CSID 3689

SITE HAZARD ASSESSMENT
WORKSHEET 1
SUMMARY SCORE SHEET

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

Jorgensen Forge Corp.
8531 E. Marginal Way S.
Seattle, WA 98108
King County
T-24N, R-4E, Sec-33
Facility Site ID: 2382
Longitude: 122° 18′ 21.480″
Latitude: 47° 31′ 35.187″

Site assessed/re-ranked for August 24, 2005 update

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

The Jorgensen Forge Corp. property is a large industrial site covering approximately twenty-one acres. The area consists mostly of large industrial complexes, commercial businesses and a few private residences. The property is bordered to the east by E. Marginal Way S., to north and south by other industrial properties and to the west by the Duwamish Waterway. There is no documented use of groundwater for private or municipal wells for either drinking water of irrigation purposes within a two-mile radius.

The Jorgensen Forge business manufactures precision machined high grade metals including carbon steels, duplex stainless steel, aluminum alloys, titanium alloys and base alloys. A metal manufacturing business has been in operation at this location since the late 1930's. During the history of the plant the manufacturing process has contributed to several types of hazardous materials being deposited on the property.

During the summer of 1991 the Washington State Department of Ecology (Ecology) received complaints that petroleum contamination had occurred at the Jorgensen Forge property on the east section of the manufacturing plant. An Ecology inspector visited the site and decided the site needed further assessment. On January 8, 1992, the Jorgensen Forge Corp. property was added to Ecology's Integrated Site Information Systems (ISIS) list of confirmed and suspected contaminated sites to await further assessment under the Model Toxics Control Act (MTCA).

During the summer of 1993, Ecology conducted a Site Hazard Assessment (SHA) of the Jorgensen Forge site. After gathering information on the property Ecology gave the site a ranking of 5 based on the ground water route being scored for petroleum contamination.

During 2003, the United States Environmental Protection Agency (EPA) issued an Administrative Order on Consent (AOC) to the Jorgensen Forge Corp. This AOC was issued to perform a site investigation to determine whether current or former operations at the Jorgensen Forge Corp. site are or have been a source of contamination to the area. This investigation was carried out by Anchor Environmental LLC and Farallon Consulting LLC during 2004. The investigation included soil borings, shoreline sediment sampling, catch basin sampling, an inactive outfall video reconnaissance survey and a site storm water drainage survey.

Results of the sample analysis showed soil contamination of polychlorinated biphenyls (PCBs) and several heavy metals at concentrations exceeding the Model Toxics Control Act (MTCA) Method A cleanup levels. The following chart shows the

highest levels of soil contamination obtained at the Jorgensen Forge Corp. site.

CONTAMINANT	CONTAMINANT LEVEL (ppm)	MTCA METHOD A CLEANUP LEVEL (ppm)
PCB's	17.8	1.0
Lead	1,530	250
Arsenic	62.7	20
Cadmium	11.6	2.0
Chromium III	10,100	2000

ppm=parts per million

The results of the analysis were forwarded to Ecology for review. After evaluating the data Ecology decided that the Jorgensen Forge Corp. property should be re-ranked using data containing the new contaminants. For the new SHA, Ecology requested that Carsten Thomsen of Public Health-Seattle & King County (PHSKC) re-rank the site.

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): These scores are based on a re-ranking of the Jorgensen Forge Corp. property using all of the environmental and human health pathways.

ROUTE SCORES:

Surface Water/Human Health: 27.2

Surface Water/Environ.: 59.3

Air/Human Health: 19.1

Air/Environmental: 21.1

Ground Water/Human Health: 30.8

OVERALL RANK: 1

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

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

Polychlorinated biphenyls (PCBs)
Lead
Arsenic
Cadmium
Chromium

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

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

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

Surface soil contamination.

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

Surface soil has exposure to weather with no cover or run-on, run-off controls.

2. AIR ROUTE

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

Polychlorinated biphenyls (PCBs)
Lead
Arsenic
Cadmium
Chromium

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

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

List those management units to be considered for scoring: Source:2.3

Surface soil contamination.

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

Surface soil has exposure to weather with no cover.

WORKSHEET 2
ROUTE DOCUMENTATION

3. GROUND WATER ROUTE

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

Polychlorinated biphenyls (PCBs)
Lead
Arsenic
Cadmium
Chromium

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

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

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

Analytically confirmed groundwater contamination.

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

Soil is exposed to weather with no containment.

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.PCBs	0.5	10	1315	3	ND	-	B2	7.7	6
2.Lead	5.0	8	ND	-	ND	-	B2	ND	-
3.Arsenic	10	8	763	5	0.001	5	A	1.75	7
4.Cadmium	5.0	8	225	5	0.0005	5	B1	ND	-
5.Chromium	100	6	ND	-	1.0	1	ND	ND	-

*Potency Factor

Source:1
Highest Value:10
(Max.=10)

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

1.2 Environmental Toxicity

(x) Freshwater
( ) Marine

Substance	Acute Water Quality Criteria (ug/l)	Value
1.PCBs	2	8
2.Lead	82	6
3.Arsenic	360	4
4.Cadmium	3.9	8
5.Chromium	1700	2

Non-human Mammalian Acute Toxicity (mg/kg) ____ Value ____ Source: 1 **Value:8**
(Max.=10)

1.3 Substance Quantity: unknown Source: 2 **Value:1**
(Max.=10)
Explain basis: ____

2.0 MIGRATION POTENTIAL

2.1 Containment: contamination at surface Source: 2 **Value:10**
(Max.=10)
Explain basis: no run-on, run-off controls

2.2 Surface Soil Permeability: sand/silt/loam Source: 2 **Value:3**
(Max.=7)

2.3 Total Annual Precipitation: 30 inches Source: 4 **Value:2**
(Max.=5)

2.4 Max. 2-Yr/24-hour Precipitation: 1-2 inches Source: 4 **Value:2**
(Max.=5)

2.5 Flood Plain: 100 yr. flood plain Source: 7 **Value:2**
(Max.=2)

2.6 Terrain Slope: site adjacent to water body Source: 3 **Value:5**
(Max.=5)

WORKSHEET 3
SURFACE WATER ROUTE

3.0 TARGETS

3.1 Distance to Surface Water: 0 ft. Source: 3 **Value:10** (Max.=10)

3.2 Population Served within 2 miles (See WARM Scoring Manual Regarding Direction): pop.= = 0 Source: 5 **Value:0** (Max.=75)

3.3 Area Irrigated within 2 miles 0.75 no. acres=0 (Refer to note in 3.2.): 0.75 =0.75( )= Source: 6 **Value:0** (Max.=30)

3.4 Distance to Nearest Fishery Resource: 0 ft. Source: 7 **Value:12** (Max.=12)

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) 0 ft. Duwamish Waterway Source: 7 **Value:12** (Max.=12)

4.0 RELEASE

Explain basis for scoring a release to surface water: no confirmed release Source: 2 **Value:0** (Max.=5)

WORKSHEET 4
AIR ROUTE

1.0 SUBSTANCE CHARACTERISTICS

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

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.PCBs	ND	-	ND	-	ND	-	B2	ND	-
2.Lead	0.05	10	ND	-	ND	-	B2	ND	-
3.Arsenic	0.00023	10	ND	-	ND	-	A	50	9
4.Cadmium	0.00056	10	25	10	ND	-	B1	6.1	6
5.Chromium	1.7	9	ND	-	5.7E-07	10	ND	ND	-

*Potency Factor

Source:1
Highest Value:10
(Max.=10)

+2 Bonus Points? Y
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= Source:
Value:
(Max.=4)

1.3.2 Particulate Mobility
Soil type: sandy loam Source:3
Erodibility: 86 Value:1
Climatic Factor: 1-10 (Max.=4)

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

WORKSHEET 4
AIR ROUTE

1.6 Substance Quantity: unknown Source: 2 **Value:1**
(Max.=10)
Explain basis:

2.0 MIGRATION POTENTIAL

2.1 Containment: none Source: 3 **Value:10**
(Max.=10)
Spill/discharge to ground now with no cover

3.0 TARGETS

3.1 Nearest Population: 490 ft. Source: 3 **Value:10**
(Max.=10)

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) 2996 ft. Source: 7 **Value:5**
(Max.=7)
Wetlands park

3.3 Population within 0.5 miles: pop.=SQ root of 1596=40 Source: 8 **Value:40**
(Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: Source: 2 **Value:0**
(Max.=5)
No confirmed release

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.PCBs	0.5	10	1315	3	ND	-	B2	7.7	6
2.Lead	5.0	8	ND	-	ND	-	B2	ND	-
3.Arsenic	10	8	763	5	0.001	5	A	1.75	7
4.Cadmium	5.0	8	225	5	0.0005	5	B1	ND	-
5.Chromium	100	6	ND	-	1.0	1	ND	ND	-

*Potency Factor

Source:1
Highest Value:10
(Max.=10)

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

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions: 1= ; 2=2; 3=3; 4=3; 5=1 Source: 1 **Value:3**
(Max.=3)

OR
Solubility(mg/l): 1= ; 2= ; 3=; 4=; 5=

1.3 Substance Quantity: unknown Source: 2 **Value:1**
(Max.=10)
Explain basis:

2.0 MIGRATION POTENTIAL

2.1 Containment: spill/discharge to ground Source: 2 **Value:10**
(Max.=10)
Explain basis: no cover

2.2 Net Precipitation: 24.4-5.2=19.2 inches Source: 4 **Value:2**
(Max.=5)

2.3 Subsurface Hydraulic Conductivity: silty sand Source: 2 **Value:3**
(Max.=4)

2.4 Vertical Depth to Ground Water: 0-25 ft./obs. rel Source: 2 **Value:8**
(Max.=8)

3.0 TARGETS

3.1 Ground Water Usage: not usable Source: 5 **Value:1**
(Max.=10)

3.2 Distance to Nearest Drinking Water Well: >10,000 ft Source: 2 **Value:0**
(Max.=5)

3.3 Population Served within 2 Miles: pop.= 0 Source: 2 **Value:0**
(Max.=100)

WORKSHEET 5
GROUND WATER ROUTE

3.4 Area Irrigated by (Groundwater) Wells
within 2 miles: 0.75 no.acres=0 Source: 6 **Value:0**
0.75 =0.75 ( )= (Max.=100)

4.0 RELEASE
Explain basis for scoring a release to ground water: none confirmed Source: 2 **Value:0** (Max.=5)

SOURCES USED IN SCORING

1. Washington ranking Method Toxicological Data-Base
2. Third Phase Environmental Sampling, Jorgensen Forge Facility, 8531 East Marginal Way South, Seattle, WA., Anchor Environmental LLC, 02/05.
3. Site Hazard Assessment, PHSKC, 06/05
4. Nation Weather Service Data
5. Washington State Dept. of Health Public Water Supply Listing
6. Washington State Water Use Data
7. Sensitive Areas Coverage, King Co. Geographic Information System Data
8. Census Data, 2000 census