

**chamberlain, kathryn, NMENV**

**From:** krich@lanl.gov  
**Sent:** Friday, February 17, 2006 9:09 AM  
**To:** chamberlain, kathryn, NMENV  
**Cc:** Cobrain, Dave, NMENV; Young, John, NMENV; Bearzi, James, NMENV; mcinroy@lanl.gov; gabriela@lanl.gov; ltrujillo@doeal.gov  
**Subject:** Re: MDA C

Katie,

As indicated in your email, the PID is not an effective field screening tool for guiding the drilling activities at MDA C. As noted, the highest concentrations of TCE in laboratory samples were detected in the bottom of four of the five perimeter boreholes at MDA C. The PID was not able to detect VOCs at the bottom depth or at 25 ft above the bottom depth. Therefore, LANL proposes to discontinue using the PID for field screening as specified in the approved work plan.

In order to ensure that the vertical and lateral extent of VOC contamination is sufficiently determined, the results from BH-09 (800 ft) will be used to bound the vertical extent of the VOC plume and guide the drilling depths at three other borehole locations. Contingency borehole BH-44 located to the south of MDA C will be drilled to a maximum depth that corresponds to 25 ft beyond the last detection of VOCs in borehole BH-09, or to 800 ft, whichever is shallower. In addition, BH-02 and BH-42 will be drilled to similar target depths. If these four boreholes are still unable to sufficiently define the extent of VOC contamination, additional existing boreholes may be drilled to deeper depths. However, the remaining boreholes at MDA C will be drilled to the target depths identified in the work plan and field screening of VOCs using the PID will be discontinued.

To evaluate the impact of liquid phase VOC transport at MDA C, LANL proposes to collect a total of six tuff samples will be analyzed for VOCs. Four samples will be collected from borehole BH-09 at 100 ft, 200 ft, 400 ft, and 800 ft. Two additional samples will be collected in borehole BH-10 at 30 ft and 60 ft. Tuff samples will be collected using the methods recently employed for the MDA L investigation. Pore-gas samples will also be collected at these same intervals and analyzed for VOCs and tritium as specified in the work plan. Results of collocated tuff and vapor samples will be used to evaluate partitioning of VOCs from the vapor plume into tuff and determine whether a separate liquid VOC phase is present in tuff at MDA C.

Pore-gas tritium samples are currently being collected at specific intervals while each borehole is being drilled. The tritium samples are taking a minimum of two hours to collect sufficient moisture for laboratory analysis. Because this significantly delays the drilling activities, LANL proposes that tritium and VOC pore-gas samples be collected after the borehole is drilled. The results from BH-09 may be used to target specific intervals for VOC sampling, however, LANL will continue to follow the requirements to collect a soil and pore-gas sample every 50 ft. All pore-gas samples will be collected approximately within a week after drilling each borehole.

Please let me know if these proposed changes are acceptable.

Thanks - Kent

At 02:54 PM 2/10/2006, chamberlain, kathryn, NMENV wrote:



Kent,

We received the preliminary VOC Data for the Pore-Gas sampling for the perimeter boreholes at MDA C. We have a few concerns regarding the results. As evidenced by your analytical results, the PID was not an effective tool for field screening, in this application, to guide the drilling activities. NMED proposes that the Permittees submit both a soil/tuff and a pore-gas sample from the target depth of the borehole for 24-hour turn-around, for VOC analysis. NMED believes this is the only feasible way to determine vertical extent of contamination. Utilizing the quick turn around analytical results appears to be the only way that may prevent additional field work/remobilizing to the site.

The analytical results show VOC detects at the TD of the boreholes, particularly TCE. These perimeter boreholes have not determined lateral or vertical extent of contamination. In this case, lateral extent is the primary concern. The Permittees have two options; 1) A drill rig is still on-site and the boreholes are still open (to the best of NMED's knowledge), therefore you can remobilize to the same boreholes and continue drilling until 25' below the deepest detected contamination, or 2) drill contingency boreholes BH-43 and BH-44 to determine lateral extent.

In addition, are you using tritium field screening to guide drilling and sampling activities? Is there any correlation between the tritium and VOC data?

Please contact us at your earliest convenience.

Thanks,  
Katie

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