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January 25, 2022

George H. Cushman
Headquarters, Department of the Army
Office of the DCS, G-9
Army Environmental Office, Room 5C140
600 Army Pentagon
Washington, DC 20310-0600

RE: DISAPPROVAL
FINAL NORTHERN AREA GROUNDWATER RCRA FACILITY INVESTIGATION REPORT
FORT WINGATE DEPOT ACTIVITY
MCKINLEY COUNTY, NEW MEXICO
EPA ID# NM6213820974
HWB-FWDA-21-004

Dear Mr. Cushman,

The New Mexico Environment Department (NMED) is in receipt of the Fort Wingate Depot Activity (FWDA or Permittee) *Final Northern Area Groundwater RCRA Facility Investigation Report* (Report), dated September 15, 2021. NMED has reviewed the Report, and hereby issues this Disapproval with the following comments.

GENERAL COMMENTS

1. **Document Distribution List**

   NMED Comment: The Report includes an outdated document distribution list. Verify that the information presented in the distribution list is current and update the information in the revised Report, as necessary.

2. **Data Link to Laboratory Analytical Reports**

   NMED Comment: The Permittee provided large quantities of data with no indication where to locate data for a specific sample within a specific analytical laboratory report. NMED's

November 7, 2018 *Disapproval Final Permittee-Initiated Interim Measures Report Parcel 6, Revision 1* states:

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 report contains which sample, or provide the 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.

The Permittee previously provided a Table of Contents listing sample identification with links to the relevant lab report and a page listing in a relevant appendix in the *Final Groundwater Periodic Monitoring Report January through June 2020 Revision 1*, dated September 2021 demonstrating that the Permittee has the ability to comply with the direction. Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action. Resolve the issue in the revised Report.

SPECIFIC COMMENTS

3. **Executive Summary, ES-1, Introduction, Purpose and Scope, lines 10-13, page ES-1**

Permittee Statement: "The Study Area of the Northern Area Groundwater RFI includes all or portions of ten parcels: 6, 7, 10A, 10B, 11, 12, 13, 14, 18 and 21; with five areas of concern (AOCs): 47, 62, 63, 68, 86; and eight solid waste management units (SWMUs): 1, 2, 5, 6, 12, 27, 45, 70, as defined in the approved Northern Area Groundwater RFI Work Plan (Sundance, 2018)."

NMED Comment: According to Figure 2-1.1 (RFI Study Area and Parcel Locations), portions of Parcels 9, 22, and 25 are also included in the study area. In addition, according to Figure 2-4.1 (Potential Source Areas), Solid Waste Management Unit (SWMU) 50, which is identified as the source area for volatile organic compounds (VOCs), is also included in the study area. Resolve the discrepancies in the revised Report.

4. **Executive Summary, ES-2.3, Groundwater Contaminant Plumes, Nitrate Plumes, lines 24-25, page ES-3**

Permittee Statement: "Increased concentrations at the leading edge of the plume adjacent to Building B009 suggest a secondary soil source for nitrate at this location."

NMED Comment: According to Figure 2-4.1 (Potential Source Areas), Building B009, which is suggested to be a secondary source for soil nitrate contamination, is not identified. Revise Figure 2-4.1 to identify the location of Building B009.

5. **Executive Summary, ES-2.3, Groundwater Contaminant Plumes, Perchlorate Plumes, lines 3-5, page ES-4**

   Permittee Statement: "The high [perchlorate] concentrations in both the bedrock and alluvium suggest releases directly to each aquifer as opposed to vertical migration from alluvial to the bedrock aquifer. Geological factors prevent the monitoring of the head of these plumes."

   NMED Comment: According to Figure 2-3.3 (FWDA Geologic Map), the Petrified Forest Formation is exposed at the surface south of the Building 528 and, as stated in Section 2.3.7.2 (Bedrock Aquifer), lines 17-18, page 2-6, recharge to the bedrock aquifer occurs when precipitation infiltrates the soil and percolates to the bedrock in the southern portion of the Study Area. Since the alluvial aquifer is absent in the area south of the Building 528 where the bedrock outcrops, perchlorate could not simultaneously be released to each aquifer. Rather, perchlorate may have initially been released to the bedrock aquifer; then, migrated to the alluvial aquifer. The groundwater monitoring data indicate that the perchlorate concentrations in the groundwater samples collected from the bedrock aquifer have been higher than those collected from the alluvial aquifer and the size of the bedrock perchlorate plume has been larger than that of the alluvial aquifer. The data suggests that the alluvial perchlorate plume may have originated from the bedrock perchlorate plume. Hydraulic communication between the bedrock aquifer and the alluvial aquifer is evident in the area downgradient of the Building 528 (e.g., Workshop Area) where the alluvial and bedrock plumes co-locate. Revise the statement for accuracy.

6. **Executive Summary, ES-2.3, Groundwater Contaminant Plumes, Other Constituents, Total Petroleum Hydrocarbons (TPH), lines 15-16, page ES-4**

   Permittee Statement: "Detections reported from remaining areas are not attributed to hydrocarbon impacts and are likely due to naturally occurring organic compounds in the TPH range of the analytical test."

   NMED Comment: The Permittee detected total petroleum hydrocarbons (TPH) in the groundwater samples collected from the wells that are located outside of the Administration Area. However, concluding that the TPH detections are likely a result of the presence of naturally occurring organic compounds is not supported. Remove the statement from the revised Report.

7. **Executive Summary, ES-2.3, Groundwater Contaminant Plumes, Other Constituents, Metals, lines 17-20, page ES-4**

   Permittee Statement: "Metals were detected at concentrations exceeding screening levels from across the Study Area in both alluvial and bedrock wells. Metals are naturally occurring and are expected to be reported in both total and dissolved samples. In addition, highly turbid samples may have attributed to the high metals concentrations."

   NMED Comment: While metals may be naturally occurring, they have previously been released at FWDA as a result of the facility operations. It is misleading to omit the fact that metals are contaminants of concern (COCs) at the site. In addition, highly turbid groundwater should be filtered to eliminate suspended solids prior to collection of dissolved metal samples. Turbidity should not affect the results for dissolved metal analysis. Correct the statements for accuracy in the revised Report.

8. **Section 1.1, Purpose and Scope, lines 17-18, page 1-1, and Section 1.3.1, State Problem, line 26, page 1-2**

   Permittee Statements: "Further define the horizontal and vertical extent of the following six identified groundwater contaminant plumes."
   and,
   "The problem statement on a groundwater plume by groundwater plume basis is presented below...".

   NMED Comment: The VOC, nitrate, perchlorate, and explosives groundwater plumes are discussed in the subsequent paragraphs; however, the groundwater plumes associated with TPH are not included in the discussion. Since the TPH plumes are present in the Administration Area, include a discussion regarding the TPH plumes. In addition, refer to Comments 17 and 27 of the NMED's July 1, 2020 *Disapproval Final Groundwater Periodic Monitoring Report January through June 2019* for the direction to delineate the TPH plumes in the Administration Area, and explain whether this was accomplished during the investigation. Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action. Revise the Report accordingly.

9. **Section 1.3.5, Analytical Approach, Nitrate Groundwater Contaminant Plumes, line 15, page 1-4, and Section 2.3.7.2, Bedrock Aquifer, lines 35-37, page 2-5**

   Permittee Statements: "Interaction between the first and second bedrock aquifers had not been determined....[t]his discontinuous sandstone interval is referred to as the 'first bedrock aquifer' and is characterized as a laterally discontinuous water bearing zone that does not yield sustainable water production."

NMED Comment: The description of the first bedrock aquifer appears to represent the characteristics of well TMW02. Comment 3 in the NMED's *Approval with Modifications Response to Approval with Modifications, Final Revision 1 Groundwater Periodic Monitoring Report, July through December 2018*, letter dated November 5, 2020, states:

> "[W]ell TMW02 represents alluvial groundwater quality rather than a mixture of both alluvial and bedrock groundwater quality. Therefore, it is more appropriate to retain well TMW02 as an alluvial groundwater monitoring well and continue to monitor groundwater quality [from it]. Designate well TMW02 as an alluvial well."

The purpose of well TMW02 is to monitor groundwater quality for the alluvial aquifer rather than the first bedrock aquifer. Remove the reference to separate aquifers among the bedrock aquifer unless such distinction is quantitatively defined (e.g., hydraulic conductivity, recharge rate). If such a distinction is made, then: (a) designate all bedrock wells with either the first bedrock wells or the second bedrock wells, and (b) provide a basis for the designation (e.g., hydraulic conductivity, recharge rate) with information regarding the depths of screened intervals.

Well BGMW08 may be defined as the first bedrock aquifer based on its low recharge rate; however, it is not clear whether the well was advanced to the discontinuous sandstone interval. In addition, there is evidence that hydraulic communication between the alluvial and bedrock aquifers occurs, because contaminants have already migrated vertically across the aquifers in the Study Area. However, interaction between the first and second bedrock aquifers has not been determined, because the presence/absence of separate aquifers among the bedrock aquifer has not been clearly demonstrated. Therefore, the former statement can be misleading. Revise the Report accordingly.

10. Section 2.3.7.1, Alluvial Aquifer, lines 29-30, page 2-5

Permittee Statement: "The relatively thin saturated zone within the alluvium and the presence of discontinuous clay layers, indicate the alluvium is a single aquifer within the Study Area."

NMED Comment: The Executive Summary (ES), lines 19-26, page ES-2, discusses the findings regarding the investigation of multiple alluvial aquifers in the Study Area, yet states that the investigation was inconclusive. The ES is ambivalent with regards to this finding. Resolve the discrepancy in the revised Report.

11. Section 2.4, Previous Investigations, lines 28-30, page 2-6

Permittee Statement: "Eight groundwater plumes are located within the Administration and Workshop areas, across Parcel 11, Parcel 21, and Parcel 22 (see Section 1.1) (Sundance, 2019)."

NMED Comment: Other sections of the Report only provide discussion regarding six identified groundwater plumes (e.g., Section 1.1). There appears to be a discrepancy (see Comment 8) regarding the number of the identified groundwater plumes. Resolve the discrepancy in the revised Report.

12. Section 2.4.1.2.3, Building 11 (SWMU 6, Parcel 11), Historical Uses, lines 30-32, page 2-8

Permittee Statement: "Diesel fuel for the generators was supplied by an aboveground storage tank (AST) and a UST, named as separate AOCs (AOC 46 and AOC 51, respectively)."

NMED Comment: The location of the Areas of Concern (AOC) 46 and 51 are not depicted on Figure 2-4.1 (Potential Source Areas). Provide the locations of AOC 46 and 51 in the revised Figure 2-4.1. In addition, AOC 47 is described as the VOC Source Area in Figure 2-4.1. According to Permit Attachment 8, AOC 47 is recorded as an area where photoflash powder was historically spilled. Photoflash powder, however, does not contain VOCs. T, but the Report states that AOC 46 and 51 are the potential source areas for VOCs. Resolve the discrepancy in the revised Report, as appropriate. Furthermore, a discussion regarding previous investigations of AOC 46 and 51 was not included in the Report. Include the discussion regarding previous investigations conducted at AOC 46 and 51 in the revised Report.

13. Section 2.4.1.3, Nature and Extent of VOC Groundwater Contamination, lines 31-33, page 2-9, and Section 2.4.5.3, Nature and Extent of TPH DRO and GRO Groundwater Contamination, lines 13-15, page 2-25

Permittee Statements: "Based on data from previous investigations, the saturated thickness of the alluvium in the VOC [and TPH GRO and DRO] groundwater plume[s are] approximately 30 feet with no continuous confining layer present. Thus, the alluvium is considered one aquifer. Below the alluvium is a claystone bedrock."

NMED Comment: Alluvial groundwater monitoring wells TMW06 and TMW07 are located south, adjacent to the Administration Area. Comment 6 of NMED's November 3, 2017 *Approval with Modifications Final Groundwater Periodic Monitoring Report, July through December 2016* states, states that:

"[t]he nitrate concentrations in alluvial monitoring wells TMW06 and TMW07 are recorded as 13 mg/L and non-detect (ND), respectively, in Figure 5-1. These wells are in close proximity to each other. The nitrate concentration in well TMW06 has routinely exceeded the regulatory limit during the previous sampling events while the nitrate concentration in well TMW07 has been non-detect or depicting very low-level detections. The boring/well logs show no notable differences between these wells except the depths of the screened intervals. Well TMW06 is screened from 45 to 55

below ground surface (bgs) while well TMW07 is screened from 65 to 75 bgs."

This comment indicates that the aquifer thickness in the vicinity of the Administration Area could be greater than 30 feet and that separate alluvial aquifers may be present. Unless additional data to support the assertion is provided, remove the statement from the revised Report. In addition, the bedrock aquifer potentially present within/beneath the claystone bedrock has not previously been investigated in the Administration Area; therefore, the presence/absence of groundwater contamination in the Administration Area is unknown at this time. Submit a work plan to investigate presence of potential groundwater contamination in the bedrock aquifer beneath the Administration Area no later than **June 30, 2022.**

14. Section 2.4.2.2.7, TNT Leaching Beds (SWMU 1, Parcel 21), Remediation Activities, and Soil Contamination Related to Nitrate Groundwater Plumes, lines 33-35, page 2-14, and lines 6-8, page 2-15, and Section 2.4.4.2.1, TNT Leaching Beds and Building 503 (SWMU 1, Parcel 21), Remediation Activities, and Soil Contamination Related to Explosives-contaminated Groundwater Plume, lines 27-29, page 2-21, and lines 13-14, page 2-22

Permittee Statements: "Given the low infiltration rate and with clean soil in place, migration of residual contamination into groundwater will be minimal to none."
and, "[a]lthough administrative actions are required before a no further action is granted, the Army no longer considers the site as a potential source of groundwater contamination."

NMED Comment: Although the severity of leaching potential of contaminants may have been reduced after implementation of the remediation activities (e.g., excavation) at the former TNT Leaching Beds, the Permittee left significant soil contamination in place at the site. The Permittee also chose to forego NMED's recommendation regarding evaluation and implementation of measures to address contamination at depths beyond the limits of the excavation prior to backfilling. NMED identified multiple shortcomings regarding the remediation activities conducted at the site in the NMED's August 3, 2020 and March 15, 2021 Disapprovals. Therefore, the Permittee's assertions are not appropriate and must be removed from the revised Report.

15. Section 2.4.2.3, Nature and Extent of Nitrate Groundwater Contamination, lines 28-31, page 2-16

Permittee Statement: "Groundwater [nitrate] contamination observed in the bedrock monitoring wells is believed to be the result of contaminant releases from facilities located on the bedrock outcrop recharge zone (TNT Leaching Beds / Building 503 (SWMU 1), Building 515 (SWMU 2), and Building 528 Complex (SWMU 27))."

NMED Comment: Although the statement would be true for the origin of perchlorate contamination in the bedrock aquifer (see Comment 5), NMED does not agree with the

statement because nitrate contamination in the bedrock aquifer also likely originated from the alluvial plume. Revise the statement for accuracy.

16. Section 2.4.3.2.3, Building 528 Complex (SWMU 27, Parcel 22), Soil Contamination Related to Perchlorate Groundwater Plumes, line 6, page 2-20

Permittee Statement: "Perchlorate concentrations exceeded the SL-SSL in 126 samples (USACE, 2011) [at the Building 528 Complex]."

NMED Comment: Provide a description of remediation activities conducted at the site, if any. Otherwise, state that the source of perchlorate contamination still remains at the site in the revised Report.

17. Section 2.4.3.3, Nature and Extent of Perchlorate Groundwater Contamination, line 8, page 2-20

Permittee Statement: "The extent of groundwater perchlorate contamination is limited to Parcel 21 and Parcel 22."

NMED Comment: The perchlorate concentrations in the groundwater samples collected from well TMW39D have exceeded the applicable screening level. Well TMW39D is located in Parcel 13; therefore, the extent of the perchlorate plume extends to Parcel 13. Revise the statement for accuracy.

18. Section 2.4.3.3, Nature and Extent of Perchlorate Groundwater Contamination, lines 13-14, page 2-20

Permittee Statement: "The highest perchlorate concentration was detected in the upper bedrock aquifer in the Workshop Area."

NMED Comment: Although the presence/absence of separate bedrock aquifers has not been demonstrated (see Comment 9), other sections of the Report (e.g., Sections 1.3.5 and 2.3.7.2) also use the designations of separate bedrock aquifers (first and second bedrock aquifers). In this statement, the bedrock aquifer is designated differently as the "upper bedrock aquifer". It is not clear whether the upper bedrock aquifer is equivalent to the first bedrock aquifer referenced in the other sections. The designation of the separate bedrock aquifers must be consistent if such distinction is used in the revised Report.

19. Section 2.4.5.2.1, Building 6 (SWMU 45, Parcel 11), Soil Contamination Related to TPH DRO and GRO Groundwater Plumes, lines 27-28, page 2-24

Permittee Statement: "USACE concluded that the vertical extent of contamination is approximately 20 feet bgs."

NMED Comment: A depth to alluvial groundwater generally reaches more than 40 feet bgs in the Administration Area and TPH have consistently been detected in the groundwater samples collected from the wells installed in the Administration Area. Accordingly, the vertical extent of the TPH contamination extended to the water table (e.g., more than 40 feet bgs). The statement is not accurate. Acknowledge that the vertical extent of contamination extends to the depth of the water table in the Administration Area, and remove the statement from the revised Report.

20. Section 3.3, Soil Vapor Sampling, lines 35-37, page 3-2

Permittee Statement: "Sixty-eight soil borings were advanced in the Administration Area to collect soil vapor samples to delineate the boundaries of 1,2-DCA soil vapor plume (Figure 3-3.1)."

NMED Comment: Figure 3-3.1 (Soil Vapor Sample Locations) only depicts 62 soil vapor sample locations. Resolve the discrepancy or provide an explanation for the discrepancy in the revised Report.

21. Section 3.4.1, Drilling, lines 24-25, page 3-4

Permittee Statement: "The first and second bedrock aquifers were defined by the thickness of the target bedrock units."

NMED Comment: The definition of the first and second bedrock aquifers is not consistent because Section 2.3.7.2 defines the first bedrock aquifer as a laterally discontinuous water bearing zone without sustainable water production. The definition of the separate bedrock aquifers must be consistent. Regardless, the presence/absence of separate bedrock aquifers has not been demonstrated in the Report (see Comments 9 and 18). Remove the designation of separate bedrock aquifers from the revised Report or clearly define the distinction.

22. Section 3.4.2, Soil Sampling during Monitoring Well Installation, line 19, page 3-5

Permittee Statement: "A schedule of soil analyses for each boring is presented in Table 3-4.1."

NMED Comment: Comment 1 in NMED's January 22, 2020 *Approval with Modifications Final Northern Area Background Well Installation and Completion Report* etter states, "[a] minimum of three soil samples should be collected from each boring at the vadose zone with the highest PID reading, if applicable, at the water table, and the termination depth." Since the borings were advanced for well installation prior to January 2020, the Permittee did not submit soil samples for the appropriate analyses. The purpose of each monitoring

well was described in the March 23, 2018 *Final Groundwater Supplemental RCRA Facility Investigation Work Plan Revision 4* (Work Plan). Table 3-4.1 (Schedule of Soil; Analyses) presents a list of soil analyses, but it is not consistent with the purpose described in the Work Plan. Soil samples should have been collected from each boring to be consistent with the purpose described in the Work Plan. Section 3.7.2.1 (Data Quality Exceptions) explains that the soil samples were only analyzed for VOCs (eight samples) and chromium (one sample). The following items must be identified as potential data gaps in the revised Report:

a. The Work Plan describes that the purpose of well MW28 is to determine the concentrations of nitrate in alluvium at the elbow of the nitrate plume. However, Table 3-4.1 does not indicate that nitrate analysis was conducted for the soil samples collected from the location. Therefore, the presence/absence of soil contamination associated with nitrate is unknown.

b. The Work Plan describes that the purpose of well MW33 is to determine the concentrations of the nitrate plume to the west of the Administration Area. However, Table 3-4.1 does not indicate that nitrate analysis was conducted for the soil samples collected from the location. Therefore, the presence/absence of soil contamination associated with nitrate is unknown.

c. The Work Plan describes that the purpose of well MW34 is to determine the western boundary of the nitrate plume. However, Table 3-4.1 does not indicate that nitrate analysis was conducted for the soil samples collected from the location. Therefore, the presence/absence of soil contamination associated with nitrate is unknown.

d. The Work Plan describes that the purpose of well MW35 is to confirm the metals concentrations in alluvial groundwater east of the Workshop Area. However, Table 3-4.1 does not indicate that metals analysis was conducted for the soil samples collected from the location. Therefore, the presence/absence of soil contamination associated with metals is unknown.

e. The Work Plan describes that the purpose of well TMW50 is to determine the southwestern boundary of nitrate plume in the bedrock water-bearing zone. However, Table 3-4.1 does not indicate that nitrate analysis was conducted for the soil samples collected from the location. Therefore, the presence/absence of soil contamination associated with nitrate is unknown.

f. The Work Plan describes that the purpose of well TMW51 is to determine the southeastern boundary of nitrate plume in the bedrock water-bearing zone. However, Table 3-4.1 does not indicate that nitrate analysis was conducted for the soil samples collected from the location. Therefore, the presence/absence of soil contamination associated with nitrate is unknown.

g. The Work Plan describes that the purpose of well TMW53 is to determine the northern extent of nitrate plume in the bedrock water-bearing zone. However, Table 3-4.1 does not indicate that nitrate analysis was conducted for the soil samples collected from the location. Therefore, the presence/absence of soil contamination associated with nitrate is unknown.

h. The Work Plan describes that the purpose of well TMW57 is to determine the eastern boundary of perchlorate and chromium in the alluvial water-bearing zone underneath the former Acid Pond. However, Table 3-4.1 does not indicate that perchlorate and chromium analyses were conducted for the soil samples collected from the location. Therefore, the presence/absence of soil contamination associated with perchlorate and chromium is unknown.

i. The Work Plan describes that the purpose of well TMW58 is to determine the western boundary of nitrate and perchlorate plumes in the bedrock water-bearing zone. However, Table 3-4.1 does not indicate that nitrate and perchlorate analyses were conducted for the soil samples collected from the location. Therefore, the presence/absence of soil contamination associated with perchlorate is unknown.

j. The Work Plan describes that the purpose of well TMW59 is to determine the concentrations of explosives within the central portion of the explosives plume. However, Table 3-4.1 does not indicate that explosives analysis was conducted for the soil samples collected from the location. Therefore, the presence/absence of soil contamination associated with explosives is unknown.

Failure to follow the NMED-approved Work Plan, including failure to collect and analyze samples appropriately, has resulted in many data gaps at FWDA. Failure to perform the appropriate work that was approved in the Work Plan will require the Permittee to perform further work in order to provide data to fill the data gaps. Provide justification for not collecting appropriate samples and not having the appropriate analyses conducted in the revised Report. In addition, propose to submit a work plan for collection and analyses of soil samples to fill the data gaps listed above no later than **June 30, 2022**.

23. Section 3.4.2, Soil Sampling during Monitoring Well Installation, lines 40-42, page 3-5, and Section 4.4.1.2, Other Analytical Results, lines 33-34, page 4-6

Permittee Statements: "In the Workshop Area, one soil sample was collected from above the water table and analyzed for chromium, as presented in Table 3-1 of the Work Plan (Sundance, 2018), to determine the extent of chromium within the alluvial water-bearing zone underneath the former Acid Pond... [t]he one soil sample associated with the nitrate/perchlorate plumes in the Workshop Area was collected from TMW57 and was analyzed for chromium."

NMED Comment: Table 3-4.1 does not indicate that chromium analysis was conducted for the soil samples collected at the former Acid Pond (see also Comment 22h). Resolve the discrepancy in the revised Report.

24. Section 3.4.5, Groundwater Sampling, lines 37-38, page 3-6

Permittee Statement: "Groundwater samples were analyzed for the constituents presented in Table 3-4.3 (Sundance, 2018 and USACE 2019)."

NMED Comment: Although all groundwater samples were proposed to be analyzed for the full analytical suite according to the Work Plan, there are some variations of selected analytical suite among groundwater samples according to Table 3-4.3 (Schedule of Groundwater Analyses). For example, groundwater samples collected from wells BGMW13D, BGMW13S, MW36D, and MW36S were analyzed for five additional analyses (alkalinity, cations, chloride/sulfate, PCBs, herbicides), those collected from wells TMW63 and TMW64 were analyzed for two additional analyses (PCBs and herbicides), and those collected from wells MW37, MW38, and MW39 were analyzed for one additional analysis (cations). Explain the basis for the variation of selected analytical suites and discuss these deviations in the revised Report.

25. Section 3.7.1, Soil Vapor Screening Criteria, lines 30-39, page 3-12

Permittee Statement: "A soil vapor screening level was calculated using the New Mexico Water Quality Control Commission (NM WQCC) standard for groundwater protectiveness using Henry's equilibrium partition for 1,2-DCA between vapor and water (Henry's Law). The soil vapor screening value is calculated as follows:

$H = C_{air} \div C_{water}$

$C_{air} = H^* C_{water}$

Where:

H = Henry's Law constant for 1,2-DCA (0.048)

C_{water} = NM WQCC (5 µg/L)

C_{air} = 0.048*5 µg/L = 0.24 µg/L"

NMED Comment: A value of the Henry's Law constant is significantly affected by temperature and the chemical composition of the water. For example, the Henry's Law constant for volatile hydrocarbons increases approximately threefold for a 10°C increase in temperature. It is prudent to obtain empirical rather than theoretical value of the Henry's Law constant since the calculated soil vapor screening level is directly proportional to its value. NMED recommends obtaining a site-specific value of the Henry's Law constant in the future when such calculation is necessary for a site where multiple plumes comingle. In addition, explain whether the value used as the Henry's Law constant (0.048) is

representative of the site's groundwater conditions (e.g., temperature and salinity) in the revised Report. If the selected value is not representative of the site's groundwater conditions and must be refined, revise all applicable sections and tables of the Report. In addition, a formula to convert the calculated soil vapor screening level from µg/L to parts per billion by volume (ppbv) is presented in the subsequent paragraph. Standard units for soil vapor concentrations and NMED's vapor intrusion screening levels are $\mu g/m^3$. For all discussion or presentation of soil vapor or air quality data, the Permittee must use $\mu g/m^3$ for concentration units. Revise the Report accordingly.

26. Section 4.1.1, Drilling Observations 3.7.1, lines 9-12, page 4-1, and Section 4.1.2, Soil Vapor Analytical Results, lines 14-15, page 4-1

Permittee Statements: "Sixty-eight soil vapor borings were attempted in the Administration Area. Twelve soil vapor borings met refusal at various depths before reaching the target depth of 30 ft bgs due to subsurface obstructions such as concrete. Another four borings could not be sampled due to tight soil conditions which prevented the collection of a soil vapor sample." And, "[f]ifty-two soil vapor samples were collected from the Administration Area and analyzed for 1,2-DCA."

NMED Comment: Figure 3-3.1 (Soil Vapor Sample Locations) depicts 62 soil vapor sample locations. Resolve the discrepancy in the revised Report or provide an explanation for the discrepancy (see Comment 20). Figure 3-3.1 must also be revised to identify the boring locations where soil vapor samples were not collected.

27. Section 4.1.2, Soil Vapor Analytical Results, lines 17-18, page 4-1

Permittee Statement: "1,2-DCA analytical results are presented on Figure 4-1.1 and Table 4-1.1."

NMED Comment: Figure 4-1.1 (1,2-DCA Soil Vapor Plume) depicts the boundary of the plume; however, the extent of the plume (e.g., north, south and east of Building B005) is not delineated. Since the data indicates that the soil vapor concentration of 1,2-DCA beneath Building B005 potentially exceeds applicable vapor intrusion screening levels, the Permittee must propose to investigate the risk associated with vapor intrusion within Building B005 in the revised Report. Submit a work plan to investigate risks associated with vapor intrusion within Building B005 no later than **June 30, 2022**, as applicable.

28. Section 4.2.2, Bedrock Aquifer, lines 4-9, page 4-2, and Section 4.2.5, Groundwater Level Measurements and Elevations, lines 27-31, page 4-2

Permittee Statements: "Eight bedrock wells (Four upper unit bedrock wells and four lower unit bedrock wells) were drilled and installed in the Study Area. Upper unit bedrock well depths ranged from 100 ft bgs at TMW64 located east of the TNT Leaching Beds to 125 ft

bgs at TMW51 located between the TNT Leaching Beds. Lower unit bedrock well depths ranged from 70 ft bgs at TMW50 in the southern portion of the Study Area, south of the TNT Leaching Beds to 185 ft bgs at TMW58 located northwest of the TNT Leaching Beds." And, "Alluvial and lower bedrock unit (BR2) groundwater elevation contours are illustrated on Figure 4-2.1 and Figure 4-2.2, respectively. Groundwater elevation contours were not generated for the upper bedrock unit (BR1) because there is inconsistent groundwater elevation data to provide a depiction of the piezometric surface and an approximation of the groundwater flow direction."

NMED Comment: The presence of the separate bedrock aquifers has not been demonstrated (see Comments 9, 18 and 21). Revise the statement as directed by the previous comments.

29. Section 4.2.6, Groundwater Gradients, lines 5-7, page 4-3, and Section 5.1.2, Presence of Multiple Alluvial Aquifers, lines 4-6, page 5-2

Permittee Statements: "Vertical hydraulic gradients were evaluated between two alluvial aquifer well pairs, four alluvial aquifer and the upper bedrock unit aquifer well pairs, and two upper bedrock unit and lower bedrock unit well pairs." And, "Comparison of multiple seasonal groundwater elevations and groundwater quality between the well pairs is necessary before a finding of the presence of multiple aquifers can be made."

NMED Comment: Although the evaluation of vertical hydraulic gradients is useful to identify the potential for vertical migration of contaminants, the presence/absence of separate units within the alluvial/bedrock aquifers is still inconclusive (see Comments 9, 10, 18, 21, and 28). One way to evaluate the presence/absence of separate units within the alluvial/bedrock aquifers is to compare its groundwater quality and chemical composition of groundwaters (e.g., concentrations of dissolved metals, anions, and contaminants). The groundwater data collected from the new well pairs (e.g., MW36S/MW36D, BGMW13S/BGMW13D, TMW29/TMW52, TMW52/TMW58, TMW03/TMW53, TMW39S/TMW64, TMW53/TMW63) as well as the existing well pairs (e.g., TMW40S/TMW02, TMW02/TMW40D, TMW06/TMW07, TMW31S/TMW31D, TMW39S/TMW39D) should be evaluated and the discussion included in future periodic groundwater monitoring reports. No revision is required to the Report.

30. Section 4.2.7.2, Bedrock Aquifer, lines 19-22, page 4-4, Section 4.4.2.1, Alluvial Aquifer, lines 32-35, page 4-7, Section 4.4.2.2, Bedrock Aquifer, lines 11-13, page 4-8,

Permittee Statements: "The elevated dissolved oxygen measurements were likely the result of supersaturation of the water by air which could have been introduced by the sample hose to the groundwater, entrained bubbles within the sample hose, and/or from bubbles on the dissolved oxygen sensor."

NMED Comment: Comment 2 of the NMED's *[Response to] Approval with Modifications, Final Revision 1 Groundwater Periodic Monitoring Report, January through June 2018*, dated July 6, 2021, states, "NMED agrees that in-situ DO measurement using downhole probes is more effective and accurate. Propose to use downhole probes for water quality measurements, where applicable, in future groundwater monitoring plan update." Use downhole probes, where applicable, to resolve the issue in future DO measurements. Since the comment was provided after the DO measurements were conducted, no revision is required to the Report. This comment serves as a reminder.

31. Section 4.3.1.1, Geotechnical Results, 4.2.7.2, lines 37-38, page 4-4

Permittee Statement: "Analyses included sample porosity, organic content, dry bulk density, and Atterberg limits. The geotechnical analysis results are presented in Table 4-3.1."

NMED Comment: Table 4-3.1 (Soil Analytical Results – Geotechnical) presents the porosity values for the soil samples; however, it is not clear whether the values represent total or effective porosity. Provide a clarification in the revised Report.

32. Section 4.3.1.2, Other Analytical Results, lines 4-6, page 4-5

Permittee Statement: "The soil samples were collected from MW29, MW30, MW31, and MW32 at depths ranging from 10 to 42 ft bgs. There were no soil exceedances of the screening levels (Table 4-3.2)."

NMED Comment: Table 4-3.2 (Soil Analytical Detections – Chemical) does not list all compounds detected from the samples. For example, 1,2,4-trimethylbenzene, acetone, benzene, ethylbenzene, tetrachloroethene, toluene, and xylenes are listed as detected compounds using EPA method 8260C DOD in the soil sample collected from boring MW29 at a depth of 10 – 11 feet bgs (11VAL-MW29SB-D10-11SO). However, the analytical report (J126165-1 USD Level 2 Report Rev(1) Final Report, page 6) also lists naphthalene as a detected compound. All detected compounds must be listed in Table 4-3.2 for accuracy in the revised Report. In addition, provide a link for each specific sample to a specific lab report filename or to a page number in the appendix where the specific lab report can be found. The Permittee has been directed to provide this link numerous times. Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action. Revise the Report accordingly (see Comment 2).

33. Sections 4.4.1.2, 4.5.1.2, and 4.7.1.2, Other Analytical Results, lines 33-35, page 4-6, lines

15-17, page 4-10, and lines 32-34, page 4-13

Permittee Statements: "The one soil sample associated with the nitrate/perchlorate plumes in the Workshop Area was collected from TMW57 and was analyzed for chromium. The concentration of chromium was below the screening level (Table 4-3.2)."

NMED Comment: Table 4-3.2 (Soil Analytical Detections – Chemical) does not list analytical data collected from boring TMW57. Resolve the issue in the revised Report.

34. Section 4.4.3.1, Alluvial Aquifer, lines 22-24, page 4-8

Permittee Statement: "A total of 24 alluvial wells were sampled for nitrate analysis. Eight detections of nitrate were reported above the screening level of 10 mg/L at concentrations ranging from 11 mg/L in MW34 to 58 mg/L in MW32. Detections of alluvial well nitrate analyses are presented in Table 4-4.1."

NMED Comment: According to Table 4-4.1 (Groundwater Analytical Detections – Nitrate), the nitrite concentrations in groundwater samples collected from wells MW27, MW35, and MW59 were also reported above the screening level of 1 mg/L. Note that none of the nitrite concentrations in groundwater samples collected from alluvial wells exceeded the screening level during the April 2019 sampling event. Explain whether the groundwater sampling technique utilized in the October/November 2019 sampling event was different from the previous technique or evaluate whether a nitrite plume is present at the site. Provide a discussion in the revised Report.

35. Section 4.4.3.2, Bedrock Aquifer, lines 29-30, page 4-8

Permittee Statement: "Detections of bedrock well nitrate analyses are presented in Table 4-4.2."

NMED Comment: There is a typographical error in the statement. The referenced table is Table 4-4.1 rather than Table 4-4.2. Correct the error in the revised Report.

36. Section 4.6.3.1, Alluvial Aquifer, lines 27-28, page 4-12

Permittee Statement: "Two detections of the explosive RDX were reported above the screening level of 9.7 µg/L at a concentration of 61 µg/L in well TMW59 and at 13 µg/L in well TMW62, respectively."

NMED Comment: Wells TMW21 and MW27 are located downgradient of well TMW62 and can be used as sentinel wells for the RDX plume. However, the distance from well TMW62 to the sentinel wells exceeds 500 feet; therefore, the RDX plume boundary west of well TMW62 is not well defined. Submit a work plan to install an additional well to delineate the

western boundary of the RDX plume no later than **June 30, 2022**. In addition, well TMW54 installed south of the former pre-1962 TNT Leaching Bed is recorded as dry; therefore, the RDX plume south of well TMW40S is not delineated. According to Table 4-2.1 (Monitoring Well Construction Details), well TMW54 is screened at depths 21.4 - 41.4 feet bgs. However, all neighboring alluvial wells were screened at deeper intervals and the screened intervals of TMW54 and the neighboring alluvial wells were not comparable. For example, well TMW40S located downgradient of TMW54 was screened at a depth of 50 – 60 feet bgs and the highest RDX concentrations have been detected in the groundwater samples collected from this well. Also, the data collected from historical groundwater depth measurements, as well as the data collected during the excavation of the former TNT Leaching Beds indicate that groundwater is not present at the depth of the screened interval of well TMW54 (21.4 – 41.4 feet bgs). According to the boring log for TMW54 included in Appendix E1 (Boring Logs), moisture was observed at a depth of 80 – 90 feet bgs in the soil (claystone). Due to potential artesian conditions at the location, the water observed at depth of 80 – 90 feet bgs may be a source of groundwater detected in the downgradient alluvial wells. Submit a work plan to replace well TMW54 with a well that is constructed with a more appropriate screened interval no later than **June 30, 2022**.

37. Section 4.7.2.1, Alluvial Aquifer, lines 3-4, page 4-15

Permittee Statement: "Sulfate; one detection above the screening level of 600 mg/L at a concentration of 4,200 mg/L in MW36S."

NMED Comment: According to Table 4-7.2 (Groundwater Analytical Detections - Other Constituents), the sulfate concentration in the groundwater sample collected from alluvial well MW36D located adjacent to MW36S is recorded as 74 mg/L. The screened intervals of wells MW36S and MW36D are recorded as 30 – 50 feet bgs and 55 – 75 feet bgs, respectively. Although these wells were installed in the same alluvial aquifer, chemical composition of the groundwater samples was significantly different. A similar phenomenon was observed in the groundwater samples collected from wells TMW06 and TMW07 (see Comment 13). Evaluate the presence/absence of separate units within alluvial/bedrock aquifers in future periodic groundwater monitoring reports (see Comment 29).

38. Section 4.7.2.2, Bedrock Aquifer, lines 15-16, page 4-15

Permittee Statement: "TPH-DRO –Screening level exceedances for TPH-DRO are presented in Table 4-7.1. There were seven TPH-DRO exceedances."

NMED Comment: The TPH-DRO concentrations in the groundwater samples collected from bedrock wells TMW50 and TMW52 are recorded as 420 and 580 µg/L, which are higher than those detected in groundwater samples collected from alluvial wells located in the Administration Area. TPH analysis must be conducted for groundwater samples collected from all new bedrock wells to evaluate aquifer conditions in future groundwater sampling

events. Propose to conduct TPH-DRO and TPH-GRO analyses for the groundwater samples collected from all new wells in the revised Report and update the sampling requirement in the upcoming Interim Northern Area Groundwater Monitoring Plan.

39. Section 4.8.3, Groundwater Analytical Data, Completeness, lines 29-31, page 4-20

Permittee Statement: "No results were rejected (R), therefore 100 percent of the results reported by the laboratory were complete, meeting the project completeness goal of 90 percent."

NMED Comment: The discussion regarding accuracy of some analyses indicates that several LCS and CCV parameters were either too high or too low. Although the statement indicates that the results are acceptable, it is not clear how they are acceptable and whether they are biased. Provide an explanation in the revised Report.

40. Section 5.1.1, Alluvial Groundwater, lines 18-21, page 5-1

Permittee Statement: "The groundwater mound has been previously attributed to a decommissioned water storage cistern and/or from the inactive artesian Well 68 (USGS, 2011). Army staff have also reported that former production well 69 is suspected of leaking into the alluvial aquifer and potentially contributing to the groundwater mound."

NMED Comment: The Permittee stated that the contract to plug wells 68 and 69 was awarded during the November 3, 2021 BRAC Cleanup Team (BCT) meeting. However, it is not clear when these wells will be plugged. Provide a timeline for when these wells will be abandoned/plugged in the revised Report.

41. Section 5.1.3, Bedrock Groundwater, lines 13-17, page 5-2

Permittee Statement: "Groundwater elevations between four wells in the upper bedrock unit (BR1) were inconsistent and groundwater parameters did not stabilize at these locations during sampling. Although the findings indicate the presence of water in the upper sandstone unit, it is unlikely to be an extensive water bearing zone. The extent and gradient of the first water bearing zone could not be completely and reliably assessed."

NMED Comment: Provide data (examples) to support the assertion in the revised Report.

42. Section 5.2.2, Fate and Transport, lines 12-13, page 5-3, and Section 5.3.1.2, Fate and Transport, lines 17-18, page 5-4

Permittee Statements: "This figure illustrates the relationship between these two plumes as follows: the groundwater VOC plume originates in the same vicinity as the soil vapor plume." And,"Based upon soil vapor results, the groundwater plume has a continuing

source of contamination (Figure 5-2.1). If the soil vapor source exists, the groundwater plume will persist."

NMED Comment: VOCs detected as soil vapor continue to partition into groundwater and act as a source of the groundwater plume. Submit a work plan to investigate the extent of the soil vapor plume, including the potential for vapor intrusion, in the vicinity of Building B006 no later than **June 30, 2022**.

43. Section 5.3.1.2, Fate and Transport, lines 22-25, page 5-4

Permittee Statement: "The low VOC concentration at MW25 suggests that the VOC plume is attenuating at the margins via dilution and dispersion. This is further supported by the lack of degradation by-products reported by the analytical laboratory and by the aerobic groundwater conditions downgradient of B006 (Table 4-2.4)."

NMED Comment: The statement is speculative and inaccurate. The DO concentrations in the groundwater samples collected from wells MW18D and TMW33 during the April 2019 sampling event are recorded as 1.01 and 0.37 mg/L, respectively. According to Table 4-2.4 (Groundwater Quality Parameters), the DO concentration in well MW25 is recorded as 0.7 mg/L. The groundwater conditions downgradient of Building B006 are not aerobic. In addition, degradation by-products of 1,2-DCA (e.g., carbon dioxide) have not been analyzed by the analytical laboratory. Remove the statement from the revised Report. Furthermore, the terms VOC and 1,2-DCA are used interchangeably in some parts of the Report. Since 1,2-DCA is only one of the VOCs, the term VOC must not be used interchangeably for the contaminant. Revise the Report accordingly.

44. Section 5.3.2.2, Fate and Transport, lines 20-22, page 5-5

Permittee Statement: "In the alluvial aquifer, the northerly nitrate plume migration is consistent with the alluvial hydraulic gradient with prominent changes in direction at the southern boundary with Parcel 11 and again in the central portion of Parcel 11 (Figures 4-2.1 and 4-4.1)."

NMED Comment: According to Figure 4-2.1 (Groundwater Elevation Contours – Alluvial), groundwater flows toward the west in the vicinity of the former TNT Leaching Beds. However, according to Figure 4-4.1 (Alluvial Groundwater Plume – Nitrate), the nitrate plume expands north rather than west. The direction of the groundwater flow and the plume expansion does not appear to be consistent in some areas. A similar inconsistency is observed in the direction of the RDX plume expansion depicted on Figure 4-6.1 (Alluvial Groundwater Plume – Explosives). Evaluate the cause of the inconsistency between the direction of the groundwater flow and the plume expansion in some areas and provide a discussion in the revised Report.

45. Section 5.3.2.2, Fate and Transport, lines 23-25, page 5-5

Permittee Statement: "The change in plume direction is consistent with alluvial high groundwater elevation at MW27 which deflects the groundwater in this direction."

NMED Comment: The influence of Well 69, a potential source of groundwater mounding, is likely unrelated to the observed groundwater elevation at well MW27. Discuss the potential cause of groundwater mounding in the vicinity of well MW27 in the revised Report.

46. Section 5.3.2.2, Fate and Transport, lines 35-38, page 5-5

Permittee Statement: "Nitrate is not observed in bedrock monitoring wells TMW36, TMW53, TMW52, and TMW63 despite these locations being overlain or in close proximity to the alluvial nitrate plume (Figure 4-4.2).This suggests a low potential for vertical migration of nitrate from the alluvial aquifer to the bedrock aquifer."

NMED Comment: Note that the bedrock nitrate plume is already present upgradient of wells TMW36, TMW53, TMW52, and TMW63. Therefore, even if there is a low potential for vertical migration of nitrate from the alluvial aquifer to the bedrock aquifer, there will be a high potential for lateral migration of nitrate within the bedrock aquifer, and nitrate may be detected in the wells in the future; therefore, continued groundwater monitoring is important. No revision is required.

47. Section 5.3.5.1, Nature and Extent of Contamination, TPH, lines 12-13, page 5-9

Permittee Statement: "In the alluvial aquifer, most of the detections were located in the Administration Area (Parcel 11) where two former fueling facilities were located (Figure 2-4.1)."

NMED Comment: Although the statement is true, the TPH-DRO concentrations in the groundwater samples collected from wells located in areas other than the Administration Area (e.g., northwest corner of the Study Area and north of the former TNT Leaching Beds) also exceeded the screening level of 16.7 µg/L. These TPH-DRO exceedances must also be addressed in the revised Report.

48. Section 5.3.5.1, Nature and Extent of Contamination, TPH, lines 14-17 and 20-23, page 5-9

Permittee Statements: "Of the alluvial samples collected in the Administration Area, only one sample (MW39) displayed a typical diesel fuel pattern in the chromatogram. Therefore, the TPH-GRO and TPH-DRO contours in Parcel 11 were based upon groundwater sample results from the 2019 Groundwater Periodic Monitoring Report (Sundance, 2019)."
and,
"Reported detections of TPH-GRO or TPH-DRO do not necessarily mean the detection was

gasoline or diesel itself. The sample chromatograms are compared against chromatograms of actual gasoline or diesel fuel in order to establish whether the sample pattern matches the fuel pattern."

NMED Comment: The contaminant contours must be prepared based on the results reported by the laboratory. Inclusion/exclusion of the data based on an examination of the chromatograms may introduce bias and is not appropriate. Revise all applicable sections, tables, and figures to include the data as reported by the analytical laboratory.

49. Section 5.3.5.1, Nature and Extent of Contamination, TPH, lines 25-28 and 33-35, page 5-9

Permittee Statements: "The TPH-DRO detections in the northwestern portion of the Study Area are not associated with a distinct source of diesel fuel, and the chromatograms for these detections lack a distinctive diesel pattern as observed in the diesel standard (Appendix F3)." And, "Therefore, these detections are likely due to naturally occurring organic compounds which were reported by the analytical laboratory as TPH-DRO, not as diesel fuel, and are not likely due to diesel fuel contamination."

NMED Comment: The discussion is speculative because relevant compound-specific analyses (e.g., semi-volatile organic compound (SVOC)) were not conducted for the groundwater samples and no reference is made to comparisons to chromatograms for other types of fuels, solvents, or naturally occurring organic compounds. The compounds causing the elevated TPH-DRO concentrations may or may not be naturally occurring organic compounds and such determination cannot be made from the available data. Propose to conduct SVOC analysis for the groundwater samples collected from all wells where TPH-DRO was detected in the revised Report and update the sampling requirement in the upcoming Interim Northern Area Groundwater Monitoring Plan. This comment is also applicable to the subsequent discussion regarding the detection of TPH-DRO in the bedrock wells.

50. Section 6.2, Soil Vapor VOC Plume, lines 19-22, page 6-1

Permittee Statement: "To design a remedy for the soil vapor plume, it is recommended that the horizontal limits of the plume be defined by collection and analysis of additional soil vapor samples to the north, south and east of Building B005."

NMED Comment: NMED concurs with the recommendation. Submit a work plan to investigate the extent of the soil vapor plume no later than **June 30, 2022** (see Comment 42).

51. Section 6.3.2, Nitrate Groundwater Plumes, lines 31-32, page 6-1

Permittee Statement: "It is recommended that the subsurface in the vicinity of Building

B009 and/or AOC 47 (Building 11) be investigated for potential source(s) of nitrate contamination to groundwater."

NMED Comment: Explain how wastewater generated from the buildings located in the Administration Area has been managed, and provide a map showing the location of the sewer lines in the Administration Area. The subsurface investigation for potential source(s) of nitrate must include a provision to evaluate the integrity of the sewer lines. Submit a work plan to investigate the potential sources of nitrate contamination in groundwater no later than **June 30, 2022**.

52. Section 6.3.5, Other Constituents in Groundwater, TPH, lines 18-22, page 6-2

Permittee Statement: "No additional investigative activities are recommended for TPH. However, for those groundwater monitoring wells where TPH GRO and TPH DRO are reported, incorporation of a silica gel cleanup to the analytical protocol is recommended for comparative purposes. The silica gel cleanup removes naturally occurring organic matter to allow for a more representative result due solely to petroleum hydrocarbons."

NMED Comment: Unless the TPH-GRO/DRO concentrations are proven to be false positives, additional provisions that address the detection of TPH-GRO/DRO are warranted (see Comments 38 and 49). Should the Permittee wish to utilize alternative sampling protocols, such as the use of silica gel to remove naturally occurring organic matter during the analysis, they must submit a petition for alternate sampling methods to NMED in accordance with 40 CFR 260.21, including a demonstration by comparison with results from the standard procedure that indicates the data quality is suitable for the project's purpose. Any change to a sampling or analysis method must be evaluated and approved by NMED prior to its use. Acknowledge the requirement in the revised Report or remove the recommendation.

53. Section 6.3.5, Other Constituents in Groundwater, Herbicides, Pesticides and PCBs, lines 28-30, page 6-2

Permittee Statement: "Additional groundwater sampling and analysis of herbicides is recommended from monitoring wells MW36S, BGMW13D and BGMW07 to determine if the reported estimated herbicide detections are repeatable and present."

NMED Comment: NMED concurs with the recommendation. In addition, two pesticide compounds were reported at concentrations below screening levels in the groundwater samples collected from wells TMW40S and TMW52. These wells also must be monitored for pesticides to determine if the detections are repeated. Propose to conduct pesticide analysis for the groundwater samples collected from wells TMW40S and TMW52 for a minimum of two consecutive groundwater sampling events in the revised Report and update the sampling requirement in the upcoming Interim Northern Area Groundwater

Monitoring Plan.

54. Section 6.3.5, Other Constituents in Groundwater, Herbicides, Pesticides and PCBs, lines 28-30, page 6-2

Permittee Statement: "At monitoring well MW36S, it is recommended that additional groundwater sampling and analysis of chloride and sulfate be performed as these constituents were reported at concentrations exceeding applicable screening level (Table 5-3.5)."

NMED Comment: NMED concurs with the recommendation. The analysis of chloride and sulfate also may be useful to determine the presence/absence of separate aquifers (see Comment 29). In the revised Report, propose to conduct chloride/sulfate analysis for the groundwater samples collected from all pertinent wells where such evaluation is relevant and potentially feasible. Update the sampling requirement in the upcoming Interim Northern Area Groundwater Monitoring Plan.

55. Figure 4-2.1, Groundwater Elevation Contours – Alluvial

NMED Comment: According to Figure 4-2.1, the groundwater elevation measured in piezometer PZ04 is recorded as 6,644.62 feet. However, piezometer PZ04 is located between the groundwater elevation contour lines of 6,650 and 6,645 feet. Similarly, the groundwater elevation measured in TMW60 is recorded as 6,628.31 feet. However, well TMW60 is located between the groundwater elevation contour lines of 6,645 and 6,640 feet. Resolve the discrepancy in the revised Report.

56. Figure 4-3.1, Alluvial Groundwater Plume – VOCs, and Figure 4-3.2, Bedrock Groundwater Concentrations – VOCs

NMED Comment: According to Table 4-3.3 (Groundwater Analytical Detections – VOCs), VOCs other than 1,2-DCA (e.g., benzene, toluene) were detected in the groundwater samples collected from alluvial and bedrock wells. Although Figures 4-3.1 and 4-3.2 are presented as depicting all VOC detections, detections of VOCs other than 1,2-DCA are recorded as "Not Detected (ND)" on the figures. Revise the purpose of the figures or include all VOC detections on the revised figures.

57. Figure 4-4.1, Alluvial Groundwater Plume – Nitrate

NMED Comment: The nitrate concentration in the groundwater sample collected from well BGMW02 exceeded the nitrate screening level of 10 mg/L. However, the exceedance is not identified on the figure. Correct the figure for accuracy in the revised Report.

58. Figure 4-7.1, Alluvial Groundwater Concentrations - TPH

NMED Comment: Figure 4-7.1 contains multiple inaccuracies. For example, although the TPH-DRO concentrations in the groundwater samples collected from well MW29, MW30, and MW31 are recorded as 55 J, 33 J, and 77 J µg/L, respectively, which all exceed the TPH-DRO screening level of 16.7 µg/L, these wells are depicted outside of the concentration contour line of 16.7 µg/L. Similarly, although the TPH-GRO concentration in the groundwater sample collected from well MW30 is recorded as 12 J µg/L, which exceeded the TPH-GRO screening level of 10.1 µg/L, the well is depicted outside of the concentration contour line of 10.1 µg/L. In addition, although multiple exceedances of TPH-DRO and TPH-GRO are recorded (e.g., 86 J µg/L TPH-DRO in MW36S, 43 J µg/L TPH-DRO and 21 J µg/L TPH-GRO in BGMW13S, 40 J µg/L TPH-DRO in BGMW11, 37 J µg/L TPH-DRO in MW37, 36 J µg/L TPH-DRO in MW25, 90 J µg/L TPH-DRO in MW33, 32 J µg/L TPH-DRO in MW34, 59 J µg/L TPH-DRO in MW27, 51 J µg/L TPH-DRO and 18 J µg/L TPH-GRO in MW28, 94 J µg/L TPH-DRO in TMW59), these exceedances are not identified in the figure. The size of the TPH-DRO and TPH-GRO plumes may be larger than those presented in the figure. Since the detections are not proven to be less than the cleanup level at this time, revise the figure for accuracy.

The Permittee must submit a revised Report that addresses all comments contained in this letter. Two hard copies and an electronic version of the revised Report must be submitted to the NMED. The Permittee must also include a redline-strikeout version in electronic format showing where all revisions to the Report have been made. The revised Report must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. The revised Report must be submitted to NMED no later than **May 12, 2022**. In addition, the work plan required by Comments 13, 22, 27, 36, 42, 50, and 51 must be submitted no later than **June 30, 2022**. Furthermore, Comments 38, 49, 53, and 54 must be addressed in the upcoming Interim Northern Area Groundwater Monitoring Plan.
Should you have any questions, please contact Michiya Suzuki of my staff at (505) 690-6930.

Sincerely,

Rick Shean Digitally signed by Rick Shean Date: 2022.01.25 06:01:09 -07'00'

Rick Shean
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
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M. Suzuki, NMED HWB
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