



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

WASHINGTON, D.C. 20555-0001

August 30, 1995

Mr. Ronald A. Milner, Director  
for Program Management and Integration  
Office of Civilian Radioactive Waste Management  
U.S. Department of Energy, RW 30  
1000 Independence Avenue, S.W.  
Washington, D.C. 20585

**SUBJECT: APACHE LEAP RESEARCH SITE CORE TRANSFER**

Dear Mr. Milner:

In response to your inquiries concerning disposition of the core recovered during Department of Energy (DOE) prototype drilling activities at the Apache Leap Research Site (ALRS), Thomas Nicholson, the U. S. Nuclear Regulatory Commission Project Manager in the Office of Nuclear Regulatory Research, discussed the matter with Dr. Randy Bassett, Principal Investigator at the University of Arizona (UAZ). Dr. Bassett is very interested in preserving that core because it was obtained only two kilometers from their ongoing research studies at ALRS. UAZ already has several hundred feet of core from the Oak Flat drilling site. This additional core would compliment their ongoing research activities investigating perched-water development.

I understand that DOE will cover the costs of packaging and shipping the core to the UAZ in accordance with Appendix 2 of the Project-Specific Agreement. As requested we are providing the following details as to the logistics and use of the proposed core transfer:

1. The UAZ investigators request the full amount of core collected. Since DOE has expressed an interest in retaining five or six boxes as display material of examples of non-welded tuff, we will direct the UAZ staff to quickly survey the core and return a few select boxes that are not critical to their research.
2. The UAZ investigators propose to conduct laboratory tests and analyses of the transferred core's mineralogy, electrical properties, geochemical evidence of perched-water presence, fracture filling, petrography and fracture geometries. Research results and conclusions will be provided in peer-reviewed journal articles, NUREG/CR reports and PhD dissertations. The data from the core testing and analyses would benefit all concerned parties by identifying diagnostic chemical evidence and mineralogical information on perched-water conditions and ground-water recharge mechanisms important to site characterization.

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- The UAZ investigators will maintain the core in suitable storage facilities following their analyses for the four-year duration of their NRC-funded contract. The core will not be destroyed without consultation with DOE as to possible retransmittal.

Please have the core shipment coordinated with the UAZ investigator, Dr. Randy Bassett, at (602) 621-6215 in the Department of Hydrology and Water Resources, University of Arizona, Tucson, Arizona, 85721. The UAZ investigators have indicated that the core is to be stored at their agricultural facility buildings just north of Tucson (i.e., driving south from Phoenix along Interstate 10 exit onto the Prince Road Exit going west adjacent to the Texaco gas station). Dr. Bassett suggests that the shippers call him at the time of departure and also when they reach the Texaco gas station.

Please call Thomas Nicholson at (301) 415-6268 if you or your staff have any questions regarding this action. NRC staff requests DOE to arrange for shipping at the Yucca Mountain Site Characterization Office's convenience.

Sincerely,

Original Signed By

Joseph J. Holonich, Chief  
 High-Level Waste and Uranium  
 Recovery Projects Branch  
 Division of Waste Management  
 Office of Nuclear Material Safety  
 and Safeguards

cc: See attached list

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