

## MEMORANDUM

TA-02

*Claudia  
per file  
prints*

To: Benito Garcia, Chief, HRMB  
John Geddie, Program Support Bureau

From: Danny Katzman, DOE Oversight Program, LANL

Date: March 3, 1993

Subject: Chromium at the Omega West Reactor, LANL

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The following provides additional information on the nature and origin of the chromium reportedly detected in soil samples near the Omega West Reactor at TA-2.

A soil sample was taken in an area where soil excavation is planned along the delay line (presumed location of the leak) of the reactor's circulation system. The sample is intended to provide a preliminary assessment for site health and safety issues that must be addressed for the purposes of excavation.

The sample was screened with a field X-ray fluorescence (XRF) instrument, an organic vapor instrument, and gross beta and gamma instrument. The field XRF detected chromium at 167 ppm. The sample has been sent to LANL's analytical laboratory for full analysis. Results will be available in the next day or so. Background values for total Cr in these sediments is reported to be 75 ppm. The cleanup level for Cr in RCRA's proposed Subpart S are 400 ppm for soil.

Radioactive chromium is the only form of chromium that would be produced during standard reactor operations, however, chromium is not detected in routine gamma spectroscopy of primary reactor coolant water. The probable source of the chromium detected in the soil sample is from historical blowdown of a nearby cooling tower. Archival information shows that approximately 7000 gallons of potassium dichromate ( $K_2Cr_2O_7$ ) were released over a 17 year period from the blowdown process. At this time, I am unable to tell you what the geochemical properties (i.e. solubility in water, particle adsorption) of  $K_2Cr_2O_7$  are, but I am looking into it. The cooling tower and the  $K_2Cr_2O_7$  release comprise Solid Waste Management Unit (SWMU) 2-005 which is included in a RCRA Facility Investigation Work Plan scheduled for submittal to the State and EPA this summer.

cc: Bruce Swanton, Manager, DOE Oversight Program  
Ed Horst, Manager, RCRA Permits  
File, LANL, Red 93

