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August 31, 2022

Base Realignment and Closure Operations Branch

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

RE: Response to Disapproval, 2023 Interim Northern Area Groundwater Monitoring Plan, Fort Wingate Depot Activity, McKinley County, New Mexico. EPA# NM6213820974, HWB-FWDA-22-001

Dear Mr. Shean:

This letter provides responses to the comments issued in the Disapproval, 2023 Interim Northern Area Groundwater Monitoring Plan Fort Wingate Depot Activity, McKinley County, New Mexico, EPA ID# NM6213820974, HWB-FWDA-22-001, dated July 19, 2022. In addition to the comment responses provided in this letter, two (2) hard copies and one (1) electronic (CD) copy of the 2023 Interim Northern Area Groundwater Monitoring Plan Revision 1 are enclosed for your review and consideration. The electronic transmittal includes a redline-strikeout version of the above-mentioned report, showing where all revisions to the report were made.

**Comments:**

**1. Objectives of the Plan**

**NMED Comment:** Section 1.3 (Purpose), page 3 of 71, provides the objectives of the interim groundwater monitoring; however, it does not state the objectives of the plan itself, as described in Permit Section V.A.4. As a result, the Plan lacks the necessary details (e.g., proposed changes to the previous plans) required by the Permit; rather, it provides trivial details that appear to be irrelevant to the objectives of the Plan. For example, Section 2.2 (Previous Investigations) and its subsections (Section 2.2.1 through Section 2.2.27) provide approximately 20 pages of the description regarding previous investigations conducted at each SWMU and AOC. More than 30 percent of the text of the Plan discusses details regarding previous investigations. Such details are unnecessary for the purpose of the plan. Although Section 7.0 (Sampling Changes from Previous Plan) briefly discusses proposed changes to the previous monitoring and sampling plan, it lacks details, and the discussion is not sufficient. The Permittee must present all proposed changes to the previous plan and provide the basis for each proposed change requested by the Permittee or required by NMED. Relevant correspondence must be referenced for all proposed changes required by NMED. Comment 32 of the NMED's July 27, 2020, Disapproval also states, "Table 5-2, Northern Area Groundwater Sampling Matrix, and the text of the Plan lack an explanation for the changes made to the Plan (e.g., inclusion or exclusion of new or existing wells and analytical suite). The revised Plan must include a section that summarizes all changes made to the previous sampling matrix. If the change was directed by NMED, provide a reference to the direction. If the change is proposed by the Permittee, provide a basis or the proposed change." This

direction was not adequately followed. Revise the Plan to include more detail for the proposed changes from the previous plans and remove unnecessary information.

**Permittee Response:** Significant changes have been made per the comment, and are presented in the redline strike-out. Specifically, Section 2.2 (and its subsections) has been significantly reduced to remove unnecessary details and Section 7.0 was expanded to include text discussion of proposed changes to the plan for each well, including the basis for each proposed change.

## 2. Proposed Changes to the Plan

**NMED Comment:** The following issues regarding the proposed changes were identified in the Plan. Resolve the issues in the revised Plan.

- a) The nitrite concentrations in groundwater samples collected from wells MW27, MW35, and MW59 may have been reported inaccurately. Propose to split the nitrite samples collected from the wells and use two different analytical laboratories to conduct nitrite analysis in the revised Plan, as appropriate.

**Permittee Response:** Comment Noted: It is the Army's understanding that NMED is referencing to Northern Area Groundwater RFI Report comment # 22, dated July 25, 2022, in this comment. The Army has reviewed NMED's comment and notes that split data for the same compound using the same analytical method when submitted to two different labs often results in variations, mainly because of variations in instrumentation. To address the NMED comment, the Army will collect additional samples from these three wells (MW27, MW35, and TMW59) during the April 2023 sampling event, and submit the three sets of samples to two separate labs to verify the results. The Army will share the results with NMED. This change was noted in Section 7.0 and in Table 5-2.

- b) The Permittee recommended conducting additional groundwater sampling and analysis of herbicides for wells MW36S, BGMW13D, and BGMW07 in the May 6, 2022, letter. However, herbicide analysis was not proposed for wells MW36S and BGMW13D in the Plan. Propose to conduct herbicide analysis for these wells in the revised Plan.

**Permittee Response:** Comment Noted: The referenced wells were analyzed for herbicides in 2021 sampling events and will be analyzed during the 2022 sampling events. The results will be reported in upcoming PMRs. The wells have not had herbicide detections thus far, and the Army proposes removing herbicide analysis if non-detections continue through the 2022 sampling events. Section 7.0 and Table 5-2 were updated to reflect the proposed changes of removing them if they are non-detect, and if detected, continuing to sample for herbicides in 2023.

- c) Propose to conduct pesticides analysis for the groundwater samples collected from wells TMW40S and TMW52, as required by Comment 53 of the NMED's January 25, 2022, Disapproval.

**Permittee Response:** Comment Noted: The referenced wells were analyzed for pesticides in 2021 sampling events and will be analyzed during the 2022 sampling events. The results will be reported in upcoming PMRs. The wells have not had pesticide detections thus far, and the Army proposes removing pesticide analysis if non-detections continue through the 2022

sampling events. Section 7.0 and Table 5-2 were updated to reflect the proposed changes of removing them if they are non-detect, and if detected, continuing to sample for pesticides in 2023.

- d) Comment 38 of the NMED's January 25, 2022, Disapproval states, "propose to conduct TPH-DRO and TPH-GRO analyses for the groundwater samples collected from all new wells." Although it appears that this comment was addressed, the discussion was not included in the Plan. Indicate where this comment was addressed in the revised Plan.

**Permittee Response:** Concur: TPH analysis for the referenced "new" wells was discussed and addressed in the 2022 GWMP (Version 11). Any changes to TPH analyses are discussed on a well-specific basis in Section 7.0 of this GWMP.

- e) Comment 49 of the NMED's January 25, 2022, Disapproval states, "propose to conduct SVOC analysis for the groundwater samples collected from all wells where TPH-DRO was detected." Propose to conduct semi-volatile organic compounds (SVOCs) analysis for all applicable wells and indicate where this comment was or is addressed in the revised Plan.

**Permittee Response:** Concur: Section 7 and Table 5-2 of the GWMP were revised to propose SVOC analysis for wells where TPH-DRO is detected in the preceding sampling event.

- f) Comment 54 of the NMED's January 25, 2022, Disapproval states, "propose to conduct chloride/sulfate analysis for the groundwater samples collected from all pertinent wells where such evaluation is relevant and potentially feasible." Propose to conduct the analysis for all applicable wells and indicate where this comment was or is addressed in the revised Plan.

**Permittee Response:** Concur: The requested revision was made to the 2022 GWMP and was carried forward into the current workplan without change. Section 5.2.1 (in 2022 and 2023 GWMPs) states: "Starting in 2021, all wells sampled for nitrate and nitrite will also be sampled for additional major anions to include chloride, fluoride, sulfate, phosphate, and bromide." No change was made to the document as a result of this comment."

- g) Comment 17 of the NMED's July 1, 2020, Disapproval states, "propose to collect groundwater samples from wells TMW06, TMW07, TMW10, TMW21 and TMW46 for TPH-DRO analysis." Although it appears that this comment was addressed, the discussion was not included in the Plan. Indicate where this comment was or is addressed in the revised Plan.

**Permittee Response:** Any changes to TPH analyses are discussed on a well-specific basis in Section 7.0 of this GWMP. Wells TMW06, TMW07, TMW10, TMW21 and TMW46 were proposed for TPH-DRO analysis in the 2022 GWMP, and remain unchanged for this 2023 GWMP.

- h) Comment 27 of the NMED's July 1, 2020, Disapproval states, "propose to collect groundwater samples from wells TMW06, TMW07, and TMW21 for TPH-GRO analysis." Although it appears that this comment was addressed, the discussion was not included in the Plan. Indicate where this comment was or is addressed in the revised Plan.

**Permittee Response:** Any changes to TPH analyses are discussed on a well-specific basis in Section 7.0 this GWMP. Wells TMW06, TMW07, and TMW21 were proposed for TPH-GRO analysis in the 2022 GWMP, and remain unchanged for this 2023 GWMP.

- i) Well MW27 appears to be the only well where 1,4-dioxane analysis was proposed in 2023. Provide a justification for the proposed change to the 1,4-dioxane analysis in the revised Plan.

**Permittee Response:** Comment Noted: Based on Comment No. 1 above, further explanation of changes in analytical protocol is provided in Section 7.0. Wells proposed for analysis for 1,4-dioxane were not changed from the 2022 GWMP.

- j) Comment 1 of the NMED's August 3, 2021, letter states, "[p]ropose to conduct PFAS analysis for the groundwater samples collected from the pertinent wells." Since this comment was not addressed, propose to conduct the analysis for all applicable wells and indicate where this comment was or is addressed in the revised Plan.

**Permittee Response:** Comment Noted: The Army is investigating the potential presence of PFAS at Fort Wingate Depot Activity under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). A Preliminary Assessment is currently being conducted and will be made available upon completion.

### **3. Section 1.5, Document Organization, lines 23-24, page 6 of 71**

**Permittee Statement:** "Section 2 presents the available site history and general description of FWDA and summarizes previous groundwater investigations."

**NMED Comment:** Section 2.2 and its subsections present a summary of previous soil and groundwater investigations conducted in each SWMU and AOC in a chronological manner with the Permittee's recommendations made after the investigations and NMED's responses. Although Section 2.2 and its subsections were reviewed, the accuracy of the statements was not verified with actual references because the details were not relevant to the Plan. The pertinent sections must provide a general description of site history and previous groundwater investigations; however, the comprehensive description of site history and previous investigations discussed in the Plan is unnecessary. Remove irrelevant details from the revised Plan.

**Permittee Response:** Comment Noted: Section 2.2 was greatly reduced in response to Comment No. 1 above.

### **4. Section 2.1, General Facility Description, lines 35-37, page 7 of 71**

**Permittee Statements:** "Figure 2-2 shows the locations of various buildings and SWMUs and AOCs throughout the Northern Area of the installation."

**NMED Comment:** Figure 2-2 was not included in the Plan. Include Figure 2-2 in the revised Plan.

**Permittee Response:** Concur: The GWMP was revised to correct the omission of Figure 2-2.

**5. Section 2.3, Semiannual RCRA Groundwater Monitoring Reports and Updated Groundwater Monitoring Plans -Ongoing, lines 15-17, page 28 of 71**

**Permittee Statement:** "Detected concentrations of other anions (fluoride, sulfate, chloride, and phosphate) are associated with hard water and brackish groundwater conditions observed at FWDA."

**NMED Comment:** Since the evaluation of background groundwater conditions has not been approved, it is not appropriate to conclude that the detection of anions is a result of natural conditions. Remove the unsupported statement from the revised Plan.

**Permittee Response:** Concur: The GWMP was revised to remove the referenced text from Section 2.3, lines 9-11, page 28 of 74.

**6. Section 2.3, Semiannual RCRA Groundwater Monitoring Reports and Updated Groundwater Monitoring Plans – Ongoing, lines 29-31, page 28 of 71**

**Permittee Statement:** "Toluene had two cleanup level exceedances and benzene has had one exceedance. Toluene and benzene may have been associated with previous fuel releases and are now detected at concentrations less than cleanup levels."

**NMED Comment:** 1,2-dichloroethane, carbon disulfide, 1,4-dioxane, toluene, and vinyl chloride are listed as volatile organic compounds (VOC) whose concentrations exceeded the applicable screening levels in the same section, lines 36-37, page 27 of 71. Since the statement indicates that benzene also exceeded the applicable screening level, resolve the discrepancy in the revised Plan.

**Permittee Response:** Concur: Benzene was added to the list of VOCs historically detected above cleanup levels in Section 2.3, line 31, page 27 of 74.

**7. Section 3.4.4, Northern Area Alluvial Groundwater System, lines 28-31, page 35 of 71**

**Permittee Statement:** "A video survey of Well 69 was performed in June 2019 to provide a visual observation of the interior of the well casing to assess possible deterioration and leaking. The video survey showed thick mineral deposits along the well casing, which made it difficult to assess the condition of the well casing."

**NMED Comment:** The Permittee submitted the June 15, 2022, Final Work Plan to Abandon and Plug Artesian Wells #68 and #69. The referenced work plan must be approved by the New Mexico Office of the State Engineer. The well abandonment plan must be approved by the New Mexico Office of the State Engineer. The well abandonment report must be submitted to NMED within ninety (90) calendar days of completion of the field activities. No revision is required to the Plan.

**Permittee Response:** Concur: No change to the document as a result of this comment.

## **8. Section 3.4.5, Northern Area Bedrock Groundwater System, lines 10-14, page 36 of 71**

**Permittee Statements:** "The upper sandstone unit is evaluated by monitoring well TMW40D. The remaining bedrock monitoring wells are completed in the lower sandstone unit which is separated from the upper by a thick sequence of shale. A third water-bearing sandstone unit is assumed since groundwater from well BGMW08 was measured at 100 feet lower than those of other bedrock wells."

**NMED Comment:** The Permittee's May 6, 2022, Final Northern Area Groundwater RCRA Facility Investigation Report, Army's Response to the New Mexico Environment Department Letter of Disapproval dated January 25, 2022, states, "[f]or consistency, the terminology 'Bedrock 1/upper bedrock aquifer was changed to the Bedrock Aquifer 1 (BR1), thru-out [and] BR1 is defined by thickness and laterally discontinuous water bearing zone without sustainable water production." The designation of the sandstone units must be consistent. Well TMW40D was screened in the BR2 that are equivalent to the lower sandstone unit according to the referenced report. Revise the statement for consistency and accuracy.

**Permittee Response:** Concur: The 2nd sentence in the 2nd paragraph of Section 3.4.5 (lines 10-12, page 27) was revised to read as follows:

"The upper sandstone unit, designated as Bedrock Aquifer 1 (BR1), is evaluated by monitoring wells TMW38, TMW51, TMW52, TMW53, and TMW64."

## **9. Section 3.5, Nature and Extent of Groundwater Contamination, lines 1-2, page 37 of 71**

**Permittee Statements:** "Figure 3-1 and Figure 3-2 present the alluvial and bedrock groundwater elevations generated from the October 2019 water level measurement event."

**NMED Comment:** Since the Plan proposes groundwater monitoring and sampling plans for year 2023, it is necessary to use the most recent data that were approved by NMED. The July through December 2020 groundwater monitoring report was approved by NMED on April 5, 2022; therefore, the data included in the 2020 report must be used. If the October 2019 data is sufficient for the purpose of this discussion, provide a justification for using the older data in the response letter.

**Permittee Response:** Concur: Figures 3-1 and 3-2 were updated to use data from the October 2020 sampling event.

## **10. Section 3.6, Fate & Transport of Contamination in Groundwater, lines 14-18, page 39 of 71**

**Permittee Statement:** "Alluvial groundwater in the northern Administration Area and Workshop Area is present in a depression formed by the downward dip of largely impermeable claystone bedrock. Southeast of the Workshop Area, communication between the bedrock and alluvial aquifers create a direct pathway between both units. In the Northern Area, alluvium overlies claystone aquitards."

**NMED Comment:** Although NMED agrees with the presence of claystone between the alluvial and bedrock aquifers at the site, the claystone layer is not impermeable. The site contaminants (e.g., nitrate) have migrated vertically from the alluvial to the bedrock aquifer. Revise the

statement for accuracy.

**Permittee Response:** Comment Noted: The GWMP was revised to remove the referenced text from Section 3.6, lines 16-20, page 39 of 74.

**11. Section 3.7, Exposure Pathways for Human and Ecological Receptor, lines 34 through 38, page 39 of 71 and lines 1 through 10, page 40 of 71**

**NMED Comment:** Although the title of Section 3.7 indicates that discussion regarding exposure pathways for ecological receptor was provided, they were not provided in the text of Section 3.7. Include the discussion in the revised Plan or revise the title of Section 3.7.

**Permittee Response:** Concur: The GWMP was revised to remove "Ecological" from the heading for Section 3.7.

**12. Section 4.2, Groundwater Sampling, lines 3-5, page 42 of 71**

**Permittee Statement:** Low-flow purging and sampling is the preferred method at FWDA, in accordance with the NMED guidance document on low-flow sampling titled, "Use of Low-Flow and Other Non-Traditional Sampling Techniques for RCRA Compliant Groundwater Monitoring (NMED-HWB, 2001)."

**NMED Comment:** According to Table 4-1 (Northern Area Groundwater Purge Method), many wells are not purged using the low-flow method even though it is the preferred method. Presumably, the wells do not produce enough water to use the low-flow method; however, the wells that are purged with high-volume capacity pumps (MW23, MW24, TMW16, TMW18, TMW19, TMW36, and TMW37) may be appropriate for the low-flow purge method. (a) Evaluate the potential for use of the low-flow method for the wells where high-volume capacity pumps are currently used and (b) provide a discussion in the revised Plan.

**Permittee Response:** Comment Noted: Flow rates and drawdown from the referenced wells will be measured during the upcoming sampling events to evaluate whether the wells may be suitable for low-flow purging. The GWMP was revised to state in Section 4.2, page 33, lines 6-7 "Current wells not sampled via low-flow method will be evaluated to determine suitability for low-flow method and will be proposed for future sampling events as appropriate."

**13. Section 4.2.2.1, Traditional Low-Flow and ZIST Low-Flow Dedicated Pumps, lines 28-29, page 46 of 71, and Section 4.2.4, Alternative Groundwater Purging and Sampling Procedures, line 40, page 47 of 71**

**Permittee Statement:** "All measurements will be obtained using a field-parameter monitoring instrument with a transparent flow-through cell that prevents air bubble entrapment in the cell." and,  
"Prior to purging, an additional DO measurement with a downhole probe will be collected on all wells without a dedicated pump."

**NMED Comment:** The data for water quality parameters other than dissolved oxygen (DO) appear to be collected by a flow-through cell rather than a downhole probe. Comment 2 of the NMED's July 6, 2021, letter 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." Propose to use downhole probes for the measurement of all water quality parameters, where applicable, or explain why DO is the only water quality parameter measured using a downhole probe in the revised Plan.

**Permittee Response:** Concur: The following was added to Section 4.2.4, lines 1-4, pages 48 of 74:

"DO is the only parameter that shows a potential affect from pumping the water through a flow-through cell by possible introduction of air into the system. No other parameter has empirically been shown to be affected by pumping water through a flow-through cell."

#### **14. Section 4.2.4.1, Disposable Bailers, lines 30-32, page 48 of 71**

**Permittee Statement:** "To filter groundwater samples for dissolved metals and/or perchlorates analysis, use a hand pump filter or run water through a peristaltic pump with dedicated tubing and in-line filter or use a clean disposable syringe and filter."

**NMED Comment:** Three different filtering methods are proposed for collection of dissolved metals and/or perchlorate analysis. Explain the criteria/conditions dictating which particular filtering method is selected in the revised Plan. In addition, explain which method is used for each well in the revised Plan.

**Permittee Response:** Concur: The applicable paragraph was revised to read as follows:

"To filter groundwater samples for dissolved metals and/or perchlorates analysis, use a clean disposable syringe and filter. An intermediary container may be used to collect the groundwater sample prior to filtering. Sample filtering and preservation will be performed in accordance with laboratory and method requirements as listed in Table 4-3."

#### **15. Section 5.1, Interim Groundwater Monitoring Analytical Program, lines 30-32, page 56 of 71**

**Permittee Statement:** "USACE is currently evaluating options to achieve lower LOQs for the remaining few compounds using enhanced analytical procedures as documented in a NMED approval letter dated May 21, 2019 (NMED, 2019b)."

**NMED Comment:** The April 13, 2022, email from Mr. Ben Wear of NMED to Mr. George Cushman of FWDA states, "submit a formal report, which details the data you have collected and includes all information provided by the analytical laboratories, to NMED for review no later than July 29, 2022." Although this information is not required to be included in the Plan, the Permittee must submit the required document no later than July 29, 2022. This comment serves as a reminder.

**Permittee Response:** Comment Noted: No change to the document as a result of this comment.



**16. Section 5.2, Monitoring Location and Frequency, lines 13-15, page 58 of 71**

**Permittee Statement:** "Once additional bedrock aquifer background monitoring wells are installed; interim monitoring will be conducted to collect additional data to support background evaluations."

**NMED Comment:** It is not clear whether the Permittee will propose to install more bedrock background monitoring wells for the purpose of collecting additional data to support background evaluations. Provide a clarification in the response letter. If additional background monitoring wells are necessary to support background evaluations, propose to submit a work plan to install these wells in the revised Plan.

**Permittee Response:** Comment Noted: Regulatory approval of background conditions is pending, and potential further evaluation is yet to be determined. The Army does not currently propose to install more bedrock background monitoring wells for the purpose of collecting additional data to support background evaluations.

The last paragraph of Section 5.2 (page 58 of 74, lines 9-13) was revised to read as follows:

"An assessment of groundwater metals contamination cannot be completed without a statistically valid background evaluation and regulatory approval of groundwater background concentrations. Monitoring wells in the Northern Area alluvial aquifer can support a background evaluation; however, evaluation is pending whether additional monitoring wells in the Northern Area bedrock aquifer are needed to prepare a statistically valid background evaluation."

**17. Section 5.2.1, Northern Area Alluvial Groundwater Monitoring Design, Explosives Plume, lines 35-36, page 58 of 71 and lines 1-2, page 59 of 71**

**Permittee Statements:** "To monitor suspected [explosive compounds] releases from SWMU 27 (Building 528 Complex), wells TMW01, TMW31S, and TMW41 are designated for explosives analysis even though they are hydraulically upgradient of SWMU 1."

**NMED Comment:** According to Table 5-2 (Northern Area Groundwater Sampling Matrix), explosive compounds analysis was not proposed for wells TMW01, TMW31S, and TMW41. Revise Table 5-2 to propose explosive compounds analysis for the wells in the revised Plan.

**Permittee Response:** Comment Noted: Well TMW41 was retained for explosives analysis due to its proximity to the explosives plume. Table 5-2 was revised to reflect this change.

The Army proposes to remove explosives analysis from wells TMW01 and TMW31S due to no detections being reported in the last four sampling events. Section 7 and Table 5-2 were revised to reflect this change.

**18. Section 5.2.1, Northern Area Alluvial Groundwater Monitoring Design, Metals Monitoring, lines 13-15, page 59 of 71**

**Permittee Statement:** "Monitoring wells along the outside edges of the monitoring network are selected to provide data that could be used to monitor potential contaminant migration [for metals]."

**NMED Comment:** According to Table 5-2, metals analyses are proposed for groundwater samples collected from all monitoring wells. However, the statement indicates that metals analyses are only proposed for wells along the outside edges of the monitoring network. To clarify, metals analyses must be conducted for all wells unless the changes are proposed and approved by NMED. Remove the statement from the revised Plan.

**Permittee Response:** Concur: The statement was removed from Section 5.2.1, Metals Monitoring, lines 13-14, page 59 of 74.

**19. Section 5.2.1, Northern Area Alluvial Groundwater Monitoring Design, Other Organics Monitoring, lines 21-25, page 59 of 71**

**Permittee Statement:** "The points of release for the SVOCs in the Northern Area include SWMU 6 (Building 11, former Locomotive Shop) and SWMU 45 (Building 6 Gas Station). There are no groundwater SVOC plumes identified at FWDA; however, wells MW20, MW22D, TMW33, and TMW46 are designated to monitor suspected releases of petroleum fuels at SWMU 6 and known releases of fuels at SWMU 45 (Figure 3-8)."

**NMED Comment:** According to Table 5-2, SVOCs analysis was not proposed for wells MW20, MW22D, TMW33, and TMW46. Revise Table 5-2 to propose SVOCs analysis for the wells or explain the basis for excluding the analysis in the revised Plan. In addition, SVOCs may be detected as degradation products of explosive compounds. Propose to conduct SVOCs analysis for all wells designated for monitoring explosive compounds in the revised Plan.

**Permittee Response:** Comment Noted: The Army proposes to remove SVOCs analysis from the wells referenced in the comment due to no detections being reported in the last four sampling events. The referenced text (Section 5.2.1, Other Organics Monitoring, lines 23-25, page 59 of 74) was revised to remove the referenced wells from the list of wells monitored for SVOCs.

The GWMP was revised to propose SVOC analysis for wells where explosives were detected in the preceding sampling event.

**20. Section 5.2.1, Northern Area Alluvial Groundwater Monitoring Design, Other Organics Monitoring, lines 29-30, page 59 of 71**

**Permittee Statement:** "The GRO releases are monitored by wells MW01, MW02, MW03, MW18D, MW20, MW22D, and TMW33."

**NMED Comment:** According to Table 5-2, total petroleum hydrocarbon gasoline range organics (TPH GRO) analysis was not proposed for well MW03. Revise Table 5-2 to propose TPH GRO analysis for well MW03 in the revised Plan.

**Permittee Response:** Concur: Table 5-2 was revised to retain TPH GRO analysis for well MW03.

**21. Section 5.2.2, Northern Area Bedrock Groundwater Monitoring Design, Perchlorate Plume, lines 13-14, page 60 of 71**

**Permittee Statement:** "To monitor the [perchlorate] plume boundary wells TMW32, TMW36, TMW38, TMW39D, and TMW40D are designated as downgradient wells."

**NMED Comment:** According to Table 5-2, perchlorate analysis was not proposed for wells TMW36 and TMW38. Revise Table 5-2 to propose perchlorate analysis for the wells in the revised Plan.

**Permittee Response:** Concur: Wells TMW36 and TMW38 were retained for perchlorate analysis due to their proximity to the perchlorate plume. Table 5-2 was revised to reflect this change.

**22. Section 5.2.2, Northern Area Bedrock Groundwater Monitoring Design, Other Organic COPCs Monitoring, lines 20-21, page 60 of 71**

**Permittee Statement:** "Suspected [SVOCs] releases will be monitored by wells TMW14A and TMW16 located downgradient in the western portion of the Workshop Area (Figure 3- 13)."

**NMED Comment:** According to Table 5-2, SVOCs analysis was not proposed for wells TMW14A and TMW16. Revise Table 5-2 to propose SVOCs analysis for the wells in the revised Plan. In addition, SVOCs may be detected as degradation products of explosive compounds. Propose to conduct SVOCs analysis for all bedrock wells designated to monitor explosive compounds in the revised Plan.

**Permittee Response:** Comment Noted: The Army proposes to remove SVOCs analysis from wells TWM14A and TMW16 due to no detections being reported in the last four rounds of sampling events. The referenced text (Section 5.2.2, Other Organic COPCs Monitoring, lines 20-21, page 60 of 74) was revised to remove the referenced wells from the list of wells monitored for SVOCs.

The GWMP was revised to propose SVOC analysis for all bedrock wells designated to monitor explosive compounds.

**23. Section 5.3.2, Analytical Data Quality Requirements, Sensitivity, DL [(Detection Limit)], lines 10-12, page 63 of 71**

**Permittee Statement:** "A DL may be used as the lowest concentration for reliably reporting a detection of a specific analyte in a specific matrix with a specific method with 99% confidence."

**NMED Comment:** Neither the Instrument Detection Limit (IDL), nor the Method Detection Limit (MDL), can be used as the lowest concentration to report detection/non-detection of an analyte. However, the reporting limit (RL), limit of detection (LOD), practical quantitation limit (PQL), or limit of quantitation (LOQ) may be used as the lowest concentration to report a detection/non-detection. Revise the statement for clarity.

**Permittee Response:** Comment Noted: The referenced definitions stated in the Permittee statement above are directly cited from DOD QSM. Based on recent NMED comments, the LOD is used for all non-detects for reporting purposes. No change to the document as a result of this

comment.

#### **24. Section 7.0, Sampling Changes from Previous Plan, lines 7-10, page 66 of 71**

**Permittee Statement:** "Starting in 2023, these wells [installed in 2019 and 2020] will only be sampled for analytes based upon neighboring wells and proximity towards known contaminant plumes and if they had any detections of other analytes during the initial four sampling events. The revised analytical program is listed in Table 5-2 with highlights pertaining to the changes for 2023."

**NMED Comment:** Since the data that supports the absence of analytes in the wells where analyses are proposed to be removed is not provided or discussed, the appropriateness of the proposed removal has not been demonstrated. The Permittee must evaluate the analytical data for each well where removal of the analyses is proposed and discuss its basis in the revised Plan (see Comment 1). For example, herbicides, PCB, and pesticides analyses conducted in wells BGMW11 and BGMW12 in 2022 are proposed to be removed according to Table 5-2 of the Plan. However, the basis for the proposed changes is not discussed in the Plan. The discussion must include (1) the detection/non-detection of analytes, (2) the exceedance of the screening levels, if any, (3) the presence of data quality exceptions, if any, and (4) the number of the sampling events used for the evaluation of proposed changes. The basis for all proposed changes must clearly be stated in the revised Plan. Note that the proposed changes are subject to NMED's approval and must not be implemented without an approval of the Plan.

**Permittee Response:** Concur: Significant changes have been made per the comment and are presented in Section 7.0 on pages 57-59. Each well contains a summary of the decision based upon (1) detections and (4) the number of sampling events used for the decision. As for (2) and (3) in NMED's comment above, a note was added in Section 7.0 page 57, lines 13-16 stating "Although there are data quality exceptions for specific analytes for SVOCs, explosives, PCBs, pesticides, and herbicides, removal of these analytical groups for specific wells is proposed if no detections of any analytes for these analytical groups are reported."

#### **25. Section 7.0, Sampling Changes from Previous Plan, lines 11-14, page 66 of 71**

**Permittee Statement:** "Wells which have been non-detect for a given analyte group in four or more of the most recent sampling events (except for VOCs) are proposed for removal of that analytical group from the well, unless the well is in proximity to an existing plume for that analyte group. No changes are proposed for VOCs or metals analyses."

**NMED Comment:** The basis for the proposed changes in analytical suite in each well must be discussed in detail. For example, TPH diesel range organics (DRO) analysis was proposed to be removed from the analytical suite for well MW03 according to Table 5-2; however, all reported non-detect concentrations exceeded the applicable screening level in well MW03; therefore, the data is considered as a data quality exception and the absence of TPH DRO in the samples collected from well MW03 has not been demonstrated. As such, TPH DRO analysis for MW03 must be continued in 2023. The proposed changes for each well must be discussed for NMED's evaluation and approval in the revised Plan.

**Permittee Response:** Comment Noted. Significant changes have been made per the comment and are presented in Section 7.0 on pages 57-59. Each well contains a summary of the decision based upon detections and number of sampling events used for the decision. TPH DRO analysis

for MW03 will be retained, and a sentence was added for Section 7.0 page 57, line 19 stating that “No changes are proposed for VOCs, TPH-DRO, TPH-GRO, or metals analysis”.

**26. Table 5-2, Northern Area Groundwater Sampling Matrix, pages TS-3; 1 through 7**

**NMED Comment:** Some issues are identified in Table 5-2. Resolve the following issues in the revised Plan.

- a) Section 5.2.1 (Northern Area Alluvial Groundwater Monitoring Design, Nitrate and Nitrite Plume) states that all wells sampled for nitrate and nitrite will also be sampled for additional major anions to include chloride, fluoride, sulfate, phosphate, and bromide starting in 2021. Although Table 5-2 includes major anions as one of the analytical parameters, each analyte included in major anions is not identified in the table. Identify all analytes included in major anions (e.g., nitrate, nitrite, chloride, fluoride, sulfate, phosphate, and bromide) in the footnote of the revised Table 5-2.
- b) Although the revised 2022 Plan included pesticides analysis for multiple wells, Table 5-2 does not propose pesticides analysis for any well. Provide an explanation for the removal of pesticide analysis in 2023 in the revised Plan.

**Permittee Response:**

- a) Concur: Similar to VOCs, SVOCs, and other groups with multiple analytes, each specific analyte is not described or listed in this table. However, in response to this comment, a footnote was added listing specific analytes for major anions.
- b) Comment Noted. A selection of wells was analyzed for pesticides in the 2021 sampling events and will be analyzed during the 2022 sampling events as well. The results will be reported in upcoming PMRs. The wells have not had pesticide detections thus far, and the Army proposes removing pesticide analysis if non-detections continue through the 2022 sampling events. Section 7.0 and Table 5-2 were updated to reflect this proposal.

If you have questions or require further information, please contact me at [George.h.cushman.civ@army.mil](mailto:George.h.cushman.civ@army.mil), 703-455-3234 (Temporary Home Office, preferred) or 703-608-2245 (Mobile).

Sincerely,

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