

December 2, 2005

Joe Vranka, Program Manager
Radiation Management Program
Hazardous Materials and Waste Management Division
Colorado Department of Public Health and Environment
Denver, Colorado 80246-1530

RE: GROUNDWATER MONITORING AT HECLA'S DURITA URANIUM MILLING SITE
(COLORADO RADIOACTIVE MATERIALS LICENSE #317-02)

Dear Mr. Vranka:

The U.S. Nuclear Regulatory Commission (NRC) staff is currently reviewing the Colorado Department of Public Health and Environment's (CDPHE) draft Completion Review Report (CRR) in support of our concurrence with the State's proposed license termination of Hecla's Durita uranium milling facility. Concurrently, our Office of Nuclear Material Safety and Safeguards (NMSS) is reviewing the U.S. Department of Energy's (DOE) draft long term surveillance plan (LTSP) for the Durita site in support of the site being transferred to DOE for long term care (LTC).

As you are aware, the NRC has the statutory authority and a regulatory responsibility to concur on an Agreement State's license termination decision for uranium milling facilities licensed in the State. In addition, NRC has to approve the caretaker agency's LTSP for the site, prior to the State terminating the specific license and the licensee transferring ownership of the site to a caretaker agency. Lastly, the State has to transfer the required financial resources provided by the licensee to the caretaker agency for LTC of the site. The requirements for LTC are reserved to the NRC and not a part of the CRR review.

Staff identified a concern during our review of the draft CRR in that CDPHE allowed the licensee to discontinue the groundwater detection monitoring program and plug the wells prior to license termination. Staff believes that the groundwater detection monitoring was prematurely terminated by the licensee and that the monitoring should have continued until the CRR was completed and a draft LTSP was submitted to NRC for review. Staff concludes that CDPHE should have consulted with NRC prior to the wells being plugged. Staff does not see any language in 10 CFR 40, Appendix A, Criterion 7A or CDPHE's compatible Part 18, Appendix A, Criterion 7 that allows for the groundwater detection monitoring to be terminated and the wells plugged prior to license termination.

For NRC to concur with the groundwater section of the CRR we recommend that the licensee, Hecla, install an appropriate number of wells and sample the groundwater to ensure no seepage has occurred since the groundwater detection monitoring program was terminated in December of 1998. The installed wells could be evaluated by DOE and possibly used in LTC upon approval by NRC. NMSS is currently reviewing the draft LTSP for the Durita site and will be communicating with DOE directly about the need for groundwater monitoring during LTC at the Durita site.

Enclosed is a more detailed explanation of Staff's review of the groundwater detection monitoring issue at the Durita site. We request CDPHE consult with Hecla and provide a response to this letter and the enclosed review of groundwater monitoring at the Durita site. We would appreciate a response in 30 days.

If you have any questions on the CRR review process, please contact Dr. Terry Brock, Health Physicist in our Office of State and Tribal Programs at 301-415-2323 or tab2@nrc.gov. If you have any questions on the enclosed review, please contact William von Till, Senior Groundwater Hydrologist in our Office of Nuclear Material Safety and Safeguards at 301-415-6251 or rwv@nrc.gov.

Sincerely,

/RA/
Janet R. Schlueter, Director
Office of State and Tribal Programs

Enclosure:
As stated

J. Vranka

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Janet R. Schlueter, Director
Office of State and Tribal Programs

Enclosure:
As stated

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Durita Groundwater Review
by William von Till, Senior Groundwater Hydrologist
Uranium Processing Section / Fuel Cycle Safety and Safeguards Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Materials Safety and Safeguards
U.S. Nuclear Regulatory Commission

Purpose: To review groundwater detection monitoring issues at the Hecla Durita site

Materials Reviewed:

State of Colorado Completion Report Review dated October 1, 2004
May 29, 1992 Letter from Hecla Mining Company to State of Colorado
- Contains response to Colorado comments
April 24, 2000 Letter from State of Colorado to Hecla Mining Company
May 9, 2005 e-mail from Phil Stoffey, of the State of Colorado, to Terry Brock, of NRC-STP
Department of Energy Long Term Surveillance Plan (LTSP) - Hecla Durita site February 1, 2005

Background:

Groundwater detection monitoring was implemented at the site from 1976 to 1991. This monitoring did not indicate that a release had occurred, however, there were concerns from Colorado about the construction of the wells and quality of the data. Therefore, in April 1991, seven new wells were installed. The program was terminated in 1998, and all wells plugged in 2002, after Colorado concluded that no seepage was detected.

Regulatory Criteria: 10 CFR Part 40, Appendix A, Criterion 7A states that;

"The licensee shall establish a detection monitoring program needed for the Commission to set the site-specific groundwater protection standards in paragraph 5B(1) of this appendix. For all monitoring under this paragraph the licensee or applicant will propose for Commission approval as license conditions which constituents are to be monitored on a site specific basis. A detection monitoring program has two purposes. The initial purpose of the program is to detect leakage of hazardous constituents from the disposal area so that the need to set ground-water protection standards is monitored. If leakage is detected, the second purpose of the program is to generate data and information needed for the Commission to establish the standards under Criterion 5B."

Colorado's implementation of this requirement can be found on page 18-28 under 6 CCR 1007-1, Part 18. The groundwater protection language is almost identical to 10 CFR Part 40, Appendix A.

The guidance document NUREG-1620 entitled, "Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act," Final Report, June 2003, was used for this review and is used for all Title II groundwater reviews. This guidance document states that *"The first strategy [of protection groundwater resources] is to prevent the spread of contaminants from disposal and processing sites into ground water or surface water"* (Page 4-1).

ENCLOSURE

10 CFR Part 40.28 covers compliance for long-term care of uranium mill tailings facilities under general license. 40.28(b)(3) covers groundwater monitoring, if required.

Technical Evaluation:

The groundwater detection monitoring wells at the Durita site were plugged and the program was terminated. A report was filed to the State Engineer on October 27, 2002.

The Durita site consists of four waste piles that will have the potential to seep contamination into the groundwater over the standard period of 1000 years. In review of the Colorado materials, it appears that the primary basis for termination of the groundwater detection monitoring program was that no contamination was detected during licensed activities from 1976 to 1991 with the first set of wells, and from 1991 to 1998 with the second set of wells. However, staff's review of Criterion 7A and Colorado's Part 18 do not find language that allows the groundwater detection monitoring program to be terminated prior to license termination. In this case, the detection monitoring program was discontinued in 1998 and the wells were plugged in 2002, prior to license termination. Secondary factors seem to include groundwater flow travel time calculations made by Hecla and geology at the site.

From a technical perspective, terminating the groundwater detection monitoring program prematurely can result in seepage from the four waste piles being undetected and causing potential harm to human health and the environment. This is not in concert with the requirements in the regulations or guidance. The requirement of groundwater detection monitoring does not consider risk, it is simply a detection monitoring function to trigger further action. If contamination at a facility is detected prior to license termination, then a compliance monitoring program must be established. A licensee may propose through Criterion 5B(6) to set alternate concentration limits (see page 18-21 and 22 of Colorado's Part 18) which does consider risk and groundwater contamination travel times. At this site there is a groundwater user (Coke Oven Ranch) in close proximity to the site that would need to be evaluated in that scenario.

At other Title II facilities that are regulated by the uranium processing section, a consistent approach is used in which a groundwater monitoring program is required up until license termination and then the DOE is required to implement a groundwater monitoring program during its long-term care. When a groundwater monitoring program is needed during long-term care, it is included in the LTSP.

Conclusion:

Staff concludes that there was not an adequate regulatory or technical basis to terminate the groundwater detection monitoring program at the Durita site and plug all monitoring wells. Rather, it is staff's conclusion, based on our technical review, that the program should have been implemented up until license termination and that some of the wells be used by the DOE for groundwater monitoring during long-term care. It is the further conclusion by staff that the long-term surveillance plan should contain a minimum of 5 monitoring wells for a continued groundwater detection monitoring program, for the purpose of detecting potential seepage from the four waste piles, so that action could be taken prior to an impact to human health and the environment.

Staff recommends that a groundwater detection monitoring plan be proposed by the licensee, Hecla, with a minimum of 5 monitoring wells (one directly downgradient of each pile and one for background), for the purpose of detecting potential seepage from the waste piles. The DOE should then propose a long-term groundwater detection monitoring program using these wells in the LTSP. It is staff's conclusion, based on our technical review, that a groundwater detection program is necessary, and is therefore required under 10 CFR 40.28. It is further recommended that information be disseminated to the States so that other groundwater detection monitoring programs are not terminated prematurely without an adequate regulatory and technical basis. Failure to detect potential seepage from these waste piles could result in a risk to public health and an adverse environmental impact to water resources.