



**NEW MEXICO
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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 11, 2020

Brian D. Knight
Environmental Division (Building 163)
U.S. Army White Sands Missile Range
White Sands Missile Range, NM 88002-5000

**RE: DISAPPROVAL OF RESPONSE TO THE NEW MEXICO ENVIRONMENT DEPARTMENT (NMED) NOVEMBER 14, 2018 FOURTH DISAPPROVAL LETTER TO THE REVISION 3 ACCELERATED CORRECTIVE ACTION (ACA) COMPLETION REPORT, REMEDIATION OF DIESEL CONTAMINATED SOIL AT MULTIPLE SITES: SWMUS 166 AND 199-214 WHITE SANDS MISSILE RANGE, NEW MEXICO
EPA ID #NM 2750211235
HWB-WSMR-08-004**

Dear Mr. Knight:

The New Mexico Environment Department (NMED) has received White Sands Missile Range (Permittee) *Response to the New Mexico Environment Department (NMED) November 14, 2018 Fourth Disapproval Letter to the Revision 3 Accelerated Corrective Action (ACA) Completion Report, Remediation of Diesel Contaminated Soil at Multiple Sites: SWMUs 166 and 199-214* (Response), dated February 6, 2020 and received February 12, 2020. NMED has reviewed the Response.

NMED's comments are based on the information presented in the Permittee's February 6, 2020 Response. NMED's acceptance of individual responses in the Permittee's Response does not constitute agreement with all information or every statement presented in the document.

The following comments correspond to the numbering of NMED's November 14, 2018 Fourth Notice of Disapproval (4th NOD) to *Revision 3 Accelerated Corrective Action (ACA) Completion Report, Remediation of Diesel Contaminated Soil at Multiple Sites: SWMUs 166 and 199-214* (Revised Report) and the Permittee's February 6, 2020 Response.

NMED Comment 1:

NMED's November 14, 2018 Fourth Notice of Disapproval (4th NOD), Comment 1, addresses an issue that affects the following sites: Harriet Site (SWMU 204), SE-70 (SWMU 205), Atom Site (SWMU 206-207), EC-50 (SWMU 209), and Cowan Site (SWMU 211). NMED's 4th NOD directed the Permittee to provide additional information to demonstrate that the soil excavations conducted at each site fully addressed soil contamination. NMED questioned whether or not the Permittee appropriately selected sidewall and base confirmation sample locations from the bounds of each excavation area that adequately demonstrate that remaining total petroleum hydrocarbon/ diesel range organics (TPH/DRO) contaminated soil was at or below the residential soil screening level of 250 mg/kg. The Permittee responded that all the locations identified in the preliminary investigation as being contaminated above the residential soil screening level (SSL) were excavated and confirmation sample locations were selected by field personnel based on site specific PetroFlag screening and visual and olfactory observations. The Permittee reportedly extended the vertical and lateral extent of the excavations at the sites based on these observations. To date, no field records documenting visual or olfactory observations have been submitted to NMED.

NMED has repeatedly commented that the confirmation samples collected from the excavated areas do not correlate with the general locations identified in the preliminary investigation as having the highest levels of contamination. As a result, NMED has directed the Permittee to submit a work plan to propose sampling locations for the collection of additional confirmation samples. The Permittee has responded that no further confirmation sampling is necessary because all of the preliminary investigation soil boring locations where DRO concentrations exceeded the residential SSL were excavated, that the final excavation extents were based on field observations, and that confirmation samples were appropriately selected based on actual site conditions rather than what was indicated by the preliminary investigations.

With few exceptions, the Report figures depicting the excavations and sampling locations show that the lateral location of sidewall confirmation samples were selected at the midpoint between the ends of the excavation sidewall, or, if more than one sample was collected, equally spaced along the length of the side wall. The uniform selection of sampling locations does not support the Permittee's assertion that sidewall samples were collected based on PetroFlag, visual, and olfactory observations made by field staff. The depth below ground surface selected for each side wall sampling location varied with each site but the locations were often at a depth that was different than where the data from the preliminary investigation indicated the highest contaminant concentrations were located. The Permittee must provide field records that demonstrate that the selection of confirmation sampling locations was based on observations of site conditions.

The Cowan site has been used by NMED in previous NODs to illustrate NMED's concerns regarding the location of confirmation samples. DRO concentration data obtained from preliminary investigation soil borings at the Cowan site indicated that there was a preferential

lateral component to the migration pathway from the source of release (SB01), to the northeast (SB03), at a depth of approximately 5-6 ft bgs. Data also indicate the somewhere between SB03 and SB04, located 10 ft further to the northeast, the concentration of DRO decreased from 6400mg/kg at SB03 (5-5.5 ft bgs) to below the laboratory reporting limit at SB04. The excavation extends only one foot past SB03 in the direction of SB04. There is no evidence presented by the Permittee that DRO concentrations decreased laterally from 6400mg/kg to below the Residential SSL of 520 mg/kg in the space of one foot. It is highly unlikely that this was the case simply based on the lateral rate of decrease of DRO concentrations observed between SB01 and SB03, which is approximately 460 mg/kg per foot. The Permittee extended the excavation vertically but not laterally at this SB03 based on the observations of field staff. While the lateral extent of contamination has been determined based on soil borings, an unacceptable level of uncertainty still exists about the amount of contaminated soil left in place between SB03 and SB04.

NMED has given careful consideration to the Permittee's responses to NMED's previous four NODs; however, the Permittee has yet to provide any record of the visual and olfactory observations made by field staff at the sites. In summary, the Permittee is directed to provide written field records that demonstrate that the excavation sidewall and base locations closest to the areas indicated by the preliminary investigation to be the most likely to be contaminated were evaluated by experienced field staff and exhibited no physical evidence of contamination. In the event that the records cannot be provided or if the records lack sufficient detail, the Permittee must proceed with submitting a work plan to address the data gaps described in the 4th NOD. Additionally, boring logs from the previous investigation were requested by NMED but only one boring log was provided in the Revised Report.

NMED Comment 2:

The Permittee's response is acceptable.

NMED Comment 3:

The Permittee's response is acceptable.

NMED Comment 4:

The Permittee has not adequately addressed NMED's comment regarding the collection of additional soil confirmation samples. In summary, the Permittee is directed to submit a work plan to address the data gaps identified by NMED unless written field records can be provided that demonstrate that the excavation sidewall and base locations were evaluated by field staff and exhibited no physical evidence of contamination.

The Permittee has adequately addressed NMED's concerns regarding arsenic at the Hardin Ranch site.

NMED Comment 5:

The Permittee has not adequately addressed NMED's comment. See Comment 1.

NMED Comment 6:

The Permittee has not adequately addressed NMED's comment. See Comment 1.

NMED Comment 7:

The Permittee was directed to make multiple revisions to the Revised Report for the Denver site.

Revision 1: The Permittee was directed to revise the Report text or replace isoconcentration lines in Figure 3. The Permittee did not comply.

Revision 2: The Permittee was directed to revise the Report to correctly identify the boring at which the 1.6 mg/L TPH result was detected in groundwater and address the detections of TPH in groundwater monitoring wells above the NMED 2017 Risk Assessment Guidance for Site Investigations and Remediation (2017 RAGS) groundwater screening level of 47.3 ug/L for diesel #2. The Permittee did not comply.

NMED has appropriately referenced the diesel #2 screening level for comparison purposes. The comparison is relevant because it provides context for the detection of contaminants in groundwater that may be related to the diesel spill and addresses the potential for residual soil contamination at the site to further contaminate groundwater. The issue of compliance will be addressed by NMED once the site has been adequately characterized. NMED rejects the Permittee's premise that if NMED uses the 2017 diesel #2 groundwater screening level for comparison purposes then all data presented in the Report should be compared to 2017 NMED screening levels. Furthermore, it is unclear why the Permittee references NMED's 2017 RAGS in the discussion of the arsenic at the Hardin Site rather than the NMED's 2005 RAGS. In summary, the Permittee is directed to compare field screening and analytical samples collected during site investigations to the NMED groundwater and soil screening levels that are current at the time the work is conducted.

Revision 3: The Permittee was directed to revise the Report to provide information on the status of the monitoring wells MW-02, MW-03, and MW-04, the distance from the diesel spill source to the wells, and the depths of screened intervals. The Permittee did not comply.

Revision 4: The Permittee was directed to submit a work plan to install a boring at the same location as SB08 to delineate the vertical extent of TPH and to include a proposal to sample groundwater monitoring wells for diesel contamination. The Permittee did not comply.

Mr. Knight
ACA Diesel Sites
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NMED Comment 8: The Permittee has not adequately addressed NMED's comment. See NMED Comment 1.

The Permittee must respond to NMED's comments above no later than **October 31, 2020**. The response must address all NMED comments included in this letter. The response must be submitted to NMED in the form of two hard copies and one electronic copy.

Should you have any questions or wish to meet with us to discuss these comments, please contact Rob Murphy at (505) 795-1403.

Sincerely,

Kevin
Pierard

Digitally signed
by Kevin Pierard
Date: 2020.09.11
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Kevin M. Pierard, Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
R. Murphy, NMED HWB
B. Avalos, WSMR
L. King EPA Region 6 (6LCRRC)

File: WSMR 2020 ACA Diesel contaminated soil SWMUs 166 and 199-214