



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

February 4, 2005

Docket No. 040-08980

License No. SMB-1541

Jill Lipoti, Ph.D.
Assistant Director
New Jersey Department of Environmental Protection
Radiation Protection and Release Prevention Programs
P.O. Box 415
Trenton, NJ 08625-0415

SUBJECT: HERITAGE MINERALS, INC.

Dear Dr. Lipoti:

This refers to your letter dated December 6, 2004, regarding the Heritage Minerals, Inc. facility in Lakehurst, New Jersey. You requested additional information on the following items:

- 1) How did the NRC arrive at 116 pCi/g of Thorium-232 as the concentration of licensable source material?

The 116 pCi/g value cited in our November 17, 2004 letter to Heritage is the unimportant quantity (as defined in 10 CFR 40.13(a)) for natural thorium (Th-232 plus Th-228) with all daughters in equilibrium. This value has been cited in Commission Papers, SECY-98-284 (page 2, "Discussion") and SECY-99-259 (Section 3.2) (Enclosures (1) and (2)).

- 2) How will a final status survey be conducted?

The final remediation activities underway at Heritage are as described in the November 17, 2004 letter and in the licensee report titled, "Removal of Fugitive Licensable Soil" dated June 26, 2003 (ADAMS Accession No. ML 031960118). The licensee is excavating the identified soil locations and gaining assurance, through surveys, that contamination levels meet the release criteria of 10 pCi/g. At this point, the licensee and the NRC staff are obtaining split samples of each location for isotopic analysis. Following shipment of the remaining stockpiled material, concurrent surveys of the ground underneath the pile will be performed by both parties. Finally, a last walkover survey will be performed to ensure all licensable material within the identified area has been removed. These surveys will be performed using a micro-rem meter at 1 m above the soil surface. Locations with dose rates exceeding twice the background dose rate will be further evaluated for the presence of additional licensable material.

- 3) Did a consultation take place with the Environmental Protection Agency (EPA) in accordance with the Memorandum of Understanding (MOU)?

As stated at the top of the MOU Table 1: *Consultation Triggers for Residential and Commercial/Industrial Soil Contamination*, the sum-of-the-fractions technique must be used for sites with more than one radionuclide, except for Ra-226, Th-232, and total uranium (emphasis added). Therefore, the concentration values in Table 1* for Th-232 and for Th-228 can be considered individually for the purposes of determining whether consultation under the MOU is required. In a case where Th-232 and Th-228 are in secular equilibrium (where Th-228 concentration will equal the Th-232 concentration), NRC will consult with EPA if the planned or actual Th-232 residual activity levels exceed 5 pCi/g, which is equivalent to total thorium (Th-232 + Th-228) exceeding **10 pCi/g**. Since Th-232 and Th-228 are in equilibrium at the Heritage Minerals site and the planned residual activity level for total thorium at the Heritage Mineral Site is **#10 pCi/g**, the EPA has not been consulted.

However, EPA Region 2 was notified when the Final Status Survey Plan was submitted by Heritage on November 3, 1997. A copy of this document was provided to Paul Giardina of the EPA Region 2 in a letter dated February 13, 1998 (Enclosure 3). Copies of the NRC's resulting environmental assessment and Finding of No Significant Impact were provided in a letter dated August 24, 1999 (Enclosure 4). The unrestricted release criteria for Heritage Minerals were published in the Federal Register on September 1, 1999 (64 Federal Register 47872-47877).

Thank you for your cooperation.

Sincerely,

/RA/

Ronald R. Bellamy, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosures:

- 1) SECY-98-284, Page 2 of 7
- 2) SECY-99-259, Page 9 of 20
- 3) Letter to Paul A. Giardina, EPA Region 2, dated February 13, 1998
- 4) Letter to Anthony J. Thompson, dated August 24, 1999

* Table 1 value for Th-232 = 5 pCi/g; Th-228 = 15 pCi/g.

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