CSID 1856

WORKSHEET 1
SUMMARY SCORE SHEET

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

Washtucna Grange Supply
Washtucna-Benge Road/Ralston-Benge Road
Benge, Adams county, WA 99105
Longitude: 118° 6′ 10″
Latitude: 46° 54′ 30″

Sec 1/T16N/R37E
Ecology Facility Site I.D. No. 570

Site scored/ranked for 02/24/04 update

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

In October, 1993, Huntingdon Consulting Engineers & Scientists (Huntingdon), Pasco, Washington, conducted Phase I investigations of three sites in Washtucna, Adams County, Washington, plus one in nearby Benge, at the request of the Washtucna Grange Supply (WGS) Board. These included, in Washtucna: the Washtucna Railroad Lease Property site, the Washtucna Fertilizer Plant site, and the Washtucna Gardens site; along with the Washtucna Grange Supply property in Benge. These investigations revealed areas of potential environmental concern, involving primarily petroleum hydrocarbon releases, at all sites except for the former Washtucna Gardens bulk storage facility.

The subject of this scoring sheet, the Washtucna Grange Supply site, is an active bulk petroleum fuel storage facility of about 0.25 acres area, located just southeast of the intersection of Ralston-Benge Road and Benge-Washtucna Road, Benge, Washington. The initial potential contamination concerns were areas of heavily stained soils visible near fuel piping and dispensers at the facility.

Between January 17 and April 5, 1994, a limited Phase II/Phase III site assessment, including environmental sampling, was conducted by Huntingdon at the three sites of concern. Three test pits, with follow-up soil sampling by hand auger, were completed at the Grange Supply site to evaluate surface and subsurface conditions in the following areas:

- Near the east end of the southernmost fuel tank
- South of the gasoline dispenser on the east side of the site
- The bulk fuel dispensers at the northeast end of the storage building

Subsurface soil sampling was accomplished firstly by use of a backhoe, followed up with four hand augered borings completed in the piping area of the fuel tanks. Samples collected from the backhoe excavated test pits produced no significant response using a photoionization detector (PID - Microtip Model 102). Hand auger samples were collected down to two feet depth in the soil, where gravelly soil was encountered.

Contaminated soil was documented to only two foot depth due to augering difficulties: total petroleum hydrocarbons (TPH), expressed as diesel, were detected at concentrations up to 10,000 mg/kg (ppm), compared to its Model Toxics Control Act

(MTCA) Method A Cleanup Level of 2000 ppm; and gasoline fuel components benzene, ethlybenzene, toluene, and xylenes (BETX) were all documented at concentrations significantly in excess of their respective Method A Cleanup Levels.

The WGS consultant notified Washington Department of Ecology Eastern Regional Office (Ecology ERO) on June 30, 1994, following the backhoe work, that it appeared a petroleum hydrocarbon release had occurred on-site. An initial investigation by Ecology ERO on September 15, 1994, visually documented the reported areas of petroleum stained/contaminated areas. An Early Notice Letter was sent by ERO on October 17, 1994, notifying the WGS of the addition of this site to Ecology's list of sites awaiting site hazard assessment (SHA).

The site property, initially owned by WGS, is now owned by Consolidated Grange Supply (CGS), Washington, who bought out WGS in the late 1990's. A site visit was made on October 16, 2003, to confirm the site characteristics per the consultant's earlier report, and meet with a representative of CGS. Remediation of the significantly contaminated areas at the site had not yet commenced.

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:	10.7	Surface Water/Environ.:	8.1
Air/Human Health:	13.0	Air/Environmental:	32.4
Ground Water/Human Health:	25.4		

OVERALL RANK: 3

WORKSHEET 2 - ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

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

Diesel, benzene, ethylbenzene, toluene, and xylenes (BETX)

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 diesel and BETX components.

2. AIR ROUTE

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

Diesel, benzene, ethylbenzene, toluene, and xylenes (BETX)

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 surface soils indicated significant concentrations of diesel and BETX components, with no vapor collection system.

3. GROUND WATER ROUTE

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

Diesel, benzene, ethylbenzene, toluene, and xylenes (BETX)

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 surface soils indicated significant concentrations of diesel and BETX components.

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

	Combination 1	Combination 2	Combination 3

Unit: **Section Not Applicable.**

1. SURFACE WATER ROUTE

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

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

2. AIR ROUTE

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

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:

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	PF*	Carcino-genicity Val.
1. Benzene	5	8	3306	3	X	-	A	.029	5
2. Ethylbenzene	700	4	3500	3	0.1	1	D	ND	-
3. Toluene	2000	2	5000	3	0.2	1	D	ND	-
4. Xylenes	10,000	2	50	10	2.0	1	D	ND	-
5. Diesel	160	4	490	5	0.004	3	-	ND	1

Source: 1,2,5

*Potency Factor

Highest Value: 10 (Max.=10)

+2 Bonus Points? 2

Final Toxicity Value: 12 (Max.=12)

1.2 Environmental Toxicity

(X) Freshwater
( ) Marine

Substance	Acute Water Quality Criteria (ug/l)	Value
1. Benzene	5300	2
2. Ethylbenzene	32000	2
3. Toluene	17500	2
4. Xylenes	ND	-
5. TPH-Diesel	2300	2

Non-human Mammalian Acute Toxicity (mg/kg) Value Source: 1,2,5 **Value: 2** (Max.=10)

1.3 Substance Quantity: Unknown, use default value = 1 Source: 1,2,6 **Value: 1** (Max.=10)

Explain basis: _____

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment — Source: 2,3,6 **Value:** 10 (Max.=10)
Explain basis:
Management unit scored as a spills/discharges/contaminated soil at the surface/subsurface, with no run-on/runoff controls.

2.2 Surface Soil Permeability: (Med.)sandy silt loam — Source: 1-3,6 **Value:** 3 (Max.=7)

2.3 Total Annual Precipitation: 10.3 inches — Source: 7 **Value:** 1 (Max.=5)

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

2.5 Flood Plain: Not in — Source: 8 **Value:** 0 (Max.=2)

2.6 Terrain Slope: <2% — Source: 2,3,6 **Value:** 1 (Max.=5)

3.0 TARGETS

3.1 Distance to Surface Water: 1.1 miles — Source: 1-4 **Value:** 2 (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: >10,000' — Source: 1-4 **Value:** 0 (Max.=12)

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Freshwater wetlands 2900' — Source: 1-4 **Value:** 6 (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. Benzene	0.12	10	31947(rat)	3	ND	-	A=1	.029	5
2. Ethylbenzene	1448	1	ND	-	ND	-	-	ND	-
3. Toluene	1248	1	ND	-	0.57	1	-	ND	-
4. Xylenes	1448	1	21714(rat)	3	0.85	1	-	ND	-
5. Diesel	166	4	ND	-	ND	-	-	ND	-

*Potency Factor

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

+2 Bonus Points? -
Final Toxicity Value: 10 (Max.=12)

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

1.3.1 Gaseous Mobility

Vapor Pressure(s)(mmHg): 1)9.5E+01 = 4; 2)7.0E+00 = 3; 3)2.8E+01 = 4; 4)1.0E+01 = 4; 5)8.2E-02 = 3

Source: 2,5
Value: 4 (Max.=4)

1.3.2 Particulate Mobility **N/A**

Soil type:
Erodibility:
Climatic Factor:

Source:
Value: (Max.=4)

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7) equals **Final Matrix Value: 20** (Max.=24)

1.5 Environmental Toxicity/Mobility Source: 2,5

Substance	Non-human Mammalian Acute Inhal. Toxicity (mg/m^3)	Value	Mobility (mmHg)	Value	(Table A-7) Matrix Value
1. Benzene	31947 (rat)	3	9.5E+01	4	6
2. Xylenes	21714 (rat)	3	1.0E+01	4	6

Highest Environmental Toxicity/Mobility Matrix Value (From Table A-7) equals **Final Matrix Value: 6** (Max.=24)

WORKSHEET 5 (CONTINUED)
AIR ROUTE

1.6 Substance Quantity: Unknown, use default value = 1 Source: 1,2,6 **Value: 1** (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: 1-3,6 **Value: 10** (Max.=10)

3.0 TARGETS

3.1 Nearest Population: < 1000 feet Source: 1-4 **Value: 10** (Max.=10)

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Freshwater wetlands, <1000 feet Source: 1-4 **Value: 7** (Max.=7)

3.3 Population within 0.5 miles: $\sqrt{pop.} = \sqrt{24} = 5$ Source: 1-4,9 **Value: 5** (Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: None documented. Source: 1-3 **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.
1. Benzene	5	8	3306	3	X	-	A	.029	5
2. Ethylbenzene	700	4	3500	3	0.1	1	D	ND	-
3. Toluene	2000	2	5000	3	0.2	1	D	ND	-
4. Xylenes	10,000	2	50	10	2.0	1	D	ND	-
5. Diesel	20	6	490	5	0.004	3	-	ND	1

Source: 1-3

*Potency Factor

Highest Value: 10 (Max.=10)

+2 Bonus Points? 2

Final Toxicity Value: 12 (Max.=12)

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

Or

Solubility(mg/l): 1) 1.8E+03 = 3; 2) 1.5E+02 = 2; 3) 5.4E+02 = 2; 4) 2.0E+02 = 2; 5) 3.0E+01 = 1

1.3 Substance Quantity: Unknown, use default = 1 Source: 1,2,6 **Value: 1** (Max.=10)
Explain basis: _____

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1-3,6 **Value: 10** (Max.=10)
Explain basis: Spills, discharge to soil = 10

2.2 Net Precipitation: 4.4 inches Source: 7 **Value: 1** (Max.=5)

2.3 Subsurf.Hydraul.Conduct.: Sands/silts/gravels Source: 1,2,6 **Value: 3** (Max.=4)

2.4 Vertical Depth to Ground Water: 50 -100 feet Source: 1,2,6 **Value: 4** (Max.=8)

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage: Priv/pub/No unthr. alts avail. Source: 9,10 **Value: 9** (Max.=10)

3.2 Dist. to Nearest Drinking Water Well: 600 - 1300' Source: 1-3,9 **Value: 4** (Max.=5)

3.3 Population Served within 2 Miles: $\sqrt{pop.} = \sqrt{15} = 4$ Source: 9,10 **Value: 4** (Max.=100)

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: $0.75\sqrt{no.acres} = 0.75\sqrt{55} = 6$ Source: 9,10 **Value: 6** (Max.=50)

4.0 RELEASE

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

SOURCES USED IN SCORING

1. Release Report/Initial Investigation, Dave George, Washington Department of Ecology Toxics Cleanup Program, Eastern Regional Office, July/September 1994.
2. Report of Environmental Assessment. Phase II/III Environmental Assessment for the following sites: #1 Washtucna Fertilizer Plant, #2 Washtucna Railroad Lease Property, #3 Washtucna Gardens in Washtucna, Washington and #4 Original Benge Property in Benge, Washington. Prepared for Washtucna Grange & Supply, HCR 1, Box 333, Washtucna, WA, by Huntingdon Consulting Engineers & Scientists, Pasco, Washington, June 1994.
3. Site Hazard Assessment Drive-by/Visit by Michael Spencer, Washington Department of Ecology Toxics Cleanup Program, Headquarters, October 16, 2003.
4. U.S.G.S. Topographic Quad. Map, Benge, Wash, 15 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, April 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 Application Tracking System (WRATS).