

# SITE HAZARD ASSESSMENT

## Worksheet 1

### Summary Score Sheet

#### SITE INFORMATION:

Cascade Autovon Co.

12727 412th Avenue SE

North Bend, King County, WA 98045

Cleanup Site ID: 8879

Facility/Site ID: 36296841

Section: 9

Latitude: 47.48527

Township: 23N

Longitude: -121.79173

Range: 8E

Tax/Parcel ID: 0923089060

*Site Scored/ranked for the August 2013 Hazardous Sites List Publication*

#### SITE DESCRIPTION:

The Cascade Autovon Co. site is a former communications facility located in North Bend, King County, Washington. The 1.7-acre property is located approximately 1250 feet from Snoqualmie River (South Fork), and zoned for urban residential (UR) use.

Adjacent properties include a mix of light industrial and residential properties. Immediately north is a vacant lot that appears to be an open field. To the northwest is a church property. To the south is a private switching building operated by AT&T (according to the King County Assessors website). Residences are situated the east across 412th Avenue SE.

The site is currently operated as a switching center for telecommunications operations for the US Department of Defense and owned by Rash & Associates #47.

The Cascade Autovon site is situated just east of Interstate-90 between SW Mt. Si Boulevard and SE 130th Street, in North Bend. This includes a 10,000 square foot building located in the center of the property. The southern half of the site is paved with asphalt, while the northern portion appears to be a grassy field. Two underground storage tanks (USTs) were located in the northwest corner of the parcel, just north of the asphalt pavement, and east of the security fence.

#### SITE BACKGROUND:

A summary of prior operations/tenants at the subject property is presented below.

<u>From</u>	<u>To</u>	<u>Operator/Tenant</u>	<u>Activity</u>
	2013	Cascade Autovon	switching center for the US Department of Defense (telecommunications station)

#### SITE CONTAMINATION:

In 1991 the Cascade Autovon Co. site was reported to Washington Department of Ecology and placed on the LUST list with ID number 1040.

In June 1991, B&C Equipment removed the two 10,000-gallon diesel USTs from Cascade Autovon and collected four soil samples from the excavation, two samples from beneath each tank at a depth of 11 feet, and two samples from the north and south sidewalls at a depth of 9 feet. Total petroleum hydrocarbons (TPH) were detected in the soil samples, and qualitative laboratory analysis indicated the presence of aged gasoline and diesel range hydrocarbons at concentrations as high as 12,000 ppm from the soil sample from beneath the north tank. Approximately 150 cubic yards of soil were removed during this excavation and stockpiled onsite.

B&C performed a subsequent excavation in October 1991, to remove the remaining soil contamination from the bottom of the excavation. Groundwater was encountered at approximately 10.5 feet below ground surface. B&C

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pumped approximately 10,000 gallons of recharging water into a Baker tank onsite, which was later treated and disposed onsite (see additional discussion below). Approximately 200 cubic yards of soil was removed from the excavation and stockpiled onsite (totaling 350 cubic yards stockpiled). Five soil samples were collected at 10.5 feet below ground surface from the excavation sidewalls. The northeast and southwest sidewall samples contained diesel range hydrocarbon concentrations at 2,900 ppm and 2,000 ppm, respectively, above the MTCA Method A cleanup level. The northeast sidewall sample contained gasoline range hydrocarbons at a concentration of 100 ppm. Two additional soil samples were collected from the bottom center of the north and south portions of the excavation at 13.5 feet and 12 below ground surface, respectively. Laboratory results indicated concentrations of diesel range hydrocarbons in soil at the bottom of the excavation were below laboratory detection limits. A groundwater sample from the recharged water was collected from the excavation pit. The groundwater sample contained diesel range hydrocarbons at a concentration of 8.5 ppm, above the MTCA Method A cleanup level. All soil and groundwater samples were analyzed for gasoline and diesel range TPH, as well as BTEX, and concentrations were below MTCA Method A soil cleanup levels, unless otherwise noted.

Due to a transformer on the west side of Cascade Autovon's property (east side of the excavation), further excavation to the east was limited. Also, excavation was limited along the east sidewall due to the foundation of the fenced security area. Petroleum contaminated soil remains at concentrations as high as 2,900 ppm (diesel range) in the northeast area of the excavation.

As previously mentioned, 10,000 gallons of recharge groundwater was collected in a Baker Tank onsite. In January 1992, B&C began pumping additional water from the tank excavation into the 20,000-gallon Baker Tank, in order to allow the excavation to be backfilled and UST installation to proceed. Pumping continued into the Baker Tank, while water treated using a carbon absorption treatment system was released into a nearby drainage ditch in a northward direction toward a nearby field. During this process, hydrocarbon breakthrough was continuously monitored. One water sample was collected and analyzed for TPH (non-differentiated) and BTEX, and results indicated no detectable concentrations. When hydrocarbon breakthrough was detected, release of water to the ditch (and nearby field) was ceased, and filtration media in the carbon treatment system was replaced. In the interim, B&C proceeded to pump accumulated water (using an alternate filtration system) from the excavation to a depression at the north end of Cascade's property so that UST installation could proceed. The discharge water was continuously monitored for visual evidence of contamination (i.e. sheen). No sheen was observed during these pumping activities. Because groundwater infiltrated the excavation at a rate faster than pumping, the new UST was installed in approximately 1.5 feet of standing water. Sediment remaining in the Baker Tank after the water was treated was deposited with the contaminated soil in the stockpile onsite.

In May, June, and September 1992, bioremediation in the soil stockpile, enhanced by the addition of bio-nutrients, EnviroMech Gold, and soil conditioners. Soil samples were collected during each of the aforementioned months. Each round of soil samples contained concentrations of total extractable hydrocarbons (assumed diesel range hydrocarbons based on previous soil sample results) at concentrations as high as 310 ppm, below the MTCA Method A soil cleanup level for diesel.

In February 1992, B&C installed three monitoring wells at the site (see attached Figure). Each well was installed to 25 feet below ground surface, with 20 feet of 4-inch screened PVC pipe. Groundwater samples were collected from all three monitoring wells, and analyzed for TPH (non-differentiated), and BTEX. Laboratory results indicated concentrations were below laboratory detection limits.

Groundwater samples were collected from three monitoring wells (MW-1 through MW-3) in March, June, and September 1992, and in February 1994. Samples were analyzed for fuel hydrocarbons, gasoline-range hydrocarbons and BTEX, and concentrations were reported to be below laboratory reporting limits.

Groundwater samples were collected from three monitoring wells (MW-1 through MW-3) in March 1995. Depth to groundwater ranged from 6.83 to 17.41 feet below ground surface. Samples were analyzed for fuel hydrocarbons, gasoline-range hydrocarbons and BTEX. Toluene was detected in MW-2 at a concentration of 0.0014 mg/L, below the MTCA Method A cleanup level.

#### **PAST REMEDIATION ACTIVITIES:**

No additional remediation activities at the Cascade Autovon Co. site have been reported to Ecology since 1992.

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#### CURRENT SITE CONDITIONS:

Petroleum contaminated soil remains at concentrations as high as 2,900 ppm (diesel range) in the northeast area of the former UST excavation.

During UST installation in January 1992, recharge groundwater was filtered, and in some cases treated, before being discharged to the northern portion of the Cascade property. No visible hydrocarbon contamination was observed during continuous monitoring of the pumping activities.

Three groundwater monitoring wells were subsequently installed at the site. Several rounds of groundwater samples have been collected and analyzed, indicating no detectable concentrations of petroleum hydrocarbons or concentrations below MTCA Method A cleanup levels for groundwater at the site.

The approximate depth to groundwater is 6 to 8 feet below ground surface, with groundwater flowing to the east (assumed). Subsurface soils are silty sand, and sandy fill material.

#### SPECIAL CONSIDERATIONS:

Checked boxes indicate routes applicable for WARM scoring

**Surface Water**

Not applicable, release occurred in the subsurface.

**Air**

The nature of contamination does not suggest vapor transport is applicable.

**Groundwater**

Petroleum release in subsurface soil.

#### ROUTE SCORES:

Surface Water/ Human Health:

Surface Water/ Environment:

Air/ Human Health:

Air/ Environment:

Groundwater/ Human Health: 31.9

**Overall Rank: 3**

#### REFERENCES:

Roy Jensen and Associates, 1994, Ground Water Sampling and Analysis Results, Cascade Autovon, Co., North Bend, Washington. 14 March.

WARM Toxicological Database

WARM Scoring Manual

Washington Department of Transportation 24-hour Isopluvial Maps, January 2006 update.  
<http://www.wsdot.wa.gov/publications/fulltext/Hydraulics/Wa24hrIspluvials.pdf>

King County GIS Center iMAP application, Property Information, Groundwater Program, and Sensitive Areas mapsets. Accessed January 2013.  
<http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx>

National Climatic Data Center 2011 Local Climatological Data for Seattle, Seattle Tacoma Airport.  
<http://www1.ncdc.noaa.gov/pub/orders/IPS-90B1F39F-6CFA-4A6B-AA82-5ED1FF897CCC.pdf>

Washington State Department of Health Source Water Assessment Maps. March 2011 update.  
<https://fortress.wa.gov/doh/eh/dw/swap/maps/>

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Ecology Water Resources Explorer, accessed January 2013.

<https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx>

FEMA Map Service Center, accessed January 2013.

<https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1>

Missouri Census Data Center, Circular Area Profiles - 2010 census data around a point location.

[Http://mcdc.missouri.edu/websas/caps10c.html](http://mcdc.missouri.edu/websas/caps10c.html). Accessed February 2013

B&C Equipment Co., 1992, Cascade Autovon Co., 12727 412th Avenue SE, North Bend, WA, Surface Water Discharge. 6 January.

Roy Jensen and Associates, 1995, Ground Water Sampling and Analysis Results, Cascade Autovon, Co., North Bend, Washington. 24 April.

B&C Equipment Co., 1991, Cascade Autovon Company, 12727 412th Avenue SE, North Bend, Washington, 98045, Environmental Site Assessment. 12 September.

B&C Equipment Co., 1993, Cascade Autovon Co., 12727 412th Avenue SE, North Bend, WA, Monitoring Well 4th Quarterly Sampling Event. 25 January.

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**SITE HAZARD ASSESSMENT**  
**Worksheet 2**  
**Route Documentation**

Cleanup Site ID: 8879

Cascade Autovon Co.

Facility/Site ID: 36296841

**1. SURFACE WATER ROUTE**

**List those substances to be considered for scoring:**

Not applicable

**Explain the basis for choice of substances to be used in scoring:**

**List those management units to be considered for scoring:**

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

**2. AIR ROUTE**

**List those substances to be considered for scoring:**

Not applicable

**Explain the basis for choice of substances to be used in scoring:**

**List those management units to be considered for scoring:**

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

**3. GROUNDWATER ROUTE**

**List those substances to be considered for scoring:**

Diesel

**Explain the basis for choice of substances to be used in scoring:**

Residual contamination of site soils at concentrations exceeding MTCA Method A cleanup level

**List those management units to be considered for scoring:**

Groundwater

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

Potential release to groundwater

**Worksheet 6**  
**Groundwater Route**

CSID: 8879

Site Name: Cascade Autovon, Co.

**1.0 Substance Characteristics**

**1.1 Human Toxicity**

Substance	Drinking Water Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
Diesel	6	5	3	X

Highest Value   
 Bonus Points?   
 Toxicity Value

**1.2 Mobility**

Cations/Anions Max Value:   
 Solubility Max Value:  Mobility Value

**1.3 Substance Quantity**

Amount: Approx. 200 cubic yards  
 Basis: Estimated volume of impacted soil remaining in-place  
 Substance Quantity Value

**2.0 Migration Potential**

**2.1 Containment** Containment Value   
 Explain Basis: Contaminated subsurface soil

**2.2 Net Precipitation** 10-20 inches Net Precipitation Value

**2.3 Subsurface Hydraulic Conductivity** Conductivity Value   
 Silty sand

**2.4 Vertical Depth to Groundwater** Depth to Aquifer Value   
 0 - 25 feet below ground surface

**3.0 Targets**

**3.1 Groundwater Usage** Aquifer Use Value   
 Municipal, domestic, commercial / industrial, and irrigation

**3.2 Distance to Nearest Drinking Water Well** Well Distance Value   
 1,250 feet (southeast)

**3.3 Population Served within 2 Miles** Population Served Value   
 5,054 people

**Worksheet 6**  
**Groundwater Route**

**CSID:** 8879

**Site Name:** Cascade Autovon, Co.

**3.4 Area Irrigated by GW Wells within 2 miles**

Area Irrigated Value

170 acres

**4.0 Release**

Release to Groundwater Value

Explain basis for scoring a release to groundwater:

No confirmed release

<b>Pathway Scoring - Groundwater Route, Human Health Pathway</b>	
$GW_H = (SUB_{GH} * 40 / 208) * [(MIG_G * 25 / 17) + REL_G + (TAR_{GH} * 30 / 165)] / 24$	
Where:	
$SUB_{GH} = (\text{Human toxicity} + \text{mobility} + 3) * (\text{Containment} + 1) + \text{Substance Qty}$	SUB <sub>GH</sub> 113
$MIG_G = \text{Depth to Aquifer} + \text{Net Precip} + \text{Hydraulic Conductivity}$	MIG <sub>G</sub> 13
$REL_G = \text{Release to Groundwater}$	REL <sub>G</sub> 0
$TAR_{GH} = \text{Aquifer Use} + \text{Well Distance} + \text{Population Served} + \text{Area Irrigated}$	TAR <sub>GH</sub> 88.87029396
	<b>GW<sub>H</sub> 31.9</b>



**Legend:**

- Property location (approximate)
- Excavation area (approximate)
- Former UST area (approximate)
- Remaining soil contamination (approximate)
- + Monitoring well (approximate)

**Notes:**

1. All locations are approximate, and not to scale.



**Cascade Autovon**  
**12727 412<sup>th</sup> Avenue SE**  
**North Bend, WA 98045**

**Site Overview Map**

**CSID 8879**  
 CSID8879.vsd



## Washington Ranking Method Route Scores Summary and Ranking Calculation Sheet

**Site Name:** Cascade Autovon Co.

**CSID:** 8879

**Site Address:** 12727 412th Avenue SE, North Bend, WA

**FSID:** 36296841

### HUMAN HEALTH ROUTE SCORES

Enter Human Health Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	ns	0
Groundwater	31.9	3

H=	3
M=	0
L=	0

$$\begin{array}{c} H^2 \\ 9 \end{array} + \begin{array}{c} 2M \\ 0 \end{array} + \begin{array}{c} L \\ 0 \end{array} = \frac{\quad}{8}$$

**Human Health  
Priority Bin Score:**

**2**

rounded up to  
next whole  
number

### ENVIRONMENT ROUTE SCORES

Enter Environment Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	ns	0

H=	0
L=	0

$$\begin{array}{c} H^2 \\ 0 \end{array} + \begin{array}{c} 2L \\ 0 \end{array} = \frac{\quad}{7}$$

**Environment  
Priority Bin Score:**

**N/A**

rounded up to  
next whole  
number

**Comments/Notes:**

**FINAL  
MATRIX  
RANKING**

**3**

### FOR REFERENCE:

**Final WARM Bin Ranking Matrix**

Human Health Priority	Environment Priority					
	5	4	3	2	1	N/A
5	1	1	1	1	1	1
4	1	2	2	2	3	2
3	1	2	3	4	4	3
2	2	3	4	4	5	3
1	2	3	4	5	5	5
N/A	3	4	5	5	5	N/A

**Quintile Values for Route Scores - February 2013 Values**

Quintile	Human Health			Environment	
	Surface Water	Air	Ground Water	Surface Water	Air
5	>= 27.0	>= 32.0	>= 50.1	>= 47.0	>= 32.0
4	>= 18.5	>= 21.1	>= 40.4	>= 30.3	>= 26.1
3	>= 12.4	>= 13.1	>= 31.6	>= 21.4	>= 21.1
2	>= 7.5	>= 7.1	>= 22.4	>= 11.0	>= 14.6
1	< 7.5	< 7.1	< 22.4	< 11.0	< 14.6

Quintile value associated with each route score entered above