WASHINGTON RANKING METHOD

ROUTE SCORES SUMMARY AND RANKING CALCULATION SHEET

Site name: Cascade Natural Gas Region: CRO

City, county: Sunnyside, Yakima

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	11.0	2
Air-HH	30.6	4
GW-HH	69.9	5
Sed-HH	—	—
SW-En	10.0	2
Air-En	33.5	5
Sed-En	—	—

Priority scores:

$\frac{H^2 + 2M + L}{8}$ $\quad 15 + 8 + 2$ $\quad 35/8 = 4.4 = 5$

$\frac{H^2 + 2L}{7}$ $\quad 25 + 4$ $\quad 29/7 = 4.1 = 5$

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	
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: 1, 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: Cascade Natural Gas

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

512 Decatur Avenue
Sunnyside, WA, Yakima County

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

Site contained four USTs of 550 gallons each. All four tanks were leaking or corroded. Gasoline and diesel fuel have been found. Over 2,000 yds^3 of soil were removed. Soil within one ft of the water table is still contaminated. The sources of some contaminants are unknown (chlorinated compounds). Soil contamination remains at 13-15 ft below ground surface. Contaminated soil pile remained onsite at time of SHA and excavation remained open, therefore all 3 routes scored.

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)

Quantity: Surface water - use soil piles estimated at 50 yds^3

Air - use aerial extent of excavation and soil piles at approximately 50 ft X 75 ft X 2 = 7,500 ft^2

Ground water - use contaminated soil volume based on aerial extent X 3 ft depth = 7,500 ft^2 X 3 = 22,500 ft^3 = 833 cubic yards

ROUTE SCORES:

Ground Water/Human:	61.8	Overall Rank:	
Surface Water/Human:	11.0		
Air/Human:	30.6		
Air/Environmental:	21.8		
Surface Water/Environmental:	8.5		

WORKSHEET 2
ROUTE DOCUMENTATION

SURFACE WATER ROUTE

List substances to be considered for scoring. Source: _____

BTEX

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

Analytical

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

See WK-1

Explain basis for choice of unit used in scoring.

AIR ROUTE

List substances to be considered for scoring. Source: _____

BTEX
Acetone
methylene chloride

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

Analytical data

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

See WK-1

Explain basis for choice of unit used in scoring.

GROUND WATER ROUTE

List substances to be considered for scoring. Source: _____

BTEX
Acetone
Methylene Chloride

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

~~See work~~
analytical data

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

See WK-1

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	Carcinogenicity Potency WOE	Factor	Value
1. B		8		3		0			5
2. E		4		3		1			0
3. T		2		3		1			0
4. X		2		10		1			0
5.									
6.									

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

1.2 Environmental Toxicity

Source: ___ Value: 2

Substance	Acute Criteria (µg/L)	Non-human mammalian acute toxicity (mg/kg)	Value
1. B			2
2. E			2
3. T			2
4. X			0
5.			
6.			

1.3 Substance Quantity

Source: ___ Value: 5

Explain basis: waste pile 50-75 yds^3

2.0 MIGRATION POTENTIAL

2.1 Containment

Source: 1 Value: 10

Explain basis: waste pile with no runon/ runoff control, outside

2.2 Surface Soil Permeability: sandy loam

Source: 1 Value: 1

2.3 Total Annual Precipitation: 7.2 ins

Source: 1 Value: 1

2.4 Maximum 2-Year 24-Hr Precipitation: 0.8

Source: 1 Value: 1

2.5 Flood Plain: NO

Source: 1 Value: 0

2.6 Terrain Slope: 0.9 %

Source: 1 Value: 1

3.0 TARGETS

3.1 Distance to Surface Water: 875 ft — Source: 1 Value: 10

3.2 Population Served within 2 miles: 0 — Source: 1 Value: 0

3.3 Area Irrigated by Sources within 2 miles: 0 — Source: 1 Value: 0

3.4 Distance to Fishery Resource: over 10,000 ft. — Source: 1 Value: 0

3.5 Distance to Sensitive Environment: — Source: 1 Value: 0

List: City Park 1300 ft SW + upgradient - no others

4.0 RELEASE

Explain basis: — Source: 1 Value: 0

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction - please review before scoring

1.2 Human Toxicity

Substance	Air Std. µg/m³	Value	Chronic Toxicity mg/kg/day	Value	Acute Toxicity mg/kg-bw	Value	Carcinogencity WOE	Potency Factor	Value
1. B		10		3		0			5
2. E		4		3		0			8
3. T		7		3		1			0
4. X		7		3		1			0
5. Acetone		4		3		0			4
6. Meth. Chloride		10		3		1			4

Source: _____
Highest Value: 10
+2 Bonus Points?: 2
Toxicity Value: 12

1.3 Mobility

B 4
E 3
T 4
X 3

1.3.1 Gaseous Mobility
Vapor Pressure: _____ Source: 1
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: 24

1.5 Environmental Toxicity/Mobility

Substance	Non-human mammalian Acute Toxicity	Value	Mobility	Value
1. B		0	4	
2. E		0	3	
3. T		1	4	
4. X		1	3	
5. Acetone		0	4	
6. Methylene Chloride		1	4	

Environmental Toxicity Mobility Matrix: Source: 1 Value: 2

1.6 Substance Quantity: 7500 ft 2
See Wk 1
Source: 1 Value: 5

WORKSHEET 5
AIR ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment: scoved spill with no cover — Source: 1 Value: 10

3.0 TARGETS

3.1 Nearest Population: <1000 ft — Source: 1 Value: 10

3.2 Nearest Sensitive Environment: 1300 ft SW City Park — Source: 1 Value: 6

List:

3.3 Population within 1/2 mile: 70 √ — Source: 1 Value: 8

4.0 RELEASE: HNu readings. — Source: ___ Value: 5

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. BEtX		8422208		3333333		0			5000002
2.									
3.									
4.									
5. Acetone									
6. Meth.chlor									

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

1.2 Mobility
Substance: BEtXAM 3222333 Source: 1 Value: 3

1.3 Substance Quantity Source: 1 Value: 3
Explain basis: 833 yds^3 - see WK-1

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1 Value: 10
Explain basis: Spills

2.2 Net Precipitation: 2 inches Source: 1 Value: 1

2.3 Subsurface Hydraulic Conductivity: 10^{-5}-10^{-3} Source: 1 Value: 3

2.4 Vertical Depth to Ground Water: 0-contaminated 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: <600 ft Source: 1 Value: 5

3.3 Population Served with 2 miles: >10,000 Source: 1 Value: 100

3.4 Area Irrigated by Wells within 2 miles: 40.5 0.75-T Source: 1 Value: 5

4.0 RELEASE

Explain basis: Contamination - analytical data Source: 1 Value: 5

WORKSHEET 7
SOURCES USED IN SCORING

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

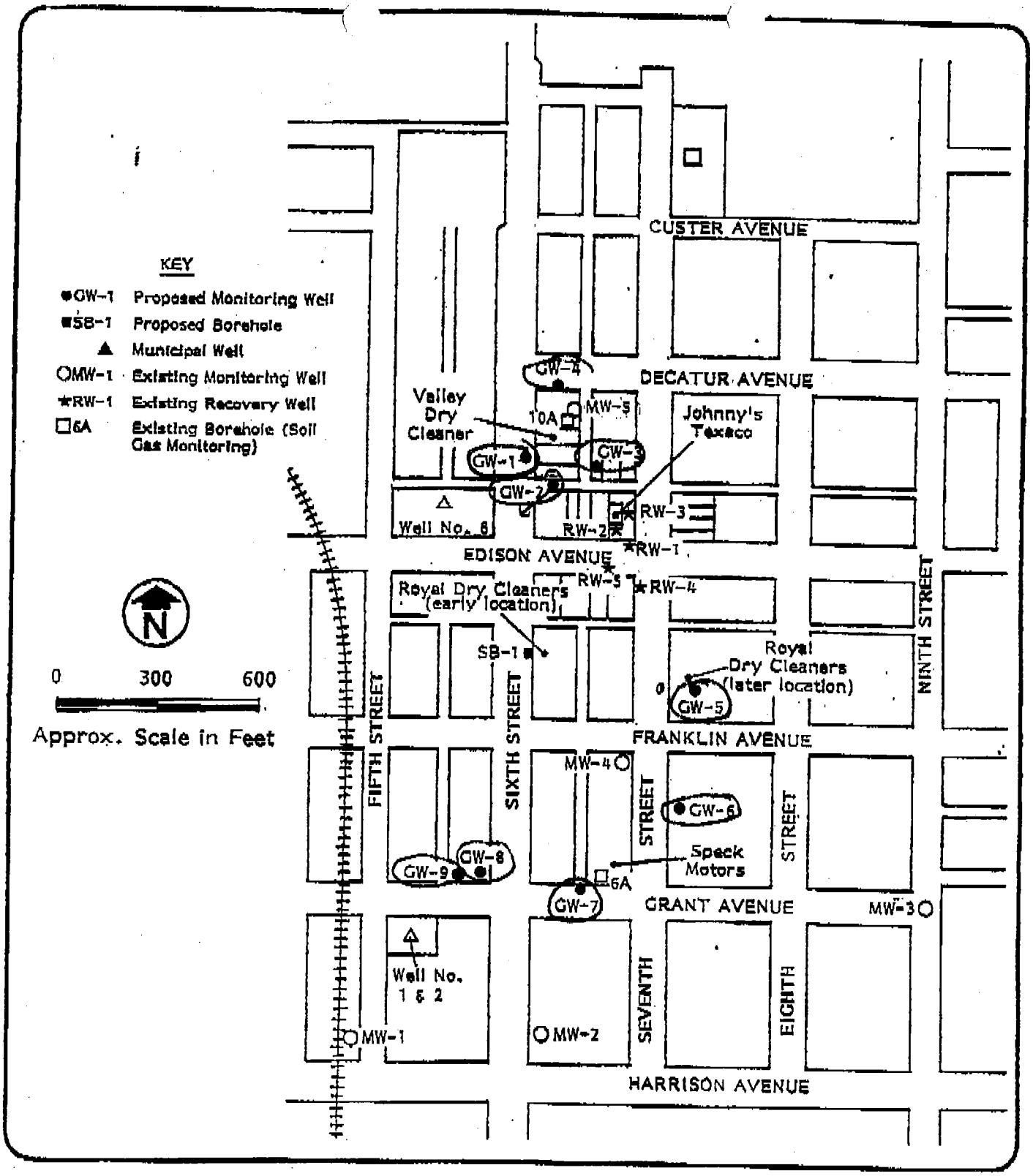

Figure 4

PROPOSED MONITORING WELL AND SOIL BORING LOCATIONS
SUNNYSIDE, WASHINGTON

4. What is the distance to the nearest fishery resource (total of overland distance plus downgradient distance)? (SW-17; WK-6)

Over 10,000 feet? X Distance if less than 10,000 feet? _____ ft.

5. What are the names of, and the distances to, the nearest sensitive environments (total of overland distances plus downgradient distances)? (SW-18; A-15; WK-6)

Over 10,000 feet? ____ Names and distances if less than 10,000 feet: a City park lies approx. 1300 ft. SSW of the site (upgradient) (see topo)

6. Is the aquifer a federally-designated sole source aquifer? No (GW-16; WK-9)

7. Is the ground water used for: (GW-16; WK-9)

- X private supply
- X public supply
- X irrigation of human food crops or livestock
- X non-food (human) vegetation
- _____ not used due to natural contaminants
- _____ ground water not used, but usable

8. Distance to nearest drinking water well? <600 feet (GW-17; WK-9) (used at City pool - supply well; not sure if used for drinking water)

9. Is there an alternate source available to groundwater for private or public water supply? (WK-9) Yes

10. Population served by drinking water wells within 2 miles? >10,000 (GW-17; WK-9) Public Supply Listing >10,000

11. Distance to the nearest population? <1000 feet (adjacent to property) (A-15, 16; WK-8)

12. Population within one-half mile radius? 70 (A-16; WK-8)

Additional comments: _____