

CSID 3830

WORKSHEET 1
SUMMARY SCORE SHEET

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

Site Name: Spencer Island Moser Property

Location: Frontage Rd and I-5, Everett, Washington

County: Snohomish, **Section:** 04, **Township:** 29, **Range:** 05.

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

In 1991, the Department of Ecology received a complaint regarding the Spencer Island-Moser property and possible contamination from leaking oil tanks which had been stored onsite. According to the Pilchuck Audobon Society, the oil tanks were brought onsite in 1985 or 1986, for the future use as a bilge dewatering business. However this business never commenced. Although the tanks were supposedly empty, petroleum product could be seen dripping down the sides and possibly leaking onto the surface of the ground. The tanks have since been removed from the property. Aerial photographs and site visits showed that the site had also been used for storage of heavy equipment (bulldozers, compactors, tractor trailers, etc.)

The property is located in a rural agricultural area with a relatively flat slope and completely surrounded with a dike system and drainage ditches. The ditches all discharge into Steamboat Slough, via a 24-inch diameter culvert.. It is adjacent to and south of Steamboat Slough, and located between Highway 529 and Interstate 5. A logging yard is located west of this property, on the other side of Highway 529, and a farm is to the south.

The Port of Everett hired Landau Associates to study the site in 1991 and 1992. Soil and water samples were taken. Extensive sampling included 35 test pits, seven surface soil samples, four ditch sediment samples, three monitoring well samples, and one surface water sample. TPH concentrations ranged from 36 to 1,300 ppm, and 16 of the 22 surface/near surface soil samples analyzed exceeded the MTCA cleanup level of 200 ppm. Test results confirmed that the soil had elevated levels of highly degraded heavy petroleum hydrocarbons, class 4 diesel contaminated soils, and the groundwater had detectable levels of TPH, below MTCA standards. TPH was not detected in the surface water. Soil was therefore designated as a confirmed contaminated media, and groundwater as a potential contaminated media.

Landau Associates recommended an Independent Cleanup Action Plan which included the removal of class 4 petroleum contaminated soil, capping the site

with clean fill and a low permeable surface layer, groundwater monitoring, and institutional controls via deed notification. Records do not indicate that this has occurred.

An early notice letter was sent to Robert McChesney, of the Port of Everett, March 13, 1992 and again to Bruce Moser, March 26, 1992. On March 7, 1997, Ecology sent Mr. Moser another letter informing him that the Snohomish Health District would conduct a Site Hazard Assessment in the near future.

Two soil samples were collected by the Health District during the SHA to determine whether natural attenuation had reduced or eliminated contaminant levels. The samples were tested for metals and hydrocarbons; specifically copper, cadmium, chromium, lead, TPH-diesel, and heavy hydrocarbons. Metals were detected at trace levels below MTCA, or non-detect. Heavy hydrocarbons were detected above MTCA cleanup levels in one sample.

SHA Sample Results:

| <u>Soil</u> | <u>result mg/kg</u> | <u>detection limit</u> | <u>cleanup standard*</u> |
|---------------------|---------------------|------------------------|--------------------------|
| <u>Sample SI-1s</u> | | | |
| TPH-d | ND | 50 | 200 |
| Heavy Hydrocarbons | 350 | 100 | 200 |
| Lead | 98 | 0.5 | 1000 |
| Chromium | 34.4 | 0.5 | 500 |
| Cadmium | ND | 0.5 | 10 |
| <u>Sample SI-2s</u> | | | |
| TPH-d | ND | 50 | 200 |
| Heavy Hydrocarbons | ND | 100 | 200 |
| Lead | 60.5 | 0.5 | 1000 |
| Chromium | 29.2 | 0.5 | 500 |
| Cadmium | ND | 0.5 | 10 |

*industrial cleanup standard

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):

Site is scored for groundwater only because TPH-diesel soil levels were detected which exceeded MTCA cleanup standards. Trace amounts of TPH were detected in the groundwater. The air route was neither sampled nor scored because no volatiles were detected with the photoionization detector.

ROUTE SCORES:

Surface Water/Human Health: NA

Surface Water/Environ. : NA

Air/Human Health: NA

Air/Environmental: NA

Ground Water/Human Health: 18.62

OVERALL RANK: 5

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WORKSHEET 2 ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List substance to be considered for scoring:

Source:

NA

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

List the management units to be considered in scoring:

Source:_____

Explain basis for choice of unit used in scoring:

Source:_____

2. AIR ROUTE

List substance to be considered for scoring:

Source:_____

NA

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

List the management units to be considered in scoring:

Source:

Explain basis for choice of unit used in scoring:

Source:

3. GROUND WATER ROUTE

List substance to be considered for scoring:

Source: 2,1

TPH-D, cadmium, chromium, lead.

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

Test results from Landau Associates report in 1992 indicated that TPH-diesel was detected in the soil, and trace levels of TPH were detected in ground water.

List the management units to be considered in scoring:

Source: 1

Spill, and contaminated soil.

Explain basis for choice of unit used in scoring:

Source: 1, 2

Although soil stains were not observed, tanks had been noticeably leaking onto the soil. The tanks have since been removed, however, soil sample results confirmed TPH contamination above cleanup standards. Two soil samples were

taken during the SHA to determine if the lighter hydrocarbons had volatilized or naturally attenuated. The soil is permeable, allowing the contamination to eventually move into the groundwater.

WORKSHEET 6
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

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

Source: 2,4
Highest Value: 6
2 Bonus Points?
Final Toxicity Value: 6

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions

Source: 1,2 Value: 1

OR
Solubility (mg/l) 30 mg/l

1.3 Substance Quantity
Explain basis: unknown

Source: 1,2 Value: 1

2.0 MIGRATION POTENTIAL

2.1 Containment
Explain basis: Uncontained spill

Source: 1,12 Value: 10

2.2 Net Precipitation: 16.9"

Source: 5 Value: 2

2.3 Subsurface Hydraulic Conductivity: silty sand

Source: 9 Value: 3

2.4 Vertical Depth to Ground Water: 5'-15'

Source: 12 Value: 8

Spencer Island Scoring

WORKSHEET 6
GROUND WATER ROUTE

3.0 TARGETS

- | | | | |
|-----|--|---------------------|-----------------|
| 3.1 | Ground Water Usage: Private supply, but alternate sources available with minimum hookup requirements | Source: <u>10</u> | Value: <u>4</u> |
| 3.2 | Distance to Nearest Drinking Water Well: approx. 7,181 feet-- | Source: <u>10</u> | Value: <u>1</u> |
| 3.3 | Population Served within 2 Miles: Square root of 9*3 | Source: <u>8,10</u> | Value: <u>5</u> |
| 3.4 | Area Irrigated by (Groundwater) Wells within 2 miles: NA | Source: <u>10</u> | Value: <u>0</u> |

4.0 RELEASE

- Explain basis for scoring a release to ground water: Source: 4 Value: 0
Release to ground water was not scored because trace levels of TPH was detected below the standard detection limit, well below the MTCA cleanup standard.

Sources Used in Scoring

1. Washington Department of Ecology, Initial Investigation, Spencer Island-Moser Property, February 25, 1992
2. Snohomish Health District, Site Hazard Assessment, Spencer Island-Moser Property, June 12, 1997
3. Washington Department of Ecology, WARM Scoring Manual, April, 1992.
4. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
5. National Weather Service, Washington Climate Data, Snohomish County
6. U.S.G.S. Topo. Map, East Edmonds Quad., 7.5 Min. Series, Photorev. 1981.
7. Washington Department of Ecology, Water Rights Information System (WRIS), November 4, 1992.
8. Washington Department of Health, Public Water System List, April 26, 1993.
9. Soil Conservation Service, Soil Survey of Snohomish County Area, July 1983.
10. Washington Department of Ecology, Well Logs
11. U.S. Dept. of Interior, Groundwater Resources of Snohomish County, 1952.
12. Landau Associates, Inc., Environmental Site Assessment and Cleanup Action Plan, Moser Property, Everett, WA, July 15, 1992.

Table 2 (Continued)

Surface Water Route - Environmental Pathway

$$SW = (SUB \times 40/175) \times \{(MIG \times 25/24)\} + REL + (TAR \times 30/115) / 24 = \underline{0.00}$$

where

SW = Pathway Score for Surface Water-Environmental =

SUB = (Env. Toxicity + 3) X (Containment + 1) + Substance Quantity =
3

MIG = Soil Permeability + Annual Precip. + Rainfall Frequency +
Floodplain + Slope = 0

REL = Release to the Surface Water = 0

TAR = Distance to Nearest Surface Water + Distance to Fisheries
Resource + Distance to Sensitive Environment = 0

Ground Water Route - Human Health Pathway

$$GW = (SUB \times 40/208) \times \{(MIG \times 25/17) + REL + (TAR \times 30/165)\} / 24 = \underline{18.62}$$

GW = Pathway Score For Ground Water-Human Health =

SUB = (Human Toxicity + Mobility + 3) X (Containment + 1) +
Substance Quantity = 111

MIG = Depth to Aquifer + Net Precipitation + Hydraulic Conductivity =
13

REL = Release to the Ground Water = 0

TAR = Aquifer Use + Well Distance + Population Served +
Area Irrigated = 10