



State of New Jersey

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Ronald R. Bellamy, Ph.D., Chief
Decommissioning and Laboratory Branch
Division of Nuclear Materials Safety
US Nuclear Regulatory Commission
Region 1
475 Allendale Road
King of Prussia, PA 19406-1415

Dear Dr. Bellamy,

Radiation Protection Program staff have reviewed the *Final Status Survey Plan for License Termination of Heritage Minerals (NRC License # SMB-1541)* and have the following comments.

Specific Comments

NRC's unrestricted release limits may not comply with the proposed unrestricted release limits for the State of New Jersey when the sum of the fraction method is considered. Specifically, the Branch Technical Position allows 5 pCi/g of ^{232}Th (because the standard is presented as total thorium and it was shown to be in equilibrium with ^{228}Th), and 5 pCi/g of ^{226}Ra . However, with ALARA considerations and the NRC's gamma exposure criteria for unrestricted use, the State's limit will likely be met. The NRC should inform the licensee that the State's limits must also be met.

Is the NRC going to require a determination of vertical extent of the residual radionuclides in the soil?

The Blue Area (as defined on earlier maps of the site) should be considered affected because monazite was diluted and then disposed of there.

Figure 2 has no indication of North.

In the discussion of the outdoor properties (p. 5), it is stated that all outdoor properties are unaffected. In a letter dated June 6, 1991 to Dr. Stern from John Kinneman, it is

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mentioned that the area between the dry mill and wet mill is contaminated from spillage of feed sand and monazite. The highest radiation levels measured were 400 $\mu\text{R/hr}$. The entire area between the wet mill and the dry mill must be considered affected.

If monazite was analyzed in the laboratory as a product sample, should the laboratory be considered an affected area (p. 6)?

In Section 6.1 (p. 7), "Affected Survey Areas", what does "100% survey" mean? Will a 10' x 10' grid pattern be used, as is recommended in NUREG/CR-5849 (p. 4.13)? If so, this should be stated clearly. If high readings are obtained, what procedure will be followed to further clarify them?

The discussion of representative data (p. 10, 11) is unclear. What does F stand for in the equation for "Representivity"? Is there a citation for this equation?

Appendix B

Shouldn't the Table Spirals (#16) be affected since the concentrate went to the Table Feed Sump (#17) which is listed as affected?

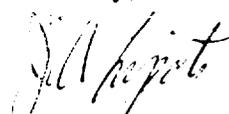
In the discussion of the HMI Phase I operations, monazite is grouped with the magnetic minerals. However, in the discussion of Survey Unit #22 (p. B7), the monazite moved with the non-magnetic minerals. Please explain.

Appendix C

What were the results of the decommissioning work done in 1991?

If you should have any questions pertaining to these comments, they may be directed to Patricia Gardner, Chief of the Bureau of Environmental Radiation, at 609-984-5400.

Sincerely,



Bill Lipoti, Ph.D.
Assistant Director
Radiation Protection Programs