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August 5, 2002

Mr. Craig Gordon
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

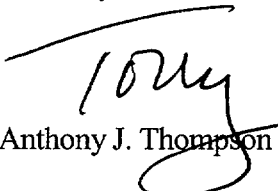
Dear Craig:

Attached is HMI's proposed Sampling Protocol to further characterize potential licensable source material concentrations within the boundaries of the monazite pile and in other areas adjacent thereto on the eastern side of the dry mill.

Radiation Science Inc. (RSI) will be developing a grid in accordance with the attached Sampling Protocol and will be attempting to get into the field as soon as possible.

If you have any additional questions, please feel free to contact me.

Sincerely,


Anthony J. Thompson

AJT/cls
Enclosure

(CGordonsamplingltr.doc)

NMSS/RGNI MATERIALS-002
Additional information

Sampling Protocol

The monazite pile created by Heritage Minerals was placed in an area that previously was used at various times to deposit materials from and/or for processing activities. Thus it appears that the NRC licensed monazite was not placed on pristine soils. Since these materials likely derived from the "magnetic fraction" created by dry mill processing they likely contained elevated levels of naturally occurring radionuclides. We know the licensed monazite pile was bounded by a fence and covered with a weighted tarp, so it is unlikely that any significant amount of material outside the fence-line of the monazite pile came from the HMI operations which produced the monazite. But because elevated radioactive levels have been identified within the monazite pile footprint and possibly without as well, it is necessary to perform a further characterization to identify any licensable source material deposits. The purpose of this protocol is to establish a clear picture of the location of any such remaining licensable source material and to determine how much material, if any, may have to be addressed with NRC in order to complete final remediation of the site as opposed to final remediation of the licensed monazite stored in the pile. Pre-NRC licensing process materials in this area, which do not contain licensable source material concentrations, apparently were not the result of NRC licensed HMI activities although they must still be addressed with the state of New Jersey.

1. A square grid, measuring approximately 200' by 200' and tied into the State Plan Coordinate system will be laid out on 20-foot centers to establish an accurate and reproducible map of the area behind the dry mill. The area of concern will extend south from the dry mill to the pump house at the process water pond and eastward, capturing the footprint of the former monazite pile. Approximately 120 such grids will be marked.
2. A shielded sodium iodide detector will be used to obtain an integral count of the gamma flux at the surface at each intersection and at each 4-foot subdivision of the grid. Additionally, each subdivision will be scanned to determine the existence of any hot spots. An integral count will be obtained at any hot spot not representative of the subdivision. The data will be used to construct a gamma flux map of the area.

3. A Geo-probe will be used to extract a core sample to a depth of four (4) feet at the center of each hot spot identified in the process above. Each core will be divided into samples represented by 12-inch lofts. The samples will be screened on-site to insure that the depth of sampling is sufficient. If the screening indicates that background levels of radioactive materials have not been reached, the Geo-probe will be used to extract an additional core sample at greater depth. The process will be repeated until the depth of any deposit has been fully characterized.
4. The samples will be further analyzed at an off-site laboratory using a sodium iodide gamma spectroscopy detector system to determine the concentrations of radioactive materials.