



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

December 23, 2002

Docket No. 04008980
EA No. EA 02-254

License No. SMB-1541

Edele Hovnanian
Vice President
Heritage Minerals, Inc.
One Hovchild Plaza
4000 Route 66
Tinton Falls, NJ 07753

**SUBJECT: INSPECTION 04008980/2001001, HERITAGE MINERALS, INC., LAKEHURST,
NEW JERSEY SITE**

Dear Ms. Hovnanian:

During the period June 28, 2001- December 18, 2002, Craig Gordon of this office conducted periodic safety inspections at the Lakehurst, New Jersey site of activities authorized by the above listed NRC license. The inspection was an examination of your licensed activities as they relate to radiation safety and to compliance with the Commission's regulations and the license conditions. The inspection consisted of observations by the inspector, interviews with personnel, and a selected examination of representative records. The enclosed report presents the results of this inspection.

Based on the results of this inspection, one apparent violation was identified and is being considered for escalated enforcement in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG 1600. The current Enforcement Policy is included on the NRC's website at <http://www.nrc.gov/what-we-do/regulatory/enforcement/enforce-pol.html>, and a copy is attached. This apparent violation is based on your failure to complete decommissioning of the Lakehurst, New Jersey site to meet NRC timeliness requirements. Since the NRC has not made a final determination on this matter, no Notice of Violation is being issued for these inspection findings at this time. In addition, please be advised that the number and characterization of apparent violations described in the enclosed inspection report may change as a result of further NRC review.

As discussed with Ronald Bellamy of my staff on December 18, 2002, an open predecisional enforcement conference to discuss the apparent violation has been scheduled for January 8, 2003, at 10:00 a.m., in the NRC Region I office, King of Prussia, PA. The decision to hold a predecisional enforcement conference does not mean that the NRC has determined that a violation has occurred or that enforcement action will be taken. This conference is being held to obtain information to assist the NRC in making an enforcement decision. This may include information to determine whether a violation has occurred, information to determine the significance of a violation, information related to the identification of the violation, and information related to any corrective actions taken or planned. The conference will provide an opportunity for you to provide your perspective on these matters and any other information that you believe the NRC should take into consideration in making an enforcement decision. In

E. Hovnanian
Heritage Minerals, Inc.

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presenting your corrective action, you should be aware that the promptness and comprehensiveness of your action will be considered in assessing any civil penalty for the apparent violation. The guidance in the enclosed NRC Information Notice 96-28, "SUGGESTED GUIDANCE RELATING TO DEVELOPMENT AND IMPLEMENTATION OF CORRECTIVE ACTION," may be helpful.

You will be advised by separate correspondence of the results of our deliberations on this matter. No response regarding this apparent violation is required at this time.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> .

Sincerely,

/RA/

George Pangburn, Director
Division of Nuclear Materials Safety

Enclosures:

1. Inspection Report No. 04008980/2001001
2. NUREG 1600 (Enforcement Policy)
3. NRC Information Notice 96-28

cc:

Anthony J. Thompson, Esquire
State of New Jersey

E. Hovnanian
Heritage Minerals, Inc.

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No. 04008980/2001001
Docket No. 04008980
License No. SMB-1541
Licensee: Heritage Minerals, Inc.
Address: One Hovchild Plaza
4000 Route 66
Tinton Falls, New Jersey 07753
Locations Inspected: Lakehurst, New Jersey
Inspection Dates: June 28, 2001- December 18, 2002
Inspector: Craig Z. Gordon
Senior Health Physicist
Approved By: Ronald R. Bellamy, Chief
Decommissioning and Laboratory Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Heritage Minerals, Inc.
NRC Inspection Report No. 04008980/2001001

Heritage Minerals, Inc. (HMI), which is on the NRC Site Decommissioning Management Plan (SDMP) list of contaminated sites, has a possession-only license for decontamination and decommissioning of land and facilities at the Lakewood, NJ, site, associated with processing of monazite sands. Source materials contained in the monazite sands were processed by physical means to extract titanium and rare minerals. The HMI Decommissioning Plan (DP) submitted to the NRC in November 1997 provided the plan for disposal of the monazite sand pile and remediation of mill buildings and equipment covered under NRC License No. SMB-1541.

In October 1999, NRC approved the DP to release the site for unrestricted use after license termination. Following DP approval, HMI solicited contract bids to perform the remediation work, but was slow to select the decommissioning contractor. Decommissioning activities, which began in June 2001, were completed in August 2001 with removal of the monazite pile and cleanup of mill buildings. Radiological controls observed during pile excavation, inspection of packaging and loading of intermodal containers for shipment, and surveys of vehicles used to transfer material, were acceptable. The final status survey of indoor and outdoor areas submitted for NRC review described how residual material met DP commitments, and also the licensee's conclusion that NRC guidelines for release for unrestricted use were satisfied.

Confirmatory surveys performed in December 2001 for NRC by the Oak Ridge Institute for Science and Education (ORISE) showed that contaminated material remained on and around the monazite pile area, and in the two mill buildings. ORISE soil sample analysis indicated that the site did not meet NRC unrestricted release guidelines. Concerns were also identified in the licensee's methodology for measuring surface contamination on mill structures. Management meetings to discuss additional characterization of outdoor areas, and actions needed to complete site decommissioning were held on January 22, 2002 and April 23, 2002. HMI provided a revised process history report on November 22, 2002, indicating that further work was expected in order to complete remediation of licensable material remaining in areas around the dry mill resulting from operations by previous owners.

Due to residual contamination remaining onsite which is above NRC guidelines for release for unrestricted use, decommissioning activities are considered incomplete. The licensee has not met the timeliness requirements to complete decommissioning within 24 months following initiation of decommissioning, an apparent violation of 10 CFR 40.42(h)(1).

REPORT DETAILS

I. Status of Site Remediation

a. Inspection Scope

To determine the adequacy of the licensee's actions to meet NRC rules and license conditions for final site remediation following NRC approval of the DP.

b. Observations and Findings

The Heritage Minerals, Inc. Final Status Survey Plan provided the licensee's plan to remove radioactive material attributable to licensed operations at the site to levels that would permit release of the property for unrestricted use. By letter dated October 19, 1999, from C. Gordon, NRC Region I, to A. Thompson, HMI's legal representative, NRC notified HMI of a Finding of No Significant Impact associated with the proposed decommissioning activities. This date is considered as NRC approval of the DP and official notification of HMI to initiate decommissioning activities in accordance with 10 CFR 40.42(d), with the licensee required to complete decommissioning within 24 months as specified by the timeliness requirements of 10 CFR 40.42(h).

HMI's actions for site decommissioning included cleaning of mill buildings, selection of the decommissioning contractor, arrangements for monazite pile removal, and conduct of final surveys. After the DP was approved, the licensee was slow to solicit bids and identify a contractor to perform the required cleanup. On March 20, 2001, a management meeting was held at the NRC Region I office to discuss HMI's lack of progress to select the decommissioning contractor, and their final site remediation plans to meet the timeliness requirements. In the June 7, 2001 letter from J. Lord, HMI, the licensee notified NRC that approvals were in place to proceed with the scope of work required for license termination.

During inspection of the site on July 11, 2001, the inspector was informed that contractual arrangements were in place to begin packaging and shipment of the monazite pile material to the International Uranium Corporation's uranium mill located in Utah. A security fence was erected around the staging area where loading vehicles were maintained. Water tanks were brought onsite and used for dust suppression during loading of the monazite sands. Followup inspections on July 16 and August 1, 2001 found an efficient loading operation in progress, and proper radiological controls during transfer of pile material into intermodal containers. Contamination surveys of packages were performed and documented prior to shipment offsite. Pile removal continued until the licensee notified NRC by letter dated September 24, 2001, from A. Thompson, HMI to C. Gordon, NRC, that they believed "all

fundamental site cleanup work will be completed before October 19, 2001.” The final status survey report from the licensee’s contractor, dated November 28, 2001, concluded the site was remediated to meet NRC guidelines for unrestricted use.

During NRC confirmatory surveys performed in December 2001 by ORISE, it was found that remediation was not complete due to residual contamination identified in the outdoor surface and subsurface areas shown in Enclosure 1, and in mill buildings. Concerns were also identified with the methodology used by HMI’s contractor to measure beta contamination on mill surface structures. Management meetings were held on January 22, 2002 and April 23, 2002 with HMI representatives and contractor staff to discuss preliminary survey findings identified by ORISE . Specific measurements exceeding NRC guidelines identified in the “Confirmatory Survey of Portions of the Heritage Minerals, Inc. Facility, Lakehurst, New Jersey,” Final Report prepared by ORISE, dated April 22, 2002, are as follows:

- Table 4 of the report shows ranges of radionuclide concentrations in soil samples taken on the monazite pile footprint were 2.3-120 pCi/g for total uranium and 5.6-1540 pCi/g for total thorium (Enclosure 2). The NRC criteria for release for unrestricted use is 10 pCi/g for each radionuclide.
- Table 4 of the report shows average radionuclide concentrations in soil samples taken from randomly selected 10m x 10m grid blocks in the monazite pile footprint were 29 and 31 pCi/g for total uranium, and 75 and 150 pCi/g for total thorium (Enclosure 2). The NRC criteria for release for unrestricted use is 10 pCi/g for each radionuclide.
- Table 3 of the report shows radionuclide concentrations (pCi/g) in three residue samples taken from mill buildings were 120, 870, and 1400 for total uranium, and 640, 1300, and 3100 for total thorium (Enclosure 3). The NRC criteria for release for unrestricted use is 10 pCi/g for each radionuclide.
- Table 1 of the report shows surface scans of equipment and structures in mill buildings with elevated alpha, and alpha plus beta activity levels. For the wet mill, total activity ranges were 140-2,300 dpm/100cm² alpha, 810-35,000 dpm/100cm² alpha plus beta; for the dry mill, total activity ranges were 200-2,000 dpm/100cm² alpha, 73-89,000 dpm/100cm² alpha plus beta (Enclosure 4). The NRC guideline for acceptable surface contamination levels for natural uranium are 5,000 dpm/100cm² averaged over a 1m² area (max. 15,000 dpm/100cm² total), and for natural thorium, 1,000 dpm/100cm² averaged over a 1m² area (max. 3,000 dpm/100cm² total). The guideline levels apply independently to alpha and

beta-gamma emitting nuclides. For thorium nuclides in secular equilibrium, the beta activity level corresponding to 1000 dpm/100 cm²-alpha is 670 dpm/100cm²-beta.

- With regard to the concerns for methodology used to identify surface contamination on structures, measurements provided by the licensee's contractor in the final survey report were limited to alpha activity. Confirmation of surface contamination on mill structures could not be determined without the licensee's analysis of the beta activity.

The licensee responded to the NRC concerns from the confirmatory survey by reviewing operational processes involving monazite sands used by former site owners. In addition, after the ORISE survey the licensee's contractor performed additional soil sampling of outdoor areas. In the process history report dated November 22, 2002, HMI indicated that the sample analysis was consistent with process history findings, that licensable quantities of source material remained in areas east and south of the dry mill, and acknowledged that additional site characterization and remediation were needed. Because HMI did not complete site decommissioning by October 19, 2001, two years after approval of the DP, an apparent violation of 10 CFR 40.42(h)(1) is identified, which requires that licensees shall complete decommissioning of the site no later than 24 months following the initiation of decommissioning.

Enclosure 5 presents the communications chronology between NRC and HMI staff and representatives after DP approval (ADAMS #ML023470315). The table shows dates of NRC transmittals which notified HMI to complete site decommissioning by October 19, 2002, communications with HMI involving ORISE confirmatory measurements, NRC site inspections, and meetings held with licensee staff to discuss confirmatory survey findings.

c. Conclusions

Although the licensee's final status survey report concluded that the site met NRC criteria for release for unrestricted use, NRC confirmatory surveys showed that remediation of outdoor subsurface areas and mill buildings was not completed due to residual contamination found above NRC release guidelines for unrestricted use. Because HMI was unable to complete site decommissioning by October 19, 2001, two years after approval of the DP, an apparent violation of 10 CFR 40.42(h)(1) is identified, which requires that licensees shall complete decommissioning of the site no later than 24 months following the initiation of decommissioning.

II. Radioactive Waste Management

a. Inspection Scope

The radioactive waste management program was inspected to confirm that the licensee maintained adequate controls related to the handling, packaging, and shipping of monazite sands encountered during decommissioning.

b. Observations and Findings

The licensee's contractor performed an inventory of contaminated material stored within the fenced area around the monazite pile and in mill buildings. Monazite sands were consolidated and packaged as necessary in preparation for shipment via truck and rail to the International Uranium Corporation's (IUC) uranium mill located in Utah, to be processed as alternate feed material.

The inspector examined handling practices on different occasions while monazite was being loaded into intermodal containers at the staging area. Interviews were conducted with workers assigned to excavate, handle, and survey monazite material during the loading process. It was found that proper radiological controls were employed throughout the process, including contamination surveys of incoming and outgoing vehicles, access control of the staging area, and personal frisks of individuals entering or exiting the staging area. Contractor staff maintained inventory records showing package contents and external radiation exposure levels prior to loading and shipment. Review of rail shipment records and the contractor database identified specific locations for material while enroute to the IUC mill. Inspector surveys of containers and outgoing shipments showed contact readings at or near background levels.

c. Conclusions

The outdoor staging area used for loading of material from the monazite pile was well planned to control exposures during preparation of packages for shipment offsite. No concerns related to monazite handling and transfer were identified.

III. Exit Meeting

A telephone call to discuss the findings of this inspection was held on December 18, 2002 with (E. Hovnanian, the property owner and representatives). The NRC stated that a predecisional enforcement conference would be held on January 8, 2003, to review HMI's decommissioning actions and plans to address the apparent violation identified in this report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

E. Hovnanian, Vice President, HMI
J. Lord, Site Manager
A. Albrethsen, Radiation Safety Officer
A. Thompson, HMI legal counsel
D. Ardito, Environmental Rail Solutions (contractor)
T. Bracke, Radiation Science, Inc. (contractor)

Enclosure 5

The following table presents the communications chronology between NRC and HMI staff and representatives after DP approval. **Bold** items denote NRC communications with HMI related to timeliness for completing decommissioning activities by October 19, 2001.

<u>DATE</u>	<u>COMMUNICATION TYPE</u>	<u>SUMMARY</u>
10/19/99	NRC letter to HMI	Decommissioning Plan approved
11/99-7/00	Telephone calls between NRC and HMI project managers	Discussed approach to decommissioning activities and track HMI's negotiations to select the decommissioning contractor
8/8/00	NRC inspection	Determined status of site security, rad controls; discuss progress for contractor selection
8/16/00	NRC IR 2000-01 issued	Requested HMI to keep NRC informed about contractor negotiations
9/20/00	NRC letter to HMI	NRC concerned about slow progress for contractor selection. HMI schedule to complete all activities by 10/19/01 requested w/in 30 days
10/24/00	HMI response letter to NRC	Contractor selection expected before end CY00. Schedule TBD after contractor assigned.
12/15/00	HMI letter to NRC	Costs of contractor proposals remain under review. Separate disposal contract for monazite pile material being negotiated with IUC.
12/29/00	NRC letter to IUC	License amendment authorizing HMI material to be accepted as alternate feed
3/20/01	Management meeting	Discussions related to delays to implement the DP held with HMI property owner and staff, NJDEP representatives, and Mayor, Manchester Twp., NJ.
3/23/01	NRC letter to HMI	Meeting summary
6/7/01	HMI letter to NRC	Contracts approved for: decommissioning work, IUC receipt of material, and rail transport to IUC.
6/28/01	Site inspection	Observed preparation work for decommissioning activities.
7/11, 16-17, and 8/1/01	Site inspections	Observed monazite pile removal and intermodal container loading and survey. Interviewed contract workers.

<u>DATE</u>	<u>COMMUNICATION TYPE</u>	<u>SUMMARY</u>
9/24/01	HMI letter to NRC	Notification that site cleanup to be completed and final status surveys expected to be submitted to NRC to meet 10/19/01 deadline.
9/26/01	Site inspection	Inspected site to observe remediated areas and determine readiness for NRC confirmatory survey.
11/28/01	RSI (HMI contractor) Final Status Survey Report	Survey data showed mills and outdoor areas remediated to meet DP commitments and NRC release guidelines.
12/10-13/01	Site inspection	ORISE confirmatory survey
12/01-1/02	NRC telephone communications with ORISE, HMI, and RSI	Discussion of preliminary ORISE survey results
1/22/02	Management meeting	Presentation of ORISE confirmatory survey results showed contaminated soil did not meet NRC unrestricted release guidelines. Discussed ORISE survey methodology for taking soil samples and measuring surface contamination.
2/14/02	NRC letter to HMI	Transmittal of preliminary ORISE survey data
2/26/02	Site inspection	Examined contaminated areas identified in ORISE report; discussed remediation schedule.
3/26/02	HMI letter to NRC	HMI recognized that additional sampling in the monazite pile area was needed. However, the licensee noted that all identified contamination in mills and pile area not due to HMI operations.
4/10/02	NRC letter to HMI	Transmittal of ORISE report. Request to address report issues. RAI if HMI to pursue exemption to decommissioning timeliness requirements. Confirmation of management meeting to be held on 4/23/02.
4/15/01	HMI letter to NRC	Transmittal of final status survey report
4/22/02	RSI letter to HMI (cc to NRC)	ORISE survey results overstated amount of contaminated residual material on surfaces.
4/23/02	Management meeting	Licensee discussed details of near-term actions identified in March 26, 2002 letter.
5/9/02	Site inspection	Toured licensed areas with NMSS staff to evaluate contamination to be considered in staff's site dose assessment.

<u>DATE</u>	<u>COMMUNICATION TYPE</u>	<u>SUMMARY</u>
6/20/02	HMI letter to NRC	Provided contractor and third party evaluations which disagreed with ORISE survey techniques.
8/5/02	HMI letter to NRC	Provided proposed sampling protocol to identify potential licensable material in outdoor areas (draft submitted 7/15/02).
7/16/02-10/23/02	Technical Assistance Request (TAR) panel and NMSS review	Provided HMI information to NMSS staff under TAR to resolve overcounting issues. Results supported ORISE survey techniques.
11/22/02	NRC letter to HMI	Transmitted TAR evaluation for measurement of residual material on surfaces.
11/22/02	HMI letter to NRC	Submitted detailed report of site process history prior to and including HMI ownership.