

8/29/00

STID 906 / Ro - 008

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Hari Patel at FUND questions if it would be better to do 2 add'l OMR to see if benzene conc. have decreased since 1998. Otherwise proposal for H₂O₂ injection is \$72K

6/02 still no OMRs since Jan 2001. Email J. Stewart + C. Glick to update OMR ...

Prior to the removal to the old USTs, three new double-walled USTs (1-4K; 1-10K gasoline and 1-550 gallon waste oil tanks) were installed in a location approximately 80 feet west of the old USTs. The two old USTs (1-300-gallon waste oil and 1-500-gallon gasoline tanks) located by the east end of the service/showroom building were removed in October 1986. A total of three soil samples were collected from the two adjacent tank pits. The soil sample from the gasoline tank pit was initially collected at 10' bgs. The pit was overexcavated to a depth of 14' bgs and a confirmation sample was collected. Up to 2,500ppm and 1,441ppm TPHg were detected at 10' and 14' bgs, respectively. A soil sample was collected from the waste oil tank pit at 8' bgs and analyzed for TOG. The sample contained 47ppm TOG. The soil sample was not analyzed for TPHg, TPHd, BTEX, MTBE, HVOCs, SVOCs, or metals.

Five soil borings (SB4, SB5 and MW1 through MW3) were drilled in January 1987. Three of the borings were converted into groundwater monitoring wells. Soil samples collected from 10' bgs contained TPHg and BTEX constituents. Groundwater also contained elevated gasoline constituents.

Quarterly monitoring was initiated for the wells beginning in July 1992. There was an increase in concentrations of gasoline constituents noted in April 1993. Therefore, two hydropunches (HP-1 and HP-2) were advanced upgradient of the former USTs in April 1993 to determine if an off-site source may be contributing to the plume. Grab groundwater samples from these borings did not contain TPHg or BTEX. It appears that the source of the contamination is from onsite.

In October 1993, in order to determine the location and extent of the source of the hydrocarbon contaminated soils and to evaluate the potential for "source removal" seven exploratory borings (EB-1 through EB-7) were advanced at the site. Soil samples were collected from each boring. Groundwater samples were collected from boring EB-3 and EB-5. High benzene concentrations were identified in soil from borings EB-2 (84ppm) and EB-4 (32 to 60ppm) at 10' bgs. Groundwater from boring EB-3 contained 9,600ppb benzene and EB-5 contained 3,900ppb benzene.

In April 1994 wells MW-4 and MW-5 were installed to further delineate the extent of groundwater contamination. And in April 1997 exploratory borings EB8 through EB12 and P1 through P3 were advanced at the site to better evaluate concentration of hydrocarbons in soil in the immediate vicinity of the former tank pit. Groundwater samples were also collected from each boring.

looking at SV samples & compared w/ ~~B~~ Oale RBCA soil gases indoor & using Merritt Sands, it appears volatilization to indoor air or outdoor air is not a problem - A61-3 dg of tank pit - SV not a problem, but should SV be collected from area w/ highest residual benzene in soil. Should SV be collected near EB-4, EB-5

In January 1997 eight subsurface geo-probes were advanced (EB-8 through EB-12 and P-1 through P-3) at the site. Subsurface sediments were comprised mainly of loose to dense, fine- to medium-grained sand interbedded with coarse-grained sand lenses to a depth of 13 feet bgs. Groundwater was encountered at depths ranging from 11 to 13 feet bgs at the time of drilling. Soil samples were collected from geo-probes EB-8 through EB-12 but were not collected from probes P-1 through P-3. Grab water samples were collected from EB-8, EB-10 through EB12, and P1 through P3. All the soil and groundwater samples contained petroleum hydrocarbon constituents.

In November 1997 three soil vapor samples (GP-1 through GP-3) were collected. GP-1 and GP2 were collected from inside the auto repair facility and GP-3 was downgradient of the former tank excavation. Data collected from the soil vapor samples as well as soil and groundwater data collected from the past subsurface investigations were incorporated into a Tier II ASTM RBCA assessment for the site.

From the risk assessment, the concentrations of benzene in soil and groundwater exceeded the Tier II SSTLs for gas migration to indoor air. Soil and groundwater data used in the evaluation are from outside the building, that is, is beneath the paved parking lot, *not beneath the building*

assuming 10^{-4} risk

Groundwater has been sampled since January 1987. Benzene concentrations were as high as 11,000ppb in November 1998 in well MW-2 (increasing trend). I recommend that the site continues with semi-annual sampling until a decreasing trend, especially in well MW-2 is observed/confirmed.

DTW ranges from 8 to 11' bgs
 Impacted Soil at 8.5 to 12.5 feet
 Calculated RBCAs for benzene (Geoglysis' RBCA) w/ 10^{-4} risk
 Soil .71/200 volatilizing from soil to indoor/outdoor air concentrations
 GW 1,200/180,000 (volatilizing from GW to indoor/outdoor air concentrations)
 Reported COCs: *not exceeded*

goodchev-history

- Undefined plume - what is at Winner frnd. - collect soil at ~8-9' + GW.
- (PHG) Review RBCAs - nuisance especially to construction worker for air activities
 who conduct ~~the~~ survey done? or show cross section
- If plume looks stable or decreasing, a risk assessment may be
- do SV measurements at 3' + 6' bgs
- continued AMP for year.