SITE HAZARD ASSESSMENT
WORKSHEET 1
SUMMARY SCORE SHEET

Site Name/Location (Street, City, County, Section/Township/Range, TCP ID Number):

Island Auto Wrecking (I)
Parcel # 01-22-02-9-039
12218 SW Cemetery Rd
Vashon, WA 98070
King County
T-22N, R-02E, Sec-01
Ecology Facility Site ID: 2316
Longitude: 122* 29' 30.7"
Latitude: 47* 25' 43.82"
Site assessed for February 27, 2001 update

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

The Island Auto Wrecking site is located in a residential area on Vashon Island. The wrecking yard facility had been in existence for a number of years. The facility was located on two, 10-acre pieces of property owned by the same owner. The west piece, Island Auto Wrecking (I), had recently been sold to Brad Middling, owner of the current business, Island Auto Wrecking & Salvage. It appears that the majority of the auto wrecking facility was on Island Auto Wrecking (I) site where the auto shop is located. There are several houses on the property served by a community well on the eastern lot, the Island Auto Wrecking (II) site. The houses are also on a private septic system. Currently, the Island Auto Wrecking & Salvage business has stopped taking in junk vehicles and is attempting to clean up the site and sell the property.

On January 4, 1990, the Washington State Department of Ecology (Ecology) received a complaint from the Public Health - Seattle & King County (PHSKC) regarding dumping of oil and other chemicals such as PCBs onto the ground when handling transformers. PHSKC had received several other complaints regarding potential contamination concerns at the site.

During the initial investigation on January 17, 1991, Norm Peck, an Ecology investigator, noted this site to be a low-intensity salvage operation with primarily historical contamination of heavy oil and possibly lead on the western side of the yard/shop area. Some relatively confined areas of stained soil possibly due to spills from draining fuel and oil from junk vehicles were observed along with forty to fifty batteries stored mostly in crates, some piles of K-2 plastic "sawdust" on-site, and numerous drums that appeared to be empty.

Mr. Peck also discovered a transformer cannister on-site at the time of the investigation and noted the potential of mercury exposure from old appliances at the wrecking yard. Although the remainder of the site appeared to be free of gross contamination, the site was added onto the Integrated Site Information Systems (ISIS) list by Ecology as a possible contaminated site on February 5, 1991 due to the confirmed petroleum stained areas and suspected contamination of metals and solvents.

A site hazard assessment (SHA) visit was conducted by Yolanda King and Peter Isaksen of the PHSKC on September 28, 2000. Brad Middling gave a tour of the 10-acre parcel beginning with the shop. Some areas of stained soil were observed just north of the shop and also inside the shop where old windshields and auto body parts used to be stored. Another area with some heavily stained soil was underneath a truck with a recycling oil tank on top of it. Various piles of miscellaneous solid waste items were spread throughout the entire parcel such as piles of large ropes and logs from

an old ferry dock, large pieces of metal from old ships, and several tire piles adjacent to some burn piles. An additional site visit on November 21, 2000 was used to determine sample locations and the number of samples to be taken.

On November 28, 2000, Yolanda King and Carsten Thomsen, who is also from PHSKC, returned to the Island Auto Wrecking (I) site to take seven soil samples. Among the seven samples, all the samples were tested for metals. Some samples had additional tests such as Northwest Total Petroleum Hydrocarbons Diesel Extended (NWTPH-Dx), polynuclear aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs) depending on the visual and suspected areas of concern of the related contaminants.

The first sample was taken in a covered shed area attached to the north side of the shop. Nearby a tipped over transformer was where the second sample was collected. The third sample was retrieved in an area just north of the shop to the left of the dirt road. Underneath the oil truck located 200 feet from the northern edge of the shop to the left of the gravel road was the location of the fourth sample. The fifth sample was taken in an old burn pile that had some burnt floppy disks to the right of the dirt road nearby the entrance. On the same side of the road directly 150 feet north of the fifth sample was the location of the sixth sample (suspected of having transformer plates according to Mr. Middling). The final soil sample was collected in another burn pile to the left of the large tire pile 50 feet north of the sixth sample. All seven samples were collected at a four to six-inch depth with the exception of the fifth and seventh samples retrieved at two inches due to its location in the burn piles.

According to the following chart below, the numbers shown in bold type indicate the soil samples that had contaminants above the Model Toxics Control Act (MTCA) Method A Cleanup levels. There were some PCB levels detected in the samples however, they were well below the PCB MTCA Method A Cleanup level of 1.0 ppm (parts per million).

	Cadmium (ppm)	Lead (ppm)	Mercury (ppm)	Diesel Fuel (ppm)	Heavy Oil (ppm)
Island I #1	ND	16	ND	ND	**17,000**
Island I #3	1.9	94	ND	ND	**270**
Island I #4	**7.4**	**380**	**2.2**	**5,400**	**3,900**
MTCA Method A Cleanup Level	2.0	250	1.0	200	200

ND = Non-detectable

On the basis of this SHA, completed by the PHSKC's Environmental Health division, this site will be scored for the surface water, air and groundwater routes.

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): N/A

ROUTE SCORES:

Surface Water/Human Health: 10.9

Surface Water/Environmental: 28.2

Air/Human Health: 9.4

Air/Environmental: 30.3

Ground Water/Human Health: 27.2

OVERALL RANK: 3

WORKSHEET 2
ROUTE DOCUMENTATION

1. **SURFACE WATER ROUTE**

List those substances to be considered for scoring: Source: 2,3

Lead, Mercury, NWTPH-Diesel, Cadmium, Heavy oil

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

All of the above substance concentrations are above MTCA Method A cleanup levels.

List those management units to be considered for scoring: Source: 3

Surface soil contamination.

Explain basis for choice of unit to be used in scoring. Source: 3

Surface soil is exposed to weather with no containment.

2. **AIR ROUTE**

List those substances to be considered for scoring: Source: 2,3

Lead, Mercury, NWTPH-Diesel, Cadmium

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

All of the above substance concentrations are above MTCA Method A cleanup levels.

List those management units to be considered for scoring: Source: 3

Surface soil contamination.

Explain basis for choice of unit to be used in scoring. Source: 3

Surface soil is exposed to weather with no containment.

3. **GROUND WATER ROUTE**

List those substances to be considered for scoring: Source: 2,3

Lead, Mercury, NWTPH-Diesel, Cadmium, Heavy oil

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

All of the above substance concentrations are above MTCA Method A cleanup levels.

List those management units to be considered for scoring: Source: 3

Surface soil contamination.

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

Surface soil is exposed to weather with no contamination.

WORKSHEET 3
SURFACE 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.	Carcino-genicity WOE	PF*	Val.
1.Mercury	2.0	8	ND	-	0.0003	5	ND	ND	-
2.Lead	5.0	8	ND	-	ND	-	B2	ND	-
3.NWTPH-Diesel	20	6	490 (rat)	5	0.04	3	ND	-	-
4.Cadmium	5.0	8	225	5	0.0005	5	B1	ND	-
5.NWTPH-Heavy Oil	ND	-	ND	-	2.0	1	ND	ND	-

*Potency Factor

Source: 2
Highest Value: 8
(Max.=10)

+2 Bonus Points? yes
Final Toxicity Value: 10
(Max.=12)

1.2 Environmental Toxicity

(x) Freshwater
( ) Marine

Substance	Acute Water Quality Criteria (ug/l)	Value	Non-human Mammalian Acute Toxicity (mg/kg)	Value
1.Mercury	2.4	8		
2.Lead	82	6		
3.NWTPH-Diesel	2300	2		
4.Cadmium	3.9	8		
5.NWTPH-Heavy Oil	ND	-		

Source: 2 **Value: 8**
(Max.=10)

1.3 Substance Quantity: 750 square feet Source: 3 **Value: 6**
(Max.=10)
Explain basis: stained soil seen in 3 separate areas

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 3 **Value: 4**
(Max.=10)
Explain basis: spill/discharge with ineffectively maintained run-on/runoff control by road

2.2 Surface Soil Permeability: sandy clay loam Source: 3 **Value: 5**
(Max.=7)

2.3 Total Annual Precipitation: 46.5 inches Source: 5 **Value: 3**
(Max.=5)

2.4 Max. 2-Yr/24-hour Precipitation: 1-2 inches Source: 5 **Value: 2**
(Max.=5)

2.5 Flood Plain: not in flood plain Source: 6 **Value: 0**
(Max.=2)

2.6 Terrain Slope: > 2% to 5% Source: 6 **Value: 2**
(Max.=5)

WORKSHEET 3 (CONTINUED)
SURFACE WATER ROUTE

3.0 TARGETS

3.1 Distance to Surface Water: 415 feet — Source: 6 — **Value: 10** (Max.=10)

3.2 Population Served within 2 miles (See WARM Scoring Manual Regarding Direction): pop.= 0 = 0 — Source: 8 — **Value: 0** (Max.=75)

3.3 Area Irrigated within 2 miles 0.75 (√no. acres) = (Refer to note in 3.2.): 0.75(√30)= 0.75(5.5)= 4 — Source: 8 — **Value: 4** (Max.=30)

3.4 Distance to Nearest Fishery Resource: 415 feet — Source: 6 — **Value: 12** (Max.=12)

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Class 3 stream off Judd Creek 415 feet — Source: 6 — **Value: 12** (Max.=12)

4.0 RELEASE

Explain basis for scoring a release to surface water: none confirmed — Source: 3 — **Value: 0** (Max.=5)

WORKSHEET 4
AIR ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction (WARM Scoring Manual)

1.2 Human Toxicity

Substance	Air Standard (ug/m^3)	Val.	Acute Toxicity (mg/m^3)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcino-genicity WOE	PF*	Val.
1.Mercury	0.3	10	ND	-	8.5e-05	8	ND	ND	-
2.Lead	0.05	10	ND	-	ND	-	B2	ND	-
3.NWTPH-Diesel	166.5	4	ND	-	ND	-	ND	-	-
4.Cadmium	.00056	10	25	10	ND	-	B1	6.1	6

*Potency Factor

Source: 2
Highest Value: 10 (Max.=10)

+2 Bonus Points? yes
Final Toxicity Value: 12 (Max.=12)

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

1.3.1 Gaseous Mobility
Vapor Pressure(s) (mmHg): 1= 2.0e-03; 2= n/a; 3= 8.2E-2; 4= n/a
Source: 1
Value: 3 (Max.=4)

1.3.2 Particulate Mobility
Soil type: sandy clay loam
Erodibility: 56
Climatic Factor: 1-10
Source: 3
Value: 1 (Max.=4)

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7) equals **Final Matrix Value: 6 (particulate)** (Max.=24)

1.5 Environmental Toxicity/Mobility

Source: 1

Substance	Non-human Mammalian Acute Inhal. Toxicity (mg/m^3)	Value	Mobility (mmHg)	Value	(Table A-7) Matrix Value
1.Mercury	No data				
2.Lead	No data				
3.NWTPH-Diesel	No data				
4.Cadmium	25 (rat)	10	0.0E+00	1	5

Highest Environmental Toxicity/Mobility Matrix Value (From Table A-7) equals **Final Matrix Value: 5** (Max.=24)

1.6 Substance Quantity: 750 square feet
Explain basis: stained soil in 3 separate areas
Source: 3 **Value: 4** (Max.=10)

WORKSHEET 4 (CONTINUED)
AIR ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment: no cover, discharges/spills to ground — Source: 3 — **Value: 10** (Max.=10)

3.0 TARGETS

3.1 Nearest Population: < 1000 feet — Source: 3 — **Value: 10** (Max.=10)

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) 368 ft to wetland across the street — Source: 3 — **Value: 7** (Max.=7)

3.3 Population within 0.5 miles: pop.= $\sqrt{195}$ = 14 — Source: 3 — **Value: 14** (Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: No confirmed release — Source: 3 — **Value: 0** (Max.=5)

WORKSHEET 5
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.	Carcino-genicity WOE	PF*	Val.
1.Mercury	2.0	8	ND	-	0.0003	5	ND	ND	-
2.Lead	5.0	8	ND	-	ND	-	B2	ND	-
3.NWTPH-Diesel	20	6	490	5	0.004	3	ND	-	-
4.Cadmium	5.0	8	225	5	0.0005	5	B1	ND	-
5.NWTPH-Heavy Oil	ND	-	ND	-	2.0	1	ND	ND	-

*Potency Factor

Source: 2
Highest Value: 8 (Max.=10)
+2 Bonus Points? yes
Final Toxicity Value: 10 (Max.=12)

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

Cations/Anions: 1= 3; 2= 2; 3= ; 4= 3; 5= N/A Source: 1 **Value: 3** (Max.=3)

OR

Solubility(mg/l): 1= ; 2= ; 3=3E+1; 4= ; 5= .

1.3 Substance Quantity: 83 cubic yards Source: 3 **Value: 2** (Max.=10)

Explain basis: 750 sq ft x3'=2250 cu ft= 83 cu yds

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 3 **Value: 10** (Max.=10)

Explain basis: spills/discharges; no containment

2.2 Net Precipitation: 28.8 inches Source: 5 **Value: 3** (Max.=5)

2.3 Subsurface Hydraulic Conductivity: clayey sand Source: 3 **Value: 3** (Max.=4)

2.4 Vertical Depth to Ground Water: > 50 - 100 feet Source: 3 **Value: 4** (Max.=8)

WORKSHEET 5 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage: federally-designated sole source aquifer — Source: 6 — **Value: 10** (Max.=10)

3.2 Distance to Nearest Drinking Water Well: 585 feet — Source: 7 — **Value: 5** (Max.=5)

3.3 Population Served within 2 Miles: $\sqrt{}$pop.= $\sqrt{}$81 = 9 — Source: 8 — **Value: 9** (Max.=50)

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: 0.75 $\sqrt{}$no.acres = 0
0.75 =0.75 ( )= — Source: 8 — **Value: 0** (Max.=100)

4.0 RELEASE

Explain basis for scoring a release to ground water: none confirmed — Source: 3 — **Value: 0** (Max.=5)

SOURCES USED IN SCORING

1. Washington Ranking Method Toxicological Database.
2. Analytical Results for Island Auto Wrecking (I), On-Site Environmental Inc., November 28, 2000.
3. Site hazard assessment, King County Health Department, December 2000.
4. National Weather Service Data.
5. Isopluvials of 2-yr., 24hr. precipitation, NOAA atlas 2, vol. IX.
6. Sensitive Areas Coverage, King County Geographic Information System Data
7. Washington State Department of Health Public Water Supply listing.
8. Washington State Water Use Data.

Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.

Alonzo L. Plough, Ph.D., MPH, *Director*

January 25, 2001

Brad Middling
12630 SW Cemetery Road
Vashon, WA 98070

Dear Mr. Middling,

The King County Health Department has completed the site hazard assessment (SHA) of the Island Auto Wrecking (I) site, as required under the Model Toxics Control Act. This site's hazard ranking, an estimation of the potential threat to human health and/or the environment relative to all other Washington state sites assessed at this time, has been determined to be a **3**, where 1 represents the highest relative risk and 5 the lowest.

For your information, Ecology will be publishing the ranking of this, and other recently assessed sites in the February 27, 2001 Special Issue of the Site Register. The site hazard ranking will be used in conjunction with other site-specific considerations in determining Ecology's priority for future actions.

Please contact me at (206) 296-4798 if you have any questions relating to the SHA of your site. If you have any inquiries/comments about the site scoring/ranking process, please call Michael Spencer at (360) 407-7195. For inquiries regarding any further activities at your site now that it is on Ecology's Hazardous Sites List, please call Norm Peck at (425) 649-7047.

Sincerely,

Yolanda King, R.S.

Yolanda King, R.S.
Health & Environmental Investigator
Public Health, Seattle King County

YK;sf

cc: Michael Spencer, Washington Department of Ecology
Norm Peck, Washington Department of Ecology
Fred Schlick

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