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DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL
Scott T. Anderson
Director

February 28, 2018

Aaron Urdiales, Director
RCRA/CERCLA Technical Enforcement Program
USEPA REGION 8
Mail Code: 8ENF-T
1595 Wynkoop Street
Denver, CO 80202-1129

RE: May 10, 2017 Report for CERCLA Off-Site Rule (OSR) Site Visit of White Mesa Mill

Dear Mr. Urdiales:

On February 15, 2018, the Utah Division of Waste Management and Radiation Control received by email from the U.S. Environmental Protection Agency (EPA) a copy of the above-referenced report. This letter is in response to the Report and its attachments. After reviewing the Report and its attachments, the Division would like to raise a number of comments and concerns relating to this Report.

First, the purpose and effect of the Report are not clearly stated. To be sure, Paragraph 1 of the cover letter to the Report suggests that the purpose of the Report was to determine whether the White Mesa Mill remains in compliance with the two criteria set forth in the OSR to determine "whether facilities are acceptable for the off-site receipt of CERCLA wastes from response actions authorized or funded under CERCLA." Yet, the Report fails to reach any definite conclusion. Rather, it makes certain "recommendations" as to facility operations. The Division's comments on the "recommendations" are provided in more detail below.

As the Division understands the EPA's OSR, once EPA makes a formal acceptability determination as to a facility, that determination remains in effect until sixty days after the EPA makes a formal determination that the facility is no longer suitable for acceptance of CERCLA wastes. The rule calls this an "unacceptability determination." *See* 40 C.F.R. § 300.440. The two OSR criteria are: (i) that no "environmentally significant release of hazardous substances has occurred at the facility unless the release is controlled by an enforceable agreement for corrective action under an applicable Federal or State authority"; and (ii) that there are no relevant violations at the unit or units receiving the CERCLA wastes. *See* 40 CFR § 300.440(a)(4).

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144880 • Salt Lake City, UT 84114-4880
Telephone (801) 536-0200 • Fax (801) 536-0222 • T.D.D. (801) 536-4284
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There is little discussion in the Report as to EPA's previous acceptability determinations regarding the White Mesa Mill. Nothing in the Report or its attachments suggests that EPA intends to make an unacceptability determination within the meaning of the OSR. To the contrary, the Report appears to note that the two elements of the OSR are met (there are no uncontrolled releases and there are no relevant violations), though no direct, final conclusion is offered. For the avoidance of any doubt, based on the Division's monitoring of the White Mesa Mill, the Division reaffirms that there are no uncontrolled releases at the White Mesa Mill without enforceable agreement, nor are there any relevant violations, as the Division understands 40 CFR § 300.440(a)(4). Based on the foregoing, the Division understands that the EPA's previous acceptability determinations remain in effect, as the EPA has not issued any unacceptability determination as provided in the OSR.

Second, and perhaps more important, the Report makes four recommendations for the White Mesa Mill operator. These are:

1. Installation of an impermeable liner for portions of the ore pad for unprocessed ore and feedstock while in operation and until closure;
2. Removal of Cell 1 from service for installation of a double liner and leak detection system;
3. Installation of additional monitoring wells in the southeast to characterize the groundwater flow in the direction of the White Mesa Community; and
4. Consideration of a new isotopic study since site conditions have changed in the last decade.

Site Visit Report, Page 9

The EPA's technical and legal bases for these recommendations are far from clear. As an initial matter, the scope of EPA's legal jurisdiction over any of the matters within the scope of the recommendations is unclear. All of the recommendations relate directly to on-site facilities and operations: the ore pad, Cell 1, monitoring wells in the southeast portion of the White Mesa buffer property and a new isotopic study.

The Office of the Utah Attorney General has provided me with a legal memorandum outlining the respective jurisdiction of the Division and the EPA with respect to the White Mesa Mill. A copy is enclosed as Exhibit A. I would very much appreciate a similar memorandum from EPA's enforcement counsel explaining the basis for EPA's assertion of legal jurisdiction over these matters under the OSR.

Apart from the legal jurisdictional issues, as a technical matter, the Division recently completed an extensive license and groundwater permit renewal process that involved consideration of significant volumes of technical data and hundreds of public comments, including significant comments submitted by the Ute Mountain Ute Tribe. The Division has also had multiple meetings with representatives from the Ute Mountain Ute Tribe relating to its concerns about the White Mesa Mill. All of this was taken into account and fully adjudicated in connection with the license and permit renewal processes. The administrative record consists of tens of thousands of pages. The Division's final Public Participation Summary is over 400 pages. The administrative record concerning the relicensing matter is available on the Division's website at https://deq.utah.gov/businesses/E/energyfuels/permits/denisonlicensereapp.htm

The EPA did not submit any comments to the Division in connection with that process. Had the EPA done so, the Division would have considered the EPA's comments. In any event, the Ute Mountain Ute Tribe made the same comments as to all the issues raised by the EPA, except as to the new suggestion about lining the ore pad. These comments have been carefully evaluated in light of all available technical and legal requirements. The adjudication is complete and the administrative record is closed. As you can see from the extensive administrative record, the Division has fully and completely

addressed and adjudicated the issues raised in EPA's comments 2, 3, and 4. It is apparent to the Division that EPA did not consider the Division's responses to comments when drafting its recommendations. Had the EPA done so, it would have learned that the site operator has agreed to undertake an additional groundwater investigation in the vicinity of MW-22 and is drilling and installing three monitoring wells to further characterize southeast area geology, perched aquifer permeability (hydraulic parameters), ground water head, groundwater chemistry and groundwater flow directions.

As to the EPA's recommendations on the ore pad, this recommendation ignores the original design approved by the NRC and subsequent studies of the ore pad permeability (showing low potential impact), as well as existing requirements imposed to control run-on, run-off and limit the potential for infiltration. The Ute Mountain Ute Tribe raised similar concerns about the ore pad as far back as 2002 during a license amendment proceeding and those concerns have been addressed on the record. The administrative record is well-developed on this topic. The ore pad will be addressed during decommissioning and site closure. This is accounted for in the approved financial surety for the White Mesa Mill. It is apparent that the EPA was unaware of this information when making its recommendation as to the design and construction of the ore pad.

Finally, Division staff have a number of specific comments and questions as to the EPA's Attachment 4 to the Report, with a particular focus on the lack of data used to prepare the groundwater flow paths map, included in the Report. These comments and questions are enclosed as Exhibit B. The Division looks forward to hearing from the EPA regarding the Division's comments and questions regarding legal jurisdiction and the conclusions of the Report's Attachment 4.

If you have any questions, please call Phil Goble at (801) 536-4044.

Sincerely,

Scott T. Anderson, Director
Division of Waste Management and Radiation Control

STA/BFR/PRG/ka

Enclosures: OAG-022-18 (DRC-2018-001821)
DWMRC Staff Review of Attachment 4 (DRC-2018-001822)

c: Karen Hamilton, USEPA, Region 8

STATE OF UTAH
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Chief Criminal Deputy

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Solicitor General

BRIDGET K. ROMANO
Chief Civil Deputy

OAG-022-18

MEMORANDUM

TO: Scott T. Anderson, Director
Division of Waste Management and Radiation Control
Utah Department of Environmental Quality

FROM: Bret F. Randall, Assistant Attorney General
Environment and Health Division
Utah Attorney General's Office

DATE: February 26, 2018

SUBJECT: EPA Jurisdiction under the Off-Site Rule

Question Presented

The Environmental Protection Agency ("EPA") has provided the Division of Waste Management and Radiation Control ("Division") with a report, dated February 15, 2018, entitled "Report for CERCLA Off-Site Rule (OSR) Site Visit of the White Mesa Mill, May 10, 2017," ("OSR Memo"). The OSR Memo provides four recommendations ("OSR recommendations") relating to design changes and technical studies, all relating to groundwater protections within the White Mesa Mill Site boundaries. These recommendations are made notwithstanding the uncontroverted finding that there are no uncontrolled groundwater releases at the White Mesa Mill Site. You have asked me to evaluate the nature and scope of the EPA's legal jurisdiction under the Off-Site Rule ("OSR").

EPA's General Authority

Section 275 of the Atomic Energy Act limits the EPA's authority at licensed uranium mills to setting generally applicable standards for all facilities. 42 U.S.C. Section 2022(b)(1) (EPA may promulgate "standards of general application"). The authority to implement those standards on a site-specific basis is granted to the Nuclear Regulatory Commission ("NRC") and Agreement States:

ENVIRONMENT AND HEALTH DIVISION • ENVIRONMENT SECTION • TELEPHONE: (801) 536-0290 • FACSIMILE: (801) 536-0222
MAILING ADDRESS: P.O. BOX 140873 • SALT LAKE CITY, UTAH 84114-0873
STREET ADDRESS: 195 NORTH 1950 WEST, 2ND FLOOR SOUTHWEST • SALT LAKE CITY, UTAH 84116

> **(d) Federal and State Implementation and Enforcement**
>
> ***Implementation and enforcement*** *of the standards promulgated pursuant to subsection (b) of this section shall be the responsibility of the Commission in the conduct of its licensing activities under this Chapter. States exercising authority pursuant to section 2021(b)(2) of this title shall implement and enforce such standards in accordance with subsection (o) of such section.*

42 U.S.C. Section 2022(d) (emphasis added).

The legislative history to Section 275 makes clear that the EPA cannot impose site-specific requirements upon uranium mills:

> **Authority of the Environmental Protection Agency**
>
> The EPA standards and criteria *should not interject any detailed or* ***site-specific requirements for management, technology, or engineering*** *methods on licensees* or on the Department of Energy. *Nor should the EPA* incorporate any requirements for permits or licenses for activities concerning uranium mill tailings which would *duplicate NRC regulatory authority over the tailings sites.*

H. Rep. No. 95-1480, Part I, 95th Cong., 2nd Sess. at 17 (1978) (emphasis added).

In short, based upon my evaluation of available legal authorities, the EPA has no legal authority to directly regulate the White Mesa Mill. This is unlike a delegated program under the Clean Air Act or the Clean Water Act, where the EPA retains its independent authority to enforce federal law. Under the Atomic Energy Act, the NRC has delegated its authority to the State of Utah. In any event, regulatory issues relating to on-site radioactive materials falls to the exclusive jurisdiction of the NRC, not the EPA.

EPA's OSR Authority

Under the OSR rule, 40 CFR 300.440, the EPA's role is clearly defined and necessarily limited. The policy of the OSR is for the EPA to make determinations as to whether disposal facilities receiving wastes from Comprehensive Environmental Response, Compensation, and Liability Act related facilities are themselves being properly managed. This is intended as a risk management tool. Under the OSR, only two questions are presented: (1) whether there exist any relevant violations at the receiving facility; and, (2) whether there exist any uncontrolled releases. Both terms are clearly defined in the OSR. The facts relating to these terms are necessarily limited. Whether a relevant violation or any uncontrolled release exist are simple, limited inquiries. At the White Mesa Mill, it is undisputable that there exist no violations nor any uncontrolled releases. The two groundwater releases, both of which are unrelated to radioactive materials, are subject to legally enforceable corrective action plans and stringent plume monitoring. These are not "uncontrolled" within the meaning of the OSR.

The EPA's authority under the OSR is equally limited and specific: (i) to make "acceptability determinations" that a given facility is in compliance with the two criteria listed in the rule; and, (ii) to make

an "unacceptability determination," that a given facility that was previously subject to an acceptability determination is no longer acceptable, based on a finding that either there exists a relevant violation, an uncontrolled release, or both. The OSR provides detailed procedures relating to unacceptability determinations, including the facility's right to appeal such a determination.

Applying the foregoing criteria to this matter, it is clear that: (i) the EPA has previously rendered several acceptability determinations as to the White Mesa Mill; (ii) the EPA has never rendered an unacceptability determination as to the White Mesa Mill; and, (iii) the OSR Memo does not purport to be an unacceptability determination.

Based on the foregoing and on the clear provisions of the OSR itself, the Division should be able to rely on the EPA's previous acceptability determinations as to the White Mesa Mill until such time, if ever, the EPA renders an express unacceptability determination.

EPA's Jurisdiction over Groundwater Discharges

Under the Clean Water Act, the EPA's jurisdiction is limited to the "waters of the United States." 33 U.S.C. § 1362(12). Groundwater associated with the White Mesa Mill is not a water of the United States, nor is it connected to a water of the United States. To the contrary, all available evidence leads to the conclusion that the regulation of the groundwater in the vicinity of the White Mesa Mill falls exclusively to the State of Utah. The OSR does not purport to extend the EPA's jurisdiction to regulate groundwater. Rather, it allows the EPA to make unacceptability determinations in the event there exists an uncontrolled discharge to groundwater. In this matter, it is undisputable that there exist no uncontrolled discharges to groundwater. The OSR recommendations relate to measures the EPA believes would reduce the risk of future discharges to groundwater. These matters are fully addressed in the Energy Fuels Resources radioactive materials license and in the groundwater discharge permit, both of which are regulated exclusively by the State of Utah/

Conclusion

Based on the foregoing, it is my view that the OSR recommendations go far beyond the EPA's jurisdiction under the Clean Water Act, Atomic Energy Act, and the OSR. The OSR recommendations purport to interject detailed, site-specific requirements for management, technology, and engineering methods as to radioactive materials that fall within the Division's licensing authority granted by the NRC. The OSR recommendations are duplicative of substance, technical areas that fall within the Division's jurisdiction, and are under active management through the facility's Radioactive Materials License and Groundwater Discharge Permit.

BFR/srb

Utah Division of Waste Management and Radiation Control's Comments Regarding Attachment 4 of the February 15, 2018 *Report for CERCLA Off-Site Rule (OSR) Site Visit of White Mesa Mill, May 10, 2017*

Timeline/Background

On February 8, 2017 the Utah Division of Waste Management and Radiation Control (DWMRC) had a conference call with the U.S. Environmental Protection Agency (EPA). The meeting was requested by the EPA to discuss groundwater at the White Mesa Uranium Mill. Representing the Division included: Phil Goble (Uranium Mill and Radioactive Materials Section Manger), Ryan Johnson (Health Physicist), and Tom Rushing (Hydrogeologist). Representing the EPA included: Henry Schuver, Treasure Bailley, Linda Jacobson, David Bartenfelder, and David Duster. The Division answered the EPA's questions but reminded the EPA that they had no jurisdiction regarding groundwater and anything related to 11e.(2) material at the White Mesa Uranium Mill. Everything located within the White Mesa Uranium Mill boundary is 11e.(2) material. This was verbally acknowledged by the EPA during the conference call.

On March 20, 2017 David Duster contacted Mr. Goble by email to let the Division know the EPA wanted to perform an OSR site visit at the White Mesa Uranium Mill. On March 21, 2017 Mr. Goble responded by email and explained that shouldn't be a problem as long as the EPA's inspection items were for the ORS only.

On April 20, 2017 Ms. Jacobson sent the operator of the White Mesa Uranium Mill, Energy Fuels Resources (EFR) a "list of items proposed to be discussed or reviewed during the site visit." That same day EFR forwarded the list to the Division for their review.

On May 2, 2017 Mr. Johnson sent by email the Division's review of the EPA's requested items for the site visit. The Division pointed out to the EPA that the majority of items they wanted to look at during the White Mesa Uranium Mill site visit were out-of-scope for the OSR. On May 3, 2017 a conference call was held with the Division and EPA to discuss the proposed list.

On May 10, 2017 the EPA performed an OSR inspection at the White Mesa Uranium Mill. Representing the EPA was David Duster, Linda Jacobson, and Treasure Bailley. Ryan Johnson was there representing the DWMRC. According to Mr. Johnson, the EPA explained that Mr. Duster and Ms. Jacobson would be performing the OSR inspection, while Ms. Bailley was there for observation only.

On February 15, 2018 Linda Jacobson sent by email EFR and Phil Goble a copy of the EPA OSR Inspection Report for the White Mesa Uranium Mill. The Report included four

recommendations from Ms. Treasure Bailley's site visit report (Attachment 4). It appears that all of these recommendations are out-of-scope for OSR.

Attachment 4 Summary

Attachment 4 of the document referenced in the title above is a EPA Region 8 Memorandum dated June 21, 2017 from Treasure Bailley, 8OWP-AAR to Linda Jacobsen, 8ENF-RC (EPA Memorandum). The stated purpose of the EPA Memorandum is to provide "*recommendations for additional protection of underground sources of drinking water and prevention of off-site groundwater contaminant migration.* The DWMRC noted that several of the comments made in the EPA memorandum, and the overall objective of the EPA recommendations, are the same as comments made by the Ute Mountain Ute Tribe (UMUT) regarding the recent Radioactive Materials License and Groundwater Quality Discharge Permit renewals for the Energy Fuels Resources (EFR) White Mesa Uranium Mill (Mill). The UMUT comments and DWMRC responses regarding the Groundwater Permit renewal can be found on the DWMRC website at: https://documents.deq.utah.gov/waste-management-and-radiation-control/facilities/energy-fuels-white-mesa/DRC-2018-000762.pdf . Since the intentions of comments made by the EPA appear to be the same as those made by the UMUT, it would be helpful for Ms. Bailley to review those comments and responses.

It was also noted that the EPA Memorandum was attached to a CERCLA Off-Site Rule Site Visit Inspection Report prepared by Linda Jacobson EPA RCRA Inspector. Which is interesting because per the Off-Site Rule, the findings and recommendations in the EPA Memorandum are outside of the allowed jurisdiction of the off-site rules and for regulation of the White Mesa Uranium Mill. The EPA Memorandum is also inconsistent with EPA's previous reports and protocols regarding the OSR. A uranium mill facility is defined in section 11.e.(2) of the Atomic Energy Act (AEA), and all groundwater regulatory oversight and enforcement is subject to those laws and associated rules, licenses and permits. Recommendations in the EPA Memorandum are related to regulatory actions currently overseen by requirements of the White Mesa Uranium Mill Radioactive Materials License issued under jurisdiction of the AEA. Attachment of the EPA Memorandum to the CERCLA inspection report is not appropriate and misleading for the licensee.

The attachment of the EPA Memorandum to the CERCLA inspection appears to be a tactic to address complaints from the UMUT. These same UMUT complaints have been responded to and addressed by DWMRC. The Mill is in compliance with groundwater rules and the groundwater permit; therefore, the EPA Memorandum included with the OSR Inspection Report is unwarranted.

The DWMRC's review of the the EPA Memorandum, a discussion of DWMRC findings regarding the EPA memorandum is below:

1 - EPA Groundwater Flow Path Figure

The EPA Memorandum includes a figure labeled "*Potential perched water-level configuration and groundwater flow paths, White Mesa Utah*" prepared by Rick Arnold (EPA). The June 21, 2017 figure includes inferred groundwater flow paths which are not supported by data. This figure only denotes a possible configuration of the shallow water table, and is a very unlikely configuration, and should not be presented as factual.

June 21, 2017 Figure

Per a telephone conversation between Phil Goble (DWMRC) and Rick Arnold (EPA) regarding the figure on February 21, 2018, Mr. Arnold stated that he used the groundwater contouring program SURFER to prepare the EPA Memorandum attached map and that he used surface contours on an existing map, and three groundwater monitoring wells to formulate his basis for his inferred groundwater contour lines across an area which is over 2,000 acres. However, water level data in rock, and especially in fractured rock, may not reflect surface topography at all. It is unclear what Mr. Arnold reviewed to support using these wells and the surface topographic in the way presented. In an assessment of the shallow groundwater in the Mill area, an overriding factor to consider is subsurface stratigraphy and surface topographic, without an understanding of the subsurface stratigraphy framework, and the effects of the surface topographic has on the groundwater system it is not possible to quantify the shallow groundwater system. Unfortunately, it appears these geologic controls on the shallow groundwater system have been overlooked or not applied correctly in the figure submitted with the EPA Memorandum. Given the complex subsurface stratigraphy of the area, and the distance between the wells, it is unclear that any effort made to verify that these three wells were screened at the same interval, or are even related to the shallow aquifer.

It is easily seen that the inferred contours do not reflect the surface topographic or drainage areas on the original map used by Mr. Arnold. If the intention was to use a surface topography map and somehow conclude that groundwater follows the same drainage patterns as surface water, then even in that interpretation the figure is in error. Surface drainages and topography are clearly seen on the original base map and clearly are not draining as Mr. Arnold's depiction.

Additionally, the inferred flow path on the east side of Mr. Arnold's figure, which shows a flow line traveling to the southeast across several drainages is likely a product of the computer software. It appears likely that the Corral Canyon drainage was treated as a no-flow boundary by Mr. Arnold which resulted in the program drawing all contour lines perpendicular to this boundary. The figure shows all contours curving to reflect this incorrect boundary creating a flow pathline parallel with the Corral Canyon drainage not supported by the well data. In reality,

Corral Canyon is a drainage with a variable head or flow boundary, not a no-flow boundary. It should be apparent that shallow groundwater flows to the drainage channel and not parallel to the channel as indicated by the figure. It is our experiences that the subsurface stratigraphy and the distribution of drainages in the area control shallow groundwater flow by controlling the positions of flow boundaries. Avery, 1986 (USGS), indicated shallow aquifer flow in the White Mesa area is in a southerly direction, with water discharging along Recapture Creek and Cottonwood Wash; this does not support Arnolds interpretation.

July 31, 2017 Figure

It was noted that a similar figure (Attachment 4) also prepared by Mr. Arnold was attached to the UMUT July 31, 2017 comments for the White Mesa Mill License and Permit renewals. For the DWMRC response to this figure please also see the UMUT comment and DWMRC response regarding this figure at the webpage link above.

The creation of the July 31, 2017 figure and delivery of the figure to the UMUT has created confusion within interested groups. The UMUT used the erroneous figure as a factual document and proceeded to present the figure as accurate during a meeting with Utah government officials at the Utah State Capitol. When in reality the figure was based on speculation and assumption and is scientifically suspect. It is requested that the EPA provide additional clarification to the UMUT that the attached figure is not supported by current data from the Mill area, and should be excluded from being presented as a factual representation of ground water flow at White Mesa.

Both figures share the same problems as the EPA totally disregards subsurface stratigraphy impacts on groundwater discharge and the extensive data that has been collected in the Mill area. Ample data exist to the north and west of Mr. Arnold's figure to accurate draw shallow groundwater surface contour lines for the shallow groundwater system, yet this information has been ignored. Groundwater elevation contours should be drawn according to measured groundwater elevations in order to evaluate groundwater flow directions. Existing data indicates the Brushy Basin Member of the Morrison Formation regionally perches the groundwater at issue and contour lines of the Brushy Basin contact indicate a west-southwest tilt on White Mesa. Regional groundwater directions, when not influenced by local surface recharge from constructed ponds, have been shown, according to data, to be to the south-southwest. The EPA figure completely ignores simple science and has created confusion amongst the UMUT stakeholders.

2 - Public Drinking Water Supply

The EPA Memorandum states a concern that contamination in the "*shallow*" aquifer may migrate into the deeper public drinking water supply. The "*shallow*" aquifer referred to is the perched groundwater in the Dakota/Burro Canyon Formation. This perched groundwater is hydraulically isolated from deeper formations by the Brushy Basin Member which is composed of bentonitic mudstone and claystone and acts as an aquitard, isolating the perched water. The

Brushy Basin Member is estimated at 275 feet thick in the area. In total, more than 1,200 feet of Morrison and Summerville Formation material which have low average vertical permeability separate the perched aquifer from deeper Entrada Sandstone and Navajo Sandstone Formations used for drinking water.

The EPA Memorandum cites a 1994 document prepared by Titan Environmental titled "*Hydrogeologic Evaluation of White Mesa Uranium Mill*" to justify its claims in bullet items on the second page that joints and fractures in the shallow aquifer may provide preferential flow paths for groundwater laterally and potentially vertically into the deeper Entrada and Navajo Sandstones. Contrary to this EPA claim, The Titan Environmental 1994 Report on Page 17 states "*Observed plasticity of claystones (Umetco 1992) forming the Brushy Basin Member indicates low potential for open fractures which could increase permeability.*" In any case, the observed cemented fractures occur in the Dakota/Burro Canyon and are in no way represented to occur continuously to the depths of the drinking water supply: Per the Titan Environmental Report Page 40 referring to perched groundwater, "*vertical migration to any significant depth is highly unlikely due to the low permeability and unsaturated thickness of the underlying strata.*"

3 - Pyrite Investigation

The EPA Memorandum page 2 makes the statement "*A discussion related to the integrity of the liner centered on Energy Fuels' assertion that there is no evidence that the cell is leaking. This, in my opinion, is subjective in that to date the line of evidence used to make this assertion is, in part, a study providing an alternative explanation for observed changes in ground water chemistry related to pyrite oxidation.*" It is recommended that EPA review the Mill groundwater discharge permit, data evaluation and source assessment report reviews to better understand lines of evidence used to support ground water compliance limit exceedances and chemical variances in groundwater monitoring data at the Mill. The DWMRC has agreed with Energy Fuels Resources that pyrite is present at certain intervals in the Dakota/Burro Canyon Formation as evidenced by data, and that there is a potential reduction in pH in groundwater data due to pyrite oxidation within the saturated portion of the perched aquifer demonstrated by geochemical modeling.

However, pyrite oxidation is not used as a primary line of evidence when evaluating data for potential tailings wastewater release to groundwater. A primary indication of tailings wastewater release to groundwater would be increases in wastewater constituents with high mobility (low retardation) in the environment. For example, if a monitoring well is showing a decrease in pH without synonymous rise in wastewater high concentration high mobility constituents then it is likely that pH is being impacted by variables other than wastewater release. Additionally, pH effects are seen in monitoring wells upgradient from the Mill and in monitoring wells far downgradient from the Mill indicating a regional or systematic cause not related to the tailings wastewater. DWMRC also evaluates; 1. Measured travel times for contaminants to reach monitoring wells based on measured permeability of the Dakota/Burro Canyon aquifer, 2.Mass

balance considering dilution, 3. Previously identified constituent trends (evident at the time of background reports), and, 4. Findings of the University of Utah Study Report[1].

Based on comprehensive review of data there is currently no evidence of a tailings wastewater release to groundwater. This conclusion is based on data and multiple lines of evidence.

4 - Chloride Indicator Parameter

Page 2 of the EPA Memorandum indicates that per EPA understanding only chloride is being used to determine if tailings wastewater has discharged to groundwater. Per the EPA Memorandum, "*and the assertion that a lack of significant changes in chloride concentrations in the monitoring wells is evidence that the cell(s) are not leaking is insufficient.*" Chloride is a mobile constituent in the environment and is present in high concentrations in tailings wastewater, and is therefore considered a strong indicator parameters when evaluating data, however, DWMRC data evaluation includes all 38 of the required monitoring parameters along with several other lines of evidence. This evaluation is conducted by the DWMRC each time there is an exceedance of Ground Water Compliance Limit at the White Mesa Uranium Mill. Past reviews completed can be found at:
https://deq.utah.gov/businesses/E/energyfuels/permits/stipulatedconsent.htm

In regards to potential problems using chloride as an indicator parameter, as mentioned in the EPA Memorandum, the DWMRC is assuming that EPA is referring to potential entrapment of chloride ions in fine clays. This issue was also raised by the UMUT, and in response based on DWMRC review of tailings cell construction and lithologic logs, and high concentrations of chloride in the tailings wastewater, there is no justification for this claim.

5 - Cell 1 Leak Detection

The second page of the EPA Memorandum includes a discussion of the leak detection system at the Mill and the capability to detect "*persistent, smaller volume leaks.*" Cell 1 was constructed and graded to provide a drainage collection point beneath the PVC FML. Although not optimal when comparing this system to more modern requirements, Cell 1 does have a functional primary detection point in the event of a liner tear. Magnitude of the leak which would be detected by this system would depend on the magnitude and location of the tear. Additional measures have been implemented at Cell 1 to compensate for the older design including: 1. Additional Monitoring Wells, 2. Additional Head Monitoring and Reporting, and 3. Additional Groundwater Monitoring Parameters. Monitoring and maintenance at Cell 1 is adequate to identify potential release of cell fluid. It was noted that these measures have been found acceptable for past CERCLA inspections. As stated in sections above, there is no indication of leakage of wastewater from Cell 1 to groundwater.

[1] Hurst T.G. and Solomon, D.K. 2008. *Summary of Work Completed, Data Results, Interpretations and Recommendations for the July 2007 Sampling Event at the Denison Mines, USA, White Mesa Uranium Mill Located Near Blanding Utah.* University of Utah Department of Geology and Geophysics.

6 - Ore Pad

Likewise, the EPA Memorandum makes recommendations regarding the current ore pad, stating that an impermeable ore pad needs to be installed. It is unclear if the EPA has a new concern regarding the ore pad and conditions of the currently approved reclamation plan. The ore pad will be addressed during decommissioning and site closure. This is accounted for in the approved financial surety for the White Mesa Mill. It is apparent that the EPA was unaware of this information when making its recommendation as to the design and construction of the ore pad.

7 - University of Utah Report

The EPA Memorandum pages 2 and 4 discusses the findings of the 2008 report prepared by the University of Utah and states that "*lack of evidence for 'young' water infiltrating 10 years ago does not effectively demonstrate that no releases have occurred since the time of the study*" (Page 2). Per the findings of the University of Utah report no leachate from the tailings cells was found to have reached the study monitoring wells as determined by age dating groundwater and evaluation of isotopic fingerprints determined in Mill and area surface waters as compared with groundwater samples.

The findings of the University Report confirmed that concentrations seen in the groundwater monitoring wells were background concentrations and not related to tailings cell release. The report thereby confirmed background reports prepared by EFR. Since that time EFR continues to collect quarterly or semi-annual groundwater samples for analysis of the 38 permit compliance parameters and submits quarterly groundwater monitoring reports for DWMRC review. Based on DWMRC review of groundwater data and findings there is no current basis to require or initiate a new isotopic groundwater study at the Mill.

Conclusion

Based on the Utah Attorney General's Office analysis (OAG-022-18), the EPA has no legal authority to directly regulate the White Mesa Uranium Mill. Regulation of the Mill lies with the State of Utah as it received that authority from the Nuclear Regulatory Commission in August 2004. The items brought up Ms. Bailley in her June 21, 2017 Memorandum are all the same concerns previously sent to the Division by the Ute Mountain Ute Tribe. It appears the EPA either completely ignores or is unaware that the Division has already fully and completely addressed and adjudicated the issues raised in the EPA's comments.

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