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IRM-RMMSO

Official Correspondence Form

Name:	U1101198													
Title:	Approval - Phase II Investigation Work Plan for Sites at Technical Area 49 Inside the Nuclear Environmental Site Boundary													
Date Received:	7/6/2011													
Addressee Name:	Michael Graham, ADEP													
Originator:	John E. Kieling, NMED Santa Fe													
Action Item Description:														
Action Due Date:	9/30/2012													
Responsible for Action:	Search <u>Henry, Paul D</u>													
Responsible Office:	ADEP													
Distribution:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Michael Graham</td> <td style="width: 50%;">Deborah K. Woitte</td> </tr> <tr> <td>Charles McMillan</td> <td>William Alexander</td> </tr> <tr> <td>Isaac RichardsonIII</td> <td>Phoebe K. Suina</td> </tr> <tr> <td>Richard Marquez</td> <td>Anthony R. Grieggs</td> </tr> <tr> <td>Paul Henry</td> <td>Tina Sandoval</td> </tr> <tr> <td>James Cantwell</td> <td>Scotty Jones</td> </tr> </table>		Michael Graham	Deborah K. Woitte	Charles McMillan	William Alexander	Isaac RichardsonIII	Phoebe K. Suina	Richard Marquez	Anthony R. Grieggs	Paul Henry	Tina Sandoval	James Cantwell	Scotty Jones
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SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1

Santa Fe, New Mexico 87505-6303

Phone (505) 476-6000 Fax (505) 476-6030

www.nmenv.state.nm.us



DAVE MARTIN
Cabinet Secretary

RAJ SOLOMON, P.E.
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 30, 2011

George J. Rael, Assistant Manager
Environmental Projects Office
Los Alamos Site Office
Department of Energy
3747 West Jemez Road, MS A316
Los Alamos, NM 87544

Michael Graham, Associate Director
Environmental Programs
Los Alamos National Security, L.L.C.
P.O. Box 1663, MS 991
Los Alamos, NM 87545

**RE: APPROVAL
PHASE II INVESTIGATION WORK PLAN FOR SITES AT TECHNICAL
AREA 49 INSIDE THE NUCLEAR ENVIRONMENTAL SITE BOUNDARY
LOS ALAMOS NATIONAL LABORATORY (LANL)
EPA ID #NM0890010515
HWB-LANL-11-018**

Dear Messrs. Rael and Graham:

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) and the Los Alamos National Security L.L.C.'s (LANS) (collectively, the Permittees) *Phase II Investigation Work Plan for Sites at Technical Area 49 Inside the Nuclear Environmental Site Boundary* (Work Plan), dated March 2011 and referenced by EP2011-0108. NMED has reviewed the Work Plan and hereby issues this Approval with the following comments.

Comments:

1) **Section 2.2.2, Nature and Extent of Contamination, page 5**

Permittees' Statement: "Similarly, the investigation report noted that plutonium-239/240 activities increased with depth at location 49-610131, but did not state whether vertical extent was defined. Vertical extent at this sampling location (sampling depths 0 to 0.5 ft and 0.5 to 1.5 ft bgs) is also defined by nondetected results in nearby 130-ft-deep borehole location 49-610943 (Plate 4)."

NMED Comment: Conclusions with regard to the extent of contamination must be made in the Investigation Report (IR). NMED assumes that the Permittees were referring in the last sentence above to location 49-610945 instead of 49-610493. Location 49-610493 is approximately 400 ft away from location 49-610131, which is too far away to provide vertical extent definition. If this assumption is incorrect, then the Permittees must conduct further investigation to determine the extent of contamination.

2) **Section 2.4.2, Nature and Extent of Contamination, page 7**

Permittees' Statement: "The conclusion that vertical extent of tritium was not defined at location 49-610940 was based on a slight increase of tritium activity from 0.255 pCi/g at a depth of 110 to 113 ft bgs (sample RE49-10-8982) to 0.288 pCi/g at a depth of 156 to 158 ft bgs (sample RE49-10-8993). In reviewing the laboratory analytical results, however, it was noted that the analytical laboratory reported a one-sigma total propagated uncertainty of 0.074 pCi/g for these results. Because this uncertainty is larger than the difference between the two sample results (0.033 pCi/g), the results do not provide a definite indication of increasing activity with depth. Therefore, vertical extent of tritium is defined at this location."

NMED Comment: Changes to the conclusions of the IR indicate a lack of thoroughness and adequate review prior to its submittal. By the same argument above, the results also do not provide a definite indication of decreasing activity with depth. While the Permittees' argument is not sufficient to assert that vertical extent of tritium is defined, tritium levels are over three orders of magnitude below residential SALs; therefore, NMED does not require further investigation at location 49-610940.

3) **Section 2.5.2, Nature and Extent of Contamination, page 7**

Permittees' Statement: "The investigation report did not specifically identify where lateral and vertical extent of perchlorate were not defined, other than to note that perchlorate was detected in seven samples, and concentrations increased with depth at locations 49-610496 and 49-610498. Vertical extent is not defined at location 49-610496 because concentrations increased with depth, and the deeper result is above the estimated quantitation limit (EQL). Vertical extent is defined at location 49-610498 because perchlorate was only detected in the deepest sample, and the result is below the EQL."

NMED Comment: Conclusions regarding lateral and vertical extent of contamination must be provided in the IR. Changes to conclusions, or further interpretation of data, in the

IWP must be accompanied by supporting information. For instance, in reference to the quoted text above, the Permittees must provide the actual concentrations of perchlorate detected at the specified location and the relative EQL cited, as well as the associated MDL. Assertions that extent is defined without supporting data will not be accepted in future reports or work plans. Since the perchlorate concentration at this location is over four orders of magnitude less than the residential SAL, no further investigation is required.

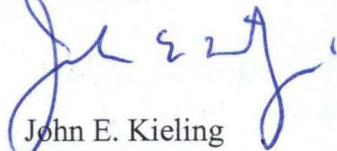
4) **Section 2.6.2, Nature and Extent of Contamination, page 7**

Permittees' Statement: "The investigation report did not specifically identify where lateral and vertical extent of perchlorate were not defined, other than to note that perchlorate was detected in nine samples, and concentrations increased with depth at locations 49-610491, 49-610492, 49-610493, and 49-610494. Vertical extent is defined at locations 49-610491 and 49-610493 because all perchlorate results at these sampling locations are below the EQL."

NMED Comment: See Comment 3. Because detected perchlorate concentrations at these locations are between three to four orders of magnitude less than the residential SAL, no further investigation is required.

The Phase II Investigation Report must be submitted to NMED no later than **September 30, 2012**. All submittals (including maps and tables) must be in the form of two paper copies and one electronic copy in accordance with Section XI.A of the March 1, 2005 Consent Order. Please contact Ben Wear at (505) 476-6041 should you have any questions.

Sincerely,



John E. Kieling
Acting Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
B. Wear, NMED HWB
S. Yanicak, NMED DOE OB, MS J993
T. Skibitski, NMED DOE OB
L. King, EPA 6PD-N
S. Fuller, EP-CAP, MS M992
A. Russell, DOE-LASO, MS A316

File: LANL '11, TA-49

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Romero Park Drive East-Building 1
Santa Fe, New Mexico 87505

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NAME Deven Montoya
Z# 086365
DATE 7-6-11

Michael J. Graham, Associate Director
Environmental Programs
Los Alamos National Security, LLC
P.O.Box 1663, MS ~~M991~~
Los Alamos, NM 87545 *A15D*

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