March 08, 2024

U.S. DOE Environmental Management Los Alamos Field Office
NEPA Document Manager
Attn: Hai Shen
1200 Trinity Drive, Suite 400
Los Alamos, NM 87544

Submitted electronically to: emla-nepa@em.doe.gov

RE: Comments on Draft Environmental Assessment for Chromium Plume Interim Measures and Final Remedy, Los Alamos National Laboratory, Los Alamos, New Mexico.

Dear Mr. Shen,

On behalf of the New Mexico Environment Department (NMED), attached please find our comments on the draft Environmental Assessment (EA) for Chromium Plume Interim Measures and Final Remedy, Los Alamos National Laboratory (LANL), in Los Alamos, New Mexico. They are consistent with the comments NMED summitted regarding the scoping environmental assessment on June 6, 2023.

Strong intergovernmental coordination, as required by the National Environmental Policy Act (NEPA), is essential to ensure progress in addressing impacts to human health and the environment from ongoing and proposed activities at LANL. Public engagement is also imperative in addressing LANL's legacy contamination in New Mexico and on tribal lands.

The Department of Energy (DOE) and its contractors have denied New Mexicans timely and effective clean-up of hexavalent chromium. Taking into consideration the unfavorable responses to injection within the plume boundary and the need to fill data gaps prior to selection of a final remedy, NMED urges DOE to focus on an Enhanced Chromium Interim Measures alternative, including activities directly related to compliance with the New Mexico Water Quality Act, the 2016 Consent Order, and any other applicable regulations.

In NMED's view, the 2016 Consent Order has failed, prompting NMED's February 2021 complaint against DOE in district court to terminate the order and initiate court-supervised negotiations to establish enforceable terms that accelerate clean-up of legacy contamination. Further, NMED has directed DOE to characterize the contamination, including determining the extent of the plume with additional monitoring wells, and utilize adaptive site management to expand the interim measures treatment system to continue remediation in a manner that ensures protection for New Mexicans. DOE concurs with additional characterization but has rejected the direction to expand the interim measures and delayed clean-up. The lack of adequate monitoring wells prevents DOE from producing scientific data that would confirm the effectiveness of this interim measure and sufficient characterization data is required to evaluate the environmental impacts of the potential final remedy alternatives.

NMED offers comments on the draft EA in the attachment for you to evaluate as the NEPA process

continues.

Sincerely,

Sydney Lienemann

Sydney Lienemann
Deputy Cabinet Secretary - Administration

Attachment (1)

Cc: Courtney Kerster, Senior Advisor, Office of Governor Michelle Lujan Grisham
Rick Shean, Director, Resource Protection Division, NMED
John Rhoderick, Director, Water Protection Division, NMED

Attachment

Background

The Department of Energy (DOE) Office of Environmental Management Los Alamos Field Office (EM-LA) invited public comment on the draft Environmental Assessment (DOE/EA-2216) for Chromium Interim Measures and Final Remedy, Los Alamos National Laboratory, Los Alamos, New Mexico. On June 6, 2023, NMED provided comment for the scoping process through which DOE-EM was seeking input on a preliminary set of alternatives for remedial action as part of the Chromium Interim Measures and Characterization Campaign under the 2016 Compliance Order on Consent. Below, NMED emphasizes prior comments and offers new comments regarding the topic.

Introduction

NMED performed a review of the "Draft Chromium Interim Measure and Final Remedy Environmental Assessment Los Alamos November 2023, DOE/EA-2216." The EA follows a standard NEPA EA format where the full suite of elements regarding potential environmental and cultural impacts are addressed. NMED's review focused more on the technical aspects of DOE-EM's approach to evaluating and mitigating hexavalent chromium groundwater contamination within the affected area. In summary, NMED reiterates the response submitted to the DOE-EM NEPA Document Manager on June 6, 2023, "Comments on Scope of Proposed Environmental Assessment for Chromium Plume Control Interim Measure and Plume-Center Characterization, Los Alamos National Laboratory, Los Alamos, New Mexico," and submits additional comments.

1. **DOE's Proposed Action**
    a. DOE's Proposed Action for a final remedy is a combination of treatment options whereby EM-LA would utilize adaptive site management (ASM) to select, implement, and manage the removal of hexavalent chromium from the groundwater. The Proposed Action includes four options that DOE asserts can be used individually or as a combination to remediate chromium contaminated groundwater. The four options were mass removal via expanded treatment, mass removal with land application, mass removal via in-situ treatment, and monitored natural attenuation. Implementation of remediation activities in the hexavalent chromium contamination plume in Mortandad and Sandia Canyons are regulated as corrective action under the 2016 Compliance Order on Consent (Consent Order). Under the Consent Order, NMED will notify DOE that a Corrective Measures Evaluation (CME) is required, then DOE shall perform a CME to identify and evaluate potential final remedy alternatives. NMED contends that there has not been a notification requiring the submittal and evaluation of potential corrective measures alternatives for the chromium plume in a CME. NMED does not support the evaluation of final remediation alternatives while necessary characterization activities are being performed. NMED maintains that it is premature to adequately evaluate the environmental impacts of potential proposed final remedy alternatives, which include the precipitous exclusion of the vadose zone remediation alternatives within the EA. NMED reiterates the need to initiate remediation efforts under the interim measures until the characterization data is available to support a determination of remedial action objectives and the evaluation of potential final remedy technologies.

b. The scope of the evaluation in the EA for the four options within the Proposed Action does not provide sufficient detail for potential environmental impacts. All four options included the expansion of the pump-and-treat treatment system, with the installation of new infrastructure, including up to 15 injection wells, up to 15 extraction wells, up to 15 monitoring wells, piezometers and an expanded groundwater treatment facility. Option 1 is intended to evaluate the environmental impacts of the implementation of mass removal via expanded treatment. Applying that expansion to Options 2, 3 and 4 prevents the inclusion of sufficient details on the environmental impacts of mass removal with land application, mass removal via in-situ treatment, and monitored natural attenuation. NMED urges a reevaluation of the four options included in the Proposed Action to focus on the potential environmental impacts of land application, all potential in-situ treatments listed in Appendix B, and the impacts of monitored natural attenuation. NMED also urges the inclusion of an option to evaluate the environmental impacts of potential vadose zone remediation alternatives.

c. The evaluation of Option 3, mass removal via in-situ treatment, under the environmental consequences to water resources as presented in Section 3.4.2.1 does not sufficiently fulfill the requirement to address any adverse environmental effects which cannot be avoided should the proposal be implemented. Appendix B, Description of Alternatives Supporting Information, includes a list of thirteen (13) in-situ chemical reduction agents and five (5) in-situ biological reduction agents and states that these amendments will be reviewed for applicability, effectiveness, and toxicity and would not be used if they would contribute to additional contamination. However, each of these potential in-situ treatments should be evaluated in the EA to determine if any of the potential amendments included in the Proposed Action would have adverse environmental effects which cannot be avoided during implementation. The analysis of the Proposed Action does not provide sufficient detail to address the cumulative impacts of the environmental consequences to water resources from the four proposed ASM options.

d. NMED recommends that EM-LA's effort in collecting groundwater information (i.e., groundwater characterization), proceeds at a pace equal to, or greater than, other options of the ASM.

2. Analyses the EA Should Include

a. Section 1.2, Background, pg. 4.

"The purposes of the Consent Order are (1) to fully determine the nature and extent of releases of contaminants at or from the LANL site; (2) to identify and evaluate, where needed, alternatives for corrective measures, to clean up contaminants in the environment, and to prevent or mitigate the migration of contaminants at or from the LANL site; and (3) to implement such corrective measures."

The 2016 Compliance Order on Consent Section II, *Purpose and Scope of Consent Order*, states that the general purposes are to (1) provide a framework for current and future actions to implement regulatory requirements; (2) establish an effective structure for accomplishing work on a priority basis through cleanup campaigns with achievable milestones and targets; (3) drive toward cost-effective work resulting in tangible,

measurable environmental clean-up; (4) minimize the duplication of investigative and analytical work and documentation to ensure the quality of data management; (5) set a structure for the establishment of additional cleanup campaigns and milestones as new information becomes available and campaigns are completed; (6) facilitate cooperation, exchange of information, and participation of the Parties; (7) provide for effective public participation; and (8) define and clarify its relationship to other regulatory requirements. To fulfill such requirements, the Consent Order sets forth a process for characterizing the nature and extent of contaminant releases, characterizing the risks to human health and the environment resulting from these releases, and mitigating unacceptable risks. The process to identify and evaluate alternatives for corrective measures and the implementation of such measures is included within the scope of the Consent Order but does not adequately represent the totality of the purposes.

b. Section 3.9.3.1, Proposed Action Alternative (Adaptive Site Management - ASM), pg. 57.

The EA states that each well would have a concrete pad approximately 10 feet by 15 feet. Clarity is needed on whether the dimensions reflect a single well or a cluster well design. Additionally, NMED encourages the evaluation conducted throughout the EA include the potential environmental impacts for concrete well pads with dimensions that allow for cluster wells.

Well design and completion during the ASM must maintain consistency with respect to existing regional aquifer groundwater monitoring wells (R-Wells) that show acceptable chemical concentration results for representative formation water. Altering or changing well design, well completion, and more importantly, experimenting with In-situ amendments has been shown to impact water chemistry thus rendering some costly wells and their associated decision-making sample results unreliable for evaluating chemical trends over time.

c. Table B-1, Description of the proposed adaptive site management alternatives, pg. B-9.

i. Under the schedule issue for Option 1, the EA assumes that approximately four wells can be drilled per year. Evaluations in the EA have the potential to underestimate the cumulative impacts to the environment by utilizing an assumption that does not represent current conditions. For instance, the impacts of expanding the timeline to accommodate the drilling operations moving slower than the EA assumes could cause additional environmental impacts to ecological resources and the traffic and transportation.

ii. A final remedy for the hexavalent chromium groundwater plume needs to simultaneously manage fugitive dust and diesel equipment emissions produced during remediation. In Table B-1 LANL proposes Adaptive Site Management Alternative Options 1 through 4, singularly or in combination, that would cause an increase in fugitive dust emissions during cleanup. Due to LANL's proximity to Class I Area-Bandelier National Monument, LANL also proposes the use of U.S. DOE-Environmental Management best management practices (BMP) to control fugitive dust emissions associated with the implementation of these remediation

options. AQB supports the implementation and use of all the proposed BMP measures to control fugitive dust as described in section C.2 Air Quality of Draft Chromium Interim Measure and Final Remedy Environmental Assessment, Volume II.

iii. Since the project includes the use of generators, light towers, and other diesel-powered equipment, it may require registration or an air quality permit if the emissions of any criteria pollutant will exceed 10 pounds per hour or 10 tons per year. Please contact Rhonda Romero of the NMED AQB Permitting Section at (505) 629-3934 to determine if a permit is required.

iv. NMED recommends using Tier 4-rated generators, gensets, and compressors to reduce particulate matter and nitrogen oxide emissions from this type of diesel-powered equipment. Tier 4-compliant engines use oxidation catalysts, particulate filters, and selective catalytic reduction systems to significantly reduce nitrogen oxide, hydrocarbon, carbon monoxide, particulate matter, and non-methane hydrocarbon emissions. In combination with Tier 4 engines, the AQB also strongly recommends using low sulfur fuel in all diesel-powered equipment at the project site. Using low sulfur diesel fuel reduces exhaust smoke, particulate matter, and sulfur dioxide engine emissions by 60% to 90%.

2. **Public water supply.**
The nearest public water supply source to the known plume boundary is Los Alamos Municipal Water System (NM3500115) Pajarito Mesa Well #3, located approximately 1500 feet to the NE. Expanded treatment would reduce the risk of eventual contamination of this source. The runoff from any ground disturbance caused by this project would likely flow a stream that discharges below the nearest surface water source, Buckman Regional Water (NM3502826) Surface Water Intake. There are not any regulated public surface water system intakes within 10 miles downgradient of the project boundary, therefore, this project is unlikely to have a significant near-term negative impact on any regulated public water system and will reduce the long-term risk to public drinking water.

3. Working relationships with all parties involved.
NMED encourages EM-LA to maintain a good technical working relationship with all parties involved: the facility (LANL), NMED, San Ildefonso Pueblo, the public, and pertinent Non-Governmental Organizations.

4. Typographical Errors

i. Pg. 1 line 22: (NWQCC)

ii. Pg. 9 line 35: New Mexico Office of State Engineer (NMOSE)