SITE HAZARD ASSESSMENT
WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Newmann's Chevron
2021 - 6th Street
Bremerton, WA 98337

Section/Township/Range: 14/24N/1E
Latitude: 47º 34' 02"
Longitude: 122º 38' 45"
Ecology Facility Site ID No: 1436259
Tax ID: 3717-002-015-0106

Site scored/ranked for the February 2010 update

February 3, 2010

SITE DESCRIPTION:

The Newman's Chevron site is a fuel station located within the City of Bremerton, Kitsap County at the intersection of 6th Street and Naval Avenue. The 0.39 acre site is located approximately 0.75 miles south of Dyes Inlet and 0.70 miles north of Sinclair Inlet in a mixed use area. A fuel station and convenience store operated at the site from 1961 until 2008. Currently, the businesses on the property are closed, but the fuel pump stations, while inoperable, remain at the site.

In 1990 the site was reported to the Washington Department of Ecology (Ecology) and was placed on the Leaking Underground Storage Tank (LUST) List (ID #7972). Six underground storage tanks and a small quantity of petroleum-contaminated soil (PCS) were removed from the site and replaced with new underground storage tanks in 1990. A large quantity of PCS was left onsite due to stability concerns with the removal of the PCS.

In March 2001, Newman's Chevron was entered into the Toxic Cleanup Program's Voluntary Cleanup Program (VCP). In December 2003, Ecology removed Newman's Chevron from the VCP program due to inactivity at the site in regards to remediation at the site, and a lack of a restrictive covenant placed on the property.

SITE HAZARD ASSESSMENT (SHA) INVESTIGATION

In preparation for conducting a site hazard assessment (SHA) for the Newman's Chevron site, a site visit was conducted by Kitsap County Health District (KCHD) staff on August 27, 2009. The site visit was conducted to observe current conditions at the property and give KCHD staff familiarity with the site and the surrounding area, including nearby drinking water well locations, and surface water flow directions.

The business at the site is closed. The fuel pump stations, while inoperable, remain at the site. The property is level, with a slight grade (0-3%) to the southwest. Subsurface soil at the site consists of

moist, sandy silt glacial till. The depth to groundwater is unknown, but estimated at 70-75 feet below ground surface, based on the nearest well logs to the site. The nearest active drinking water well is located approximately 2500 feet to the south and is used to fill the freshwater tanks of US Navy vessels.

An independent cleanup was performed in 2000 by GeoScience Management, Inc. and is summarized in their March 26, 2001, report. During the 2000 remedial action, soil samples were collected from various locations around the location of the former LUST. Analytical data from the sampling events are summarized below in Table 1 and approximate sample locations are noted in Figure 1. Approximately 20 cubic yards of PCS were removed from the location of sample B5-S1 and B5-S2. Post-excavation samples were collected, and were still above their respective Model Toxics Control Act (MTCA) Method A industrial soil cleanup standards for the following contaminants: Benzene, Xylenes, and TPH-gasoline.

Table 1: Newman's Chevron 2000 Soil Sampling Results (µg/l)

Sample Location	Sample Date	Sample Depth (ft. bgs)	Benzene (µg/kg)	Ethylbenzene (µg/kg)	Toluene (µg/kg)	Xylenes (µg/kg)	TPH-gasoline (µg/kg)
B1-S4	9/15/00	10.5	ND [1]	ND [1]	ND [1]	ND [1]	ND
B2-S4	9/15/00	10.5	ND [1]	ND [1]	ND [1]	ND [1]	ND
B2-S4	9/15/00	13.5	ND [1]	ND [1]	ND [1]	120 [1]	7,100
B3-S4	9/15/00	12.5	ND [1]	ND [1]	ND [1]	ND [1]	ND
B4-S4	9/15/00	12.5	ND [1]	ND [1]	ND [1]	1100 [1]	11,000
B5-S4 [2]	9/15/00	10.5	24,000 [1]	64,100	40,800	711,000	8,700,000
B5-S4 [2]	9/15/00	12.5	260 [1]	83,000	152,000	709,000	160,000
B6-S4	9/15/00	10.5	ND [1]	ND [1]	ND [1]	ND [1]	ND
B7-S1	9/15/00	14.0	ND	ND	ND	ND	130,000
Exc Bottom	12/27/00	14.5	178	1,680	4,180	12,300	179,000
Exc NE Wall	12/27/00	11.5	ND	80	337	465	19,400
Exc SE Wall	12/27/00	11.5	ND	79	137	257	18,700
MTCA Method A Industrial Soil			**30**	**6,000**	**7,000**	**9,000**	**30,000** [3]

1 GeoScience used analytical method BTEX by EPA Method 8021b results instead of standard BTEX by EPA Method 8260b
2 Sampled material was excavated and resampled
3 TPH-gasoline with Benzene present standard

SPECIAL CONSIDERATIONS (include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):

Due to the significant contamination documented on-site being primarily subsurface, the surface water and air routes are not applicable for WARM scoring for this site. Thus, only the groundwater route will be scored.

ROUTE SCORES:

Surface Water/Human Health:	**NS**	Surface Water/Environmental.:	**NS**
Air/Human Health:	**NS**	Air/Environmental:	**NS**
Groundwater/Human Health:	**26.5**		

OVERALL RANK: 5

WORKSHEET 2
Route Documentation

1. **SURFACE WATER ROUTE –** *Not Scored*

   a. List those substances to be considered for scoring: Source:

   b. Explain basis for choice of substance(s) to be used in scoring.

   c. List those management units to be considered for scoring: Source:

   d. Explain basis for choice of unit to be used in scoring:

2. **AIR ROUTE –** *Not Scored*

   a. List those substances to be considered for scoring: Source:

   b. Explain basis for choice of substance(s) to be used in scoring:

   c. List those management units to be considered for scoring: Source:

   d. Explain basis for choice of unit to be used in scoring:

3. **GROUNDWATER ROUTE**

   a. List those substances to be considered for scoring: Source: 1,2

      Benzene, toluene, ethylbenzene, xylenes, and TPH-gasoline.

   b. Explain basis for choice of substance(s) to be used in scoring:

      These substances were detected in subsurface soil and/or groundwater samples associated with the site in concentrations exceeding their respective MTCA cleanup levels.

   c. List those management units to be considered for scoring: Source: 1,2

      Subsurface soil and groundwater

   d. Explain basis for choice of unit to be used in scoring:

      The contaminating substances were detected in subsurface soil and/or groundwater samples in concentrations exceeding their respective MTCA cleanup levels.

WORKSHEET 6
Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.2 Human Toxicity											
	Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	Ethylbenzene	700	4	3500	3	0.1	1	ND	ND	-
2	Toluene	2000	2	5000	3	0.2	1	ND	ND	-
3	Xylenes	10,000	2	50	10	2	1	ND	ND	-
4	Gasoline w/ Benzene	5	8	3306	3	ND	ND	A=1	0.029	5

* *Potency Factor*

Source: 1,2,4,5
Highest Value: 10
(Max = 10)
Plus 2 Bonus Points? 2
Final Toxicity Value: 12
(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)		
Cations/Anions	OR	Solubility (mg/L)
1=		1= $1.5 \times 10^2 = 2$
2=		2= $5.4 \times 10^2 = 2$
3=		3 = $2.0 \times 10^2 = 2$
4 =		4= $1.9 \times 10^3 = 3$

Source: 1,4,5
Value: 3
(Max = 3)

1.3 Substance Quantity:	
Explain basis: Unknown	Source: 1,5 **Value: 1** (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment (explain basis):** Scored as landfill w/ impervious cap, no liner, and no leachate collection	1,5,9	**5** (Max = 10)
2.2	**Net precipitation:** 35.25" – 5.25" = 30"	6	**3** (Max = 5)
2.3	**Subsurface hydraulic conductivity:** sand and gravel	1,3	**4** (Max = 4)
2.4	**Vertical depth to groundwater:** Unknown (estimated 70-75 feet)	2	**4** (Max = 8)

3.0 TARGETS

		Source	Value
3.1	**Groundwater usage:** Public water source with alternates	7,8	**4** (Max = 10)
3.2	**Distance to nearest drinking water well**: Approximately 2500 feet	7,8,9	**3** (Max = 5)
3.3	**Population served within 2 miles:** Approximately 5000	7,8	**71** (Max = 100)
3.4	**Area irrigated by (groundwater) wells within 2 miles:** None = 0	7,8	**0** (Max = 50)

4.0 RELEASE

	Source	Value
Explain basis for scoring a release to groundwater: Unconfirmed release (soil samples only)	1,2	**0** (Max = 5)

SOURCES USED IN SCORING

1. Additional Subsurface Assessment, Interim TPH Evaluation, and Soil Excavation Report, Newman's Chevron, 2021 6th Street, Bremerton, Washington, GeoScience Management Inc, March 26, 2001.
2. Workplan, Newman's Chevron, Bremerton, Washington, Applied GeoTechnology, Inc, October 17, 1990.
3. Soil Survey of Kitsap County Area, Washington, US Dept of Agriculture, 1980
4. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
5. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
6. Washington Climate – Net Rainfall Table
7. Washington State Department of Ecology, Water Rights Application System (WRATS) printout for two-mile radius of site.
8. Washington State Department of Health, SADIE Database printout for public water supplies
9. KCHD Site Visit on August 27, 2009

Figure 1: Geoprobe sampling locations