Dec 1994

Comments

1) "Ground water impacts are not likely to extend significantly beyond downgradient monitoring well MW-7 because hydrocarbons in that well are more than an order of magnitude less than the hydrocarbon concentrations found in ground water from source area Well C-1"

This is not a good enough arguement to show that significant migration is not occurring. Per the NAA guidelines for Category I, one condition is that the discharger has demonstrated that no significant pollutant migration will occur. Even for Category II, an acceptable plan must be submitted and implemented for containing and managing water quality risks posed by residual soil and groundwater contamination. "Containing" is to be understood to mean "no significant migration". This has not yet been shown to be the case. Weiss argues that "ground water impacts associated with the hydrocarbon plume at the site are limited since it is not likely that hydrocarbons in ground water extend more than several dozen feet beyond perimeter monitoring wells." However, this fact does not meet the NAA guildine's intentions of the term "limited water quality impact", because the plume has already been shown to migrate off site, into potential residential areas, and it has not yet been shown to have stabilized.

The extent of the plume has not yet been delineated, and "containment points" (i.e., permanent monitoring wells) shall be installed at the boundary of the site. Per the NAA draft guidelines, "established cleanup levels that meet water quality objectives must be achieved at containment monitoring points." If Chevron wishes to use the existing off-site monitoring wells as "containment points", then a risk assessment must be conducted to argue that the levels observed in these wells are suitable cleanup standards.

2) "A discussion of potential risks at this site found that there is less than a 1 x 10-6 lifetime cancer risk to site residents by inhalation of hydrocarbon vapors from the subsurface beneath and in the vicinity of the onsite house"

Could we get a hard copy of this discussion? Based on the elevated levels of soil vapors documented at the site in the past and the sensitivity of the area, it being a residential/commercial area, a formal risk assessment should be conducted for the site. The term "assessment of human health and environmental risks" means a qualitative assessment for most sites. In some cases, the qualitative assesesment will indicate a sufficient concern to warrant a more detailed risk evaluation. The term "qualitative" means the common sense review of pertinent information on existing and probable exposure pathways and receptors." ~~Risk assessment should include addressing that there is a minor risk that fuel odors could develop in a building site over the most contaminated soil~~.

3) "Approximately 100 cubic yards of source area soil and most of the potential hydrocarbon contaminated soil beneath the residence has been removed from the site"

This office has not information on any excavation that took place. Please submit all relevant file information. According to the NAA proposal, the majority of the soil beneath the house was removed for installation of the foundation in early 1989. Please provide this information.

4) "The extraction trench has removed and treated approximately 100,000 gallons of ground water in two and a half years, yet only 54 pounds of hydrocarbons have been recovered. The shallow ground water table reduces the viability of other remedial technologies such as SVE or bioventing. Therefore, no cost-effective technologies exist that would significantly accelerate cleanup of hydrocarbons in ground water or soil at this site."

1/26/95 Next step is to completely delineate g.w plume. Mr. Miller will get in touch w/ County w/ plans for next investigative step w/in next month.

Currently, the ground water extraction system is, at the very least, acting as a containment measure. Ground water extraction systems have never really been considered an adequate remediation measure.
Even with the extraction system operating,, it has not been effective in containing the plume on site, as observed by the elevated levels, and ever increasing and erratic levels observed in the downgradient off-site wells.

Although Chevron and Weiss is making the arguement that there is no other viable remediation alternative, due to the shallow ground water, no formal feasibility study has yet been conducted. The viability of bioremediation has not yet even been assessed. Per the draft NAA guidelines, "In assessing technical feasibility, the Discharger should consider the availability of technologies which have been shown to be effective in reducing the concentrations of constituents of concern to the established cleanup levels. Bench-scale and/or pilot-scale studies may be necessary to make the feasibility assessment"

Possibly tests should be conducted on the plume when the extraction system is not in operation, to study the potential ramifications.

5) "Groundwater in Well MW-7 could potentially be impacted by possible hydrocarbon releases from the former Phillips service station approximately 30 feet east of MW-7."

More rationale is needed behind this statement. Essentially, you are stating that the concentrations observed in Well MW-7, which is located **upgradient** from the former Phillips station could possibly be resulting from the Phillips station. The concentrations observed in Well MW-7 could very likely be resulting from the Chevron site due to the statement that Weiss made earlier that concentrations are attenuating from the site to Well MW-7 by more than an order of magnitude.

6) "Apparently, plume migration through natural attenuation mechanisms, such as sorption, dispersion, volatilization through the unsaturated zone, and/or chemical and biological activity have degraded the hydrocarbon plume, thereby limiting the concentration of hydrocarbons in ground water offsite and the magnitude of offsite plume migration"

Why is it apparent that natural attenuation is occurring and limiting migration off site? Based on the sampling results to date, concentrations in Wells MW-5 and MW-7 are continuing to increase, and concentrations in Well C-1 and MW-6 have been, at the very least, erratic. ~~The~~ No quantitative data has yet been collected to show that any biological activity, or natural degradation through oxidation or sorption is occurring.

The plume has not yet been shown to be stable, even in conjunction with the operation of the extraction system, so why should we believe that the plume will be stable when you discontinue pumping. **A more elaborate fate and transport model will be required**.

7) The sampling frequency proposed is not acceptable. For one, the existing off-site monitoring wells are not eligible yet to be considered for "containment points", so additional monitoring wells will probably have to be installed and included in any sampling plans. At this point in time, quarterly ground water monitoring should continue, and the schedules for any changes in the monitoring frequency should be based on observations of stabilization or natural attenuation of the plume during the quarterly sampling events.

Well C-1 should definitely continue to be sampled on a quarterly basis. The concentrations have been erratic, and quarterly ground water monitoring is especially vital if the extraction system is no longer operating.

8) Per the NAA draft guidelines, "Management measures and mitigation for plume areas that cross property boundaries will require a more detailed evaluation by the Discharger and shall involve notification to all affected property owners and/or operators."

9) Where are the lab results for the first four quarters of water sampling of Wells C-1 through C-3?
- Sample lab analysis results for tank removal samples are missing