Department of Energy
Carlsbad Area Office
P. O. Box 3090
Carlsbad, New Mexico 88221

June 7, 1996

Ms. Jennifer Salisbury, Cabinet Secretary and Chair
New Mexico Energy, Minerals and
Natural Resources Department
New Mexico Radioactive Waste
Consultation Task Force
2040 Pacheco Street
Santa Fe, N.M. 87505

Subject: Confirmation of May 21, 1996, Consultation and Cooperation Meeting

Dear Secretary Salisbury:

This letter confirms the Consultation and Cooperation (C&C) meeting that was held on May 21, 1996 in the Carlsbad Area Office in Carlsbad, New Mexico. As outlined in our letter of May 9, 1996, the purpose of this meeting was to fulfill the Department of Energy's (DOE's) obligation to consult with the State of New Mexico on the experimentally derived actinide distribution coefficients (K_D) values to be used in the Waste Isolation Pilot Plant (WIPP) performance assessment (PA) calculations.

The K_D values presented to your representative, Mr. Chris Wentz, were based on mechanistic, batch, and core column experiments conducted at the Sandia National Laboratories (SNL) and the Los Alamos National Laboratory (LANL) over the past several years. The purpose of these experiments was as follows:

1. Mechanistic Experiments - Develop an understanding of the chemical mechanisms of adsorption of the actinides onto the dolomite matrix;

2. Batch Experiments - Determine the time dependent adsorption of the actinides onto prepared crushed Culebra dolomite under a variety of conditions expected to occur in the natural setting over the regulatory containment period of the WIPP; and

3. Core Column Experiments - Conduct a series of dynamic flow experiments by introducing actinide-contaminated-brine to cores taken from the Culebra dolomite and monitoring the flow and elution of the activities from the core. These experiments are designed to provide confirmation of the results of the batch experiments.

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In determining the reasonable range of K_D values to be used in the PA calculations, no credit has been taken for retardation occurring on non-dolomite minerals contained within the Culebra dolomite. Therefore the conservatism of the K_D values has been reinforced by not considering the sorbing characteristics of these naturally occurring minerals.

K_D values have been determined for those actinides and oxidation states that have been experimentally determined to be present in the repository during the regulatory containment period and that has the potential to be transported from the repository to the Culebra dolomite.

The following table provides the ranges of K_D values selected after the consultation meeting and which will be used in the PA calculations. These values may be reduced based on sensitivity studies to be performed once the initial PA is completed.

Oxidation State	**Pu**	**Am**	**U**	**Th**	**Np**
VI	**N/A***	**N/A**	**0.03 to 30**	**N/A**	**N/A**
V	**N/A**	**N/A**	**N/A**	**N/A**	**1 to 200**
IV	**900 to 20,000**	**N/A**	**900 to 20,000**	**900 to 20,000**	**900 to 20,000**
III	**20 to 500**	**20 to 500**	**N/A**	**N/A**	**N/A**

*N/A = Not applicable, i.e., determined to be unstable in the repository environment.

I wish to express my appreciation to your staff for his participation in this meeting. If you have any questions regarding the above or the WIPP in general, please contact me at (505) 234-7300 or Mike McFadden of my staff at (505) 234-7486.

Sincerely,

George E. Dials, Manager
Carlsbad Area Office

cc:
Chris Wentz, NMEMNRD
Les Shephard, SNL