



*"Always working for
a safer and healthier
Skagit County"*

Public Health

Environmental Public Health Division

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January 28, 2013

Kelli Gustaf
Environmental Coordinator
Operating Agent for Olympic Pipeline Company
BP Pipelines
2201 Lind Avenue SW, Ste 270
Renton, WA 98057

Re: **SITE HAZARD ASSESSMENT:** Facility Site # 19701

Olympic Pipeline K Booster
10200 March Point Road
Anacortes, WA 98221
Property Tax # P32990

Dear Kelli:

The Skagit County Public Health Department is writing to inform you that the above referenced property was subject to a site hazard assessment (SHA) as required under the Model Toxics Control Act, in January 2013. The site was determined to be contaminated with total petroleum hydrocarbons – gasoline and - diesel, and benzene. The site's hazard ranking, an estimation of the potential threat to human health and/or the environment relative to all other Washington state sites assessed at this time, has been determined by the Department of Ecology to be a 3, where a 1 represents the highest relative risk and 5 the lowest.

For your information, Ecology will be publishing the ranking of this, and other recently assessed sites, in the February 2013 Special Issue of the Site Register. The hazard ranking will be used in conjunction with other considerations in determining Ecology's priority for future action at this site.

For inquiries regarding what may occur with your site now that it is on Ecology's Hazardous Sites List please contact Donna Musa at (425) 649-7136 or donna.musa@ecy.wa.gov.

Sincerely,

/s/

Corrina Marote
Environmental Health Specialist
Skagit County Public Health Department

cc: Neil Norcross, Tesoro.
Ted Benson, Department of Ecology
Donna Musa, Department of Ecology

SITE HAZARD ASSESSMENT WORKSHEET 1

Summary Score Sheet

SITE INFORMATION:

Name: **Olympic Pipeline K Booster**
Address: **10200 W March Point Road**
City: **Anacortes** County: **Skagit** State: **WA** Zip: **98221**
Parcels: **P32990**
Section/Township/Range: **SE ¼, NW ¼, Section 28, Township 35 North, Range 2 East**
Latitude: **48.49234** Longitude: **-122.56098**
FSID #: **19701**

Site scored/ranked for the February 2013 update of the Site Register by Corrina Marote, Skagit County Public Health Department, January 25, 2013.

SITE DESCRIPTION:

The Olympic K-Booster Station site is operated by Olympic Pipeline Company (OPLC) and is located on approximately 0.2 acres within the northeast portion of the Tesoro Refinery on March Point (Figure 1). March Point is approximately 2000 acres and land use is primarily industrial; the Shell Refinery is adjacent to Tesoro to the south. Approximately fifty to seventy residences surround the refineries on March Point, which extends into Puget Sound and delineates Fidalgo Bay to the west and Padilla Bay to the east. The City of Anacortes provides drinking water to most of those residences as well as to the refineries. Department of Ecology (Ecology) well logs are not available for those five residences that are not metered by the City of Anacortes. Another pump station, Anacortes Station (FSID 9655597), also operated by OPLC is located approximately one mile to the southeast of K-Booster (Figures 1 and 3). The status for this site (Anacortes Station) was changed to No Further Action (NFA) by the Department of Ecology (Ecology) in June 2012.

The K-Booster Station sends pressurized fuel east to the Allen Station in high pressure underground pipes from the refineries. Fuels passing through the station include gasoline, diesel and jet fuel. The K-Booster Station is fenced and contains a control building, transfer pumps, a process pump, pipeline monitoring equipment, and the 16-inch underground high pressure pipeline, as well as other underground pipes (Figure 4). The pump works are in a concrete containment system that was completed in March 2012. The ground surface of the site is gravel and is slightly elevated with a 3% slope from the site to Padilla Bay. Padilla Bay lies approximately 1800' to the east of the site (Figure 2).

In September 1994, petroleum sheen on surface water of a drainage ditch was discovered by Shell Oil Company (Shell) personnel. The K-Booster was identified as the potential source of the sheen. The site was monitored by Shell, which was the owner of the site then, from the time of discovery. Ecology received a Semi-Annual Status report in February 2010, which triggered an Initial Investigation. Polly Dubbel and I investigated the site in March 2010 and found confirmed soil and groundwater contamination from Total Petroleum Hydrocarbons (TPH) for gasoline (G) and diesel (D), and also from benzene. We recommended that the site be listed on Ecology's Confirmed and Suspected Contaminated Sites List.

The February 2010 Semi-Annual Status Report provided by Delta Consultants (Delta) described events following the September 1994 release, which included the installation of six test pits and 22 soil borings to evaluate soil and groundwater conditions around K-Booster. Three of the soil borings were

completed as groundwater monitoring wells 94-2, 94-3, and 94-4. Two additional groundwater monitoring wells (95-1 and 95-4) were installed in 1995.

In 2008 Delta collected groundwater samples from the monitoring wells, except from 94-2, which could not be located. Delta also installed two additional groundwater monitoring wells, which are identified as MW-6 and MW-7 (Figure 4). Delta conducted monthly groundwater sampling from monitoring wells 94-3, 95-1, MW-6 and MW-7 and multi-phase extractions (MPE) from wells 94-4 and MW-7 through November 2008. Delta detected light non-aqueous phase liquids (LNAPL) in well 94-4 during routine sampling events in December 2007 and January 2008.

In December 2008 the monthly sampling and MPE events were discontinued. Semi-annual monitoring began in January 2009 for monitoring wells 94-3, 94-4, 95-1, 95-4, MW-6, and MW-7. The sample collected in July 2009 from monitoring well 94-4 exceeded the Model Toxics Control Act (MTCA) Clean Up levels for TPH-G, TPH-D, and benzene.

Delta submitted a semi-annual status report in September 2010. Again, samples collected from monitoring wells 94-3 and 94-4 exceeded MTCA Clean Up levels for benzene (94-3) and TPH-G and -D (94-4). LNAPL was not detected during the sampling event, and MPE was not conducted.

Another semi-annual status report from the Antea Group (Antea) was submitted in February 2011. During the July 2010 monitoring event, LNAPL was present in MW-7 but not in 94-4 until the September 2010 sampling event. MPE was conducted in September to remove the LNAPL. Benzene was detected above MTCA Method A Clean Up levels in monitoring well 94-3. TPH-G, -D, and benzene was detected above MTCA Method A Clean Up levels in MW-7.

The third semi-annual status report was submitted by Antea in July 2011. During the March 2011 sampling event LNAPL was not detected in 94-4 and MW-7. Groundwater was collected from 94-3, 94-4, 95-1, 95-4, and MW-6. An obstruction in MW-7 prevented groundwater sampling. MTCA Method A Clean Up levels were exceeded for TPH-G and -D in the sample from monitoring well 94-4. LNAPL was observed in 94-4 during an April 26, 2011 observation event and MPE was performed. LNAPL was not observed in MW-7.

A fourth semi-annual status report was submitted by Antea in December 2011. Groundwater samples were collected from 93-4, 95-4, MW-6, and MW-7. Measurable LNAPL was not detected in 94-4 and MW-7; however, a sample was not collected from 94-4 due to the presence of sheen. Monitoring well 95-1 was dry. MTCA Method A Clean Up levels were exceeded for TPH-G, -D, and benzene in MW-7. In October 2011, 94-4 was abandoned to facilitate the installation of secondary containment at K-Booster. MPE was conducted on 94-4 prior to abandonment to address the presence of sheen.

The fifth and final (with respect to the drafting of this report) semi-annual status report was submitted by Antea in August 2012. Groundwater samples were collected on May 10, 2012 from monitoring wells 94-3, 95-1, 95-4, MW-6, and MW-7. Measurable LNAPL was not detected. Monitoring well 95-1 did not provide enough volume of sample for analysis of TPH-D or -O. The sample from monitoring well 94-3 exceeded MTCA Method A Clean Up levels for TPH-G and benzene. The sample from MW-7 exceeded MTCA Method A Clean Up levels for TPH-G and -D.

I visited the site on January 24, 2013. Neil Norcross (Tesoro), Kelli Gustaf (BP), and Bryan Taylor (Antea Group) toured the site with me. Tesoro is the landowner, BP owns the booster station, and the Antea Group conducts the semi-annual monitoring. The site has changed little in appearance from the 2010 site visit for the Initial Investigation. Figure 5 is a photograph from the March 2010 Initial Investigation site visit. The underground portion of the pump and pipe works are now contained in a

concrete containment system. The photo shows the site before the containment system was constructed. The sample results from the monitoring wells appeared to be trending downward (Table 1); however, the most recent sample results from May 2012 increased in monitoring wells 94-3 and MW-7, which could indicate that ongoing contamination has occurred despite the containment system. Another possibility discussed was that contamination is coming from the refinery. A computerized monitoring system within the pipe works and containment system is supposed to detect hydrocarbon leaks, which would trigger an alarm. Bryan stated that he has completed the application to enter Ecology's Voluntary Clean Program (VCP) and intends to submit the application by the end of this month.

Contamination exceeding MTCA Method A Clean Up Levels from TPH-G, -D, and benzene is documented from samples taken from monitoring wells 94-3, 94-4, and MW-7 from 2009 until the most recent sampling event in 2012. There is no documentation that the contamination was remediated. The groundwater route will be scored for TPH-G, -D, and benzene. Whether or not drinking water wells for the five residences that are not metered by the City of Anacortes are included in the algorithm, the rank did not change.

ROUTE SCORES:

Surface Water/Human Health:	NS	Surface Water/Environmental:	NS
Air/Human Health:	NS	Air/Environmental:	NS
Groundwater/Human Health:	39.1		

OVERALL RANK: 3

WORKSHEET 2
Route Documentation

1. **GROUNDWATER ROUTE**

- a. List those substances to be considered for scoring: Source: 1, 2, 3, 4, 5, 6, 7, 8

TPH-D and benzene

- b. Explain basis for choice of substance(s) to be used in scoring:
Documented ground water contamination with TPH-G, -D, and benzene exceeding MTCA Clean Up Levels.

- c. List those management units to be considered for scoring: Source: 1, 2, 3, 4, 5, 6, 7, 8

Contaminated groundwater

- d. Explain basis for choice of unit to be used in scoring:
Documented ground water contamination with TPH-G, -D, and benzene exceeding MTCA Clean Up 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 Benzene	8	8	3306, LD50, rat	3	-	-	A	0.029	1	
2 TPH-D	4	8	490, LD50, rat	5	0.004	5	-	-	X	

* Potency Factor

Source: 2, 3, 4, 5, 6, 7, 8, 9, 10

Highest Value: 8

(Max = 10)

Plus 2 Bonus Points? 2

Final Toxicity Value: 10

(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)	
Cations/Anions [Coefficient of Aqueous Migration (K)]	OR Solubility (mg/L)
1= value=	1= 1800 value= 3
2= value=	2= 30 value= 1

Source: 2, 3, 4, 5, 6, 7, 8, 9, 10

Value: 3

(Max = 3)

1.3 Substance Quantity (volume):		
Explain basis: Unknown quantity, default to 1		Source: 9, 10 Value: <u>1</u> (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Contaminated ground water from leaking booster pump.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	10 (Max = 10)
2.2	Net precipitation: $(3.5+3.8+3.4+2.6+2.4+1.5)-(1.0+.7+.5+.7+1.2+2.1) = 11''$	11	2 (Max = 5)
2.3	Subsurface hydraulic conductivity: gravelly, sandy loam	17	4 (Max = 4)
2.4	Vertical depth to groundwater: Soil borings on site <25' depth to ground water	13	8 (Max = 8)

3.0 TARGETS

		Source	Value
3.1	Groundwater usage: used for irrigation	12, 13	3 (Max = 10)
3.2	Distance to nearest drinking water well: >10,000 feet	1, 12, 13	0 (Max = 5)
3.3	Population served within 2 miles: $\sqrt{\text{pop.}} = \sqrt{0}=0$	1, 12, 13	0 (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles : $(0.75)*\sqrt{\# \text{ acres}} = \underline{0.75 * \sqrt{113} = 8}$	12,15	8 (Max = 50)

4.0 RELEASE

		Source	Value
Explain basis for scoring a release to groundwater: Contamination above MTCA Method A Clean Up Level found in ground water.		2, 3, 4, 5, 6, 7, 8	5 (Max = 5)

SOURCES USED IN SCORING

1. Skagit County Health Department, Olympic Pipeline K Booster files and field notes, December 2012.
2. February 2010, Delta, Semi Annual Status Report OPLC K-Booster Station, 10200 West March Point Road, Anacortes, Washington.

3. September 2010, Delta, Semi Annual Status Report, OPLC K-Booster Station, 10200 West March Point Road, Anacortes, Washington.
4. February 2011, Antea Group, Semi Annual Status Report, Semi Annual Status Report, OPLC Anacortes K-Booster, 10200 West March Point Road, Anacortes, Washington.
5. February 2011, Ecology, Early Notice Letter Site 19701.
6. July 2011, Antea Group, Semi Annual Status Report, First Half 2011, OPLC Anacortes K-Booster, 10200 West March Point Road, Anacortes, Washington.
7. December 2011, Antea Group, Semi Annual Status Report, Second Half 2011, OPLC Anacortes K-Booster, 10200 West March Point Road, Anacortes, Washington.
8. August 28, 2012, Antea Group, Semi Annual Status Report, First Half 2012, OPLC Anacortes K-Booster, 10200 West March Point Road, Anacortes, Washington.
9. Washington Department of Ecology, WARM Scoring Manual, April, 1992.
10. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January, 1992.
11. National Weather Service, Washington Climate Data.
12. Washington Department of Ecology, Water Rights Explorer, 2012.
13. Washington Department of Ecology, Well Logs.
14. Washington Department of Health Public Water Supply Data (SENTRY).
15. Skagit County Mapping, Skagit Explorer, Version 10.0.1750, 2012.
16. Pictometry Electronic Field Study Version 2.7, March 2012.
17. USDA Soil Conservation Service, Soil Survey of Skagit County Area, Washington, 1989.

Olympic Pipeline Company
K-Booster
FSID 19701

by Corrina L. Marote

- Measured Line (1788.961 Fe)
- New View
- Site
- Address Labels
- Sections
- Section Labels
- Layer Definitions Document
- Tax Parcel Layers
- County Boundary
- Road Centerlines
- P32990
- P32990
- P32990
- P32990
- 10560ft Buffer
- P33502
- P33502
- P33502
- P33502
- P33502
- P33502
- P33502
- P33502
- P33502
- P33502
- P33502
- P33502
- P33502
- P33502
- Basemap (Bing Maps Hybrid)



Figure 1

Figure 2

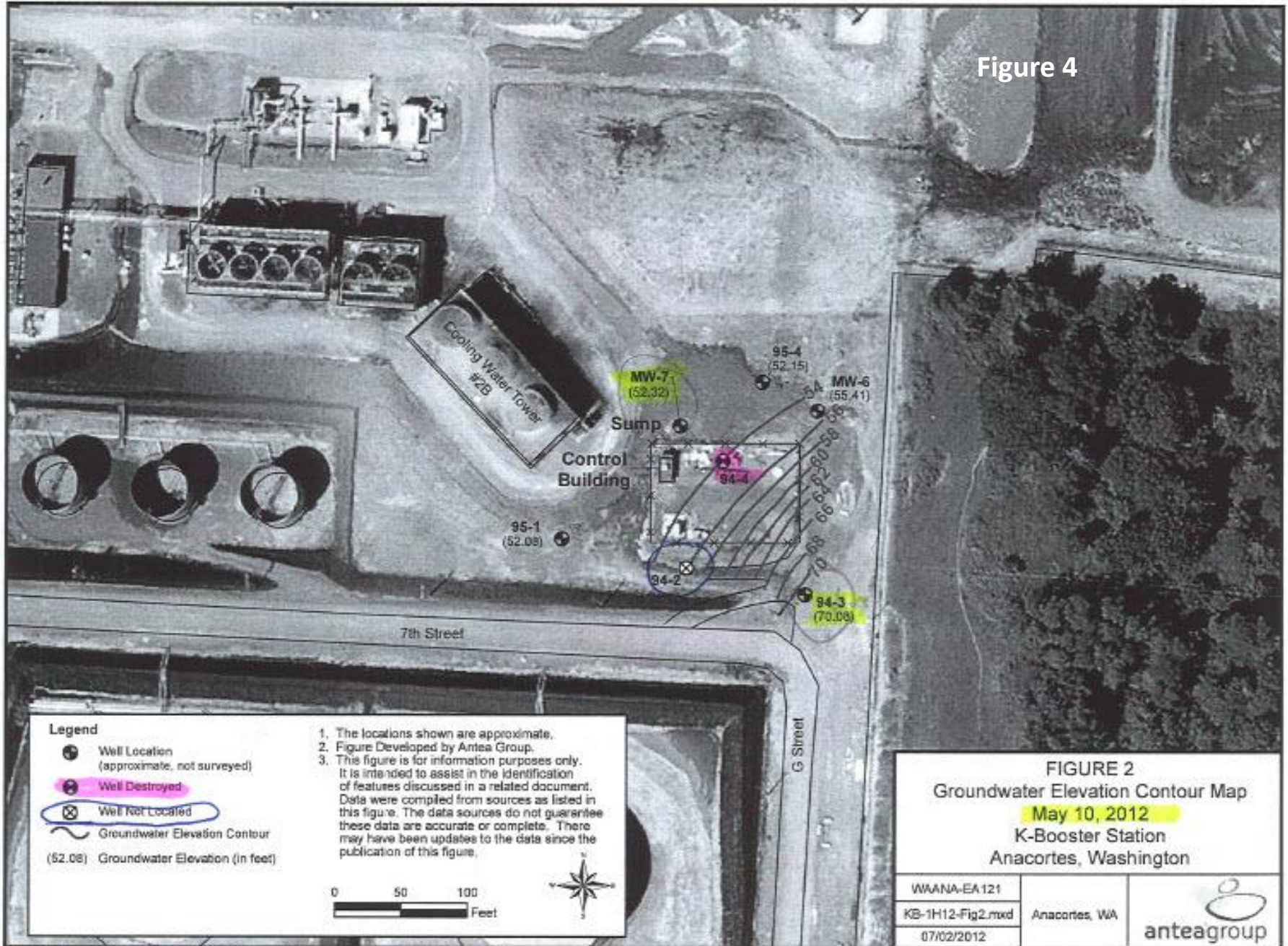


Figure 3



Anacortes Pump Station location

Figure 4



Base Map Source: USGS High Resolution Orthoimagery for the Seattle, Washington Urban Area, 2009

Wells where samples exceed MTCA Method A Clean Up levels

Figure 5

Arrow indicates site of initial sump

Pipe works in below-ground concrete containment

03/18/2010 11:49

