PERIODIC REVIEW

Glacier Park East
Facility/Site ID #: 349

1408 US Highway 2
Leavenworth, Washington 98826

Central Region Office

TOXICS CLEANUP PROGRAM

December 30, 2008

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1.0 INTRODUCTION

This document is a review by the Washington State Department of Ecology (Ecology) of post-cleanup site conditions and monitoring data to ensure that human health and the environment are being protected at the former Glacier Park East site (Site). Cleanup at this Site was implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC).

Cleanup activities at this Site were initiated and conducted under an agreed order entered into with Ecology in 2001. The cleanup actions consisted of isolating soil contamination and monitoring groundwater contamination. Currently, gasoline-range (TPH-G) petroleum hydrocarbons and benzene remain at the Site in groundwater at concentrations that exceed MTCA Method A cleanup levels. TPH-G, diesel-range petroleum hydrocarbons (TPH-D), and volatile organic compounds (VOCs) remain in soil at concentrations that exceed MTCA Method A cleanup levels. The MTCA Method A cleanup levels for groundwater are established under WAC 173-340-720(3). The MTCA Method A cleanup levels for soil are established under WAC 173-340-740(2). WAC 173-340-420 (2) requires that Ecology conduct a periodic review of a site every five years under the following conditions:

(a) Whenever the department conducts a cleanup action;
(b) Whenever the department approves a cleanup action under an order, agreed order or consent decree;
(c) Or, as resources permit, whenever the department issues a no further action opinion and one of the following conditions exists:
    1. Institutional controls or financial assurance are required as part of the cleanup;
    2. Where the cleanup level is based on a practical quantitation limit;
    3. Where, in the department's judgment, modifications to the default equations or assumptions using site-specific information would significantly increase the concentration of hazardous substances remaining at the site after cleanup or the uncertainty in the ecological evaluation or the reliability of the cleanup action is such that additional review is necessary to assure long-term protection of human health and the environment.

When evaluating whether human health and the environment are being protected, the factors the department shall consider include [WAC 173-340-420(4)]:

(a) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the site;
(b) New scientific information for individual hazardous substances of mixtures present at the Site;
(c) New applicable state and federal laws for hazardous substances present at the Site;
(d) Current and projected site use;
(e) Availability and practicability of higher preference technologies; and
(f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

The department shall publish a notice of all periodic reviews in the site register and provide an opportunity for public comment.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Site History

The former Glacier Park East site is located in the City of Leavenworth in Chelan County, Washington (Vicinity Map - Appendix 6.1). In 2001, the Burlington Northern and Santa Fe Railway Company (BNSF) and Chevron Products Company (Chevron) entered into an agreed order with Ecology to address petroleum contamination at the Site. Long-term groundwater monitoring is currently being conducted at the Site.

The former Glacier Park East Site is located near the town of Leavenworth, which was founded in 1892 when the Great Northern Railroad (GNR) line was constructed through the area. The Site was undeveloped during the early 1900s. Standard Oil of California (Chevron) leased the Site from GNR in the mid-1920s. A bulk fuel storage facility was constructed at the Site by Chevron sometime between 1920 and 1940.

Facilities at the Site consisted of one 20,000-gallon above ground storage tank (AST), one 13,000-gallon AST, a pump house, a warehouse/office building, and an unloading rack for receiving product from rail cars. Two 5,000-gallon ASTs were reportedly used at the Site to store gasoline for a short period. The 5,000-gallon ASTs were visible on 1967 and 1979 aerial photographs of the Site. The locations of these historical features are shown in Appendix 6.2. The facilities were removed in 1990. The Site was used in 1992 as a staging area to store equipment and soil associated with bridge construction on U.S. Highway 2 over the Wenatchee River. In addition, the City of Leavenworth places snow from road plowing activities on the Site.

2.2 Site Investigations

The following site investigations have been performed at the site:

- A Preliminary Environmental Assessment was performed for BNSF by Hart Crowser in 1990.
- A Subsurface Exploration and Testing Report was prepared for BNSF by Hart Crowser in 1991.
- A RI/FS was performed in 1996 for BNSF and Chevron by GeoEngineers.
- A Monitoring Well Installation and Groundwater Monitoring Report was prepared in 2001 by GeoEngineers.
- Groundwater Monitoring Reports have been prepared from 2001 through 2008 by GeoEngineers and Kennedy/Jenks Consultants.

Numerous test pits were excavated during site investigation activities in 1990, 1991, and 1996. Petroleum contaminated soils (PCS) were identified at depths ranging from 1.5 to 22.5 feet below ground surface on the site. The extent of PCS is illustrated in Appendix 6.3. Petroleum compounds identified at the Site consist of TPH-G and TPH-D. Concentrations of TPH-G from not detected above 10 milligrams per kilogram (mg/kg) to 4,800 mg/kg in the soil sample from

7.5 feet below ground surface (bgs) in boring VES-1. Concentrations of TPH-D ranged from not detected above 10 mg/kg to 8,350 mg/kg in the soil sample from 7.5 feet bgs in boring VES-1.

2.3 Cleanup Levels

MTCA Method A cleanup levels were used for the Site. The key contaminants of concern are TPH-G, TPH-D, TPH-O, benzene, toluene, ethylbenzene and xylenes. Cleanup levels for these contaminants are available in the table below:

Table 1: 2001 MTCA Method A Cleanup Levels

Contaminant	Groundwater	Soil
	(mg/l)	(mg/kg)
TPH	1.0	NL
TPH-Gas	0.5	1000
TPH-Diesel	0.5	2000
Benzene	0.005	0.5
Ethylbenzene	0.7	40
Toluene	1	20
Total Xylenes	1	20
NL = None listed		

2.4 Remedial Activities

BNSF and Chevron entered into Agreed Order No. DE 01TCPCR-3168 with Ecology in September 2001. The selected cleanup action for the Agreed Order was soil isolation and groundwater monitoring for a minimum of five years. The initial two years required quarterly groundwater monitoring, and the results of those sampling events were to be used to establish monitoring frequency for the remaining three years.

Soil isolation generally consisted of three steps:

1. Raising the Site elevation to the approximate grade of the surrounding roadways.
2. Covering the Site with a horizontal cap of a relatively impermeable material to restrict infiltration of precipitation.
3. Establishing surface drainage on the Site to minimize ponding and infiltration of precipitation on the Site.

The Site cap was constructed in 2003, and consisted of the import of approximately 10 feet of soil to raise the Site to the elevation of surrounding roadways. A layer of asphaltic concrete was placed over the soil. The edges of the raised cap were surrounded by a large rock barrier to prevent erosion and limit access to the surface of the cap.

Due to the containment of contamination at concentrations exceeding MTCA Method A cleanup levels, this alternative requires institutional controls and a long-term plan to monitor and document the integrity of the cap placed over the isolation area.

2.5 Groundwater Monitoring

Quarterly groundwater monitoring was initiated at the site in October 2001. After the initial two-year monitoring period, sampling was continued on a quarterly basis. In 2006, at the conclusion of the five-year monitoring period, it was determined that monitoring should continue for the Site.

Groundwater analytical results are presented on Appendix 6.4. Between 2001 and 2008, concentrations of TPH-G in groundwater samples ranged from not detected to 2,510 micrograms per liter (ug/l). Concentrations of diesel in groundwater samples ranged from not detected to 2,820 ug/l. Lube oil was not detected in groundwater samples. Benzene, ethylbenzene, toluene, and total xylenes (BTEX) compounds were detected at the highest concentrations in the groundwater samples from monitoring well MW-3. Concentrations of BTEX compounds ranged from not detected to 32.2 ug/L for benzene, 38.8 ug/l for ethylbenzene, 137 ug/l for toluene, and 106 ug/l for xylenes.

In 2007, groundwater monitoring frequency was reduced from quarterly to semiannually. The sampling frequency was reduced as a cost saving measure for the BNSF and Chevron. All parties agreed that MW-3 was showing little sign of reaching MTCA Method A cleanup levels in the immediate future, and there was no benefit to continued quarterly groundwater monitoring. Ecology agreed to this reduction in frequency with the understanding that four quarters of clean sample results would still be required to receive a no further action determination for the Site.

2.6 Environmental Covenant

Given the concentrations of petroleum hydrocarbon contamination in soil and groundwater, institutional controls for the Site should include an Environmental Covenant with the following restrictions:

1. Restrictions should be placed on property use at the Site.
2. Restrictions should be placed on groundwater use at the Site.
3. Restrictions should be placed on soil disturbance and soil use at the Site.

The Environmental Covenant for the Site should meet the minimum requirements of the Uniform Environmental Covenants Act (UECA).

3.0 PERIODIC REVIEW

3.1 Effectiveness of completed cleanup actions

Based upon the site visit conducted on December 24, 2008, the Site surface consists of a raised soil cap over the area of soil contamination. The Site is no longer used as a bulk petroleum storage facility. The Site is vacant and is accessible to the public on foot, but not by motorized vehicle. All monitoring wells were observed to be present and intact on and around the Site. The Site use continues to reduce, but not eliminate, direct human exposure pathways (ingestion, contact) to contaminated soils. A photo log is available as Appendix 6.5.

Institutional controls have not been implemented at the Site. At a minimum, an Environmental Covenant should be recorded with the deed for the property. The Environmental Covenant should include the following limitations:

1. Restrictions should be placed on property use at the Site.
2. Restrictions should be placed on groundwater use at the Site.
3. Restrictions should be placed on soil disturbance and soil use at the Site.

In addition, the Restrictive Covenant should meet the minimum requirements of the UECA.

3.2 New scientific information for individual hazardous substances for mixtures present at the Site

Cleanup levels at the site were based on regulatory standards rather than calculated risk for chemicals and/or media. These standards were sufficient to be protective of site-specific conditions.

3.3 New applicable state and federal laws for hazardous substances present at the Site

3.3.1 Residual Saturation

Initial cleanup at the Site was governed by Chapter 173-340 WAC (1996 ed.). Current WAC 173-340-747(10) provides that,

"To ensure the soil concentrations established under one of the methods specified in subsections (4) through (9) of this section will not cause an exceedance of the ground water cleanup level established under WAC 173-340-720, the soil concentrations must not result in the accumulation of nonaqueous phase liquid in groundwater. To determine if this criterion is met....residual saturation screening levels must be established and compared with the soil concentrations"

A residual saturation screening level of 1,000 mg/kg for weathered gasoline and 2,000 mg/kg for diesel fuel has been established. Based on these screening levels, soil concentrations at the Site may not be protective of ground water.

3.3.2 Soil to Vapor Pathway

Initial cleanup at the Site was governed by Chapter 173-340 WAC (1996 ed.). Current WAC 173-340-740(C) (II) provides that,

"The soil to vapor pathway shall be evaluated for volatile organic compounds whenever any of the following conditions exist…. (**(I)** For gasoline range organics, whenever the total petroleum hydrocarbon (TPH) concentration is significantly higher than a concentration derived for protection of ground water for drinking water beneficial use under WAC 173-340-747(6) using the default assumptions;"

Additionally, current WAC 173-340-747(2) (b) provides that,

"To ensure that the criterion in (a) of this subsection is met, the soil concentration shall not result in the accumulation of non-aqueous phase liquid on or in ground water. To determine if this criterion is met, one of the methodologies specified in subsection (10) of this section shall be used."

Therefore, because soil concentrations of gasoline-range petroleum hydrocarbons exceed the previously discussed residual saturation screening level of 1,000 mg/kg for weathered gasoline, there is some potential for the accumulation of non-aqueous phase liquid and resulting vapor intrusion at the Site. However, due to the presence of the substantial soil cap and the lack of a sensitive receptor building, it is not critical that the vapor pathway be evaluated.

3.4 Current and projected site use

The Site is currently vacant and is no longer used as a bulk fuel distributorship. There are no plans to develop the Site at this time, but there are no restrictions limiting future development. Institutional Controls should be used at the Site to limit future use to commercial and industrial activities.

3.5 Availability and practicability of higher preference technologies

The remedy implemented included containment of hazardous substances and it continues to eliminate the direct human contact pathway. Due to the residual TPH-G and benzene concentrations in groundwater, it is possible that residual soil contamination continues to contribute to groundwater contamination. Consideration should be given to additional physical removal or in situ treatment of remaining contaminant source materials. It is unlikely that groundwater cleanup standards will be met until the remaining source material has degraded.

3.6 Availability of improved analytical techniques to evaluate compliance with cleanup levels

The analytical methods used at the time of the remedial actions were capable of detection below MTCA Method A cleanup levels. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

4.0 CONCLUSIONS

- The cleanup actions completed at the Site appear to eliminate the direct human contact pathway.

- The cleanup action has resulted in the containment of hazardous materials at the Site, but institutional controls have not been implemented. Institutional controls should be implemented to restrict property use, and to restrict use and exposure of soil and groundwater from the Site.

- Soil concentrations of TPH-G may not be protective of groundwater.

- Soil and groundwater cleanup levels have not been met at the Site.

- Groundwater monitoring continues at the Site.

- Additional remedial action is should be considered at the Site. Consideration should be given to the removal or treatment of remaining contaminant source material. Groundwater cleanup standards will not likely be met until remaining source material has degraded.

Based on this periodic review, the Department of Ecology has determined that the remedial action at the Site is not protective of human health and the environment. At a minimum, institutional controls should be implemented at the Site. Additional remedial actions should also be considered if contaminant concentrations in MW-3 remain above MTCA Method A cleanup levels.

4.1 Next Review

The next review for the Site will be scheduled five years from the date of this periodic review. In the event that additional cleanup actions or institutional controls are required, the next periodic review will be scheduled five years from the completion of those activities.

5.0 REFERENCES

Hart Crowser, Inc. 1990. Preliminary Environmental Assessment, Glacier Park Company Property, Property Sequence No. 99, Leavenworth, Washington.

Hart Crowser, Inc. 1991. Subsurface Investigation and Testing, Glacier Park Company Property, Property Sequence No. 99, Leavenworth, Washington.

Ecology. 1994. Enforcement Order No. DE 01TCPCR-3168.

GeoEngineers, Inc. 1997. Remedial Investigation/Feasibility Study, Glacier Park East Site, Leavenworth, Washington.

GeoEngineers, Inc. 1999. Feasibility Study-Supplemental Information Supporting Remedial Alternative Recommendation, Glacier Park East Site, Leavenworth, Washington.

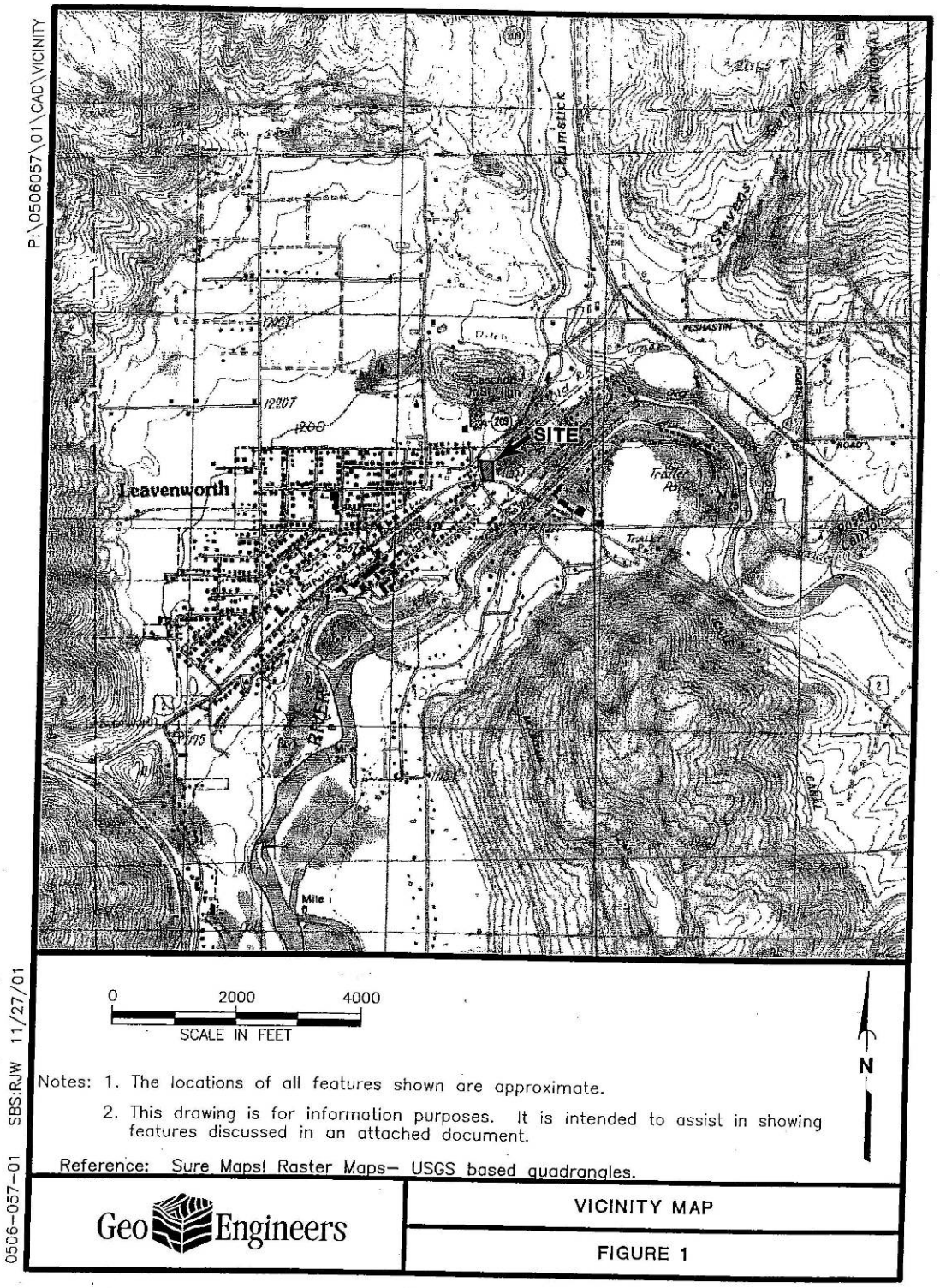
GeoEngineers, Inc. 2002. Revised Draft Report, December 2001Groundwater Monitoring, Glacier Park East Site, Leavenworth, Washington.

Kennedy/Jenks Consultants. 2008. Semiannual Groundwater Monitoring. BNSF Railway Company Glacier Park East Site.

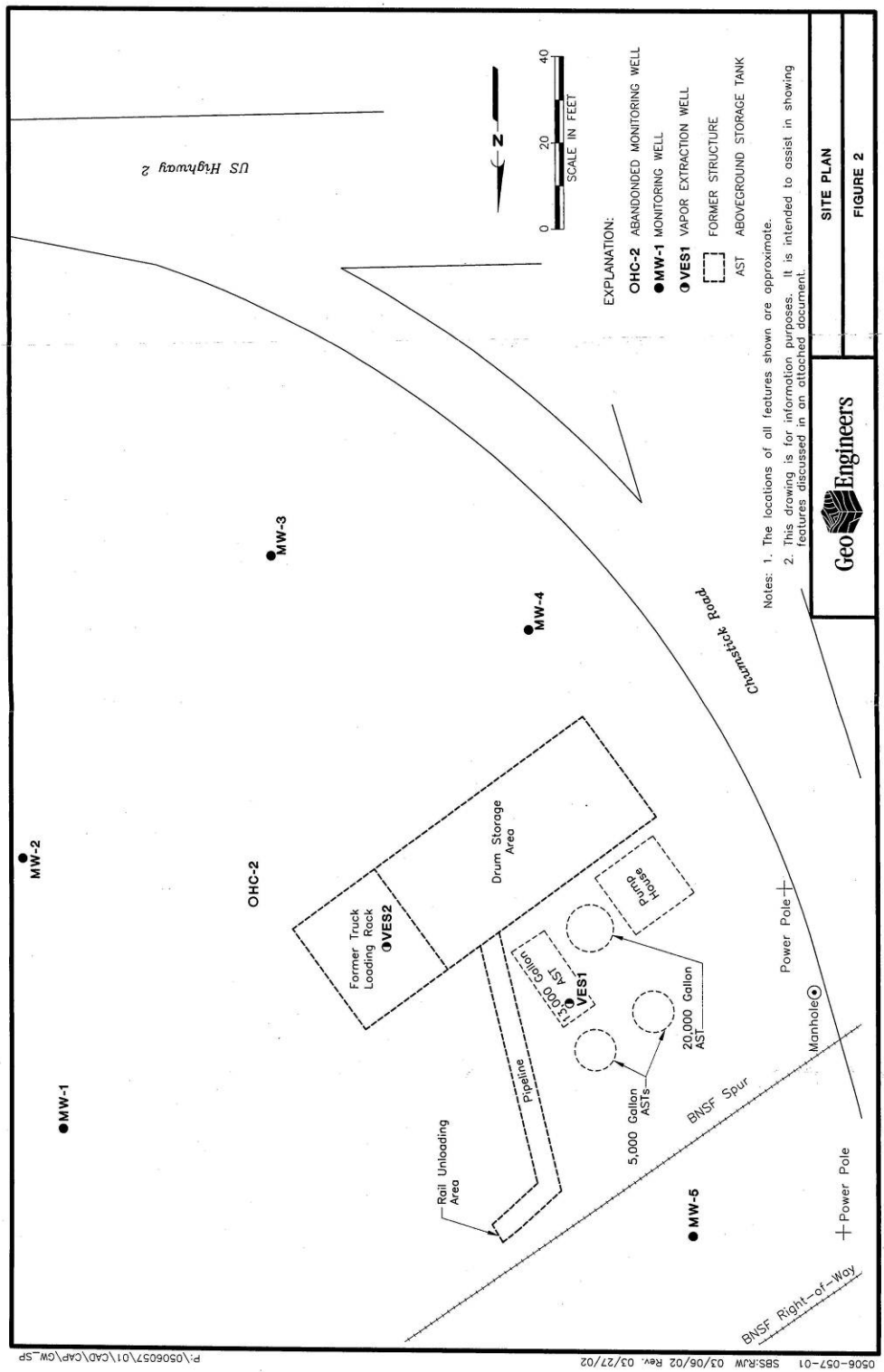
Ecology. 2008. Site Visit.

6.0 APPENDICES

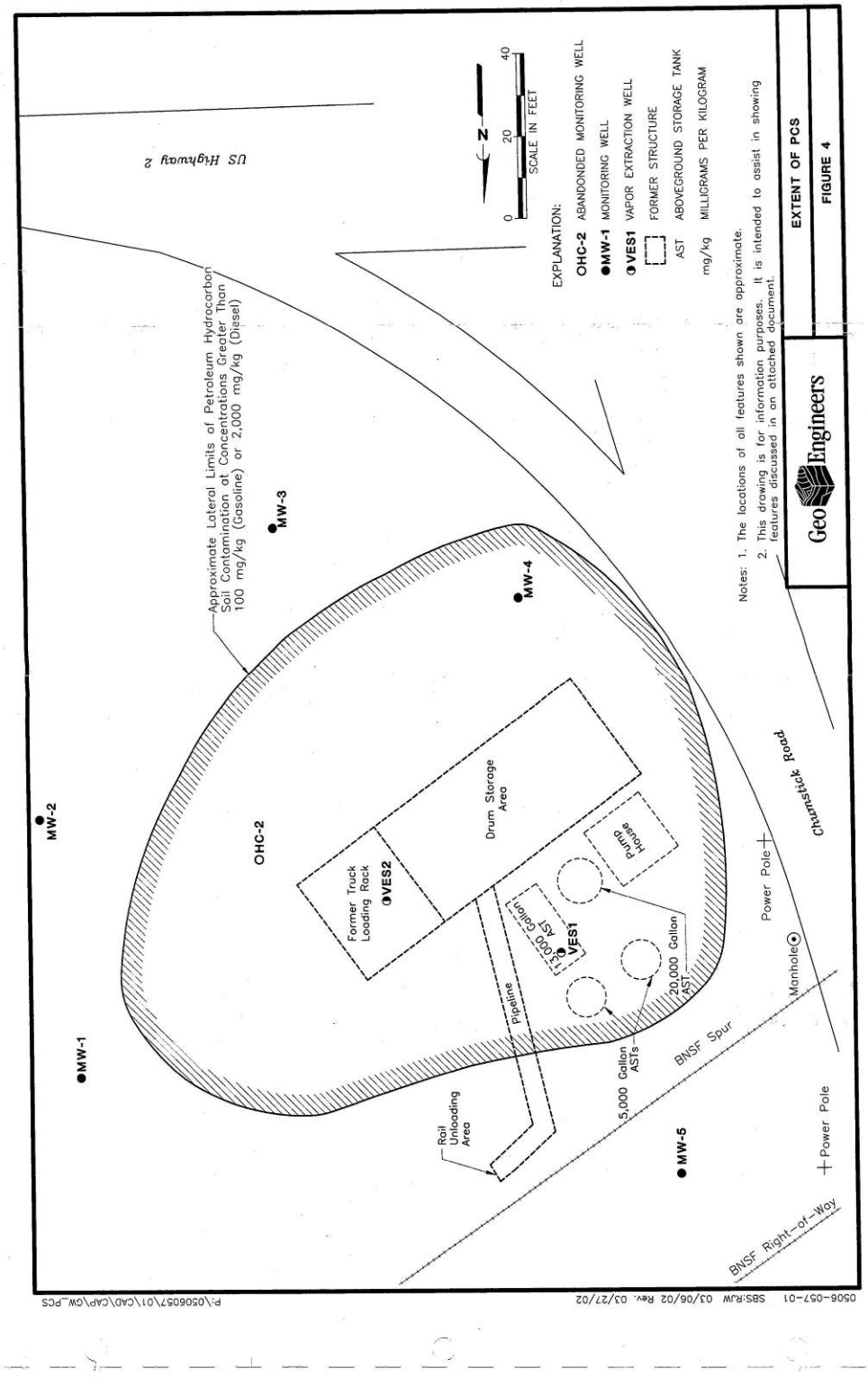
6.1 Vicinity Map



6.2 Site Plan


US Highway 2
N
0
20
40
SCALE IN FEET
EXPLANATION:
OHC-2 ABANDONDED MONITORING WELL
MW-1 MONITORING WELL
VES1 VAPOR EXTRACTION WELL
FORMER STRUCTURE
AST ABOVEGROUND STORAGE TANK
Notes: 1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers
SITE PLAN
FIGURE 2
MW-1
MW-2
MW-3
MW-4
MW-5
OHC-2
VES1
VES2
Former Truck Loading Rack
Drum Storage Area
Pump House
13,000 Gallon AST
20,000 Gallon AST
5,000 Gallon ASTs
Pipeline
Rail Unloading Area
Chumstick Road
Power Pole
Manhole
BNSF Spur
BNSF Right-of-Way
0506-057-01 SBS:RJW 03/06/02 Rev. 03/27/02
P:\050605701\CAD\CAP\GW_SP

6.3 PCS Footprint



6.4 Groundwater Monitoring Data

TABLE 2

Page 1 of 2

**GROUNDWATER ANALYTICAL RESULTS
OCTOBER 2001 THROUGH APRIL 2008
BNSF Glacier Park East**

Well ID	Date Sampled[a]	Total Petroleum Hydrocarbons (µg/L)[b]			Benzene, Toluene, Ethylbenzene, Xylenes (µg/L)[c]			
		Gasoline-Range	Diesel-Range	Lube Oil-Range	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-1	10/4/2001	<50[d]	<281[e]	<562 I	<0.500	1.79	<0.500	<1.00
	12/20/2001	<50	<250UJ[f]	<500	<0.50	<0.50	<0.50	<1.00
	3/21/2002	<50	<250	<500	<0.50	<0.50	<0.50	<1.00
	6/26/2002	<50	<250	<500	<0.50	<0.50	<0.50	<1.00
	9/24/2002	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00
	12/18/2002	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00
	3/14/2003	<50.0	543	<500	<0.50	<0.50	<0.50	1.24
	5/30/2003	<50.0	710	<500	<0.50	<0.50	<0.50	<1.00
	3/26/2004	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	6/29/2004	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	9/27/2004	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	12/1/2004	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	3/9/2005	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	6/29/2005	<50.0/<50.0[g]	1,710/1,040	1,130/722	<0.500/ <0.500	<0.500/ <0.500	<0.500/ <0.500	<1.00/ <1.00
	9/23/2005	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	12/30/2005	<50.0	<281	<562	<0.500	<0.500	<0.500	<1.00
	3/28/2006	<50.0	<253	<505	<0.500	<0.500	<0.500	<1.00
	6/29/2006	<50.0	<253	<505	<0.500	<0.500	<0.500	<1.00
	9/5/2006	<80.0	<248	<495	<0.500	<0.500	<0.500	<1.00
	12/11/2005	<50.0[h]	<250	<500	<0.500[h]	<0.500[h]	<0.500[h]	<1.00[h]
	3/30/2007	<50.0	<248	<495	<0.500	<0.500	<0.500	<1.00
	9/6/2007	Not Sampled[i]	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
	4/29/2008	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
MW-2	10/4/2001	<50	Not analyzed	Not analyzed	<0.500	<0.500	<0.500	<1.00
	12/20/2001	102	<250UJ	<500	0.52	<0.50	<0.50	<1.00
	3/21/2002	<50	<250	<500	<0.50	<0.50	<0.50	<1.00
	6/26/2002	82	<250	<500	<0.50	<0.50	<0.50	1.73
	9/24/2002	125	<250	<500	<0.50	<0.50	0.815	1.06 I
	12/18/2002	Not Sampled[i]	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
	3/14/2003	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
	5/30/2003	165	499	<500	1.18	<0.50	<0.50	<1.00
	3/26/2004	99.1	<250	<500	<0.500	<0.600	<0.500	1.30
	6/29/2004	71.2	<250	<500	<0.500	<0.500	<0.500	<1.00
	9/27/2004	96.9	264	<500	<0.500	<0.500	<0.500	<1.00
	12/1/2004	67.8	<250	<500	<0.500	<0.500	<0.500	<1.00
	3/9/2005	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	6/29/2005	55.6	<250	<500	<0.500	<0.500	<0.500	<1.00
	9/23/2005	54.6	<250	<500	<0.500	<0.500	<0.500	<1.00
	12/30/2005	84.6	<248	<495	<0.500	<0.500	0.763	2.74 I
	3/28/2006	180	<253	<505	0.558	<0.500	0.993	1.38
	6/29/2006	154	<250	<500	0.801	<0.500	<0.500	<1.00
	9/5/2006	98.2	<278	<556	0.932	<0.500	0.79	<1.00
	12/11/2006	71[h]	<250	<500	<0.500[h]	<0.500[h]	<0.500[h]	<1.00[h]
	3/30/2007	258	<245	<490	2.66	<0.500	1.11	2.12
	9/6/2007	341	<253	<505	5.28	<0.500	3.67	3.23
	4/29/2008	318	<250	<500	3.22	<0.500	0.968	1.28
MW-3[h]	10/5/2001	1,280 I	1,730	<500	28.1 I	11.2 I	51.6 I	4.52 I
	12/20/2001	977 I/950 I	<250 UJ/<250 UJ	<500 UJ/<500 UJ	19.2 I/19.3 I	2.40 I/2.42 I	7.62 I/7.60 I	3.55 I/3.55 I
	3/21/2002	993 I/963 I	255/428	<500/<500	14.9 I/16.7 I	2.95 I/1.23 I	4.58 I/2.66 I	7.35 I/1.84 I
	6/26/2002	823/762	<250/<250	<500/<500	16.6/15.4	1.02 I/1.03 I	2.46 I/2.48 I	3.60 I/3.56 I
	9/24/2002	1,020 I/1,030 I	<250 UJ/<250 UJ	<500 UJ/<500 UJ	16.2 I/16.3 I	4.77 I/4.73 I	29.4 I/29.6 I	8.74 I/8.69 I
	12/18/2002	1,300/1,250	<250/<250	<500/<500	20.7/21.1	7.42/7.43	78.9/79.4	10.4/10.2
	3/14/2003	919 I/849 I	2,330/2,200	<500/<500	12 I/11.4 I	2.58 I/2.21 I	27.7 I/25.5 I	2.5 I/2.32 I
	5/30/2003	959/845	2,820/3,610	<500/580	22.7/14.4	6.01/3.88	42.8/27.0	7.12/3.46
	3/26/2004	1,060/1090	443/528	<500/<500	19.7/19.1	7.44/7.14	24.0/23.0	4.32/3.62
	6/29/2004	1,260/1,050	305/<250	<500/<500	25.6/21.7	8.11/6.82	20.7/17.4	2.99/2.61
	9/27/2004	1,340	535	<500	19.4	9.41	31.8	7.29
	12/1/2004	1,450	259	<500	20.9	8.06	27	4.82
	3/9/2005	698/639	602/334	<500/<500	11.7/9.33	2.52/1.98	4.84/3.84	1.26/<1.00
	6/29/2005	909	324	<500/<501	11.0	1.67	4.72	2.27
	9/23/2005	718	<250	<500	7.38	0.994	1.96	2.25
	12/30/2005	377	<248	<495	5.01	0.799	0.890	1.04
	3/28/2006	603	<250	<500	4.28	<0.500	0.918	1.99
	6/29/2006	998	<278	<500	12.7	1.61	10.5	3.03
	9/5/2006	655	366	<556	20.1	8.83	74.5	33.5
	12/11/2006	959	369	<490	4.66	<0.500	<0.500	2.06
	3/30/2007	2,510	341	<485	32.3	17.7	89.9	56.8
	9/6/2007	2,080	<250	<500	30.7	38.8	137	106
	4/29/2008	1550 UJ/2000 UJ	419 I/<250	<476/<500	12.8/16.7	16.2/19.9	48.4/54.6	29.9/31.7

GLACIER PARK EAST
April 2008

0596022.1 1

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
OCTOBER 2001 THROUGH APRIL 2008
BNSF Glacier Park East

Well ID	Date Sampled[a]	Total Petroleum Hydrocarbons (µg/L)[b]			Benzene, Toluene, Ethylbenzene, Xylenes (µg/L)[c]			
		Gasoline-Range	Diesel-Range	Lube Oil-Range	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-4[h]	10/5/2001	149/140	1,940/2,180	<561/<561	<0.500/<0.500	2.17/2.08	<0.500/<0.500	<1.00/<1.00
	12/20/2001	50.7	<250UJ	<500UJ	<0.50	<0.50	<0.50	<1.00
	3/21/2002	63.4	393	<500	<0.50	<0.50	<0.50	<1.00
	6/26/2002	244	<250	<500	2.73	<0.50	<0.50	1.06
	9/24/2002	253	<250	<500	3.31	<0.50	<0.50	1.01 I
	12/18/2002	236	<250	<500	1.73	<0.50	<0.50	<1.00
	3/14/2003	254	2,830	<500	0.647	<0.50	<0.50	<1.00
	5/30/2003	199	2,980	<500	0.602	<0.50	<0.50	<1.00
	3/26/2004	204	314	<500	<0.500	<0.500	<0.500	<1.00
	6/29/2004	204	469	<500	<0.500	<0.500	<0.500	<1.00
	9/27/2004	192	408	<500	<0.500	<0.500	<0.500	<1.00
	12/1/2004	196	<250	<500	<0.500	<0.500	<0.500	<1.00
	3/9/2005	153	378	<500	<0.500	<0.500	<0.500	<1.00
	6/29/2005	183	477	<500	<0.500	<0.500	<0.500	<1.00
	9/23/2005	180	<250	<500	<0.500	<0.500	<0.500	<1.00
	12/30/2005	137	<248	<495	<0.500	<0.500	<0.500	<1.00
	3/28/2006	170	<243	<485	<0.500	<0.500	<0.500	<1.00
	6/29/2006	132	<250	<500	<0.500	<0.500	<0.500	<1.00
	9/5/2006	<80.0	<263	<526	<0.500	<0.500	<0.500	<1.00
	12/11/2006	<50.0[h]	<245	<490	<0.500[h]	<0.500[h]	<0.500[h]	<1.00[h]
	3/30/2007	<50	<253	<505	<0.500	<0.500	<0.500	<1.00
	9/6/2007	267	<250	<500	0.65	<0.500	<0.500	<3.00
	4/29/2008	98.7	<248	<495	<0.500	<0.500	<0.500	<1.00
MW-5	10/5/2001	<50	Not analyzed	Not analyzed	<0.500	<0.500	<0.500	<1.00
	12/20/2001	<50	<250UJ	<500	<0.50	<0.50	<0.50	<1.00
	3/21/2002	<50	<250	<500	<0.50	<0.50	<0.50	<1.00
	6/26/2002	<50	<250	<500	<0.50	<0.50	<0.50	<1.00
	9/24/2002	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00
	12/18/2002	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00
	3/14/2003	<50.0	<250	<500	<0.50	<0.50	<0.50	1.24
	5/30/2003	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00
	3/26/2004	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	6/29/2004	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	9/27/2004	<50.0/<50.0	<250/<250	<500/<500	<0.500/<0.500	<0.500/<0.500	<0.500/<0.500	<1.00/<1.00
	12/1/2004	<50.0/<50.0	<250/<250	<500/<500	<0.500/<0.500	<0.500/<0.500	<0.500/<0.500	<1.00/<1.00
	3/9/2005	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	6/29/2005	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00
	9/23/2005	<50.0/<50.0	<250/<250	<500/<500	<0.500/<0.500	<0.500/<0.500	<0.500/<0.500	<1.00/<1.00
	12/30/2005	<50.0/<50.0	<250/<248	<500/<495	<0.500/<0.500	<0.500/<0.500	<0.500/<0.500	<1.00/<1.00
	3/28/2006	<50.0/<50.0	<243/<250	<485/<500	<0.500/<0.500	<0.500/<0.500	<0.500/0.500	<1.00/<1.00
	6/29/2006	<50.0/<50.0	<250/<263	<500/<526	<0.500/<0.500	<0.500/<0.500	<0.500/0.500	<1.00/<1.00
	9/5/2006	<80.0/<80.0	<278/<253	<556/<505	<0.500/<0.500	<0.500/<0.500	<0.500/0.500	<1.00/<1.00
	12/11/2006	<50.0/<50.0[h]	<250/<248	<500/<495	<0.500/<0.500[h]	<0.500/<0.500[h]	<0.500/0.500[h]	<1.00/<1.00[h]
	3/30/2007	<50.0/<50.0	<245/<245	<490/<490	<0.500/<0.500	<0.500/<0.500	<0.500/0.500	<1.00/<1.00
	9/6/2007	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
	4/29/2008	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
MTCA Method A[j]		800	500	500	5	1,000	700	1,000

Notes:

(a) Analytical data prior to 26 March 2004 generated by GeoEngineers.
(b) Groundwater samples were analyzed for diesel- and oil-range, and gasoline-range hydrocarbons using Northwest Total Petroleum Hydrocarbon Methods NWTPH-Dx and NWTPH-Gx, respectively.
(c) Groundwater samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B.
(d) "<" indicates the compound was not detected at a concentration greater than the stated laboratory reporting limit.
(e) "I" indicates the analyte concentration may be artifically elevated because of co-eluting compounds or components.
(f) "UJ" indicates the surrogate recovery for this sample cannot be accurately quantified because of interference from co-eluting compounds and/or the surrogate recovery for the sample was outside established control limits because of a sample matrix effect.
(g) Where two values are displayed, the second is the analytical result for a field blind duplicate sample.
(h) Samples MW-1, MW-2, MW-4, MW-5, and MW-100 that were analyzed for NWTHP-Gx/BETX and had a pH >2 were analyzed outside the 7 day hold time for unpreserved volatile samples per EPA method requirement due to power outage from wind storm.
(i) MW-2 was inaccessible because the well head was elevated in anticipation of cap construction.
(j) Washington State Department of Ecology Model Toxics Control Act (MTCA) Method A groundwater cleanup levels (WAC 173-340) dated February 2001.

Concentrations above the detection limit are shown in bold.

6.5 Photo log

Photo 1: Soil Cap Area - from the northwest

Photo 2: North End of Cap – from the northwest

Photo 3: South End of Cap - from the southwest

Photo 4: Chumstick Road/Highway 2 Intersection – from the north