

## **G. Fred Lee & Associates**

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Via email

Julie Roth, Executive Director  
DSCSOC

### **Chromium Discussions at the Last RPM Meeting**

As I indicated in a recent email, the last RPM meeting devoted considerable time to a discussion of the DOE/Weiss Associates' efforts to establish an updated background chromium concentration in the soils at the LEHR site. From the discussions at the meeting it appears that the analytical laboratory that had been doing the work on the LEHR site has made a significant error in the approach that they used to determine the chromium content of soil samples. The error is an example of the chronic problems that exist in commercial and public laboratories that simply "crank through" the analyses for a fee. I am sure, based on my over 40 years of work in this area, that there are other problems of this type with respect to the LEHR site studies.

The reason that the chromium issue became important to DOE/Weiss is that the previously established background chromium, which was much lower than the one with the "corrected" analytical methods, would predict, through the Weiss unsaturated groundwater transport model, that there would be widespread pollution of groundwater by chromium. While we have not seen the results, from the comments made by Weiss staff, it appears that the new chromium background does not lead to the same conclusion.

While it is important to properly establish the background concentrations of constituents in soil, in this case the issue is not the hazard that the chromium represents in the soil to terrestrial or aquatic life or human contact, but that of a prediction, based on the modeling, of the role of chromium in the soil in causing groundwater pollution. It appears that Weiss is still persisting with its inappropriate approach of modeling, where they are still trying to use the model based on average annual moisture content of the unsaturated zone to predict transport. This is well-known to be unreliable and, as we have discussed and Susan Timm has confirmed, it is not an appropriate approach to follow. The modeling will never be accepted as a reliable tool for predicting the potential for pollutants in the soil or wastes to pollute groundwater. Actual groundwater quality measurements through monitoring will have to be the basis for this evaluation. It is unfortunate that so much time was spent at the last RPM meeting on this issue, since ultimately, it will not be a major factor in determining remediation approaches at the LEHR site.

With respect to chromium, as I have previously pointed out, the subsurface strata in the LEHR region has pockets of elevated chromium from natural sources. This is why certain of the

neighbors' wells contain greatly elevated concentrations of chromium in the well water. Further, this same situation occurs at the LEHR site. I have pointed out repeatedly over the years that the approach that has been used at the LEHR site to investigate whether elevated concentrations of chromium at a particular well are in any way related to waste disposal by UCD, is inappropriate. There is need to conduct comprehensive groundwater monitoring between the waste disposal areas and the wells with the elevated chromium. Thus far, DOE and UCD have been unwilling to follow this approach, which is the normal approach used in situations of this type.

If you have questions on this matter, please contact me. If you wish, please pass this on to the RPMs.

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