CSID 1282

Fleury Auto & Truck Parts

SITE HAZARD ASSESSMENT

SNOHOMISH HEALTH DISTRICT
for the
WASHINGTON STATE DEPARTMENT OF ECOLOGY

August 7, 2002
Mike Young

WORKSHEET 1 **SUMMARY SCORE SHEET**

Site Name: Fleury Auto & Truck Parts **Facility Site ID No. 10248**

Location: 13303 Hwy 99 S Everett, Washington 98204

County: Snohomish, Section: NW1/4 OF 35, Township 28 N, Range 4 E.

Date site ranked August 27, 2002 Latitude/longitude 47° 52' 38" 122° 16' 8"

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

This 4.96 acre property is located one mile south of Everett, Washington on the east side of Highway 99 between the Mukilteo Speedway (aka Hwy 525) and Airport Road. The site is at an elevation of 500 feet above sea level, in an area described as the Intercity Plateau, which is an undulating, southward sloping, plain. The site has shallow, disturbed, soils that lie on till from the Vashon Glaciation. Much of the soil on the site was mapped as "Alderwood Gravelly Sandy Loam". However, one third of the property was mapped as "McKenna Gravelly Silt Loam". The McKenna soil is generally poorly drained and commonly found in drainage ways. Drainage from the site appears to flow to the low area in the center of the property where the McKenna soil was mapped and then south into an unnamed tributary of Swamp Creek. The soil on the site has been compacted or eroded to a depth of 6 inches or less. The thin layer of soil on the property has very little vegetation and contains a large quantity of debris from vehicle parts. The glacial till layer below the soil is very dense and is known to consist of 50 feet of compacted clay and rock.

The current occupant and business owner Mr. McAllister has used this property for auto recycling since 1985. The current property owner, Cory and Nancy Wold, used the property for the same activity starting in the 1960's. In 1995 the Health District received two complaints concerning draining oil, hydraulic fluids and antifreeze onto ground. During several visits to the site, investigators have noted automotive dismantling work being done on concrete work pad without cover. They also noticed a strong odor of antifreeze and oil product floating on surface of a puddle near the work area. Other puddles with oil sheens and areas of soil staining were also noted around the property. The soil staining and oil sheens were thought to be the result of spillage of motor oil, crankcase oil, transmission oil, and other automotive waste. During an inspection a filamentous algae material was noted in the surface water flowing off the site on the south end of the property.

The Health District collected a soil sample in drainage south of the shop as part of the initial investigation in 1995. The soil sample was analyzed for TPH HCID quantified, heavy metals and PCB's. The chemical analysis shows that the total petroleum hydrocarbons were present in the soil at 26,000 ug/g. These hydrocarbons were identified as heavy oil and diesel, with diesel at < 1300 ug/g. No PCB's were detected in the sample. Cadmium was the only metal found above MTCA cleanup standard.

Cadmium was found at 6.2 ug/g, which is above the Method A cleanup standard of 2.0 ug/g.

After several visits by the Health District and Ecology, it was observed that the operator has been making improvements. Mr. McAllister has built a cover over the work area and has obtained a discharge permit from Ecology. Mr. McAllister also made several hazardous waste handling improvements over a period of several months, but never removed contaminated soil. It was noted that the stained soil noted in past inspections near the shop was covered with gravel.

As part of the Site Hazard Assessment investigation the Health District collected new soil samples and a water sample. Two soil samples were collected near the workshop below the new gravel. Two other soil samples were collected near the location where the car-crushing machine was operating in the past. Although there was no surface water flowing onto, or off, the site during the time of the investigation, a surface water sample was collected from a puddle located near the southwest corner of the property. This puddle appeared to have some type of contamination and several volatile organic hydrocarbons were detected in the puddle sample. However, all of the organic parameters detected were below the MTCA standards available, see table 1. Lead was the only other parameter found in concentration above the MTCA Method A soil standards, not previously discovered in the initial investigation. The four soil samples collected showed lead values ranging from 193 to1040 mg/Kg.

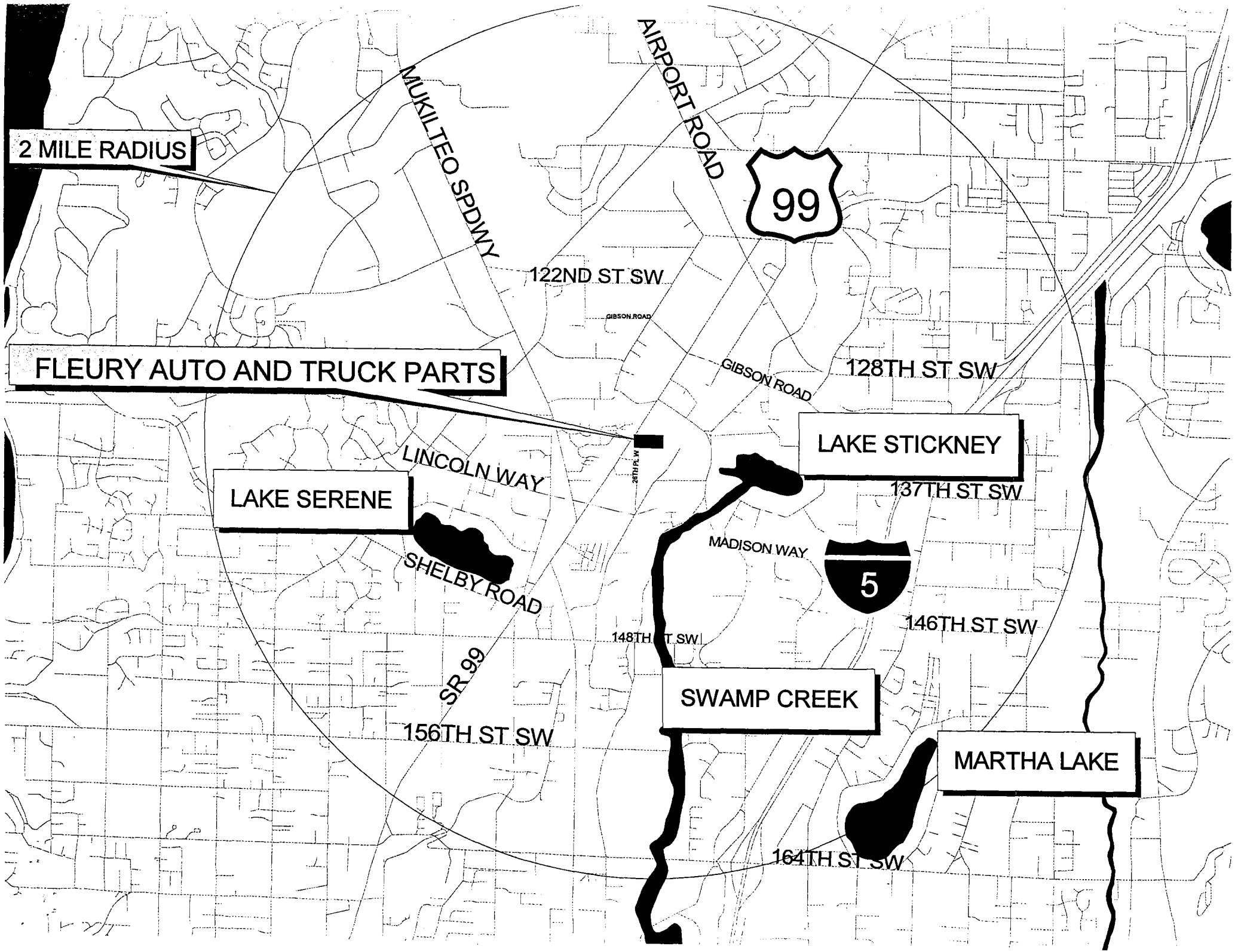
Special Considerations **(Include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):**

None

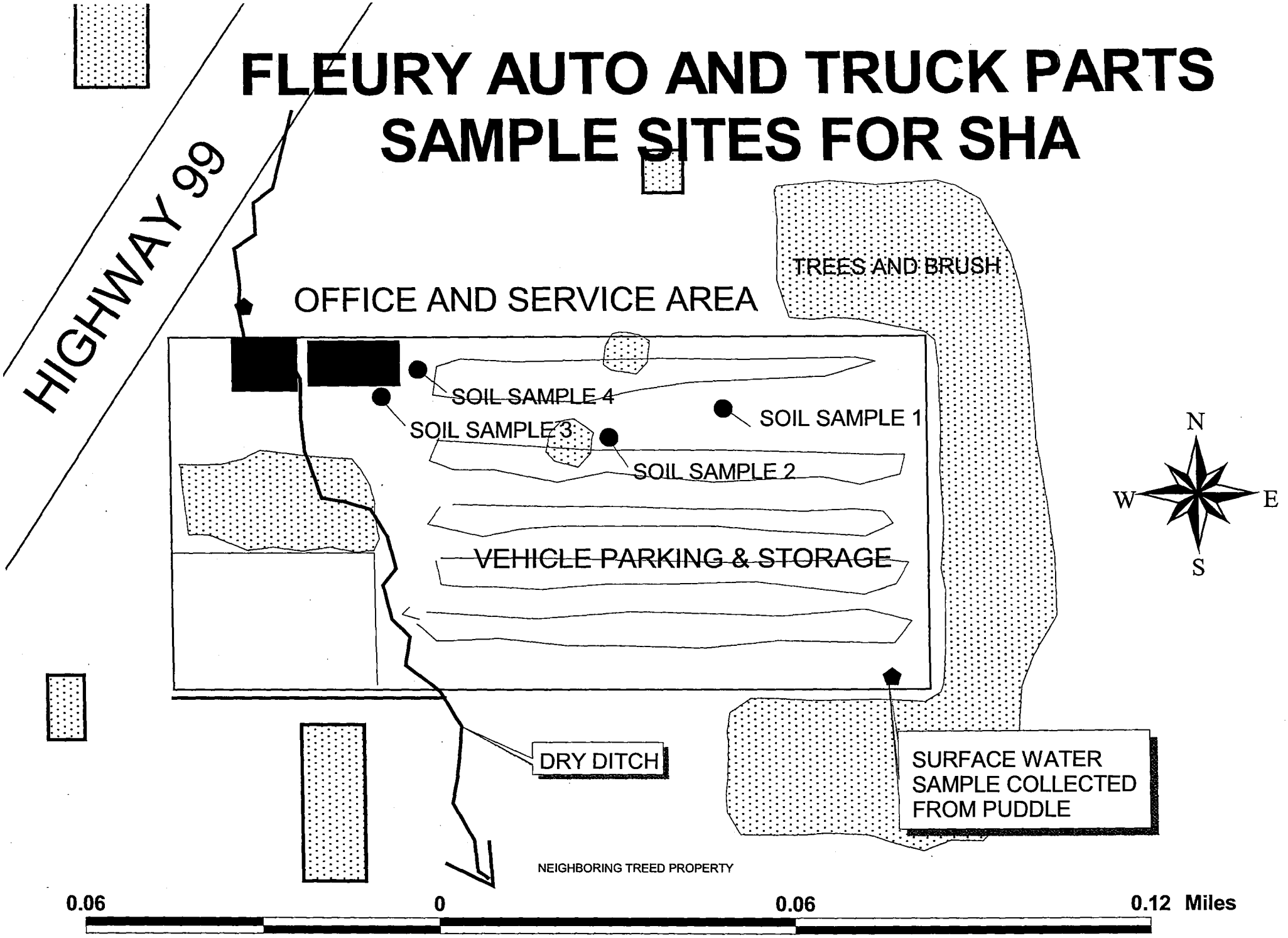
ROUTE SCORES:

Surface Water/Human Health:	8.2	Surface Water/Environ:	19.8
Air/Human Health:	8.6	Air/Environmental:	13.9
Ground Water/Human Health:	19.7		

OVERALL RANK: ~~5~~ 4 MJJ 08/26/02


2 MILE RADIUS
FLEURY AUTO AND TRUCK PARTS
MUKILTEO SPDWY
AIRPORT ROAD
99
122ND ST SW
GIBSON ROAD
GIBSON ROAD
128TH ST SW
LAKE STICKNEY
137TH ST SW
LINCOLN WAY
LAKE SERENE
SHELBY ROAD
MADISON WAY
5
146TH ST SW
148TH ST SW
SR 99
SWAMP CREEK
156TH ST SW
MARTHA LAKE
164TH ST SW

FLEURY AUTO AND TRUCK PARTS SAMPLE SITES FOR SHA



SOIL SAMPLES	Maximum Result Reported	MTCA (method A)	SAMPLES AT FLEURY AUTO & TRUCK PARTS
METALS mg/Kg			
Arsenic	2.66	20	SOIL 2, CRUSHER AREA 7/2/2
Cadmium	**6.2**	**2**	DRAINAGE S. OF SHOP 1995
Chromium, Total (Cr)	61	2000*	SOIL 4 NEAR SHOP 7/2/2
Lead, Total (Pb)	**1040**	**250**	SOIL 3 NEAR PAD 7/2/2
Mercury	0.08	2	SOIL 4 NEAR SHOP 7/2/2
TPH (heavy oil)	**26000**	**2000**	DRAINAGE S. OF SHOP 1995

*Chromium was not speciated, an assumption was made that it consist of chromium III.

SURFACE WATER SAMPLE
PUDDLE NEAR S.E. CORNER OF PROPERTY

VOLATILE ORGANIC COMPOUNDS ug/L	Maximum Result Reported	MTCA (method A)	MTCA (method B)	Ground Water Standard	Primary Drinking Water Standard
Acetone	8.1		800		
Benzene	0.2	5	22.7	0.795	5
N - Butylbenzene (1 - Phenylbutane)	0.5				
Sec - Butylbenzene (1 - methylpropyl benzene)	0.4				
Tert - Butylbenzene (1,1 - Dimetnytlethyl benzene)	0.7				
Ethylbenzene	0.3		6910		700*
Naphthalene	3.2		4940		
Toluene	1.2	1600	48500		1000*
1,2,4- Trimethylbenzenen (Pseudocumene)	6.4				
1,3,5 - Trimethylbenzene (Mesitylene)	5				
M/P - Xylenes	12.8	1600			10000*
O - Xylenes	4.9				MCL Goal *

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List substance to be considered for scoring:

See Table 1

Explain basis for choice of substance(s) to be used in scoring. Source (2)

Cadmium and Lead were found above the MTCA Method A cleanup level in the soil. Heavy oil hydrocarbons were also found above the MTCA Method A cleanup level in the soil during the initial investigation. Although several volatile organic hydrocarbons were detected in the surface water recently sampled, the organic parameters detected were below MTCA standards, or had no standards. For example, Sec – Butylbenzene, AKA (1 - methylpropyl benzene), is used as a solvent, but has no MTCA standard.

List the management units to be considered in scoring: Source (1)

Although some contaminated soil on the property was covered with gravel there is no effective containment of contaminated soil. Although the ditch and swell through the property was dry at the time of site visit, we know that there is surface water flow through the site periodically.

Explain basis for choice of unit used in scoring: Source (2)

Contaminated soil on the property is still likely to be exposed to surface water during storm events.

2. AIR ROUTE

List substance to be considered for scoring:

See Table 1

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

Cadmium and Lead were found above the MTCA Method A cleanup level in the soil. Heavy oil hydrocarbons were also found above the MTCA Method A cleanup level in the soil during the initial investigation. Although several volatile organic hydrocarbons were detected in the surface water, there was no odor or

readings from the Photo Ionization Detector during the investigation anywhere on the property.

List the management units to be considered in scoring: Source: (1)

Some soil with staining had been covered in some areas with gravel and straw, but other areas with soil staining have no cover. There was no dust control measure in place for the site.

Explain basis for choice of unit used in scoring: Source: (1)

The air route will be scored because there is a great deal of exposed soil that could be subject to particulate mobility.

3. GROUND WATER ROUTE

List substance to be considered for scoring:

See Table 1

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

Cadmium and Lead were found above the MTCA cleanup level in the soil. Heavy oil hydrocarbons were also found above the MTCA cleanup level in the soil during the initial investigation. These substances will be used to rank the site.

List the management units to be considered in scoring: Source: (2)

Although there is a glacial till layer between the contaminated soil and the deep aquifer, the contaminated soil has not been placed in any effective management unit. A small amount of soil (10cy) has been moved and piled near the back of the site, some soil was covered with gravel, the remaining soil on the property is exposed and compacted by vehicular traffic. The vehicles mix the soil when wet as they produce large ruts on the property.

Explain basis for choice of unit used in scoring: Source (2)

There has not been enough work removing or containing contaminated soil on this site to consider the site has no ground water pathway.

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

	Drinking Water Standard		Acute Toxicity		Chronic Toxicity	Carcinogenicity			
Substance	*(ug/l)*	*Val.*	*(mg/kg-bw)*	*Val.*	*(mg/kg/day)*	*Val.*	*WOE*	*PF*	*Val.*
Cadmium	5	8	225 (rat)	5	ND	ND	ND	ND	ND
Lead, Total (Pb)	8	8	ND	ND	ND	ND	ND	ND	ND
TPH (Other)	ND	ND	ND	ND	2	1	ND	ND	ND

Source: 2

Highest Value: 8

2 Bonus Points? 2

Final Toxicity Value 10

1.2 Environmental Toxicity

(x) Freshwater
( ) Marine

	Acute Criteria		Non-human Mammalian Acute Toxicity	
Substance	*(ug/l)*	*Val.*	*(mg/kg)*	*Val.*
Cadmium	3.9	8		
Chromium, Total (Cr)	16	6	3306(rat)	3
Lead, Total (Pb)	82	6	5000(rat)	3
TPH (Other)	2300	2	-	ND

Source: 12 Value: 8

1.3 Substance quantity

Source: 1,2 Value: 1

Explain basis: UNKNOWN

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment — Source: 2 Value: 4

Explain basis: Some of the contaminated soil was excavated and piled next to the spill site, straw and gravel has been used to control run off. Stained soil is visable in many areas.

2.2 Surface Soil Permeability: — Source: 13 Value: 3

McKenna Gravelley Silt Loam

2.3 Total Annual Precipitation — Source: 7 Value: 3

34"/year

2.4 Max. 2-Yr/24-hour Precipitation — Source: 7 Value: 2

1.5"

2.5 Flood Plain: — Source: 14 Value: 0

no

2.6 Terrain Slope: — Source: 8 Value: 2

3%

3.0 TARGETS

3.1 Distance to Surface Water: 2000' — Source: 8 Value: 7

3.2 Population Served within 2 miles: 9 — Source: 9 Value: 3

SQ ROOT OF 9

3.3 Area Irrigated within 2 miles: — Source: 6 Value: 0

SQ ROOT OF 0 AC * .75=

3.4 Distance to Nearest Fishery Resource: 2000' — Source: 8 Value: 9

3.5 Distance to, and Name (s) of, nearest Sensitive Environment (s) — Source: 8 Value: 9

Wetland	2000'
McCollum County Park	6000'
Silver Lake	8000'

4.0 RELEASE

Explain basis for scoring a release to surface water: — Source: 1 Value: 0

No confirmed release of any chemical to surface water was made.

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

Surface Water Route - Human Health Pathway

SW = (SUB X 40/175) X {(MIG X 25/24)) + REL + (TAR) **8.2**

where SW = Pathway Score for Surface Water-Human Health =

SUB = (Human Toxicity + 3) X (Containment + 1) + Substance Quantity = 66

MIG = Soil Permability + Annual Precip. + Rainfall Frequency + Floodplain + Slope = 10

REL = Release to the Surface Water = 0

TAR = Distance to Surface Water + Population Served by Surface Water + Area Irrigated = 10

Surface Water Route - Environmental Pathway

SW = (SUB X 40/175) X {(MIG X 25/24)) + REL + (TAR) **19.8**

where SW = Pathway Score for Surface Water-Environmental =

SUB = (Env. Toxicity + 3) X (Containment + 1) + Substance Quantity = 56

MIG = Soil Permability + Annual Precip. + Rainfall Frequency + Floodplain + Slope = 10

REL = Release to the Surface Water = 0

TAR = Distance to Nearest Surface Water + Distance to Fisheries Resource + Distance to Sensitive Environment = 25

WORKSHEET 5
AIR ROUTE

1.0 SUBSTANCE CHARACTERISTICS

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

1.2 Human Toxicity

	Air Standard		Acute Toxicity		Chronic Toxicity		Carcinogenicity		
Substance	*(ug/m3)*	*Val.*	*(mg/kg BW)*	*Val.*	*(mg/kg/day)*	*Val.*	*WOE*	*PF*	*Val.*
Cadmium	0.00056	10	25 (rat)	10	6.1	3	B1	ND	ND
Lead, Total (Pb)	0.5	10	ND	ND	ND	ND	B2	ND	ND
TPH (Other)	ND	ND	ND	ND	ND	ND	ND	ND	ND

Source: 6
Highest Value: 10
2 Bonus Points? 2
Final Toxicity Value **12**

1.3 Mobility (Use numbers to refer to above listed substances)

1.3.1 Gaseous Mobility *(mmHg)* *value* Source: Value:
Vapor Pressure (s):

1.3.2 Particulate Mobility Source: 4 Value: 1
Soil type: Sandy Loam
Erodibility: 86 tons/acre/year
Climactic Factor: 5

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7)
equals **Final Matrix Value:** **6**

1.5 Environmental Toxicity/Mobility Source: 4

Non-human Mammalian

Substance	*Toxicity (mg/kg BW)*	*Value*	*Mobility*	*Matrix Value*
Cadmium	25 (rat)	10	1	5
Chromium, Total (Cr)	X	X	X	X
Lead, Total (Pb)	X	X	X	X
TPH (Other)	X	X	X	X

1.4 Highest Environmental Toxicity/Mobility Matrix Value (from Table A-7) equals
Final Matrix Value **5**

1.6 Substance Quantity: Source: 1,2 Value: 1
Explain basis: UNKNOWN

WORKSHEET 5 (CONTINUED)
AIR ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment: Source: 2 Value: 5

Some contaminated soil is covered with gravel or straw, but this cover is less than 2 feet thick.

3.0 TARGETS

3.1 Nearest Population: Source: 4 Value: 10

There are several businesses that are within 1000 of the property.

3.2 Distance to, and Name (s) of, Nearest Sensitive Environment (s) Source: 8 Value: 6

Wetland	1800'
Swamp Creek	2000'

3.3 Population within 0.5 miles: Source: 4 Value: 31

Square root of 981= 31.32092

4.0 RELEASE

Explain basis for scoring a release to air: Source: 1 Value: 0

Evidence that a release was made to the air is limited.
No PID reading were noted while on site.
There is potential for dust on the site because of the large amount of exposed soil.

Air Route - Human Health Pathway

AIR = (SUB X 60/329) X {REL + (TAR X 35/85} / 24 **8.6**

where AIR = Pathway score for Air-Human Health =
SUB = (Human Toxicity Value + 5) X (Containment +1) + Substance Quantity = 67
REL = Release to Air = 0
TAR = Nearest population + Population within 1/2 mile = 41

Air Route - Environmental Pathway

AIR = (SUB X 60/329) X {REL + (TAR X 35/7} / 24 **13.9**

where AIR = Pathway score for Air-Environmental
SUB = (Env. Toxicity Value + 5) X (Containment +1) + Substance Quantity = 61
REL = Release to Air = 0
TAR = Nearest Sensitive Environment = 6

WORKSHEET 6
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcinogenicity WOE	CPF	Val.
Cadmium	5	8	225	5	ND	ND	ND	ND	ND
Lead, Total (Pb)	5	8	ND	ND	ND	ND	ND	ND	ND
TPH (Other)	ND	ND	ND	1	0.004	1	ND	ND	ND

Source: 12
Highest Value: 8
2 Bonus Points? 2
Final Toxicity Value: 10

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

Cations/Anions	*Value*
Cadmium	3
Chromium, Total (Cr)	1
Lead, Total (Pb)	2

Source: 12 Value: 3

OR

Solubility (mg/l)	*mg/l*	*Value*

Source: _____ Value: _____

1.3 Substance Quantity

UNKNOWN

Source: 2 Value: 1

2.0 MIGRATION POTENTIAL

2.1 Containment
Explain basis: Spill, Discharges and Contaminated soil,

Source: 1 Value: 10

2.2 Net Precipitation: 22.8 inches Nov-Apr Everett, WA

Source: 10 Value: 3

2.3 Subsurface Hydraulic Conductivity: Low Permeability Glacial Till

Source: 2 Value: 1

2.4 Vertical Depth to Ground Water: 205 feet

Source: 11 Value: 2

WORKSHEET 6
GROUND WATER ROUTE (CONTINUED)

3.0 TARGETS

3.1 Ground Water Usage: Private Supply with alternative — Source: 9 Value: 4

3.2 Distance to Nearest Drinking Water Well: 3326 feet — Source: 8 Value: 2

3.3 Population Served within 2 Miles: Square root of 225 — Source: 9 Value: 15

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: 92 ac
.75*Square root of 92 — Source: 9 Value: 7

4.0 RELEASE

Explain basis for scoring a release to ground water: Source: 2 Value: 0

There is no evidence of on-site contamination impacting the groundwater.

See references for Sources Used in Scoring

Ground Water Route - Human Health Pathway

GW = (SUB X 40/208) X {(MIG X 25/17) + REL + (TAR X 30/165)} / 24 = **19.7**

GW = Pathway Score For Ground Water-Human Health =
SUB = (Human Toxicity + Mobility + 3) X (Containment + 1) +
Substance Quantity = 177
MIG = Depth to Aquifer + Net Precipitation + Hydraulic Conductivity =
6
REL = Release to the Ground Water = 0
TAR = Aquifer Use + Well Distance + Population Served +
Area Irrigated = 28

Site Scoring

Pathway	Route Score	Quintile
SW-HH	8.2	2
Air-HH	8.6	2
GW-HH	19.7	1
SW-En	19.8	2
Air-En	13.9	2

Priority Scores

Human Health

$\frac{H^2+2M+L}{8}$ = $(2^2+2(2)+1)/8=$ 1+ = 2

Environmental

$\frac{H^2+2L}{7}$ = $(2^2+2(2))/7=$ 1+ = 2

Quintile Values as of August 28, 2001

Human Health Pathway Scores

Quintile No.	Surface Wate	Air	Ground Water
5	>26.8	>33.5	>55.0
4	20.1-26.6	22.0-33.5	43.9-55.0
3	13.9-20.0	14.3-21.9	35.5-43.8
2	7.2-13.8	8.1-14.2	26.5-35.4
1	<7.2	<8.1	<26.5

Environmental Pathway Scores

Quintile No.	Surface Water	Air
5	>49.1	>31.3
4	33.5-49.1	23.7-31.3
3	23.3-33.4	15.6-23.6
2	10.4-23.5	0.1-15.2
1	<10.4	<0.1

Human Health Priority	Environment Priority					
	5	4	3	2	1	NA
5	1	1	1	1	1	1
4	1	2	2	2	3	2
3	1	2	3	4	4	3
2	2	3	4	4	5	3
1	2	3	4	5	5	5
NA	3	4	5	5	5	NFA

REFERENCES

1. Snohomish Health District, Complaint file # 950059, includes letter, file notes and photos.

2. Snohomish Health District, Site Hazard Assessment, Data collection Sheet.

3. Aerial photograph from Snohomish County Public Works, Section 35 T28N, R4E .

4. Washington Department of Ecology, WARM Scoring Manual, April 1992.

5. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.

6. Washington Department of Ecology, Water Rights Information System (WRIS), email Melisa Snoeberger 2002.

7. NOAA Atlas 2 Volume IX- Washington Precipitation Frequency Atlas of the Western United States, 1973.

8. U.S.G.S. Topo. Map, Mukilteo Quad., 7.5 Min. Series Photorev. 1973.

9. Washington Department of Health, Public Water System List (SADIE) email Holly Duggan.

10. Washington Climate for Snohomish Co., National Weather Service Forecast Office, 1931-1960.

11. Ground-Water Resources of Snohomish County Washington. Geologic Survey Water-Supply Paper 1135. Newcomb, R. C., 1952.

12. Washington Department of Ecology, Cleanup Levels and Risk Calculations under the Model Toxics Control Act Cleanup Regulation CLARK. Version 3.1 Publication No. 94-145 Updated November 2001.

13. Soil Survey of Snohomish County Area Washington, USDA Soil Conservation Service, July 1983

14. FEMA Flood Hazard Zones, Snohomish County Geographical Information System Department /24000/environ/fldz py.