NEW MEXICO
ENVIRONMENT DEPARTMENT

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

SUSANA MARTINEZ
Governor
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Lieutenant Governor

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Cabinet Secretary
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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

December 12, 2014

Mr. Thomas A. Ladd, Director
US Army Garrison White Sands
U.S. Army White Sands Missile Range
White Sands Missile Range,
New Mexico 88002-5000

RE: APPROVAL WITH MODIFICATIONS
REVISED RCRA FACILITY INVESTIGATION REPORT
SWMU 153 FORMER VANDAL BURIAL SITE
WHITE SANDS MISSILE RANGE, NEW MEXICO
EPA ID# NM2750211235
WSMR-12-009

Dear Mr. Ladd:

The New Mexico Environment Department (NMED) has completed its review of White Sands Missile Range's (Permittee) *Revised RCRA Facility Investigation Report, SWMU 153, Former Vandal Burial Site* (Report), dated May 2014. NMED hereby issues this Approval with Modifications with the following comments.

Comment 1

In the response to comments for NMED's Disapproval Comment 9 the Permittee states, "[a]fter further research of historical documentation for SWMUs 153, 55, 56, and 56A, it was discovered that erroneous coordinates within the project Geographic Information System (GIS) resulted in an initial misidentification of the SWMU 55 location, and incorrect boundary of SWMU 153. Further evaluation and discussions with the project team indicated that a small fenced area to the south of the OB/OD Unit and north of SWMU 153 Vandal Burial Site was actually the location of SWMU 55. A supplementary soil investigation performed under the auspices of the OB/OD Investigation Work Plan (Shaw, 2012) was completed in February 2014. The investigation included soil samples collected from five borings within SWMU 55. The analytical results

indicate that no COCs were detected above NMED residential SSLs. Additional confirmation borings taken near the boring with lead and antimony exceedances showed no exceedances for metals. The analytical results and field documents for the supplementary investigation at SWMU 55 will be submitted in a forthcoming letter addendum to the OB/OD Site Investigation Report." NMED will review the Supplemental Report as part of the OB/OD Investigation Report. Note that the Permittee cannot change SWMU boundaries without a permit modification. NMED understands that a GIS error originally caused the issue; however, the SWMU boundaries depicted in the figures do not match the original SWMU boundaries. It appears that SWMU 55 (the Old Burn Pan) is within the boundary of SWMU 153 (the Vandal Burial Site) and it is not appropriate to separate the two areas. After a conversation with WSMR on October 21, 2014 it appears that the fenced area was erected after the removal of the burn pan to keep people out of the burn pan area. Provide a letter describing the changes and revised replacement figures depicting the accurate placement of SWMU boundaries for the OB/OD sites and the Vandal Burial Site.

Comment 2

In Section 2.2 (Previous Vandal Burial Site Investigations), page 2-8, the Permittee states, "[t]he samples were collected at the fill/native soil interface because the soil around the metal missile parts, which may have contained perchlorate, had been removed, and the replacement soil was considered clean for perchlorate. The soil samples were submitted for ammonia perchlorate analysis by EPA Method 314.0 (leachate developed from 10 grams of sample in 20 milliliters [mL] of water) (EPA, 1986). Perchlorate was detected in VSB-01 (from 7.0 to 7.5 feet bgs) at a concentration of 112 micrograms per liter (µg/L) in the soil leachate. Sample VSB-03 (from 10 to 10.5 feet bgs) was analyzed using the leachate procedure, and no perchlorate was detected above the reporting limit of 12.2 µg/L. Based on the results for the March 2001 soil sampling conducted by MEVATEC (2001), ammonia perchlorate is present in the soil overlying the fractured granite bedrock in the area of VSB-01 at a depth of 7 to 7.5 feet bgs." In the response letter, include information about the depth of the historic excavations, backfill (the general depth of the fill/native interface), and the depth to bedrock.

Comment 3

In Section 6.2 (Soil Contamination Limits) the Permittee states, "Shaw performed an Exposure Point Concentration (EPC) calculation for lead as it was detected in all 31 samples. The 95% upper confidence limit (UCL) EPC is 224 mg/kg, using all of the data. However, the UCL is not used to assess lead in the IEUBK Child Lead Model (used for human health risk assessments), instead the arithmetic average is considered. The average lead concentration in soil is 49.7 mg/kg. As the average is below the RSL of 400 mg/kg, lead would not be a concern for residential exposure. Shaw performed a similar EPC calculation for antimony, but as there was only a single antimony detection in the 31 samples collected, the EPC had little value in demonstrating that the single detection was an anomaly. This single detection of antimony is at a concentration of 39.8 µg/kg which appears to be isolated and is barely above the NMED residential SSL of 31.28 µg/kg (NMED, 2012b)." The units for antimony should be in mg/kg

rather than µg/kg and the correct NM SSL is 31.3 mg/kg; provide replacement pages where needed. If the change in units requires more extensive edits, then the Permittee may be required to submit a revised Report.

Comment 4

The Permittee states on page 1-1 "[t]he purpose of the RFI activities was to conduct a soil and groundwater investigation at SWMU 153. The results of this investigation, in conjunction with data obtained during previous investigations, were used to determine whether COCs have been released within the site boundary and to evaluate the extent of impacts to each media (e.g., soil and groundwater) adjacent to the site." Although the soil sample results report no COCs in exceedance of NM SSLs in the soil, the COCs are constituents that move relatively quickly through the soil column (which is shallow at the HTA) and into groundwater. It is impossible to determine whether or not the Vandal Burial Site contributed to the groundwater contamination. Groundwater contamination at the HTA is likely from a combination of sources. The groundwater contamination figures (Figure 6-1 and Figure 6-2) indicate that there may be a source of groundwater contamination north of the OB/OD units. HTA 25 is the groundwater well furthest north of the units and displays high concentrations of perchlorate and RDX. There may be fracture flow affecting the movement of groundwater contamination. Because soil contamination levels are below NM SSLs for the COCs and groundwater contamination is being addressed as part of the OB/OD post-closure care, no further soil investigation at the Vandal Burial site is necessary. It appears that material left on-site has been excavated and the remaining soil contamination meets the applicable screening levels (see Comment 3). No response is required.

Comment 5

The Report includes an Appendix with a report titled *Site Assessment of the Open Burn/Open Detonation Site (Results of Hydrogeologic Investigation 1996-2000*, dated August 2001. It appears that the report was not submitted to NMED and is not in the administrative record. Review of this Report does not constitute a review of the USGS report.

The Permittee must address all of the above comments in the Approval with Modifications and must submit a response letter and provide revised figures. The response letter must cross-reference NMED's numbered comments. The response letter and revised text and figures must be submitted to NMED no later than **February 16, 2015**.

If you have any questions regarding this letter, please contact Kristen Van Horn at (505) 476-6046.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. Van Horn, NMED HWB
J. Gallegos, WSMR
B. Avalos, WSMR

File: WSMR 2014 and Reading
WSMR-12-009