

July 9, 2004

Ms. Tracy Plessinger, Site Lead  
Gunnison Uranium Mill Tailings  
Remedial Action Project  
U.S. Department of Energy  
Grand Junction Office  
2597 B3/4 Road  
Grand Junction, CO 81503

SUBJECT: U.S. DEPARTMENT OF ENERGY REQUEST TO DECOMMISSION MONITOR  
WELLS AT THE GUNNISON, COLORADO, URANIUM MILL TAILINGS  
REMEDIAL ACTION PROJECT SITE (TAC L51108)

Dear Ms. Plessinger:

In a letter dated August 26, 2003, the U.S. Department of Energy (DOE) requested U.S. Nuclear Regulatory Commission (NRC) staff approval of DOE's plans for the decommissioning of 46 groundwater monitor wells at the Gunnison, Colorado, Uranium Mill Tailings Remedial Action (UMTRA) Project Site. DOE also proposed the construction of two new monitor wells for the long-term groundwater monitoring program at Gunnison. The staff has completed its review of DOE's proposed well decommissioning plans and concludes that 36 of the proposed 46 monitor wells may be decommissioned. The remaining 10 wells should be retained for the long-term groundwater monitoring program. These 10 wells include the following: 0002, 0005, 0102, 0105, 0125, 0135, 0136, 0181, 0186, and 0187. The staff also concludes that three additional monitor wells should be developed for the groundwater monitoring program to better define the contaminant plume in the area just north of Tomichi Creek. Additionally, domestic wells 0080, 0081, and 0082 should be added to the long-term monitoring program. Lastly, the staff agrees with DOE's proposed location of the two new wells, GUN-0062 and GUN-0063. The staff's detailed review is provided in the enclosed Technical Evaluation Report (Enclosure).

If you have any questions regarding this letter, please contact Rick Weller, the Project Manager for the Gunnison UMTRA Project Site, at (301) 415-7287 or via e-mail to [RMW2@nrc.gov](mailto:RMW2@nrc.gov).

T. Plessinger

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In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

***/RA/***

Gary S. Janosko, Chief  
Fuel Cycle Facilities Branch  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: WM-61

Enclosure: Technical Evaluation Report

cc: D. Bergman-Tabbert, DOE GJO  
W. Naugle, CDPHE

T. Plessinger

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<b>NAME</b>	R. Weller		B. Garrett		R. Nelson		G. Janosko	
<b>DATE</b>	7/9/04		7/9/04		7/9/04		7/9/04	

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**Technical Evaluation Report  
DOE Request to Abandon Monitoring Wells  
at the Gunnison, Colorado,  
Uranium Mill Tailings Remedial Action Project Site**

**Date:** June 10, 2004

**Technical Reviewer:** Ron C. Linton, Hydrogeologist

**Project Manager:** Rick Weller

**Summary and Conclusions:**

In a letter to the U.S. Nuclear Regulatory Commission (NRC) dated August 26, 2003, the U.S. Department of Energy (DOE) has proposed the decommissioning of 46 existing groundwater monitor wells and the construction of two additional monitor wells in the vicinity of the Gunnison, Colorado Uranium Mill Tailings Remedial Action (UMTRA) Project Site (DOE 2003a). The staff concludes that 36 of the 46 monitor wells may be decommissioned. The remaining 10 wells should be retained and added to the long-term monitoring program. These wells include the following: 0002, 0005, 0102, 0105, 0125, 0135, 0136, 0181, 0186, and 0187. The staff also concludes that three additional intermediate to deep monitor wells should be constructed on the north side of Tomichi Creek before its confluence with South Fork Gunnison River to characterize the southern boundary of the contaminated groundwater plume. These wells should be added to the long-term monitoring program. Additionally, domestic wells 0080, 0081, and 0082 should be added to the long-term monitoring program. Lastly, the proposed location of the two new wells, GUN-0062 and GUN-0063, is acceptable.

**Background:**

In a letter to the NRC dated August 26, 2003, the DOE has proposed the decommissioning of 46 existing monitor wells in the vicinity of the Gunnison UMTRA Project Site. The wells to be decommissioned are not part of the proposed long-term monitoring network that consists of 15 DOE monitor wells, 6 surface water locations, and 6 domestic wells as shown in Table 1 of the Verification Monitoring Report (VMR) for the Gunnison, Colorado UMTRA Project Site (DOE 2003b). Thirteen of the DOE monitor wells currently exist. Two additional monitor wells, GUN-0062 and GUN-0063, are to be added at the time the other monitor wells are being decommissioned. The 46 monitor wells proposed to be abandoned are listed as an attachment to the August 26, 2003, letter.

The NRC staff coordinated its review of DOE's proposed well decommissioning plans with the State of Colorado, Department of Public Health and Environment (CDPHE). In this regard, input was solicited from CDPHE about the DOE proposal and recommendations for well retention were received from CDPHE staff via e-mail dated June 6, 2004. The CDPHE staff recommended that, of the 46 wells proposed for decommissioning, 9 should be retained for the long-term monitoring program (CDPHE 2004).

## Technical Evaluation:

Based on the staff's review of DOE's proposed well decommissioning plans, the staff concludes that 36 of the proposed 46 monitor wells may be decommissioned. The remaining 10 wells should be retained for the long-term groundwater monitoring program. These 10 wells include the following: 0002 (shallow), 0005 (shallow), 0102 (intermediate), 0105 (intermediate), 0125 (shallow), 0135 (shallow), 0136 (intermediate), 0181 (shallow), 0186 (intermediate), and 0187 (deep). Several of the aforementioned shallow, intermediate, and deep monitor wells appear to be in the center of the groundwater plume. These wells will provide valuable information on uranium contaminant plume evolution and should be maintained. Several of the wells are shallow and, if flood irrigation practices in the hay meadow change, the stratification of the plume may change and that would necessitate the need for the shallow wells. Two of the wells are located hydraulically upgradient on the airport property and should be maintained as an indicator of background water quality in the groundwater. Two of the wells are on the mill site property and would be important for future characterization of groundwater for construction dewatering. For these reasons, the 10 wells identified above should be added to the long-term monitoring program.

The proposed location of new wells GUN-0062 and GUN-0063, as shown on Figure 5 of the VMR, is acceptable. The need for the wells and the approximate location of the wells were addressed in a letter to DOE from NRC dated January 29, 2002 (NRC 2002). The location of the wells was also discussed and agreed upon during a field visit to the site on September 11, 2003, by staff from DOE, NRC, and CDPHE.

During the September 2003, site visit, the DOE, NRC, and CDPHE staff observed the location of the new Tomichi Creek Preserve subdivision to be built to the south of the old mill site on the immediate south side of Tomichi Creek. The location of the three domestic wells currently installed to serve the subdivision is a concern. DOE has already sampled these wells for uranium and manganese. The well concentrations for these constituents are below drinking water standards, however, one well, 0082, has uranium levels that are above background. The DOE is aware of the potential problem and has committed to further investigation of groundwater flow paths in the direction of the domestic wells, if contaminant concentrations remain elevated above background (VMR, page 14). The subdivision domestic wells, 0080, 0081, and 0082, should be added to the long-term monitoring program.

The uranium contaminant plume and the plume boundary at the mill site are well defined with the exception of the area just north of Tomichi Creek, before its confluence with South Fork Gunnison River. DOE has not defined the plume in the intermediate to deep water zones in this area that is in the south and south-westerly direction from the mill site. The only monitor wells in this area are 0058 and 0059 which are shallow wells. DOE has shown that the contaminant plume is sinking with distance away from the mill site (DOE 2001, page 5-23 of Final Site Observational Work Plan). The plume should be better defined with the addition of three new wells described as follows: an intermediate to deep monitor well in the location of the current shallow monitor well, 0059; an intermediate to deep monitor well in the location of the cul-de-sac just to the north of surface water monitoring station 0777 on Tomichi Creek; and a deep monitor well in the previous monitor well location, 0157. These new wells should be added to the long-term monitoring program.

**References:**

U.S. Department of Energy, 2003a. Letter dated August 26, 2003, from D. Metzler, DOE, to S. Frant, NRC.

U.S. Department of Energy, 2003b. Letter dated August 12, 2003, from D. Metzler, DOE, to W. Naugle, CDPHE. Transmittal of the *Verification Monitoring Report for the Gunnison, Colorado, UMTRA Project Site*.

Colorado Department of Public Health and Environment, 2004. List of Wells to Keep at the Gunnison UMTRA Site, e-mail communication dated June 4, 2004, from W. Naugle, CDPHE, to R. Linton, NRC.

U.S. Nuclear Regulatory Commission, 2002. Letter dated January 29, 2002, from M. Leach, NRC, to D. Bergman-Tabbert, DOE. Review of the Final Site Observational Work Plan for the Uranium Mill Tailing Remedial Action Project Site at Gunnison, Colorado.

U.S. Department of Energy, 2001. Letter dated April 11, 2001, from D. Metzler, DOE, to P. Ting, NRC. Transmittal of the *Final Site Observational Work Plan for the Gunnison, Colorado, UMTRA Project Site*.