106 PDR-1 LPDR-Wm-16 (2)

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JUN 22 1987

Jefferson Neff, Program Manager
U.S. Department of Energy
Salt Repository Project Office
110 North 25 Mile Avenue
Hereford, TX 79045

Dear Mr. Neff:

This letter confirms recent telephone conversations between Tom Cardone (NRC) and John Ellenburger (DOE), regarding a planned NRC visit to the Texas Bureau of Economic Geology (TBEG) on July 21, 22, and 23, 1987, to view sections of the drill core recovered to date as part of the Deaf Smith site study. The NRC staff would find it valuable if arrangements could be made for this core review to consist of the following:

1) DOE introductory presentation of the Palo Duro Basin stratigraphic section and lithology represented in the core, with emphasis on any new unpublished developments or interpretations of data;

2) Examination of core intervals, geophysical logs, and thick and thin sections of the San Andres Salt as detailed in Enclosure 1;

3) Discussion of the core descriptions and interpretations, and other related work that has been done by the investigators; and

4) Tour of the core storage facility.

The purpose of this core review is to provide new NRC staff and contractors, who were not involved in the previous core review (August 1985), an opportunity to view sections of the drill core. This visit is not a technical meeting to resolve specific concerns; rather, it is a data review to improve the staff's understanding of the geologic section associated with the Deaf Smith site. Such understanding will provide useful information for our future review of the Site Characterization Plan.

The NRC attendees will include two geologists, a geochemist, a rock mechanics engineer and three hydrologic contractors (see list of attendees, Enclosure 2). We ask that, to the extent practicable, technical staff with expertise in these disciplines, as well as personnel responsible for obtaining, analyzing and interpreting the drill core, be available to respond to questions that may arise during the review. It would be useful if the following individuals at TBEG could be made available for discussions: Susan Hvorka, Thomas Gustavson, Michael Fracasso, R.S. Fisher, C.W. Kreitler, and B. Kaiser.

If there is a need for further clarification of technical aspects of this

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proposed core review, please contact Tom Cardone at FTS 427-4526. Any discussion of the logistics of this review should be held with Dan Gillen of my staff (FTS 427-4793).

Original Signed By:
John J. Linehan, Acting Chief
Operations Branch
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosures:
As stated

cc: J. Knight, DOE/HQ
O. Thompson, DOE/HQ
S. Frishman, State of Texas

ENCLOSURE 1

Proposed Data Review Specifics

I. Examination

(a) Core sections and geophysical logs of the following intervals:

Boring Name	Core Interval Depth(ft.)	Formation
J. Friemel	394-600	Ogallala to Pennsylvanian
	1000-1216	
	1239-1464	
	1846-2830	
	5519-5909	
	6421-6537	
	7768-7780	
	8047-8283	
G. Friemel	1210-1312	Upper Seven Rivers
	2400-2700	Lower San Andres Unit 4
Grabbe #1	30-90	Ogallala Aquifer
Mansfield	1540-1820	Lower San Andres Unit 4
Sawyer	2850-3100	Wichita-Wolfcamp
Zeeck	2700-3100	Lower San Andres Units
	5300-5500	Wichita-Wolfcamp
	7300-7387	Pennsylvanian

(b) Black #1 and Taylor Wells

We understand that these were drilled by oil companies, and therefore the core is not available. However, we would like to see whatever information has been made available to TBEG and the DOE staff for interpretation, i.e., geophysical logs, field observations, and laboratory data. This information from the Black #1 and Taylor Wells would be valuable for comparison with that of the J. Friemel to detect possible structural discontinuities or deformation and/or possible facies changes in Lower San Andres Unit 4.

(c) Sections of the San Andres Salt

If possible, the staff would like to view thick sections of the San Andres salt. It would be preferable if the salt contained fluid inclusions displaying a variety of characteristics which are representative of the repository horizon. The salt should contain representative examples of primary (chevron) and secondary inclusions including fracture fill inclusions. Samples containing a wide range in water content (i.e., fluid inclusion content) are also of interest. In addition, thin sections of the San Andres salt should be made available to view secondary minerals present in the salt.

II. Discussion

Areas of discussion related to the core review may include:

- Vertical and lateral distribution of silt and clay interbeds in the Lower San Andres Unit 4 salt.
- Percentage of mudstone and other non salt strata in the Lower San Andres Unit 4 salt.
- Percent recovery of core collected and identification of core tested by Stone and Webster and/or TBEG.
- Indications of dissolution/diagenesis, syndeposition and postdeposition in the Lower San Andres Unit 4 in particular, or in other Permian evaporate sequences.
- Indications of faulting or fracturing in the core from any of the formations penetrated.
- Distribution of secondary permeability zones in the Lower San Andres Unit 4.
- Correlation of core with geophysical logs, with drilling records of core loss or drilling fluid loss, with field tests for permeability and/or brine zones, and with laboratory testing geophysical logs.

ENCLOSURE 2

NRC Attendees List

Dan Gillen (HLOB)	Project Management
Tom Cardone (HLTR)	Geology
Jim Warner (HLTR)	Geology
Jim Tesoriero (HLTR)	Geochemistry
Naiem Tanious (HLTR)	Rock Mechanics
Dan Stephens (Stephens & Assoc.)	Hydrology
Jeff Minier (Stephens & Assoc.)	Hydrology
Fred Phillips (Stephens & Assoc.)	Hydrology