

WASHINGTON RANKING METHOD

ROUTE SCORES SUMMARY AND RANKING CALCULATION SHEET

Site Name: Crest Linen (former) Region: CRO

City: Yakima County: Yakima

This site was (X) ranked, () re-ranked on February 20, 1992, based on quintile values from previously assessed/scored sites.

<u>Pathway</u>	<u>Route Score</u>	<u>Quintile Group Numbers</u>	<u>Priority Scores:</u>
SW-HH	<u>6.7</u>	<u>2</u>	<u>Human Health:</u>
AIR-HH	<u>60.0</u>	<u>5</u>	$\frac{H^2 + 2(M) + L}{8} = \frac{5^2 + 2(5) + 2}{8} = \frac{4.62}{8} = \underline{5}$
GW-HH	<u>60.5</u>	<u>5</u>	
SED-HH			<u>Environment:</u>
SW-En	<u>11.2</u>	<u>2</u>	$\frac{H^2 + 2(L)}{7} = \frac{4^2 + 2(2)}{7} = \frac{2.85}{7} = \underline{3}$
AIR-En	<u>29.0</u>	<u>4</u>	
SED-En			

Use the matrix presented to the right, along with the two priority scores, to determine the site ranking. N/A refers to where there is no applicable pathway.

Human Health	Environment					
	5	4	3	2	1	N/A
5	1	1	1	1	1	1
4	1	2	2	2	3	4
3	1	2	3	4	4	5
2	2	3	4	5	5	5
1	2	3	4	5	5	5
N/A	3	4	5	5	5	N/A

DRAFT / FINAL

Matrix ("bin") Ranking: 1, or _____ No Further Action

CONFIDENCE LEVEL: The relative position of this site within this bin is:

- _____ almost into the next higher bin.
- _____ right in the middle, unlikely to ever change
- _____ almost in the next lower bin

rev. 2/92

This document was part of the official Administrative Record for the Yakima Railroad Area on October 31, 1996.
Washington State
Department of Ecology.

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name/Location (City, County, Section/Township/Range):

Crest Linen (former)
North First and "B" Streets
Yakima (Yakima County)

NW 1/4 Section 19, Township 13 North, Range 19 East, W. M.

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

The site is a vacant lot, following demolition of the Crest Linen Building. A cleaning/laundrying facility and a service station previously operated at the site. Compounds of concern include tetrachloroethene or PCE (detected onsite at 7.8 ppb in groundwater, 1 ppb in soil), chloroform (9 ppb in groundwater), dichloromethane (2.7 ppb in groundwater, 0.5 ppb in soil), toluene (3 ppb in groundwater) and xylene (3.9 ppb in groundwater).

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):

ROUTE SCORES:

Surface Water/Human Health: 6.7 (2) Surface Water/Environ.: 11.2 (2)

Air/Human Health: 60.0 (5) Air/Environmental: 29.0 (4)

Ground Water/Human Health: 60.5 (5)

$$HH = \frac{5^2 + 2(5) + 2}{8} = 4.62 \text{ -----} (5)$$

$$\text{Environmental} = \frac{4^2 + 2(2)}{7} = 2.85 \text{ --} (3)$$

OVERALL RANK: 1

Rev. 5/31/91

Handwritten:
This is a copy of the original
data for the site for the
R. D. H. Report, October 31, 1986.
Washington State
Department of Ecology.

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List substances to be considered for scoring: Source: 1

- | | |
|--------------------|------------|
| 1. PCE | 4. toluene |
| 2. chloroform | 5. xylene |
| 3. dichloromethane | |

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

The five substances listed were used in scoring because they have been detected in groundwater onsite.

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

1. contaminated soil

Explain basis for choice of unit used in scoring. Source: 1,2

Contaminated soil was used because no other management units are known to be present at the site.

2. AIR ROUTE

List substances to be considered for scoring: Source: 1

- | | |
|--------------------|------------|
| 1. PCE | 4. toluene |
| 2. chloroform | 5. xylene |
| 3. dichloromethane | |

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

The five substances listed were used in scoring because they have been detected in groundwater and/or soil onsite.

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

1. contaminated soil

Explain basis for choice of unit used in scoring.

Contaminated soil was used because no other management units are known to be present onsite.

WORKSHEET 2 (CONTINUED)
ROUTE DOCUMENTATION

3. GROUND WATER ROUTE

List substances to be considered for scoring:

Source: 1

1. PCE
2. chloroform
3. dichloromethane
4. toluene
5. xylene

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

The five substances listed were used in scoring because they have been detected in groundwater onsite.

List management units to be considered in scoring:

Source: 1,2

1. contaminated soil

Explain basis for choice of unit used in scoring.

Contaminated soil was used in scoring because no other management units are known to be present onsite.

WORKSHEET 3
SUBSTANCE CHARACTERISTICS WORKSHEET
FOR MULTIPLE UNIT/SUBSTANCE SITES

Combination 1 Combination 2 Combination 3

Unit:

Substance:

SURFACE WATER ROUTE

Human Toxicity Value:

Environ. Toxicity Value:

Containment Value:

Surface Water Human
Subscore:

Surface Water Environ.
Subscore:

AIR ROUTE

Human Toxicity/Mobility
Value:

Environ. Toxicity/
Mobility Value:

Containment Value:

Air Human Subscore:

Air Environ. Subscore:

GROUND WATER ROUTE

Human Toxicity/
Mobility Value:

Containment Value:

Ground Water Subscore:

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard		Acute Toxicity		Chronic Toxicity		Carcinogenicity	
	(ug/l)	Val.	(mg/kg/day)	Val.	(mg/kg-bw)	Val.	WOE	PF* Val.
1. PCE	5	8	800	5	.01	3	B2	.051 4
2. chloroform	100	6	908	5	.01	3	B2.0061	2
3. dichloromethane	5	8	1650	3	.06	1	B2.0075	2
4. toluene	2000	2	5000	3	.2	1	X	-- --
5. xylene	10000	2	5000	3	2	1	X	-- --
6.								

*Potency Factor

Source: 4,5
Highest Value: 8
+2 Bonus Points? 2
Final Toxicity Value 10

1.2 Environmental Toxicity

Substance	Acute Criteria (ug/l)	Non-human Mammalian Acute Toxicity		Source: <u>4</u>	Value: <u>3</u>
		(mg/kg)	Value		
1. PCE	5280	800	2		
2. chloroform	28900	908	2		
3. dichloromethane	X	1650	3		
4. toluene	17500	5000	2		
5. xylene	X	5000	3		
6.					

1.3 Substance Quantity

Source: 12 Value: 8

Explain basis: Area of site=(140 ft.)(150 ft.)
=21,000 square feet.

This document was part of the official
Administrative Record for the Yakima
Railroad Area on October 31, 1998.
Washington State
Department of Ecology.

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

- 2.1 Containment Source: 1 Value: 10
Explain basis: Contaminated soil with no run-on/
runoff control.
- 2.2 Surface Soil Permeability: high, gravel, sand, silt Source: 1 Value: 1
- 2.3 Total Annual Precipitation: 7.2 inches Source: 7 Value: 1
- 2.4 Max. 2-Yr/24-hour Precipitation: .8 to 1 inches Source: 8 Value: 1
- 2.5 Flood Plain: not in flood plain. Source: 6 Value: 0
- 2.6 Terrain Slope: (1070-1020)over 5600= 0.9 % Source: 13,14 Value: 1

3.0 TARGETS

- 3.1 Distance to Surface Water: 5600 feet, Yakima River Source: 13,14 Value: 2
- 3.2 Population Served within 2 miles: √0= 0 Source: 10,11 Value: 0
- 3.3 Area Irrigated within 2 miles: 0.75√0= 0 Source: 10 Value: 0
- 3.4 Distance to Nearest Fishery Resource: 5600 feet Source: 13,14 Value: 3
- 3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Source: 13,14 Value: 6
Miller Park, 2000 feet, upgradient
Lions Park, 3800 feet
Kiwanis Park, 5200 feet

4.0 RELEASE

Explain basis for scoring a release to surface water: Documentation of a release to surface
was not found. Source: Value: 0

**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		Acute Toxicity		Chronic Toxicity		Carcinogenicity		
	(ug/m ³)	Val.	(mg/kg/day)	Val.	(mg/kg-bw)	Val.	WOE	PF*	Val.
1. PCE	.02	9	X	--	X	--	B2	X	--
2. chloroform	.04	10	47702	3	X	--	B2	.081	4
3. dichloromethane	.24	10	88000	3	.86	1	B2	.014	4
4. toluene	10.24	1	X	--	.57	1	X	--	--
5. xylene	11.8	1	21714	3	.085	1	X	--	--
6.									

*Potency Factor

Source: 4
 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

Vapor Pressure(s): 1=18 ; 2=150 ; 3=360 Source: 4
4=28 ; 5=10 ; 6= Value: 4

1.3.2 Particulate Mobility

Soil type: _____ Source: _____
 Erodibility: _____ Value: N.A.
 Climatic Factor: _____

1.4 Final Human Health Toxicity/Mobility Matrix Value: 24

1.5 Environmental Toxicity/Mobility

Substance	Non-human Mammalian		Value	Mobility	Value
	Acute Toxicity				
1.PCE	X		--	4	--
2.chloroform	47702		3	4	6
3.dichloromethane	88000		3	4	6
4.toluene	X		--	4	--
5.xylene	21714		3	3	5
6.					

Environmental Toxicity/Mobility Matrix Source: 4 Value: 6

WORKSHEET 5 (CONTINUED)
AIR ROUTE

1.6 Substance Quantity: Surface area= 21,000 sq. ft. Source: 12 Value: 6
Explain basis: (140 feet)(150 feet)=21,000 sq. ft.

2.0 MIGRATION POTENTIAL

2.1 Containment: No cover. Source: 1 Value: 10

3.0 TARGETS

3.1 Nearest Population: 200 feet. county courthouse. Source: 12 Value: 10

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Source: 13,14 Value: 6
Miller Park, 2000 feet
Lions Park, 3800 feet
Kiwanis Park, 5200 feet

3.3 Population within 0.5 miles: $\sqrt{2355}=49$ Source: 9 Value: 49

4.0 RELEASE

Explain basis for scoring a release to air: Source: _____ Value: 0
Documentation of release to air was not found.

**WORKSHEET 6
GROUND WATER ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard		Acute Toxicity		Chronic Toxicity		Carcinogenicity	
	(ug/l)	Val.	(mg/kg/day)	Val.	(mg/kg-bw)	Val.	WOE	PF* Val.
1. PCE	5	8	800	5	.01	3	B2	.051 4
2. chloroform	100	6	908	5	.01	3	B2.0061	2
3. dichloromethane	5	8	1650	3	.06	1	B2.0075	2
4. toluene	2000	2	5000	3	.2	1	X	-- --
5. xylene	10000	2	5000	3	2	1	X	-- --
6.								

*Potency Factor Source: 4,5
Highest Value: 8
+2 Bonus Points? 2
Final Toxicity Value 10

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

Cations/Anions _____ Source: 3 Value: 3

OR

Solubility(mg/l) 1.150 2.8200 3.20000 4.540 5.200
 values: 1-2 2-3 3-3 4-2 5-2

1.3 Substance Quantity

Source: 12 Value: 4

Explain basis: Area= (140)(150)=21,000 sq. ft.
Assume depth of 3 feet.
Volume=(21,000)(3)(1/27)= 2333 cubic yards

2.0 MIGRATION POTENTIAL

2.1 Containment

Source: 1 Value: 10

Explain basis: All contaminated soil= value of 10

2.2 Net Precipitation: 1.7 inches

Source: 7 Value: 1

2.3 Subsurface Hydraulic Conductivity: well graded gravel, sand and silt

Source: 1 Value: 4

2.4 Vertical Depth to Ground Water: 16.5 to 18.5 feet

Source: 1 Value: 8

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage: public. no alternate Source: 11 Value: 9

3.2 Distance to Nearest Drinking Water Well: 4000 ft Source: 15 Value: 2

3.3 Population Served within 2 Miles: v2327=48 Source: 10,11 Value: 48

3.4 Area Irrigated by (Groundwater) Wells
within 2 miles: 0.75v2672=39 Source: 10 Value: 39

4.0 RELEASE

Explain basis for scoring a release to ground Source: 1 Value: 5
water: PCE detected in groundwater (7.8 ppb) and
soil (1 ppb) onsite.

SOURCES USED IN SCORING

1. Phase II Environmental Assessment, Yakima County Public Works Department (Chen-Northern, Inc., contractor), March 7, 1991.
2. Memorandum: Site Visit, Mark Peterschmidt, Department of Ecology, March 25, 1991.
3. Memorandum: Property Ownership, Mark Peterschmidt, Department of Ecology, April 2, 1991.
4. Toxicology Database for Use in WARM Scoring, SAIC, June, 1991.
5. Drinking Water Standards, U. S. EPA.
6. Flood Boundary and Floodway Map, City of Yakima, WA Community-Panel Number 530311 0006, FEMA.
7. Washington Climate, Cooperative Extension Service, Washington State University.
8. Isopluvials of 2-Yr 24-Hr Precipitation in Tenths of an Inch, NOAA Atlas 2, Volume IX, U. S. Department of Commerce.
9. Census Data Map, adapted from Sullivan's Cleaners SHA, SAIC, February 1991.
10. Recorded Water Rights of the Department of Ecology, Region 4, 8/16/90.
11. Public Water Supply System Listing, Washington Department of Health, 11/8/89.
12. Plat Map, Yakima County Assessor's Office.
13. Yakima East Quadrangle Map, USGS 7.5 Minute Topographic Series.
14. Yakima West Quadrangle Map, USGS 7.5 Minute Topographic Series.
15. Water Well Report, Robert Millner Well, State of Washington, 11/11/77.