SITE HAZARD ASSESSMENT
WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Winger Land Golden Homes
19647 Viking Ave NW
Poulsbo, WA 98370
Kitsap County Parcel ID: 152601-4-023-2003

Section/Township/Range: 15/26/1E
Latitude: 47.74129
Longitude: -122.65893
Ecology Facility Site ID No: 5181107
Cleanup Site ID: 7621

Site scored/ranked for the August 2015 update

August 10, 2015

SITE DESCRIPTION (management areas, substances of concern, and quantities):

The Winger Land Golden Homes site is 1.9 acre commercial property located at 19647 Viking Way NW, Poulsbo, Washington. Multiple businesses are located at the site. The predominant one is manufactured home sales. The manufactured home sales occupy the front of the property with demonstration models and a small sales office. A warehouse/garage and an office building occupy the back of the property. Apparently, these are the only two permanent structures on the property and were built circa 1975. The general topography slopes down towards Liberty Bay of Puget Sound, approximately 850 feet to the east. There is no other surface water in the area of the site. The site is level near Viking Way and rises at the back of the property where the warehouse/garage and the office building are located. The buildings on site vary depending on the number of manufactured homes onsite.

The site owner for the property is listed as: Winger Family Limited
PO Box 603
Seabeck, WA 98380

BACKGROUND AND HISTORY OF CONTAMINATION

The site was reported to Ecology in May of 2003 when the owner (also current owner) had two underground storage tanks pulled and decommissioned. One of the tanks was a 500 gallon diesel tank and the second was a 1000 gallon gasoline tank. Hydrocarbon stained soil was visible below the piping of both tanks. When the tanks were removed a hydrocarbon sheen was observed on the surface of the groundwater in the tank excavation hole 9 feet below ground surface. Soil samples taken in the area of the excavation, in March of 2003, showed benzene, ethylbenzene, xylenes, and gasoline all above Model Toxics Control Act (MTCA), Method A clean up levels. (See table 1 below for results) The soil stockpile from the tank excavation was left onsite in a separate pile near the excavation site.

Soil stockpile quantity was unreported. Sampling of the soil stockpile confirmed with benzene and gasoline above MTCA, Method A clean up levels.

Table 1. MTCA Exceedances in Soil. (mg/kg)

Sample ID	Date	Benzene	Ethylbenzene	Xylenes	Gasoline
WP-CE-8	3/28/03	**0.03**	0.06	0.33	2
WP-UST2-NSW-8	3/28/03	**1.1**	**14.0**	**81.0**	**1200**
*MTCA Standard**	---	*0.03*	*6.0*	*9.0*	*30*

*MTCA Method A

In June of 2003, a contractor (AESI) for the owner installed three monitoring wells and an air sparge system. During the construction of the wells, soil samples were taken and tested for petroleum hydrocarbons. Analytical results for the well soil samples were all below MTCA, Method A. The excavation sidewalls were also sampled and two of the sample results showed benzene above MTCA, Method A, in addition to the soil stockpile sample. See table 2 below. The air sparge system was placed in the tank excavation hole and backfilled with pea gravel. The air sparge system's purpose was to add air to the ground with the expectation that volatile hydrocarbons would be evaporated out of the soil.

Table 2. MTCA Exceedances in Soil. (mg/kg)

Sample ID	Date	Benzene
WP-RX-SS1	5/6/2003	**0.04**
WP-CCS3-9	5/6/2003	**0.04**
WP-CCS5-8	5/6/2003	**0.06**
MTCA Standard	---	*0.03*

Water samples were also collected during monitoring well installation. Lead was detected in MW-3 at **30 ug/l**, above the MTCA Method A Standard of 15 ug/l.

SITE HAZARD ASSESSMENT (SHA) INVESTIGATION

In preparation for conducting an SHA for the Winger Land Golden Homes Site, a site visit was conducted by Kitsap Public Health District (KPHD) staff. The site visit occurred on June 4, 2015. This site visit was conducted to observe current conditions at the property and give KPHD staff a familiarity with the site and the surrounding area, including surface water flow directions. Conditions observed onsite were consistent with those described above under Site Description.

The City of Poulsbo and several small public water systems provide water for the area. Drinking water for this site is from the City of Poulsbo. There is a 4 party private well located directly west (approximately 150 ft from area of contamination to water system parcel) and upslope of the site. Washington State Department of Health, Sentry Water System Database information on this water system indicates that the source wells are inactive, used for irrigation, and are around 70 ft deep. Several other water systems and associated wells are in the area and upslope of the Winger Land Golden Homes Site.

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):

1) Due to the analytical documentation of contamination 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.
2) The final disposition of the contaminated soil stockpiled on site during the tank excavation and removal is not referenced in any of the reports. Presumably it is still onsite.

ROUTE SCORES:

Surface Water/Human Health:	**NS**	Surface Water/Environmental.:	**NS**
Air/Human Health:	**NS**	Air/Environmental:	**NS**
Groundwater/Human Health:	**39.6**		

OVERALL RANK: 3

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: 1,2,3

      Lead, TPH-Gx, benzene, ethylbenzene, and xylenes

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

      These substances were detected in subsurface soil and 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: 1,2,3

      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	TPH-Gx	5	8	3306	3	ND	ND	A	0.029	5
2	Lead	15	6	--	ND	<0.001	10	B2	--	ND
3										
4										
5										

* *Potency Factor*

Source: 1,2,3,4,5

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** $1.8x10^3 = 3$
2= 0.1 to 1.0 = 2	**2**
3=	**3**

Source: 1,2,3,4,5

Value: 3
(Max = 3)

1.3 Substance Quantity:	
Explain basis: Unknown - Best estimate 600 cubic yards of contaminated soil	Source: 1,2,5,10 **Value: 3** (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment (explain basis):** Scored as Landfill: No liner (3) + No Cover (2) + No leachate system (2) + No Free liquids (0) = 7	1,5,10	**7** (Max = 10)
2.2	**Net precipitation:** 29.7" – 5.6" = 24.1"	7	**3** (Max = 5)
2.3	**Subsurface hydraulic conductivity:** Gravelly silty sand over till.	1,2,3,4	**3** (Max = 4)
2.4	**Vertical depth to groundwater:** Approximately 9 feet.	1,2,3,4	**8** (Max = 8)

3.0 TARGETS

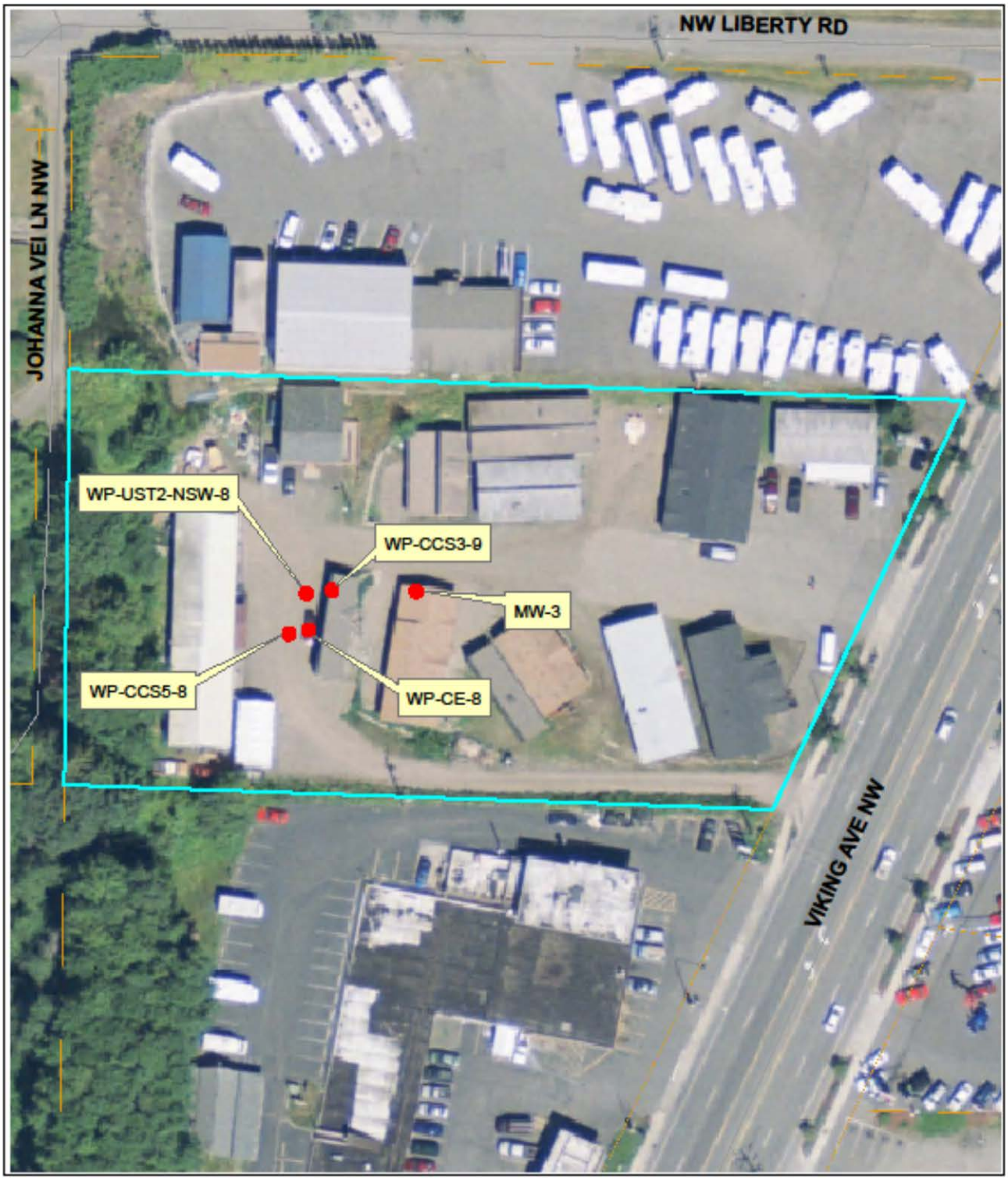
		Source	Value
3.1	**Groundwater usage:** Public water source with alternate source available.	9	**4** (Max = 10)
3.2	**Distance to nearest drinking water well**: Approximately 700 feet.	7,8,9,10	**5** (Max = 5)
3.3	**Population served within 2 miles:** Approximately 1260	10	**35** (Max = 100)
3.4	**Area irrigated by (groundwater) wells within 2 miles:** None	9,10	**0** (Max = 50)

4.0 RELEASE

	Source	Value
Explain basis for scoring a release to groundwater: Confirmed in groundwater.	1,2,3,10	**5** (Max = 5)

SOURCES USED IN SCORING

1) Underground Storage Tank Site Assessment Report – Winger Property, Poulsbo, WA, Saybr Contractors, Inc., May 7, 2003
2) Independent Cleanup and Ground Water Characterization Report – Winger Land Company Property, Poulsbo, WA., Associated Earth Sciences, Inc., June 26, 2003
3) Groundwater Monitoring Report Winter Quarter, 2003-2004, Winger Land Company Property, Associated Earth Sciences, Inc., June 2, 2004
4) Washington State Department of Ecology, ISIS Summary, 2015
5) KPHD Staff site visit, June 4, 2015
6) Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
7) Washington State Department of Ecology, WARM Scoring Manual, April 1992.
8) Washington Climate – Net Rainfall Table
9) Washington State Department of Ecology, Washington State Well Log Viewer.
10) KPHD GIS, 2015



KITSAP PUBLIC HEALTH DISTRICT

Winger Land Golden Homes
approximate sample locations

GAH 7/2/2015