HEAL START
Hanford Education Action League

Comments on Expedited Response Action Proposal (EE/CA & EA) for 200 West Area Carbon Tetrachloride Plume

by

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It is assumed that "most" of the carbon tetrachloride contamination will be found directly underneath the disposal sites. While the data presented in the ERA Proposal doesn't refute this, it does show that a significant amount of the contaminant has migrated laterally beyond the boundaries of the disposal sites. A good example of the migration of the contamination is well W15-16, a well that is over 1000 feet away from the closest disposal site of concern, yet has the highest measured carbon tetrachloride concentration.

Because of this migration, treatment in the immediate area of the disposal sites, while appropriate in this ERA, will not close the carbon tetrachloride issue. The rest of the contaminated soils, as well as the ground water, must be treated before this issue is closed.

Caution in the use of injection wells is appropriate. They may prove beneficial tools in the extracting of the contaminant. But they could also worsen the carbon tetrachloride contamination situation. Possible facilitation of other contaminant (primarily radioactive) transport must also be considered.

Better evaluation of the effectiveness of the VES is necessary to determine if injection wells will be necessary. The current data shows that the VES does indeed remove carbon tetrachloride from the contaminated soil. But the efficiency of the system is still in question. Is the system efficient enough to remove the contaminant without injection wells? If so, injection wells should be avoided.

How does the private sector employ injection wells when using a vapor extraction system? The answer to this question may provide insight as to whether the wells will be needed at Hanford.

On page 48 the radius influence from a vertical well in the 216-A-1A Tile Field is approximately 59 feet. I assume this means the radius from which the VES will be able to draw vapor. If so, how was this radius calculated? Won't the radius of influence vary with disposal sites and depth at which the VES is operating?

It is my understanding that there are many more boreholes in the area than are shown on the map. It would be helpful to have a map including these other boreholes along with a list of which of the boreholes could be used for vapor extraction. Unless the "not shown" boreholes prove otherwise, it appears that new boreholes will have to be drilled for Phase II remediation.

Any future vapor extractions should be accomplished with existing boreholes, if possible. New boreholes may serve to provide an avenue for the transport of other contaminants, particularly radionuclides. If it is determined that new boreholes will be necessary, their effect on the soil, ground water, and future cleanup activities must be thoroughly evaluated.

The disposal cost figures given for the carbon canisters are difficult to follow. The carbon tetrachloride trapped in carbon containing canisters is expressed in pounds. The capacity of the truck transporting the

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canisters is expressed in gallons. There is no figure for the amount of carbon trapped in one canister. The effect of the canisters on truck capacity, if there is any, is not mentioned. The transport rate for the canisters is $3.25 per loaded mile in a truck that holds 4,500 gallons of carbon tetrachloride. How many gallons are in a canister? How many canisters can the truck carry? Consistency in the units here is necessary to provide clarity.

The ERA does not outline how the intervals at which the wells will be perforated is decided upon. Page B-46 deals with the downhole sampling of the boreholes to determine carbon tetrachloride presence and quantity. Some of the samples are analyzed in the lab to determine carbon tetrachloride concentrations at specific depths. If this method and data is reliable and accurate it should be used to determine where to perforate. Is this method reliable? How are the samples taken? It would seem difficult to get reliable samples (in terms of depth taken) of gaseous substances in these wells.

When spectral gamma logging was done on borehole 299-W18-171 it was found that radionuclides resided in significant amounts at the 83-84 foot depth. As a result, it was recommended that, during vapor extraction, the well not be perforated in the 83-84 foot area.

This type of spectral gamma logging needs to be done in any borehole chosen for vapor extraction. It is necessary to avoid perforating at a depth where radionuclides are residing. The logging wasn't mentioned in the "Implementation" section, but must be prerequisite to any vapor extraction.

Concerning the logging equipment itself, how often is it calibrated? For how many measurements is the calibration reliable and how does the uncertainty increase with each subsequent measurement? Is there any way to calibrate the equipment at Hanford or plans to obtain that capability? If not, why?

The ERA could have been more specific in outlining implementation plans and operating parameters for the VES. If that type of information is forthcoming it should be available for public comment.

This ERA is a good first step in remediating the carbon tetrachloride problem in 200 West Area. Many more steps will need to be taken, not only to deal with other contaminants, but also to complete the job of cleaning up the carbon tetrachloride. The parties must take into account the effect projects such as this have on future cleanup activities. Lack of foresight, among other factors, is one of the reasons there is such a large cleanup job today.