

CSID 1600

WORKSHEET 1
SUMMARY SCORE SHEET

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

Washtucna Fertilizer Plant	Sec 28/T15N/R36E
Highway 261 & North Street Junction	Ecology Facility Site I.D. No. 567
Washtucna, Adams county, WA 99371	January 16, 2004
Longitude: 118° 18' 40''	
Latitude: 46° 45' 23''	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 bulk storage facility at the Washtucna Gardens site property.

The subject of these scoring sheets, the Washtucna Fertilizer Plant, is a former grange supply store, selling bulk feed, hardware, fuel, lubricants, herbicides, pesticides, fertilizer and retail hardware. It is bounded by North Street to the north, the Washtucna Grain Growers facility, along Main Street (State Highway 261) to the east and drainage ditches along the south and west. On the approximate 1.5 acre property were: a large building housing the Consolidated Grange Supply store; a smaller storage building for lubricants with an adjacent even smaller building for pesticide storage; an aboveground storage tank (AST) for Round-up; an equipment washout area; a pressurized ammonia AST; four ASTs in the former fuel tank area; and mobile ammonia tanks.

The initial potential contamination concerns revealed during the Phase I assessment were:

- Localized areas of surface staining suggesting potential surface releases by lubricants, waste oils and gasoline
- The four ASTs at the far southwest corner of the site property containing anhydrous ammonia which apparently formerly stored petroleum fuels, representing another area of potential release
- Staining from fertilizer stored in the ASTs was observed around the dispensing area
- Potential herbicides and pesticides were reported in an equipment wash area east of an existing Round-Up tank

- Potential petroleum fuel contamination may exist at an apparent former fuel island area located near the north end of the Consolidated Grange Supply building, at the northern end of the site property

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. Eight test pits were completed at the Fertilize Plant site to evaluate surface and subsurface conditions in the following areas:

- Adjacent to the anhydrous ammonia ASTs in the SW corner of the site to assess for potential petroleum hydrocarbon, fertilizer and pesticide contamination
- Near the Round-up tank to evaluate the equipment wash area for herbicide and pesticide contamination
- Near the northeast corner of a storage building for hydrocarbon assessment associated with lubricant storage
- Three pits were advanced near the northeast corner of the site property, adjacent to the fuel island area, to assess for potential hydrocarbon contamination
- Near the existing gasoline AST at the south end of the storage building
- Near a small waste oil AST east of the gasoline AST

In addition, samples were collected using hand tools from:

- The drainage ditch adjacent to the storage building for metals downstream from a roof drainage discharge pipe emanating from Stoess Manufacturing
- Beneath the storage building for heavy hydrocarbons associated with lubricants stored inside

Subsurface soil sampling was accomplished in two phases: firstly, use of a backhoe or hand tools, followed up by auger boring (CME-75 drill rig). Headspace screening of subsurface soils was employed using a photoionization detector (PID - Microtip Model 102). Samples representing zones of apparent maximum concentration in each test pit were submitted for laboratory analysis.

The impacted areas appear to be limited to two zones: total petroleum hydrocarbons (TPH), expressed as diesel, were detected from a surface sample in the vicinity of the anhydrous ammonia ASTs at a concentration of 13,000 mg/kg (ppm), compared to its Model Toxics Control Act (MTCA) Method A Cleanup Level of 2000 ppm. Analytical results of herbicide and pesticide soil sample analyses were below practical quantitation limits (PQLs) in all samples. Of the metals analyzed, only cadmium and silver were found in concentrations exceeding their respective MTCA cleanup levels.

The WGS consultant had already notified Washington Department of Ecology Eastern Regional Office (Ecology ERO) on February 23, 1994 following the backhoe work that it appeared a petroleum hydrocarbon release had occurred on-site. An initial investigation by Ecology ERO on March 8, 1994 visually documented the reported areas of petroleum stained/contaminated areas. An Early Notice Letter was sent by ERO to the WGS on March 23, 1994 notifying the addition of this site to Ecology list of sites awaiting site hazard assessment (SHA).

The site property was initially owned and operated by the Washtucna Grange Supply. It had been purchased in the late 1990's by Robert Brodahl, formerly associated with the adjacent Washtucna Grain Growers facility. Mr. Brodahl, now resident in Pasco, Washington, did not respond to any correspondence from Ecology regarding the SHA site driveby/visit on October 16, 2003. I spoke with Mrs. Schweitzer who happened to be at the site using the storage building, along with several other apparent deer hunters, as a place to dress out several recently harvested mule deer. Her partner, Galen Schweitzer, of Washtucna, apparently loaned the money to Mr. Brodahl to purchase the site property. There had been some cleanup of soils around the former fuel tank area, but no indications that the site had been completely remediated.

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: 12.1
Air/Human Health: 8.0
Ground Water/Human Health: 23.6

Surface Water/Environ.: 27.1
Air/Environmental: 12.7

OVERALL RANK: 5

WORKSHEET 2 - ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

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

TPH-Diesel, cadmium, silver

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 and subsurface soils noted significant concentrations of TPH-diesel, cadmium and silver

2. AIR ROUTE

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

TPH-Diesel, cadmium, silver

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 and subsurface soils indicated significant concentrations of TPH-diesel, cadmium and silver.

3. GROUND WATER ROUTE

List those substances to be considered for scoring:

Source: 1,2

TPH-Diesel, cadmium, silver

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 and subsurface soils indicated significant concentrations of diesel, cadmium and silver.

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		Acute Toxicity		Chronic Toxicity		Carcinogenicity		
	(ug/l)	Val.	(mg/kg-bw)	Val.	(mg/kg/day)	Val.	WOE	PF*	Val.
1. Cadmium	5	8	225 (rat)	5	0.0005	5	ND	-	-
2. Silver	100	6	ND	-	0.003	3	ND	-	-
3. TPH-Diesel	160	4	490	5	0.004	3	-	ND	1

Source: 1, 2, 5

*Potency Factor

Highest Value: 8
(Max.=10)

+2 Bonus Points? 2

Final Toxicity Value: 10
(Max.=12)

1.2 Environmental Toxicity

- Freshwater
 Marine

Substance	Acute Water Quality Criteria		Non-human Mammalian Acute Toxicity		Source: <u>1, 2, 5</u>	Value: <u>8</u> (Max.=10)
	(ug/l)	Value	(mg/kg)	Value		
1. Cadmium	3.9	8				
2. Silver	4.1	8				
3. TPH-Diesel	2300	2				

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

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

- 2.1 Containment Source: 2,3,6 Value: 10
Explain basis: (Max.=10)
Management unit scored as a spills/discharges/contaminated soil at the surface/subsurface, with no run-on/runoff controls.
- 2.2 Surface Soil Permeability: Sandy silt/fine sands 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 Dist. to Surface Water: <1000' (Watson Canal/Staley Coulee) Source: 1-4 Value: 10
(Max.=10)
- 3.2 Population Served within 2 miles (See WARM Scoring Manual Regarding Direction): $\sqrt{\text{pop.}} = \sqrt{0} = 0$ Source: 9,10 Value: 0
(Max.=75)
- 3.3 Area Irrigated within 2 miles $0.75\sqrt{\text{no. acres}} = 0.75\sqrt{0} = (.75)(0) = 0$ 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) 0.5 - 1.0 mile FW wetland Source: 1-4,9 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		Acute Toxicity		Chronic Toxicity		Carcinogenicity		
	(ug/m ³)	Val.	(mg/m ³)	Val.	(mg/kg/day)	Val.	WOE	PF*	Val.
1. Cadmium	0.00056	10	25 (rat)	10	ND	-	B1=.8	6.1	6
2. Silver	0.3	10	ND	-	ND	-	-	ND	-
3. Diesel	166	4	ND	-	ND	-	-	ND	-

Source: 2,5

*Potency Factor

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 N/A

Soil type: Silts/sands Source: 2,5
Erodibility: >30 - 80 Value: 1
Climatic Factor: 1-10 (Max.=4)

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: 2,5

Substance	Non-human Mammalian Acute		Mobility (mmHg)	(Table A-7)	
	Inhal. Toxicity (mg/m ³)	Value		Value	Matrix Value
1. Cadmium	0.00056 (rat)	10	Particulate	1	5

Highest Environmental Toxicity/Mobility Matrix Value

(From Table A-7) equals **Final Matrix Value: 5**
(Max.=24)

WORKSHEET 5 (CONTINUED)
AIR ROUTE

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

2.0 MIGRATION POTENTIAL

2.1 Containment: Significant air pathway potential Source: 1-3,6 Value: 10
from surface spill/discharge, contaminated soil (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) 3600 feet FW Wetland Source: 1-4,9 Value: 3

(Max.=7)

3.3 Population within 0.5 miles: $\sqrt{\text{pop.}} = \sqrt{250 (.5)} = 11$ Source: 1-4,9 Value: 11
(Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: None Source: 1-3 Value: 0
documented. (Max.=5)

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-bw)	Val.	(mg/kg/day)	Val.	WOE	PF*	Val.
1. Cadmium	5	8	225 (rat)	5	0.0005	5	ND	-	-
2. Silver	100	6	ND	-	0.003	3	ND	-	-
3. TPH-Diesel	160	4	490	5	0.004	3	-	ND	1

*Potency Factor

Source: 2, 5
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) 3; 2) 3 Source: 2, 5 Value: 3
(Max.=3)

Or

Solubility(mg/l): 3) 3.0E+01 = 3

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

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1-3, 6 Value: 10
Explain basis: Spills, discharge to soil = 10 (Max.=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: 235 feet Source: 1, 2, 6 Value: 2
(Max.=8)

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

- 3.1 Ground Water Usage: No unthr. alts available Source: 9,10 Value: 5
(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: $\sqrt{\text{pop.}} = \sqrt{304} = 17$ Source: 9,10 Value: 17
(Max.=100)
- 3.4 Area Irrigated by (Groundwater) Wells
within 2 miles: $0.75\sqrt{\text{no. acres}} =$ Source: 9,10 Value: 17
 $0.75\sqrt{541} = 17$ (Max.=50)
- 4.0 RELEASE
Explain basis for scoring a release to ground Source: 1,2,6 Value: 0
water: None documented by analytical data (Max.=5)

SOURCES USED IN SCORING

1. Release Report/Initial Investigation, Dave George, Washington Department of Ecology Toxics Cleanup Program, Eastern Regional Office, Feb./March 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, Washtucna North, 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).