CSID 2885

Tacoma-Pierce County Health Department
Source Protection Programs/Site Hazard Assessment

Worksheet 1 - Summary Score Sheet

SITE INFORMATION

Name: **Art's Auto Doctors**
Address: **3512 South 84th St**
City: **Tacoma** County: **Pierce** State: **WA** Zip: **98409**
Section/Township/Range: **3-20N-31E**
Latitude: **47° 10' 51.0"N** Longitude: **122° 28' 57"W**
Facility Site ID: **62353322**

Site assessed/ranked for the February 23, 2005 update

Site Description:
Art's Auto Doctors, currently known as Reid's Automotive, is located in Tacoma, Washington on Parcel 0320312108. The parcel spans approximately 25,700 square feet or 0.59 acres. The site is located on the southeast side of Interstate 5 just east of South Tacoma Way. The site consists primarily of "Spanaway gravelly sandy loam, deep, nearly level" soils, described as dark colored gravelly sandy loam underlain by brown gravelly sandy loam which is underlain by grayish yellow poorly sorted cobbles.

Topography of the site is flat, with a slight slope towards the west. Pavement extends over 90 % of the property. No storm water collection system or oil water separator was noted on the site.

Six Group A drinking water wells, ranging in depth from 80 to 937 feet below ground surface (bgs), are located within two miles of the Art's Auto Doctor site and serve a population of approximately 379,596. Four Group B drinking water wells and eleven private wells are also located within a two-mile radius of the site; of these wells, recorded depths ranged from 53 to 168 feet bgs.

Groundwater was not encountered on the site during subsurface investigations performed both by Hart Crowser and by Associated Environmental Group (AEG), LLC. Hart Crowser performed a total of nine soil probes on the site; each probe was advanced to approximately ten feet below ground surface (bgs). AEG excavated two areas on the site, one to a maximum depth of 16 feet bgs. Ground water in the area generally ranges between 12 feet and 32 feet bgs as indicated from resource protection groundwater monitoring wells located within ¼ mile of the subject property.

Site History

The site has been used primarily as an automobile repair facility since development in 1975. The subject property is currently commercially zoned in an air corridor zoning area. An air corridor zoning area allows for current mixed use of residential, commercial and industrial property with re-zoning ability only to industrial.

Hart Crowser Inc. of Seattle, WA conducted a Phase 1 Environmental Site Assessment (ESA) of the site in June of 2002. In response to the results of the Phase 1, a Phase 2 ESA was performed in the first half of 2003 by AEG.

The Phase 1 ESA included three borings inside the building and six borings outside of the building. The results of the soil borings indicated that concentrations of petroleum hydrocarbons were found above their respective Model Toxics Control Act (MTCA) Method A Cleanup levels in one boring located to the north of the building. No groundwater was encountered during this ESA.

According to the Ecology Underground Storage Tank (UST) database, an oil–water separator UST was on site. Further investigation by Hart Crowser determined that the original UST was converted to what they describe as a "water drainage system" in approximately 1991. In an attempt to locate the UST system, Hart Crowser subcontracted with GeoRecon to perform a Ground Penetrating Radar (GPR) scan of the area. GeoRecon results did not identify the presence of an UST on the property.

The Phase 2 ESA performed by AEG involved two separate excavations on two separate dates. On February 6, 2003, AEG excavated soil from around the boring location identified to the north of the building where elevated concentrations of petroleum-contaminated soil (PCS) were detected. The excavation was dug to a total depth of ten feet bgs. Oil saturated soil was discovered at approximately five feet bgs just east of the boring location. Further excavation to the east identified a four-inch perforated PVC pipe containing free product (waste oil). This pipe appeared to be coming from the building to the north of the excavation. Upon further excavation, contamination was found approximately three feet east and west of the pipe but continued vertically beyond the ten-foot depth of the excavation. The excavation at this point was terminated; the pit was lined with visqueen and backfilled to grade.

On June 5, 2003, AEG returned to the site to further delineate the extent of the contamination. During the delineation, they discovered a 500-gallon UST located approximately eight feet off the building's north side at a top height of four feet bgs. The UST was filled with oily water and had various pipes coming off it containing waste oil. The four-inch perforated PVC pipe that was discovered on February 6th 2003 was found to continue north to within 20 feet of the north property line (South 84th Street) at a depth of six-feet bgs. Soils encountered during this excavation indicated free product saturation was prevalent in the surrounding three to four feet of the pipe horizontally and extended to depths of over nine feet vertically. Onsite screening of the soil revealed levels of VOCs in excess of 2000 ppm around the pipe.

Soil samples were taken from both the north excavation pit and the southern UST pit. Samples were taken from the north, west and east sidewalls as well as the bottom of the northern excavation. From the southern excavation, a sample was taken from the south side of the excavation next to the UST. Results of the sampling indicated heavy oil and gasoline concentrations above the current MTCA Method A cleanup levels in the sample collected adjacent to the UST in the southern excavation. Levels of hydrocarbons were below MTCA method A levels in the north excavation's west wall. Upon completion of

the excavation work, both excavations were backfilled to grade with the contaminated native soil. The tank was not removed and no types of resource protection controls were employed to protect the surrounding soils during the assessment activities.

Current Site Conditions

The site is currently an active automotive repair facility. It is owned and operated by Mr. Daniel Reid. Mr. Reid also maintains and sells a small volume of cars from the property. The majority of the site is paved and covered by buildings, with the exception of the ESA excavation locations.

Special Considerations

The subject site is located above a federally designated sole source aquifer. Water Rights Tracking System info indicates 237.5 acres are irrigated by water drawn from within a 2-mile radius of this site. It is unknown if food crops are irrigated with this water so zero will be used in scoring this category. The total population usage of groundwater for drinking water from all private and public supply wells is documented to be in excess of 10,000, so the maximum value of 100 will be used for that scoring value. The sites known areas of contamination are available to infiltration due to the lack of institutional controls; because of this, a full score of 10 will be used for containment.

When determining depth to groundwater for the site, a review of underground storage tank files within the general area was performed. During this review, several sites were closely reviewed for depth of groundwater. A site two blocks north of Arts Auto Doctor identified depth to groundwater at approximately 32 feet bgs. Due to the relative flatness in the topography and consistency with data on surrounding properties in the area, this depth was used for calculation purposes.

Due to the significant contamination documented on-site being primarily subsurface, the surface water and air routes are not applicable for WARM scoring for this site, thus only the ground water route will be scored.

ROUTE SCORES:

Surface Water/Human Health: **NS**

Surface Water/Environ. **NS**

Air/Human Health: **NS**

Air/ Environmental: **NS**

Ground Water/Human Health: 65.9

OVERALL RANK: 2

Worksheet 2--Route Documentation

1. SURFACE WATER ROUTE

Not applicable/not scored.

2. AIR ROUTE

Not applicable/not scored.

3. GROUND WATER ROUTE

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

Benzene, Toluene, Xylene, Gasoline and Heavy oil

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

Benzene, Toluene, Xylene, and heavy oil will be scored for the groundwater route due to levels detected in soil and their persistence over time; also, all substances were available to the groundwater route through less than perfect containment.

c. List those management units to be considered for scoring: Source: **1,2**

Spills, discharges, contaminated soil with no run-on, run-off control.

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

Contaminated soil verified by sampling and analysis.

Worksheet 6 – Ground Water Route

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

	Substance	Drinking Water Standard (ug/1)	Val	Acute Toxicity (mg/kg-bw)	Val	Chronic Toxicity (mg/kg/day)	Val	Carcino-genicity WOE PF*	Val
1	Benzene	5	8	3,306 (rat)	3	--	--	0.029	5
2	Toluene	2000	2	5,000 (rat)	3	0.2	1	--	--
3	Xylene	10,000	2	50 (human)	10	2	1	--	--
4	Heavy oil	--	--	--	--	2.0	1	--	--
5									
6									

***Potency Factor**

Source: 2,3
Highest Value: 10
(Max = 10)
Plus 2 Bonus Points? 2
Final Toxicity Value: 12
(Max = 12)

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

Cations/Anions:	OR	Solubility (mg/1):
1=		1= Benzene = 1.8E+03 = 3
2=		2 = Toluene = 5.4E+02 = 2
3=		3 = Xylene = 2.0E+02 = 2
4=		4 = Heavy oil = 0
5=		5 =
Source: _____ Value: _____ (Max = 3)		Source: 2,3 Value: 3 (Max = 3)

1.3 Substance Quantity: Unknown

Explain basis: Use default of 1	Source: 1, 2	**Value: 1** (Max = 10)

Worksheet 6 (cont'd)

2.0 MIGRATION POTENTIAL

2.1	**Containment** **Explain Basis**: Spills, discharges, contaminated soil with no run-on, run-off control.	Source: 1,2 **Value: 10** (Max = 10)
2.2	**Net Precipitation:** 19.1 inches (Tacoma: Nov – April = 25.5"-6.4" = 19.1")	Source: 2,9 **Value: 2** (Max = 5)
2.3	**Subsurface hydraulic conductivity:** Sand and gravel	Source: 1,2 **Value: 4** (Max = 4)
2.4	**Vertical depth to ground water:** Groundwater at 32 feet bgs minus known contamination at 10 feet bgs = 22 feet.	Source: 7 **Value: 8** (Max = 8)

3.0 TARGETS

3.1	**Ground Water Usage:** Federally designated sole source aquifer	Source: 2,11 **Value: 10** (Max = 10)
3.2	**Distance to nearest drinking water well:** The closest drinking water well is approximately 790 from to the southwest of the site.	Source: 2,7,11 **Value: 4** (Max = 5)
3.3	**Population served within 2 miles: √ pop. =** Total population served by all wells within 2 miles of site is approximately 379,668.	Source: 2,8,11 **Value: 100** (Max = 100)
3.4	**Area Irrigated by (groundwater) wells within 2 miles:** **(0.75) √ No. acres =**	Source: 2,6 **Value: 0** (Max = 50)

4.0 RELEASE **Explain basis for scoring a release to ground water:** No groundwater data.	Source: 1,2 **Value: 0** (Max = 5)

Sources Used in Scoring

Arts Auto Doctors 3512 South 84th Street, Tacoma, WA 98409

1. Tacoma-Pierce County Health Department Site Hazard Assessment File/Ecology TCP File
2. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
3. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
4. U.S. Department of Interior Geological Survey Topographical Map
5. Soil Survey of Pierce County, U.S.D.A. Soil Conservation Service
6. Water Rights Information System (WRIS), Ecology
7. Department of Ecology/Tacoma-Pierce County Health Department Well Logs
8. Washington State Department of Health Public Water Supply System
9. Washington Climate for Pierce County, National Weather Service Forecast Office
10. Department of Fish and Wildlife, Catalog of Washington Streams and Salmon
11. Pierce County Geographic Information System Countyview Database

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