WASHINGTON RANKING METHOD

ROUTE SCORES SUMMARY AND RANKING CALCULATION SHEET

For Sites With No Sediment Route Migration Pathways

Site name: Exxon "Big B" Minimart Region: CRO

Street, city, county: Ellensburg, Kittitas

This site was ( ) ranked, (XX) re-ranked, on August 13, 1992 based on quintile values from a total of 338 assessed/scored sites.

Pathway	Route Score(s)	Quintile Group number(s)
SW-HH	1.3	1
Air-HH	NA	0
GW-HH	56.4	4
SW-En	2.8	1
Air-En	NA	0

Priority scores:

$\frac{H^2 + 2M + L}{8}$: $\frac{16 + 2 + 0}{8} = \frac{18}{8} = 2.25 \sim 3$

$\frac{H^2 + 2L}{7}$: $\frac{1 + 0}{7} = \frac{1}{7} = 0.14 \approx 1$

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	4	5	5
1	2	3	4	5	5	5
N/A	3	4	5	5	5	NFA

DRAFT / (FINAL)

Matrix ("bin") Ranking: 4, or _____ No Further Action

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

____almost into the next higher bin.
__X__right in the middle, unlikely to ever change.
____almost into the next lower bin.

rev. 8/92

Mini mart SHA + Ranking

WASHINGTON RANKING METHOD

ROUTE SCORES SUMMARY AND RANKING CALCULATION SHEET

Site name: Exxon "Big B" Mini Mart Region: CRO

City, county: Ellensburg, Kittitas

This site was ranked on August 12, 1991, based on quintile values from 259 assessed/scored sites.

Pathway	Route Score(s)	Quintile Group number(s)
SW-HH	1.3	1
Air-HH	NS	-
GW-HH	56.4	5
Sed-HH	-	
SW-En	2-8	1
Air-En	NS	-
Sed-En		

Priority scores:

$$\frac{H^2 + 2M + L}{8} = \frac{25 + 2 + 0}{8} = 27/8 = 3.4 = 4$$

$$\frac{H^2 + 2L}{7} = \frac{1 + 0}{7} = 1/7 = 1$$

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	4	5	5
1	2	3	4	5	5	5
N/A	3	4	5	5	5	5

DRAFT / (FINAL)

Matrix ("bin") Ranking: 3, or _____ No Further Action

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

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

rev. 8/91

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name: Exxon "Big B" Mini-Mart

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

1611 Canyon Road
Ellensburg, WA

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

This gas station was discovered to have USTs with diesel fuel leaking while pit was excavated to install another tank in October 1990. Contaminated soil was removed and stockpiled, and has been disposed offsite. Spill occurred from break in pipe from diesel and unleaded gasoline tanks. Contaminated soil and ground water documented.

Quantity: 24,000 gallons, based on once-filled capacity of tanks. Could have used 60 yds^3 of contaminated soil, but this has been removed.

Special Considerations: (Include limitations in site file data, data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site)

Air route not scored - site paved.

ROUTE SCORES:

Ground Water/Human:	48.7	Overall Rank:	
Surface Water/Human:	1.3		
Air/Human:	ns		
Air/Environmental:	ns		
Surface Water/Environmental:	2.6		

WORKSHEET 2
ROUTE DOCUMENTATION

SURFACE WATER ROUTE

List substances to be considered for scoring. Source: _____

BTEX
Naphthalene (TPH as diesel)

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

- Substances measured in soil + groundwater
- contents of tanks

List management units to be considered in scoring: Source: _____

- USTs/piping
- contaminated soil

Explain basis for choice of unit used in scoring.

AIR ROUTE

List substances to be considered for scoring. Source: _____

BTEX
Naphthalene (TPH as diesel)

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

See above

List management units to be considered in scoring: Source: _____

USTs/piping
contaminated soil

Explain basis for choice of unit used in scoring.

GROUND WATER ROUTE

List substances to be considered for scoring. Source: _____

BTEX
Naphthalene (TPH as diesel

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

see surface water

List management units to be considered in scoring: Source: _____

USTs/piping
contaminated soil

Explain basis for choice of unit used in scoring.

WORKSHEET 3
SUBSTANCE CHARACTERISTIC WORKSHEET
FOR MULTIPLE UNIT/SUBSTANCE SITES

	Combination 1	Combination 2	Combination 3
Unit: Substance: <u>AIR ROUTE</u> Human Toxicity/Mobility Value: Environmental Toxicity/ Mobility Value: Containment Value:			
Air Human Subscore: Air Environmental Score:			
<u>SURFACE WATER ROUTE</u> Human Toxicity Value: Environmental Toxicity Value: Containment Value:			
Surface Water Human Subscore: Surface Water Environmental Subscore:			
<u>GROUND WATER ROUTE</u> 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 Std. (µg/l)	Value	Chronic Toxicity mg/kg/day	Value	Acute Toxicity mg/kg-bw	Value	Carcinogencity Potency WOE	Factor	Value
1. Ethylbenzene		4		3		1			0
2. Toluene		2		3		1			0
3. Xylene		2		3		1			0
4. Naphthalene		6				3			0
5.									
6.									

Source: ____
Highest Value: 10
+2 Bonus Points?: 2
Value: 12

1.2 Environmental Toxicity

Source: 1 Value: 2

Substance	Acute Criteria (µg/L)	Non-human mammalian acute toxicity (mg/kg)	Value
1. Ethylbenzene			2
2. Toluene			2
3. Xylene			0
4. Naphthalene			2
5.			
6.			

1.3 Substance Quantity

Source: 1 Value: 5

Explain basis: 24,000 gallons

2.0 MIGRATION POTENTIAL

2.1 Containment

Source: ___ Value: 0

Explain basis: underground tanks
some spillage of ground water during diesel recovery operations

2.2 Surface Soil Permeability: Sand, gravel - high

Source: 1 Value: 1

2.3 Total Annual Precipitation: <10

Source: 1 Value: 1

2.4 Maximum 2-Year 24-Hr Precipitation: 0.8 - 1

Source: 1 Value: 1

2.5 Flood Plain: NO

Source: 1 Value: 0

2.6 Terrain Slope: 0.3%

Source: 1 Value: 1

3.0 TARGETS

3.1 Distance to Surface Water: 625 ft — Source: 1 Value: 10

3.2 Population Served within 2 miles: None downstream — Source: 1 Value: 0

3.3 Area Irrigated by Sources within 2 miles: None downstream — Source: 1 Value: 0

3.4 Distance to Fishery Resource: 4000 ft - Yakima River — Source: 1 Value: 6

3.5 Distance to Sensitive Environment: 4000 ft - Yakima River — Source: 1 Value: 6

List:

4.0 RELEASE

Explain basis: No evidence - did not use release to "swampy area" - unsure what this was — Source: — Value: 0

Not scored

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction - please review before scoring

1.2 Human Toxicity

Substance	Air Std. $\mu g/m^3$	Value	Chronic Toxicity mg/kg/day	Value	Acute Toxicity mg/kg-bw	Value	Carcinogencity WOE	Potency Factor	Value
1.									
2.									
3.									
4.									
5.									
6.									

Source: _____
Highest Value: _____
+2 Bonus Points?: _____
Toxicity Value: _____

1.3 Mobility

1.3.1 Gaseous Mobility
Vapor Pressure: _____ Source: ___
Value: _____

1.3.2 Particulate Mobility
Soil Type: _____ Source: ___
Erodibility: _____
Climatic Factor: _____
Particulate Mobility Potential Value: _____

1.4 Final Human Health Toxicity/Mobility Matrix: Value: _____

1.5 Environmental Toxicity/Mobility

Substance	Non-human mammalian Acute Toxicity	Value	Mobility	Value
1.				
2.				
3.				
4.				
5.				
6.				

Environmental Toxicity Mobility Matrix: Source: ___ Value: _____

1.6 Substance Quantity: _____

Source: ___ Value: _____

2.0 MIGRATION POTENTIAL

2.1 Containment: _____ Source: ___ Value: _____

_____

3.0 TARGETS

3.1 Nearest Population: _____ Source: ___ Value: _____

3.2 Nearest Sensitive Environment: _____ Source: ___ Value: _____

List: _____

_____

_____

3.3 Population within 1/2 mile: _____ Source: ___ Value: _____

4.0 RELEASE: _____ Source: ___ Value: _____

WORKSHEET 6
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Std. (µg/l)	Value	Chronic Toxicity mg/kg/day	Value	Acute Toxicity mg/kg-bw	Value	Carcinogencity Potency WOE	Factor	Value
1. Ethylbenzene		4		3		1			0
2. Toluene		2		3		1			0
3. Xylene		2		10		1			0
4. Naphthalene		6		5		3			0
5.									
6.									

Source: ____
Highest Value: 10
+2 Bonus Points?: 2
Value: 12

1.2 Mobility E 2 B 3 T 2 X 1

Substance: ____ Source: 1 Value: 2

1.3 Substance Quantity Source: 1 Value: 5

Explain basis: 24,000 gallons

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1 Value: 10

Explain basis: Spilled, leaked

2.2 Net Precipitation: 0.1 in Source: 1 Value: 1

2.3 Subsurface Hydraulic Conductivity: 10^{-2} Source: 1 Value: 4

2.4 Vertical Depth to Ground Water: 0 Source: 1 Value: 8

3.0 TARGETS

3.1 Ground Water Usage: Public/private with alternate source Source: 1 Value: 4

3.2 Distance to Nearest Drinking Water Well: 1300-2600 Source: 1 Value: 3

3.3 Population Served with 2 miles: 2732 $\sqrt{}$ Source: 1 Value: 52

3.4 Area Irrigated by Wells within 2 miles: 166 acres $\sqrt{0.75}$ Source: 1 Value: 10

4.0 RELEASE

Explain basis: Analytical evidence Source: 1 Value: 5

WORKSHEET 7
SOURCES USED IN SCORING

1. Exxon Big B SHA, May 1991
2.
3.
4.
5.
6.
7.
8.
9.
10.