

WILLIAMS & ASSOCIATES, INC.

p. 5 is budget
info - no
PDR

P.O. Box 48, Viola, Idaho 83872 (208) 883-0153 (208) 875-0147
Hydrogeology • Mineral Resources Waste Management • Geological Engineering • Mine Hydrology

'85 JUL -8 P12:04

July 2, 1985
Contract NRC-02-82-044
FIN #B7372-3
Communication #132

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

WM-RES
WM Record File
B7372
W & A

WM Project 10
Docket No.
PDR ✓
LPDR ✓ (B)

Re: Thirty-sixth Monthly Progress Report

Distribution:
Gordon
x 3/11
(Return to WM, 623-SS)
X Jan-ticket
ef

Dear Matt:

This document constitutes the thirty-sixth monthly (June 1-30, 1985) progress report as required by contract No. NRC-02-82-044 and modification.

Task 1, Subtask 1.1

A document list for references received this month is attached.

Task 1, Subtask 1.2 through Subtask 1.3

These subtasks are completed.

Task 2 and 3

These tasks have been completed.

Task 4

The work conducted under this active task is the preparation to review the BWIP Site Characterization Plan (SCP).

Task 6

Williams & Assoc., Inc. reviewed the draft BWIP EA previously. The NRC comments on the draft EA have been received.

8507310237 850702
PDR WMRES EECWILA
B-7372 PDR

2185

Additional Work Performed

We submitted, in April, a request (Communication #123) to the NRC that an alternate means of quantifying effective porosity be investigated for the BWIP site. This approach is based on the application of methodologies using barometric and earth tide data for quantification of this parameter. Mr. Gordon raised several pertinent questions regarding this request. We responded to these questions in Communication #126. This topic is being discussed further.

We continued our efforts on the statistical analysis of the latest hydrochemical data produced by Rockwell Hanford Operations. A first draft of the report on this analysis has been submitted to the NRC as Communication #124. Comments have been received from the NRC on this draft; the comments have been evaluated. We have revised the draft report based on these comments. A second draft of the report was submitted to the NRC as Communication #131. Additional figures were generated for the report to help clarify specific areas of confusion. Two new appendices were incorporated into this second draft.

We reviewed the Leonhart et al. document entitled "Analysis and Interpretation of a Recirculating Tracer Experiment Performed on a Deep Basalt Flow Top". We also reviewed Mr. Gordon's review of this document. Our comments on this document and the review by Mr. Gordon were forwarded as Communication #129.

Two groups of documents were received from the NRC this month. We have completed draft reviews of SD-BWI-TC-023, SD-BWI-DP-059, and SD-BWI-TP-039. These and other documents received this month are included in the list attached to this monthly report. We have reviewed RHO-BW-SA-364 P, RHO-BW-SA-366 P, RHO-BW-SR-84-1-40 P, RHO-BW-SA-372 P, and RHO-BW-SA-370 P; written reviews of these documents have not been prepared at this time. We have taped a review of the axisymmetric modeling study conducted by Golder Associates for Rockwell Hanford Operations (transmittal letter from Mr. Rowe to Mr. Luttrell, dated March 27, 1985). We have reviewed the Summary Meeting Minutes for the May 22, 1985, DOE-NRC meeting which representatives from Williams & Associates attended. We have reviewed "Basalt System Characterization: Inverse Technique" by Lu and Yeh. We are investigating this document in greater detail due to the extreme importance of this document to the analysis of the upcoming large scale test planned for the BWIP site. We are concerned about the appropriateness of the parent model to studies where early time drawdown data may be of vital importance to the correct interpretation of the test data. Lateral boundary conditions may influence the drawdown data after only a short period of pumping. We have reviewed "Opportunistic Use of Drilling-Stress Data to Estimate Aquifer

Properties" (Lu, no date), internal Rockwell Hanford Operations letter compiling April 1984 through March 1985 hydrographs for the DC-19, -20, and -22 clusters, and the "BWIP Groundwater Monitoring Facility Location Map". Written reviews have not been prepared for the last three documents.

Future Activities

Williams and Associates will continue their preparation for the review of the Site Characterization Plan (SCP). We will review the appropriate documents as directed by the project officer.

We are discussing, with the Project Officer, our request that we investigate the use of barometric and earth tide data for the quantification of effective porosity.

We hope to receive copies of the released baseline data for the BWIP site for the months following December 1984. We will perform the same analyses on these data as we performed on the data we presented to the NRC in May. Relevant concerns developed from this data review will be forwarded to the project officer.

We will investigate the implications of the inverse modeling document by Lu and Yeh. A written review will be prepared of the Lu and Yeh document. The documents noted in the preceding section, for which written reviews have not been prepared, will be discussed with the Project Officer.

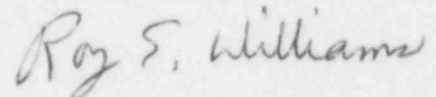
Contractural Problems

No contractural problems have arisen.

Current Expenditures

A break down of individual hours and charges plus travel expenses is shown on the attached Table 1. Cumulative costs and projected costs are shown on the attached Table 2.

Sincerely,

A handwritten signature in cursive script that reads "Roy E. Williams". The signature is written in dark ink and is positioned above the printed name.

Roy E. Williams

REFERENCE LIST

- Bryce, R. W. and Yeatman, R. A. February 1985. Water Level, Downhole Pressure and Atmospheric Pressure Measurements from Piezometer Clusters DC-19, DC-20 and DC-22, December 1 through December 31, 1984. Rockwell Hanford Operations, SD-BWI-DP-059, 300 p.
- Brown, W. R. January 1985. Integrity Testing Plans for Selected Hanford Site Monitoring Wells. Rockwell Hanford Operations, SD-BWI-TP-039, 44 p.
- Clifton, P. M., Sagar, B., and Baca, R. G. March 1984. Stochastic Groundwater Traveltime Modeling Using a Monte Carlo Technique. Rockwell Hanford Operations, RHO-BW-SA-366 P, also presented at The International Association of Hydrologists 17th International Congress, January 7-12, 1985, 16 p.
- Dahlem, D. H. and Wright, R. J. May 22, 1985. Summary Meeting Minutes DOE/NRC Meeting BWIP Hydrology Program May 22, 1985, Silver Spring, Maryland.
- Graham, D. L., Bryce, R. W., and Halko, D. J. March 1984. A Field Test to Assess the Effects of Drilling Fluids on Groundwater Chemistry Collected from Columbia River Basalts. Rockwell Hanford Operations, RHO-BW-SA-370 P, also presented at The International Association of Hydrologists 17th International Congress, January 7-12, 1985, 15 p.
- Graham, D. L., Gifford, S., and Bentley, H. March 1984. Chlorine Isotopes as Environmental Tracers in Columbia River Basalt Groundwaters. Rockwell Hanford Operations, RHO-BW-SA-372 P, also presented at The International Association of Hydrologists 17th International Congress, January 7-12, 1985, 17 p.
- Lanstrom, O., Klockars, C. E., Holmberg, K. E., and Westerberg, S. July 1978. In Situ Experiments on Nuclide Migration in Fractured Crystalline Rocks. Studsvik Energiteknik and The Geological Survey of Sweden, Teknisk Rapport 110, 25 p.
- Lu, A. H. no date. Opportunistic Use of Drilling-Stress Data to Estimate Aquifer Properties. Rockwell Hanford Operations, no document number, p. 214-237.
- Lu, A. H. and Yeh, W. W. G. no date. Basalt System Characterization: Inverse Technique. Rockwell Hanford Operations, no document number, 11 p.

- Mazor, E., Vuataz, F. D., and Jaffe, F. C. 1985. Tracing Groundwater Components by Chemical, Isotopic and Physical Parameters - Example: Schinznach, Switzerland. Journal of Hydrology, no. 76, p. 233-246.
- Rockwell Hanford Operations. no date. BWIP Groundwater Monitoring Facility Location Map. no document number.
- Rockwell Hanford Operations. no date. Basalt Waste Isolation Project Drilling and Testing Quarterly Report, 1 October 1984 through 31 December 1984. RHO-BW-SR-84-1 4Q P, 15 p.
- Rowe, J. March 27, 1985. Subcontract SA-968-Site Characterization Support to BWIP Item 4 - Axisymmetric Modeling Study. Letter report from Golder Associates to Mr. Stewart Luttrell, Rockwell Hanford Operations.
- Sagar, B. and Clifton, P. M. March 1984. Stochastic Groundwater Flow Modeling Using the Second-Order Method. Rockwell Hanford Operations, RHO-BW-SA-364 P, also presented at The International Association of Hydrologists 17th International Congress, January 7-12, 1985, 25 p.
- Strait, S. P. April 23, 1985. Hydrographs from Piezometer Sites DC-19, -20, and -22. Rockwell Hanford Operations, Internal Letter.
- Woolhiser, D. A., Emmerich, W. E., and Shirley, E. D. 1985. Identification of Water Sources Using Normalized Chemical Ion Balances: A Laboratory Test. Journal of Hydrology, no. 76, p. 205-231.