

JUN 24 1986

WM s/f (426.1)

426.1/JP/86/06/23

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WMGT r/f
NMSS r/f
RBrowning
MBell
JBunting
PJustus
JPohle & r/f
MFliegel
PDR
LPDR (B,N,S)
EDavis, PPAS

Dr. Roy E. Williams
Williams and Associates
Post Office Box 48
Viola, Idaho 83872

Dear Dr. Williams:

I have reviewed your Monthly Progress Report for May, dated June 6, 1986. This report describes the status of Williams and Associates Technical Assistance under Contract No. NRC-02-85-008. Progress made to date under this contract is satisfactory.

Your group's efforts in reviewing DOE's Final EA's are appreciated. The meeting we had last week was very successful. I think we made a good start on how to deal with stochastic analyses and will be able to provide useful comments to DOE.

I have the following comments relative to ongoing work:

Task 1 - NNWSI

Subtask 1.1

Complete

Subtask 1.2

We have received your reviews of the following:

1. Benson, L.V., and McKinley, P.W., 1985. Chemical Composition of Groundwater in the Yucca Mountain Area, Nevada, 1971-84. USGS Open-file Report 85-484, Denver.
2. Byerlee, J., Morrow, C., and Moore, D., 1983. Permeability and Pore Fluid Chemistry of the Bullfrog Tuff in a Temperature Gradient. U.S. Geological Survey, USGS-OF-83-475.
3. Erdal, B.R., and others, November 16, 1981. Nuclide Migration Field Experiments in Tuff, G Tunnel, Nevada Test Site. International Symposium on the Scientific Basis for Nuclear Waste Management Materials Research Society, Boston, Mass., LA-UR-81-3141.

WM-RES
WM Record File
D1020
WFA

WM Project 10, 11, 16
Docket No. _____
PDR ✓
LPDR ✓ (B,N,S)

FC :WMGT	8608070442	860624	Distribution:	
	PDR WMRES	EECWILA		
	D-1020	PDR		
AME :JPohle	:	:	(Return to WM, 623-SS)	et
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4. Langkopf, B.S., August 1982. Thermal Analysis of Nuclear Waste Emplacement in Welded Tuff. Sandia National Laboratories, Albuquerque, NM, SAND80-2639.
5. Lappin, A.R., and Nimick, F.B., April 1985. Bulk and Thermal Properties of the Functional Tuffaceous Beds in Holes USW G-1, UE-25a#1, and USW G-2, Yucca Mountain, Nevada. Sandia National Laboratories, Albuquerque, NM, SAND82-1434.
6. Martinez, M.J., January 1985. FEMTRAN-A Finite Element Computer Program for Simulating Radionuclide Transport Through Porous Media. Sandia National Laboratories, Albuquerque, NM, SAND84-0747.
7. Moore, D.E., Morrow, C.A., and Byerlee, J.D., June 1984. Changes in Permeability and Fluid Chemistry of the Topopah Spring Member of the Paintbrush Tuff (Nevada Test Site) When Held in a Temperature Gradient: Summary of Results. Lawrence Livermore National Laboratory, UCRL-15620, SANL 324-001.
8. Moore, D.E., Morrow, C.A., and Byerlee, J.D., 1984. Permeability and Fluid Chemistry Studies of the Topopah Spring Member of the Paintbrush Truff, Nevada Test Site, Part II. U.S. Geological Survey, USGS-OF-84-848.
9. Peters, R.R., Gauthier, J.H., and Dudley, A.L., 1985. The Effect of Percolation Rate on Water Travel Time in Deep, Partially Saturated Zones. Sandia National Laboratories, Albuquerque, NM, SAND85-0854C.
10. Rechar, R.P., and Schuler, K.W., 1982. Permeability Change Near Instrumentation Holes in Jointed Rock. Sandia National Laboratories, Albuquerque, NM, SAND81-2584, 19 p.
11. Sass, J.H., Lachenbruch, A.H., and Mase, C.W., 1980. Analysis of Thermal Data from Drill Holes UE25a-3 and UE25a-1, Calico Hills and Yucca Mountain, Nevada Test Site. U.S. Geological Survey, USGS-OF-80-826.
12. Waddell, R.K., Robison, J.H., and Blankennagel, R.K., 1984. Hydrology of Yucca Mountain and Vicinity, Nevada-California Investigative Results Through Mid-1983. USGS Water Resources Investigations Report 84-4267.

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Subtask 1.3

No comments.

Task 2 - BWIP

Subtask 2.1

Complete

Subtask 2.2

We have received your reviews of the following:

1. Clifton, P.M., January 1986. Groundwater Travel Time Analysis for the Reference Repository Location at the Hanford Site. Rockwell Hanford Operations, SD-BWI-TI-303.
2. Spane, F.A., Jr., March 1986. Preliminary Evaluation of Piezometer Responses at DC-19, DC-20, and DC-22, During Construction of DC-23W. Rockwell Hanford Operations, Richland, WA, SD-BWI-TI-313.

Subtask 2.3

No comments.

Task 3 - SRPO

Subtask 3.1

Complete

Subtask 3.2

We have received your reviews of the following:

1. Dutton, A.R., and Orr, E.D., 1984, Geostatistical Analysis of Potentiometric Surface of the San Andres Formation, Texas Panhandle. Texas Bureau of Economic Geology, Austin, TX, OF-WTWI-1984-22.
2. Smith, D.A., Akhter, S., and Kreidler, C.W., 1985, Groundwater Hydraulics of the Deep-Basin Aquifer System, Palo Duro Basin, Texas Panhandle. Texas Bureau of Economic Geology, Austin, TX, OF-WTWI-1985-16.

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- 3. Smith, Andy, and Orr, E.D., December 1982. Use of Kriging to Estimate the Wolfcampaian and San Andreas Potentiometric Surfaces, Palo Duro Basin, Texas Panhandle. Texas Bureau of Economic Geology, University of Texas, Austin, TX, OF-WTWI-1982-3.

Subtask 3.3

No comments.

Task 4

Not initiated.

Task 5

Continue with ongoing efforts preparing thought papers on "uncertainty" and the relationship of scale, hydrogeologic parameter quantification and prediction of groundwater travel time. I would like to see outlines of the structure of these papers later in July.

The action taken by this letter is considered to be within the scope of the current contract NRC-02-85-008. No changes to cost or delivery of contracted services and products are authorized. Please notify me immediately if you believe that this letter would result in changes to cost or delivery of contracted products.

Sincerely,

Jeffrey A. Pohle, Project Officer
Geotechnical Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

- cc:
 Mary Little, ACB
 Atef Elzeftawy, WMGT
 Richard Codell, WMGT
 Neil Coleman, WMGT
 Fred Ross, WMGT
 Michael Weber, WMGT

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