

**U.S. DEPARTMENT OF ENERGY  
FIELD TASK PROPOSAL/AGREEMENT**

1. WORK PACKAGE NUMBER	2. TASK NO.	3. REV. NO. 0	4. PROJECT NO.	5. DATE PREPARED (mm dd yy) 01-30-80	6. CONTRACTOR NUMBER F217
7. TASK TITLE Biogeochemistry of Uranium Mill Wastes			8. WORK PACKAGE TITLE		
9. BUDGET AND REPORTING CODE HA-02-03-02-0		10. TASK TERM Begin: (mm dd yy) 07-01-75 End: (mm dd yy) OPEN		11. CONTRACTOR NAME Los Alamos Scientific Laboratory	
12. CODE (See instructions)		13. CONTRACTOR TASK MANAGER (Name: Last, First, MI) (FTE No.) Donald F. Petersen, 843-2690			
14. PRINCIPAL INVESTIGATORS (Name: Last, First, MI.) David R. Dreesen				15. WORK LOCATION (See instructions: Name of facility, City, State, Zip Code) Los Alamos Scientific Laboratory P. O. Box 1663 Los Alamos, New Mexico 87545	
16. Is this task included in the Institutional Plan? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			17. Does this task include any management services efforts? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		

**18. TASK DESCRIPTION (Approach, relation to work package, in 200 words or less)**

The Los Alamos Scientific Laboratory is investigating the biogeochemistry of uranium mill tailings to determine contaminant transport pathways from tailings into the surrounding environment. The two principal mechanisms of contaminant transport that are being examined include (1) the uptake and translocation of trace elements and radionuclides by vegetation and (2) the aqueous transport of mobile contaminants through soils and geologic materials.

Laboratory experiments are planned to examine the assimilation and translocation of contaminants (including Se, Mo, As, V, U, and <sup>226</sup>Ra) from a variety of tailings materials by dominant native plant species of semi-arid western U. S. ecosystems and by common agronomic species. The transport of contaminants through geologic media will initially be examined for individual adsorptive media (such as amorphous iron oxide) and simple solutions containing the contaminants of concern (principally those elements present as anionic species). These initial experiments will define what soil characteristics control the fixation of these mobile contaminants. Tailings leachate movement through soils and geologies will be compared with the simple adsorption systems. The measurement of basic chemical and/or physical parameters that control contaminant fixation may allow the development of a predictive capability of contaminant transport through a variety of soils.

Determining the magnitude of these contaminant transport pathways will assist in the assessment of the environmental hazards posed by these contaminants as well as aid in the development of effective waste disposal technologies.

**19. CONTRACTOR TASK MANAGER**



\_\_\_\_\_  
(Signature) \_\_\_\_\_  
(Date)

**20. DETAIL ATTACHMENTS (See instructions)**

<input type="checkbox"/> a. Facility Requirements	<input checked="" type="checkbox"/> e. Background	<input type="checkbox"/> g. Future accomplishments	<input checked="" type="checkbox"/> j. Explanation of priorities
<input checked="" type="checkbox"/> b. Publications	<input checked="" type="checkbox"/> f. Approach	<input type="checkbox"/> h. Relationships to other projects	<input type="checkbox"/> k. ZBB Data
<input checked="" type="checkbox"/> c. Purpose	<input checked="" type="checkbox"/> i. Technical progress	<input type="checkbox"/> l. Environmental assessment	<input checked="" type="checkbox"/> l. Other (Specify) Annual Report FY 1979

1829 General