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## NEW MEXICO ENVIRONMENT DEPARTMENT

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RYAN FLYNN  
Secretary  
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Deputy Secretary

### CERTIFIED MAIL – RETURN RECEIPT REQUESTED

July 24, 2014

Geoffrey L. Beausoleil  
Manager  
U.S. Department of Energy  
P.O. Box 5400, MS-0184  
Albuquerque, NM 87185-5400

Peter B. Davies  
Director,  
Nuclear Energy & Fuel Cycle Programs  
P.O. Box 6200, MS-0721  
Albuquerque, NM 87185

**RE: MIXED WASTE LANDFILL GROUNDWATER MONITORING REPORT –  
GROUNDWATER MONITORING WELL MWL-MW4 – CALENDAR YEAR  
2013, MAY 20, 2014  
SANDIA NATIONAL LABORATORIES, EPA ID# NM5890110518  
HWB-SNL-14-009**

Dear Mr. Beausoleil and Mr. Davies:

The New Mexico Environment Department (NMED) has reviewed the subject report submitted by the U.S. Department of Energy (DOE) on behalf of itself and Sandia Corporation (collectively, the Permittees), with cover letter dated May 20, 2014. The Permittees request recommendations from the NMED concerning the action that may be necessary to address certain elevated metals concentrations detected in groundwater samples obtained from Mixed Waste Landfill (MWL) monitoring well MWL-MW4.

Review of the data in the subject report suggests that the elevated chromium and nickel in water samples are derived from corrosion of stainless-steel components of the dedicated pump and/or packer installed in the well. As the report indicates, chromium, nickel, and the other metals of concern were found in soil in the vadose zone at background levels during the RCRA Facility Investigation, indicating that waste buried in the MWL is likely not the source of these metals. However, NMED believes further investigation is warranted. Below in response to your request are NMED's recommendations regarding this matter.

Mr. Beausoleil and Mr. Davies

July 24, 2014

Page 2

1. NMED agrees that if the chromium and nickel (and the other metals) are derived from corrosion of the stainless steel packer and/or pump components, then removal of the pump and packer components and replacing/refurbishing them should eliminate the elevated concentrations of metals observed in water samples (however, if the same components are re-installed in the wells, then they would likely eventually corrode and the same issue would arise again at some future date).
2. Groundwater should be pumped from MWL-MW4 to remove contaminated groundwater in and surrounding the well with the intent to expedite the return of metal concentrations in water samples to background levels. Because the upper monitoring interval of MWL-MW4 purges dry, the well should be allowed to recover, and the well purged again. This procedure should be repeated a number of times to ensure that most, if not all, of the contaminated groundwater is removed. Field parameters (like specific conductance), or field analysis of Cr and Ni may be helpful to decide when pumping has adequately accomplished removal of the contaminated groundwater, and thus, can be terminated.
3. Filtered and unfiltered groundwater samples should be collected immediately prior to and after the pumping procedure described above is terminated, and possibly during the pumping of contaminated groundwater from MWL-MW4. The samples should be analyzed in a laboratory for Cr, Ni, and the other metals of concern. In addition, standard field parameters (e.g. turbidity, specific conductance, pH, and temperature) should be measured and recorded each time a groundwater sample is collected.
4. The pumping procedure should be conducted before removal of the packer with the goal of removing as much of the sediment as possible that may have accumulated on top of the packer. This sediment may contain particles bearing Cr and other metals derived from corrosion, and it should be removed to prevent it from sinking into the well's sump.

If you have any questions regarding this matter, please contact Mr. William Moats of my staff at (505) 222-9551.

Sincerely,



John E. Kieling

Chief

Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
W. Moats, NMED HWB  
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