

TA-54

LANL Hydrogeologic Work Plan
TA-54**Subject: TA-54 Well DQOs****Date:** Thu, 16 May 2002 20:39:46 -0600**From:** "David E. Broxton" <broxton@lanl.gov>**To:** john_young@nmenv.state.nm.us**CC:** mjohansen@doeal.gov, nylander@lanl.gov, John McCann <jmccann@lanl.gov>

John,

I would like to express some reservations concerning your comments (e-mail on 5/14/02) about the need to collect additional characterization data during the installation of the TA-54 wells that the Laboratory plans to install this summer.

My main reservation is the emphasis you place on characterization of the vadose zone during drilling (e.g. coring to 800 ft and straddle-packer testing for vapor phase contaminants). The primary goals for all of the TA-54 wells is the characterization of the regional groundwater system in the vicinity of TA-54. At the recent annual Hydrogeologic Workplan Meeting held at Bishop's Lodge, the Laboratory clearly outlined a new approach for quickly and efficiently installing regional aquifer wells. This approach focuses on simplifying the installation of these wells by expanding our drilling toolbox (e.g. adding mud rotary drilling) and by concentrating the R-wells on those regional aquifer issues that are relevant for assessing the hydrogeology of the regional aquifer. These data will support the proper design and installation of a groundwater monitoring system for those parts of the Laboratory where contaminants are already in the regional aquifer or can be reasonably expected. The vadose zone will be cased off when the borehole approaches the regional aquifer, and well screens will be restricted to the regional aquifer.

The characterization of the vadose zone is restricted to activities that do not seriously impact the main goal of these drilling activities, which is the installation of regional aquifer wells for determining hydrochemical and hydrological data. That said, vadose zone characterization will occur to varying degrees during the installation of the TA-54 wells and include: 1) coring with an auger rig and determination of anion profiles for Pajarito Canyon, 2) collection of perched water during drilling where possible, 3) identification of possible perched water through borehole geophysics and drillers observations, and 4) characterization of geologic units through the examination of drill cuttings. Detection of significant perched could lead to the installation of dedicated intermediate-depth wells, particularly if contaminants are present. DQOs specific to vadose zone characterization may include some of the data collection activities you have suggested if intermediate wells are installed.



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I would be remiss if I did not state that the Laboratory believes that the vapor plume at MDA L is already sufficiently characterized. The nature and extent of that plume has already been thoroughly documented by numerous boreholes specifically designed for that purpose. In addition, at MDA G the existing borehole data and the Performance Assessment indicate that the potential for contaminant migration to regional aquifer is extremely small. The planned wells will provide additional data to evaluate whether these assessments are correct.

Thanks for your review of the DQOs. Although we do not agree on all points about the types of characterization activities that are needed, I believe that we are not so far apart on the overall goals for the installation of these wells. I look forward to speaking to you tomorrow.

Dave