

CSID 2451

**WORKSHEET 1  
SUMMARY SCORE SHEET**

**Note:** This document currently has no provision for sediment route scoring.

**Site Name/Location (Street, City, County, Section/Township/Range).**

Geiger Heights Housing Area

Grove and Hallett Roads

NW1/4 of Section 10, Township 24N, Range 42 EWM.

**Site Description (Include management areas, substances of concern, and quantities):**

The Geiger Heights Housing Area consists of 131 duplex and single family houses. The housing area is located in an rural area 8 miles south west of Spokane. Military personnel from Fairchild Air Force Base and their families occupy the houses.

On November 7, 1996 the Department of Ecology (Ecology) received a report on excavation and removal of underground heating oil tanks conducted in 1992 and 1996. The reports indicate multiple releases of diesel fuel oil have occurred at this site. Shallow ground water was reported at all excavations between 4 and 6 feet below ground surface and that ground water contamination exceeds MTCA standards.

**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):**

Partial remediation of contaminated soil has occurred at the site with remaining contamination under structures, roads and distributed through shallow ground water. The quantity of contaminant remaining on site is unknown.

**ROUTE SCORES:**

Surface Water/Human Health: NA      Surface Water/Environ.: NA

Air/Human Health:      NA      Air/Environmental:      NA

Ground Water/Human Health: 29.9

**OVERALL RANK: 5**

Rev. 3/10/93



**WORKSHEET 2**  
**ROUTE DOCUMENTATION**

- 1. SURFACE WATER ROUTE Not Applicable.**  
Contamination restricted to subsurface soils.
- 2. AIR ROUTE Not Applicable.**  
Contamination restricted to subsurface soils



**WORKSHEET 2 (CONTINUED)  
ROUTE DOCUMENTATION**

**3. GROUND WATER ROUTE**

List those substances to be considered for scoring:      Source's: 1 & 10  
Diesel fuel #2 (heating oil)

Explain basis for choice of substance(s) to be used in scoring.  
Documentation of heating oil release into soil and shallow ground water following underground tank decommissioning.

List those management units to be considered for scoring:      Source's: 1 & 10  
Contaminated ground water and subsurface soil

Explain basis for choice of unit to be used in scoring.  
This site is scored on the basis that the contaminant was detected at concentrations exceeding MTCA cleanup levels in soil and ground water (up to 5,400 ppm ground water)



**WORKSHEET 6  
GROUND WATER ROUTE**

**1.0 SUBSTANCE CHARACTERISTICS**

**1.1 Human Toxicity**

Substance	Drinking Water Standard		Acute Toxicity		Chronic Toxicity		Carcinogenicity		Val.
	(ug/l)	Val.	(mg/kg-bw)	Val.	(mg/kg/day)	Val.	WOE	PF*	
1. TPH -Diesel	20	6	490	5	0.004	3	*	*	ND
2.									
3.									
4.									
5.									
6.									

\*Potency Factor Source: 6 & 7  
Highest Value: 6  
+ 2 Bonus Points? 0  
Final Toxicity Value: 6

**1.2 Mobility (Use numbers to refer to above listed substances)**

Cations/Anions: \_\_\_\_\_ Source: 6 & 7 Value: 1  
OR  
Solubility(mg/l): 1: = 3.0E + 01

**1.3 Substance Quantity**

Source's: 1, 7 & 10 Value: 3

Explain basis: Report conclusions indicate contaminated soils and ground water is wide spread through the area. Of the 122 tank locations where tanks were removed, 46 were reported with soil and or ground water contamination.  
Estimating 46 sites times 100 square feet per site times 3 foot depth equals 511 cubic yards. Table GW-7A





**2.0 MIGRATION POTENTIAL**

2.1 Containment Source: 7 Value: 10  
Explain basis: Spills, Discharges, and Contaminated Soils

2.2 Net Precipitation: 7.2 inches Source: 8 Value: 1

2.3 Subsurface Hydraulic Conductivity: >10<sup>-5</sup> to 10<sup>-3</sup> Source: 9 Value: 3

2.4 Vertical Depth to Ground Water: 0 feet Source: 1, 4 & 10 Value: 8

**3.0 TARGETS**

3.1 Ground Water Usage: Public Supplies/alternative source Source: 4 & 5 Value: 4  
(Max. = 10)

3.2 Distance to Nearest Drinking Water Well: <600 ft Source: 1 & 4 Value: 5  
(Max. = 5)

3.3 Population Served within 2 Miles:  $\sqrt{\text{pop.}} = \sqrt{715} = 27$  Source: 3 & 4 Value: 27  
(Max. = 100)

3.4 Area Irrigated by (Groundwater) Wells  
within 2 miles:  $0.75\sqrt{\text{no. acres}} = 815$  Source: 5 Value: 21  
 $0.75\sqrt{815} = 0.75(28.5) = 21.4$  (Max. = 50)

**4.0 RELEASE**

Explain basis for scoring a release to ground water: Reference to shallow ground water encountered during tank removal and subsequent ground water tests reveal ground water contamination up to 5,400ppm Source: 1, 7 & 10 Value: 5  
(Max. = 5)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## SOURCES USED IN SCORING

1. Site Assessment Report for UST Decommissioning  
Fairchild AFB, Geiger Field Military Housing Areas,  
Spokane, Washington.  
E. P. Johnson Construction and Environmental, Inc. March 1993
2. Aquifer Sensitive Overlay Zone Map, Spokane County, Washington
3. Washington State Department of Health Drinking Water Information Network
4. Washington State Department of Ecology (Ecology) Well Logs
5. Ecology Water Resource Inventory Area (WRIA) System Data Base
6. Toxicology Data Base Washington Ranking Method (WARM)
7. WARM Scoring Manual
8. Washington Climate, Spokane County, WSU Dept. of Agriculture
9. Soil Survey of Spokane County Washington. USDA Soil Conservation Svc.
10. Site Assessment Results and Independent Cleanup Action Report  
Geiger Heights Housing Area  
Volume 1 Report Sampling & Laboratory Results Summary December 1994  
Rob's Demolition
11. Ecology Letter: Initial Investigation Report on Review of Tank Removal  
January 9, 1997