



State of New Mexico  
ENVIRONMENT DEPARTMENT



Hazardous Waste Bureau

SUSANA MARTINEZ  
Governor  
JOHN A. SANCHEZ  
Lieutenant Governor

2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6313  
Phone (505) 476-6000 Fax (505) 476-6030  
[www.env.nm.gov](http://www.env.nm.gov)

BUTCH TONGATE  
Cabinet Secretary  
BRUCE YURDIN  
Acting Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

November 7, 2018

Mark Patterson  
BRAC Environmental Coordinator  
Fort Wingate Depot Activity  
13497 Elton Road  
North Lima, OH 44452

Steve Smith  
USACE  
CESWF-PER-DD  
819 Taylor Street, Room 3B06  
Fort Worth, TX 76102

**RE: DISAPPROVAL  
FINAL PERMITTEE-INITIATED INTERIM MEASURES REPORT  
PARCEL 6, REVISION 1  
FORT WINGATE DEPOT ACTIVITY  
MCKINLEY COUNTY, NEW MEXICO  
EPA ID# NM6213820974  
HWB-FWDA-16-011**

Dear Messrs. Patterson and Smith:

The New Mexico Environment Department (NMED) is in receipt of the Fort Wingate Depot Activity (Permittee) *Final Permittee-Initiated Interim Measures Report Parcel 6, Revision 1* (Report), dated July 27, 2018. NMED has reviewed the Report and hereby issues this Disapproval. The Permittee must address the following comments.

**1. Response to NMED's August 21, 2017 Disapproval Comment 2**

**Permittee Statements:** "The removal action at SWMU 8 occurred in 4 separate phases. One waste profile sample was collected following the initial removal on 10/20/15; 2 samples were collected on 12/08/15; a 4<sup>th</sup> sample was collected on 5/12/16; and a fifth sample was collected on January 18, 2018."

and,

"The text was revised to reflect that 5 waste profile samples were collected [in Section 5.3]."

**NMED Comment:** In Section 5.3, *Waste Profile Sampling and Disposal*, lines 22-24, page 5-2, the Permittee states, “[c]opies of waste profile laboratory report summary and waste manifests and landfill weigh tickets are included in Appendix G.” Appendix G notes, “[d]ue to the excessive number of scanned pages, this appendix has not been tagged for accessibility.” The information presented in Appendix G is not organized in a reviewable manner. Provide a table summarizing the analytical results for all waste profile samples collected for Solid Waste Management Unit (SWMU) 8 in the revised Report. In addition, all appendices must be organized reviewable manner for readers (e.g., table of contents) and include bookmarks in the electronic version.

## 2. Responses to NMED’s August 21, 2017 Disapproval Comments 4 and 6

**Permittee Statements:** “In cases where it is not possible to meet sensitivity criteria the laboratory will be instructed to inform the Army prior to completing a work plan.”

**NMED Comment:** Comment 2 in NMED’s *Approval with Modifications for Final 2017 Interim Facility-wide Groundwater Monitoring Plan, Version 10 Revision 1*, dated October 22, 2018, provides further instruction regarding the issue. No response is required.

## 3. Sampling Result Tables

**NMED Comment:** Tables 5-1A, 5-1B, 6-1A, 6-1B, and others list all analytes for all analytical methods applied to the samples. This is a departure from the standard practice of presenting data in tables based on the analytical group (e.g., a table for VOCs, a table for SVOCs, a table for metals, etc.). Presenting data for all analytes in one table increases review time for a document based on the difficulty of finding a specific analyte for a specific sample in a single 320-page table that spans two volumes (Table 6-1B). Revise the Report to present data in tables specific to analyte groups as has been performed in the past. This applies to all tables where data is presented in this and all future documents.

## 4. Electronic Database

**NMED Comment:** The Permittee failed to submit an electronic database that includes all historical data for Parcel 6 in the Report, which has been provided historically. The document cannot be fully reviewed without the electronic database. For all documents that include analytical data, the Permittee must include a searchable electronic file with all historical data included in a format acceptable to NMED. Provide the searchable electronic data in the revised Report.

## 5. Analytical Laboratory Reports

**NMED Comment:** The Report includes Level IV reports from the analytical laboratories. This has resulted in over 18,000 pages of laboratory reports for this Report. This level of reporting is rarely needed and cumbersome. NMED requests that only Level II analytical laboratory reports be included with all submittals. Revise the Report by substituting the Level



II reports for the Level IV analytical reports. In addition, for large appendices such as the 12,228-page Appendix J where multiple analytical and quality assurance/quality control reports are included, the Permittee must include descriptive bookmarks indicating where each new report begins.

#### **6. Sample to Analytical Laboratory Report Link**

**NMED Comment:** The Permittee provided large quantities of data with no indication where to locate a specific sample within a specific analytical laboratory report. For this document alone, the Permittee provided over 18,000 pages of analytical laboratory reports with no indication of where a specific sample can be located. For every document that includes analytical data, provide a link for each specific sample to a specific lab report filename (if multiple files are provided) or to a page number in the appendix where the specific lab report can be found (if multiple lab reports are combined into one large file). For Appendices C and F, the lab reports are indexed by lab report number. The Permittee must provide a link to the lab report number for each analyte. For Appendix J, no indexing is provided and multiple laboratory reports are combined. The Permittee must either provide indexing for each report and indicate which particular report contains a particular sample, or provide specific page numbers for each sample ID that indicates where the sample can be found in the lab reports. This information can be provided either in a new table or in the analytical data electronic database.

#### **7. Section 2.2, Remediation Goals, lines 7-13, and Section 2.2.1, Human Health Screening Levels and Risk Evaluation Approach, lines 30-33, page 2-2**

**Permittee Statements:** “The risk evaluation initially [sic] presented in the October 2016 PIIM Report used the July 2015 NMED risk guidance because the risk evaluation started in 2016 prior to NMED issuing the March 2017 (Revised) edition of the its risk guidance. This PIIM report retains use of the 2015 NMED SSLs and 2015 USEPA RSLs, as allowed by NMED consistent with Comment 4 on the Final RCRA Facility Investigation Report for Parcel 7 (NMED, 2017a) that states, “If the risk assessment is already in progress (e.g., started or being revised through comments), NMED allows the older version of the guidance to be followed.”, and

“The screening levels used in the human health risk evaluation were those appropriate for evaluating residential receptors exposed to COPCs in soil through the direct contact pathway and the soil to groundwater pathway, and that were in effect at the time the original risk evaluation was submitted to NMED (October 2016).

**NMED Comment:** The Permittee used a statement taken out of context from NMED comments on another Parcel’s investigation report to justify use of the 2015 risk guidance. The Permittee failed to include that field work continued to be conducted through 2018 for this investigation. In addition, while the initial risk evaluation was submitted in 2016, the Permittee had not completed the scope of the investigation as approved by NMED; therefore, risk evaluation at that time was not appropriate. NMED’s policy is that the risk assessment guidance that is in effect when the field work is completed is the appropriate guidance to



follow. Therefore, the Permittee must reevaluate the risk related to Parcel 6 based on NMED's March 2017 *Risk Assessment Guidance for Site Investigations and Remediations* (Guidance). Revise the Report to include risk assessment based on the appropriate guidance.

**8. Section 4.5, Confirmation Sampling Results, lines 14-15, page 4-2**

**Permittee Statement:** "Based on the confirmation sampling, soil removal for lead in AOC 28 -Igloo Block B is considered complete."

**NMED Comment:** NMED does not agree with this statement. The Permittee has been directed through comments in multiple documents that direct comparison of multi-incremental (MI) samples to SSLs is not appropriate for compliance purposes. Disregarding NMED's comments without adequate justification constitutes non-compliance. Further characterization is required at multiple apron sites where MI sample concentrations exceeded the background concentration for lead and multiplication of the sample concentration by the number of subsamples results in exceedance of the SSL. A preliminary review of the data indicates that 55 MI samples from decision units in Igloo Block B fit the criteria above and require further characterization. Review the data for the aprons and propose to submit a Phase 2 interim measures work plan that proposes to further subdivide the decision units for collection of MI samples or collect discrete samples where further characterization is warranted in the revised Report.

**9. Section 4.8.3, Background Threshold Values, lines 32-33, page 4-7**

**Permittee Statement:** "However, an evaluation of metals background may not be conducted if a cumulative risk evaluation is not required because only one analyte is detected."

**NMED Comment:** The statement is not correct. Regardless of the number of contaminants of potential concern (COPCs), it is acceptable to screen out site concentrations as being within background levels. If the site metal concentrations were within background levels, eliminating all COPCs, no risk assessment would be required. For Area of Concern (AOC) 28, because the background reference value for lead (12.4 milligrams per kilogram, mg/kg) is significantly below the direct contact residential soil screening levels (SSLs) (400 mg/kg residential and 800 mg/kg industrial/construction), retention and/or elimination of lead as a COPC through site attribution analysis does not impact the conclusions for this site. Revise the Report accordingly.

**10. Section 4.8.9, Risk Evaluation Results – Human Health, lines 17-18, page 4-9**

**Permittee Statement:** "The results of the risk screening are illustrated in Table 4-1. All lead results were below the screening level."

**NMED Comment:** The evaluation of the data for AOC 28 does not include an evaluation of the soil-to-groundwater pathway. All of the data provided in Table 4-1 that are not reflective of background levels exceed the lead soil-to-groundwater screening level based on a dilution

attenuation factor (DAF) of 20. However, given the site history, small areas of impact and comparison to background levels, it is unlikely that impact to groundwater has occurred. Revise the Report to address the soil-to-groundwater pathway and provide lines of evidence to demonstrate why it is incomplete in the revised Report.

**11. Section 5.1, Previous Investigations, lines 8-9, page 5-1**

**Permittee Statement:** “Former Building 537 was also used to store containers of pesticides and was demolished in 2010.”

**NMED Comment:** An inspection for asbestos-containing materials (ACM) must be conducted during the investigation in accordance with Permit Section VIII.A.1.e. If ACM is found, the soil must be analyzed for the presence of asbestos. Propose to submit a phase 2 interim measures work plan to evaluate for the presence of ACM in SWMU 8 in the revised Report.

**12. Section 5.4, Confirmation Sampling, lines 8-9 and 14-15, page 5-4**

**Permittee Statements:** “[The analytical results indicated that COPC concentrations exceeded the screening levels in] one sample from Area B (0608B537BEC-0.0-0.5D-SO) [in SWMU 8],”

and,

“One discrete bottom sample (0608B537BEC-1.0-1.5D-SO) was collected from Area B.”

**NMED Comment:** The second confirmation sample was designated as 0608B537BEC-2.0-2.5D-SO in Table 5-1B, *SWMU 8 – Former Building 537 Excavation Confirmation Sampling Results (all results)*. Correct the discrepancy in the revised Report.

**13. Section 5.6.2.8.2, Initial Cumulative Risk Evaluation, Residential Receptors (Area A through E), lines 10-12, page 5-15**

**Permittee Statement:** “The results of the cumulative evaluation for the direct contact pathway are presented in Table 5-3A, and indicate the estimated cancer risk of  $1.5 \times 10^{-5}$  is greater than the NMED target risk threshold of  $1 \times 10^{-5}$ .”

**NMED Comment:** The 2015 NMED Soil Screening Levels were applied. If the 2017 NMED Soil Screening Levels had been applied, it is likely the initial screen would have met target risk levels. Although the refined risk assessment, using the 95% upper confidence level of the mean, resulted in acceptable risk levels, use of the current screening levels would have resulted in less cumbersome assessments with less refinement and justification needed to address uncertainties. Revise the Report to use the 2017 SSLs.



**14. Table 5-2, Quantitation Limits Compared to Human Health Soil Screening Levels - Direct Contact, p 5-T137 and Table 5-5, SWMU 9 - POL Discharge Area - Quantitation Limits Compared to Ecological Screening, p 5-T145, etc.**

**NMED Comment:** According to Tables 5-2 and 5-5, there were multiple analytes with quantitation limits that exceeded the residential and ecological soil screening levels. Quantitation limits that exceed screening levels make it impossible for the Permittee to demonstrate, or for NMED to defend, that contamination is not present at unacceptable concentrations at the facility. The Permittee must make a concerted effort to identify analytical laboratories that can achieve appropriate quantitation limits that are below the screening levels. Revise the Report to discuss efforts to achieve appropriate quantitation limits as detailed above.

**15. Section 6.4, Confirmation Sampling, lines 33-38, page 6-2 and line 1, page 6-3**

**Permittee Statement:** “The analytical results indicated that COPC concentrations exceeded the NMED direct contact [soil screening levels] SSLs in two samples from Area A (4AEC05-0.0-0.5D-SO and 4AEC08-0.0-0.5D-SO) and in one sample from Area B (4BEC03-0.0-0.5D-SO). Additional soil was removed from Areas A and B and three new confirmation samples were collected on March 7, 2016 (4AEC05-1.0-1.5D-SO, 4AEC08-1.0-1.5D-SO, and 4BEC03-1.0-1.5D-SO). The analytical results from the three new confirmation samples indicated that COPC concentrations were below the NMED direct contact SSL.”

**NMED Comment:** The Permittee returned to the field during 2017 and 2018 to collect samples required by the NMED-approved work plan that were omitted during the initial field work. Three of the collected samples from SWMU 20, Feature 4 exceeded the SSLs for SVOCs, yet discussion of these results was not provided in the text. Table 6-1A, *Excavation Confirmation Sampling Results (detections only)* and Figure 6-3, *Exceedance Area Map, Human Receptors*, indicate that the concentrations of COPCs exceeded the applicable screening levels in the soil samples collected from 4AEC-05D-SO, 4BEC-03D-SO, and 4BEC-28D-SO. The soils that contain these exceedances are still present. The Permittee must propose to collect step-out and deeper samples to define the extent of contamination, remove the soils where the exceedances are detected, and conduct confirmation sampling after removal of the contaminated soils. Use of the 2017 Guidance, which increased the direct contact SSL concentration for benzo(a)pyrene, results in only one exceedance versus three. Propose to submit a phase 2 interim measures work plan to define and remediate the SVOC contamination at this location in the revised Report.

**16. Section 6.6.2.5, Screening Levels, lines 30-33, page 6-9**

**Permittee Statement:** “Direct contact pathway – SSLs for residential receptors and construction workers identified in NMED risk guidance (NMED, 2015b) were considered in the human health risk evaluation, with the exception of arsenic in soil where NMED is allowing use of the site-specific background level of 5.6 mg/kg in lieu of the NMED screening level.”

**NMED Comment:** The site-specific background level of 5.6 mg/kg was used to screen arsenic as a potential COPC and for assessing site risk. The agreement with NMED to use 5.6 mg/kg for screening purposes was based on the fact that at the time of this agreement, the SSL for arsenic was below the background level. However, the 2017 SSL for arsenic is 7.07 mg/kg (residential). The current SSL for arsenic must be used for estimating risk, to avoid an overly conservative evaluation for arsenic. Revise the Report to include risk assessment evaluation based on the March 2017 Guidance.

**17. Section 6.6.2.7, Risk Evaluation Approach, Step 1, lines 17-22, page 6-11**

**Permittee Statement:** “Metals with maximum concentrations greater than the site-specific background level were further evaluated by comparing the maximum detected concentration in the sample set to the maximum detected concentration in the background data set. Metals with maximum concentrations from the sample set that are at or below the maximum concentration from the background data set are not considered site-related and are eliminated from further evaluation.”

**NMED Comment:** The comparison of site data to a background range is only applicable for arsenic. According to Section 2.7.3 of the 2015 NMED Guidance, if the maximum detected concentration is greater than the background reference value, a statistical evaluation is required to determine if the data are statistically different. Further, as noted in Section 2.8.3.3 of the 2017 NMED Guidance, a “simple comparison to a range of data or quartiles are not acceptable lines of evidence” to drop a constituent from the risk assessment. Remove the statement from the Report and revise the risk assessment tables and discussions accordingly.

**18. Section 6.6.2.8.3, Initial Cumulative Risk Evaluation, lines 26-28, page 6-13**

**Permittee Statement:** “The initial cumulative risk evaluation considered six metals, two pesticides (4,4'-DDE and 4,4'-DDT), three PCBs (Aroclors 1254, 1260, and 1268), five VOCs, and 14 PAHs.”

**NMED Comment:** Five volatile organic compounds (VOCs) were retained as COPCs for the human health risk assessments. However, an evaluation of the vapor intrusion pathway has not been provided. Section 2.5.2 of the 2015 NMED Guidance (and Section 2.5.2 of the 2017 NMED Guidance) outlines the tiered approach for the evaluation of the vapor intrusion pathway. Since VOCs were detected, the vapor intrusion pathway is at least potentially complete and requires a qualitative discussion. If the pathway is complete according to the guidance, a quantitative assessment conducted in accordance with the methodology outlined in Section 2.5.2 of the 2017 NMED Guidance, is required. Revise the Report to address vapor intrusion.



**19. Section 6.6.2.8.3, Initial Cumulative Risk Evaluation, Soil to Groundwater Pathway, lines 24-29, page 6-14**

**Permittee Statement:** “The results of the initial cumulative risk evaluation for the soil to groundwater pathway are presented in Table 6-4C and indicate that the estimated total cancer risk of  $1 \times 10^{-4}$  is greater than the NMED target risk threshold of  $1 \times 10^{-5}$ . PAHs contribute the majority of the risk with benzo(a)pyrene contributing the greatest percent of risk from PAHs. Further evaluation of potential cancer risks was warranted and a refined cumulative risk evaluation was conducted.”

**NMED Comment:** For the soil-to-groundwater screening analyses, risks were calculated using constituent-specific concentrations in the subsurface and the generic soil-to-groundwater SSLs for a dilution attenuation factor DAF of 20 taken from the 2015 NMED Soil Screening Guidance. The generic soil-to-groundwater SSLs address the potential leaching of contaminants from the vadose zone to groundwater and incorporate chemical and physical properties of the constituents. The soil-to-groundwater SSLs are not truly risk-based numbers and as such, estimations of risk should not be conducted nor be included in cumulative risk/hazard estimates; therefore, comparison to target risk levels is not applicable to the soil-to-groundwater pathway. Rather than estimating risk, soil contaminant concentrations must be compared directly to the soil-to-groundwater screening levels to determine if the subsurface soil contamination has the potential to act as a source of contamination for groundwater. If the site concentration is greater than the appropriate soil-to-groundwater SSL, additional investigation is necessary to evaluate potential leaching and migration to groundwater in excess of NMED groundwater protection criteria. Refinements of the soil-to-groundwater pathway do not include evaluation on a target organ-specific basis; again, the soil-to-groundwater SSLs are not evaluated as risk-based numbers and comparison of risk by target organ is inappropriate. Section 4.3 of the 2017 NMED Guidance allows the use of the least conservative SSL for the initial SSL evaluation (this may be based on a water quality parameter, a contaminant limit or drinking water standard). Revise all text and associated tables in the Report, removing all estimates of risk/hazard for the soil-to-groundwater pathway. In addition, revise the discussion of the soil-to-groundwater screening in terms of point comparisons and the identification of constituents that exceed the corresponding SSLs. Where soil-to-groundwater SSLs are exceeded, additional evaluation following Section 4.3 of the 2017 NMED Guidance is required.

**20. Table 6-3, Metals Background Evaluation, page 1 of 1**

**NMED Comment:** Barium was detected above the background reference value. As such, it should have been retained as a COPC. The only metal where comparison to a range of background is acceptable is arsenic. Revise the table (and the risk in Table 6-4A) to include barium as a COPC in the revised Report. It is noted that inclusion of barium will not significantly change the estimated hazard index.



**21. Table 6-5A, Cumulative Risk/Hazards Calculations for Detected Analytes, page 1 of 1**

**NMED Comment:** The total cancer risk ( $1.3E-05$ ) when using the refined exposure point concentrations (95% upper confidence level of the mean) slightly exceeds the target risk level of  $1E-05$ . The primary driver is polycyclic aromatic hydrocarbons (PAHs). Note that PAH risks are based on outdated toxicity. The three PAHs with the highest level of contribution to total risk are benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene. Based on the 2015 SSLs, the risk resulting from these three PAHs is  $1.11E-05$ . However, if the 2017 SSLs are applied, the cumulative risk due to these three PAHs drops to  $6.8E-06$ . It is likely that use of the 2017 NMED SSLs will show acceptable cancer risk for the residential receptor at SWMU 20. Reevaluate the cancer risk using the 2017 NMED SSLs in the revised Report.

The Permittee must submit a revised Report that addresses all comments contained in this Disapproval. In addition, the Permittee must include a response letter that cross-references where NMED's numbered comments were addressed. The Permittee must also submit an electronic redline-strikeout version of the revised Report showing all changes that have been made. The revised Report must be submitted no later than **January 31, 2019**. The revised Report must include a schedule for submittal of a phase 2 interim measures work plan as directed in the comments.

Messrs. Patterson and Smith  
November 7, 2018  
Page 10

Should you have any questions, please contact Michiya Suzuki of my staff at (505) 476-6059.

Sincerely,



John E. Kielling  
Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
B. Wear, NMED HWB  
M. Suzuki, NMED HWB  
C. Hendrickson, U.S. EPA Region 6  
L. Rodgers, Navajo Nation  
S. Begay-Platero, Navajo Nation  
M. Harrington, Pueblo of Zuni  
C. Seoutewa, Southwest Region BIA  
G. Padilla, Navajo BIA  
J. Wilson, BIA  
B. Howerton, BIA  
R. White, BIA  
C. Esler, Sundance Consulting, Inc.

File: FWDA 2018 and Reading, Parcel 6, FWDA-16-011