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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

April 28, 2014

Mr. Thomas A. Ladd, Director
Public Works (Building 102)
US Army Garrison White Sands
White Sands Missile Range,
New Mexico 88002-5000

**RE: DISAPPROVAL
2012 LONG-TERM GROUND WATER MONITORING PROGRAM
REPORT; MULTIPLE SITES
WHITE SANDS MISSILE RANGE, NEW MEXICO
EPA ID# NM2750211235
WSMR-13-010**

Dear Mr. Ladd:

The New Mexico Environment Department (NMED) has completed its review of White Sands Missile Range's (Permittee) *2012 Long Term Monitoring Program Report, Multiple Sites* (Report), dated July 2013 and hereby issues this disapproval with the following comments.

Comment 1

The Permittee must follow the outline for Periodic Monitoring Reports presented in the 2009 RCRA Permit (Permit), Appendix 7. However, the Permittee may modify the outline, for example, sections such as Regulatory Criteria (screening levels), which are similar for each site in the Report, may be included in the Introduction of the Report rather than repeating the information for each section. Generally, the introduction for each solid waste management unit (SWMU) must briefly discuss the sampling results, the constituents of concern in groundwater, and other information relevant to groundwater and monitoring at the site. More detailed discussions of those topics should be discussed in other sections of the Report (scope of services,

analytical results, etc.). Revise the Report to generally follow the outline provided in the Permit and ensure that groundwater monitoring at each site is presented clearly.

Comment 2

The Permittee must provide tables that summarize analytical data from the last several groundwater monitoring events (i.e., 2007 through 2011) for comparison to current groundwater monitoring analytical results as required by Permit Appendix 7, Section 7.4.8. In the revised Report include historical analytical data for all of the sites.

Comment 3

All analytical results tables must present the cleanup levels for comparison to the groundwater analytical results. Revise the analytical tables in the Report to incorporate the cleanup levels for analytes that were tested for in summary tables as well as general analyte tables in Appendix C (Data).

Comment 4

In the revised Report, provide groundwater potentiometric elevation maps depicting the direction of groundwater movement for the HELSTF sites.

Comment 5

In Section 1.0 (Introduction), under the heading titled "Regulatory Criteria and Status," the Permittee states, "[p]otentially applicable standards for concentrations of constituents in the groundwater at WSMR can be found in the New Mexico Water Quality Control Commission (NMWQCC) regulations for groundwater protection as referenced in 20.6.2 New Mexico Administrative Code (NMAC). No cleanup levels have been established for any WSMR Solid Waste Management Unit (SWMU)." Cleanup levels for groundwater have been established site-wide for White Sand Missile Range (WSMR). Permit Appendix 3 (Cleanup Levels), Section 3.1 (Groundwater Cleanup Levels) discusses the groundwater cleanup levels for hazardous waste and hazardous constituents in groundwater. No site-specific groundwater clean-up levels have been established for SWMUs in this Report. Additionally, applicable standards, as outlined in Permit Appendix 3, rely not only on the NMWQCC standards, but also the Environmental Protection Agency (EPA) maximum contaminant level (MCL) and NMED standards as set out in paragraphs 2 or 3 in Permit Appendix 3, Section 3.1. Moreover, Permit Appendix 3, Section 3.1 states, "[f]or any contaminant for which more than one of the cleanup levels set forth in subparagraphs a, b, and c above would apply, the lowest (or otherwise most protective) level shall be the applicable cleanup level." Revise the Report to discuss the correct groundwater cleanup standards.

Comment 6

In Section 4.0 (LAUNCH COMPLEX 38 DIESEL SPILL (SWMU 198) (CCWS-09)) the Permittee states, "[b]ased on the results of the previous investigations, WSMR has petitioned NMED to change the status of LC-38 to Corrective Action Complete with Controls (ARCADIS,

2011a). WSMR plans to conduct future groundwater monitoring as a control until such time that data demonstrate stable or declining dissolved concentrations and the NMED approves a cessation of the groundwater monitoring at the site.” The Permittee must continue to monitor groundwater until NMED approves changes to the sampling frequency. Additionally, the Permittee must provide a report evaluating groundwater data from the site for NMED to evaluate whether or not contaminant concentrations in groundwater are have met the appropriate cleanup level. Groundwater monitoring reports are part of the administrative record reviewed for corrective action complete determinations. In the revised Report include data tables listing previous sampling results for comparison to current sampling results.

Comment 7

In Section 4.1 (Scope of Services), LC-38 Diesel Spill, the Permittee states, “[t]otal chromium was detected in all of the wells sampled. Chromium was detected at a highest concentration of 798 µg/L which is above the NMWQCC standard for chromium of 50 µg/L. Results for total chromium detected during this sampling event are similar to results from the SWMU Assessment sampling conducted in January 2004. The highest total chromium detection from 2004 was from MW-002 (1,760 µg/L). Hexavalent chromium was not detected.” The scope of services section must focus on the activities performed during the monitoring event and summarize the field data collection and the analytical testing in accordance with Permit Appendix 7, Section 7.4.5 (discussion of analytical results must be in the analytical results section). In the revised Report include more details: identify which groundwater monitoring well had the highest chromium level and discuss the relative location of the well (upgradient or downgradient from the diesel spill). In addition to comparing the analytical results to data collected in 2004, compare the results to current data collected from the last several years.

Comment 8

In Section 5.0 (OPEN BURN/OPEN DETONATION AREA (SWMUs 55, 56, & 56A) (CCWS-11)) the Permittee discusses the history of closure activities at the Open Burn/Open Detonation (OB/OD), but the discussion ends in 2002; however, because perchlorate was discovered in the groundwater the Permittee was required to conduct further investigations at the site. If the Permittee includes discussion of historical site activities, the discussion must be expanded to include more recent information, including perchlorate and any additional site investigations that have been conducted place since 2002. In the revised Report include more recent information regarding site activities.

Comment 9

In Section 5.3 (Groundwater Monitoring Results) for the OB/OD the Permittee states, “[t]he maximum perchlorate concentration was 19,200 µg/L from the August 2012 sample at HTA 15, and 20 of the 24 samples collected in February and August exceeded the 26 µg/L screening level.” The groundwater screening level for perchlorate is 4 ug/L in accordance to Permit Appendix 5. Ensure that groundwater contaminants are being compared to the appropriate groundwater screening levels. Revise the Report to reflect the proper screening level. Table 10

(Summary Analytical Results for OB/OD) reports the correct screening level of 4 ug/L (however, the screening level is attributed to the NMWQCC; it is from Appendix 5 of the Permit). In the revised Report ensure that tables and text are consistent and that all screening level references are correct.

Comment 10

The groundwater monitoring at the OB/OD must include monitoring of groundwater monitoring well HTA-14. All future groundwater monitoring conducted at the OB/OD must include analytical and monitoring data for groundwater monitoring well HTA-14.

Comment 11

Table 9 (Field Parameters from the OB/OD Sampling Event) lists the field parameters for the groundwater monitoring wells included in the groundwater monitoring program. There appears to be an error in the data presented for monitoring well HTA-3. The field parameters table includes all of the field parameters except depth to water for HTA-3. It is not clear whether HTA-3 was sampled or not, since depth to water was not reported. Additionally, the pH and the temperature reported for HTA-3 are also inconsistent with results for the other wells in the area. The Permittee must assess whether or not it is appropriate to continue sampling HTA-3 or if a replacement monitoring well should be installed. HTA-3 is a production well and has a much larger screened interval than other monitoring wells at the site. If HTA-3 continues to be included in the groundwater monitoring program, ensure that the well has been purged and sampled appropriately. Explain whether or not this well was sampled in the revised Report. Additionally, discuss any issues related to the field work in the revised Report. The Report must describe the field activities conducted during the groundwater monitoring and any variance from the monitoring plan.

Comment 12

In Section 6.3 (Groundwater Monitoring Results) for the HELSTF Technical Support Area (TSA) Spill the Permittee must include discussion of historical groundwater results and compare the recent data to previous years. The Permittee has sampled for MTBE since 2008, at this point the Permittee must discuss any changes or trends apparent in the results and provide a table showing a comparison (ensure that the units are consistent) over time. Provide a discussion of the MTBE in groundwater in future Reports rather than a copy of the discussion from previous reports. In the revised Report discuss the presence of MTBE and compare current results to previous sampling results.

Comment 13

Table 11 (Construction Details for HELSTF TSA Regional Monitoring Wells) also lists the HVW wells for the site. The HVW wells are constructed within the "perched" water at the site and must also be monitored and sampled during each groundwater monitoring event, if water is present. Revise the monitoring work plan to include these wells in all future monitoring events. Additionally, the table must define where the measurements were collected (top of casing,

ground surface) and must report the same units.

Comment 14

In Section 6.4 (Remediation System Monitoring and Additional Site Activities), for the HELSTF TSA, the Permittee states, “[i]n March 2009, six wells (HVW-05 through HVW-10) were installed in the zone of saturated soils (HVW-05 through HVW-10). Soil samples were collected from saturated soils (from 16 to 31 ft bgs) for characterization purposes. No gasoline constituents were detected above the soil screening levels. Some constituents were detected above the dilution attenuation factor (DAF 1) standards. Light non-aqueous phase liquid (LNAPL) was encountered in some of the wells and was sampled. The product analyses confirmed that the product was slightly weathered gasoline, which most resembled an 87 octane gasoline. Hydraulic testing was conducted to further develop the understanding of the hydro-geologic conditions. Results from the tests indicated that little or no hydraulic connectivity exists between wells screened in the shallow saturated soils, further supporting the conclusion that lateral groundwater flow within the vadose zone is very limited.” NMED provided comments in the April 11, 2011 Notice of Disapproval (NOD) regarding issues with soil sample collection, the misuse of evaluating the soil analytical results with DAF1 screening levels and the misinterpretation of the results to support the Permittee’s conclusion that there is not a connection between the vadose zone soils and the aquifer. In addition, several issues associated with the risk assessment for this SWMU makes the assessment unusable until the concerns are addressed. It is not appropriate to include information from reports that have not been approved by NMED. Furthermore, omitting historical information concerning site activities and regulatory direction is not appropriate and may result in additional work at the site. Revise the Report to explain the Permittee’s position but include NMED’s comments and provide additional discussion about the historical activities and regulation at the site.

Comment 15

Table 19 (Wells Selected for HELSTF Long Term Groundwater Monitoring Program) columns “Elevation feet Brass Cap (amsl)”, “Elevation feet TOC”, “Stickup (feet)”, “Top of Screen TOC (feet)”, and “Bottom of Screen TOC” present too many significant digits. In the revised Report use the appropriate number of significant digits for the measurements. Additionally, in the revised Report identify the measuring point where the measurements for depth to water are collected (e.g., TOC, brass cap, or surveyed mark on stickup length).

Comment 16

In Table 24 (Construction Details for MPL No. 3 Monitoring Wells) ensure that all of the measurements use the same units.

Comment 17

Table 25 (Parameters at Time of Sampling – MPL No. 3 (March 2012) lists the field parameters for the groundwater monitoring wells. The Depth to Groundwater bgs (ft) row lists “NR” for the water level depth of MW-10. There is no explanation in the text for the reason why no water

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level was recorded for MW-10. The Report must discuss all activities conducted at the site and include any changes to the monitoring work plan or any issues encountered in the field in the Report. In the revised Report, explain why the water level was not recorded and include it as a footnote in the table.

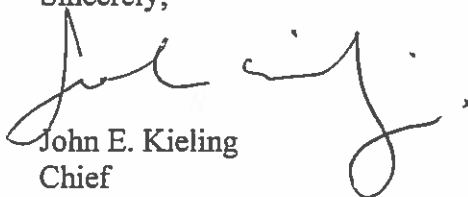
Comment 18

Ensure that all of the figures and other data included in Appendix C (Data) are referenced in the main text of the revised Report.

The Permittee must incorporate and address all of these comments as well as NMED's comments regarding the Long Term Groundwater Monitoring Reports from 2008 through 2010 and 2011. The revised Report must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments and a red-line strikeout version (electronic) of the Report that shows where all changes have been made. The Permittee must submit two paper copies and an electronic version of the revised Report to NMED no later than **August 15, 2014**.

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
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