

Reviewed 10/1/09
E-mail sent same

SITE HAZARD ASSESSMENT

WORKSHEET 1

Summary Score Sheet

SITE INFORMATION:

Glen Cove Wrecking Yard

180 Julian Street

Port Townsend, WA 98368

Jefferson County Parcel # 964-800-001

Section/Township/Range: Sec 21 Township 30N Range 1W

Ecology Facility Site ID No. 3828620

Site scored/ranked for the February 2010 update

September 22, 2009

SITE DESCRIPTION:

Description: The Glen Cove Wrecking Yard is located in the Glen Cove neighborhood, just south of Port Townsend city limits, on the cusp between an industrial park area and a residential neighborhood. The property owners are Glenn "Buzz" and Jacqueline Neet. Buzz Neet operates an un-permitted automotive wrecking and metal recycling yard. The collection, storage, dismantling, and crushing of scrap metal and vehicles has occurred on the property continuously from 1987 to the present. Much of the business handled at the Glen Cove site has been transferred in the past few years to a second site several miles away, operated by Ed Neet, Buzz's son. That site is permitted through Ecology. However, the Glen Cove site still receives vehicles, scrap metal, and batteries.

The Glen Cove Recycling Yard is located on relatively flat land with occasional berms and land depressions. The soil is glacial outwash, somewhat excessively drained loamy sand. Port Townsend Bay, the nearest tidewater, is located approximately 2440 feet to the east of the site. Half of the parcel lies within a well-head protection area that surrounds a reserve water well for the City of Port Townsend. There is an approximately 40' travel trailer and an RV, as well as some heavy equipment on the property. The ground is packed dirt/sand, with some gravel. There are no paved areas or impermeable surfaces.

On April 25, 2006 Washington State Department of Ecology (Ecology) received a telephone complaint that the owners of Glen Cove Wrecking Yard were burying batteries and sand blasting residue. Jefferson County Public Health (JCPH) staff-person Alan Gardner performed a site inspection on May 22, 2006. Photos were obtained of what appears to be a pile sand blasting residue on the ground, a vacuum/pumper truck parked on an adjacent property, a heap of vehicle batteries missing caps, laying sideways on the ground, and partially covered with dirt; and open 5 and 55 gallon containers, which appear to have formerly held liquids, lying sideways on the ground. Independent clean-up measures were initiated by Mr. Neet soon after the site visit.

During a February 26, 2008 follow-up site visit by Alan Gardner and Marjorie Boyd of JCPH, Buzz Neet pointed out where he stated he allowed an acquaintance to purge commercial sandblasting residue "off and on" during 2006. Mr. Neet estimates the amounts of residue involved to be "one full vacuum truck and other trips of 100 gallons or so." Mr. Neet says it was dispersed along the dirt

roadways and used as fill for wet areas. Mr. Neet later admitted to burning automotive tires, plastics, wood products, and garbage on the property from 1987 until approximately 2005. He stated that at least once he had burned a television.

Soil sampling performed by JCPH on September 12, 2008 revealed levels of motor oil, arsenic, cadmium, and lead above MCTA Method A clean-up levels. Other constituents were above reporting levels, though below MCTA, including metals and numerous phthalates.

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):

ROUTE SCORES:

Surface Water/Human Health: _____

Air/Human Health: _____

Groundwater/Human Health: _____

Surface Water/Environmental.: _____

Air/Environmental: _____

OVERALL RANK: _____

WORKSHEET 2
Route Documentation

1. SURFACE WATER ROUTE

- a. List those substances to be considered for scoring: Source: 1,3,4
Lead, TPH-heavy oil, cadmium , arsenic.
- b. Explain basis for choice of substance(s) to be used in scoring.
These substances were detected in on-site surface samples in concentrations exceeding MTCA clean-up levels, and are potentially available to this route.
- c. List those management units to be considered for scoring: Source: 1,3,4
Surface and subsurface soils.
- d. Explain basis for choice of unit to be used in scoring:
Lead, TPH-heavy oil, cadmium, and arsenic were confirmed to be present in on-site surface and sub-surface soil samples in concentrations exceeding MTCA cleanup levels. There is no secondary containment system to prevent the contaminants from spreading to nearby surface water.

2. AIR ROUTE

- a. List those substances to be considered for scoring: Source: 1,3,4
Lead, TPH-heavy oil, cadmium , arsenic.
- b. Explain basis for choice of substance(s) to be used in scoring:
Lead, TPH-heavy oil, cadmium, and arsenic were confirmed to be present in on-site surface and sub-surface soil samples in concentrations exceeding MTCA cleanup levels and are potentially available to the route of concern.
- c. List those management units to be considered for scoring: Source: 1,3,4
Surface and subsurface soils.
- d. Explain basis for choice of unit to be used in scoring:
Lead, TPH-heavy oil, cadmium, and arsenic were confirmed to be present in on-site surface and sub-surface soil samples in concentrations exceeding MTCA cleanup levels. There is no secondary containment system to prevent the contaminants from being released to the air.

3. GROUNDWATER ROUTE

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

Source: 1,3,4

Lead, TPH-heavy oil, cadmium , arsenic.

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

These substances were detected in on-site surface samples in concentrations exceeding MTCA clean-up levels and are potentially available to this route.

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

Source: 1,3,4

Surface and subsurface soils.

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

Lead, TPH-heavy oil, cadmium , and arsenic are confirmed to be present in on-site surface and sub-surface soil samples in concentrations exceeding MTCA cleanup levels. There is no secondary containment system to prevent the contaminants from spreading into the groundwater.

WORKSHEET 4
Surface Water Route

1.0 SUBSTANCE CHARACTERISTICS

1.1 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	Lead	15	6	ND	-	<0.001 (NOAEL)	10	ND	ND	-
2	Arsenic	10	8	763(rat)	5	0.001	5	A =1.0	1.75	7
3	Cadmium	5	8	225 (rat)	5	0.0005	5	ND	ND	-
4	TPH-Other (Motor oil)	ND	-	ND	-	2.0	1	ND	ND	-

*Weight of Evidence

** Cancer Potency Factor mg/kg/day

Source: 1-3

Highest Value: 8

(Max = 10)

Plus 2 Bonus Points? 2

Final Toxicity Value: 10

(Max = 12)

1.2 Environmental Toxicity () Freshwater (X) Marine					
Substance		Acute Water Quality Criteria		Non-Human Mammalian Acute Toxicity	
		(µg/L)	Value	(mg/kg)	Value
1	Lead	ND	4		
2	Arsenic			763 (rat)	6
3	Cadmium			225 (rat)	6
4	TPH-Other (Motor oil)	ND	-	ND	-

Source: 1-3

Highest Value: 6

(Max = 10)

1.3 Substance Quantity		
Explain Basis: 33% of 152,008 sq/ft = 50,163 sq/ft		Source: <u>1,3,12</u> Value: <u>8</u> (Max = 10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment: Explain basis: Contaminated surface soil with no run-on/runoff control	1,3	<u>10</u> (Max = 10)
2.2	Surface Soil Permeability: Sandy soil, high permeability	1,3,10	<u>1</u> (Max = 7)
2.3	Total Annual Precipitation: 18.74"	3,8	<u>2</u> (Max = 5)
2.4	Max 2yr/24hr Precipitation: 1"	3,7	<u>1</u> (Max = 5)
2.5	Flood Plain: Not in flood plain	3,9	<u>0</u> (Max = 2)
2.6	Terrain Slope: 210'/2504' = 8% slope	3,5	<u>3</u> (Max = 5)

3.0 TARGETS

		Source	Value
3.1	Distance to Surface Water: 2504' (Port Townsend Bay)	3,9	<u>4</u> (Max = 10)
3.2	Population Served by surface drinking water intakes within 2 miles: 0	3,6	<u>0</u> (Max = 75)
3.3	Area Irrigated by surface water within 2 miles : (0.75)*√ # acres = 0	3,6	<u>0</u> (Max = 30)
3.4	Distance to Nearest Fishery Resource: >10,000 feet	3,13	<u>0</u> (Max = 12)
3.5	Distance to, and Name(s) of, Nearest Sensitive Environment(s): 2595' Port Townsend Bay coastal wetlands	3,14	<u>6</u> (Max = 12)

4.0 RELEASE

Explain Basis: None documented	Source: <u>1,3</u> Value: <u>0</u> (Max = 5)
--------------------------------	---

WORKSHEET 5

Air Route

1.0 SUBSTANCE CHARACTERISTICS

1.1. Introduction (WARM Scoring Manual) – Please review before scoring

1.2 Human Toxicity										
Substance		Air Standard ($\mu\text{g}/\text{m}^3$)	Value	Acute Toxicity (mg/m^3)	Value	Chronic Toxicity ($\text{mg}/\text{kg}/\text{day}$)	Value	Carcinogenicity		Value
								WOE*	PF**	
1	Lead	0.5	10	ND	-	ND	-	B2=0.8	ND	-
2	Arsenic	.00023	10	ND	-	ND	-	A=1.0	50=9	9
3	Cadmium	0.00056	10	25(rat)	10	ND	-	B1=0.8	6.1=7	6
4	TPH-Other (Motor oil)	ND	-	ND	-	ND	-	ND	ND	-

*Weight of Evidence

** Cancer Potency Factor $\text{mg}/\text{kg}/\text{day}$

Source: 1-3

Highest Value: 10

(Max = 10)

Plus 2 Bonus Points? 2

Final Toxicity Value: 12

(Max = 12)

1.3.2 Particulate Mobility				
		Soil Type	Erodibility	Climatic Factor
1	Lead	Loamy sand	130-170 tons/acre/yr (best fit range)	1-10
2	Arsenic	Loamy sand	130-170 tons/acre/yr (best fit range)	1-10
3	Cadmium	Loamy sand	130-170 tons/acre/yr (best fit range)	1-10
4	TPH-Other Motor Oil=ND	-	-	-

Source: 1,3

Value: 2

(Max = 4)

1.4 Highest Human Health Toxicity/ Mobility Matrix Value (from Table A-7)

(Use highest of: $12/2=12$; (or $10/2=10$??))

Final Matrix Value: 12

(Max = 24)

1.5 Environmental Toxicity/Mobility –						
	Substance	Non-human Mammalian Inhalation Toxicity (mg/m ³)	Acute Value	Mobility (mmHg)	Value	Matrix Value
1	Lead	-	-	(Particulate)	2	-
2	Arsenic	-	-	(Particulate)	2	-
3	Cadmium	25	10	(Particulate)	2	10
4	TPH-Other (MotorOil)	-				

Highest Environmental Toxicity/Mobility Matrix Value (Table A-7) = **Final Matrix Value: 10**
(Max = 24)

Source: 1,3

1.6 Substance Quantity	
Explain Basis: 33% of 152,008 sq/ft = 50,163 sq/ft	Source: <u>1,3</u> Value: 6 (Max = 10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment: Contaminated soil, no cover	1,3	<u>10</u> (Max = 10)

3.0 TARGETS

		Source	Value
3.1	Nearest Population: < 1000'	1,3,12	<u>10</u> (Max = 10)
3.2	Distance to [and name(s) of] nearest sensitive environment(s): 2595' Port Townsend Bay coastal wetlands	3,14	<u>5</u> (Max = 7)
3.3	Population within 0.5 miles: $\sqrt{462}=22$ (estimate, likely low)	3,12	<u>221</u> (Max = 75)

4.0 RELEASE

Explain Basis for scoring a release to air:	Source: <u>1,3</u> Value: 0 (Max = 5)
None documented.	

WORKSHEET 6
Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.1 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	Lead	15	6	ND	-	<0.001 (NOAEL)	10	ND	ND	-
2	Arsenic	10	8	763 (rat)	5	0.001	5	A =1.0	1.75 =7	7
3	Cadmium	5	8	225 (rat)	5	0.0005	5	ND	ND	-
4	TPH-Other (Heavy oil)	ND	-	ND	-	2.0	1	ND	ND	-

*Weight of Evidence

** Cancer Potency Factor mg/kg/day

Source: 1-3

Highest Value: 10

(Max = 10)

Plus 2 Bonus Points? 2

Final Toxicity Value: 12

(Max = 12)

1.2 Mobility (Numbers refer to above listed substances)	
Cations/Anions [Coefficient of Aqueous Migration (K)]	OR Solubility (mg/L)
1= K is 0.1 to 1.0 = 2	1=
2= K is Greater than 1.0 = 3	2=
3= K is Greater than 1.0 = 3	3=
4=	4= 6.6E-03 to 1.5E-11 =0

Source: 1-3

Value: 3

(Max = 3)

1.3 Substance Quantity:	
Explain basis: (33% of 152,008 sq/ft = 50,163 sq/ft X 3) = 150,489 cubic yards	Source: 1-3 Value: 9 (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Contaminated area scored as spill/discharge to surface soil, no cover/liner	1-3	<u>10</u> (Max = 10)
2.2	Net precipitation: 11.2" – 6.1" = 5.1"	3,11	<u>1</u> (Max = 5)
2.3	Subsurface hydraulic conductivity: Loamy sand	1,3,10	<u>3</u> (Max = 4)
2.4	Vertical depth to groundwater: Aquitard soil layer 129'-172'	10, 15	<u>3</u> (Max = 8)

2.0 TARGETS

		Source	Value
3.1	Groundwater usage: Use within 2 miles is a mixture of private wells - no alternate unthreatened sources available with minimal hookup, and public supply- alternate sources available.	6,15	<u>4</u> (Max = 10)
3.2	Distance to nearest drinking water well: $\leq 600'$	3,16	<u>5</u> (Max = 5)
3.3	Population served within 2 miles: 32 private wells, $x3=96$, $\sqrt{96}=9.79=10$	3,6	<u>10</u> (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: 0	3,6	<u>0</u> (Max = 50)

3.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: No groundwater sampling data available	1,2	<u>0</u> (Max = 5)

SOURCES USED IN SCORING

1. Initial Investigation Report, Washington State Department of Ecology, December 15, 2008, ERTS # 554695.
2. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
3. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
4. Washington State Department of Ecology, Model Toxics Control Act Chapter 70.105D RCW (Amended 2005) AND Cleanup Regulation Chapter 173-340 WAC (Amended February 12, 2001). Publication No. 94-06, revised October 2005.
5. U.S.G.S. Topographical map for area.
6. Washington State Department of Ecology, Water Rights Application System
7. NOAA Atlas 2, Volume IX, Isopluvials of 2-year 24-Hr. Precipitation in Tenths of an Inch. Figure SW-1.
8. Western Regional Climate Center, Washington Climate Summaries On-line Database.
9. Q3 Flood Data Map of Jefferson County Washington, Federal Emergency Management Agency, 1996. <http://www.co.jefferson.wa.us/idms/metadata/FEMA%20FIRMS.shtml>
10. Soil Survey of Jefferson County, Washington; U.S. Department of Agriculture Soil Conservation Service and Washington Agricultural Experiment Station, August, 1975.
11. Washington Climate-Net Rainfall Table
12. Aerial Photograph of Port Townsend, Washington State Plane North (5601), March 2004, City of Port Townsend, Jefferson County Central Services GIS.
13. Map of Commercial and Recreational Shellfish Growing Areas, Puget Sound, January 2009, Washington State Department of Health, www.doh.wa.gov/ehp/sf/Pubs/ai-map.pdf
14. Wetlands Map, Washington State Plane North (5601), NAD83, Jefferson County Central Services GIS, 3/18/97.
15. Washington State Well Log Viewer, Washington State Department of Ecology, <http://apps.ecy.wa.gov/welllog/>
16. Permit Map, Jefferson County Central Services GIS ArcMap, Jefferson County, Washington.