1	7.1	6.1	<2.48	<2.48	<2.48	<2.48	< 0.00496	< 0.0496	< 0.0496	< 0.0496	< 0.0496	< 0.0993
~	10	08/30/18	<1.2	<1.2	<1.2	<1.2	<3.7	<2.5	<7.4	<2.5	<3.06	<3.06	<3.06	<3.06	< 0.0613	< 0.0613	< 0.0613	< 0.0613	< 0.0613	< 0.123
SVP-2	8	08/30/18	<1.2	<1.2	<1.2	<1.2	<3.6	<2.4	<7.2	<2.4	<3.85	<3.85	<3.85	<3.85	< 0.0770	< 0.0770	< 0.0770	< 0.0770	< 0.0770	< 0.154
~	10	08/30/18	<1.2	<1.2	<1.2	<1.2	<3.7	<2.4	<7.3	<2.4	<3.23	<3.23	<3.23	<3.23	< 0.0647	< 0.0647	< 0.0647	< 0.0647	< 0.0647	< 0.129
SVP-3	8	08/30/18																		
	10	08/30/18																		

For EPH analyses all samples were re-extracted outside the method required holding time. Results for the first trial are included in the table. For the results of the second trial refer to the laboratory report.

EXPLANATIONS:

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

D = Duplicate sample

EPH = Extractable Petroleum Hydrocarbons

ft = feet

mg/kg = milligrams per kilogran

MTBE = Methyl t-butyl ether

VPH = Volatile Petroleum Hydrocarbons

< = Analyte is not detected at or above the method detection limit; value represents limit.

-- = not analyzed

ANALYTICAL METHODS: EPHs analyzed by NWEPH Method VPHs analyzed by NWVPH Method



TABLE 4 SUMMARY OF SOIL ANALYTICAL RESULTS - Metals and Other Non-Petroleum Contaminants 2021 6th Street

Bremerton, Washington Concentrations reported in mg/kg

		Ī	Metals		Halogena	ated VOCs					PC	CBs			
Boring ID	Depth (ft)	Sample Date	Lead	Methylene Chloride	PCE	1,1,1-TCA	TCE	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	Total PCBs
	6	08/23/18	5.35												
	12	08/27/18	2.40												
SB-1	14	08/27/18	<2.35												
	16	08/27/18	1.35												
	51	08/27/18	1.93												
	6	08/24/18	4.02												
	8	08/28/18	1.48												
SB-2	11	08/28/18	2.66												
	15	08/28/18	5.29												
	20	08/28/18	4.14												
	10	08/28/18	5.42												
SB-3	12	08/28/18	2.50												
SD 3	16	08/28/18	2.06												
	24	08/28/18	3.41												
	6	08/23/18	4.72												
	12	08/29/18	2.37												
SB-4	12 (D)	08/29/18	2.67												
	14	08/29/18	1.40												
	25	08/29/18	1.27												
	6	08/23/18	4.51												
	12	08/28/18	3.50												
SB-5	14	08/28/18	2.36												
SB 3	17.5	08/28/18	1.70												
	24	08/28/18	1.76												
	30	08/29/18	1.54												
SB-6	2	08/24/18	2.20												
SB 0	6	08/24/18	2.20												
	6	08/23/18	16.2												
	10	08/27/18	5.51												
SB-7	14	08/27/18	2.18												
	22	08/27/18	2.62												
	28	08/27/18	2.73												
	2	08/29/18	22.8												
SB-8	12	08/29/18	<2.34												
50-0	14	08/29/18	<12.5												
	25	08/29/18	< 0.542												
SB-9	7	08/31/18	27.3												
557	11.5	08/31/18	25.4												

SUMMARY OF SOIL ANALYTICAL RESULTS - Metals and Other Non-Petroleum Contaminants

2021 6th Street

Bremerton, Washington

Concentrations reported in mg/kg

			Metals		Halogena	nted VOCs					PC	CBs			
Boring ID	Depth (ft)	Sample Date	Lead	Methylene Chloride	PCE	1,1,1-TCA	TCE	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	Total PCBs
UST-1	8	08/28/18	4.19												
UST-2	8	08/28/18	2.51	< 0.10	< 0.026	< 0.031	< 0.026	< 0.0041	< 0.0052	< 0.0090	< 0.0037	< 0.0037	< 0.0037	< 0.0055	< 0.0090
031-2	8 (D)	08/28/18	1.98	< 0.10	< 0.026	< 0.031	< 0.026	< 0.0039	< 0.0050	< 0.0087	< 0.0036	< 0.0036	< 0.0036	< 0.0054	< 0.0087
UST-3	8	08/29/18	4.47	< 0.002	< 0.0004	< 0.0005	< 0.0004	< 0.0039	< 0.0049	< 0.0086	< 0.0035	< 0.0035	< 0.0035	< 0.0053	< 0.0086
UST-4	8	08/29/18	11.9												
UST-5	8	08/29/18	8.24	< 0.002	< 0.0005	< 0.0006	< 0.0005	< 0.0040	< 0.0051	< 0.0089	< 0.0037	< 0.0037	< 0.0037	< 0.0054	< 0.0089
UST-6	8	08/28/18	2.64												
UST-7	8	08/29/18	9.51												
UST-8	8	08/29/18	3.21												
SVP-1	8	08/30/18	41.3	< 0.002	0.0005	< 0.0006	< 0.0005	< 0.020	< 0.025	< 0.043	< 0.018	< 0.018	< 0.018	< 0.027	< 0.043
241-1	10	08/30/18	9.82	< 0.002	0.0006	< 0.0006	< 0.0005	< 0.0045	< 0.0057	< 0.010	< 0.0041	< 0.0041	< 0.0041	< 0.0061	< 0.010
SVP-2	8	08/30/18	11.8	< 0.002	< 0.0005	< 0.0006	< 0.0005	< 0.0044	< 0.0057	< 0.0099	< 0.0041	< 0.0041	< 0.0041	< 0.0061	< 0.0099
3 V F-2	10	08/30/18	7.53	< 0.002	< 0.0005	< 0.0006	< 0.0005	< 0.0045	< 0.0058	< 0.010	< 0.0041	< 0.0041	< 0.0041	< 0.0061	< 0.010
SVP-3	8	08/30/18	10.9												
3 4 1 - 3	10	08/30/18	7.11												
MTCA M	ethod A Clea	nup Levels:	250	0.02	0.05	2	0.03				See Total PCBs				1

EXPLANATIONS:

ft = feet

D = Duplicate sample

mg/kg = milligrams per kilogram

MTCA = Model Toxics Control Act

PCBs = polychlorinated biphenyls PCE = Tetrachloroethylene

TCA = Trichloroethane

TCE = Trichloroethylene

USEPA = United States Environmental Protection Agency

VOCs = Volatile organic compounds

< = Analyte not detected at or above method detection limit; value represents limit.

1 MTCA Method A Cleanup Level of 1 mg/kg represents a total value for all PCBs

ANALYTICAL METHODS:

VOCs analyzed by USEPA 8260C

PCBs analyzed by USEPA 8082A

Lead analyzed by USEPA 6010D

TABLE 5 SUMMARY OF SOIL GAS ANALYTICAL DATA NEWMAN'S CHEVRON

2021 6th Street

Bremerton, Washington

Concentrations in µg/m³

Sample ID	Sample Date	MTBE	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylenes	Naphthalene
SVP-1	09/27/18	< 0.033	0.46 J	1.8 J	0.12 J	0.35 J	0.34 J	0.23 J
SVP-2	09/27/18	< 0.031	0.26 J	0.26 J	0.096 J	0.15 J	0.083 J	< 0.054
SVP-2 (D)	09/27/18	< 0.031	0.58 J	0.8 J	0.26 J	0.7 J	0.52 J	0.16 J
SVP-3	09/27/18	< 0.03	0.18 J	1.7 J	0.3 J	0.66 J	0.47 J	1.4 J
Equipment	09/26/18	< 0.048	0.38 J	5.7	0.46 J	1.5 J	0.33 J	< 0.082
Blank	09/28/18	< 0.044	0.36 J	14	0.58 J	2.1 J	0.47 J	1.1 J
Method Blank	NA	< 0.0093	< 0.02	< 0.011	< 0.0097	< 0.019	< 0.0098	< 0.016
Sub-Slab Soil G	as Screening	g Level						
MTCA	A Method B	320	10.7	76,200	15,200	1,500	1,500	2.45

EXPLANATIONS:

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

(D) = Duplicate sample

J = Laboratory Estimated Value

MTCA = Model Toxics Control Act

MTBE = Methyl Tertiary Butyl Ether

NA == Not applicable

USEPA = United States Environmental Protection Agency

 μ g/m3 = micrograms per cubic meter

< = Analyte not detected above laboratory method detection limits

ANALYTICAL METHOD:

BTEX, MTBE, and Naphthalene analyzed by USEPA Method TO-15 Modified.



TABLE 6 SUMMARY OF SOIL GAS ANALYTICAL DATA (FIXED GASES) NEWMAN'S CHEVRON

2021 6th Street

Bremerton, Washington

Concentrations listed as percentage (unless otherwise noted)

Sample ID	Sample Date	Hydrogen	Oxygen	Carbon Monoxide	Methane	Carbon Dioxide	Helium (ppm)
SVP-1	09/27/18	< 0.14	14.6	< 0.14	< 0.14	5.79	69
SVP-2	09/27/18	< 0.14	13.8	< 0.14	< 0.14	5.71	250
SVP-2 (D)	09/27/18	< 0.14	13.8	< 0.14	< 0.14	5.68	250
SVP-3	09/27/18	< 0.13	17.9	< 0.13	< 0.13	3.63	140
Equipment Plenk	09/26/18	< 0.21	12.5	< 0.21	< 0.21	< 0.21	3,700
Equipment Blank	09/02/18	< 0.19	19.9	< 0.19	< 0.19	< 0.19	850
Method Blank	NA	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	<25

EXPLANATIONS:

ASTM = American Society for Testing and Materials

(D) = Duplicate sample

NA = Not applicable

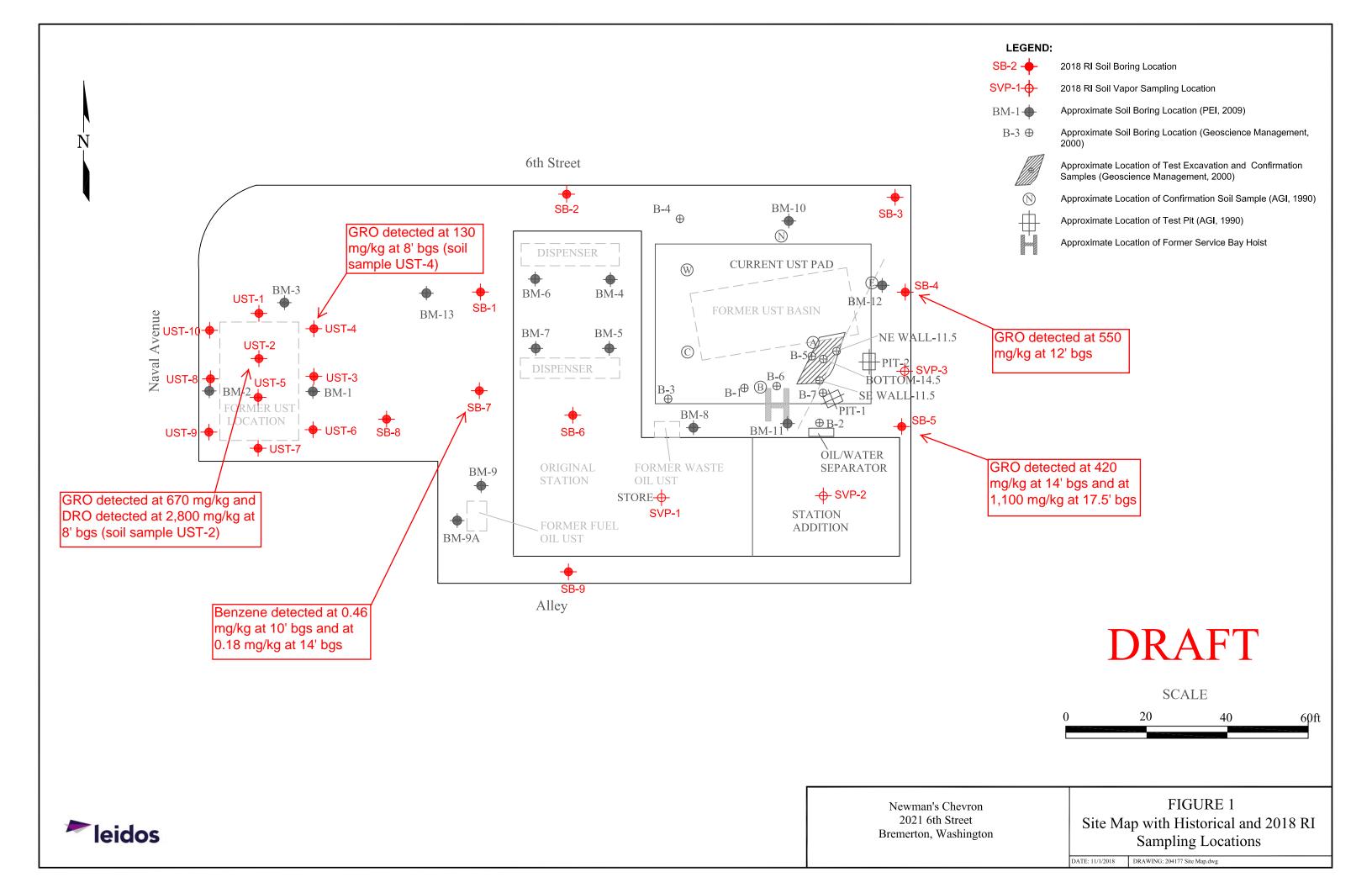
ppm = parts per million

<= Analyte not detected above laboratory method reporting limits

ANALYTICAL METHODS:

Hydrogen, Oxygen, Carbon Monoxide, Methane, Carbon Dioxide analyzed by ASTM D1945 Modified. Helium analyzed by 3C Modified.





2007 6th Street Bremerton, WA Parcel # 3717-002-013-0009



SOURCE: GOOGLE EARTH IMAGE DATED 2017.

Proposed Soil Boring Locations for Supplemental RI Field Activities

LEGEND:

Approximate Property Boundary

Draft - For Discussion Only 12/10/2018

SCALE 0 20 40 60ft

N

Newman's Chevron 2021 6th Street Bremerton, Washington FIGURE 3
Aerial Photo of Site and Adjacent
Properties

DATE: 6/5/2018 DRAWING: 204177 Site Map.dwg

