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Los Alamos NATIONAL LABORATORY EST 1943

ACTION REQUIRED

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Official Correspondence Form

Name:	U1100003
Title:	Approval with Modification Phase II Investigation Work Plan for Sandia Canyon LANL EPA ID NM0890010515 HWB-LANL-10-061
Date Received:	1/4/2011
Addressee Name:	M. Graham, ADEP
Originator:	J. Bearzi, NMED
Action Item Description:	
Action Due Date:	3/25/2011
Responsible for Action:	Search Graham, Michael J
Responsible Office:	ADEP
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January 4, 2011

George J. Rael
Manager, Environmental Projects Office
Los Alamos Site Office, DOE
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Michael J. Graham
Associate Director, Environmental Programs
Los Alamos National Security, L.L.C.
P.O. Box 1663, MS M991
Los Alamos, NM 87545

RE: APPROVAL WITH MODIFICATION
PHASE II INVESTIGATION WORK PLAN FOR SANDIA CANYON
LOS ALAMOS NATIONAL LABORATORY
EPA ID#NM0890010515
HWB-LANL-10-061

Dear Messrs Rael and Graham:

The New Mexico Environment Department (NMED) is in receipt of the United States Department of Energy (DOE) and the Los Alamos National Security, L.L.C.'s (collectively, the Permittees) document entitled *Phase II Investigation Work Plan for Sandia Canyon* (Plan) dated July 30, 2010 and referenced by EP2010-0290.

NMED hereby issues this Approval with the following modifications.

1. **General Comment:**
   The Permittees must stabilize the eastern end of the wetland in reach S-2 in upper Sandia Canyon. Currently, the wetland is unstable as evidenced by active erosion (head-cutting) in that area. The Permittees must submit a work plan to stabilize the eastern end of the wetland and prevent further upstream migration of the headcut. The work plan must also include proposals for post-stabilization contaminant monitoring to determine the effectiveness of the stabilization and a

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maintenance program for all structures installed as part of the stabilization. The work plan must be submitted to NMED no later than **March 25, 2011**.

2. **Section 3.0, CONCEPTUAL MODEL, pages 2 – 4:**
Based on NMED's review of available information and data concerning contamination in the regional aquifer beneath Sandia and Mortandad Canyons, the Permittees' Conceptual Model 3, which proposes two distinct sources of chromium contamination in the regional aquifer, appears to be the most accurate model of the three presented in the Plan. If data obtained under the Plan confirm or imply the existence of the second regional-aquifer chromium plume that originates from a source outside Sandia Canyon, the Permittees will be required to conduct an investigation to determine the nature and vertical and lateral extent of contamination within that plume. If additional groundwater monitoring wells are deemed necessary to properly characterize the plume, their number and location will be primarily based on data and information derived from the proposed regional wells R-61 and R-62, as well as other wells located in the investigation area.

3. **Section 4.1, DC-Resistivity Profiling in Upper Sandia Canyon, pages 4 – 5:**
The Permittees must add more profiles to the DC-resistivity survey in order to properly delineate the lateral contrast between zones of saturation beneath the wetland and the surrounding subsurface materials. The resistivity survey must also be configured to allow for determination of the role of the near-vertical features located beneath the wetland such as the Rendija Canyon fault and associated fault splays as potential infiltration pathways. The Permitees must submit the final scope of the resistivity survey to NMED no less than 20 days prior to its implementation. The Permittees must provide notice to NMED no less than 15 days prior to conducting the survey.

4. **Section 4.3, Collection of Additional Sediment Data in Sandia Canyon, page 7:**
The Permittees must add 10 more sediment samples to the scope of activities proposed in the Plan for characterization of reach S-5EC. The location and depth of the sediment samples must be based on results of mapping of the post-1942 geomorphic units, as described in the Plan. The Permittees must notify NMED a minimum of 15 days prior to sampling reach S-5EC.

5. **Appendix A, NMED Comment No. 3, page A-2:**
The Permittees' assertion that "[m]onitoring data from existing dual-screen wells, including R-50, provide good evidence that chromium migration occurs in the upper part of the aquifer and that the vertical extent of chromium is sufficiently constrained by the existing network of wells . . ." is not shared by NMED. Due to the absence of deep-screened wells within the main body of the chromium contaminant plume, significant uncertainty exists regarding the vertical extent of

chromium contamination in the regional aquifer. If the work performed under the Plan does not reduce this uncertainty to an acceptable level, the Permittees will be required to install a deep-screened, dual-screen well to define the vertical extent of chromium contamination in the regional aquifer.

The Phase II Investigation Report for Sandia Canyon must be submitted to NMED by **April 30, 2012**, as proposed in the Plan. Should you have any questions or comments, please contact Michael Dale at (505) 661-2673.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:md/jk

cc: J. Kieling, NMED HWB
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