

# SITE HAZARD ASSESSMENT

## WORKSHEET 1

### Summary Score Sheet

#### **Skyline Fluid Power Inc.**

109 N. Front Street  
Dayton, Columbia County, WA 99328

Section/Township/Range: Sec 30/T10N/R39E  
Latitude: 46° 19' 9.37" Longitude: 117° 58' 56.89"

Ecology Facility Site ID No.: 41637325

*Site scored/ranked for the August 22, 2007 update*  
August 9, 2007

#### **SITE DESCRIPTION:**

Skyline Fluid Power, owned by Bob McKeen, is a company with four employees that repairs hydraulic systems, primarily on farm equipment, located in downtown Dayton, WA, on the bank of the Touchet River. A September 1994 Dangerous Waste Compliance Inspection at this site by the Washington Department of Ecology (Ecology) Eastern Regional Office (ERO) Hazardous Waste and Toxics Reduction (HWTR) Program revealed numerous significant violations of the Dangerous Waste Regulations, Chapter 173-303 WAC. An excessive (>50 drums) accumulation of used oil and waste solvent, along with discharges of sump sludge, oil, and solvent to the ground, were noted, as well a drain from a concrete wash pad between the office and shop building that led to a drywell located in an alleyway where a large pool of oily sludge was observed.

In December 1994, an Administrative Order was issued to the facility requiring designation, proper container management, and site characterization due to spills to the environment. Follow-up inspections were conducted by ERO HWTR in 1995, 1997, 1998, and 1999. A change in job duties within Ecology resulted in no more visits to the site until a September 19, 2006, Compliance Inspection by Nicky Swanson and Emily Celto Vache, Ecology ERO HWTR, in response to a complaint alleging on-going dumping of oil within 100 feet of the Touchet River.

There were approximately 68 55-gallon drums marked "waste oil" stored in rows on pallets in the back portion of the site property, only a short distance from the Touchet River. These had been accumulating on site for the past 25 years. The drums appeared to be closed and had rubber type drum lid covers placed on them to protect them from the weather. There were several areas of dark stained soil observed around the base of some of the drums. There were seven lead-acid batteries observed lying on the ground.

A wash pad, consisting of a couple of pieces of plywood lying on the ground, was located near the front portion of the site, near to a wooden garage structure where the shop work was done. A high-pressure washer, used without heat or detergents, had been used here to cleanup equipment

being worked on. The soil appeared heavily contaminated from years of historic release of oily wastes. Directly outside the main shop building was a pallet on the soil which held four 55-drum, three of which were labeled "waste solvents". Another 55 gallon drum was observed in this area lying on its side with a large dark stain in the soils, this having been a drum punctured the previous day, with no actions having been taken to prevent oil from the drum leaking out onto the soil. Photographs were taken throughout the site to document these events.

ERO HWTR wrote a Compliance Report on September 27, 2006, detailing the above events and listing a number of required actions to be completed at the site in order to attain compliance under Washington State Dangerous Waste Regulations (Chapter 173-303) in establishing a system for safe and responsible management of dangerous wastes. Required corrective actions included properly labeling used oil containers; cleaning up and properly managing released used oil; properly labeling containers of dangerous waste; conducting weekly inspections of dangerous waste accumulation area(s); properly disposing of dangerous wastes that have accumulated on site greater than 90 days; and providing adequate secondary containment.

The site was referred to Ecology's Toxics Cleanup Program (TCP) at that same time as a potential site for cleanup and disposal of historically contaminated soil areas under the Model Toxics Control Act (MTCA) and was listed on its Confirmed and Suspected Contaminated Sites list on November 20, 2006, with a site status of Awaiting Site Hazard Assessment. This was followed up on February 28, 2007, with a notification letter to Mr. McKeen, that a site hazard assessment (SHA) under MTCA, Chapter 173-340-320, would take place.

A follow-up Dangerous Waste Compliance Inspection was conducted by ERO HWTR on January 24, 2007, as there had been no response from the site owners regarding the above requested corrective actions. No cleanup of stained soil areas was noted, with only minor progress made at that time in attaining satisfactory compliance regarding the September 27, 2006 required corrective actions.

Michael Spencer, Ecology TCP Headquarters, along with John Skyles, Whitman County Public Health, met with Mr. McKeen at the site on April 24, 2007. Following a discussion about what the SHA would entail, Mr. McKeen gave Mr. Spencer and Mr. Skyles a walk-around of the site. Mr. Spencer's observations confirmed obvious releases to the environment of such hazardous contaminants as used hydraulic fluids and solvents (likely Stoddard solvent). No lead batteries were noted lying uncovered directly on the ground surface. It was observed that there was no containment features at the site to prevent surface water run-off into the Touchet River.

**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):**

Due to the thorough documentation of contamination release events, likely over a nearly 25 year period, with detailed color photographs, by ERO HWTR, and confirmed by the SHA site visit, it was felt that sampling for specific contaminants was not necessary at this time for this site. Based on a number of sites throughout the state with similar waste management activities/releases to the environment where soil sampling was done, the following contaminants would be highly likely to be found in significant concentrations, and will be used to score the site: hydraulic fluids and Stoddard

solvent. Due to the lack of consistent toxicity data in the literature for Stoddard solvent, it is likely the toxicity values used in scoring the surface water and groundwater routes are underestimated, as one reference (Clinical Toxicology of Commercial Products) states that the various fractions of Stoddard solvent “closely resemble kerosene in toxicity”, but gave no actual values.

**ROUTE SCORES:**

Surface Water/Human Health: 12.2  
Air/Human Health: 21.6  
Groundwater/Human Health: 14.6

Surface Water/Environmental.: 22.8  
Air/Environmental: 27.9

**OVERALL RANK: 2**

WORKSHEET 2  
Route Documentation

1. **SURFACE WATER ROUTE**

- a. List those substances to be considered for scoring: Source: 1-3  
Hydraulic fluids, Stoddard solvent
- b. Explain basis for choice of substance(s) to be used in scoring.  
These substances are believed to occur on-site in surface/subsurface soils in significant concentrations, and are potentially available to the route of concern.
- c. List those management units to be considered for scoring: Source 1-3,4  
Surface and subsurface soils.
- d. Explain basis for choice of unit to be used in scoring:  
The contaminating substances would be detected in surface or subsurface soil samples in significant concentrations based on sampling knowledge from many other sites with very similar hazardous waste management/release to the environment practices.

2. **AIR ROUTE**

- a. List those substances to be considered for scoring: Source: 1-3  
Hydraulic fluids, Stoddard solvent
- b. Explain basis for choice of substance(s) to be used in scoring:  
These substances are believed to occur on-site in surface/subsurface soils in significant concentrations, and are potentially available to the route of concern.
- c. List those management units to be considered for scoring: Source: 1-3,4  
Surface and subsurface soils.
- d. Explain basis for choice of unit to be used in scoring:  
The contaminating substances would be detected in surface or subsurface soil samples in significant concentrations based on sampling knowledge from many other sites with very similar hazardous waste management/release to the environment practices.

3. **GROUNDWATER ROUTE**

- a. List those substances to be considered for scoring:

Source: 1-3

Hydraulic fluids, Stoddard solvent

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

These substances are believed to occur on-site in surface/subsurface soils in significant concentrations, and are potentially available to the route of concern.

- c. List those management units to be considered for scoring:

Source: 1-3,4

Surface and subsurface soils and groundwater.

- d. Explain basis for choice of unit to be used in scoring:

The contaminating substances would be detected in surface or subsurface soil samples in significant concentrations based on sampling knowledge from many other sites with very similar hazardous waste management/release to the environment practices.

WORKSHEET 4  
Surface Water Route

**1.0 SUBSTANCE CHARACTERISTICS**

<b>1.1 Human Toxicity</b>										
Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value	
							WOE	PF*		
1	Hydraulic fluids	ND	-		-	3.0	3	ND	ND	-
2	Stoddard solvent	ND	-	>5000(rat)	1	ND	-	ND	ND	-

\* Potency Factor

Source: 1-3,5

**Highest Value: 3**

(Max = 10)

**Plus 2 Bonus Points? No**

**Final Toxicity Value: 3**

(Max = 12)

<b>1.2 Environmental Toxicity (X) Freshwater ( ) Marine</b>					
Substance	Acute Water Quality Criteria		Non-Human Mammalian Acute Toxicity		
	(µg/L)	Value	(mg/kg)	Value	
1	Hydraulic fluids	ND	-	Low	1
2	Stoddard solvent	ND	-	>5000	1

Source: 1-3,5

**Highest Value: 1**

(Max = 10)

<b>1.3 Substance Quantity</b>	
Explain Basis: >50 drums	Source: <u>1-3,6</u> <b>Value: <u>4</u></b> (Max = 10)

## 2.0 MIGRATION POTENTIAL

		Source	Value
2.1	<b>Containment:</b> Maximum value of 10 points scored. <b>Explain basis:</b> Spills; discharge, or contaminated surface soils	1-3,4	<u>10</u> (Max = 10)
2.2	<b>Surface Soil Permeability:</b> Sandy silt loam	4	<u>3</u> (Max = 7)
2.3	<b>Total Annual Precipitation:</b> 19.55"	7	<u>2</u> (Max = 5)
2.4	<b>Max 2yr/24hr Precipitation:</b> 2.0" – 2.5"	6	<u>3</u> (Max = 5)
2.5	<b>Flood Plain:</b> Not in flood plain	4	<u>0</u> (Max = 2)
2.6	<b>Terrain Slope:</b> Site is immediately adjacent to Touchet River	1,4,10	<u>5</u> (Max = 5)

## 3.0 TARGETS

		Source	Value
3.1	<b>Distance to Surface Water:</b> <1000 feet (adjacent to site)	1,4,10	<u>10</u> (Max = 10)
3.2	<b>Population Served within 2 miles (see WARM Scoring Manual Regarding Direction):</b> $\sqrt{6} = 2.4 = 2$	8,9	<u>2</u> (Max = 75)
3.3	<b>Area Irrigated by surface water within 2 miles:</b> $(0.75)^* \sqrt{\# \text{ acres}} = 0.75 * \sqrt{60} = 6$	8,9	<u>6</u> (Max = 30)
3.4	<b>Distance to Nearest Fishery Resource:</b> <1000'	4,10	<u>12</u> (Max = 12)
3.5	<b>Distance to, and Name(s) of, Nearest Sensitive Environment(s):</b> fishery resource, <1000' feet	4,10	<u>12</u> (Max = 12)

## 4.0 RELEASE

Explain Basis: None documented	Source: 1-3 Value: <u>0</u> (Max = 5)
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**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 (µg/m <sup>3</sup> )	Value	Acute Toxicity (mg/m <sup>3</sup> )	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	Hydraulic fluid	ND	-	ND	-	ND	-	ND	ND	-
2	Stoddard solvent	ND	-	5500 (rat) (B)	5	ND	-	ND	ND	-

\* Potency Factor

Source: 1-3,5

**Highest Value: 5**  
(Max = 10)

**Plus 2 Bonus Points? -**

**Final Toxicity Value: 5**  
(Max = 12)

1.3 Mobility (Use numbers to refer to above listed substances)				
1.3.1 Gaseous Mobility		1.3.2 Particulate Mobility		
	Vapor Pressure(s) (mmHg)	Soil Type	Erodibility	Climatic Factor
1	$> 10^{-3}$ to $10^{-10} = 3$ (A)			
2	0.002 = 3			
3				

Source: 5  
**Value: 3**  
(Max = 4)

Source: \_\_\_  
**Value: -**  
(Max = 4)

1.4 Highest Human Health Toxicity/ Mobility Matrix Value (from Table A-7)

**Final Matrix Value: 8**  
(Max = 24)



1.5 Environmental Toxicity/Mobility –						
Substance	Non-human Mammalian Inhalation Toxicity (mg/m <sup>3</sup> )	Acute Value	Mobility (mmHg)	Value	Matrix Value	
1	Hydraulic fluid					
2	Stoddard solvent	5500	5	0.002	3	

Highest Environmental Toxicity/Mobility Matrix Value (Table A-7) = **Final Matrix Value: 8**  
(Max = 24)

1.6 Substance Quantity	
Explain Basis: > 50 drums	Source: 1-4 <b>Value: 4</b> (Max = 10)

## 2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment: Cover <2 feet thick, surface spill; no vapor collection system	1-4	<u>10</u> (Max = 10)

## 3.0 TARGETS

		Source	Value
3.1	Nearest Population: < 1000'	4	<u>10</u> (Max = 10)
3.2	Distance to [and name(s) of] nearest sensitive environment(s): Freshwater wetlands 2000 – 3000'	10	<u>5</u> (Max = 7)
3.3	Population within 0.5 miles: $\sqrt{(0.5) 2715} = 36.8$	9,10	<u>37</u> (Max = 75)

## 4.0 RELEASE

Explain Basis for scoring a release to air: None documented.	Source: 1-4 <b>Value: 0</b> (Max = 5)
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**WORKSHEET 6**  
Groundwater Route

**1.0 SUBSTANCE CHARACTERISTICS**

<b>1.1 Human Toxicity</b>										
Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value	
							WOE	PF*		
1 Hydraulic fluids	ND	-	ND	-	3.0	3	ND	ND	-	
2 Stoddard solvents	ND	-	>5000	1	ND	-	ND	ND	-	

\* Potency Factor

Source: 1-3,5

**Highest Value: 3**  
(Max = 10)

**Plus 2 Bonus Points? =**  
**Final Toxicity Value: 3**  
(Max = 12)

<b>1.2 Mobility (use numbers to refer to above listed substances)</b>	
Cations/Anions [Coefficient of Aqueous Migration (K)]	OR Solubility (mg/L)
1=	1= 1 – 2 = 0
2=	2= Insoluble = 0

Source: 1-3,5

**Value: 0**  
(Max = 3)

<b>1.3 Substance Quantity:</b>	
Explain basis: Unknown, use default value = 1	Source: <u>1-3</u> <b>Value: 1</b> (Max=10)

**2.0 MIGRATION POTENTIAL**

		Source	Value
2.1	<b>Containment (explain basis):</b> Contaminated area scored as spill/discharge to surface soil, no cover/liner	1-4	<u>10</u> (Max = 10)
2.2	<b>Net precipitation:</b> 24.4" – 5.2" = 19.2"	7	<u>2</u> (Max = 5)
2.3	<b>Subsurface hydraulic conductivity:</b> Sands/sandy gravels	4	<u>3</u> (Max = 4)
2.4	<b>Vertical depth to groundwater:</b> 50-100'	8,9	<u>4</u> (Max = 8)

## 2.0 TARGETS

		Source	Value
3.1	Groundwater usage: Public supply, unthreatened alts. avail.	8,9	<u>4</u> (Max = 10)
3.2	Distance to nearest drinking water well: 5000 – 10,000 feet	8,9	<u>3</u> (Max = 5)
3.3	Population served within 2 miles: $\sqrt{(2715 + 173 \times 3)} = 56.8 = 57$	8,9	<u>57</u> (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: $(0.75) \times \sqrt{279} = 13$	8,9	<u>13</u> (Max = 50)

## 3.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: None documented.	1-4	<u>0</u> (Max = 5)

## SOURCES USED IN SCORING

1. Washington Department of Ecology, Hazardous Waste & Toxics Reduction Program (ERO HWTR) Compliance Report, September 27, 2006, based on a Dangerous Waste Compliance Inspection on September 19, 2006.
2. Memo from Nicky Swanson, ERO HWTR, to Flora Goldstein, ERO TCP, October 24, 2006.
3. ERO HWTR Compliance Report, January 25, 2007, based on a Dangerous Waste Compliance Inspection on January 24, 2007.
4. SHA Site Visit, April 24, 2007.
5. Various toxicology data for hydraulic fluids and Stoddard solvent (enclosed in site files).
6. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
7. Washington Climate – Net Rainfall Table
8. Washington State Department of Ecology, Water Rights Application System (WRATS) printout for two-mile radius of site.
9. Washington Department of Health, Sentry Internet Database printout for public water supplies.
10. U.S.G.S. Topo map for site area.

