CSID 3956

WORKSHEET 1
SUMMARY SCORE SHEET

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

Schwerin Concaves Walla Walla
Sapolil Road 2 miles North of Highway 12
Walla Walla, Walla Walla county, WA 99362
Longitude: 118° 21′ 20.48″
Latitude: 46° 04′ 08.6″

Sec 31/T8N/R37E
Ecology Facility Site ID: 11293827

Site scored/ranked for 08/29/00 update

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

The subject site is a hard chrome plater located on a farm on Sapolil Road, two miles north of Highway 12, and a few miles northeast of Walla Walla. Plating of concaves, used on combines which thresh wheat, has been the company's primary work since the early 1970's. The plating operation is housed mainly in one central shop, and over the years other buildings on the farm have housed waste handling functions. These buildings, and the onsite farmhouse, are situated along the north bank of Dry Creek, a tributary to the Walla Walla River. The immediate surrounding area is rural and sparsely populated.

A chronology of Ecology Eastern Region Office (ERO) Hazardous Waste (HW) site visits/inspections dating back to June 1988 shows a consistent history of non-compliance issues regarding hazardous waste handling practices which, along with the chrome plating operations, have resulted in significant contamination of surface soils and groundwater at the site. Past wastewater treatment operations have resulted in hexavalent chromium (the most toxic form of chromium) contamination in soil at a depth of at least 24 feet. ERO inspectors have documented chromium contamination in three nearby drinking water wells and in soil to a depth of at least nine feet in another area where equipment was stored.

ERO issued an order in 1990 requiring cleanup of the contamination at the site, but this has yet been accomplished. A new enforcement order was issued on February 25, 2000 requiring a Remedial Investigation/Feasibility Study (RI/FS) to collect, develop, and evaluate site-specific information regarding contamination. The site was added to Ecology's Confirmed and Suspected Contaminated Sites List February 28, 2000.

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: 27.2
Surface Water/Environ.: 52.9
Air/Human Health: 5.5
Air/Environmental: NS
Ground Water/Human Health: 45.2

OVERALL RANK: 2

WORKSHEET 2 - ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring: Source:1,2

Hexavalent chromium, trivalent chromium, lead

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

Analytical results from soil samples showed concentrations greater than their respective Method A MTCA cleanup levels for all of the above.

List those management units to be considered for scoring: Source:1,2

Contaminated on-site surface and subsurface soils.

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

Chemical analyses of on-site soils indicated significant concentrations of these heavy metal components.

2. AIR ROUTE

List those substances to be considered for scoring: Source:1,2

Hexavalent chromium, trivalent chromium, lead

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

Analytical results from soil samples showed concentrations greater than their respective Method A MTCA cleanup levels for all of the above.

List those management units to be considered for scoring: Source:1,2

Contaminated on-site surface and subsurface soils.

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

Chemical analyses of on-site soils indicated significant concentrations of these heavy metal components.

3. GROUND WATER ROUTE

List those substances to be considered for scoring: Source:1,2

Hexavalent chromium, trivalent chromium, lead

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

Analytical results from soil samples showed concentrations greater than their respective Method A MTCA cleanup levels for all of the above.

List those management units to be considered for scoring: Source:1,2

Contaminated on-site surface and subsurface soils.

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

Chemical analyses of on-site soils indicated significant concentrations of these heavy metal components.

WORKSHEET 3 (If Required)
SUBSTANCE CHARACTERISTICS WORKSHEET
FOR MULTIPLE UNIT/SUBSTANCE SITES

	Combination 1	Combination 2	Combination 3

Unit: **Section Not Applicable.**

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1. SURFACE WATER ROUTE

Substance(s):
Human Toxicity Value:
Environ. Toxicity Value:
Containment Value:
Rationale:

	Combination 1	Combination 2	Combination 3
Surface Water Human Subscore:	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___
Surface Water Environ. Subscore:	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___

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2. AIR ROUTE

Substance(s):
Human Toxicity/Mobility Value:
Environ. Toxicity/ Mobility Value:
Containment Value:
Rationale:

	Combination 1	Combination 2	Combination 3
Air Human Subscore:	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___
Air Environ. Subscore:	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___

3. GROUND WATER ROUTE

Substance(s):
Human Toxicity Value:
Containment Value:
Rationale:

	Combination 1	Combination 2	Combination 3
Ground Water Subscore:	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___	(+3)(+1)= ( )( ) = ___

Based on their respective highest scoring toxicity/containment combinations, the following management units will be used for route scoring:

Surface Water -
Air -
Ground Water -

WORKSHEET 4
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.	WOE	Carcino-genicity PF*	Val.
1. Chromium (III)	100	6	ND	-	0.015	1	ND	-	-
2. Chromium (VI)	100	6	ND	-	1	3	ND	-	-
3. Lead	5	8	ND	-	ND	-	ND	-	-

*Potency Factor

Source: 1,2,5
Highest Value: 8 (Max.=10)

+2 Bonus Points? 2
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. Chromium (III)	1700	2		
2. Chromium (VI)	16	6		
3. Lead	82	6		

Source: 1,2,5 **Value: 6** (max.+10)

1.3 Substance Quantity

Source: 1,2,5 **Value: 5** (max.+10)

Explain basis: Once-filled tank volumes total 13,750 gallons

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment — Source: 1,6 — **Value:** 10 (Max.=10)
Explain basis:
Management unit scored as a spills/discharges/contaminated soil at the surface, with no run-on/runoff controls

2.2 Surface Soil Permeability: Piped to, adjacent — Source: 1,3,6 — **Value:** 7 (Max.=7)

2.3 Total Annual Precipitation: 14.1 inches — Source: 7 — **Value:** 2 (Max.=5)

2.4 Max. 2-Yr/24-hour Precipitation: 1 - 1.2 inches — Source: 6 — **Value:** 2 (Max.=5)

2.5 Flood Plain: 100 year flood plain — Source: 8 — **Value:** 2 (Max.=2)

2.6 Terrain Slope: Piped — Source: 1,3,6 — **Value:** 3 (Max.=5)

3.0 TARGETS

3.1 Distance to Surface Water: <1000' — Source: 1-4 — **Value:** 10 (Max.=10)

3.2 Population Served within 2 miles (See WARM Scoring Manual Regarding Direction): $\sqrt{}$pop.=$\sqrt{}$0 = 0 — Source: 9,10 — **Value:** 0 (Max.=75)

3.3 Area Irrigated within 2 miles 0.75$\sqrt{}$no. acres= 0.75$\sqrt{}$0 = (.75)(0) = 0 — Source: 10 — **Value:** 0 (Max.=30)

3.4 Distance to Nearest Fishery Resource: <1,000' — Source: 1-4 — **Value:** 12 (Max.=12)

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Fishery <1000' — Source: 1-4 — **Value:** 12 (Max.=12)

4.0 RELEASE

Explain basis for scoring a release to surface water: — Source: 1,2 — **Value:** 0 (Max.=5)
None documented by analytical evidence.

WORKSHEET 5
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. Chromium (III)	1.7	9	ND	-	0.015	10	ND	-	-
2. Chromium (VI)	8.3E-05	10	ND	-		10			
3. Lead	5	10	ND	-	ND	-	ND	-	-

*Potency Factor

Source: 1,5
Highest Value: 10 (Max.=10)
+2 Bonus Points? 2
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): _____ Source: ____
_____ Value: ____ (Max.=4)
_____

1.3.2 Particulate Mobility
Soil type: _____ Source: 1,5
Erodibility: >31- 80 Value: 1 (Max.=4)
Climatic Factor: 1 - 10

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: 1,2,5

Substance	Non-human Mammalian Acute Inhal. Toxicity (mg/m^3)	Value	Mobility (mmHg)	Value	(Table A-7) Matrix Value
No data					

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

WORKSHEET 5 (CONTINUED)
AIR ROUTE

1.6 Substance Quantity: 15,750 gallons Source: 1,6 **Value:** 5 (Max.=10)
Explain basis:

2.0 MIGRATION POTENTIAL

2.1 Containment: Significant vapor pathway potential from surface spill/discharge, contaminated soil with no vapor collection system Source: 1,6 **Value:** 10 (Max.=10)

3.0 TARGETS

3.1 Nearest Population: <1000 feet Source: 1,3 **Value:** 10 (Max.=10)

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) <1000 feet Source: 1,3 **Value:** 7 (Max.=7)

3.3 Population within 0.5 miles: $\sqrt{pop.} = \sqrt{16} = 4$ Source: 3,4,9 **Value:** 4 (Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: None documented. Source: 1,2,6 **Value:** 0 (Max.=5)

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.	Carcino-genicity WOE	PF*	Val.
1. Chromium (III)	100	6	ND	-	0.015	1	ND	-	-
2. Chromium (VI)	100	6	ND	-	1	3	ND	-	-
3. Lead	5	8	ND	-	ND	-	ND	-	-

*Potency Factor

Source: 1,2
Highest Value: 8 (Max.=10)

+2 Bonus Points? 2

Final Toxicity Value: 10 (max.=12)

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

Or

Solubility(mg/l): _____

1.3 Substance Quantity: 13,750 gallons Source: 1,2,6 **Value:** 5 (Max.=10)
Explain basis: _____

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1,2,6 **Value:** 10 (Max.=10)
Explain basis: Spills, discharge to soil = 10

2.2 Net Precipitation: 0.1 - 10 inches Source: 7 **Value:** 1 (Max.=5)

2.3 Subsurf.Hydraul.Conduct.: Sands/gravels Source: 1,6 **Value:** 3 (Max.=4)

2.4 Vertical Depth to Ground Water: <25 feet Source: 1,6 **Value:** 8 (Max.=8)

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage:_____ Source: 9,10 **Value:** 9 (Max.=10)

3.2 Dist. to Nearest Drinking Water Well: On-site Source: 1-3,10 **Value:** 5 (Max.=5)

3.3 Population Served within 2 Miles: $\sqrt{pop.} = \sqrt{48} = 6.9 = 7$ Source: 9,10 **Value:** 7 (Max.=100)

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: $0.75\sqrt{no.acres} = 0.75\sqrt{1171} = (0.75)(34.2) = 25.66 = 26$ Source: 9,10 **Value:** 26 (Max.=50)

4.0 RELEASE

Explain basis for scoring a release to ground water: Documented by analytical data Source: 1,2,6 **Value:** 5 (Max.=5)

SOURCES USED IN SCORING

1. Washington State Department of Ecology, Hazardous Waste & Toxics Reduction Program, Compliance Report, Schwerin Concaves, Inspection Dates 9/29/99; 12/27/99 and 1/25/00; Schwerin Chronology/HW File Highlights, February 24, 2000, plus discussions with Lynn Maser and Flora Goldstein, ERO June 9, 2000.
2. Metals Quality Assurance memo for the Schwerin Concave monitoring, Ecology Manchester Laboratory, May 30, 2000.
3. Site Hazard Assessment Drive-by by Michael Spencer, August 3, 2000.
4. U.S.G.S. Topographic Quad. Map, Buroker, WA, 5 Min. series.
5. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
6. Washington Department of Ecology, WARM Scoring Manual, A ril 1992.
7. See attached table identified as Reference 7.
8. Flood Insurance Rate Maps (FIRM).
9. U.S. EPA SITEINFO GIS Query for lat./long. of site.
10. Ecology Water Rights Information System (WRIS).