

WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Name: **Moxee City Shop & STP**
Address: **7520 Postma Road**
City: **Moxee** County: **Yakima** State: **WA** Zip: **98936**
Section/Township/Range: **S2/T12N/R19E**
Latitude: **46.56166** Longitude: **-120.40082**
Facility/Site ID #: **42788675**
Cleanup ID #: **6057**

Site scored/ranked for the August 2013 update

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



The property is owned by the City of Moxee and used as a sewer/wastewater treatment plant. It consists of a building, maintenance shop, laboratory, aeration lagoon and sludge dewatering cells.

In May 1996, Sage Earth Science removed two 1000-gallon gasoline USTs that were installed in 1977 and used to refuel vehicles and equipment. Upon removal, holes up to 1/2" were discovered at the base of both tanks. Impacted soil was found on the north, west and south sidewalls of the UST excavation, which resulted in the removal of ~50 yd³.

Six soil samples were collected from the sidewalls of the excavation and analyzed for TPH-HCID; some were composited. Since groundwater was encountered at 4.66 feet bgs, a water sample was also

collected. Lab analysis confirmed the presence of hydrocarbons in Sample MAX-0196-S1, collected at 4' bgs from the north sidewall, so additional analyses were conducted. Results exceeding MTCA Method A cleanup levels include TPH-G – 95 ppm and Xylenes – 9.1 ppm. Field analysis indicated the presence of organic compounds in Samples MAX-0196-S4 and –S5, but they were not submitted to the lab for analyses.

The stockpiled soil contained gas, BTEX and low levels of lead. It designated as Class 4 Soils, which requires treatment of the soil. Since remediation activities began soon thereafter, the stockpiled soil was not yet removed from the site.

Later in 1996, Maxim Technologies began conducting site investigation and soil remediation activities. In July, the excavation of the northwest corner was extended ~4 feet to the west-northwest. Two soil samples were collected at 4' bgs and analyzed for TPH-G; highest levels were 1.2 ppm.

In August 1996, four groundwater test pits were dug to evaluate groundwater conditions. High levels of gas, BTEX and lead were detected in water samples, but do not accurately represent groundwater conditions. No groundwater monitoring wells were installed as part of this investigation.

The City of Moxee opted to bio-remediate the stockpiled soil instead of dispose of it offsite. The contaminated soil was returned to the tank pit after it was lined with 6 mil black plastic. The “Oil Sponge” microbes were mixed with the PCS, hosed down, then covered with more plastic. On October 16, 1996 three soil samples were collected from the bio-remediated soil and analyzed for TPH-G, BTEX, and lead. All samples came back non-detect for hydrocarbons and lead was at very low levels.

In January 2012, City of Moxee submitted a Sampling and Analysis Plan to Ecology to address groundwater contamination at the site. At the end of February 2012, six soil borings were drilled south of the former UST excavation at depths ranging from 8-12 feet bgs. Groundwater was encountered at 4-4.5 feet bgs. Five soil samples were submitted for analysis and resulted in no or low detection of TPH-Gx, MTBE, BTEX, Napthalenes, EDC, EDB and lead. EDB's reporting limit exceeds MTCA Method A cleanup standards.

MW1 was installed in boring DP6. A groundwater sample collected from this well found 1550 ppb gas; benzene was detected at 0.22 ppb.

The City of Moxee is working with Ecology through the Clean Sites Initiative. Future plans include installing three additional groundwater monitoring wells and begin quarterly monitoring.

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.

Benzene was used to evaluate the risk of toxicity due to groundwater contamination even though BTEX were detected at levels that do not exceed MTCA cleanup standards. Since TPH-G is present, benzene toxicity values must be used to represent the acute toxicity hazards associated with gasoline.

ROUTE SCORES:

Surface Water/Human Health: NA
Air/Human Health: NA
Groundwater/Human Health: 38.9

Surface Water/Environmental.: NA
Air/Environmental: NA

OVERALL RANK: 3

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: 1, 2

TPH-G as benzene

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

Gasoline is present and benzene toxicity values must be used to represent the acute toxicity hazard.

c. List those management units to be considered for scoring: Source: 1, 2

Subsurface soils and groundwater

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

Confirmed groundwater contamination exceeding MTCA Method A cleanup levels for gasoline.

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	--	ND	0.8	--	2.1	

* Potency Factor

Source: 2

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= 3

Source: 2

Value: 3
(Max = 3)

1.3 Substance Quantity:	
Explain basis: Between 10-100 yd ³ of contaminated soils is estimated for this site.	Source: <u>5</u> Value: <u>2</u> (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Leaking underground storage tank site with possible spills and discharges; site is paved.	3	8 (Max = 10)
2.2	Net precipitation: 1.2	6	1 (Max = 5)
2.3	Subsurface hydraulic conductivity: fine sands, silt and clay	1, 2	3 (Max = 4)
2.4	Vertical depth to groundwater: a confirmed release to groundwater has been determined	1, 2	8 (Max = 8)

3.0 TARGETS

		Source	Value
3.1	Groundwater usage: Public supply but alternate source available	8	4 (Max = 10)
3.2	Distance to nearest drinking water well: <u>3200</u> feet	9	2 (Max = 5)
3.3	Population served within 2 miles: $\sqrt{\text{pop.}} = \sqrt{3732} = 61$	8	61 (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: $(0.75) * \sqrt{\# \text{ acres}} = 0.75 * \sqrt{299.9} = 17.3$	7	17 (Max = 50)

4.0 RELEASE

	Source	Value
Explain basis for scoring a release to groundwater: Analytical results confirm gasoline-contaminated groundwater.	2	5 (Max = 5)

SOURCES USED IN SCORING

1. Closure Site Assessment Report, *Sage Earth Sciences, Inc.*, June 1996
2. Limited Remedial Action Report for Moxee Sewer Treatment Plant Facility, *Maxim Technologies, Inc.*, December 1996
3. Site visits by Norm Hepner
4. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
5. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
6. Washington Climate – Net Rainfall Table
7. GWIS application using aerial photography
8. Washington State Department of Health, Office of Drinking Water Sentry website printout for public water supplies
9. Ecology Well Log database