

SITE HAZARD ASSESSMENT
WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Site Name: John's Shell

Address: 1410 Ocean Beach Hwy, Longview

Ecology Facility Site ID No.: 98186449

Township/Range/Section: 08 N/02 W/28 WM

Latitude: 46.14662 Longitude: -122.93316

Site scored/ranked for the February 2016 update

Today's date: 12/30/2013

SITE DESCRIPTION:

The subject site consists of a 0.41 acre irregularly shaped parcel designated as "Food Market" in an area of Longview zoned for residential and commercial uses. The subject site lies 21 feet above mean sea level. The site currently houses a fueling station and convenience store and is almost entirely paved.

In July of 1991, Wilson Oil Inc. reported a petroleum release that was discovered during Environmental Assessment for the sale of the property. Gasoline was confirmed in the soil and groundwater at one end of the underground storage tanks (USTs).

In October of 1991, Environmental Inspection Services excavated a nine ft by 28 foot by 15 foot deep excavation and removed approximately 50 cubic yards of soil for bioremediation. Four soil samples were collected from the excavation. The soil sample results returned below the MTCA Method A Cleanup Levels for gasoline, diesel, BTEX (benzene, toluene, ethyl benzene, and xylene), and lead. One groundwater sample was collected from water in the excavation. The groundwater sample results returned with above the MTCA Method A Cleanup Level for gasoline. The BTEX sample results returned without units, it is unclear whether BTEX is present in the groundwater.

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):

The scope of this Site Hazard Assessment did not include a hydrogeologic survey of the subject site and surrounding area. The groundwater contamination documented or inferred at the subject site is therefore considered to have the potential to impact any well located within the prescribed 2-mile radius and all such wells were used in the scoring process.

The documented contamination on this site is primarily subsurface. The Surface Water and Air routes have not been scored.

The City of Longview's Mint Farm Regional Water Plant, opened in April of 2013, is located within two miles of the subject site (at 46.13656, -122.97856), and supplies ground water for potable use. The City of Longview Water serves a population of 40,878 residents. This water system is considered to be highly susceptible to contamination.

ROUTE SCORES:

Surface Water/Human Health: Not scored	Surface Water/Environmental.: Not scored
Air/Human Health: Not scored	Air/Environmental: Not scored
Groundwater/Human Health: 58.0	

OVERALL RANK: 2

WORKSHEET 2
Route Documentation

1. SURFACE WATER ROUTE

- 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

- 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
TPH as Gasoline (from benzene)

- b. Explain basis for choice of substance(s) to be used in scoring:
TPH as gasoline (from benzene) will be used due to the fact that it was detected above its
MTCA Method A Cleanup Level, 800 ug/L

- c. List those management units to be considered for scoring: Source: 1,2
Spills, discharges, and contaminated soil

- d. Explain basis for choice of unit to be used in scoring:
Spills, discharges, and contaminated soil will be the management unit used for scoring due to
contaminated subsurface soils, verified through sampling and analysis

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									
2									
3									
4									
5									
6									

* Potency Factor

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

1.2 Environmental Toxicity () Freshwater () Marine				
Substance	Acute Water Quality Criteria		Non-Human Mammalian Acute Toxicity	
	(µg/L)	Value	(mg/kg)	Value
1				
2				
3				
4				
5				
6				

Source:
Highest Value:
(Max = 10)

1.3 Substance Quantity

Explain Basis:	Source: Value: (Max = 10)
-----------------------	-----------------------------------------------

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment Explain basis:		— (Max = 10)
2.2	Surface Soil Permeability:		— (Max = 7)
2.3	Total Annual Precipitation:		— (Max = 5)
2.4	Max 2yr/24hr Precipitation:		— (Max = 5)
2.5	Flood Plain:		— (Max = 2)
2.6	Terrain Slope:		— (Max = 5)

3.0 TARGETS

		Source	Value
3.1	Distance to Surface Water:		— (Max = 10)
3.2	Population Served within 2 miles (see WARM Scoring Manual Regarding Direction):		— (Max = 75)
3.3	Area Irrigated by surface water within 2 miles : $(0.75)*\sqrt{\# \text{ acres}} =$		— (Max = 30)
3.4	Distance to Nearest Fishery Resource		— (Max = 12)
3.5	Distance to, and Name(s) of, Nearest Sensitive Environment(s):		— (Max = 12)

4.0 RELEASE

Explain Basis:	Source: Value: (Max = 5)
-----------------------	----------------------------------------------

WORKSHEET 5

Air Route

1.0 SUBSTANCE CHARACTERISTICS

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

1.2 Human Toxicity										
1	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*	
2										
3										
4										
5										

* Potency Factor

Source:

Highest Value:

(Max = 10)

Plus 2 Bonus Points?

Final Toxicity Value:

(Max = 12)

1.3 Mobility (Use numbers to refer to above listed substances)				
1.3.1 Gaseous Mobility		1.3.2 Particulate Mobility		
Vapor Pressure(s) (mmHg)		Soil Type	Erodibility	Climatic Factor
1				
2				
3				

Source:

Value:

(Max = 4)

Source:

Value:

(Max = 4)

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

(Use highest of:)

Final Matrix Value:

(Max = 24)

1.5 Environmental Toxicity/Mobility –					
Substance	Non-human Mammalian Inhalation Toxicity (mg/m ³)	Acute Value	Mobility (mmHg)	Value	Matrix Value
2					
6					

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

1.6 Substance Quantity	
Explain Basis:	Source: Value: (Max = 10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment:		(Max = 10)

3.0 TARGETS

		Source	Value
3.1	Nearest Population:		(Max = 10)
3.2	Distance to [and name(s) of] nearest sensitive environment(s):		(Max = 7)
3.3	Population within 0.5 miles:		(Max = 75)

4.0 RELEASE

Explain Basis for scoring a release to air:	Source: Value: (Max = 5)
---------------------------------------------	---------------------------------------

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	TPH as Gasoline (from Benzene)	5	8	3306	3	--	ND	A	0.02 9	5
2										
3										
4										
5										
6										

* Potency Factor

Source: 1,2,3

Highest Value: 8

(Max = 10)

Plus 2 Bonus Points? 0

Final Toxicity Value: 8

(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=	1= 1.8E+03 = 3
2=	2=
3=	3 =
4=	4=
5=	5=
6=	6=

Source: 2,3

Value: 3

(Max = 3)

1.3 Substance Quantity:

Explain basis: The substance quantity was estimated using the total volume of all USTs documented to have been on site. A volume of 26,000 gallons was used for this calculation	Source: 1,2 Value: 6 (Max=10)
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Scored as a landfill with no liner, a compacted soil cover with unknown maintenance, no known collection system, and with disposal of free/bulk liquids.	1,2	<u>9</u> (Max = 10)
2.2	Net precipitation: 50.1-60 inches	2,4,7	<u>5</u> (Max = 5)
2.3	Subsurface hydraulic conductivity: Caples silty clay loam	2,7,8	<u>2</u> (Max = 4)
2.4	Vertical depth to groundwater: Documented groundwater contamination confirmed through sample analysis	1,2	<u>8</u> (Max = 8)

2.0 TARGETS

		Source	Value
3.1	Groundwater usage: Public supply, no alternate unthreatened sources available with minimal hookups	2,5,6	<u>9</u> (Max = 10)
3.2	Distance to nearest drinking water well: The nearest well lies approximately 300 feet east of the subject site	2,6,7	<u>5</u> (Max = 5)
3.3	Population served within 2 miles: Wells supplying the Kelso Water System lie within two miles of the subject site. The Kelso Water System serves 11,840 residents.	2,5,6,7	<u>100</u> (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: (0.75)*√ Approximately 189 acres irrigated by groundwater within two miles of the subject site	2,7,9,10	<u>10</u> (Max = 50)

3.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: Documented groundwater contamination confirmed through sample analysis	1,2	<u>5</u> (Max = 5)

SOURCES USED IN SCORING

1. Washington State Department of Ecology Site Hazard Assessment File/TCP file
2. Washington State Department of Ecology, WARM Scoring Manual, April 1992
3. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
4. U.S. Department of Interior Geological Survey Topographical Map
5. Washington State Department of Health, Public Water System Database
6. Washington State Department of Ecology, Water Resources Explorer
7. Cowlitz County GIS map
8. Washington State Department of Agriculture, soil maps
9. Washington State Department of Ecology Water Rights Tracking System
10. GeoCommunicator, Land Survey Information System
11. Washington State Department of Ecology Well Log Viewer