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PDR - WM-10 (2) (187)  
R. Browning

WASTE CONTROL CENTER

MEMORANDUM FOR: Frank A. Costanzi, Chief, Waste Management Branch, <sup>JAN 12 1987</sup> <sup>JAN 12 1987</sup> <sup>P4:13</sup> <sup>DOE</sup>

THRU: Richard P. Grill, Section Leader, Performance Section, WMB

FROM: Donald Chery, Project Manager-Hydrogeologist

SUBJECT: TRIP REPORT ON IN-SITU SITE VISIT (12/01/86)  
SPOKANE, WASHINGTON AND NRC-DOE DATA REVIEW MEETING  
(12/02-05/86) RICHLAND, WASHINGTON

On the evening of November 30, 1986, I arrived in Spokane, Washington, and met with Dr. Tim Steele and Mr. Jim Paschis of In-Situ, Inc. to make final plans for the next day meeting and field trip. Monday morning, December 1, 1986, we began the orientation meeting on the In-Situ, Inc. project (FIN D1163) at 8:00 a.m. I introduced Dr. Tim Steele, In-Situ's project manager and then he with the assistance of two other In-Situ staff members explained the objectives and study tasks to the group. A copy of his viewgraphs are enclosed (Enclosure A). Jim Paschis showed slides of the field site and the recent In-Situ drilling and coring activities. He prepared a packet of materials with general geological information for the area, a summary of the recent test borings and an itinerary for the field trip (copies of these materials are in Enclosure B).

Aside from the In-Situ personnel (3) and me, 14 people attended the meeting. The NRC/NMSS contingent had Tilack Verma, Neil Coleman, Mike Weber and Harold Lefevre and they were accompanied by five consultants. Mike Thompson was attending from the Richland DOE office and he was accompanied by one consultant. Jack Wittman was representing the Yakima Indian Nation and he was accompanied by a consultant. Ted Olson from the State of Washington Department of Ecology was present. See Enclosure C for a copy of the attendance list.

After the presentations there was discussion with the following requests being made or issues raised:

- a) DOE requested a copy of the statement of work from the Request for Proposal.
- b) The Yakima Indian Nation expressed their desire to be kept informed on the progress and findings of the study.
- c) The issue of "transferability of the data" to the Basalt Waste Isolation Project (BWIP) at Hanford was raised. Opinions were expressed that the study should be moved to and done at the BWIP site.
- d) The issue of quality assurance (QA) procedures was raised for this research project, and NRC/NMSS voiced opinions that QA procedures as vigorous as those they are requiring for licensing review should apply to research work.

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- e) The issue of documenting and reporting the preliminary site characterization data was raised. Could the exploratory work be considered "tests"?

Assurances were given that all parties would be kept informed and the issues were discussed; however, resolution of the issues raised was not germane to the purpose of the meeting and thus was not pursued.

After the orientation meeting, the group divided into one contingent that went to visit the Bunker Hill mine in Kellogg, Idaho, (a University of Idaho research project on mine effluent) and another desiring to see the In-Situ, Inc. field site. Those touring the field site were Mike Weber, NMSS, Gerry Winter, Williams & Associates, Fred Marinelli and Michael Galloway, Terra Therma Inc., Mike Thompson, US DOE, Richland, and Randolph Stone, Rockwell/BWIP. Jack Wittman and Vielchan Nguyen (Yakima Indran Natron) were also planning to join the field tour, but I was later told they thought it was too foggy to tour the field site. The tour began with a look at a road cut through the Roza formation a short distance northeast of Creston, then wells 3-C, OW-2, 16-C and the Dreger well were visited. At well 16-C, the collection of automatically recorded pressure data was demonstrated. Indeed, it was quite foggy when the tour began before noon but by the conclusion of the tour at the Dreger Well the sun was shining brightly with scattered clouds in the sky.

The In-Situ personnel stayed in the field to gather additional data and the others headed for Richland. One vehicle had the noble objective of seeing some of the basalt formations to the west along the Columbia River, but the falling sun soon changed those plans and the course was altered to head directly for Richland. That evening NRC/NMSS held a short pre-meeting planning session conducted by Mike Weber. Objectives of the Data Review meeting were discussed and reference information and a sample review comment form distributed (see Enclosure D for copies of these materials).

The Data Review meeting began at 8:00 a.m., December 2, 1986. Dave Dahlem of the DOE Richland office opened the meeting and officiated on behalf of DOE. NRC was represented by Paul Hildenbrand, Telack Verma, and Neil Coleman. In response to NRC's data request and meeting schedule letter of October 6, 1986 (see Enclosure E), the DOE had assembled the requested data and brought it to the meeting room in the hotel. An inventory list of the available data had been prepared by DOE and a copy of this inventory is in Enclosure F. The data were arranged in five groups for review and NRC assigned one person responsible for the review. They were:

1. Monitoring Installations (Mike Galloway)
2. Geologic Information (Ron Williams)
3. Hydraulic Head (Gerry Winter)
4. Hydraulic Testing Data (Dale Ralston)
5. Hydrochemistry (G. Jacobs)

I had expressed primary interest in the hydraulic testing data and hydraulic head data and was assigned to these review teams in the opening session. I spent one and a half days with Gerry Winter reviewing the head data and collection

procedures, and discussing the process with Rockwell personnel doing the work. We found all Rockwell people with whom we talked open, candid, helpful and competent. In general, the head data may be taken as quite good, collected by good procedures and thoroughly checked by the quality assurance procedures (although daily measurements are interrupted each weekend, no measurements are taken on Saturday and Sunday). Even with all the checking, occasional errors do occur in the final data set (NOMAD File). We made a couple of suggestions for improvements to the data processing procedures. Samples of the type of information that we reviewed have been placed in Enclosure G.

I discussed the hydraulic testing data with Dale Ralston, monitoring data with Mike Galloway, and the geologic data with Harold Lefevre and Steven Hart (Council of Energy Resource Tribes) who reviewed geophysical logs with me to some extent.

Wednesday afternoon I had a long discussion with Ralph Patt (Oregon Water Resources Department). He was quite interested in the In-Situ Research project and told me about a cyanide contamination problem at an aluminum plant near the Dalles in which the integrity of the claystone layer below the Roza Formation played an important role in containing the contamination. He informed me that Geraghty and Miller were consultants to the plant for clean up of the contamination and that David Smith of their Aiken, South Carolina office was very familiar with the hydrogeology of the site. He also recommended Mary Beeson, geologist at Portland State University, as another expert on the basalt formations being considered for the In-Situ, Inc. tests.

In reviewing a DOE draft of "Piezometer Responses in Basalt Waste Insolation Project Monitoring Wells During Construction and Testing of DC-23W and DC-23GR," I read on page 2, "Mean hydraulic conductivities for Roza and Middle Sentinel Bluff flow interiors are  $10^{-12}$  m/s; for the Untanum flow interior,  $10^{-13}$  m/s."

Thursday morning I spent some time discussing with a Rockwell person the features of their NOMAD data base and management system. It is a commercial data base management system marketed by Dunn & Bradstreet.

In the afternoon I visited Battelle Pacific Northwest Laboratory where I visited with Dr. Michael J. Graham, Manager Hydrology Section; Marcel Bergeron, Richard Skaggs, Mike Foley, Charlie Cole and Charlie Kincaid.

That evening NRC/NMSS with state and Indian representatives present spent a considerable amount of time compiling and preparing the meeting summary report. (See Enclosure H.)

Friday morning, NRC and DOE reconvened with state representatives and Indian tribes present. NRC presented DOE with a 13 page meeting summary that included some comments from Indian tribes, and requested DOE sign to acknowledge participation in the meeting. DOE requested and took a 45 minute recess to review the Meeting Summary notes. They returned to say that they were not willing to sign the notes as they were presented. They would need adequate time to review them and negotiate with NRC on some of the representations in the report. They suggested that they review the report until about 3:00 p.m. and then reconvene with NRC and work out the final meeting summary notes.

T. Verma responded for NRC saying that NRC had met for a couple of hours each evening and feel that the comments are accurate. He said that DOE's signature only acknowledge receipt of the report.

DOE took another recess to caucus. They returned unwilling to sign the meeting notes as they stood and with the suggestion that notes of the meeting be separated with notes by each participant - NRC, states and tribes. They offered to review the NRC comments over the weekend and discuss them with Telach Verma by telephone on Monday. They also offered to discuss the notes in the afternoon with anyone remaining in Richland (all NRC personnel and contractors except Neil Coleman were departing from Richland by 1:00 p.m.). DOE would respond formally at a latter date. Dave Dahlem offered an opportunity for discussion and/or comments. All was quiet and he then adjourned the meeting.

#### Relevant Issues for Research

1. Originally representatives from In-Situ, Inc. were planning to attend the Data Review, but on 11/10/86 I had a phone call from Mike Weber informing me that In-Situ, Inc. representatives could not attend because of a DOE limitation on the number of people that they could accommodate. As it developed, there was no reduction in any other contingent to the data review and with the meeting being held at the motel there were no problems with gaining access. Why did this situation occur with the In-Situ, Inc. personnel?
2. To what extent do Quality Assurance procedures and standards employed by NMSS for license approval apply to Research?
3. What is the role and function of Research personnel's participation in an NMSS (or should that read NRC) review?

**Original Signed By:**

Donald L. Chery, Project Manager  
Performance Section  
Waste Management Branch, DES

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