



## Department of Energy

Washington, DC 20585

December 20, 2019

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Deputy Director  
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WM-0063

Subject: U.S. Department of Energy, Office of Legacy Management Response to U.S. Nuclear Regulatory Commission Comments and Suggestions from their Letter Dated February 14, 2019, titled "U.S. Nuclear Regulatory Commission Staff Review of the U.S. Department of Energy's Draft Seep Monitoring Evaluation Report Mexican Hat, Utah, Disposal Site." (NRC Docket No. WM-0063)

To Whom it May Concern:

Thank you for your comments on the December 2018 *Draft Seep Monitoring Evaluation Report, Mexican Hat, Utah, UMTRCA Title I Disposal Site*. The U.S. Department of Energy's (DOE's) responses to the U.S. Nuclear Regulatory Commission's (NRC's) comments received on February 14, are provided below.

### **NRC Comment 1:**

*The report recommends discontinuing the annual visual monitoring of Seep 261, but does not provide a rationale for excluding the seep from the visual monitoring program. Seep 261 will be observed if Seep 248 exhibits increased flow or if other conditions in Gypsum Creek are observed. Suggest that the report provide the DOE's rationale for discontinuing the annual visual monitoring at Seep 261. In addition, if DOE intends to discontinue visual monitoring of Seep 261, the Long-term Surveillance Plan (LTSP) for the Mexican Hat site will need to be updated to reflect the new monitoring program (Section 3.7.2 of the LTSP).*

### **DOE Response**

This recommendation was removed from page vii and page 41 since there was no technical basis for excluding visual monitoring of Seep 0261.

### **NRC Comment 2:**

*DOE performed sampling of Seep 248 in 2015 and 2016 at the request of the Navajo Nation. It is not clear from the report why sampling was not conducted in 2017, as the seep was visited at least once in 2017 and again in 2018. Note that Figure 9 seems to indicate that samples were collected and analyzed in 2017 but the results are not included in the discussion or in the Appendix B results. However, this apparent inconsistency may be due to the resolution of the graph in Figure 9.*

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**DOE Response**

Seep 248 was sampled in 2015 and 2016 at the request of the Navajo Nation; however, the Navajo Nation did not request seep sampling in 2017 or 2018. For clarification, in Figure 9, the most recent samples in question were collected and analyzed in October 2016, so no additional changes are needed.

**NRC Comment 3:**

*The visual observation dates in Table 1 do not appear to be consistent with the seep sampling dates discussed in the report. For example, the Appendix B tables indicate that samples were collected at Seep 248 in September 2015, March and October 2016, while Table 1 indicates that the visual observations were performed in April 2015 and March 2016. Suggest that DOE verify that the observation and sample collection events were performed as indicated in the report.*

**DOE Response:**

DOE has verified the observation and sample collection events were performed as indicated throughout the report. Historically, visual observations were performed by one group of individuals during the annual site inspection, and sample collection was performed by another group of individuals based on scheduling and availability of personnel. Efforts were made to combine observations and sample collection, but on occasion these two activities were performed independent of each other, which is why the date of performance for each activity can vary when comparing observation dates versus sample collection dates.

**NRC Comment 4:**

*On the bottom of page 11, the report includes the statements, "An upward hydraulic gradient in the lower unit also impedes the downward migration of contaminated groundwater perched in the upper unit from entering the uncontaminated lower Halgaito unit." and "The Halgaito [sic] Trail Formation that lies directly beneath the Halgaito Formation is effectively hydrologically isolated from contamination in the upper Halgaito unit." It is suggested that the references for these statements be included in the report, as the technical bases for the statements are not included in the report.*

**DOE Response**

On the bottom of page 11, last paragraph, the statement "An upward hydraulic gradient in the lower unit also impedes the downward migration of contaminated groundwater perched in the upper unit from entering the uncontaminated lower Halgaito unit" was removed due to only having old water elevations collected prior to significant site changes, so there wasn't accurate data to support this statement.

On the bottom of page 11, last paragraph, the citation "(DOE 2007)" has been added as a technical basis to the statement "The Honaker Trailing formation lies beneath the lower unit of the Halgaito Formation, making it also hydrologically isolated from contamination in the upper Halgaito unit."

With the incorporation of the two changes discussed above, on the bottom of page 11, the last paragraph now reads as:

The lower unit of the Halgaito Formation, classified as the uppermost aquifer beneath the site, is isolated from contaminated groundwater in the upper unit by thin lenticular to continuous limestone beds that limit downward water movement (DOE 2007). The uppermost aquifer beneath the site was not contaminated by uranium processing operations or by surface remedial actions. Recharge to the uppermost aquifer occurs upgradient (southwest) of the site and from upward flow from deeper formations (DOE 2007). The Honaker Trail Formation lies beneath the lower unit of the Halgaito Formation, making it also hydrologically isolated from contamination in the upper Halgaito unit (DOE 2007).

**NRC Comment 5:**

*Information on Seep 265 is missing from Table 11 [sic]. Suggest that DOE determine why the DOE Response information is missing and include the information if it is available.*

**DOE Response**

Table 1 was modified to include only the seven seeps required to be visually observed, in accordance with the LTSP.

Please contact me at (970) 248-6621 or [Angelita.Denny@lm.doe.gov](mailto:Angelita.Denny@lm.doe.gov), if you have any questions. Please address any correspondence to:

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Sincerely,



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File: HAT 3500-04