This update is provided to parties interested in a status on the chromium investigation underway at Los Alamos National Laboratory (the Laboratory).

Background

For the past 2 years, the Laboratory has conducted a rigorous program to define the nature and extent of chromium contamination found beneath Mortandad Canyon in regional well R-28. The investigation has also focused on determining if any immediate risk exists to human or ecological receptors and collecting and evaluating data to determine the source of the chromium, chromium migration in the environment, and potential cleanup. The investigations have involved detailed characterization of sediment, surface water, shallow and deep (regional) groundwater, and the unsaturated (vadose) zone between the surface and the regional groundwater. In the past year, three regional groundwater wells (R-35a, R-35b, and R-36) have been drilled downgradient of R-28 to define the extent of contamination and to monitor for potential migration of chromium towards the Laboratory boundary or towards water-supply wells. Two perched-intermediate wells, SCI-1 and SCI-2, have been drilled in Sandia Canyon to characterize the fate and transport of chromium along the infiltration pathway.

Relevant reports are available electronically at
http://www.lanl.gov/environment/h2o/reports.shtml?1.

Update - November 13, 2008

The current phase of the chromium project investigation includes the installation of several additional monitoring wells to further refine the nature and extent of contamination in the regional groundwater. The previous update in September 2008 discussing the new intermediate well SCI-2 was posted on this same listserv.

R-42

R-42 is located in Mortandad Canyon with the objective of further characterizing the chromium contamination in the regional groundwater upgradient (west) of R-28. This location is also thought to be within the primary chromium infiltration zone. The well is screened in alluvial deposits near the water table and is now complete. The first groundwater samples collected from the well following development show approximately 800 µg/L (parts per billion [ppb]) chromium in filtered and nonfiltered samples. These results are the highest observed to date in the regional aquifer beneath the Laboratory. Nitrate is also present at approximately 5 mg/L which is above the background level, but below the drinking water standard of 10 parts per million (ppm). Subsequent sampling is scheduled in late November 2008.

R-43

R-43 is located in Sandia Canyon and, like R-42 in Mortandad Canyon, was drilled with the objective of further characterizing the chromium concentrations upgradient (northwest) of R-28. R-43 is situated adjacent to perched-intermediate well SCI-2 which shows hexavalent chromium at approximately 500 ppb. R-43 was completed as a two-screen well with the upper screen near the water table and the lower screen 77 ft below the water table. This well design will require a packer system to isolate the two screens to allow discrete-zone sampling. Therefore, the first samples are being collected as part of the aquifer tests. These data are expected to be reasonable representations of groundwater quality at the screened intervals. The first samples collected with the dedicated sampling system are expected in February 2009.

R-44 and R-45

Installation of the next planned regional monitoring wells is now underway. These wells are intended to supplement the information from regional wells R-35a, R-35b, R-36, R-13, and R-28. Both R-44 and R-45 are planned as two-screen wells for characterizing water quality near the water table and at depth within the regional aquifer to refine our knowledge of the downgradient extent of chromium (and other) contamination. The additional characterization work represented by these new wells is in accordance with the planned approach established with NMED to refine our understanding of the chromium contamination. Data from these wells will be provided when they become available early in 2009.

The data collected from the recently finished and sampled wells are consistent with the conceptual model for chromium transport that was presented in the July 2008 “Fate and Transport Investigation Update for Chromium Contamination from Sandia Canyon” (LA-UR-08-4702). Additional updates will be provided as further data become available and the results of all aspects of the chromium investigation will be presented in the Sandia Canyon Investigation Report.