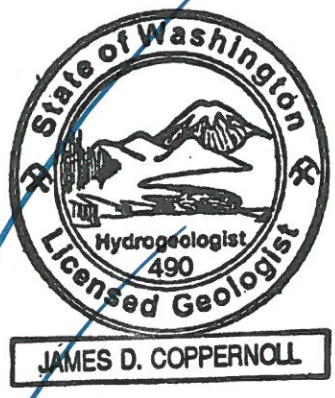
06/03/2017

LIMITED SUBSURFACE INVESTIGATION REPORT

Camp Union
14174 NW Holly Road
Seabeck, Washington

Prepared for:

Serizon #1 LLC
14174 NW Holly Road
Seabeck, WA



By:

GeoConsulting, Inc.

James D. Coppernoll, L.G., L.HG
President

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1.0 SUMMARY

Kwangsik Yi of Serizon # 1 LLC authorized GeoConsulting, Inc. (GeoConsulting) to conduct a limited subsurface investigation at 14174 NW Holly Road, Seabeck, Washington (Site). An operating gasoline station and convenience store as well as a pizza restaurant occupy the Site.

The purpose of this investigation was to further define the northern, southern, and eastern limits and magnitude of soil and groundwater contamination. Findings are intended for use in Site characterization and remedial investigation.

In March 2017 and May 2017, GeoConsulting advanced three borings to approximately 15 to 20 feet below the ground surface near the former and current USTs and dispensers and completed each boring as a groundwater monitoring well (B-1/MW-4, B-2/MW-5, and B-3/MW-6). At least one soil sample from each boring was submitted for analysis. Subsequently, GeoConsulting measured the groundwater elevation in all on-Site wells and collected groundwater samples from each for laboratory analysis.

The laboratory detected gasoline-range organics at 5,300 milligrams per kilogram (mg/kg), benzene at 0.08 mg/kg, toluene at 1.2 mg/kg, ethylbenzene at 9.7 mg/kg, and xylenes at 68 mg/kg in soil from boring B-1/MW-4 at 15 feet below the surface. All other soil sample results are below the laboratory practical quantitation limits (PQLs).

The laboratory detected gasoline range organics at 20,000 micrograms per liter (µg/l) and 1,700 µg/l in MW-2 and MW-4, respectively. Gasoline range organics, toluene, ethylbenzene, and xylenes were also detected in MW-2 and MW-4. Toluene, ethylbenzene, and xylenes were detected at below Method A cleanup levels in MW-6. All other groundwater sample results are below the laboratory practical quantitation limits PQLs.

The results of this investigation indicate that gasoline-range organics as well as some BTEX compounds are present in soil and groundwater west of the current dispensers. The groundwater plume stops north of the planter between the Site and Holly Road NW and west of MW-5. The northern limit of the plume has not been delineated and may extend under the buildings. However, GeoConsulting does not anticipate that the plume extends far to the north of MW-4, based on the short distance the plume has traveled in general. Vapor intrusion remains a possibility.

There are two apparent paths forward toward cleanup and closure of the Site:

1) Pursue remediation and closure through the State of Washington Department of Ecology Voluntary Cleanup Program. This path includes the general steps of; a) performing additional delineation of the plume in the northern direction and determining if vapor intrusion is a concern, b) conducting a feasibility study to determine an appropriate remedial method, c) implementing the remedial method with monitoring for a period of time followed by one year of groundwater monitoring, and d) applying for closure.

2) Pursue remediation and closure through the State of Washington Pollution Liability Insurance Agency's Loan and Grant Program. This path includes the same general steps but may provide additional guidance and financial assistance. The Site appears to be a good candidate for this program.

Either path will likely require investigation to determine if vapor intrusion is a concern and delineation of the plume in the northern direction.

2.0 INTRODUCTION

Kwangsik Yi of Serizon # 1 LLC authorized GeoConsulting, Inc. (GeoConsulting) to conduct a limited subsurface investigation at 14174 NW Holly Road, Seabeck, Washington (Site). An operating gasoline station and convenience store as well as a pizza restaurant occupy the Site.

3.0 PURPOSE

The purpose of this investigation was to further define the northern, southern, and eastern limits and magnitude of soil and groundwater contamination. Findings are intended for use in Site characterization and remedial investigation.

4.0 SCOPE OF SERVICES

GeoConsulting performed the following tasks:

- Site background review, as available;
- Subcontracted public and private utility locating;
- Drilling activities direction, observation, and documentation;
- Subcontracted drilling and groundwater monitoring well installation;
- Collected soil samples from the borings and logged each according to the Unified Soil Classification System;
- Field screened the samples for contaminants;
- Measured the groundwater elevation in each well relative to the existing wells;
- Purged the new wells and the previously existing wells prior to sampling;
- Collected a groundwater sample from each well for analysis;
- Submitted one soil sample from each boring and one groundwater sample from each well to a qualified analytical laboratory for analysis of the following: gasoline-range total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylenes, and methyl tertiary-butyl ether by Washington State Department of Ecology Method NWTPH-Gx/BTEX/MTBE; and
- Analyzed and interpreted the results and prepared this comprehensive report of the findings.

5.0 SITE DESCRIPTION

The Site consists of 3.81 acres of nearly level land located near Lake William Symington south of the city of Seabeck in unincorporated Kitsap County. Specifically, the Site is approximately 600 feet west of Coho Run NW along the north side of NW Holly Road (Kitsap County Tax Account No. 052401-3-004-1004; T.24N., R.1W., Sec 5). Appendix A – Figure 1, Site Location Map depicts the Site location.

The Site is developed with three businesses situated along NW Holly Road: The Camp Union Grocery (14174 NW Holly Road), a gasoline station and convenience store in the southwest corner of the Site; the Camp Union Pizzeria (14184 NW Holly Road), located immediately west

of the Camp Union Grocery; a small vacant portion of land immediately west of the Camp Union Pizzeria; and the Camp Union Saloon (14194 NW Holly Road), located in the southwest corner of the Site. The businesses all front NW Holly Road. The northern portion of the Site is undeveloped. The Camp Union Store includes a separate canopy over four multi-grade fuel dispensers with three fuel USTs located in a single basin immediately east of the dispensers. Collectively, the businesses are known locally as Camp Union. Appendix A – Figure 2, Site Map, depicts the Site features.

Topographically, the Site is situated at 400 feet above sea level with a slight downward slope to the east. The site neighborhood is mixed residential and commercial. NW Holly Road borders the site to the south followed by a single-family residence. Small acreages with single-family residences border to the west and north. A church borders to the east. The Site is zoned Rural Commercial (RCO).

5.1 GEOLOGIC SETTING

The Site is situated in the Puget Sound Lowlands physiographic province, a broad north-south trending trough between the Olympic Mountains to the west and the Cascade Mountains to the east. Elevation in the Lowlands ranges from sea level up to several hundred feet. North-south trending valleys and low, nearly flat-topped highlands cut by streams dominate the topography. The Puget Sound occupies a large part of the western portion of the basin and lakes and streams occur frequently throughout the area.

Surficial geology is dominated by Pleistocene glacial alluvium with Recent alluvium in river floodplains and mouths. Pleistocene sediments are typically well-compacted beds of very dense till interbedded with sands, silts and gravels with occasional lacustrine deposits. Beds of till are often several meters thick containing frequent discontinuous lenses of more permeable material. Perched groundwater frequently occurs in the lenses with larger aquifers occupying sandy strata overlying less permeable till or silt deposits. The first occurrence of groundwater is typically within 50 feet of the surface.

Per the United States Geological Survey (USGS), the Site is located near the contact between Pleistocene-age Vashon recessional outwash deposits and Vashon till deposits. Vashon recessional outwash deposits consist of variably sorted gravel and sand with small amounts of silt and clay deposited by meltwater from receding glaciers. Till deposits consist of generally clay, silt, sand, and gravel with boulders that is not sorted or stratified.

5.2 SITE HISTORY

According to Kitsap County building permit records, a previous Camp Union Service grocery store was built in 1950, and two 1,000-gallon gasoline USTs were installed at that time. According to Mr. Barney Graden, former Site owner, the 1,000-gallon gasoline USTs were installed under a single dispenser island located directly in front of the current Camp Union Pizzeria building. Also, according to Mr. Graden, the USTs and dispenser island were removed when the Camp Union Grocery was built. The building now occupied by Camp Union Pizzeria appears to be the Camp Union Service building built in 1950.

The Camp Union Saloon was added in 1981. A building labeled "Feed Store", located in the currently-vacant space between the Camp Union Pizzeria and the Camp Union Saloon, is marked as "Destroyed by Fire 10-95".

According to Kitsap County Assessor records, the 4,800-square foot Camp Union Store building and gasoline station were constructed in 1991. Underground Storage Tank

information provided in regulatory database records indicates that the current USTs were installed on 8/31/1989.

5.3 PREVIOUS INVESTIGATION

In May of 2011, ENCON Solutions, Inc. (ENCON) completed a Phase II Environmental Site Assessment at the Site. According to the ENCON report, Krazan & Associates, Inc. conducted a Phase I Environmental Site Assessment of the Site in July of 2003 and reported that the current Camp Union Pizzeria building was a gasoline station with a single dispenser island from 1956 until 1986. Krazan recommended addition investigation at the former USTs and dispensers.

Also, according to the ENCON report, environmental consultant Robert Rodman advanced three soil borings in September of 2004 to depths of 12 and 13 feet in the area of the former single gasoline dispenser island and USTs. Mr. Rodman reported no petroleum hydrocarbon contamination in the borings.

In the May 2011 investigation, ENCON advanced six soil borings (B1 – B6) to depths of 16 to 20 feet and collected seven soil and two groundwater samples for analysis of gasoline-range total petroleum hydrocarbons by Washington Department of Ecology (Ecology) Method NWTPH-Gx; benzene, toluene, ethylbenzene, and xylenes by EPA Method 8021B and 8260C, as well as diesel-range total petroleum hydrocarbons by Ecology Method NWTPH-Dx. Three of the borings were advanced near the current USTs east of the current dispensers and three were advanced west of the current dispensers, also the area of the former 1,000-gallon gasoline USTs and dispenser (referred to from this point on as the historical USTs and dispensers). ENCON reported no petroleum hydrocarbons from samples collected in the area of the current USTs. Gasoline-range total petroleum hydrocarbons in soil samples from the west side of the current dispensers ranged from 36 milligrams per kilogram (mg/kg) at 16 feet of depth in boring B4 to 36,300 mg/kg in boring B6 at 16 feet. Benzene ranged from 0.044 mg/kg to 33 mg/kg in the same two samples from borings B4 and B6 at 16 feet of depth. Groundwater samples from borings B4 and B5 contained gasoline-range total petroleum hydrocarbons at 16,700 micrograms per liter (ug/l) and 239,000 ug/l and benzene at 45 ug/l and 1,680 ug/l, respectively.

In June 2011, Robert M. Rodman, Environmental Consultant advanced five borings (B7, B8, B9, MW-1, and MW-2) in the area of the historical USTs and dispenser. Groundwater monitoring wells were installed in two of the borings. One additional boring northeast of the current USTs (MW-3) was also completed as a groundwater monitoring well. Soil samples from borings B7, B8 and B9 contained gasoline-range total petroleum hydrocarbons ranging from 720 mg/kg at 17 feet in B9 to 4,200 mg/kg at 12 feet in B8. Soil samples from MW-1 at 16 feet and MW-2 at 16 feet contained 51 and 50 mg/kg of gasoline-range total petroleum hydrocarbons, respectively. No contaminants were detected in groundwater from MW-1. Groundwater from MW-2 contained 130,000 ug/l of gasoline-range total petroleum hydrocarbons. No contaminants were detected in soil or groundwater from MW-3.

In August 2011, GeoConsulting, Inc. observed excavation of a total of 325 tons of soil from an excavation located west of the current dispensers in the area of the former gasoline USTs and dispenser. The excavation was approximately 15 to 16 feet deep at the deepest point. Approximately 312 tons of soil was transported off-site for proper disposal.

Native soil observed in the excavations consisted of approximately eight feet of poorly-sorted, rounded gravel underlain by three to four feet of poorly-sorted, medium sand that was underlain by silt. Groundwater was not observed in the excavation.

GeoConsulting collected five soil samples from the excavation and six from the stockpiled soil. The analytical laboratory reported gasoline-range total petroleum hydrocarbons and BTEX compounds above Method A Cleanup Levels at 10 to 12 feet below grade in the central and southern excavation.

Prior to backfilling, 1,100 pounds of Oxygen Release Compound – Advanced (ORC Advanced), supplied by Regenesis of San Clemente, California were installed in the ponded groundwater in the two excavations.

6.0 FIELD ACTIVITIES

This investigation was focused on further defining the lateral and vertical extent of soil and groundwater contamination to the north, south, and east. A licensed driller performed all drilling. A GeoConsulting hydrogeologist directed the driller to the boring and sampling locations, collected the samples, performed the measurements, and documented the activities.

GeoConsulting chose boring and well installation locations as follows:

- Boring B-1/MW-4 was located approximately four feet south of the pizzeria building. This location was chosen to determine the northern limit of the contaminant plume.
- Boring B-2/MW-5 was located immediately south of the Camp Union store and north of the current USTs. This location was chosen to determine the eastern and downgradient limit of the contaminant plume.
- Boring B-3/MW-6 was located south of the southwestern dispenser in the planter. This location was chosen to determine the southern limit of the contaminant plume.

All soil cuttings, decontamination water, and purge/development water were placed in 50-gallon drums and left on Site pending analysis. Appendix A—*Figure 2, Site Map* depicts boring and well locations.

6.1 SUBSURFACE SOIL INVESTIGATION

On March 13, 2017, ESN Northwest, Inc. (ESN) advanced two soil borings (B-1 and B-2) to approximately 20 and 15 feet below the ground surface utilizing a Geoprobe 7800 direct push drill rig. On May 9, 2017 ESN returned to the Site to advance boring B-3 to approximately 15 feet. In each case, ESN drove a 5-foot long stainless-steel sampler lined with a plastic sampling sleeve in 5-foot intervals utilizing a hydraulically operated hammer. The driller then withdrew the sampler and the GeoConsulting hydrogeologist collected a small amount of the sample for field screening, collected a sample for laboratory analysis, and logged the sample by the Unified Soil Classification System. Laboratory samples for volatile compound analysis were collected per Method 5035. Samples for non-volatile analysis were collected in 4-ounce jars. The hydrogeologist placed all samples in the appropriate laboratory-prepared jars, labeled them, and placed them in a cooler until delivered to the analytical laboratory.

The hydrogeologist observed sand with minor silt and sandy gravel with minor silt from below the surface substrate to approximately 14 feet. A stratum of olive-gray silt was encountered

from approximately 14 feet to approximately 16 feet. Field screening observations indicated contamination in boring B-1 only. Appendix B – *Boring Logs* presents soil boring details.

Groundwater was encountered at approximately 7 to 9 feet below the ground surface in each of the borings, based on soil sample water content.

6.2 GROUNDWATER INVESTIGATION

To further define and characterize the Site groundwater with respect to COCs as well as depth, gradient, and inferred flow direction, GeoConsulting installed three new permanent groundwater monitoring wells on the Site. The wells were named MW-4, MW-5, and MW-6 to correspond with GeoConsulting borings B-1, B-2, and B-3 respectively.

6.2.1 Well Installation and Development

The driller installed a 2-inch diameter groundwater monitoring well in each of the three borings advanced on March 13, 2017 and May 9, 2017. The wells were screened across the groundwater table as encountered during drilling using Schedule 40 PVC well screen with a blank riser. GeoConsulting developed the new wells on March 21, 2017 and on May 15, 2017 by bailing approximately 20 gallons from each well using a disposal plastic bailer per well.

6.2.2 Groundwater Purging and Sampling

Pre-existing groundwater monitoring wells MW-1, MW-2 and MW-3 were also measured, purged and sampled on March 21, 2017, GeoConsulting measured the groundwater elevation in all six wells prior to purging each of the pre-existing wells and collecting a groundwater sample from all five wells. The hydrogeologist measured the depth to groundwater in each well to the nearest 0.01 feet relative to a reference point on the top of each casing. The Washington State Department of Ecology assigned a unique well number.

6.2.3 Well Locations and Elevations

The hydrogeologist used an auto level and stadia rod to measure the elevation of the reference point of each well casing relative to an on-site datum assigned an elevation of 426.00 feet, based on Washington Department of Ecology EIM Groundwater Map Search data. The resulting data was used to calculate the elevation of groundwater in each well relative to the 426.00-foot datum. The well number, the Department of Ecology well number, and the groundwater elevation for each well is shown in the following table:

Well No.	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
Dept. of Ecology Well No.	BIE 977	BIE 978	BBB 285	BJR 677	BJR 676	BJR 568
Groundwater Elevation	421.19 ft.	421.14	416.06	420.01	419.42	-

6.2.4 Calculating Groundwater Migration Direction

GeoConsulting calculated the groundwater migration direction across the Site using well location and groundwater data. The groundwater migration direction is to the east-northeast across the Site.

6.3 LABORATORY ANALYSIS

GeoConsulting submitted one soil sample from each boring to ESN Northwest, Inc., a Washington State certified analytical laboratory, for analysis of gasoline-range organics, benzene, toluene, ethylbenzene, and xylenes.

GeoConsulting also submitted groundwater samples from wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6 for analysis of one or more of the following: gasoline-range organics, diesel- and lube oil-range organics, as well as benzene, toluene, ethylbenzene, xylenes, and methyl tert-butyl ether (MTBE).

7.0 LABORATORY ANALYTICAL RESULTS

All soil and groundwater samples were delivered to the laboratory under chain-of-custody procedures within the required holding times and analyzed within the laboratory's standard turnaround time.

7.1 SOIL ANALYTICAL RESULTS

The laboratory detected gasoline-range organics at 5,300 milligrams per kilogram (mg/kg), benzene at 0.08 mg/kg, toluene at 1.2 mg/kg, ethylbenzene at 9.7 mg/kg, and xylenes at 68 mg/kg in soil from boring B-1/MW-4 at 15 feet below the surface. All other soil sample results are below the laboratory practical quantitation limits (PQLs). *Table 1—Soil Analytical Data Summary* summarizes the soil analytical results.

Table 1
Soil Analytical Data Summary

Sample ID	Sample Date	Sample Depth (ft.)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)
B-1-15	3/13/17	15	**5300**	**0.08**	1.2	**9.7**	**68**
B-2-15	3/13/17	15	<10	<0.02	<0.05	<0.05	<15
B6/MW-6	5/9/17	9.5	<10	<0.02	<0.05	<0.05	<15
Method A Cleanup Level			30 mg/kg / 100 mg/kg*	0.03	7	6	9
Lab Method			NWTPH-Gx	8260	8260	8260	8260

NWTPH-Gx = Northwest method for gasoline-range organics.
<0.05 = Indicates concentrations were less than the stated laboratory reporting limit of 0.05 mg/kg.
mg/kg = Milligrams per kilogram (ppm).
B6/MW-6 = This soil sample is mis-labeled and refers to boring B3.

7.2 GROUNDWATER ANALYTICAL RESULTS

The laboratory detected gasoline range organics at 20,000 micrograms per liter (µg/l) and 1,700 µg/l in MW-2 and MW-4, respectively. Gasoline range organics, toluene, ethylbenzene, and xylenes were also detected in MW-2 and MW-4. Toluene, ethylbenzene, and xylenes were detected at below Method A cleanup levels in MW-6. All other groundwater sample results are below the laboratory practical quantitation limits PQLs. *Table 2—Groundwater Analytical Data Summary* summarizes groundwater results.

Table 2
Groundwater Analytical Data Summary

Sample ID	Date Sampled	GRO (µg/L)	DRO/Lube Oil RO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW-1/ BIE977	2/17/17	<100	NT	<1.0	<1.0	<1.0	1.7	<10
MW-2/ BIE978	2/17/17	**20000**	3.4/0.41	**16**	470	300	**2650**	<100
MW-3/ BBB285	2/17/17	<100	NT	<1.0	<1.0	<1.0	<1.0	<10
MW-4/ BJR677	3/21/17	**1700**	NT	1.2	2.5	17	96	NT
MW-5/ BJR676	3/21/17	<100	NT	<1.0	<1.0	<1.0	<1.0	NT
MW-6/ BJR568	5/15/17	520	NT	<1.0	1.3	17	31.1	NT
Method A Cleanup Level		800 µg/l / 1,000 µg/l*	0.5 mg/l	5 µg/l	1,000 µg/l	700 µg/l	1,000 µg/l	20 µg/l
Laboratory Methods		NWTPH-Gx	NWTPH-Dx Ext.	8021B	8021B	8021B	8021B	8021B

NWTPH-Gx = Northwest method for gasoline-range organics.
NWTPH-Dx ext. = Northwest method for diesel and lube oil range organics.
<1.0 = Indicates concentrations were less than the stated laboratory reporting limit of 1.0 ug/L.
µg/L = Micrograms per liter.
Mg/L = Milligrams per liter.
NT = This sample was not tested for this compound.
800 µg/l / 1,000 µg/l* = The cleanup level is 800 µg/l when benzene is not present and 1,000 µg/l when benzene is present.

Appendix C—*Certified Laboratory Reports* contains detailed analytical procedures and results.

7.3 COMPARISON TO CLEANUP STANDARDS

Cleanup standards, as put forth in Chapter 173-340, consist of cleanup level concentrations for contaminants of potential concern, point(s) of compliance, and applicable or relevant and appropriate requirements (ARARs). The contaminants of potential concern at the site are TPH-G, benzene, toluene, ethylbenzene, and xylenes.

Per Chapter 173-340, the following three methods are available for establishing cleanup levels: (1) Method A cleanup levels are intended for use at sites with relatively few COC and relatively routine cleanups; (2) Method B is the universal cleanup method for Washington state and provides for cleanup levels based on site-specific characteristics; and (3) Method C is used mostly on industrial sites.

Identifying points of compliance and ARARs is not within the scope of this investigation. Therefore, cleanup levels have not been established for the Property. However, Method A is appropriate for comparison purposes. Method A includes tables of common contaminants and their cleanup levels. Tables 720-1 and 740-1 of Chapter 173-340 provide Method A cleanup levels for the contaminants of concern.

The following table summarizes the Method A cleanup levels for COC in soil and groundwater:

	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-G	TPH-D
Soil	0.03 mg/kg	7 mg/kg	6 mg/kg	9 mg/kg	30 mg/kg / 100 mg/kg*	2,000 mg/kg
Groundwater	5 µg/l	1,000 µg/l	700 µg/l	1,000 µg/l	800 µg/l	500 µg/l

* = The cleanup level is 30 mg/kg when benzene is not present and 100 mg/kg when benzene is present.

8.0 CONCEPTUAL SITE MODEL

Chapter 173-340 of the Washington Administrative Code (Chapter 173-340) defines contaminated site (Site)as the property where the contamination originated as well as adjoining or nearby properties that have been impacted by the contamination. Currently, the limits of the contamination have been delineated to the west, south, and east. Due to the proximity of Site buildings to MW-4, it is possible minor contamination extends under the buildings to the north.

8.1 Contaminants of Concern and Their Distribution

Soil and groundwater contamination is restricted to approximately small area in the south-central portion of the Site, west of the current USTs. The COC are in a zone of impacted soil and groundwater from Gasoline range organics and a few volatile organic compounds are documented in shallow soil and groundwater in this area. The volatile organic compounds are consistent with gasoline and aged gasoline. The most volatile components of gasoline are low or absent, also suggesting aged gasoline. Based on the above, the contaminants of concern (COCs) are gasoline range organics, benzene, toluene, ethylbenzene, and xylenes.

8.2 Contaminant Sources

The primary source of contamination is assumed to be overfillage, spillage, and possibly leakage from the historical gasoline USTs and associated dispenser and product lines formerly located south of the pizzeria and west of the current dispensers. The time of release and release mechanism are not precisely known. The former USTs, dispenser, and product lines were removed prior to 1991 followed by extensive remedial excavation of impacted soil in 2011.

8.3 Transport Mechanisms

Possible transport mechanisms for soil include particles and volatilization to outdoor air and leaching to groundwater. Potential groundwater contaminant transport mechanisms include advection and diffusion through groundwater, then volatilization from groundwater used as tap water to indoor air, volatilization from groundwater to outdoor and indoor air, and discharge to the surface. To volatilize to outdoor or indoor air, contaminants must partition from the groundwater to soil vapor in the vadose zone, then migrate upward and/or laterally to the surface or to a building via molecular diffusion or advection.

8.4 Exposure Pathways and Receptors

The area of the Site impacted by contamination is entirely paved. The Site is zoned commercial and will likely remain a gasoline station for the foreseeable future. A paved

roadway adjoins the Site to the south, followed by small residential acreages. However, the residences are cross-gradient with respect to the inferred groundwater migration direction. Unsurfaced ground and a church adjoin the Site to the east followed by Lake William Symington approximately 1,600 feet east. However, based on the estimated age of the release, the short distance the plume has traveled to date, and the fact that the source structures and most of the impacted soil has been removed, it appears that COCs in the groundwater plume are attenuating naturally by biodegradation and dilution within approximately 30 feet of the former source location. However, because the plume has not been fully delineated to the north, inhalation, ingestion, and dermal contact with surface and subsurface soil by current and future residential and occupational receptors, as well as current construction and excavation receptors, are considered potentially complete pathways now. The Property contains no surface waterways and surface sediments.

9.0 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this investigation was to further define the northern, southern, and eastern limits and magnitude of soil and groundwater contamination. The results indicate that gasoline-range organics as well as some BTEX compounds are present in soil and groundwater west of the current dispensers. The groundwater plume stops north of the planter between the Site and Holly Road NW and west of MW-5. The northern limit of the plume has not been delineated and may extend under the buildings. However, GeoConsulting does not anticipate that the plume extends far to the north of MW-4, based on the short distance the plume has traveled in general. Vapor intrusion remains a possibility.

There are two apparent paths forward toward cleanup and closure of the Site:

1) Pursue remediation and closure through the State of Washington Department of Ecology Voluntary Cleanup Program. This path includes the general steps of; a) performing additional delineation of the plume in the northern direction and determining whether vapor intrusion is a concern, b) conducting a feasibility study to determine an appropriate remedial method, c) implementing the remedial method with monitoring for a period of time followed by one year of groundwater monitoring, and d) applying for closure.
2) Pursue remediation and closure through the State of Washington Pollution Liability Insurance Agency's Loan and Grant Program. This path includes the same general steps but may provide additional guidance and financial assistance. This Site appears to be a good candidate for this program.

Either path will likely require investigation to determine if vapor intrusion is a concern and delineation of the plume in the northern direction.

10.0 REFERENCES

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Appendix A- FIGURES

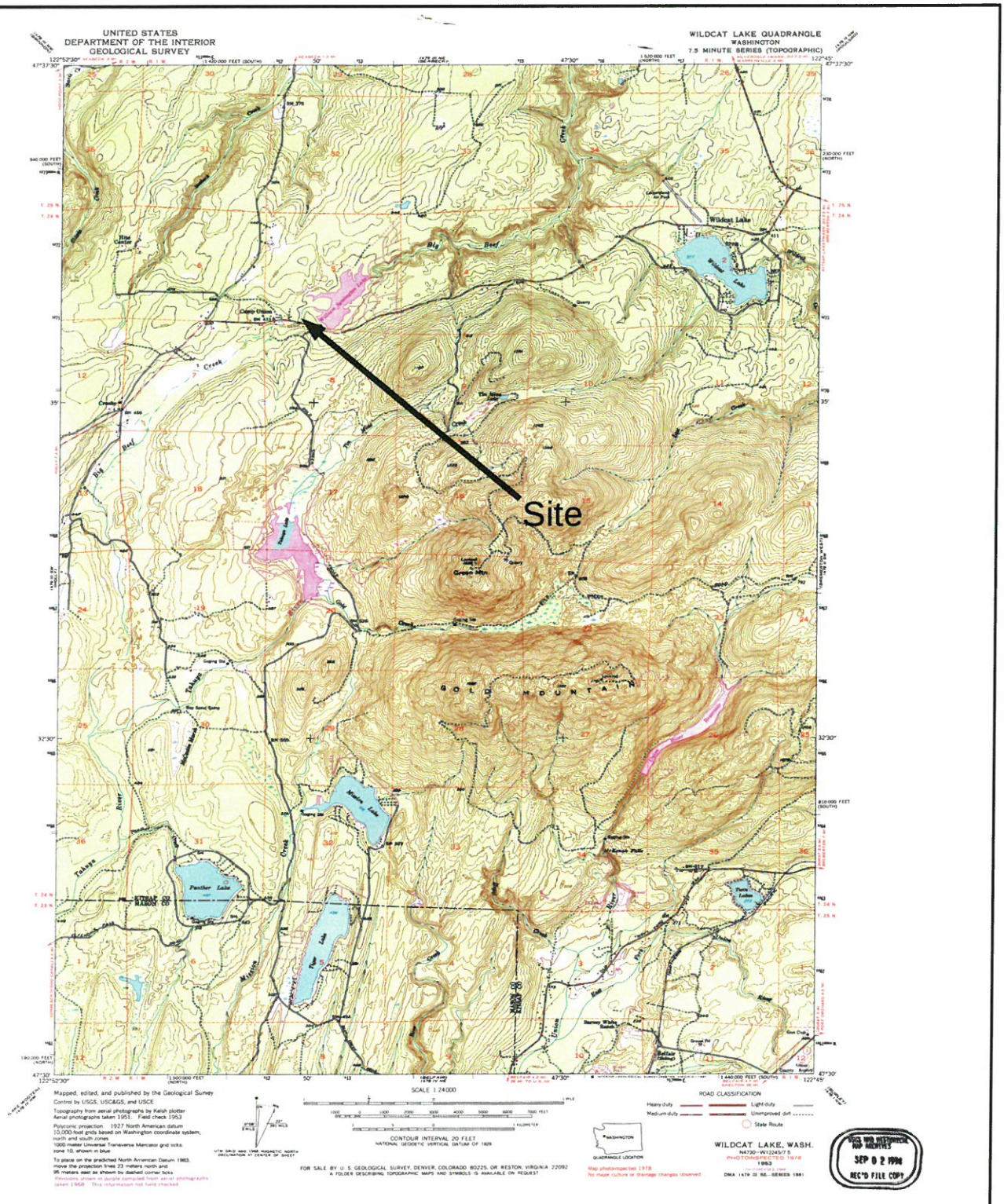

Figure 1 – Site Location Map

Camp Union
14174 NW Holly Road
Seabeck, Washington

GeoConsulting, Inc.
May 23, 2017

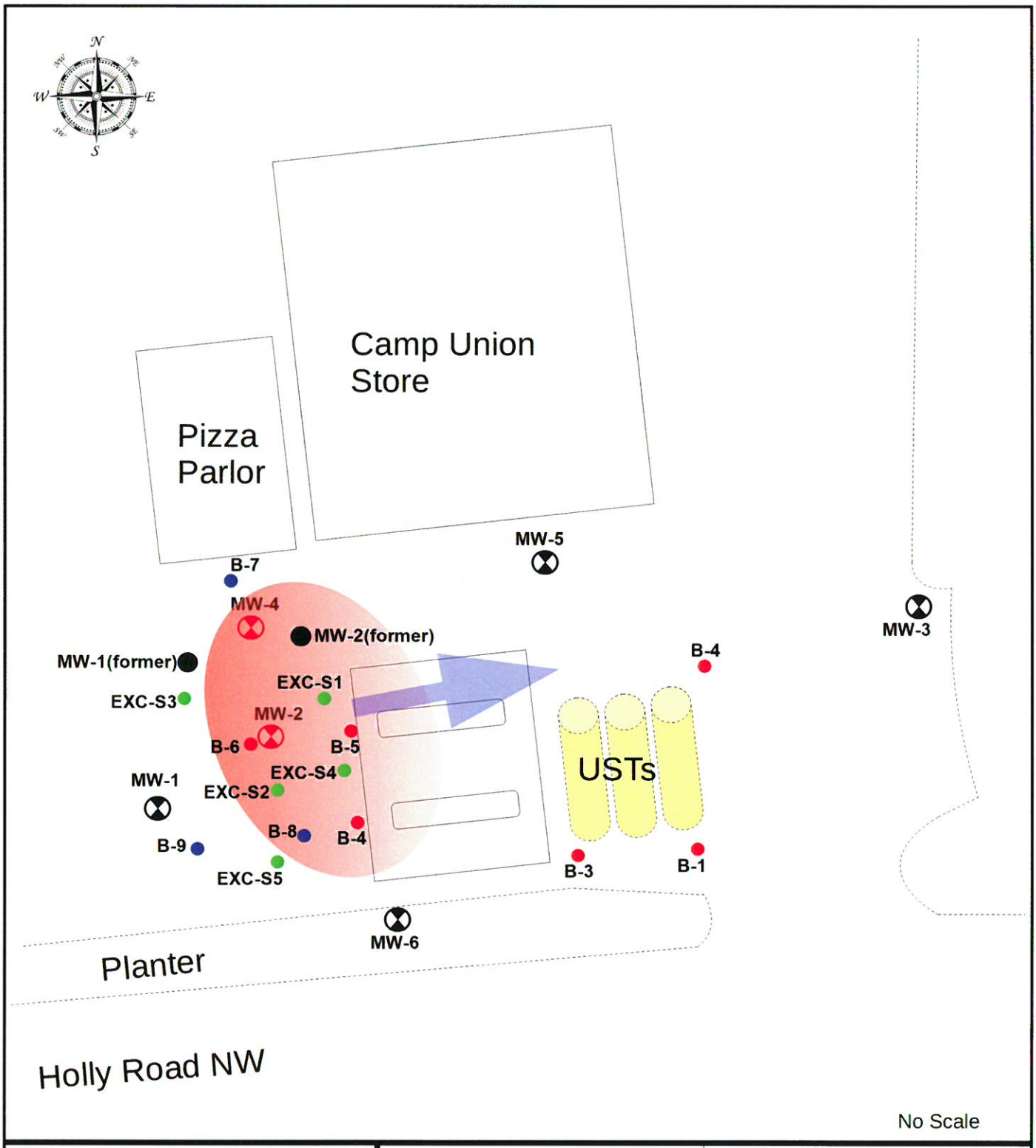

Figure 2, Site Map

Camp Union
14174 Holly Road NW
Seabeck, Washington

GeoConsulting, Inc.
425-350-7645

Drawn by: Jim Coppernoll
Date: May 27, 2017

Notes:

- Groundwater monitoring well
- Contaminated groundwater monitoring well
- Abandoned groundwater monitoring well
- Soil excavation sample - 2011
- Approximate area of known groundwater contamination
- Groundwater migration direction
- ENCON soil boring location - 2011
- Rodman soil boring location - 2011

Appendix B – BORING LOGS

Boring Log	B-1/MW-4			1 of 1
	Drilling Co.: ESN Driller: Brian	Method: Direct Push	Logged By: Jim Coppernoll	
GeoConsulting, Inc.	Lat: 47.59363	Ele: ~426 ft.	Well Depth: 15 ft.	
	Long: -122.84059	TOC Ele: N/A	Casing Diameter: 2 in.	
Project No.: SER01-1702	Depth to Water at time of drilling: ~8 ft.		Date Drilled: 03/03/2017	
	Boring Depth: 20 ft.		Date Developed: 03/21/2017	
Address: 14174 Holly Road NW, Seabeck, Washington	Sandpack: 9 - 15	Seal: 0.5 - 9		

Depth (Feet)	Rec.	PID	Time	Soil	Description	Well
1					Asphalt Surface.	
2						
3						
4						
5	40	0	1022	SP/GP	SAND/GRAVEL; gray, moist, medium- to coarse-grained sand with rounded gravel.	
6						
7						
8						
9						
10	50	0	1024	GM	GRAVEL; gray, saturated, subrounded with silt.	
11				SP	----- Becomes SAND, saturated, gray, medium with minor silt, hydrocarbon odor.	
12						
13						
14					------ Becomes SILT; olive-gray moist, hydrocarbon odor.	
15	50	250	1027		------ GRAVEL; gray, saturated, subrounded with silt.	
16				GP		
17					Terminated at 20 feet	
18						
19						
20						

Boring Log	B-2/MW-5			1 of 1
	Drilling Co.: ESN Driller: Brian	Method: Direct Push	Logged By: Jim Coppernoll	
GeoConsulting, Inc.	Lat: 47.59366	Ele: ~426 ft.	Well Depth: 15 ft.	
	Long: -122.84035	TOC Ele: N/A	Casing Diameter: 2 in.	
Project No.: SER01-1702	Depth to Water at time of drilling: ~8 ft.		Date Drilled: 03/03/2017	
	Boring Depth: 15 ft.		Date Developed: 03/21/2017	
Address: 14174 Holly Road NW, Seabeck, Washington	Sandpack: 9 - 15	Seal: 0.5 - 9		

Depth (Feet)	Rec.	PID	Time	Soil	Description	Well
1					Asphalt Surface.	
2						
3						
4						
5	50	0	1226	SP	SAND; reddish-grown, moist, medium- to coarse-grained sand with some rounded gravel.	
6						
7						
8				GM	GRAVEL; tannish-gray, saturated, subrounded with sand.	
9						
10	50	0	1228			
11						
12					------	
13					Becomes SAND, saturated, gray, medium with minor silt. ------	
14					Becomes SILT; olive-gray moist.	
15	50	0	1230		Terminated at 15 feet	
16						
17						
18						
19						
20						

Boring Log	B-3/MW-6			1 of 1
	Drilling Co.: ESN Driller: Brian	Method: Direct Push	Logged By: Jim Coppernoll	
GeoConsulting, Inc.	Lat: 47.59346	Ele: ~426 ft.	Well Depth: 15 ft.	
	Long: -122.84048	TOC Ele: N/A	Casing Diameter: 2 in.	
Project No.: SER01-1702	Depth to Water at time of drilling: ~8 ft.		Date Drilled: 05/9/2017	
	Boring Depth: 15 ft.		Date Developed: 05/15/2017	
Address: 14174 Holly Road NW, Seabeck, Washington	Sandpack: 9 - 15	Seal: 0.5 - 9		

Depth (Feet)	Rec.	PID	Time	Soil	Description	Well
1					Asphalt Surface.	
2						
3						
4						
5	40	0	1140	SP/GP	SAND/GRAVEL; gray, moist, medium- to coarse-grained sand with rounded gravel.	
6						
7						
8						
9						
10	50	0	1144	GM	GRAVEL; gray, saturated, subrounded with silt.	
11				SP	----- Becomes SAND, saturated, gray, medium with minor silt, hydrocarbon odor.	
12						
13						
14					------ Becomes SILT; olive-gray moist, hydrocarbon odor.	
15	50	0	1155		------ GRAVEL; gray, saturated, subrounded with silt.	
16				GP		
17					Terminated at 20 feet	
18						
19						
20						

Appendix C – CERTIFIED LABORATORY REPORT

ESN NORTHWEST CHEMISTRY LABORATORY

GeoConsulting, Inc.
PROJECT CAMP UNION
PROJECT #SER01-1702
Seabeck, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	3/20/2017	3/20/2017	nd	nd	nd	nd	nd	122
LCS	3/20/2017	3/20/2017	74%	83%	84%	89%	145%	119
LCSD	3/20/2017	3/20/2017	81%	97%	99%	102%	---	117
B1-15	3/13/2017	3/20/2017	**0.08**	**1.2**	**9.7**	**68**	**5300**	122
B2-15	3/13/2017	3/20/2017	nd	nd	nd	nd	nd	127
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS : 65% TO 135%

ESN NORTHWEST, INC. | Environmental Services Network

CHAIN-OF-CUSTODY RECORD

CLIENT: GeoConsulting, Inc.

ADDRESS: 15306 Plainview Pl, Monroe, WA 98272

PHONE: 425-350-7645 FAX: email jim@geoconsulting@gmail.com

CLIENT PROJECT #: SER01-1702 PROJECT MANAGER: Jim Coppernoll

DATE: 3/13/17 PAGE 1 OF 1

PROJECT NAME: Camp Union

LOCATION: 14174 Holly Rd, Seabeck

COLLECTOR: Jim Coppernoll DATE OF COLLECTION: 3/13/17

Sample Number	Depth	Time	Sample Type	Container Type	TPH - HCID	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Laboratory Note Number
1. B1-7	7	1024	S	VOAs																				
2. B-15	15	1027	S	VOAs			X	X																
3. B2-15	15	1230	S	VOAs			X	X																
4.																								
5.																								
6.																								
7.																								
8.																								
9.																								
10.																								
11.																								
12.																								
13.																								
14.																								
15.																								
16.																								
17.																								
18.																								

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
James V. Coppernoll	3/13/17 1:00	Ben Thomas	3/13/17 1:00
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Turn Around Time: 24 HR 48 HR (5 DAY)

1210 Eastside Street SE, Suite 200
Olympia, Washington 98501
Phone: 360-459-4670
Fax: 360-459-3432
Website: www.esnnw.com
E-Mail: info@esnnw.com

ESN NORTHWEST CHEMISTRY LABORATORY

GeoConsulting, Inc
PROJECT CAMP UNION
PROJECT #SER01-1702
Seabeck, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	5/12/2017	5/12/2017	nd	nd	nd	nd	nd	98
LCS	5/12/2017	5/12/2017	115%	116%	107%	123%	127%	88
LCSD	5/12/2017	5/12/2017	104%	108%	104%	116%	---	97
B6/MW-6	5/9/2017	5/12/2017	nd	nd	nd	nd	nd	100
B6/MW-6 Duplicate	5/9/2017	5/12/2017	nd	nd	nd	nd	nd	100
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS : 65% TO 135%

ESN NORTHWEST CHEMISTRY LABORATORY

GeoConsulting, Inc
PROJECT CAMP UNION
PROJECT #SER01-1702
Seabeck, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	5/12/2017	5/12/2017	109	nd	nd
LCS	5/12/2017	5/12/2017	107	120%	---
B-6/MW-6	5/12/2017	5/12/2017	100	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST, INC. | Environmental Services Network

CHAIN-OF-CUSTODY RECORD

CLIENT: GeoConsulting, Inc.
ADDRESS: 15306 Plainview Place, Monroe, WA 98272
PHONE: 425-350-7645 FAX: jim.geoconsulting@gmail.com
CLIENT PROJECT #: SER01-1702 PROJECT MANAGER: Jim Copperwell

DATE: 5/9/17 PAGE 1 OF 1
PROJECT NAME: Camp Union
LOCATION: 14174 NW Holly Rd, Seabeck, WA
COLLECTOR: Jim Copperwell DATE OF COLLECTION: 5/9/17

Sample Number	Depth	Time	Sample Type	Container Type	TPH - HCID	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Laboratory Note Number
1. B6/MW-6	9.5	1144	S	VOCs		X	X	X																
2.																								
3.																								
4.																								
5.																								
6.																								
7.																								
8.																								
9.																								
10.																								
11.																								
12.																								
13.																								
14.																								
15.																								
16.																								
17.																								
18.																								

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	5/9/17 12:30	[signature]	5/9/17 12:31
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Turn Around Time: 24 HR 48 HR (5 DAY)

1210 Eastside Street SE, Suite 200
Olympia, Washington 98501
Phone: 360-459-4670
Fax: 360-459-3432
Website: www.esnnw.com
E-Mail: info@esnnw.com

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

March 29, 2017

Jim Coppernoll
GeoConsulting, Inc.
15306 Plainview Place
Monroe, WA 98272

Re: Analytical Data for Project SER01-1702
Laboratory Reference No. 1703-199

Dear Jim:

Enclosed are the analytical results and associated quality control data for samples submitted on March 22, 2017.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: March 29, 2017
Samples Submitted: March 22, 2017
Laboratory Reference: 1703-199
Project: SER01-1702

Case Narrative

Samples were collected on March 21, 2017 and received by the laboratory on March 22, 2017. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: March 29, 2017
Samples Submitted: March 22, 2017
Laboratory Reference: 1703-199
Project: SER01-1702

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-4**					
Laboratory ID:	03-199-01					
Benzene	**1.2**	1.0	EPA 8021B	3-23-17	3-23-17	
Toluene	**2.5**	1.0	EPA 8021B	3-23-17	3-23-17	
Ethyl Benzene	**17**	1.0	EPA 8021B	3-23-17	3-23-17	
m,p-Xylene	**69**	1.0	EPA 8021B	3-23-17	3-23-17	
o-Xylene	**27**	1.0	EPA 8021B	3-23-17	3-23-17	
Gasoline	**1700**	100	NWTPH-Gx	3-23-17	3-23-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*61-118*				
Client ID:	**MW-5**					
Laboratory ID:	03-199-02					
Benzene	**ND**	1.0	EPA 8021B	3-23-17	3-23-17	
Toluene	**ND**	1.0	EPA 8021B	3-23-17	3-23-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-23-17	3-23-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-23-17	3-23-17	
o-Xylene	**ND**	1.0	EPA 8021B	3-23-17	3-23-17	
Gasoline	**ND**	100	NWTPH-Gx	3-23-17	3-23-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*61-118*				

Date of Report: March 29, 2017
Samples Submitted: March 22, 2017
Laboratory Reference: 1703-199
Project: SER01-1702

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0323W1					
Benzene	**ND**	1.0	EPA 8021B	3-23-17	3-23-17	
Toluene	**ND**	1.0	EPA 8021B	3-23-17	3-23-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	3-23-17	3-23-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	3-23-17	3-23-17	
o-Xylene	**ND**	1.0	EPA 8021B	3-23-17	3-23-17	
Gasoline	**ND**	100	NWTPH-Gx	3-23-17	3-23-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*87*	*61-118*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	03-211-02										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**2.05**	**1.78**	NA	NA		NA		NA	14	30	
o-Xylene	**1.65**	**1.49**	NA	NA		NA		NA	10	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*86*	*88*	*61-118*			
MATRIX SPIKES											
Laboratory ID:	03-199-02										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**51.5**	**49.0**	50.0	50.0	ND	**103**	**98**	80-120	5	13	
Toluene	**52.1**	**49.9**	50.0	50.0	ND	**104**	**100**	81-115	4	14	
Ethyl Benzene	**53.1**	**51.4**	50.0	50.0	ND	**106**	**103**	81-114	3	12	
m,p-Xylene	**52.2**	**50.8**	50.0	50.0	2.05	**100**	**98**	81-114	3	13	
o-Xylene	**52.4**	**51.6**	50.0	50.0	1.65	**102**	**100**	81-113	2	11	
Surrogate:											
Fluorobenzene						*106*	*96*	*61-118*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GeoConsulting, Inc.
Project Number: SERO1-1702
Project Name: Camp Union
Project Manager: Jim Coppernoll
Sampled by: Jim Coppernoll

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Days ☐ 3 Days
- ☒ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Laboratory Number: 03-199

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A					% Moisture
1	MW-4	3/21/17	1200	W	4		X																				
2	MW-5	3/21/17	1230	W	↓		X																				

	Signature	Company	Date	Time
Relinquished		GeoConsulting Inc	3/22/17	9:50
Received		OSE	3/22/17	0950
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

May 23, 2017

Jim Coppernoll
GeoConsulting, Inc.
15306 Plainview Place
Monroe, WA 98272

Re: Analytical Data for Project SER01-1702
Laboratory Reference No. 1705-204

Dear Jim:

Enclosed are the analytical results and associated quality control data for samples submitted on May 16, 2017.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: May 23, 2017
Samples Submitted: May 16, 2017
Laboratory Reference: 1705-204
Project: SER01-1702

Case Narrative

Samples were collected on May 15, 2017 and received by the laboratory on May 16, 2017. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: May 23, 2017
Samples Submitted: May 16, 2017
Laboratory Reference: 1705-204
Project: SER01-1702

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-6**					
Laboratory ID:	05-204-01					
Benzene	**ND**	1.0	EPA 8021B	5-18-17	5-18-17	
Toluene	**1.3**	1.0	EPA 8021B	5-18-17	5-18-17	
Ethyl Benzene	**17**	1.0	EPA 8021B	5-18-17	5-18-17	
m,p-Xylene	**27**	1.0	EPA 8021B	5-18-17	5-18-17	
o-Xylene	**4.1**	1.0	EPA 8021B	5-18-17	5-18-17	
Gasoline	**520**	100	NWTPH-Gx	5-18-17	5-18-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*61-118*				

Date of Report: May 23, 2017
Samples Submitted: May 16, 2017
Laboratory Reference: 1705-204
Project: SER01-1702

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0518W1					
Benzene	**ND**	1.0	EPA 8021B	5-18-17	5-18-17	
Toluene	**ND**	1.0	EPA 8021B	5-18-17	5-18-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-18-17	5-18-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-18-17	5-18-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-18-17	5-18-17	
Gasoline	**ND**	100	NWTPH-Gx	5-18-17	5-18-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*61-118*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	05-176-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*88*	*95*	*61-118*			
MATRIX SPIKES											
Laboratory ID:	05-176-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**43.6**	**45.1**	50.0	50.0	ND	**87**	**90**	80-120	3	13	
Toluene	**44.3**	**45.9**	50.0	50.0	ND	**89**	**92**	81-115	4	14	
Ethyl Benzene	**45.2**	**46.9**	50.0	50.0	ND	**90**	**94**	81-114	4	12	
m,p-Xylene	**44.6**	**46.4**	50.0	50.0	ND	**89**	**93**	81-114	4	13	
o-Xylene	**44.6**	**46.4**	50.0	50.0	ND	**89**	**93**	81-113	4	11	
Surrogate:											
Fluorobenzene						*92*	*89*	*61-118*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
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Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 05-204

Company: GeoConsulting, Inc.
Project Number: SER01-1702
Project Name: Camp Union
Project Manager: Jim Coppernoll
Sampled by: Jim Coppernoll

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Days ☐ 3 Days
- ☒ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A					% Moisture
1	MW-6	5/15/17	1330	W			X																				

	Signature	Company	Date	Time
Relinquished		GeoConsulting, Inc.	5/16/17	11:15
Received			5/16/17	1115
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐