

WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

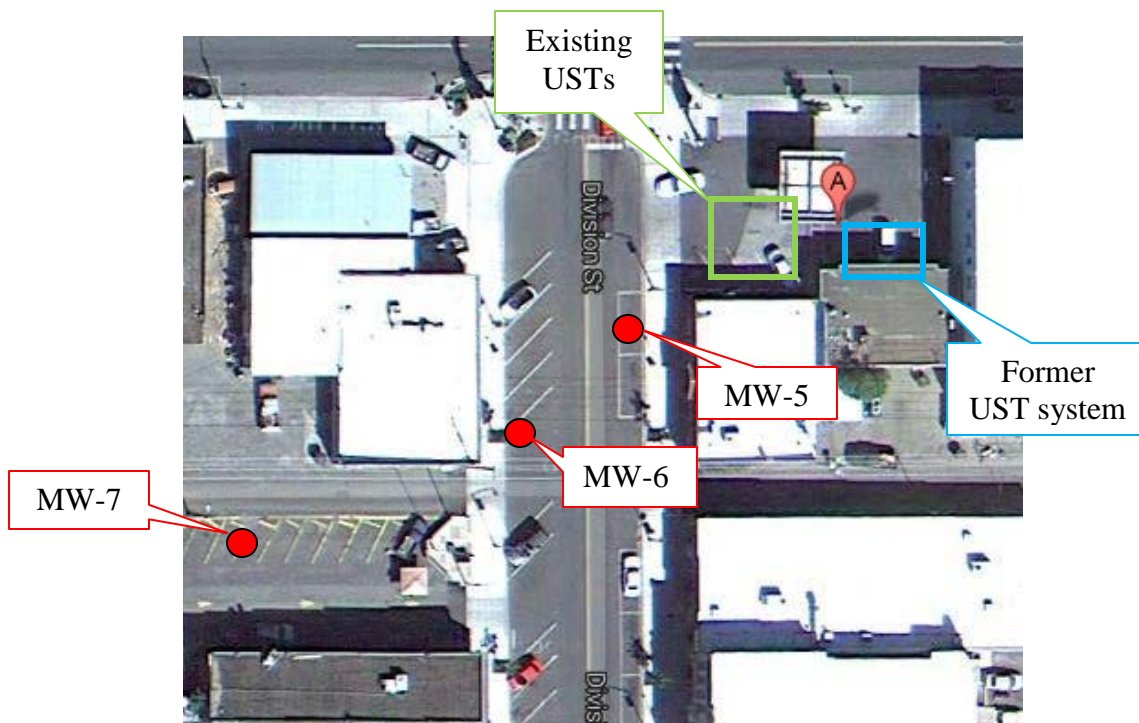
Name: **Grandview Market / Petrosun 1070**
Address: **100 East Wine Country Road**
City: **Grandview** County: **Yakima** State: **WA** Zip: **98930**
Latitude: **46.25587** Longitude: **-119.90160**
TCP ID #: **6845** FSID #: **91458995**

Site scored/ranked for the August 2013 update

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

Time Oil Property operated the UST system beginning in 1965. According to the Corrective Action Report, in May 1995 the Grandview Fire Department alerted the owner about gas vapors in a building adjacent to the property. A soil vapor survey was conducted and revealed elevated concentrations of gas, diesel, and BTEX in the vicinity of the former USTs, existing USTs and area north of the convenience store.

In September 1998, while the UST system was being upgraded with a cathodic protection system, petroleum impacted soil was discovered in three of the six soil borings drilled around the tank bed for anode installation. Composite soil samples collected from 12-15' below ground surface (bgs) and analyzed for WTPH-D, WTPH-G and BTEX found heavy oil, gasoline, and xylenes exceeding cleanup standards.



Beginning in February 2000, the property was investigated to determine the extent of hydrocarbon contamination and identify groundwater flow direction. Thirteen soil probes on and off the property were advanced to 17-20' bgs. Select soil samples were analyzed for BTEX, TPH-G and TPH-D. Groundwater was encountered in each soil probe. Based on this investigation, soil samples within the petroleum plume, identified as a 200-foot long by 80-foot wide area extending southwest from the existing USTs, exceeded Method A cleanup levels. At this time, groundwater was confirmed to be impacted.

Eleven borings were completed as groundwater monitoring wells. An April 2000 RI/FS report selected the construction of a high pressure-low flow in-situ air sparging system coupled with a SVE system to address hydrocarbon impacts at the site. The system began operating in September 2001. On November 14, 2006, Time Oil shut down the remediation system.

Groundwater has been monitored since March 2000. During the last four quarters of groundwater sampling results submitted to Ecology, contaminant levels in the wells were considerably less than initially reported in 2000. However, the extent of the contaminant plume to the southwest has yet to be identified and three wells (MW-05, -06, and -07) continue to detect concentrations of TPH-G, benzene, MTBE, and/or EDC at levels which exceed Method A cleanup standards (in red font). The highest detected levels during the last four monitored quarters are in the following table.

Well	TPH-G	Benzene	MTBE	EDC
MW-05	2900	52	<1	4.8
MW-06	120	<1	26	58
MW-07	620	4.3	2.2	37
Method A Cleanup Level	800	5	20	5

Depth to groundwater is about 12-15' bgs and consistently flows in a southwesterly direction.

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.

The total population usage of groundwater for drinking water from all private and public supply wells is documented to be in excess of 10,000, so the maximum value of 100 will be used for that scoring value.

Also, groundwater flow direction is consistent and has caused impacted groundwater only to the southwest of the UST system. For this reason, wells to the northeast of the site that would fall into a 2-mile radius were excluded during scoring.

ROUTE SCORES:

Surface Water/Human Health:	<u>n/a</u>	Surface Water/Environmental.:	<u>n/a</u>
Air/Human Health:	<u>n/a</u>	Air/Environmental:	<u>n/a</u>
Groundwater/Human Health:	<u>59.6</u>		

OVERALL RANK: 2

WORKSHEET 2
Route Documentation

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

2. **AIR ROUTE** – *Not Scored*

3. **GROUNDWATER ROUTE** –

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

Benzene, Toluene, Ethylbenzene, Xylenes, lead, MTBE, EDC

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

Analytical results of groundwater samples confirm the presence of these hazardous substances at levels which exceed Method A cleanup standards.

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

Subsurface soil and groundwater

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

Analytical results confirm groundwater contamination.

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	5	8	3306	3	--	--	A (1)	0.029	5
2	EDC	5	8	670	5	--	--	B2 (0.8)	0.091	4

* Potency Factor

Source: 2

Highest Value: 8

(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 [Coefficient of Aqueous Migration (K)]	OR Solubility (mg/L)
1=	1= $1.8 \times 10^3 = 3$
2=	2= $8.5 \times 10^3 = 3$

Source: 5

Value: 3

(Max = 3)

1.3 Substance Quantity:	
Explain basis: The extent of contamination has not been determined at the site. Therefore, a conservative estimate of 10-100yd ³ has been used to calculate substance quantity.	Source: <u>6</u> Value: 2 (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Leaking underground storage tank site with spills and discharges to soil; area is paved.	1, 2, 3, 4	8 (Max = 10)
2.2	Net precipitation: 6-8" annually	7	1 (Max = 5)

2.3	Subsurface hydraulic conductivity: <10' consists of fine sand and moderate silt; 10-34' consists of fine sand with moderate silt interbedded with medium-grained sand	3	3 (Max = 4)
2.4	Vertical depth to groundwater: confirmed contamination of groundwater = 0' bgs	2	8 (Max = 8)

3.0 TARGETS

		Source	Value
3.1	Groundwater usage: public supply, but alternate sources available	9	4 (Max = 10)
3.2	Distance to nearest drinking water well: <u>2200</u> feet	10	3 (Max = 5)
3.3	Population served within 2 miles: $\sqrt{\text{pop.}} = \sqrt{10971} = 104$	9	100 (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: (0.75)* $\sqrt{\#}$ acres = $0.75 * \sqrt{543} = 17.5$	8	18 (Max = 50)

4.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: Confirmed contamination in groundwater at levels which exceed MTCA Method A cleanup standards.	2	5 (Max = 5)

SOURCES USED IN SCORING

1. Grandview Market Correspondence File, Ecology records
2. Groundwater Monitoring Report, 3rd Quarter of 2007, *Sound Environmental Strategies Corporation*, October 3, 2007
3. Corrective Action Report, *Brown and Caldwell*, August 2001
4. Soil Sampling Results/Confirmation of Release at Grandview Market, *Time Oil Co.*, October 6, 1998
5. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
6. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
7. Washington Climate – Net Rainfall Table
8. GWIS application using aerial photography
9. Washington State Department of Health, Office of Drinking Water Sentry website printout for public water supplies
10. Ecology Well Log database