



Department of Energy

Washington, DC 20585

December 16, 2022

Ms. Brittany Bolz
Attn: Document Control Desk
U.S. Nuclear Regulatory Commission
Deputy Director
Mail Stop T8F5
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Subject: U.S. Department of Energy Office of Legacy Management Response to U.S. Nuclear Regulatory Commission Staff Review of the draft *Sampling and Analysis Plan for the Shiprock Evaporation Pond Decommissioning Project at the Shiprock, New Mexico, Disposal Site* (Docket Number WM-00058)

Dear Ms. Bolz:

Thank you for your comments on the draft *Sampling and Analysis Plan for the Shiprock Evaporation Pond Decommissioning Project at the Shiprock, New Mexico, Disposal Site* (August 2022). Below are U.S. Department of Energy (DOE) Office of Legacy Management (LM) responses to the U.S. Nuclear Regulatory Commission (NRC) questions from the NRC review of the Sampling and Analysis Plan and from previous correspondence you identified in your letter dated October 14.

NRC Comment #1

In Section 2.5, "Sample Collection Method," the report states:

- a. "If an intact core cannot be obtained of the sediment layer, the sampler will apply a modified collection approach that will include a scoop type method."
- b. "The mobility of the samplers in the pond may be hindered due to the sediment, which can impede movement similar to soft material encountered in shallow natural ponds and wetlands."
- c. "Samplers will have the latitude to adjust locations locally, based on access and mobility, to keep worker safety a priority."

NRC staff would like to verify whether these "samplers" are human or machine. If human, what safety protocols will be in place to ensure their safety? Additionally, what measures will be taken to keep the samplers from damaging the pond liner and possibly causing a leak, as the samplers would likely be wearing heavy boots.

LM Response to NRC Comment #1

The "samplers" are human. The samplers will work in tandem while in the evaporation pond; one sampler will conduct the sediment sampling while the other sampler will remain on the shore with a radiological control technician to monitor their activities. The samplers will also be in appropriate personal protective equipment, including waders. As stated in the Sampling Analysis Plan, the samplers will have the latitude to adjust sample locations locally, based on access and mobility, to keep the workers in a safe working area.

The samplers will cautiously walk across the pond to the identified sample locations. Previous inspection and maintenance activities that have been conducted on the pond liner (both above and below the water line) have demonstrated that cautious walking on the liner is unlikely to result in damage to the liner that could result in leaks.

NRC Comment #2

NRC staff would like to revisit several relevant comments made in previous correspondence.

- a. Comment #2 in the NRC Staff Review of “Position Paper Suspension of Groundwater Extraction and Evaporation Pond Operations...” (ML19074A025).
- b. Comment #1 in the NRC Staff Review of “Draft Reevaluation of Ammonia, Manganese, Selenium, and Strontium as Contaminants of Concern...” (ML22242A316).

LM Response to NRC Comment #2

DOE is approaching the decommissioning and removal of the existing evaporation pond with the assumption that there is some contamination of subgrade soils due to the likelihood of contaminant flow through defects in the geomembrane (GM) portion of the liner system and in the subsequent geosynthetic clay liner (GCL) below the GM. To assess whether there is contamination beneath the composite liner system, DOE anticipates implementing an iterative sampling plan with the potential for field lab testing to determine the extents of contamination within the subgrade materials. Where subgrade materials are contaminated, those soils will be removed to the extent necessary and either disposed of or otherwise remediated appropriately.

DOE’s focus will be within the areas of known defects below the waterline. The focus areas will center on the central location of any found defect, and a radial investigation will begin from that point. Due to the presence of the GCL below the GM, it is likely that any contamination would have spread laterally in the intermediate void space between the two fabrics prior to migrating, to the extent possible, through the bentonite-rich GCL product and into the subgrade material. Therefore, DOE will also conduct a grid-based environmental sampling and testing program across the entire subgrade of the pond.

The grid-based survey below the entire pond will provide assurance that DOE is not missing any areas of potential contamination from horizontal migration of contaminants from known defect locations or from potential defect locations that were not identified prior to the pond removal efforts. In DOE’s opinion, the sampling and testing approaches combined with the plan to remove or otherwise remediate the contamination, is more than sufficient to protect human health and the environment from unintentional propagation of contaminants due to the use of a surface impoundment.

The details for the sampling plans and the removal or remediation efforts are being planned to integrate with the pond removal project to occur in the future.

If you have any questions or comments regarding this letter, please contact me at (970) 248-6018 or Mark.Kautsky@lm.doe.gov. Please address any correspondence to:

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Sincerely,



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Mark Kautsky
Shiprock Site Manager

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