

# WILLIAMS & ASSOCIATES, INC.

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Hydrogeology • Mineral Resources • Waste Management • Geological Engineering • Mine Hydrology

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December 6, 1985  
Contract No. NRC-02-85-008  
Fin No. D-1020  
Communication No. 10

WM-RES  
WM Record File  
D1020  
W+A

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

Mr. Jeff Pohle  
Division of Waste Management  
Mail Stop 623-SS  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Distribution:  
JPohle  
JNS:ll  
(Return to WM, 623-SS)

Joan-Ticket
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RE: Monthly Report--November 1985

Dear Jeff:

This document constitutes the second monthly (November 1-30, 1985) progress report as required by Contract No. NRC-02-85-008. Williams and Associates, Inc. reviewed several documents this month for the Nevada Test Site, the BWIP site, and for the Palo Duro Basin. These document reviews are in draft and final forms. We have initiated our reviews of two draft generic technical position papers. We attended a workshop on geology; we are preparing for an upcoming meeting on BWIP. We are continuing our efforts on the required list of tasks outlined in the SDW. Details about our efforts on this contract are outlined based on Task and Subtask numbers.

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## TASK 1

The following work was conducted under Task 1.

### Subtask 1.1

Williams and Associates, Inc. has prepared a list of documents obtained for NNWSI. In addition, we have prepared recommendations for the addition, deletion, and/or modification of issues identified in Exhibit 1. These have been forwarded under a separate cover.

### Subtask 1.2

Written reviews were prepared for the following six documents added to our NTS data base in October and November, 1985.

1. Peters, R.R., and others, 1984, Fracture and Matrix Hydrologic Characteristics of Tuffaceous Materials from Yucca Mountain, Nye County, Nevada: SAND84-1471, Sandia National Laboratories, Albuquerque, New Mexico and Livermore, California.
2. Kilbury, R.K., 1984, Water Intake at the Atmosphere-Earth Interface in a Fractured Rock System: Dept. of Hydrology and Water Resources, University of Arizona.
3. Bixler, N.E., 1985, NORIA--A Finite Element Computer Program for Analyzing Water, Vapor, Air and Energy Transport in Porous Media: SAND84-2057, Sandia National Laboratories, Albuquerque, New Mexico and Livermore, California.
4. Muller, D.C., and Kibler, J.E., 1984, Preliminary Analysis of Geophysical Logs from Drill Hole UE-25p#1, Yucca Mountain,

Nye County, Nevada: USGS Open-file Report 84-649, Denver, 14 P.

5. Barr, G.E., 1985, Reduction of the Well Test Data for Test Well USW H-1, Adjacent to Nevada Test Site, Nye County, Nevada: SAND 85-0637, Sandia National Laboratories, Albuquerque, New Mexico and Livermore, California, 36 p.
6. Travis, B.J., Hodson, S.W., Nuttall, H.E., Cook, T.L., Runberg, R.S., \_\_\_\_, Preliminary Estimates of Water Flow and Radionuclide Transport in Yucca Mountain: NNWSI Milestone Report, Department of Energy, Nevada Operations Office.

Additional documents added to our NNWSI data base during the month of November, 1985, also are being reviewed.

#### Subtask 1.3

Williams and Associates, Inc. is continuing to work on a preliminary phase of conceptual model evaluation for NNWSI.

## TASK 2

The following work was conducted under Task 2.

### Subtask 2.1

Williams and Associates, Inc. completed a review of past interactions between the NRC and DOE. These interactions have been and are being reviewed with respect to their relevance to the issues. We are continuing our review of the issues. The BWIP document list is being revised and updated for inclusion in the future letter report.

### Subtask 2.2

Williams and Associates, Inc. generated a list of topics that should be addressed during the review of a technical document (Communication #5). This communication also lists four suggested categories for cataloging technical documents.

Williams and Associates, Inc. reviewed "Strategy and Preliminary Plans for Large-Scale Hydraulic Stress Testing of Selected Hydrogeologic Units at the RRL-2 Location." Our review was forwarded as Communication #6. This revisit of the aforementioned document was conducted in anticipation of the NRC/DOE workshop scheduled for December 9, 1985.

Williams and Associates, Inc. received and reviewed the new BWIP test plan entitled "Test Plan for Multiple-Well Hydraulic Testing of Selected Hydrogeologic Units at the RRL-2 Site, Basalt Waste Isolation Project, Reference Repository Location" (November 1985, SD-BWI-TP-040). Copies of our review were sent to Mr. Weber in Richland, Washington, in preparation for the upcoming hydrology workshop. The workshop is scheduled for December 9, 10, and 11, 1985. A pre-meeting meeting is scheduled for December 5 in Richland. We created a list of topics (Communication #8) concerning this upcoming meeting. These topics for discussion at the meeting were created at the request of the NRC.

#### Subtask 2.3

Williams and Associates, Inc. is continuing the preliminary phase of conceptual model evaluation. We are considering the existing concepts regarding groundwater flow at the BWIP site; these concepts are being evaluated based upon the water level data collected in the multi-piezometer clusters (DC-19, DC-20, and DC-22).

### TASK 3

The following work was conducted under Task 3.

#### Subtask 3.1

Principal effort for the month of November was directed toward this subtask. Work has continued on site familiarization mainly through the assembly and examination of pertinent documents. Documents requested at the October kickoff meeting have been received and are in the process of being reviewed and catalogued.

On November 19, 20, and 21, 1985, key personnel of Williams and Associates, Inc. attended a joint DOE-NRC workshop on the status of geologic investigation for the salt repository program in Columbus, Ohio. The workshop was of significant benefit as it provided considerable insight on the current level of knowledge on the detailed structure and stratigraphy of the Palo Duro Basin and to the related problems and limitations of the current data base. These knowledge limitations have significant impact on the development of accurate conceptual ground water models for the basin.

#### Subtask 3.2

Williams and Associates, Inc. has prepared draft reviews of two

technical reports as part of the site familiarization process. These document reviews will be completed the following month. The reports reviewed are "Analytical Study of the Ogallala Aquifer in Deaf Smith County, Texas" and "Interpretation of Pressure-Depth Data from Confined Underpressured Aquifers Exemplified by the Deep-Basin Brine Aquifer, Palo Duro Basin, Texas."

### Subtask 3.3

Consideration of conceptual models and model alternatives has begun as part of the site familiarization process. Documents specifically relating to the definition of hydrogeologic framework are being collected as potential source material for review of conceptual models. Refamiliarization with possible conceptual models, as outlined in contract exhibits, also is underway.

TASK 4

(not initiated)



TASK 5

Williams and Associates, Inc. submitted Communication No. 2 (in October) to the NRC requesting further consideration of a proposal initially submitted under the previous contract. This request presents additional information pertaining to the determination of effective porosity from field data. Effective porosity is a parameter required for calculating ground water velocities and travel times. This request is pending further discussions.

Williams and Associates, Inc. attended a joint DOE-NRC workshop on geology of the Palo Duro Basin in Columbus, Ohio, as noted under Subtask 3.2. A trip report for the meeting is in the final stages of preparation. Documents requested from the NRC have been received and catalogued along with data handouts presented at the workshop.

Williams and Associates, Inc. initiated a review of two generic technical position papers. These papers are entitled "Draft Generic Technical Position on Groundwater Travel Time (GWTT)" and "Draft Generic Technical Position: Interpretation and Identification of the Extent of the Disturbed Zone in the High-Level Waste Rule (10 CFR 60)."

Contractual Problems

No contractual problems have arisen.

Current Expenditures

A breakdown of individual hours and charges is shown on the attached table. Cumulative costs and projected costs are shown on the second table. The attached figure illustrates projected and current cumulative costs.

Sincerely,

*Roy E. Williams*

Roy E. Williams

**INDIVIDUAL HOURS AND CHARGES**

	This Month (hours)	Cumulative (hours)	Cumulative (amount)
Roy Williams	64	112	\$ 5,600
Gerry Winter	173.3	346.6	6,586
Jeff Brown	45	87	3,045
Jim Osiensky	116	232	4,408
Dale Ralston	7	11	484
Kirk Steinhorst	-	-	-
Terry Eckwright	5	5	75
Jack Sharp	-	-	-
Charles Smith	-	-	-
Noel Kroethe	-	-	-
George Bloomsburg	14	14	560
Terry Howard	-	-	-
Stanley Miller	-	-	-

**CURRENT AND CUMULATIVE PROJECT COSTS**

Task	Current Month	Cumulative to Date		Total to Date
		FY 85	FY 86	
1	\$ 8,779	\$ 14,676	\$-----	\$ 14,676
2	9,063	15,663	-----	15,663
3	7,873	14,087	-----	14,087
4	-----	-----	-----	-----
5	2,148	5,408	-----	5,408

Percentage billed to total funds allocated = 11%

Williams and Associates, Inc.  
Viola, Idaho 83872  
Contract No. NRC-02-85-008

Cost in Dollars x 100

800  
700  
600  
500  
400  
300  
200  
100  
0

Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep  
1985 1986

Projected Costs  
Actual Costs

