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**ENVIRONMENT DEPARTMENT**  
*Hazardous Waste Bureau*



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**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

March 8, 2018

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CESWF-PER-DD  
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**RE: DISAPPROVAL  
FINAL RCRA FACILITY INVESTIGATION WORK PLAN PARCEL 9  
REVISION 1  
FORT WINGATE DEPOT ACTIVITY  
MCKINLEY COUNTY, NEW MEXICO  
EPA ID# NM6213820974  
HWB-FWDA-15-007**

Dear Messrs. Patterson and Smith:

The New Mexico Environment Department (NMED) is in receipt of the Fort Wingate Depot Activity (Permittee) *Final RCRA Facility Investigation Work Plan Parcel 9 Revision 1* (Work Plan), dated December 15, 2017. NMED has reviewed the Work Plan and hereby issues this Disapproval. The Permittee must address the following comments.

**1. General Issues with Work Plan**

**NMED Comment:** The Work Plan contains many issues that have been previously commented on by NMED, including the inclusion of inappropriate appendices, the inclusion of other reports in appendices, appendices within an appendix of the same name, missing pagination within appendices or on tables and figures, and such.

Most of these issues are addressed in Comments 4,7, and 8. For all submittals to NMED, all pages within the submittal must include a page number, whether it is a table, a figure, or part

of an appendix. Review of document submittals regularly require that the document be disassembled so that text, tables, and figures can be reviewed together or so that stakeholders can make copies. Reassembling the document is difficult when pages do not include page numbers. Ensure that all document submittals include page numbers on all pages. Revise the Work Plan accordingly.

## 2. Presentation of New Data in a Work Plan

**NMED Comment:** The Permittee has presented new data in the Work Plan that has not been presented to NMED in an investigation report. Work was performed at the Parcel 9 Area of Concern (AOC) 18 igloos in the absence of NMED-approved work plans, and no reports have been submitted summarizing the work that was completed. Based on review of work performed on the Parcel 24 AOC 18 igloos, it appears that there may be problems with the method in which composite and multi-incremental samples were evaluated. For example, it appears that direct comparison to soil screening limits (SSLs) was conducted instead of multiplying concentration result by number of subsamples. Also, invalid x-ray diffraction (XRF) data was used to make decisions (e.g., no correlation between XRF results and lab confirmation results) and inappropriate SSLs were used for contaminant concentration comparison (e.g., chrome III vs total chrome).

An investigation report describing the work that was performed in 2008 and 2010, including all sampling data, at the Parcel 9 igloos and revetments must be submitted prior to resubmittal of the Work Plan. The investigation report must detail all work performed at Parcel 9 since the effective date of Fort Wingate's RCRA Permit (12/31/2005). Appropriate evaluation of data and associated recommendations must be included in the investigation report. The investigation report must be submitted to NMED no later than **August 3, 2018**.

## 3. Response to Comments

**NMED's Comment:** The Permittee did not provide an electronic version of their response to NMED's Disapproval comments on the included CD. For all future revised document submittals, provide an electronic version of the Permittee's response to comments with the electronic version of the submittal.

## 4. Appendices

**NMED's Comment:** NMED did not review and does not provide approval for:

- Appendix A, Summary Report of Historical Information
- Appendix B, Cultural Resources Programmatic Agreement
- Appendix C, NRCS Soil Descriptions for Fort Wingate
- Appendix D, Quality Assurance Project Plan

NMED has repeatedly requested that the Permittee not include full documents or reports as appendices. For example, Comment 12 from NMED's November 1, 2016 *Disapproval Final*

*Interim Measures Work Plan Parcel 21 – Solid Waste Management Unit 1 – TNT Leaching Beds* specifically states,

Previous NMED comments on other documents have requested that the Permittee not include full documents or reports as appendices. These documents or reports must be referenced in the Work Plan, but should be submitted to NMED separately as reference documents.”

In addition, NMED has repeatedly provided comments regarding the haphazard nature of the Permittee’s report/work plan appendices and the problems inherent in providing appendices within appendices. For example, Comment 11 from NMED’s November 1, 2016 *Disapproval Final Interim Measures Work Plan Parcel 21 – Solid Waste Management Unit 1 – TNT Leaching Beds* states,

The labeling of appendices within the appendices is confusing for a reviewer. For example, Appendix A contains an Appendix A. Provide a logical nomenclature for appendices within another appendix. For example, Appendix A-1, A-2, etc.

In addition, the page numbering of Appendix A is repetitive and confusing. For example, there are five pages numbered 1 (one) in the Appendix and several pages with no numbers at all. All Appendices must be presented with properly numbered pages.

Remove all extraneous appendices from the Work Plan. Label sub-appendices within appendices appropriately. Ensure all appendices have all pages sequentially numbered for review. Revise the Work Plan to correct these issues. These recurring issues, which have repeatedly been brought to the Permittee’s attention, must be addressed in all future document submittals. If corrections are not made in future submittals, the submittals may be rejected.

## 5. Work Plan CD

**NMED Comment:** The CD includes unexplained folders and files that are listed with letters that do not correlate to the lettered appendices. All folders and files included on accompanying CDs must be organized in the same structure as the Work Plan. Revise the Work Plan CD appropriately.

## 6. Typographical Errors

**NMED Comment:** The Work Plan contains many typographical errors. For examples see,

- a. Section ES-4.1, *Human Health*, line 4, ES-4
- b. Section ES-4.2, *Ecological*, line 31, page ES-4
- c. Section 7.3.4.2.3, *Step 1 – Evaluate the Maximum Concentration*, line 23, page 7-7

Revise the Work Plan to correct the errors and review all future documents for accuracy to avoid typographical errors.

**7. Appendix A: Summary Report of Historical Information Parcel 9**

**NMED Comment:** The Summary Report of Historical Information Parcel 9 (HIR) is another example of a disorganized document consisting of appendices that include multiple reports mixed together without an apparent rationale. For instance, Appendix C of Appendix A is a collection of miscellaneous pages, many of which are illegible, pulled from a variety of unreferenced documents, taken out of context, and combined without organization, pagination, or description. Also included in this document is the Parcel 24 Release Assessment Report which does not discuss Parcel 9.

The Permittee has received numerous and repeated comments on the lack of organization of appendices in reports and work plans. These recurring issues, which have repeatedly been brought to the Permittee's attention, must be addressed in all future document submittals. The HIR must be revised and submitted as a stand-alone document no later than **June 8, 2018**.

**8. Section 3.3, Previous Investigations, page 3-6**

**Permittee Statement:** "Available historical information from prior investigations for the FWDA sites that encompass Parcel 9 has been compiled and summarized in the SRHI (Appendix A)."

**NMED Comment:** The Summary Report of Historical Information is a stand-alone report that must be submitted under separate cover. A historical information report was required by Table VII.2 of the Permit to be submitted no later than 11/1/2016. Historical information reports should only include site-related information from prior to the date that the 2005 RCRA Permit went into effect. Prior investigations conducted under the Permit must first be presented in an investigation report and then summarized in the Previous Investigation section of the Work Plan. Remove all information related to work performed under the Permit from the Historical Information report. Prepare and submit the historical information report as directed in Comment 7 above. Prepare and submit an investigation report for prior sampling conducted at Parcel 9 as directed by Comment 2 above.

**9. Section 3.3, Previous Investigations, lines 29-32, page 3-6**

**Permittee Statement:** "All the igloos and revetments in Igloo Block A were investigated and documented in the Final Release Assessment Report Parcel 24 (USACE, 2014a) with two exceptions: Revetment YA925-F was not sampled because it had been destroyed by an arroyo, and Igloo A1000 was not sampled because it is currently in use by the Missile Defense Agency (MDA). Only the sampling of Igloo A1000 in Igloo Block A is included in this RFI Work Plan."

**NMED Comment:** The statement is not accurate. The very first page of text, p ES-1, in the 2014 *Final Release Assessment Report Parcel 24* (2014 RAR) specifically states, "...only Parcel 24 is discussed in this report." Section 1.0, paragraph 3 of the 2014 RAR states, "[p]arcel 9 is presently being leased to the Missile Defense Agency (MDA) and is not part of this investigation." Section 4.1, paragraph 1 of the 2014 RAR states, "only Parcel 24 is discussed in this report." Paragraph 3 of the same section again specifically states, "[o]nly Parcel 24 results are discussed in this report."

In addition, while the statement above states that Igloo A1000 was not sampled, Table 5-1 includes data for Igloo A1000. Provide an explanation for this discrepancy. Also, the location of Revetment YA925-F is not depicted on any figure. Provide the location of Revetment YA925-F, as well as all other revetments and igloos, on a figure in the investigation report required by Comment 2. Based on igloo and revetment numbering schemes, it appears that Revetment YA925-F is likely located in Parcel 24, rather than Parcel 9. In addition, Table 1 of the 2014 RAR includes Y-A925-F as part of the Parcel 24 AOC 18 structures.

Clarify these issues in the investigation report required by Comment 2 above. In addition, resolve these discrepancies in the revised Work Plan. Remove all statements referring to the Parcel 24 Release Assessment Report since it does not contain information on Parcel 9.

#### **10. Section 4.3.3, Incremental Soil Sampling, lines 10-14, page 4-5**

**Permittee Statement:** "ISM will be used to collect soil samples to delineate the nature and extent of COPCs at Igloo A1000 in AOC 18 and at former building X-16/Z-222 and former building X-17/Z-225 in AOC 85 in Parcel 9. ISM samples will be collected in accordance with procedures outlined in *Technical and Regulatory Guidance, Incremental Sampling Methodology* (Interstate Technology Regulatory Council, 2012).

**NMED Comment:** NMED views the incremental sampling proposed in this Work Plan as a screening tool only. If contamination is identified in soils using the procedures, the Permittee may be required to conduct additional sampling. Refer to NMED Comment 15 in the September 5, 2007 *Notice of Disapproval Parcel 21 RCRA Facility Investigation Work Plan and Release Assessment Report for Parcel 21*. No revisions to this Work Plan are necessary.

#### **11. Section 4.3.3, Incremental Soil Sampling, lines 21-22, page 4-5**

**Permittee Statement:** "Personnel will sample in a systematic manner so that collected increments are evenly distributed across DUs and SUs."

**NMED Comment:** The incremental sampling locations in decision unit 1 shown in Figure 5-5, *Proposed Discrete-depth and Incremental Sample Locations for AOC 18*, must be biased toward the drainage swales and nearby loading pad areas. In Section 5.3, *Nature and Extent of Contamination*, the Permittee also states, "[explosives and metal-contaminated water] potentially flowed in the swales adjacent to the paved apron and remained there or flowed away from the igloo across the paved access road and into the drainage area opposite of the

igloo.” The incremental sampling locations in decision unit 2 shown in Figure 5-5 must be biased toward the areas where contamination is likely to have accumulated. Similarly, the sampling locations for former building sites shown in Figure 6-2, *Proposed Incremental Sample Locations for AOC 85* must be biased toward topographic low areas and also any evidence of potential contamination. Incremental sampling locations should not be established in a systematic manner; rather, the locations must be biased toward the areas of potential contaminant accumulation at the igloo and former building sites. Revise the Work Plan accordingly.

## 12. Table 4-1, Data Quality Objectives for RCRA Facility Investigation at Parcel 9

**Permittee Statements:** “Problem Statement: The presence of contamination at Igloo A1000 has not been confirmed...”

“Analytic Approach: Additional soil removal at other igloo outfall locations may be needed and will be determined based on the results of the risk evaluation...”

**NMED Comment:** The presence of contamination at Igloo A1000 has been confirmed based on the data provided in Table 5-1, *Parcel 9 – AOC 18 (Igloo Block A) Historical Analytical Detections*. The lead concentration in the composite soil sample collected from Igloo A1000 during the 2008 investigation is recorded as 1,070 mg/kg, according to Table 5-1. Revise Problem Statement, Goals of the Study, and Information Inputs in Table 4-1, accordingly.

In addition, the lead concentrations in the soil samples collected from most of the other igloos exceeded the residential soil screening level when evaluated appropriately; based on Table 5-1, soil removal is warranted at 19 igloos where the drain composite samples were collected, and one igloo requires further investigation at the aprons where the multi-incremental samples were collected. Revise the Analytic Approach in Table 4-1, accordingly.

## 13. Section 5.2.2, Sampling Data, lines 39-41, page 5-1 and lines 1-2, page 5-3

**Permittee Statement:** “As shown in Table 5-1, the nitrate/nitrite and phosphate concentrations in soil samples collected from AOC 18 in 1981 did not exceed the current NMED human health direct contact or ecological screening levels.”

**NMED Comment:** Data collected in 1981 was not performed under the FWDA RCRA Permit and cannot be used to make decisions. In addition, the screening level of phosphate is 3,800,000 mg/kg, which exceeds 100% of phosphate concentration. The phosphate concentration will not exceed the screening level under any circumstances. The value of the screening level implies that phosphate poses no human health and ecological risks. The Permittee is not required to assess site risks associated with the compounds with screening criteria that are above 1,000,000 mg/kg. Remove all references to data not collected under the FWDA RCRA Permit from all investigation work plans or reports. Data collected prior to the Permit should only be discussed in the historical information report.

**14. Section 5.2.2, Sampling Data, lines 21-24, page 5-3**

**Permittee Statement:** “The phosphate concentrations ranged from 661 mg/kg to 804 mg/kg. Phosphate was detected at concentrations above background at the two igloos located within Parcel 9: one sample collected from Igloo A987 at a concentration of 726 mg/kg and one sample from Igloo A991 at a concentration of 758 mg/kg.”

**NMED Comment:** Releases of white phosphorous may have occurred in the past based on phosphate concentrations that exceeded the background concentration at two igloos located within Parcel 9. Discuss the potential release of white phosphorous in AOC 18 in the revised Work Plan and propose to include phosphate analysis for the soil samples collected from Igloo A1000, as necessary.

**15. Section 5.5.2, Discrete-depth Surface Soil Sampling Below Igloo A1000 Drains, lines 10-13, page 5-5**

**Permittee Statement:** “To determine if a release occurred from Igloo A1000, personnel will collect one discrete depth soil sample directly below each of the former drain outlets, after the drains have been removed (Figure 5-5). Personnel will collect soil from 0 to 6 inches bgs, following the protocol described in Section 4.3.2. The analytes for these samples will be explosives and TAL metals.”

**NMED Comment:** It is not clear whether the discrete-depth soil sampling referenced above refers to soil confirmation sampling after soil is already removed from under each drain outlet. Since the lead concentrations from the soil samples collected from under drain outlets of Igloo A1000 during the 2008 investigation exceeded the screening level according to Table 5-1, the Permittee is not required to collect additional samples prior to soil removal. Remove contaminated soil from below each drain outlets; then, collect one discrete depth soil sample directly below each of the former drain outlets as a confirmation sample. Although the Permittee states, “[t]his sample will be analyzed for the constituents that exceed the screening levels” in Section 5.5.4, *Soil Removal Below Previously Sampled Igloo Drain Pipes*, the soil samples must be analyzed for TAL metals and explosives as stated in Section 5.5.2. Revise the Work Plan accordingly.

**16. Section 5.5.3, Incremental Surface Soil Sampling of Igloo A1000 Drainage Areas, lines 36-39, page 5-5**

**Permittee Statement:** “If analysis reveals constituents exceed NMED selected human health SSLs or Tier 1 ESLs, a decision will be made as to whether screening level refinements are appropriate, as described in Section 7.3.4.3.2 and Section 7.4.1.4. If exceedances remain, 3-foot-wide step-out DUs will be established around the perimeter of DU1 and/or DU2 (Figure 5-6), and sampled.”

**NMED Comment:** The reported constituent concentrations for incremental samples must be multiplied by the number of subsamples in each decision unit for comparison to screening

levels. If any exceedances are found during the screening process, the Permittee is also required to conduct additional soil sampling by further dividing the sampling grid in the decision unit to identify whether there is a local area of contamination. This comment applies to all AOCs and SWMUs where a multi-incremental soil sampling approach is utilized. In the revised Work Plan, include the procedures for subdividing the existing decision units, in addition to collecting soil samples from additional step-out decision units in case if the contaminant concentrations exceed the screening levels.

**17. Section 5.5.4, Soil Removal Below Previously Sampled Igloo Drain Pipes, lines 7-9, page 5-6**

**Permittee Statements:** "Soil removal will be conducted at igloo outfall locations where the 2010 resampling analytical results exceeded the human health screening level for lead in effect at the time of sampling (400 mg/kg), and that exceeded the arsenic background level (5.6 mg/kg)."

**NMED Comment:** The 2010 sampling event consists of the X-ray fluorescence (XRF) soil investigation. The data from the XRF did not correlate to the analytical laboratory confirmation sample data; therefore, the data is not valid. No decisions can be made based on the XRF data. The Permittee must use the 2008 soil investigation results as soil removal criteria. These results must be multiplied by the number of subsamples collected, then compared to the SSLs to determine if further investigation is required. Based on a cursory review of the data, soil removal and further characterization is required at multiple igloos. The Permittee must present the data collected previously in an investigation report as outlined in Comment 2 and provide data analysis and recommendations for further investigation and/or remediation.

Accordingly, in the revised Work Plan, the Permittee should propose to further characterize and/or remove soils from drain outlets of contaminated igloos within AOC 18. Following removal of soil from the drain outlet areas, the Permittee must collect one discrete soil sample from each excavation area directly below the drain outlet and analyze the sample for TAL metals and explosives. Although the Permittee states, "[t]his sample will be analyzed for the constituents that exceed the screening levels", soil confirmation samples must be analyzed for both TAL metals and explosives. Revise the Work Plan accordingly. In addition, evaluate whether phosphate should be included as an analyte.

**18. Figure 5-3, Parcel 9 AOC 18 2008 Sample Locations Map, no page number**

**NMED Comment:** Figure 5-3 indicates that discrete soil samples were collected at the igloo drains. This is not accurate. Based on the sampling conducted at the Parcel 24 Igloo Block A igloos, composite samples were collected from the igloo drains in 2008. Provide an accurate depiction of work performed on Figure 5-3 in the revised Work Plan.

In addition, the Figures and Tables within the Work Plan must contain page numbers that correspond to the text of each section. Provide proper pagination in the revised Work Plan.



**19. Table 5-1, Parcel 9 AOC 18 Historical Analytical Detections, page 1 of 5**

**NMED Comment:** Table 5-1 includes data collected prior to the effective date of the FWDA RCRA Permit. Data collected prior to the effective date of the RCRA Permit must be included in the Historical Information Report and removed from all investigation work plans and reports.

**20. Section 6.1.3, Constituents of Potential Concern, lines 18-19, page 6-1**

**Permittee Statement:** “The relevant COPCs for former buildings X-16/Z-222 and X-17/Z-225 are explosives and TAL metals.”

**NMED Comment:** White phosphorous may also have been stored at the site; therefore, include phosphate analysis. In addition, nitrate-based explosives may degrade into nitrate and semi-volatile organic compounds (SVOCs); therefore, include nitrate and SVOCs analyses for the soil investigation at AOC 85. Revise the Work Plan accordingly.

**21. Section 6.2.1, Non-sampling Data, lines 24-26, page 6-1**

**Permittee Statements:** “Review of available aerial photography (Environmental Research, Inc., 2006) suggests that the former buildings were constructed between 1935 and 1948.”

**NMED Comment:** Asbestos-containing materials (ACM) have been found at other sites where buildings were constructed during the similar timeframe. ACM must be searched for visually during the investigation. If significant amounts of ACM are found, the soil samples must be analyzed for asbestos. Revise the Work Plan to include ACM investigation at AOC 85.

**22. Section 6.3.1, Incremental Surface Soil Sampling Inside Former Building Areas, lines 24-25, page 6-2**

**Permittee Statement:** “Figure 6-2 depicts the quartering of the DU into SUs and proposed sampling.”

**NMED Comment:** The sampling unit boundaries do not encompass large areas of AOC 85 according to Figure 6-2, *Proposed Incremental Sample Location for AOC 85*. The area covered by sampling unit X-17/Z-225 is mostly located outside of the AOC 85 boundary. Provide an explanation for why the sampling unit boundaries do not overlap with the AOC 85 boundaries in the revised Work Plan. Unless an acceptable justification is provided, the proposed sampling plan must be revised to cover both the building footprints and all areas designated as AOC 85.

**23. Section 7.1.1, AOC 18 Data Set, p 7-2**

**Permittee Statement:** “All igloos and revetments in Parcel 9 have previously been sampled, except for Igloo A1000 because it was in use for storage of munitions during all prior sampling events.”

**NMED Comment:** This statement is not accurate. Sampling data for Igloo A1000 is presented in Table 5-1. Resolve this discrepancy in the revised Work Plan.

**24. Section 7.3.1, Conceptual Site Model, p 7-3**

**NMED Comment:** The Work Plan indicates that a phased approach to sampling will be conducted, with the initial round of sampling limited to the zero to one foot interval. Upon completion of this sampling, a risk assessment will be conducted, and data will be evaluated to determine if the nature and extent of contamination has been defined. If nature and/or extent is not defined, advancement of soil borings and sampling at depth will be conducted. Nature and extent must first be defined, then the risk assessment completed. Similarly, for Section 7.4.1.3, ecological risks must only be evaluated once the nature and extent of contamination has been defined.

In addition, the Work Plan indicates that the NMED guidance directs a qualitative evaluation for the vapor intrusion pathway. This is not entirely correct. In some cases, a qualitative assessment is adequate. However, if the vapor intrusion pathway is complete, a quantitative assessment is required (refer to Section 2.5.2.3 of the 2017 NMED Risk Assessment Guidance). Decisions regarding the vapor intrusion pathway should only be determined once the nature and extent of contamination has been defined. Revise the Work Plan to resolve these issues.

**25. Section 7.3.4, Human Health Risk Evaluation Approach, lines 13-14, page 7-5**

**Permittee Statement:** “2. Metals background evaluation: The second part is an evaluation of metals background concentrations.”

**NMED Comment:** The site attribution analyses must be conducted as the first step of the screening process. If site concentrations are determined to be within background levels, the constituent should not be identified as a potential contaminant of concern. Revise the order of the risk screening steps in the Work Plan accordingly.

**26. Section 7.3.4.2.3, Step 1 – Evaluate the Maximum Concentration, lines 23-25, page 7-7**

**Permittee Statement:** “NMED risk guidance (NMED, 2017 Revised Section 2.8.3.3 and Section 2.8.3.3) indicates that metals can be eliminated from further consideration when the maximum detected concentration is less than or equal to its background level.”

**NMED Comment:** The reference is pertaining to Comparison to Background - Incremental Site Methodology (ISM) Data. The Permittee compares incremental sampling data to the background values collected from discrete sampling. Discrete and incremental sampling data should not be quantitatively compared. Therefore, the discussion is not supported by the reference. Revise the Work Plan accordingly.

#### **27. Section 7.3.4.2.4, Step 2 – Evaluate Essential Nutrients, p 7-7**

**Permittee Statement:** “Essential nutrients with maximum concentrations less than the SSL will not be retained as COPCs and are not evaluated further. Essential nutrients that are metals with maximum concentrations greater than the SSLs will progress to Step 3 of the metals background evaluation.”

**NMED Comment:** The soil screening levels for all essential nutrients (calcium, chloride, magnesium, phosphorus, potassium, and sodium) exceed 1,000,000 mg/kg (100%). There is no risk associated with these elements; therefore, the evaluation of risks associated with essential nutrients is not necessary. However, elevated phosphorous concentrations relative to site-specific background value may be indicative of white phosphorous release. The Permittee is required to evaluate whether white phosphorous was released to the environment.

#### **28. The Permittee’s Response to Comment 3 of the Disapproval**

**Permittee Statement:** “This background study provides an unbiased, adequate, and reasonable representation of background conditions at FWDA and can be utilized when evaluating both discrete and ISM metals analyses for soil.”

**NMED Comment:** The Permittee’s response is not acceptable. Incremental sampling methodology is designed to reduce variances and small-scale variability; thus, incremental sampling data are more a reflection of the mean of a dataset rather than the UTL. Comparison of incremental sampling data to a UCL would be more appropriate than comparison to a UTL. Intuitively, comparison of a “mean” to an UTL seems conservative and may result in decision errors that result in stricter regulation. However, as the data are statistically incomparable; comparisons should be limited to a qualitative discussion at best. While some one-tailed statistical tests might be applied, the level of uncertainty would be high. Thus, NMED does not agree that discrete and incremental sampling data may be quantitatively compared. For a quantitative analysis, the Permittee must collect incremental sampling background data for comparison to the proposed incremental sampling data. The comparison of the discrete background data to site incremental sampling data may be used as a qualitative line of evidence, but may not be used to eliminate an inorganic constituent as a potential constituent of concern. If incremental samples are to be used, background incremental sampling must be conducted for quantitative comparison to site incremental sampling data.

However, if the Permittee still wants to pursue comparing discrete data to incremental sampling data, the Permittee must contact the EPA and developers of ProUCL to see if Parcel 2 could be used as a data case for testing new methodologies under Monte Carlo Background Incremental Sample Simulator (BISS) module. As noted in Section 4.4.3.2 of the *ITRC Guidance* for incremental sampling, comparing or combining discrete and incremental sampling data, conceptually, can only be done when specific conditions are met. If the Permittee chooses to propose a test data case to EPA, the following issues must be evaluated thoroughly prior to contacting EPA about using Fort Wingate Depot Activity (FWDA) as a test facility for BISS:

- a. The design for selecting the discrete samples must be known (i.e., simple random sampling, adaptive cluster sampling, etc.), and the discrete sample set must be representative of the entire decision unit (i.e., the sampling design was statistically based and not biased). The number of previous background data representative of Parcel 2 may not be sufficient for comparison to incremental sampling data. The Permittee must justify that the entire database is appropriate for use.
- b. The samples must have been collected using the same collection method or methods similar enough to ensure equivalent particle size distributions between types of samples. The background data collected during the 2010 sampling event used field screening of samples with a No. 4 screen (4.76 mm). However, Method 8330B uses a No. 10 mesh screen (2 mm). The inclusion of larger particles in the discrete data is likely to result in differences. Further, the discrete data were not ground prior to analyses, but Method 8330B will include grinding of the aliquots before collecting a subsample for analysis. Grinding of the samples will likely result in greater concentrations of metals compared to the discrete data. Given the differences in sample collection methods and processing of the data, there is a potential that the incremental sampling data will result in higher metals concentrations compared to the discrete background data.
- c. The samples are representative of the same soil conditions (e.g., soil type, depth). The 2010 background sampling data were based on ecozones rather than soil type. The discrete samples collected during the 2013 sampling event represent soil from 6-12 bgs. For the incremental sample, one sample is proposed for 0-6 inches and a second sample from 6-12 inches according to Section 4.3.3. Justification must be provided to show that the data from 6-12 inches bgs is appropriate for the surface incremental sampling data collected from the 0-6 inches bgs interval.
- d. The samples have been processed in a laboratory using the same sample preparation method or methods similar enough to ensure equivalent digestion and extraction of contaminants from the sample matrix for analysis. As noted above, there are differences in sample preparation, specifically grinding of samples, that could result in differences in concentrations and add a layer of uncertainty to the comparison of discrete to incremental sampling data.
- e. The samples have been analyzed in a laboratory using the same analytical method or methods sufficiently similar to ensure equivalent analytic results.
- f. The quality of both data sets is understood (via data validation reports) such that it is known that the data are appropriate for the intended use.

Messrs. Patterson and Smith

March 8, 2018

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The Permittee must submit a revised stand-alone historic information report that addresses the relevant comments in this Disapproval no later than **June 8, 2008**. The Permittee must also submit an investigation report that summarizes the work performed in Parcel 9 in 2008 and 2010 and addresses the relevant comments contained in this Disapproval no later than **August 3, 2018**. In addition, the Permittee must submit a revised Work Plan that addresses all comments contained in this Disapproval. For each submittal, the Permittee must include a response letter that cross-references where NMED's associated numbered comments were addressed. The Permittee must also submit an electronic redline-strikeout version of the revised Work Plan showing all changes that have been made to the Work Plan. The revised Work Plan must be submitted no later than **November 1, 2018**.

Should you have any questions, please contact Ben Wear of my staff at (505) 476-6041.

Sincerely,



John E. Kieling

Chief

Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
B. Wear, NMED HWB  
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File: FWDA 2018 and Reading, Parcel 9, FWDA-15-007

