



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT  
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WASHINGTON, DC 20310-0600

May 29, 2019

Base Realignment and Closure Division

Mr. John Kieling  
Chief, Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303

**Re: NOTIFICATION OF SUBMITTAL OF FINAL, REV. 1 PERMITTEE-INITIATED INTERIM MEASURES REPORT FOR PARCEL 24 AT FORT WINGATE DEPOT ACTIVITY, MCKINLEY COUNTY, NEW MEXICO**

Dear Mr. Kieling:

This letter is in reply to the NMED Disapproval letter dated November 19, 2018, reference number HWB-FWDA-18-007 regarding the Parcel 24 PIIM Report. The following are the Army's responses and cross-referencing the numbered NMED comments. This letter also transmits the revised report and the red-line strike-out copy of the edits.

1. **NMED Comment:** Comment 16 of NMED's March 8, 2018 Disapproval Final RCRA Facility Investigation Work Plan Parcel 9 Revision 1, the same document that required the submittal of this Report, states, "[t]he 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." The Permittee has not followed this directive. The Permittee must revise the Report to evaluate the composite and multi-incremental sampling results appropriately. Non-compliance with NMED direction may result in enforcement action or delays in achieving corrective action complete status for sites listed on the Permit.

**Army Response:** Comment Noted: Please note that the scope of the work performed at P24 Igloo Block A was described in the *Notification of Permittee-Initiated Interim Measures for Parcel 24* (October 22, 2014). This document was submitted to NMED received an email concurrence on May 19, 2015 (originally attached to the transmittal letter and now contained within Appendix A).

NMED's comment appears to apply to the evaluation of data in the *Final Release Assessment Report, Parcel 24*, dated January 31, 2014. Please note that NMED reviewed the 2014 RAR and issued an approval letter on May 18, 2015.

The work performed and submitted under this Report involved removal of all drain pipes and ¼ cubic yard (CY) of soil from beneath designated igloo drain outfalls. Following soil removal, one discrete confirmation soil sample was collected from the floor of each

excavation and submitted for analysis of lead, arsenic, and mercury. Confirmation samples were then compared to NMED SSLs for lead (400 mg/kg) and mercury (20.50 mg/kg) per NMED 2017 revised Risk Guidance. In addition, the site-wide background reference value of 5.6 mg/kg for arsenic was used. Soil beneath 84 igloo drains was removed and confirmation samples were below current NMED SSLs. The Army did not utilize MI/ISM sampling protocols. The Army, therefore, believes that it performed the subject PIIM work appropriately.

No changes were incorporated into the Report as a result of Comment 1.

## 2. Laboratory Report Data Link

**NMED Comment:** The Report contains multiple analytical data reports, which is typical of most investigation reports. For this and all other future documents, the Permittee must provide a method for cross-referencing data reports and specific samples. This could be accomplished through an additional table, an additional column in an existing table, or a column in the database (if included for the project). Include a method for linking a specific sample with the associated analytical laboratory data report in the revised Report.

**Army Response:** Concur. Table 2-1 in the Quality Control Summary Report (Appendix C) provides the Laboratory Report number with the corresponding Sample ID, collection date, and analyses. This table has been reproduced in the main body of the document as Table 2 in the "Tables" section (p. 7).

## 3. Inappropriate usage of data:

**NMED Comment:** Work was performed at the Parcel 24 igloos in the absence of NMED-approved work plans. Review of work performed on the Parcel 24 igloos suggests that there are problems with the method in which composite and multi-incremental (MI) samples were evaluated. For example, it appears that direct comparison of composite and MI sample concentrations to soil screening limits (SSLs) was conducted instead of multiplying concentration results 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., chromium III vs total chromium).

Work has continued at the Parcel 24 igloos without approved work plans. Work conducted without a NMED-approved work plan is performed at the Permittee's own risk. Review of work performed indicates that inappropriate decisions have been made based on data that is not appropriate for use in decision-making. As stated in multiple comments spanning more than a decade, MI samples in this application are only appropriate for screening-level decisions, e. g., is the contaminant present or not. In addition, NMED has made clear that data collected by field instruments is only appropriate for screening-level decisions unless a clear and accurate correlation between the field instrument data and duplicate analytical laboratory data is established. Since this was not accomplished at Parcel 24, the XRF data is invalid and must not be used for any decision making

**Army Response:** As indicated in the response to Comment 1, the scope of work follows the *Notification of Permittee-Initiated Interim Measures for Parcel 24* (October 22, 2014). This document was reviewed by NMED and concurrence was provided May 19, 2015 via email. The May 19, 2015 email clearly states that, "NMED has reviewed the *Notification of Permittee-Initiated Interim Measures (Notification) for Parcel 24 dated October 22, 2014*

*and concurs with the proposed work*" (originally attached to the transmittal letter and now contained in Appendix A); NMED had no objections with the Army proceeding with the work proposed in the Notification of PIIM for Parcel 24.

The igloo drain locations that were selected for the cleanup under this PIIM WP were based on the recommendations of the 2014 Release Assessment Report. This report was also approved by NMED in its letter HWB-FWDA-14-0002 dated May 18, 2015. It is important to note that during PIIM field efforts, the Army collected discrete confirmation samples once soil was removed from beneath the 84 igloo drains and results were compared with SSLs from the 2019 Risk Assessment Guidance.

XRF testing was not used to determine removal of soil. Whether discrete or composite samples, the Army sampled the soils under all the igloo drains in Parcel 24 during the 2008 and 2010 sampling events as presented in the Approved (with Modification) Final Release Assessment Report for Parcel 24 (USACE, 2014); NMED approved the report on 18 May 2015. The samples were sent to an ELAP certified lab and analytical results were used to determine if removal was needed for each drain. Soil removal was based on composite samples with a lead concentration less than or equal to 200 mg/kg (half the 400 mg/kg SSL per NMED guidance) or discrete samples taken with results less than or equal to the NMED SSL of 400 mg/kg. All confirmation samples taken after soil remediation were discrete samples and were also sent to an ELAP certified lab

The Army used the SSLs in effect at the time (June 2012) to screen contaminant concentrations at the time of the field work for the P24 RAR. Chromium III and chromium VI values were listed in the 2012 Risk Assessment Guidance for Investigations and Remediation, Volume I, February 2012 (updated June 2012). Total chromium was not in the 2012 Guidance and therefore, was not included in the RAR report. Total chromium was introduced for the first time in the 2014 NMED guidance, which is why that value is not shown in the P24 RAR. SSLs used in the P24 PIIM Report reflect the most recent NMED SSLs.

In addition to the review conducted as part of the response to Comment #8, the Army will re-evaluate all data in the RAR for potential data gaps and address additional Parcel 24 work in a future work plan.

No changes were incorporated into the Report as a result of Comment 3.

#### **4. Transmittal Letter**

**Permittee Statement:** "The U.S. Army Corps of Engineers (USACE) completed a Release Assessment Report (RAR) at Parcel 24, dated January 31, 2014. The RAR concluded that based on data collected from x-ray fluorescence (XRF) and analytical data from 2008 and 2010, lead, arsenic, and mercury exceeded New Mexico Environment Department (NMED) soil screening levels (SSLs) (or the site-specific background concentration protocol established for arsenic) in soils below certain igloo drain outfalls in Parcel 24."]

**NMED Comment:** The transmittal letter presents information that is not included in the Report. All information related to the purpose of the submittal should be included in the submittal, not in the transmittal letter. Revise the Report to include the details provided above and remove technical information from the transmittal letter.

**Army Response:** Concur. The transmittal letter has been revised to remove this information. The Introduction of the Report discusses the RAR and recommendations made therein; information previously provided in the transmittal letter has been incorporated into the Introduction. Comment 4 resulted in revision of the transmittal letter accompanying the Final PIIM. Report, Rev. 1. Revisions were also made to Chapter 1.0, Introduction, paragraph 1 (p. 1-1).

**5. Transmittal Letter:**

**Permittee Statement:** The Army submitted a Notification of Permittee-Initiated Interim Measures (PIIM) to NMED for Parcel 24 dated October 22, 2014. It was approved by Vicki Boca of your office by email on May 19, 2015 (attachment 1)

**NMED Comment:** This statement is not accurate. The email from Vicki Boca concurred with the work proposed, but specifically stated that the notification was not an official work plan. Therefore, there was no official approval. In addition, there is no Attachment 1 included with the report. Avoid inaccurate, unsupported, or misleading statements in future submittals. Remove the statement from revised report.

**Army Response:** Comment Noted. As noted in comment 3 above, the scope of work for the subject report follows the Notification of Permittee-Initiated Interim Measures for Parcel 24 (October 22, 2014) WP. This document was reviewed by NMED and concurrence provided on May 19, 2015 via email from Ms. Vicky Baca. The May 19, 2015 email clearly states that, "NMED has reviewed the Notification of Permittee-Initiated Interim Measures (Notification) for Parcel 24 dated October 22, 2014 and concurs with the proposed work." Ms. Baca clarifies that the submitted PIIM is a notification and not an official work plan. However, the email further states, "Never the less, the proposed work is straight forward and contains general information to ensure cleanup is obtained." Therefore, the Army concluded that NMED had no objections with the Army's intent to proceed with the work proposed in the Notification of PIIM for Parcel 24. Furthermore, the Army's intent on proceeding with the field efforts were discussed during a conference call followed by email exchange between Ms. Baca, David Henry, and Mark Patterson. A notification that the Army was commencing field operations was also sent to NMED on November 30, 2017 (contained in Appendix A, p. A-9).

The Army has revised its statement to correctly reflect the information provided above. The email from Vicky Baca has been included in Appendix A (NMED Correspondence). Comment 5 resulted in revision to the transmittal letter and insertion of the email from Ms. Baca into Appendix A (p. A-10).

**6. Section 1.0, Introduction, Page 1-1**

**Permittee Statement:** "ZAPATA executed the approved PIIM letter work plan scope; however, it should be noted that New Mexico Environment Department (NMED) Soil Screening Levels (SSLs) outlined in the 2017 guidance (NMED, 2017) were implemented at the time of field sampling, as opposed to the 2015 levels approved in the letter."

**NMED Comment:** This statement is not accurate. A letter work plan was never formally submitted to NMED. Therefore, there is no NMED-approved PIIM letter work plan. While a

notification that the Permittee intended to perform work was submitted, NMED's concurrence specifically stated that the notification was "not an official work plan". Remove the statement from the revised Report.

**Army Response:** Comment Noted. As outlined in Army's response to comments 3 and 5, the Army will revise the subject statement and provide additional clarification. Paragraph 2 of Chapter 1.0, Introduction (p. 1-1) was revised as a result of Comment 6.

**7. Section 2.3, Confirmation Sampling, page 2-1**

**NMED Comment:** Soil sampling procedures were not described in the Report. All methods used in the field must be described in the Report. Provide details of the soil sampling procedures, including duplicate sample collection, in the revised Report.

**Army Response:** Concur. Detailed soil sampling procedures have been added to Section 2.3 of the Report, as well as duplicate sample collection procedures and results. Section 2.3, Confirmation Sampling, paragraph 1 (p.2-1) was revised to include soil sampling procedures, and discussion of duplicate results were inserted as paragraph 6 (p.2-2).

**8. Section 3.0, Summary and Conclusions, page 3-**

**Permittee Statement:** "The interim measures for Parcel 24 Igloo Block A have been completed and No Further Action (NFA) is recommended."

**NMED Comment:** NMED does not agree with the recommendation above. The Permittee has not investigated many locations where the data indicates that contamination is likely to be present. The table below indicates locations that remain to be further characterized and will likely require remediation. The Permittee must submit a work plan for review and approval by NMED that proposes the characterization and remediation activities for the sites listed above no later than June 27, 2019.

Table is attached separately.

**Army Response:** The Army agrees that further action for some igloos drain pipe soils is still required and the statement of No Further Action is withdrawn. Section 3 of the report will be revised to reflect this.

Table 1 from NMED's Disapproval letter dated November 19, 2018 has been reviewed and checked against site data and the Army has four categories of responses:

- 1) MI Samples: No action is proposed in conjunction with Parcel 9 Igloo drain pipe and soil removal.
- 2) Composite samples where half the standard for lead was exceeded, indicating that one or the other drain location may require remediation and only one drain was remediated: Include removal and confirmation testing of soil beneath the un-remediated drain in future Parcel 9 Igloo drain pipe and soil removal.
- 3) Composite samples where half the standard for lead was exceeded, indicating that one or the other drain location may require remediation and neither drain was remediated: Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal.

- 4) Composite samples where XRF screening showed a location where total chromium exceeded the standard, removal had occurred but confirmation sampling did not include chromium in the list of analyses: Include confirmation testing of soil under the appropriate drain at the bottom of the fill depth in native soil for total chromium and chromium VI in future Parcel 9 Igloo drain pipe and soil removal.

These responses on an igloo-by-igloo basis are presented in a revised Table 1. Table 1 is attached separately.

## 9. Appendix C, Confirmation Sample Data, p 1 and 5

**Permittee Statements:** "The analytical data were validated in accordance with specifications given in the Interim Measures Work Plan Parcel 21 - Solid Waste Management Unit 1 - TNT Leaching Beds, Final, July 14, 2016 (Work Plan), and in U.S. Army Corps of Engineers (USACE) documents Guidance for Evaluating Performance-Based Chemical Data, EM 200- 1-10, June 30, 2005, and Chemical Data Quality Management for Environmental Restoration Activities, ER 200-1-7, November 28, 2014.", and "Four field duplicates were collected in association with the soil sampling at Parcel 24."

**NMED Comment:** Out of a total of 104 samples, the Permittee collected only four duplicates for quality assurance. In addition, all four duplicates were collected on the final day of initial sampling, almost a month after the previous 65 samples had been collected over three days when duplicates were not collected, suggesting that the collected duplicate samples were an afterthought. The Work Plan referenced in the Permittee Statement above specifically states, "[field duplicate samples will be collected and analyzed at a frequency of 10% (one duplicate for every ten field samples collected).]" The Permittee collected less than 4% duplicates. Performance of work without an approved work plan has resulted in data collected without meeting the designated quality assurance requirements. Failure to collect appropriate quality assurance samples can result in rejection of data. Provide an explanation in the revised Report text as to why 10% field duplicates were not collected, as well as a justification (other than professional judgment) as to why the data are acceptable for use.

The Work Plan also specifically states, "The identity of field duplicate samples will not be provided to the analysts or laboratory personnel. A log will be kept identifying each field duplicate sample to its parent sample. This procedure ensures that the laboratory will not know which duplicate sample matches the field sample. A table will be provided in the IM report that designates the field duplicate sample to the associated field sample." This procedure was also not followed, as the four duplicate samples were all submitted with "DUP" in the sample identifier. Provide an explanation as to why the cited work plan was not followed.

In addition, one of the four field duplicates resulted in concentrations of lead and mercury that were 3 to 5 times the concentrations found in the original sample. According to the Work Plan referenced in Appendix C, the RPD goal for duplicate samples is 20%. Half of the duplicate samples exceed the 20% goal, yet no samples were qualified. The cited work plan specifically states, "Field duplicates will be evaluated by %RPD or, at low levels (i.e., when one or both results are less than 5 x Limits of Quantitation [LOQ]), the absolute

difference in results (*/S-D/*). The specific numeric criteria for field duplicates for this project are as follows:

- When one or both results are less than 5 x LOQ, the extent of variability will be considered acceptable if, for soil samples, */S-D/* is less than the magnitude of LOQ x 2 and, for water samples, */S-D/* is less than the magnitude of the LOQ.
- When both results are greater than 5 x LOQ, the extent of variability will be considered acceptable if, for soil samples, %RPD is less than 50% and, for water samples, %RPD is less than 35%."

General QA/QC standards would require all data above the target 20% RPD to be qualified with a J flag for estimated value and all data that exceeds 50% RPD to be rejected and qualified with a R flag. The Permittee provides no discussion of this issue in the Report text. The Permittee must provide a discussion of the issue and justification (other than professional judgment) for not qualifying and/or rejecting all data based on the duplicate sample results with half of the duplicates exceeding the RPD range for acceptability.

**Army Response:**

As commented, a 4% field duplicate collection rate was achieved for Parcel 24, rather than the 10% rate specified in the Work Plan, however, the Army does not believe that this oversight impacts the usability or representativeness of the data generated from this field event. Our rationale follows:

Given the soil heterogeneity reflected in the field duplicate results, Army believes these data have limited value in documenting the precision of the sample collection process and the reproducibility of results. This is supported by the laboratory QC results in several ways. Although matrix spike results are not meaningful for lead because the spike concentrations were insignificant relative to the parent sample concentrations, for a COC such as arsenic the matrix spike analysis resulted in (J) qualification of all arsenic results, indicating that matrix interferences may have impacted the analyses. The likelihood of matrix interference is reinforced by the fact that laboratory control samples (LCSs) for arsenic and lead were within acceptance limits in all instances (validating the laboratory methodology). In addition, all serial dilution and/or post-digestion spike results were within project acceptance limits in all instances. Initial and continuing calibration verifications (ICVs and CCVs) bracketing the analyses of the soil samples were reviewed and confirmed as being within acceptance limits of 90-110% in all instances. Thus, the totality of the laboratory QC data indicates that the variability in field duplicate results is not a result of analytical bias, but of heterogeneity in the matrix. Considering that arsenic, lead, and mercury concentrations for all primary and duplicate samples are significantly less than background/SSLs, the data quality is adequate for the purpose of soil confirmation.

A new paragraph has been added to Section 2.3, Confirmation Sampling (paragraph 6. p. 2-2) that provides a discussion of duplicate precision, followed by conclusions substantiating the usability and representativeness of the sample data.

Regarding the identity of field duplicate samples, a procedure is in place to ensure that the laboratory does not know which parent sample matches the duplicate (i.e., a blind duplicate). There is no quality control issue with the laboratory knowing that a sample is a field duplicate, as long as the matching parent sample is not identified. Please note that



this is a standard industry practice. Section 4.2.1.1, p. 4-5, of the Final Interim Measures Work Plan for Parcel 21 (ZAPATA, September 2017) states that "A log will be kept matching each field duplicate sample to its parent, which will not be provided to the laboratory. Field duplicate and associated parent sample results will be compared and discussed in the DQSR." A previous version of the Work Plan (July 2016) contains the wording in the comment, but this was clarified in a subsequent version. Additionally, Section 4.6 of the Work Plan, Sample Identification, p. 4-10, states that duplicate samples will be identified with "DUP" in the sample ID. Therefore, the Work Plan was followed regarding identification of field duplicates, as well as the sample identifier. The laboratory was not aware of the duplicate/parent identifications. Primary and duplicate samples are provided below as an example:

Primary	Duplicate
24A917-EFR-D-SO	24A-EF-D-SO-DUP01
24A917-EFL-D-SO	24A-EF-D-SO-DUP02
24A903-EFR-D-SO	24A-EF-D-SO-DUP03
24A903-EFL-D-SO	24A-EF-D-SO-DUP04

The chain of custody is contained within Laboratory Report 218031317. The duplicates are not listed prior to or after the primary sample, and the collection time for each is "0000" to prevent matching the collection times. There is no way that the laboratory could match the primary/duplicate samples. No changes were made to the report as a result of this portion of Comment 9.

The goal of 20% RPD for soil field duplicates is extremely stringent for soil samples, given their characteristic heterogeneity (and, in fact, a limit of  $\leq 50\%$  RPD was given in the IMWP). Of 12 analyte result comparisons, only one %RPD was greater than 50% (lead reported for the primary sample-field duplicate pair collected from location 24A903-EFR-D-SO), and only two comparisons were greater than the 20% RPD goal (lead reported for the primary sample-field duplicate pair collected from location 24A917-EFR-D-SO and arsenic from the primary sample-field duplicate pair collected from location 24A903-EFR-D-SO). Consistent with the %RPD goal of 20%, these results have been qualified with "J" validation qualifiers to indicate that the individual results may not be fully representative of the sampled locations. However, in the absence of evidence of gross error (either in the field or in the laboratory) or loss of analytical precision, such results (either for the primary sample or the field duplicate) should not be classified as unusable, as they provide insight into the extent of variability of analytes of interest at the given sampling location and thus provide useful information to the project team. It is important to note that none of the sample results in question exceeded the most recent NMED SSLs. As discussed above, laboratory QC supports the validity of sample results; those results with %RPDs  $> 20\%$  (six results in total) have been qualified but are not rejected and are otherwise usable. Table 1 (Tables, p. 1) and Section 2.3, paragraph 7 of the main document have been revised. Section 2.4.2, Field Duplicates (p. 5) of the QCSR (Appendix C) has been revised as a result of Comment 9. Table 1 (Tables, p. 1) and Section 2.3, paragraph 7 have been revised and Section 2.4.2, Field Duplicates (p. 5-6) of the QCSR (Appendix C) have been revised as a result of Comment 9.

The goal of 20% RPD for soil field duplicates is extremely stringent for soil samples, given their characteristic heterogeneity (and, in fact, a limit of  $\leq 50\%$  RPD was given in the



IMWP). Of 12 analyte result comparisons, only one %RPD was greater than 50% (lead reported for the primary sample-field duplicate pair collected from location 24A903-EFR-D-SO), and only two comparisons were greater than the 20% RPD goal (lead reported for the primary sample-field duplicate pair collected from location 24A917-EFR-D-SO and arsenic from the primary sample-field duplicate pair collected from location 24A903-EFR-D-SO). Consistent with the original %RPD limit of 20%, these results have been qualified with “J” validation qualifiers to indicate that the individual results may not be fully representative of the sampled locations. However, in the absence of evidence of gross error (either in the field or in the laboratory) or loss of analytical precision, such results (either for the primary sample or the field duplicate) should not be classified as unusable, as they provide insight into the extent of variability of analytes of interest at the given sampling location and thus provide useful information to the project team. It is important to note that none of the sample results in question exceeded the most recent NMED SSLs. As discussed above, laboratory QC supports the validity of sample results; those results with %RPDs > 20% (six results in total) have been qualified but are not rejected and are otherwise usable.

Table 1 (Tables, p. 1) and Section 2.3, paragraph 7 have been revised and Section 2.4.2, Field Duplicates (p. 5-6) of the QCSR (Appendix C) have been revised as a result of Comment 9.

#### **10. Appendix C, Confirmation Sample Data, p 11**

**Permittee Statement:** “However, as noted in Section 2.4.2, the results for lead and mercury for the primary sample –field duplicate pair collected at location 24A903-EFR-D-SO yielded data for cumulative precision that exceeded project objectives given in the Work Plan

**NMED Comment:** The statement is not accurate. The work plan referenced in Appendix C states that project objectives for RPD% is <20%. In addition to sample 24A903-EFR-D-SO, samples 24A917-EFR-D-SO and 24A917-EFL-D-SO exceeded project objectives given in the Work Plan. Three of the four duplicate samples exceeded project objectives, yet no sample results were qualified and the issue was not discussed in the Report text. Correct the statement above, provide a discussion of the issue with the duplicates, and provide justification (other than professional judgment) for not qualifying and/or rejecting any data based on these results in the revised Report.

**Army Response:** Concur. The goal of 20% RPD for soil field duplicates is extremely stringent for soil samples, given their characteristic heterogeneity, and, in fact, a limit of 50% RPD for soil was specified in the IMWP. However, as noted above in Comment Response # 9, qualifiers may appropriately be applied to the results for primary sample-field duplicate pairs when goals for cumulative precision are exceeded and the reason for the qualification is clearly indicated. In this case, the detections of lead reported for samples 24A917-EFR-D-SO and 24A-EF-D-SO-DUP01 and detections of lead and arsenic reported for samples 24A903-EFR-D-SO and 24A-EF-D-SO-DUP03 have been qualified with “J” validation qualifiers to indicate that the results may not be fully representative of the sampled locations.

In the absence of evidence of gross error (either in the field or in the laboratory) or other evidence of loss of analytical precision as reflected by laboratory QC data, such results should not be classified as unusable, as they provide insight into the extent of variability of analytes of interest at the given sampling location and thus provide useful information to

the project team. All laboratory QC data associated with the primary sample-field duplicate pairs collected from location 24A903-EFR-D-SO and 24A917-EFR-D-SO support the conclusion that the data are usable and representative of site conditions. Affected results have been qualified, as described above, in response to comment 10 and revisions made to the report as specified below, so that the data user is fully informed as to issues of representativeness and soil heterogeneity

Table 1 (Tables, p. 1) and Section 2.3, paragraph 7 have been revised and Section 2.4.2, Field Duplicates (p. 5-6) of the QCSR (Appendix C) has been revised as a result of Comment 9.

If you have questions or require further information, please call me at 505-721-9770.

Sincerely,

**SMITH.STEVEN.W.1231038520**  
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For

Mark Patterson  
BRAC Environmental Coordinator

CF:

John Kieling, NMED HWB  
Dave Cobrain, NMED HWB  
Michiya Suzuki, NMED HWB  
Chuck Hendrickson, U.S. EPA Region 6  
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**Table 1**

Igloo	Exceedance Sample Type	NMED Notes	Army Response	Future Actions
A-901	MI	Exceeded background for lead in MI sample. Further characterization is warranted at the decision unit.	The igloo apron area characterized by the ISM sample was not part of this remediation effort.	No action is proposed in conjunction with Parcel 9 Igloo drain pipe and soil removal
A-902	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-904	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-906	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-907	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted for the left drain location.	Agreed	Include removal and confirmation testing of soil beneath left drain in future Parcel 9 Igloo drain pipe and soil removal
A-908	Comp/MI	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations. Also exceeded background for lead in MI sample. Further characterization is warranted at the decision unit.	Agree with respect to the drains. The igloo apron area characterized by the ISM sample was not part of this remediation effort.	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal No action is proposed in conjunction with Igloo drain pipe and soil removal.

Igloo	Exceedance Sample Type	NMED Notes	Army Response	Future Actions
A-910	Comp	Exceeded half the standard for lead in composite sample, indicating Comp that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-912	Comp	Both drains were excavated and sampled during the PIIM. The location had previously exceeded the standard for total chromium in an XRF sample from the right drain. Chromium was not analyzed during the PIIM. A confirmation sample must be collected and analyzed for total chromium from the right drain location.	Agreed	Include confirmation testing of soil under the right drain at the bottom of the fill depth in native soil for total chromium and chromium VI in future Parcel 9 Igloo drain pipe and soil removal
A-914	Comp	Both drains were excavated and sampled during the PIIM. The location had previously exceeded the standard for total chromium in an XRF sample from the left drain. Chromium was not analyzed during the PIIM. A confirmation sample must be collected and analyzed for total chromium from the left drain location.	Agreed	Include confirmation testing of soil under the left drain at the bottom of the fill depth in native soil for total chromium and chromium VI in future Parcel 9 Igloo drain pipe and soil removal
A-919	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-924	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The right side was addressed in PIIM. Further characterization and potential excavation is warranted for the left drain location.	Agreed	Include removal and confirmation testing of soil beneath left drain in future Parcel 9 Igloo drain pipe and soil removal
A-927	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The left side was addressed in PIIM. Further characterization and potential excavation is warranted for the right drain location.	Agreed	Include removal and confirmation testing of soil beneath right drain in future Parcel 9 Igloo drain pipe and soil removal

Igloo	Exceedance Sample Type	NMED Notes	Army Response	Future Actions
A-928	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-930	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-932	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-934	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The left side was addressed in PIIM. Further characterization and potential excavation is warranted for the right drain location.	Agreed	Include removal and confirmation testing of soil beneath right drain in future Parcel 9 Igloo drain pipe and soil removal
A-937	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-938	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The right side was addressed in PIIM. Further characterization and potential excavation is warranted for the left drain location.	Agreed	Include removal and confirmation testing of soil beneath left drain in future Parcel 9 Igloo drain PIIM
A-941	MI	Exceeded background for lead in the MI sample. Further characterization is warranted at the decision unit.	The igloo apron area characterized by the ISM sample was not part of this remediation effort.	No action is proposed in conjunction with Igloo drain pipe and soil removal.

Igloo	Exceedance Sample Type	NMED Notes	Army Response	Future Actions
A-945	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The left side was addressed in PIIM. Further characterization and potential excavation is warranted for the right drain location.	Agreed	Include removal and confirmation testing of soil beneath right drain in future Parcel 9 Igloo drain pipe and soil removal
A-947	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The right side was addressed in PIIM. Further characterization and potential excavation is warranted for the left drain location.	Agreed	Include removal and confirmation testing of soil beneath left drain in future Parcel 9 Igloo drain pipe and soil removal
A-949	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-954	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-956	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-957	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-958	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal

Igloo	Exceedance Sample Type	NMED Notes	Army Response	Future Actions
A-959	MI	Exceeded background for lead in the MI sample. Further characterization is warranted at the decision unit.	The igloo apron area characterized by the ISM sample was not part of this remediation effort.	No action is proposed in conjunction with Igloo drain pipe and soil removal.
A-963	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The left side was addressed in PIIM. Further characterization and potential excavation is warranted for the right drain location.	Agreed	Include removal and confirmation testing of soil beneath right drain in future Parcel 9 Igloo drainpipe and soil removal
A-965	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The left side was addressed in PIIM. Further characterization and potential excavation is warranted for the right drain location.	Agreed	Include removal and confirmation testing of soil beneath right drain in future Parcel 9 Igloo drain pipe and soil removal
A-967	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-968	Comp/MI	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations. Also exceeded background for lead in the MI sample. Further characterization is warranted at decision unit.	Agree with respect to drain soils. The igloo apron area characterized by the ISM sample was not part of this remediation effort.	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain PIIM. No action is proposed in conjunction with Igloo drain pipe and soil removal.
A-973	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal



Igloo	Exceedance Sample Type	NMED Notes	Army Response	Future Actions
A-974	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.	Agreed	Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal
A-975	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The right side was addressed in PIIM. Further characterization and potential excavation is warranted for the left drain location.	Agreed	Include removal and confirmation testing of soil beneath left drain in future Parcel 9 Igloo drain pipe and soil removal
Y-A962	MI	Exceeded background for lead in the MI sample. Further characterization is warranted at the decision unit.	The igloo apron area characterized by the ISM sample was not part of this remediation effort.	No action is proposed in conjunction with Igloo drain pipe and soil removal

## Christy Esler

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**From:** Christy Esler <cesler@sundance-inc.net>  
**Sent:** Wednesday, May 29, 2019 4:12 PM  
**To:** john.kieling@state.nm.us  
**Cc:** (dave.cobrain@state.nm.us); Ben Wear (benjamin.wear@state.nm.us); Michiya Suzuki; hendrickson.charles@epa.gov; Ian Thomas (ian.m.thomas2.civ@mail.mil); Patterson, Mark C CIV (US); Steven Smith (steve.w.smith@usace.army.mil); Saqib SWF Khan (Saqib.Khan@usace.army.mil); Montgomery, Cheryl R ERDC-EL-MS; Sharlene Begay-Platero; Mark Harrington; Clayton Seoutewa; B.J Howerton; Oliver Whaley; george.padilla@bia.gov; Jennifer Turner  
**Subject:** Notification of Submittal Final Permittee-Initiated Interim Measures Report for Parcel 24, Rev. 1- Fort Wingate Depot Activity  
**Attachments:** Notification of Submittal\_PIIM Report\_Parcel 24\_Rev 1\_ 29May2019.pdf; P24PIIM\_NOD\_RespTab01\_CRM\_May29\_2019.pdf

Mr. Kieling,

The attached notification of submittal letter and Table 1 is in reply to the NMED Disapproval letter dated November 19, 2018, reference number HWB-FWDA-18-007 regarding the Parcel 24 PIIM Report. The revised report and the red-line strike-out copy of the edits will be provided via FedEx to your attention.

If you have questions please contact Mark Patterson at 505-721-9770.

Respectfully submitted,

**Christy Esler | Program Manager**

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