

CSID 3172

WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Name: **Ultra Custom Care Cleaners**
Address: **18304 Bothell Way NE**
City: **Bothell** County: **King** State: **WA** Zip: **98011**
Section/Township/Range: **07/ T27N/ R05E**
Latitude: **47° 45' 39.8934"** Longitude: **-122° 12' 25.7603"**

FS ID #: **379891**

Site scored/ranked for the February 21, 2007 update

Site Description

The Ultra Custom Care Cleaners site consists of one parcel of land, 11,057 square feet in area located in Bothell, Washington. The site is almost entirely covered by concrete and asphalt covered parking areas and by one building. The building contains three businesses, including the Ultra Custom Care dry-cleaning business, Franks Hair Design, a hair salon and the Laundry Basket, a laundromat. The building was built in 1967 and covers 4,104 square feet. There are open soils along the back wall of the building. The back wall appears to be built along the east property line of the parcel with no setback. The site and the surrounding neighborhood are served by the City of Bothell Sewer and Water Departments. Storm water from the site is collected in surface drains, travels by a storm water pipe system and discharges to a drainage area 1,025 feet south of the site. The storm water then goes to the Sammamish River which runs from east to west, south of the site. The river drains to Lake Washington, and eventually to Puget Sound at the Ballard Locks. There are living quarters within 100 feet of the building in the form of houses to the northeast. The site is across Bothell Way from an alternative High School.

Background

The current building was built over the site of a previous building. This original building was located on the southwestern portion of the parcel and was built in 1948. A business called the Rain Check Cleaners occupied the building. It is believed this business used Tetrachloroethylene in its dry cleaning operations. Farallon Consulting LLC, Issaquah, WA had conducted a subsurface investigation at the site in 2002. Farallon sent a letter to the Washington State Department of Ecology (Ecology) notifying them of the presence of Tetrachloroethylene (PCE) and its breakdown products Trichloroethylene (TCE), and cis-1,2-Dichloroethylene (DCE) in groundwater at the site. These levels were shown to be above Washington States Model Toxic Control Act (MTCA) Method A Cleanup Levels for groundwater in a report called Subsurface Investigation Report, Ultra Custom Care Cleaners Property, Farallon Consulting LLC on file at Ecology's Northwest Regional office (NWRO) library. Bremer and Woods from NWRO conducted an Initial Investigation in October of 2002. The site was listed on Ecology's Confirmed and Suspected Contaminated Sites and an Early Notice letter was sent to the owners of the site to advise them of the listing on November 1, 2002.

The most recent environmental study for this site was conducted by Environmental Partners Inc, and was completed November 30, 2004. The document is titled Chlorinated VOC nature and Extent Investigation Letter Report, Case Property, 18300-18304 Bothell Way NE, Bothell, Washington, EPI Project No. 46101.0. Further study was conducted at the site to determine where the high levels of contamination found in the groundwater study above could have come from. The results seem to show a source for this contamination to be in the area of the former building occupied by Rain Check Cleaners. Selected significant results for continued contamination above MTCA Method A Cleanup Levels are listed in the following section. (Note, not all sampling information has been provided below due to space limitations, please refer to the Environmental Partners Inc report listed above and on file at NWRO.)

Results of Analysis

Table 1. Selected Groundwater sampling analytical results EPA Method 8260, Environmental Partners Inc, Issaquah WA, November 30, 2004

Analyte	B-1:9 (ug/L)	B-2:9 (ug/L)	B-3:9 (ug/L)	B-4:9 (ug/L)	B-10 (ug/L)	B-16 (ug/L)	Standard	ug/L (ppb)
Tetrachloroethylene (PCE)	6400	14	410	1900	23	30	MTCA A ULU*	5
Trichloroethylene (TCE)	110	ND<2	ND<2	210	ND<2	ND<2	"	5
Cis-1,2- Dichloroethylene	31	ND<2	ND<2	160	ND<2	ND<2	MTCA B ULU**	80

*MTCA A ULU refers to the Model Toxics Control Act Table 720-1 Method A Cleanup Levels for Ground Water.

** MTCA B ULU refers to the CLARC Version 3.1 Method B Cleanup Levels for Ground Water.

Yellow Color highlights levels above cleanup standards.

Site Hazard Assessment

A Site Hazard Assessment site visit was conducted by Peter Isaksen, Public Health – Seattle & King County on January 23, 2007. The entire site was covered by building, concrete and asphalt. There were no visible changes at the surface of the site to indicate cleanup efforts had begun.

Pathway Information

Subsurface **Soils** at the site were documented to have been impacted by dry cleaning contaminants and their breakdown products. The contamination is mostly covered by building and hard surfaces, however some migration has been shown to have occurred in the unsaturated soils zone due to the volatile nature of the contaminants.

The **Surface Water Pathway** is not likely a significant route of potential exposure at this site because the contamination appears to be subsurface, and the site is capped by asphalt and concrete. However due to the volatile nature of the contamination and the presence of foundation footing drains, there is still potential for surface water to be affected by contamination from this site. The **Air Pathway**, is a significant route of potential exposure due to the volatile nature of any remaining contamination, and the fact that there are houses within 100 feet of the site.

Groundwater sampling data is available for this site and shows that the contamination remains above MTCA Method A Cleanup levels (and/or Method B levels) for dry cleaning products and their breakdown products. However, it appears no public water supplies are at risk from any remaining subsurface contamination. The residents in this neighborhood and most nearby neighborhoods are served by the City of Bothell Public Water System. This system has its source in the Cascade Mountain Range in far eastern King County. The nearest public well appears to be over a mile away to the north, and appears to be upgradient from the soils of this site.

Conclusions/Recommendation

Soils and groundwater have been shown to be contaminated by dry cleaning products and their breakdown products at this site. The main cause of the contamination seems to be from the soils near the former Rain Check Cleaners building. The current owner of the site is planning a clean up for the contamination, but is unsure of a method to employ, and has no timetable in place for the effort.

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):

The Air Environmental Route is not scored due to a lack of environmental toxicity data.

ROUTE SCORES:

Surface Water/Human Health:	<u>7.0</u>	Surface Water/Environmental.:	<u>8.9</u>
Air/Human Health:	<u>44.4</u>	Air/Environmental:	<u>NS</u>
Groundwater/Human Health:	<u>41.5</u>		

OVERALL RANK: 3

WORKSHEET 2
Route Documentation

1. **SURFACE WATER ROUTE**

- a. List those substances to be considered for scoring: Source: 1
Tetrachloroethylene (PCE), Trichloroethylene (TCE), and cis-1,2-Dichloroethylene

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

Analytical results from soil and water sampling indicate the presence of these hazardous substances at levels which exceed our current Method A cleanup levels.

- b. List those management units to be considered for scoring: Source 1

Surface and subsurface soils

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

Spills/discharges caused soil contamination

2. **AIR ROUTE**

- a. List those substances to be considered for scoring: Source: 1

PCE, TCE and cis-1,2-Dichloroethylene

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

Analytical results from soil and water sampling indicate the presence of these hazardous substances at levels which exceed our current Method A cleanup levels.

- c. List those management units to be considered for scoring: Source: 1

Surface and subsurface soils

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

Spills/discharges caused soil contamination

3. **GROUNDWATER ROUTE**

- a. List those substances to be considered for scoring: Source: 1

PCE, TCE and cis-1,2-Dichloroethylene

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

Analytical results from soil and water sampling indicate the presence of these hazardous substances at levels which exceed our current Method A cleanup levels.

List those management units to be considered for scoring: Source: 1

Surface and subsurface soils

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

Spills/discharges caused soil contamination

WORKSHEET 4
Surface Water Route

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity										
Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value	
							WOE	PF*		
1 Tetrachloroethylene (PCE)	5	8	800 (rat)	5	0.01	3	B2	0.051	4	
2 Trichloroethylene (TCE)	5	8	2402 (mus)	3	-	ND	B2	0.011	4	
3 Cis-1,2-Dichloroethylene	70	6	-	ND	0.01	3	-	-	ND	

**Potency Factor*

Source: 1, 2

Highest Value: 8

(Max = 10)

Plus 2 Bonus Points? Yes

Final Toxicity Value: 10

(Max = 12)

1.2 Environmental Toxicity				
Substance	Acute Water Quality Criteria		Non-Human Mammalian Acute Toxicity	
	(µg/L)	Value	(mg/kg)	Value
1 Tetrachloroethylene (PCE)	5280	2		
2 Trichloroethylene (TCE)	45000	2		
Cis-1,2-Dichloroethylene	11600	2		

Source: 1, 2

Highest Value: 2

(Max = 10)

1.3 Substance Quantity	
<p>Explain Basis: Unknown. Sampling has not determined the extent of contamination, nor has located the highest contaminated soils. Use Default.</p>	<p>Source: <u>1, 3</u> Value: <u>1</u> (Max = 10)</p>

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment: Management unit scored as a spills/discharges/contaminated soil, with ineffectively maintained run-on/runoff controls (mostly covered). Explain basis: While most of the site is capped (parking lots, buildings, etc), it is believed the foundation footing drains discharge to storm water.	1, 3	<u>4</u> (Max = 10)
2.2	Surface Soil Permeability: site consists of gravelly sand and sand	3, 10	<u>1</u> (Max = 7)
2.3	Total Annual Precipitation: average annual precipitation for Bothell, WA = 40 in	3, 9	<u>3</u> (Max = 5)
2.4	Max 2yr/24hr Precipitation: 1.5 in	3	<u>2</u> (Max = 2)
2.5	Flood Plain: Not in a flood plain	3	<u>0</u> (Max = 2)
2.6	Terrain Slope: Piped	3, 10	<u>3</u> (Max = 5)

3.0 TARGETS

		Source	Value
3.1	Distance to Surface Water: 1025 feet	3, 6	<u>7</u> (Max = 10)
3.2	Population Served within 2 miles (see WARM Scoring Manual Regarding Direction): $\sqrt{0} = 0$	3, 7	<u>0</u> (Max = 75)
3.3	Area Irrigated by surface water within 2 miles : $(0.75) * \sqrt{\# \text{ acres}} = .75 * \sqrt{0} = 0$	3, 6	<u>0</u> (Max = 30)
3.4	Distance to Nearest Fishery Resource: 1455 feet, Sammamish River	3, 6	<u>9</u> (Max = 12)
3.5	Distance to, and Name(s) of, Nearest Sensitive Environment(s): 1025 ft, Bothell Landing City Park	3, 6	<u>9</u> (Max = 12)

4.0 RELEASE

Explain Basis: Not documented	Source: 3 Value: <u>0</u> (Max = 5)
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WORKSHEET 5

Air Route

1.0 SUBSTANCE CHARACTERISTICS

1.1. Introduction

1.2 Human Toxicity										
	Substance	Air Standard ($\mu\text{g}/\text{m}^3$)	Value	Acute Toxicity (mg/m^3)	Value	Chronic Toxicity ($\text{mg}/\text{kg}/\text{day}$)	Value	Carcinogenicity		Value
								WOE	PF*	
1	Tetrachloroethylene (PCE)	1.1	9	-	ND	-	ND	B2	-	ND
2	Trichloroethylene (TCE)	0.0091	10	-	ND	-	ND	B2	0.017	4
3	Cis-1,2-Dichloroethylene	2630.7	1	6500	3	-	ND	-	-	ND

* Potency Factor

Source: 1, 2, 3

Highest Value: 10

(Max = 10)

Plus 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		1.3.2 Particulate Mobility		
	Vapor Pressure(s) (mmHg)	Soil Type	Erodibility	Climatic Factor
1	18, Value = 4	Gravel, Sand	22	10 - 30
2	58, Value = 4			
3	210, Value = 4			

Source: 3

Value: 4

(Max = 4)

Source: 3, 10

Value: 0

(Max = 4)

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

Final Matrix Value: 24

(Max = 24)

1.5 Environmental Toxicity/Mobility						
Substance	Non-human Mammalian Inhalation Toxicity (mg/m ³)	Acute Value	Mobility (mmHg)	Value	Matrix Value	
1	Tetrachloroethylene (PCE)	No Data	-	18	4	-
2	Trichloroethylene (TCE)	No Data	-	58	4	-
	Cis-1,2-Dichloroethylene	No Data	-	210	4	-

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

1.6 Substance Quantity	
Explain Basis: Unknown. Sampling has not determined the extent of contamination, nor has located the highest contaminated soils. Use Default.	Source: 3, 8 Value: 1 (Max = 10)

2.0 MIGRATION POTENTIAL

	Source	Value
2.1 Containment: Uncontaminated soil cover <2 feet thick	7	<u>5</u> (Max = 10)

3.0 TARGETS

	Source	Value
3.1 Nearest Population: 75' to nearest house	3, 7	<u>10</u> (Max = 10)
3.2 Distance to [and name(s) of] nearest sensitive environment(s) [fisheries excluded]: Bothell Landing City Park ~450'		<u>10</u> (Max = 7)
3.3 Population within 0.5 miles: $\sqrt{\text{pop.}} = \sim 1657 \text{ Units} * 3 \text{ residents} = 4971$ $\sqrt{4971} = 70.51$	3, 6	<u>71</u> (Max = 75)

4.0 RELEASE

Explain Basis for scoring a release to air: Not documented	Source: 3, 8 Value: 0 (Max = 5)
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WORKSHEET 6
Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.2 Human Toxicity										
Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value	
							WOE	PF*		
1 Tetrachloroethylene (PCE)	5	8	800 (rat)	5	0.01	3	B2	0.051	4	
2 Trichloroethylene (TCE)	5	8	2402 (mus)	3	-	ND	B2	0.011	4	
3 Cis-1,2-Dichloroethylene	70	6	-	ND	0.01	3	-	-	ND	

* Potency Factor

Source: 1, 2

Highest Value: 8

(Max = 10)

Plus 2 Bonus Points? 2

Final Toxicity Value: 10

(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)	
Cations/Anions [Coefficient of Aqueous Migration (K)]	OR Solubility (mg/L)
1=	1= 150, Value = 2
2=	2= 1100, Value = 3
3=	3= 3500, Value = 3

Source: 3

Value: 3

(Max = 3)

1.3 Substance Quantity:	
Explain basis: Unknown. Sampling has not determined the extent of contamination, nor has located the highest contaminated soils. Use Default.	Source: <u>1, 3</u> Value: <u>1</u> (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): While most of the site is capped (parking lots, buildings, etc), groundwater contamination has been documented.	3	<u>10</u> (Max = 10)
2.2	Net precipitation: Bothell 2N: 27.3" – 5.4" = 21.9"	2	<u>3</u> (Max = 5)
2.3	Subsurface hydraulic conductivity: the site consists of gravel, and sand	3	<u>4</u> (Max = 4)
2.4	Vertical depth to groundwater: Measured at 9' below ground surface	3, 5	<u>8</u> (Max = 8)

3.0 TARGETS

		Source	Value
3.1	Groundwater usage: Public supply, but alternate sources available with minimum hookup requirements	3	<u>4</u> (Max = 10)
3.2	Distance to nearest drinking water well: ~5800 feet	3, 5	<u>1</u> (Max = 5)
3.3	Population served within 2 miles: $\sqrt{\text{pop.}} = \sqrt{39} = 6.24$	3, 7	<u>7</u> (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: $(0.75) * \sqrt{\# \text{ acres}} = 0.75 * \sqrt{0} = 0$	3, 6	<u>0</u> (Max = 50)

4.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: Confirmed by analysis	1, 3	<u>5</u> (Max = 5)

SOURCES USED IN SCORING

1. Chlorinated VOC Nature and Extent Investigation Letter Report, Case Property, 18300-18304 Bothell, WA, EPI project number 46101.0, November 30, 2004, by Environmental Partners, Issaquah, WA
2. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
3. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
4. Washington Climate – Net Rainfall Table
5. Washington State Department of Ecology, Water Well Reports
6. Public Health Seattle & King County, Environmental Health Envision Group B Water System Data
7. Washington State Department of Health, Office of Drinking Water website for public water supplies, <http://www4.doh.wa.gov/SentryInternet/Disclaimer.aspx?Page=/SentryInternet/FindWaterSystem.aspx>
8. Ultra Custom Care Cleaners file, WSDOE records at the Northwest Regional Office

9. Western Regional Climate Center's Historical Climate Information
10. National Resources Conservation Service Soil Survey Data of King County, WA, King County GIS