



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Reply to:
301 E. Stewart Ave., #203
Las Vegas, NV 89101

Tel: (702) 388-6125

TO: Joseph Holonich, Director, HLPD, M/S 4 H 3
FROM: Sr. On-Site Licensing Representatives Office, Las Vegas
DATE: DECEMBER 3, 1992
SUBJECT: OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE
WEEK ENDING NOVEMBER 13 AND NOVEMBER 20, 1992, and YUCCA
MOUNTAIN SITE OFFICE (YMSO) FIELD ACTIVITY REPORT FOR WEEK
ENDING NOVEMBER 13 AND NOVEMBER 20, 1992

Please find enclosed the above-referenced reports

There is nothing requiring specific management attention in the reports.

cc: w/enc.: Charlotte Abrams, M/S 4 H 3
Rosetta Virgilio, M/S 3 D 23
Dean Kunihiro, Region 5

nan

NOTE TO CHARLOTTE - Also enclosed: Daily Operations Reports, Weekly Interactions Calendar, Field Test Coordinator's Report prepared by Raytheon for October 19-23, October 26-30, and November 9-13, 1992; Preliminary Field Composite Borehole Log Report (USW UZN-57, completed on 11/4/92); Yucca Mountain Site Characterization Project Monthly Activity Report (9/92), Los Alamos; Yucca Mountain Site Characterization Project Monthly Status Report (10/92, Sandia

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Department of Energy
Yucca Mountain Site Characterization
Project Office
P. O. Box 98608
Las Vegas, NV 89193-8608

WBS 1.2.9.2
QA: N/A

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John W. Bartlett, Director, Civilian Radioactive Waste Management,
HQ (RW-1) FORS

OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE WEEK ENDING
NOVEMBER 13, 1992

I. CRITICAL ITEM STATUS - YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
(YMP)

A. Site Characterization Planning

Field Operations

The Site Manager and Field Operations Center staff participated in and provided logistical support for three major tours this reporting period.

Regarding Job Package (JP) 92-3, drilling activities continue with the IM-300 drill rig on Borehole UZ-16. Reynolds Electrical & Engineering Co., Inc. (REECo), has cored to a depth of 996 feet and reamed to 979.15 feet.

On JP 91-9, Neutron Access Boreholes, Phase II, drilling activities continue with the CME-850 drill rig on USW UZN-58. REECo has cored to a depth of 45.59 feet and reamed to 40.59 feet.

On JP 92-10, Drill Pad and Access Road for NRG-6, construction of the drill pad and the grade work were completed.

The Site Manager has finalized preparation for obtaining the necessary heavy equipment for Exploratory Studies Facility (ESF) site preparation activities.

Sample Management Facility

Processing of core and recovery of core and cuttings from UE25 UZ-16 continued. Recovery of core from USW UZN-58 continued. Fifteen core boxes were laid out for the U.S. Geological Survey (USGS), Sandia National Laboratories (SNL), and Los Alamos National Laboratory (Los Alamos). A Sample Overview Committee meeting was held on November 10, 1992.

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Site Investigations

Excavation of Trench MWV-T7 was completed as a part of the fault investigations in Midway Valley.

Regulatory InteractionsIssue Resolution

The Yucca Mountain Site Characterization Project Office (YMPO) staff will attend the Issues Resolution Steering Group meeting in Albuquerque, New Mexico, on November 17, 1992. Agenda items for discussion include: the status of high priority issues, including Erosion and Calcite Silica; potential new issues for consideration; and the scope and purpose of topical reports.

Site Characterization Progress Report (PR)

PR 6 is still in the Secretary of Energy's office for approval. The estimated distribution date for PR 6 is now December 18, 1992. A preliminary draft of PR 7 has been prepared and will be distributed for review on November 13, 1992. Comments will be due to YMPO by December 7, 1992.

Advisory Committee on Nuclear Waste (ACNW) Interactions

Preparation of presentations for the ACNW Working Group meeting on climate change, which is scheduled for November 18, 1992, in Bethesda, Maryland, has been completed. The presentations include information on the U.S. Department of Energy's (DOE) proposed methodology for predicting climate change for the next 10,000 years.

ESF Task Force Activities

The following milestones represent the near-term plan for ESF activities:

Release Tunnel Boring Machine (TBM)	
Request for Proposal	December 1, 1992
Receive TBM Vendor Proposals	January 1993
Award TBM Contract	TBD
Receive Energy System Acquisition Advisory Board (ESAAB) Approval to Start Work	November 25, 1992
Start ESF Site Preparation	November 30, 1992
Start Excavating TBM Launch Chamber	April 2, 1993

Site Characterization Plan (SCP) Study Plan (SP) Status

Three SPs were approved by YMPO this week: SP 8.3.1.5.2.1, Revision 2, "Characterization of the Quaternary Regional Hydrology;" SP 8.3.1.5.2.2, "Characterization of Future Regional Hydrology Due to Climate Changes;" and SP 8.3.1.9.2.1, "Natural Resource Assessment of Yucca Mountain, Nye County, Nevada." Starting with this week's report, information will be provided on the status of SP revisions that are critical to the initiation of ESF construction.

STUDY PLAN BREAKDOWN

In Screening Review	0
In YMPO and DOE/Headquarters (HQ) Review	6
Awaiting Comment Resolution	11
Awaiting Author Revision	4
In YMPO/HQ Verification Audit	4
Preparing to Submit or Awaiting YMPO Approval	4
Awaiting Submission to the U.S. Nuclear Regulatory Commission (NRC)	3
NRC Phase 1 Review	15
NRC Acceptance	28
Total	75

SCP/SP Status:

Total SPs Assigned to Cover 106 Studies	103
SPs Not Yet Submitted for Review	35
SPs Submitted for Initial Review	68
Revised SPs Submitted for Review	5
Revised ESF SPs Submitted for Review	2
Total SPs Submitted for Review	75

State of Nevada Comments Status:

Received Comments from the State of Nevada	10
Responses Transmitted to the State of Nevada	10

NRC Comments Status:	18
Received Comments from NRC	18
Responses Transmitted from OGD to DOE/HQ	11

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Critical ESF SP Status:

SP 8.3.1.4.2.2, "Characterization of Structural Features Within the Site Area," will be submitted to YMPO by November 16, 1992.

SP 8.3.1.2.2.4, "Characterization of the Yucca Mountain Unsaturated Zone Percolation ESF Study," will be submitted to YMPO by December 1, 1992.

B. Project Planning and Control

No significant items to report.

C. Quality Assurance (QA) Implementation**Determination of Importance and Grading Enhancement****Quality (Q) List and Q-List Procedure Development**

The Assessment Team (AT) continues to work with SNL to resolve the comments the AT provided on the Items Important to Waste Isolation report.

The Items Important to Safety report is expected to be received from SNL for the AT meeting on November 12, 1992.

Implementation

A revised AT Controlled List, which lists the basis information for the two Raytheon Services Nevada (RSN) classified reports is currently in QA Procedure 6.2 review. Review of additional documents for potential placement on the AT Controlled List continues.

D. Public Outreach and Institutional Activities

The YMP sponsored a Boy Scouts Atomic Energy Merit Badge Workshop at the Las Vegas Yucca Mountain Information Office on November 7, 1992. Twenty-one scouts and five leaders attended the seven-hour hands-on workshop, where they learned about: atoms, fission and fusion, radiation, and nuclear power from James Blink, Lawrence Livermore National Laboratory (LLNL); nuclear reactors and the fuel cycle from a slide presentation provided by Todd Kaish, Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O); and measurement of radiation, time, space, and shielding from Kevin Shenk, Technical and Management Support Services (T&MSS).

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Approximately 200 teachers attended the Nevada Science Teachers Conference at Cheyenne High School in Las Vegas, Nevada, November 6-7, 1992. The YMP "New Work" tabletop exhibit was displayed at the conference along with the new YMP folders and fact sheets. John Hartley and Effie Harle, both from T&MSS, conducted a "Geology is Fun" workshop to inform the teachers about a day in the life of a miner. Michael Pitterle, T&MSS, gave an educational presentation on geology to approximately 150 people at the conference.

A tour to Yucca Mountain was conducted on November 7, 1992, for several Nevada senators and their guests. Carl Gertz, Project Manager, gave a pretour briefing to the group of approximately 12 people, and A. C. Robison, YMPO, was an escort. Tours were also conducted on November 9, 1992, for Tony Batt of the Donrey Media Group (Washington correspondent for the Las Vegas Review-Journal), and on November 13, 1992, for two guests from the Power Reactor and Nuclear Fuel Development Corporation. Carl Gertz gave a pretour briefing to Tony Batt.

The YMP Public Update Meetings were held on November 9, 1992, in Amargosa Valley; on November 10, 1992, in Las Vegas; and on November 12, 1992, in Reno, Nevada. The YMP exhibits were set up and staffed for these events.

On November 10, 1992, Dorothy Tepper, USGS, gave an educational presentation to approximately 100 students of the Department of Geological Sciences at Cornell University in Ithaca, New York; James Blink gave an educational presentation on radiation to three fifth grade classes at the Robert Taylor Elementary School in Henderson, Nevada.

On November 12, 1992, Linda Linden, T&MSS, gave an educational presentation on geology to four sixth grade classes at the Kermit R. Booker Sixth Grade Center in Las Vegas. Approximately 120 students attended the presentation. Also, John Hartley provided an educational presentation on geology to three first grade classes at the Harvey Dondero Elementary School in Las Vegas. Approximately 90 students attended his presentation.

On November 13, 1992, in Las Vegas, Tom Pysto, T&MSS, gave an educational presentation on Environmental Studies at Yucca Mountain to approximately 70 students at the Burkholder Junior High School; and Richard Arnold, a consultant, gave an educational presentation on Native American Indians to approximately 90 kindergarten and prekindergarten students at the Madison Sixth Grade Center. Richard Arnold also provided an educational presentation to the Girl Scouts of America in Las Vegas on November 14, 1992.

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Institutional and External Affairs (IEA) and CRWMS M&O staff assisted in planning for the DOE Contractors' Briefing on November 13, 1992, in Reno, Nevada. Max Powell, YMPO, and A. C. Robison attended the briefing. The CRWMS M&O staff also met with State Superintendent of Instruction, Eugene Paslov, to discuss the math and science education reforms conference; and with Judy Schumacher, RSN, to plan involvement in the Business Roundtable statewide education initiatives.

The CRWMS M&O staff submitted a draft of the YMPO University Relations Plan to DOE.

II. ANALYSIS & VERIFICATION DIVISION

The staff participated in the Geochemistry Integration Team teleconference on November 10, 1992.

The staff conducted a review of the Waste Package Implementation Plan, Revision 0, dated October 1992 (YMP/92-11). Comments were submitted on November 13, 1992.

III. GENERAL INFORMATION ITEMS

LLNL

A draft plan for a laboratory 3- x 3- x 3-meter heated block experiment was informally submitted to YMPO. The Fran Ridge test pits were identified as a potential source of 1-M3 blocks to be used to conduct the experiment.

Los Alamos

Trench LW-1 at Cind-R-lite volcanic center (formerly called Lathrop Wells volcanic center) was deepened to allow for paleomagnetic sampling for cosmogenic helium age determinations.

The Environmental Safety and Health questionnaire and self assessment were provided to YMPO for RW/YMP work at Los Alamos.

REECO

Analysis began of job specific safety training requirements for work activities proposed for JP 92-20, ESF North Portal Pad and Facilities. The preparation of a requisition technical package for the planned aggregate processing facility subcontract Request for Proposal was initiated.

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SNL

Additional analyses for waste isolation impacts associated with ESF Design Package 1A have been completed. A proposed plan for testing activities in the starter tunnel for the ESF was submitted to Los Alamos.

T&MSS

The IEA staff organized the first Teacher Educational Steering Committee meeting, which will be held on November 18, 1992. Their first meeting will be a brainstorming, organizational meeting to establish goals and objectives. The purpose of the steering committee is to evaluate existing YMP educational programs and develop applicable new programs for kindergarten through twelfth grades.

USGS

The staff continued lithologic logging of recently-drilled and currently-active core holes. A preliminary log of UZ-16 to a depth of 810 feet has been completed, and detailed logging continued as core was acquired. Detailed field work began in upper Paintbrush Canyon on the stratigraphic relationships in the rhyolitic rocks of Calico Hills. This study works within the stratigraphic and structural framework for the area and focuses on facies analysis of the sedimentary units. Initial efforts have begun to interpret the lowest and thickest of four redeposited tuffaceous units that are interstratified with five lava flows and pumiceous breccias. Compilation of outcrop and structural section data for the Topopah Springs units continue.

IV. UPCOMING EVENTS CALENDAR

Please note that the usage of "(P)" in the calendar indicates that the event is open to the public. Educational presentations and State and Public Interactions are coordinated by the Speakers Bureau; contact Linda Artis at (702) 794-7896 or Theresa Hirsch at (702) 794-7759 for additional information. Exhibits are coordinated by Kevin Rohrer at (702) 794-7769. Public Update Meetings are coordinated by Joanna Magruder at (702) 794-7056, and tours are coordinated by Carleen Hill at (702) 794-7375.

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
A. <u>DOE/HQ Meetings</u>			
Monday, November 16	ESAAB Presentation	Washington, DC	C. Gertz

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
B. <u>CRWS M&O/DOE Meetings</u>			
Thursday, December 3	CRWS M&O Program Management Review	Vienna, VA	C. Gertz
C. <u>Internal and DOE/NV Meetings</u>			
Wednesday, November 18	NV Manager's Monthly Program Review	Las Vegas, NV	C. Gertz
Friday, November 20	State of the Project	Las Vegas, NV	C. Gertz
Monday, December 7	State of the Project	Denver, CO	C. Gertz
D. <u>NRC Interactions</u>			
Tuesday, November 24	Interaction Planning Meeting (P)	Video Conference	T. Bjerstedt
Monday- Tuesday, December 14-15	Technical Exchange - Total System Performance Assessment (P)	Rockville, MD	T. Bjerstedt
TBD 1993	Technical Exchange - Volcanism (P)	Albuquerque, NM	T. Bjerstedt
E. <u>Nuclear Waste Technical Review Board (NWTRE) Interactions</u>			
Wednesday- Friday, November 18-20	Workshop on Expert Judgment (P)	Albuquerque, NM	A. Simmons
Tuesday- Wednesday, January 5-6, 1993	NWTRE Full Board Meeting (P)	Arlington, VA	J. Cooper
February or March 1993 TBD	NWTRE HG&G Panel Meeting (P)	TBD	J. Cooper

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
E. <u>NWTRB Interactions (Continued)</u>			
Tuesday-Friday, April 20-23, 1993	NWTRB Full Board Meeting (P)	Reno, NV	J. Cooper
Tuesday, June 1, 1993	NWTRB International Trip	TBD	J. Cooper
Monday-Thursday, July 12-15, 1993	NWTRB Full Board Meeting (P)	Denver, CO	J. Cooper
Tuesday-Friday, October 19-22, 1993	NWTRB Full Board Meeting (P)	Las Vegas, NV	J. Cooper
F. <u>ACNW Interactions</u>			
Wednesday, November 18	ACNW WG Climate (P)	Bethesda, MD	A. Gil
Thursday-Friday, November 19-20	ACNW 48th Meeting (P)	Bethesda, MD	A. Gil
Wednesday, December 16	ACNW WG on PA - Phase 2 HLW Interactive PA by NRC (P)	Bethesda, MD	A. Gil
Thursday-Friday, December 17-18	ACNW 49th Meeting (P)	Bethesda, MD	A. Gil
Wednesday-Thursday, January 27-28, 1993	ACNW 50th Meeting (P)	Bethesda, MD	A. Gil
Wednesday-Thursday, February 24-25, 1993	ACNW 51st Meeting (P)	Bethesda, MD	A. Gil

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
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G. State and Public Interactions

Monday, November 16	Kenny Guinn Junior High School	Las Vegas, NV	J. Blink
Monday, November 16	Beatty Elementary School	Beatty, NV	D. Merritt
Monday, November 16	Yerington High School	Yerington, NV	E. Lundgaard
Monday, November 16	American Nuclear Society (ANS)	Chicago, IL	A. Robison
Tuesday, November 17	Yucca Mountain Lecture Series (P)	Beatty, NV	R. Saunders
Tuesday, November 17	Lake Mead National Park Service	Henderson, NV	R. Arnold
Wednesday, November 18	American Association of University Women	Las Vegas, NV	J. Cooper
Wednesday, November 18	ANS	Chicago, IL	C. Gertz
Thursday, November 19	Yucca Mountain Lecture Series (P)	Las Vegas, NV	R. Saunders
Thursday, November 19	Archael Nevada	Las Vegas, NV	R. Arnold
Thursday, November 19	Clark County Bar Association	Las Vegas, NV	C. Gertz
Thursday, November 19	C. P. Squires Elementary School	Las Vegas, NV	R. Arnold
Friday, November 20	State of the Project	Las Vegas, NV	C. Gertz
Friday, November 20	Madison 6th Grade Center	Las Vegas, NV	R. Arnold
Friday, November 20	National Association of Regulatory Utility Commissioners (NARUC)	Las Vegas, NV	TED

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
G. <u>State and Public Interactions</u> (Continued)			
Monday, November 23	Palo Verde Nuclear Power Station	Las Vegas, NV	TBD
Tuesday, November 24	Helen Herr Elementary School	Las Vegas, NV	R. Arnold
Wednesday, November 25	Japan Atomic Industrial Forum	Las Vegas, NV	M. Wadkins M. d'Ouille
Tuesday, December 1	YMP Business Opportunity Briefing	Las Vegas, NV	C. Gertz
Tuesday- Wednesday, December 1-2	Henderson Community College	Henderson, NV	M. Powell
Wednesday, December 3	Court Continuation School	Las Vegas, NV	R. Arnold
Monday, December 7	State of the Project, USGS	Denver, CO	C. Gertz
Thursday, December 10	Savannah Chapter of ANS	Aiken, SC	TBD
Monday, December 14	NRC Commissioner Curtis Pretour Briefing	Las Vegas, NV	C. Gertz
Wednesday, January 13, 1993	ANS	Schenectady, NY	C. Gertz
Thursday, January 14, 1993	ANS	Parsippany, NJ	C. Gertz
Tuesday, February 23, 1993	University of Iowa	Ames, IA	C. Gertz
Tuesday, May 4, 1993	Underground Structures Colorado School of Mines	Golden, CO	C. Gertz

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<u>Date</u>	<u>Event</u>	<u>Location</u>
H. Exhibits Scheduled		
Tuesday- Thursday, November 17-19	ANS Winter Meeting	Chicago, IL
Wednesday, November 18	Public Open House (P)	Las Vegas, NV
Thursday- Saturday, November 19-21	Nevada Association of Counties	Fallon, NV
Friday, November 20	State of the Project Meeting	Las Vegas, NV
Monday- Friday, December 7-11	American Geophysical Union	San Francisco, CA
Saturday, December 12	Public Open House (P)	Las Vegas, NV
<u>Date</u>	<u>Event</u>	<u>Escorts</u>
I. Tours Scheduled		
Wednesday, November 18	Public Open House (P)	Various Escorts
Thursday, November 19	Pahrump Middle School	TBD
Friday, November 20	NARUC	A. Robison
Monday, November 23	Palo Verde Nuclear Power Station	TBD
Monday, November 30	ESF Groundbreaking	TBD
Tuesday, December 1	Paradise Christian Academy	TBD
Wednesday, December 2	YMP Business Opportunity	TBD

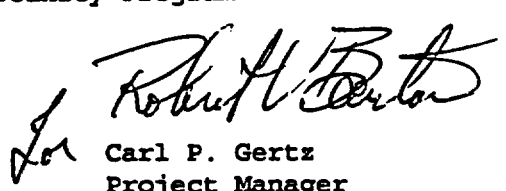
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<u>Date</u>	<u>Event</u>	<u>Escorts</u>
I. <u>Tours Scheduled (Continued)</u>		
Thursday, December 3	Pahrump Middle School	TBD
Thursday, December 3	TRB/State of Nevada Environmental	W. Dixon
Monday, December 7	UNLV Cooperative Agreement Group	M. Powell
Tuesday, December 8	Bonanza/Cheyenne Las Vegas Rotary Club	TBD
Saturday, December 12	Public Open House (P)	Various Escorts
Monday, December 14	NRC Commissioner Curtis	TBD
Saturday, January 16, 1993	Public Open House (P)	Various Escorts
Wednesday, January 20, 1993	Tonopah Middle School	TBD
Saturday, February 20, 1993	Public Open House (P)	Various Escorts
Wednesday, February 24, 1993	Tonopah Middle School	TBD
Thursday, March 11, 1993	Meadows School	TBD
Thursday, March 18, 1993	Gabs School	TBD
Wednesday, March 24, 1993	Thurman White Middle School	TBD
Monday, April 19, 1993	Hydrology Field Trip	A. Flint
Tuesday, April 20, 1993	Round Mountain High School	TBD

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<u>Date</u>	<u>Event</u>	<u>Escorts</u>
I. <u>Tours Scheduled</u> (Continued)		
Monday, April 26, 1993	High-Level Waste Conference	TBD
Monday, June 21, 1993	Girl Scouts Wider Opportunity Program	TBD

YMP:VFI-1008


Carl P. Gertz
Project Manager



Department of Energy
Yucca Mountain Site Characterization
Project Office
P. O. Box 98608
Las Vegas, NV 89193-8608

WBS 1.2.9.2
QA: N/A

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John W. Bartlett, Director, Civilian Radioactive Waste Management,
HQ (RW-1) FORS

OFFICE OF GEOLOGIC DISPOSAL (OGD) WEEKLY HIGHLIGHTS FOR THE WEEK ENDING
NOVEMBER 20, 1992

I. CRITICAL ITEM STATUS - YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT (YMP)

A. Site Characterization Planning

Field Operations

The Site Manager and Field Operations Center (FOC) staff participated in and provided logistical support for two major tours this reporting period.

On Job Package (JP) 92-3, drilling activities continue with the LM-300 drill rig on Borehole UZ-16. As of November 17, 1992, Reynolds Electrical & Engineering Co., Inc. (REECo,) had cored to a depth of 1039.33 feet and reamed to 1019.06 feet.

On JP 91-9, Neutron Access Boreholes, Phase II, drilling activities continue with the CME-850 drill rig on USW UZN-58. REECo has cored and reamed to a depth of 100.08 feet. Drilling was suspended for one day while the crew mobilized for drilling at NRG-1 (JP 92-2), a borehole ramp located by Exile Hill. REECo cleaned out the fill on the borehole from 86 feet to 150 feet.

Regarding construction activities at NRG-6, Drill Pad and Access Road, the Site Manager and Field Testing Coordinator (FTC) met at the site with representatives from Raytheon Services Nevada (RSN) Quality Control and REECo construction on November 18, 1992. The pad and road were approved and accepted by the FTC and Site Manager. As a result, the Site Manager notified REECo to begin mobilizing the Joy drill rig for drilling activities at this site.

On JP 92-5, Soil Test Pits and Trenches, REECo provided support to the Principal Investigator, cleaning walls and the bottom of Trench MWV-T7.

On JP 92-7, Fran Ridge Test Pit Mapping, REECo provided support for pit wall photography.

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Sample Management Facility

Processing of core and recovery of core and cuttings from UE25 UZ-16 continued. The use of a drill hole sampling plan spread sheet at UE25 UZ-16 was initiated. The staff visited a potential quarry site at Busted Butte with representatives of Lawrence Livermore National Laboratory (LLNL). Processing of specimens from V-1 and V-2 was completed. The prognosis on UE25 NRG-6 was completed.

Site Investigations

Borehole NRG-1 was cleaned out in preparation for geophysical logging. A demonstration test of a new, state-of-the-art, computerized video logging device was completed in the hole; this device can produce a graphic display of the borehole that simulates core.

A Yucca Mountain Site Characterization Project Office (YMPO) Technical Review Committee was established to review the revised Exploratory Studies Facility (ESF) Study Plans (SP).

Regulatory InteractionsIssue Resolution

The Steering Group met on November 17, 1992, in Albuquerque, New Mexico. High priority issues and budget information were discussed at the meeting. The U.S. Nuclear Regulatory Commission's (NRC) site characterization analysis open items and their relationship to current issues were also discussed.

The Erosion Topical Report will be submitted to the U.S. Department of Energy (DOE) for formal review by December 1, 1992. It is expected that the Calcite-Silica Technical Report will be completed by the end of the year.

Site Characterization Progress Report (PR)

PR 6 is still in the Secretary of Energy's office for approval. The review draft of PR 7 was distributed on November 16, 1992, and comments are due to YMPO on December 7, 1992.

Advisory Committee on Nuclear Waste (ACNW) Interactions

The Working Group meeting on climate change was held in Bethesda, Maryland, on November 18, 1992. DOE's methodology for determining the effects of long-range climate change on a proposed repository at Yucca Mountain, Nevada, were presented to the ACNW.

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ESF Task Force Activities

The following milestones represent the near-term plan for ESF activities:

Release Tunnel Boring Machine (TBM)	
Request for Proposal	December 1, 1992
Receive TBM Vendor Proposals	January 1993
Award TBM Contract	TBD
Receive Energy System Acquisition Advisory	
Board Approval to Start Work	November 25, 1992
Start ESF Site Preparation	November 30, 1992
Start Excavating TBM Launch Chamber	April 2, 1993

Site Characterization Plan (SCP) SP Status

One SP was submitted to YMPO this week: SP 8.3.1.4.2.2, Revision 2, "Characterization of Structural Features Within the Site Area." This was an ESF revision.

STUDY PLAN BREAKDOWN

In Screening Review	1
In YMPO and DOE/Headquarters (HQ) Review	6
Awaiting Comment Resolution	10
Awaiting Author Revision	4
In YMPO/HQ Verification Audit	4
Preparing to Submit or Awaiting YMPO Approval	5
Awaiting Submission to NRC	3
NRC Phase 1 Review	15
NRC Acceptance	28
Total	76

SCP/SP Status:

Total SPs Assigned to Cover 106 Studies	103
SPs Not Yet Submitted for Review	35
SPs Submitted for Initial Review	68
Revised SPs Submitted for Review	5
Revised ESF SPs Submitted for Review	3
Total SPs Submitted for Review	76

State of Nevada Comments Status:

Received Comments from the State of Nevada	10
Responses Transmitted to the State of Nevada	10

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NRC Comments Status:

Received Comments from NRC	17
Responses Transmitted from OGD to DOE/HQ	16

Critical ESF SP Status:

SP 8.3.1.2.2.4, "Characterization of the Yucca Mountain Unsaturated Zone Percolation ESF Study," will be submitted to YMPO by December 1, 1992.

As indicated above, SP 8.3.1.4.2.2, Revision 2, was submitted to YMPO. It is currently undergoing the YMPO screening review.

B. Project Planning and Control

No significant items to report.

C. Quality Assurance (QA) Implementation**Determination of Importance and Grading Enhancement****Quality (Q) List and Q-List Procedure Development**

The Assessment Team (AT) continues to work with Sandia National Laboratories (SNL) to resolve the comments the AT provided on the Items Important to Waste Isolation report.

The SNL Items Important to Safety report was received on November 12, 1992, and is currently in AT review.

Implementation

The AT is working with SNL to resolve concerns with two SAND reports referenced as basis information in the RSN classification reports. Final comments on the two RSN classification reports were provided on November 18, 1992.

The AT is reviewing the draft RSN classification report on the TBM and comments are being consolidated.

D. Public Outreach and Institutional Activities

The Yucca Mountain Lecture Series, "The Ins and Outs of Underground Tunneling and Mining: Boring Makes the Difference," was presented by Robert Saunders, Civilian Radioactive Waste Management System

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Management and Operating Contractor (CRWMS M&O), on November 17, 1992, in Beatty, Nevada, and on November 19, 1992, at the Las Vegas Yucca Mountain Information Office (YMIO). Approximately 60 people attended the two lectures.

On November 16, 1992, James Blink, LLNL, gave an educational presentation on nuclear energy to five ninth grade biology classes at the Kenny Guinn Junior High School in Las Vegas, Nevada, with approximately 150 students in attendance; David Merritt, Technical and Management Support Services (T&MSS), gave an educational presentation on geology to approximately 24 students in the fifth grade class at the Beatty Elementary School; and Thomas Bjerstedt, YMPO, and Steve Frishman, from the State of Nevada, provided an educational presentation for ninth through twelfth grades of the Environmental Education Club at Yerington High School in Yerington, Nevada.

April Gil, YMPO, and Effie Harle, T&MSS, presented a workshop at the Nevada Math and Science Conference on November 14, 1992. The conference was held at the Reno Billingshurst Middle School in Reno, Nevada, and was attended by teachers from the area. April Gil gave an overview of the project, and Effie Harle presented various hands-on student activities and discussed YMP's educational programs.

A. C. Robison, YMPO, and Beatrice Reilly, T&MSS, presented papers at the American Nuclear Society (ANS) Winter Meeting on November 16, 1992, in Chicago, Illinois. Carl Gertz, Project Manager, gave a presentation at the ANS meeting on November 18, 1992.

The Institutional and External Affairs (IEA) staff attended the U.S. Council on Energy Awareness meeting in Chicago, November 16-18, 1992,

Terry Tait, T&MSS, gave a general overview presentation to approximately 30 members of the American Business Women's Association on November 16, 1992, in Las Vegas. Jeanne Cooper, YMPO, gave a general overview presentation to the American Association of University Women on November 18, 1992, in Las Vegas. Approximately 55 women attended the presentation.

Richard Arnold, a consultant, provided an educational presentation on Native Americans to the Lake Mead National Park Service on November 17, 1992, in Henderson, Nevada. Approximately 40 people attended. Approximately 50 people attended Richard Arnold's general presentation to the Archaeo Nevada group on November 19, 1992, in Las Vegas.

The Twenty-first Public Open House tour of Yucca Mountain was conducted on November 18, 1992, for approximately 280 people. Tour participants visited the Las Vegas YMIO, the FOC, two laboratories, the LM-300 drill rig, and Yucca Mountain.

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YMP representatives staffed an exhibit at the Nevada Association of Counties Conference in Minden, Nevada, November 18-20, 1992. This exhibit was set up in association with rural Nevada outreach programs. Over 65 people stopped by the booth to receive literature and visit with YMP representatives. Many county officials from the affected counties in Nevada were present at the conference.

Carl Gertz gave a general overview and participated in a mini-debate for the Clark County Bar Association on November 19, 1992, in Las Vegas. Approximately 150 people attended.

William Andrews, a consultant, gave an educational presentation to three sixth grade science classes at the Garrett Middle School on November 19, 1992, in Boulder City, Nevada.

Richard Arnold gave an educational presentation on Native American Indian culture to four third grade classes at the C. P. Squires Elementary School in Las Vegas on November 19, 1992. Approximately 110 students attended the presentation. Richard Arnold also gave an educational presentation on November 20, 1992, to 90 kindergarten children at the Madison Sixth Grade Center in Las Vegas.

A tour to Yucca Mountain was conducted on November 19, 1992, for 90 guests from Pahrump Middle School. Another tour was conducted on November 20, 1992, for 10 guests from the National Association of Regulatory Utility Commissioners (NARUC). A. C. Robison provided a pretour briefing to the NARUC commissioner and conducted the tour with Bruce Crowe, Los Alamos National Laboratory (Los Alamos), and Wendy Dixon, YMPO.

Carl Gertz gave a State of the Project presentation, including fiscal year (FY) 1992 past accomplishments and FY 1993 goals, to the Las Vegas participants on November 20, 1992, in Las Vegas. Approximately 600 people were in attendance. YMP exhibit displays on new work, volcanism, earthquakes, ESF, Carbon-14, and the panels depicting general information about site characterization were set up and staffed at the meeting. Approximately 260 members of the public were able to participate in the public forum and have individual discussions with scientists.

II. ANALYSIS & VERIFICATION DIVISION

The staff attended the American Society for Testing and Materials International Symposium on Microbiologically Influenced Corrosion Testing November 16-17, 1992, in Miami, Florida.

The staff participated in the Technical Review Group meeting November 18-20, 1992, in Orlando, Florida. The focus of the meeting was the Defense Waste Processing Facility Waste Qualification Report (Volumes 5, 2, and 9) and West Valley Waste Compliance Plan. They also

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participated in the DOE Workshop on Expert Judgment, November 18-20, 1992, in Albuquerque. The management perspective on use of expert judgment in the Office of Civilian Radioactive Waste Management (OCRWM) program was presented at the workshop.

The staff attended the ACNW Working Group meeting on climate change on November 18, 1992, in Bethesda. The staff attended the ACNW 48th Meeting November 19-20, 1992, in Bethesda. Topics of interest to OCRWM included: ACNW's response to Chairman Selin's request on a system analysis approach for reviewing the high-level waste (HLW) program, consideration of potential impacts of different waste forms on repository performance, and use of the collective dose concept in HLW repository licensing.

Comments on the draft revision to the DOE/NRC Procedural Agreements for a Geologic Repository were provided to RW-30 on November 20, 1992.

III. GENERAL INFORMATION ITEMS

LLNL

The preliminary results of initial EQ3/6 runs to consider precipitation and dissolution effects on pore and fracture properties are being used to evaluate the effects of mineral recrystallization on pore properties in regions dominated by slow fluid movement.

Hydrothermal calculations have been extended to include heat and fluid flow in the saturated zone (SZ) rather than treating the water table as an isothermal boundary. For a wide range of areal power densities, SZ conduction dominates convection, causing heating and fluid flow (convection cells) in the SZ. The convection cells are large and extend radially more than 10 kilometers from the repository. They form in approximately 1000 years, last for many tens of thousands of years, and have flow rates that are much larger than the ambient flow of the SZ.

Los Alamos

Chlorine-36 results were received for 15 samples including ream-bit cuttings from USW UZN-37, soils from five Midway Valley trenches, and ground water from USW-H1. All results were at or slightly below meteoric background values, as expected.

The Los Alamos staff provided program orientation and QA training to contractor staff at Lawrence Berkeley Laboratory and Stanford University. The management staff presented an overview of Los Alamos/YMP work to Los Alamos' Earth and Environmental Science Division's External Advisory Committee.

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CRWMS M&O

The staff coordinated and participated in the DOE Workshop on Expert Judgment.

RSN

The final approved partial ESF Package 1A was delivered to the Change Control Board.

T&MSS

The IEA staff supervised the creation and distribution of a newspaper advertisement publicizing this week's mining and tunnel boring speaker series. They also supervised production of a five-minute videotape summary of recent site characterization activities.

The IEA staff responded to a DOE/OCRWM request for detailed information about IEA's recycled paper program, including how to calculate the environmental impact minimized by such usage and arrangements with vendors for storing paper.

U.S. Geological Survey (USGS)

New data-logger programs are being tested at selected wells where earthquake-induced water-level fluctuations are being monitored. The programs look for earthquake effects every five seconds and, if any are found, digitally record water levels at one-half second intervals. This digital data supplements the continuous analog data already being collected.

The staff attended a demonstration by RAAX, a Japanese corporation, of their video-based Borehole Imaging Processing System to a depth of about 190 feet in the UZ-16 borehole. The enhanced computer processing allows for determination of dip angle and aperture width of fractures and bedding features in dry or fluid-filled holes. The software provides an oriented 360 degree projected color image of a borehole.

UPCOMING EVENTS CALENDAR

Please note that the usage of "(P)" in the calendar indicates that the event is open to the public. Educational presentations and State and Public Interactions are coordinated by the Speakers Bureau; contact Linda Artis at (702) 794-7896 or Theresa Hirsch at (702) 794-7759 for additional information. Exhibits are coordinated by Kevin Rohrer at (702) 794-7769, Public Update Meetings are coordinated by Joanna Magruder at (702) 794-7056, and tours are coordinated by Carleen Hill at (702) 794-7375.

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
A. <u>DOE/HQ Meetings</u>			
No significant meetings this week.			
B. <u>CRWMS M&O/DOE Meetings</u>			
Thursday, December 3	CRWMS M&O Program Management Review	Vienna, VA	C. Gertz
C. <u>Internal and DOE/NV Meetings</u>			
Monday, December 7	State of the Project	Denver, CO	C. Gertz
Friday, December 11	Technical Project Officers Meeting	Las Vegas, NV	C. Gertz
Friday, December 11	Planning and Budget Meeting	Las Vegas, NV	C. Gertz
D. <u>NRC Interactions</u>			
Tuesday, November 24	Interaction Planning Meeting (P)	Video Conference	T. Bjerstedt
Monday- Tuesday, December 14-15	Technical Exchange - Total System Performance Assessment (P)	Rockville, MD	T. Bjerstedt
TBD 1993	Technical Exchange - Volcanism (P)	Albuquerque, NM	T. Bjerstedt
E. <u>Nuclear Waste Technical Review Board (NWTRB) Interactions</u>			
Tuesday- Wednesday, January 5-6, 1993	NWTRB Full Board Meeting (P)	Arlington, VA	J. Cooper
February or March 1993 TBD	NWTRB HG&G Panel Meeting (P)	TBD	J. Cooper
Tuesday- Friday, April 20-23, 1993	NWTRB Full Board Meeting (P)	Reno, NV	J. Cooper
Tuesday, June 1, 1993	NWTRB International Trip	TBD	J. Cooper

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
E. <u>NWTRB Interactions</u> (Continued)			
Monday- Thursday, July 12-15, 1993	NWTRB Full Board Meeting (P)	Denver, CO	J. Cooper
Tuesday- Friday, October 19-22, 1993	NWTRB Full Board Meeting (P)	Las Vegas, NV	J. Cooper
F. <u>ACNW Interactions</u>			
Wednesday, December 16	ACNW WG on PA - Phase 2 HLW Interactive PA by NRC (P)	Bethesda, MD	A. Gil
Thursday- Friday, December 17-18	ACNW 49th Meeting (P)	Bethesda, MD	A. Gil
Wednesday- Thursday, January 27-28, 1993	ACNW 50th Meeting (P)	Bethesda, MD	A. Gil
Wednesday- Thursday, February 24-25, 1993	ACNW 51st Meeting (P)	Bethesda, MD	A. Gil
G. <u>State and Public Interactions</u>			
Monday, November 23	Palo Verde Nuclear Power Station	Las Vegas, NV	M. Voegele
Tuesday, November 24	Helen Herr Elementary School	Las Vegas, NV	R. Arnold
Tuesday, November 24	Robert E. Lake Elementary School	Las Vegas, NV	M. Pitterle
Wednesday, November 25	Japan Atomic Industrial Forum	Las Vegas, NV	M. Wadkins M. d'Ouville

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<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>YMPO Contact</u>
G. <u>State and Public Interactions</u> (Continued)			
Tuesday, December 1	YMP Business Opportunity Briefing	Las Vegas, NV	C. Gertz
Tuesday- Wednesday, December 1-2	Henderson Community College	Henderson, NV	M. Powell
Wednesday, December 3	Court Continuation School	Las Vegas, NV	R. Arnold
Monday, December 7	State of the Project, USGS	Denver, CO	C. Gertz
Thursday, December 10	Savannah Chapter of ANS	Aiken, SC	M. Blanchard
Monday, December 14	NRC Commissioner Curtis Pretour Briefing	Las Vegas, NV	C. Gertz
Tuesday, January 12 1993	Marion Earl Elementary School	Las Vegas, NV	A. Gil
Wednesday, January 13, 1993	ANS	Schenectady, NY	C. Gertz
Thursday, January 14, 1993	ANS	Parsippany, NJ	C. Gertz
Tuesday, February 23, 1993	University of Iowa	Ames, IA	C. Gertz
Tuesday, May 4, 1993	Underground Structures Colorado School of Mines	Golden, CO	C. Gertz

<u>Date</u>	<u>Event</u>	<u>Location</u>
H. <u>Exhibits Scheduled</u>		
Monday- Friday, December 7-11	American Geophysical Union	San Francisco, CA
Saturday, December 12	Public Open House (P)	Las Vegas, NV

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<u>Date</u>	<u>Event</u>	<u>Escorts</u>
I. <u>Tours Scheduled</u>		
Monday, November 23	Palo Verde Nuclear Power Station	TBD
Tuesday, November 24	LLNL	TBD
Monday, November 30	ESF Groundbreaking	TBD
Monday, November 30	Fluor Daniel	H. Dokuzoguz
Tuesday, December 1	Paradise Christian Academy	TBD
Wednesday, December 2	YMP Business Opportunity	TBD
Thursday, December 3	Pahrump Middle School	TBD
Thursday, December 3	TRB/State of Nevada Environmental	W. Dixon
Monday, December 7	UNLV Cooperative Agreement Group	M. Powell
Tuesday, December 8	Bonanza/Cheyenne Las Vegas Rotary Club	TBD
Saturday, December 12	Public Open House (P)	Various Escorts
Monday, December 14	NRC Commissioner Curtis	TBD
Saturday, January 16, 1993	Public Open House (P)	Various Escorts
Wednesday, January 20, 1993	Tonopah Middle School	TBD
Wednesday, February 3, 1993	Green Valley High School	TBD
Saturday, February 20, 1993	Public Open House (P)	Various Escorts

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<u>Date</u>	<u>Event</u>	<u>Escorts</u>
I. <u>Tours Scheduled</u> (Continued)		
Wednesday, February 24, 1993	Tonopah Middle School	TBD
Thursday, March 11, 1993	Meadows School	TBD
Thursday, March 18, 1993	Gabs School	TBD
Wednesday, March 24, 1993	Thurman White Middle School	TBD
Thursday, April 1, 1993	Orr Junior High School	TBD
Monday, April 19, 1993	Hydrology Field Trip	A. Flint
Tuesday, April 20, 1993	Round Mountain High School	TBD
Monday, April 26, 1993	HLW Conference	TBD
Monday, June 21, 1993	Girl Scouts Wider Opportunity Program	TBD

YMP:VFI-1132


Carl P. Gertz
Project Manager



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WBS 1.2.7.3
QA: N/A

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Carl P. Gertz, Project Manager, YMP, NV

YUCCA MOUNTAIN SITE OFFICE (YMSO) FIELD ACTIVITY REPORT

The following are the significant field activities for the weeks ending November 13, 1992, and November 20, 1992:

1. Field Operations Center, (YMSO)

A. Management and Administration

- a. The Site Manager and FOC staff participated in and provided operational and logistical support to several tours conducted during this period. These were: Tony Batt; Power Reactor and Nuclear Fuel Development Corps; Public Open House; Pahrump Middle School and NARUC.
- b. Provided operations support for field site characterization activities.
- c. Supported 5 tours of YMP facilities by providing drivers and other staff, field radios, vehicles and administrative and logistical support.
- d. Issued vehicles, first aid kits, fire extinguishers, and other necessary equipment to personnel performing field duty.
- e. Continued providing operations and administrative support to the Yucca Mountain Site Manager and his DOE staff.
- f. Created and distributed "GIS Needs Assessment" forms to key participants. Created GIS Output Tracking System (database) to keep track of GIS output products produced.
- g. Continued installing cruise control in GSA vans.
- h. Worked out logistics for weekly photography of ESF construction progress, will videotape on a regular basis. With approval of Tom Fortner, Gene Ryder, and Carl Gertz, five sites were selected and staked. Prototype photos were taken. Vantage Points are Alice Hill, Midway Valley floor from 25' Photo Tower, two locations on Exile Hill, and Fran Ridge. Developing Special Instructions for precision photography.

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- i. Initiated training of Don Unglesbee of PC ORPS.
- j. Processed 12 work order requests and 2 technical field work order request.
- k. Transmitted 3 occurrence reports.
- l. Provided special assistance to institutional on ESF Video Tape.
- m. Set up photogrammetric mission for Crater Flat, Stagecoach Road and Fran Ridge, schedules 11/16 to 11/20.
- n. Completed revision of FOI 6401, "Work Order Requests" and submitted for approval.
- o. Completed "Ranch Control Handbook" for front desk.
- p. Photographs and video were taken of NRG-6 pad construction, MWF-T7 excavation and 500 meter trench.
- q. Coordination meeting with M&O on development of "Situation Room" in the FOC.
- r. Researched products at COMDEX Convention to support GIS System.
- s. Updated one ORPS report and finalized one other.
- t. Supported photos support coordination to place a camera stand in Midway Valley for use in monitoring construction progress.
- u. Made arrangements to allow REEC Co Construction to acquire two trailers formerly used by the Russian verification group.
- v. Commenced defining the first draft of hardware/software requirements for the VARS system.

B. Bullfrog Planning Commission

- a. Continuing with development of data base for Facilities Management Program.
- b. Met with Ivan Cottle's group to discuss schedule and methodology for development of future scheduling activities. There was no meeting due to lack of interest on the part of Las Vegas personnel.
- c. Continuing to gather information on vehicle usage and assignments for decision paper concerning YMP/YMSO vehicles.

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C. Project Safety and Health, (DOE/SAIC)

- a. Did budget work-up for Project Participant's Safety and Health Programs.
- b. Put a final wrap-up on CFAF objectives and other tasks accomplished. CFAF objectives for next quarter, beginning December 1, agreed to.
- c. Reviewed LANL S&H Plan for conformance to YMP S&H Plan.
- d. Made arrangements with NTS personnel to coordinate for FOC Fire Drill.
- e. Conducted 6 surveillances: LM-300=2, MWV-Pit 7=2; NRG-1=1; and Fran Ridge=1.
- f. Met with M&O S&H personnel to develop safety and health analysis for Exploratory Site Facility.
- g. Conducted air quality studies at Fran Ridge to ensure that activity was not a "confined spaces entry", they were not.
- h. Supported ongoing tours.
- i. Occurrences Reports - none awaiting F signature, 2 new reports submitted.
 - 1. REECo - 5 outstanding: 2 waiting PM signature; 2 rejected (by F, both on 06/02/92); and 1-10 day notification (10/20/92).
 - 2. SAIC - 5 outstanding: 1 rejected (by F, 07/27/92); 2-10 day notification (both dated 11/03/92); and 1-10 day update (11/11/92 and 11/12/92).
- j. Attended meeting with job package writers on the USGS seismic project.
- k. Attended monthly meeting of Safety and Health Advisory Committee.
- l. Attended regular T&MSS Field Test Support Group safety meeting.
- m. Sent comment resolution on Surface Based Testing Facility Requirement Document to the M&O.
- n. Published monthly surveillance report.
- o. Attended meeting with Silver State Staff on ambulance driver's training class.

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- p. Reviewed Job Packages 92-19.
- q. SHCD closed all CPAF items for this quarter, ending 11/30.
- r. Reviewed California Tunnel Orders to obtain cross references that we need to obtain.
- s. Completed fire inspection check-list for SMF Laboratory.
- t. Performed fire extinguisher inspections.
- u. IH discussed OSHA requirements for temporary space heaters with drilling superintendent. Discussed hazardous noise signs with rig superintendent, signs were placed at appropriate locations.
- v. Attempted to conduct air sampling at Midway Valley Trench 7, personnel were operating the air lance, this operation was stopped due to excessive visible emissions.
- w. Reviewed special conditions for "Aggregated Processing Facility for the YMP."

2. Sample Management Facility, (SMF/SAIC)

- a. Continued recovery and processing core and cutting from UZ-16.
- b. Completed drilling on UZN-58.
- c. Visited potential quarry site at Busted Butte with LLNL.
- d. Completed processing specimens from V-1 and V-2.
- e. Completed prognosis on NRG-6.
- f. Initiated use of drill hole sampling plan spread sheet at UZ-16.
- g. Laid out 15 core boxes for examination by LAND, Sandia and USGS.
- h. Supported SOC meeting, 11/10.

3. YMP Hydrologic Research Facility, (USGS)

- a. HRF staff conducted Neutron Logging in 76 boreholes.
- b. Saturated Zone staff took water level measurements in 2 wells and data collected from 6 additional wells.
- c. Denver staff at NTS to monitor tracer gas injection at UZ-16 and to observe core collection for Hydrochemical studies.

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- d. Tectonics Section staff conducted mapping of Busted Butte, Midway Valley, Crater Flats, Stagecoach and Trench 14 and began preparing trenches for photogrammetric mapping.
 - e. SAIC, Golden staff finished current mapping in Ghost Dance Fault and Yucca Mountain Area's
4. Raytheon Services Nevada, (RSN)
1. Field Support
- a. Continued work on Area 25 control net, on-going.
 - b. The Field Engineering Group checks the trench walls on a daily basis in order to determine suitability for continued operations.
 - c. Survey of the geophysical lines is complete, Phase I complete. Phase II calculations remain.
 - d. N-63, N-33 and N-34 Drill Holes survey complete. Calculations and plotting remain. N-31, N-32 and N-35 survey complete. Calculation and plotting remain.
 - e. Resurvey to verify depth of MWV-7 excavation.
 - f. Issued eleven (11) work initiations (WI's) in support of ongoing and upcoming job packages.
 - g. Field Engineering providing support to JP 91-9/Rev 3., JP 92-5, JP 92-12, JP 92-7, JP 92-8 and JP 92-10, as required.
 - h. Current status of JP 92-2, "Test Pits" submitted. JP 92-5, "Test Pits" is in progress. Calculations remain.
 - i. Electrical as-built of FOC, Building 4015 is 82% complete. Work is ongoing.
 - j. GSF Test Pits survey complete. Calculations and plotting remain.
 - k. Busted Butte, Stagecoach, Crater Flats Survey complete. Calculations and plotting remain.
 - l. Fran Ridge pit and pavement ready for survey except for Pit Mapping by USGS. Calculations complete.
 - m. Verified vertical alignment, LM-300, UZ-16.
 - n. USGS's mapping of Busted Butte, Stagecoach, and Crater Flats are completed. Calculations complete.

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- o. NRG-6 Pad complete and released to Drilling.

2. Quality Control

- a. Continued verification of activities on UZ-16 borehole utilizing LM-300 Drill Rig.
- b. Completed verification activities at UZN-58 utilizing the CME-850 Rig.
- c. Completed verification activities on NRG-6 Pad and Access Road construction.

5. Reynolds Electrical and Engineering Co., Inc., (REECO)

1. Drilling

- a. JP 92-3, UZ-16, LM-300, cored to 1,055.88 feet, reamed to 1,039.04 feet. Survey at 1,010 feet - 2 degrees. Survey at 1,039 feet - 2 degrees.
- b. JP 91-9, CME-850, UZN-58, cored and reamed to 118.77 feet, total depth.
- c. JP 92-2, NRG-1, CME-550, tripped in hole, cleaned fill from 86 feet to 150 feet. Barbour Logging Co. ran caliper gyro log from 0 to 148 feet.
- d. JP 92-11, NRG-6, Joy #1, crew rigging up drill rig.

2. Logistics

- a. Continued requisitioning supplies, materials, and services for YMP Field Operations Center.
- b. Supported tours during the week.
- c. Performed verification on condition of fences and trenches SCR-T1, T2, and T3, CF-1 and SCF-T1.
- d. Started verification activities on set up "Joy" Rig ant NRG-6.
- e. Completed verification activities on the excavation of Trench 7. Trench to be backfilled later.
- f. Completed verification activities on NRG-1, borehole cleanout and logging.

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- g. Verified rig down of equipment on N-58 and set up on N-59. Initiated verification activities on N-59 utilizing the CME-850.
- h. Backfilling of trenches in Midway Valley started (MWV TP#29, 30, 31, and 32) (NRSF TP#25, 28, and 29.)

6. Los Alamos National Laboratory, (LANL)

- a. No report submitted.

7. Document and Records Center, (CRWMS/M&O)

- a. Received and Issued to following controlled documents:

Job Packages N/A

Test Planning Packages N/A

Specifications N/A

Drawings N/A

FCRs: FCR 93/046, Rev. 0, "Modification of Rev. 1 of Geophysical Logging Program and Attachment of G.L.P. to Rev. 2 of Job Package."
FCR 93/056, Rev. 0, "NRG-6 Pad Elevation, Grade & Fill."
FCR 93/066, Rev. 0, "Addition of Funding to JP 92-05 for MWVC-T7 Trenching."
FCR 93-065, Rev. 0, "NRG-1 Plug and Abandonment Program."

Work Programs: YMP/WP/93-04, Rev. 0, "UE-25 NRG-1 Plug and Abandonment Program."
YMP/WP/92-11, Rev. 0, "USW NRG-6, North Portal Ramp Borehole."

Reproduction: 16521 pages copied.
180 drawing copied.

Documents Issued: 259 controlled documents.
36 uncontrolled documents.

DTAR logoffs: 183.

Attended weekly FOC staff meetings.

8. Field Training, (SAIC)

- a. Training conducted for GET 1.2, 1.3, and 1.4. A total of 23 people attended.

-8-

- b. 27 GET 1.5 exams were administered, all examinees passed.
- c. First aid training class conducted, 5 people attended.

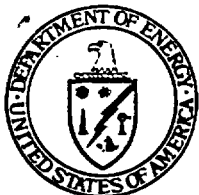
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YMP:WAW-422

CC: R. M. Cameron, CRWMS M&O/YMSO, M/S 717
M. D. Voegele, SAIC, Las Vegas, NV
R. R. Schneider, SAIC/YMSO, Mercury, NV
G. K. Beall, SAIC, Las Vegas, NV
J. H. Peck, SAIC, Mercury, NV
C. J. Cotten, SAIC, Las Vegas, NV
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G. D. Milligan, SAIC/YMSO, Mercury, NV
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WBS 1.2.3.5
QA: N/A

NOV 05 1992

Carl H. Johnson, State of Nevada, Carson City, NV
Phillip Niedzielski-Eichner, Nye County, Chantilly, VA
Dennis A. Bechtel, Clark County, Las Vegas, NV
Albert C. Douglas, City of Las Vegas, Las Vegas, NV
~~Philip S. Justus, NRC, Las Vegas, NV~~

DAILY OPERATIONS REPORTS AND WEEKLY INTERACTIONS CALENDAR

Enclosed for your information are copies of the Daily Operations Reports for Yucca Mountain Site Characterization Project drill holes UE-25 UZ16 and USW UZ N35 (enclosure 1). These reports were prepared by Raytheon Services Nevada and cover October 19-23, 1992.

A copy of the Weekly Interactions Calendar (enclosure 2) is enclosed for your information. It includes a section providing the status of boreholes, trenches, and test pits.

A copy of the field test coordinator's report (enclosure 3) summarizing activities of the previous week and forecasting the activities planned for the current week is also included for your information.

If you need additional information regarding these reports, please contact Uel S. Clanton at (702) 794-7943.

J. Timothy Sullivan for

J. Russell Dyer, Director
Regulatory & Site Evaluation Division

RSED:USC-767

Enclosures:

1. Daily Operations Reports
2. Weekly Interactions Calendar
3. Field Test Coordinator's Report

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30
Date: October 26, 1992
Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Pulling core assembly

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: October 23, 1992 (Rig Day 98)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0820	Service and warm up equipment.
0820 - 0855	Ream down the last joint of dual wall drill pipe and circulate to clean hole.
0855 - 0920	Rig up and run deviation survey at 879', found deviation to be 2 degrees 0 minutes from vertical with a 6 degree tool.
0920 - 1025	Pick up core barrel and go in hole with core rods.
1025 - 1250	Core run #199 from 879.23' - 889.50' (128 min), 8.9' Rec.
1250 - 1344	Core run #200 from 889.50' - 892.76' (35 min), 2.9' Rec.
1344 - 1426	Core run #201 from 892.76' - 894.65' (24 min), 1.3' Rec.
1426 - 1530	Core run #202 from 894.65' - 899.23' (52 min), 4.6' Rec.
1530 - 1605	Pull core assembly.
1605 - 1630	Shut down and secure rig.

CORING: Average air rate 757 SCFM
Average vacuum rate 1080 SCFM

REAMING: Average air rate N/A SCFM
Average vacuum rate N/A SCFM

Ending Depth: Cored 899.23' Reamed 879.23' Drilled 0
Daily Footage: Cored 20.00' Reamed 00.00' Drilled 0

Drilling Rep: Dick Sowards, REECO

A/E Rep: David Putnam, RSN

Personnel On Site: 1-RSN; 9-REECO; 2-USGS; 2-SMF

Visitors On Site: RSN - Lindquist, Wright; REECO - Wonderly, SAIC - Martin, Blackburn; USGS- Buesch; DOE - Clanton, Sullivan; LV/State - Douglas

Field Report Prepared By: David Putnam

Office Report Prepared By: David Putnam

**RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT**

Report Time: 7:30 hrs
Date: October 26, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N35

Drill Rig: CME-850

Activity: Reaming

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 100'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: October 23, 1992 (Rig Day 9)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0830	Service and start up rig and equipment.
0830 - 0955	Ream cycle #16 from 143.66' - 163.12' (85 mins).
0955 - 1015	Pull out of hole with Odex hammer.
1015 - 1044	Trip in hole with coring assembly. Run RSN #30, a Christensen Carbonado bit. Rig up to core.
1044 - 1055	Core run #52 from 163.12' - 164.83' (3 mins) 0.0' Rec.
1055 - 1215	Core run #53 from 164.83' - 169.79' (67 mins) 1.4' Rec.
1215 - 1245	Lunch.
1245 - 1317	Core run #54 from 169.79' - 172.81' (25 mins) 1.3' Rec.
1317 - 1333	Core run #55 from 172.81' - 174.83' (5 mins) 0.7' Rec.
1333 - 1415	Core run #56 from 174.83' - 175.64' (31 mins) 0.3' Rec.
1415 - 1435	Core run #57 from 175.64' - 175.81' (13 mins) 0.9' Rec.
1435 - 1525	Pull out of hole laying down core rods.
1525 - 1542	Trip in hole with Odex hammer.
1542 - 1630	Shut down and secure rig.

Average Air Rates: Coring 295 SCFM
 Reaming 313 SCFM

Ending Depth: Cored 175.81' Reamed 163.12' Drilled 0'
Daily Footage: Cored 12.69' Reamed 19.46' Drilled 0'

Drilling Rep: Neal Walker, REEC

A/E Rep: James Anthony

Personnel On Site: 1-RSN; 4-REEC; 1-USGS; 3-SMF; 1-DOE; 3-Visitors

Visitors On Site: RSN - Wright, Lindquist; CLV/NV - Douglas.

Field Report Prepared By: James Anthony

Office Report Prepared By: Richard W. Wright and James Anthony

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30 hrs
Date: October 23, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N35

Drill Rig: CME-850

Activity: Reaming

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 100'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: October 22, 1992 (Rig Day 8)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and start up rig and equipment.
0830 - 0925	Pull out of hole with coring assembly. No core recovered from run #45. Change bit. Run RSN #40, a Longyear step Carbonado. Trip in hole with coring assembly.
0925 - 0952	Core run #46 from 143.09' - 144.82' (15 mins) 1.7' Rec.
0952 - 1016	Core run #47 from 144.82' - 146.12' (13 mins) 1.3' Rec.
1016 - 1121	Core run #48 from 146.12' - 149.82' (55 mins) 3.5' Rec.
1121 - 1200	Begin core run #49.
1200 - 1230	Lunch.
1230 - 1309	Core run #49 from 149.82' - 153.23' (69 mins) 2.5' Rec.
1309 - 1336	Core run #50 from 153.23' - 158.55' (14 mins) 1.6' Rec.
1336 - 1436	Core run #51 from 158.55' - 163.12' (50 mins) 4.5' Rec.
1436 - 1515	Pull out of hole with coring assembly. Had to ream out of open hole.
1515 - 1535	Trip in hole with Odex Hammer. Rig up to ream.
1535 - 1555	Ream cycle #15 from 138.63' - 143.66' (20 mins).
1555 - 1630	Shut down and secure rig.

Average Air Rates: Coring 320 SCFM
 Reaming 406 SCFM

Ending Depth: Cored 163.12' Reamed 143.66' Drilled 0'
Daily Footage: Cored 20.03' Reamed 5.03' Drilled 0'

Drilling Rep: Neal Walker, REEC
A/E Rep: James Anthony
Personnel On Site: 1-RSN; 4-REEC; 1-USGS; 4-SMF; 8-Visitors
Visitors On Site: RSN - Wright, Lindquist; REEC - Wonderly; SAIC - Drew, Pitterle, Weeks;
DOE - Tunnell; Dresser Security - Huffstutter

Field Report Prepared By: James Anthony
Office Report Prepared By: Richard W. Wright and James Anthony

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30

Date: October 23, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Ream down last joint

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: October 22, 1992 (Rig Day 97)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0830	Service and warm up equipment.
0830 - 1200	Complete ream cycle # 63 to 879.23'.
1200 - 1230	Lunch.
1230 - 1300	Rig up and run deviation survey at 879', found deviation to be 2 degrees 0 minutes from vertical with a 6 degree tool.
1300 - 1430	Pull dual wall drill pipe and lay down the bottom hole assembly.
1430 - 1615	Pick up open centered bit and go in hole with dual wall drill pipe.
1615 - 1630	Shut down and secure rig.

CORING:	Average air rate	N/A SCFM
	Average vacuum rate	N/A SCFM

REAMING:	Average air rate	755 SCFM
	Average vacuum rate	1297 SCFM

Ending Depth:	Cored 879.23'	Reamed 879.23'	Drilled 0
Daily Footage:	Cored 00.00'	Reamed 8.67'	Drilled 0

Drilling Rep: Dick Sowards, REECO

A/E Rep: David Putnam, RSN

Personnel On Site: 1-RSN; 9-REECO; 1-USGS; 3-SMF;

Visitors On Site: RSN - Lindquist, Wright; REECO- Wonderly

Field Report Prepared By: David Putnam

Office Report Prepared By: David Putnam

RUNS
DATES
BITS

CORE LOG

(ft/hr)

(/ 5 ft)

DEPTH
GRAPHIC
LOG

USW UZN#35

Page 5 of 5

LITHOLOGY/ REMARK

20.0/11.9
60

5.4

165

RUNS DATES BITS	CORE LOG	DRILLING RATE (ft/hr)			TOTAL TIME (/ 5 ft)		DEPTH GRAPHIC LOG	LITHOLOGY/ REMARK
		0	10	20	0	50		
		20	70	120	50	100		
18.9/15.0 79%		8.6			11			114.0-xxxxx Ashflow tuff; pale red, densely welded, devitrified, very rare lithics or pumice, <3% biotite phenocrysts, abundant snowy calcite on fractures.
41 10/21/92		5.7			18		120	
42		10.1			67		125	
43		6.6			33		130	
44		11.6			11		135	
45 25.0/ 16.3 65%		12.2			22		140	
46 10/22/92		6.9					145	
47		6.0						
48		4.0			15		150	
49		2.9			53			
50		22.8			14		155	
51		5.4					160	

**RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT**

Report Time: 7:30 hrs
Date: October 22, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N35

Drill Rig: CME-850

Activity: Pulling out of hole with core assembly

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 100'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: October 21, 1992 (Rig Day 7)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and start up rig and equipment.
0830 - 0940	Core run #41 from 118.04' - 123.15' (54 mins) 4.8' Rec.
0940 - 1026	Core run #42 from 123.15' - 128.53' (32 mins) 4.8' Rec.
1026 - 1122	Core run #43 from 128.53' - 133.47' (45 mins) 3.0' Rec.
1122 - 1200	Core run #44 from 133.47' - 138.63' (27 mins) 2.0' Rec.
1200 - 1230	Lunch.
1230 - 1308	Pull out of hole with coring assembly. Trip in hole with Odex Hammer. Rig up to ream.
1308 - 1440	Ream cycle #14 from 114.01' - 138.63' (92 mins).
1440 - 1522	Pull out of hole with Odex hammer. Trip in hole with coring assembly. Run RSN #41, serial #2S29254, a Christensen diamond impregnated bit.
1522 - 1600	Core run #45 from 138.63' - 143.09' (22 mins) 1.6' Rec.
1600 - 1630	Shut down and secure rig.

Average Air Rates: Coring 415 SCFM
 Reaming 342 SCFM

NOTE: Unable to seat inner barrel because of unretrieved core in barrel after run #45.
Will pull coring assembly to recover core.

Ending Depth:	Cored 143.09'	Reamed 138.63'	Drilled 0'
Daily Footage:	Cored 25.05'	Reamed 24.62'	Drilled 0'

Drilling Rep: Neal Walker, REEC

A/E Rep: James Anthony

Personnel On Site: 1-RSN; 4-REEC; 1-USGS; 4-SMF; 6-Visitors

Visitors On Site: RSN - Lindquist; REEC - McDaniel; USGS - Soeder, Davies, Craig, Edwards.

Field Report Prepared By: James Anthony
Office Report Prepared By: James Anthony

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30

Date: October 22, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Reaming

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: October 21, 1992 (Rig Day 96)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0830	Service and warm up equipment.
0830 - 0930	Pull out of hole with core assembly.
0930 - 1110	Pull dual wall drill pipe and pick up the bottom hole assembly.
1110 - 1200	Go in hole with tri-cone bit and dual wall drill pipe.
1200 - 1230	Lunch.
1230 - 1314	Go in hole with dual wall drill pipe.
1314 - 1610	Ream cycle #63 from 859.23' to 870.56'.
1610 - 1630	Shut down and secure rig.

CORING:	Average air rate	N/A SCFM
	Average vacuum rate	N/A SCFM

REAMING:	Average air rate	742 SCFM
	Average vacuum rate	1282 SCFM

Ending Depth:	Cored 879.23'	Reamed 870.56'	Drilled 0
Daily Footage:	Cored 00.00'	Reamed 11.33'	Drilled 0

Drilling Rep: Dick Sowards, REECO

A/E Rep: David Putnam, RSN

Personnel On Site: 2-RSN; 9-REECO; 1-USGS; 2-SMF

Visitors On Site: RSN - Lindquist; SAIC - Roesner; DOE - Tunnell

Field Report Prepared By: David Putnam

Office Report Prepared By: David Putnam

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**RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT**

Report Time: 7:30

Date: October 21, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Pull out of the hole with core assembly

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: October 20, 1992 (Rig Day 95)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and warm up equipment.
0830 - 1025	Pick up open-centered ream bit and trip in hole with dual wall drill pipe.
1025 - 1100	Rig up and run deviation survey at 859', found deviation to be 2 degrees 5 minutes from vertical with a 6 degree tool.
1100 - 1130	Lunch
1130 - 1230	Trip in hole with core assembly.
1230 - 1414	Core run #197 from 859.23' - 869.53' (80 min.), Rec. 9.6'
1414 - 1600	Core run #198 from 869.53' - 879.23' (84 min.), Rec. 8.5'
1600 - 1620	Rig up to pull out of the hole with core assembly.
1620 - 1630	Shut down and secure rig.

NOTE: Moved out both Atlas Copco compressors for repair.

CORING: Average air rate 469 SCFM
Average vacuum rate 1084 SCFM

REAMING: Average air rate N/A SCFM
Average vacuum rate N/A SCFM

Ending Depth: Cored 879.23' Reamed 859.23' Drilled 0

Daily Footage: Cored 20.00' Reamed 00.00' Drilled 0

Drilling Rep: Dick Sowards, REECO

A/E Rep: Richard Wright and David Putnam, RSN

Personnel On Site: 2-RSN; 7-REECO; 2-USGS; 4-SMF; 1-DOE

Visitors On Site: RSN - Cunningham, Lindquist; SAIC - Weeks, Keele, Peck, Harper; DOE - Williams; CLV/STATE - Douglas; M&O - Buth, Aden-Geason, McCrumb, Cleary, Buth

Field Report Prepared By: David Putnam

Office Report Prepared By: Richard Wright

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30 hrs
Date: October 21, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N35

Drill Rig: CME-850

Activity: Coring

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 100'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: October 20, 1992 (Rig Day 6)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and start up rig and equipment.
0830 - 0915	Ream cycle #12 from 89.58' - 99.23' (45 mins).
0915 - 0930	Tighten brass sleeve-in hydraulic chuck-ram.
0930 - 0953	Pull out of hole with Odex hammer. Trip in hole with coring assembly. Rerun RSN #41, a Christensen diamond impregnated bit.
0953 - 1018	Core run #34 from 99.23' - 100.91' (12 mins) 0.9' Rec.
1018 - 1042	Core run #35 from 100.91' - 102.69' (7 mins) 1.1' Rec.
1042 - 1112	Core run #36 from 102.69' - 104.37' (9 mins) 1.1' Rec.
1112 - 1141	Core run #37 from 104.37' - 107.54' (9 mins) 2.3' Rec.
1141 - 1210	Core run #38 from 107.54' - 109.41' (13 mins) 1.7' Rec.
1210 - 1240	Lunch.
1240 - 1332	Core run #39 from 109.41' - 114.01' (15 mins) 3.9' Rec.
1332 - 1347	Pull out of hole with coring assembly.
1347 - 1355	Remove core inner barrel from core barrel.
1355 - 1409	Trip in the hole with Odex Hammer.
1409 - 1448	Ream cycle #13 from 99.23' - 114.01' (39 mins).
1448 - 1524	Pull out of hole with Odex hammer. Trip in hole with coring assembly. Rerun RSN #36, a Christensen PDC bit.
1524 - 1600	Core run #40 from 114.01' - 118.04' (8 mins) 4.0' Rec.
1600 - 1630	Shut down and secure rig.

Average Air Rates: Coring 226 SCFM
Reaming 376 SCFM

Ending Depth:	Cored 118.04'	Reamed 114.01'	Drilled 0'
Daily Footage:	Cored 18.81'	Reamed 24.42'	Drilled 0'

Drilling Rep: Neal Walker, REEC

A/E Rep: James Anthony

Personnel On Site: 1-RSN; 4-REEC; 1-USGS; 4-SMF; 16-Visitors

Visitors On Site: RSN - Cunningham, Lindquist; M&O - C. Buth, Gleason, Corwell, McCleary, S. Buth, McCrumb; SAIC - Lugo, Peck, Mapa, Weeks, Harper, Beall; DOE - Williams, Sullivan

Field Report Prepared By: James Anthony
Office Report Prepared By: James Anthony

RUNS DATES BITS	CORE LOG	RATE (ft/hr)			TIME (hr)		DEPTH GRAPHIC LOG
		0	10	20	0	50	
		20	70	120	50	100	
25							
20.6/14.9 72%		21.5			52		
10/19/92			12.9				75
26							
27				15.8	22		
28		8.1					80
29		7.8			43		
30				13.8			85
31			10.6				90
32		7.2			47		
33		6.4					95
25.9/15.5 60%					78		
34		6.4					100
10/20/92							
35		6.3			18		
36		4.8					105
37			9.5				
38		7.4			38		
39			8.0				110
40			8.6		31		
							115

LITHOLOGY/ REMARK

80.1-xx.xx Tiva Canyon ash-flow tuff, pale red densely welded devitrified; oblate lithophysae 10-12%, with vapor phase silica and alternation rinds that are medium gray; <5% Phenocrysts of sanidine.

@ 85.9 Calcite filled fracture about 2 cm across.

@ 94.8-97.1 Breccia Zone-calcite matrix with Tiva ashflow-tuff fragments 0.5 cm to 4.0 cm long, solution removal of matrix?, <5% vugs

@ 97.1-114.0 Fault Breccia: varies from micro-breccia to coarse breccia. Uniform anhedral calcite matrix, no visible mineralization, <5% vugs.

UNUS
DATES
BITS

CORE LOG

DRILLING RATE
(ft/hr)

FRAC FREQ
(/ 5 ft)

DEPTH
GRAPHIC
LOG

LITHOLOGY/ REMARK

10
18.9/15.0
78%

8.6

120

125

130

135

140

145

150

155

160

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30

Date: October 20, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Go in hole with open centered reaming bit.

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum.
3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: October 19, 1992 (Rig Day 94)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and warm up equipment.
0830 - 0850	Repair inlet riser on sample collector.
0850 - 0930	Continue ream cycle #62 from 851.74'.
0930 - 1130	Change oil in rig engines. Repair oil cooler.
1130 - 1200	Continue ream cycle #62.
1200 - 1230	Lunch
1230 - 1415	Complete ream cycle #62, total ream cycle 839.20' - 859.23'.
1415 - 1443	Rig up and run deviation survey at 859', found deviation to be 1 degree 55 minutes from vertical with a 6 degree tool.
1443 - 1610	Pull out of hole with dual wall drill pipe.
1610 - 1630	Shut down and secure rig.

Note: Moved out Sullair compressor # 85072 and moved in Sullair compressor # 85063.

CORING:	Average air rate	N/A SCFM
	Average vacuum rate	N/A SCFM

REAMING:	Average air rate	675 SCFM
	Average vacuum rate	1358 SCFM

Ending Depth:	Cored 859.23'	Reamed 859.23'	Drilled 0
Daily Footage:	Cored 00.00'	Reamed 7.49'	Drilled 0

Drilling Rep: Dick Sowards, REECO

A/E Rep: Richard Wright and David Putnam, RSN

Personnel On Site: 2-RSN; 10-REECO; 2-USGS; 1-SMF;

Visitors On Site: RSN - Cunningham, McClaskey; REECO - Henze

Field Report Prepared By: David Putnam

Office Report Prepared By: Richard Wright and David Putnam

**RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT**

Report Time: 7:30 hrs
Date: October 20, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N35

Drill Rig: CME-850

Activity: Reaming

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 100'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: October 19, 1992 (Rig Day 5)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and start up rig and equipment.
0830 - 0900	Safety meeting.
0900 - 0920	Air compressor maintenance.
0920 - 0935	Core run #26 from 73.32' - 74.83' (7 mins) 1.2' Rec.
0935 - 1003	Core run #27 from 74.83' - 79.83' (19 mins) 1.6' Rec.
1003 - 1025	Core run #28 from 79.83' - 81.45' (12 mins) 0.4' Rec.
1025 - 1059	Core run #29 from 81.45' - 84.44' (23 mins) 3.0' Rec.
1059 - 1126	Pull out of hole with coring assembly. Trip in hole with Odex hammer. Rig up to ream.
1126 - 1200	Ream cycle #10 from 69.73' - 84.44' (34 mins).
1200 - 1230	Lunch.
1230 - 1256	Pull out of hole with Odex hammer. Trip in hole with coring assembly. Rerun RSN #41, a Christensen diamond Impregnated bit.
1256 - 1327	Core run #30 from 84.44' - 89.52' (22 mins) 2.5' Rec.
1327 - 1344	Core run #31 from 89.52' - 91.11' (9 mins) 0.7' Rec.
1344 - 1424	Core run #32 from 91.11' - 94.83' (31 mins) 2.8' Rec.
1424 - 1515	Core run #33 from 94.83' - 99.23' (41 mins) 3.3' Rec.
1515 - 1535	Pull out of hole with coring assembly. Trip in hole with Odex hammer. Rig up to ream.
1535 - 1600	Ream cycle #11 from 84.44' - 89.58' (25 mins).
1600 - 1630	Shut down and secure rig.

Average Air Rates: Coring 253 SCFM
 Reaming 373 SCFM

Ending Depth:	Cored 99.23'	Reamed 89.58'	Drilled 0'
Daily Footage:	Cored 25.91'	Reamed 19.85'	Drilled 0'

Drilling Rep: Neal Walker, REEC Co

A/E Rep: James Anthony

Personnel On Site: 1-RSN; 4-REEC Co; 1-USGS; 3-SMF; 2-Visitors

Visitors On Site: RSN - Cunningham, McClaskey

Field Report Prepared By: James Anthony

Office Report Prepared By: James Anthony

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 10/23/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
10/20/92 Las Vegas, NV	ACNW WG on Human Intrusion		Gil (LeRoy-M&O)		Discuss methodologies for assessment of potential for natural resources at YM, and relationship between such resources and potential for human intrusion.
10/21/92 Las Vegas, NV	ACNW 47th Meeting		Gil (LeRoy-M&O)		Agenda TBD.
10/22/92	ACNW GIS Tour		Gil (LeRoy-M&O)		Tour will take place in the morning only.
10/23/92	ACNW Yucca Mountain and NTS Tours		Gil (LeRoy-M&O)		Agenda TBD.
10/29/92 San Antonio, TX	NRC TE: CNWRA Functional Analysis of 10CFR60		Bjerstedt (LeRoy-M&O)	M&O	Discuss CNWRA activities related to regulatory and institutional uncertainties, definition of regulatory requirements, guidance on technical issues, and FCRG for LA.

BOLD INDICATES REVISIONS AND NEW INFORMATION

** = MEETINGS THAT ARE CLOSED TO THE PUBLIC

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 10/23/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
11/4-6/92 Las Vegas, NV (Plaza-Suite Hotel)	NWTRB SG&G Panel Workshop		Cooper (Hoffman-M&O)	M&O	Discuss ESF alternative design and construction strategies.
11/16-17/92 Bethesda, MD	ACNW 48th Meeting		Gil (LeRoy-M&O)		Agenda TBD.
11/18/92 Bethesda, MD	ACNW WG Climate		Gil (LeRoy-M&O)		Discuss the potential for climate changes in Southern Basin and Range and the impact on natural processes affecting PA of potential repository at YM. Original scheduled 11/19/91, this has been rescheduled from 4/22/92.
Date and Location TBD Rockville, MD	Interaction Planning Meeting	Bjerstedt (LeRoy-M&O)	Bjerstedt (LeRoy-M&O)	M&O	Discuss/plan DOE/NRC interactions for first half 1993. Previously scheduled 11/18/92.

BOLD INDICATES REVISIONS AND NEW INFORMATION

**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 10/23/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
11/18-20/92 Albuquerque, NM	DOE Workshop on Expert Judgment	Dyer/Boak (Yunker-M&O, Van Luik-M&O, Weaver-M&O)	Simmons (Hoffman-M&O)	M&O	Examine DOE's use of expert judgment for YMP, learn how other projects have used expert judgment, make recommendations for future use, fulfill NWTRB recommendation to hold workshop.
12/14-15/92 Rockville, MD	NRC TE: Total System Performance Assessment	Boak (Pahwa-M&O)	Bjerstedt (LeRoy-M&O)	M&O SNL PNL	
12/16/92 Bethesda, MD	ACNW WG on PA - Phase 2 HLW Interactive PA by NRC	Boak (Van Luik-M&O)	Gil (LeRoy-M&O)	M&O SNL	Will discuss progress of Phase 2 PA effort. Also will hear briefing from DOE on status of TSPA.
12/17-18/92 Bethesda, MD	ACNW 49th Meeting		Gil (LeRoy-M&O)		Agenda TBD.
Delayed to early 1993 Albuquerque, NM	NRC TE: Volcanism	Cooper (Jerez-M&O)	Bjerstedt (LeRoy-M&O)	M&O LANL	Discuss DOE volcanism studies as detailed in LANL report.

BOLD INDICATES REVISIONS AND NEW INFORMATION

**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 10/23/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
Delayed to early 1993 (January) Albuquerque, NM	WIPP Roundtable discussion - NRC observation	Boak (Van Luik-M&O)	Bjerstedt (LeRoy-M&O)	M&O SNL PNL	NRC staff observe interaction between YMPO PA and WIPP PA. Previously scheduled 10/27/92.
Delayed to early 1993 (January) Carlsbad, NM	Tour of WIPP Site **	Boak (Van Luik-M&O)	Bjerstedt (LeRoy-M&O)	M&O	Previously scheduled 10/28/92.
1/5-6/93 Arlington, VA	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		M&O systems update and ESF and respository design follow-up.
2/93 or 3/93 TBD	NWTRB HG&G Panel Meeting		Cooper (Hoffman-M&O)		Agenda TBD.
4/20-23/93 Reno, NV	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		Agenda TBD.
6/1/93 TBD	NWTRB International Trip **		Cooper (Hoffman-M&O)		Agenda TBD.
7/12-15/93 Denver, CO	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		Agenda TBD.

BOLD INDICATES REVISIONS AND NEW INFORMATION

**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 10/23/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
10/19-22/93 Las Vegas, NV	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		Agenda TBD.

BOLD INDICATES REVISIONS AND NEW INFORMATION
**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

DRILLING, TRENCHING, AND TEST PIT ACTIVITIES 10/23/92

<u>DESIGNATION</u>	<u>PLANNED START DATE</u>	<u>PLANNED END DATE</u>	<u>BACKFILL DATE</u>	<u>YMPO SITE CONTACT</u>	<u>COMMENTS</u>
Midway Valley Investigations	10/27/92	11/20/92	11/20/92	Sullivan	Trench MWV-T7 will be excavated within ESF North access site area.
Soil and Rock Properties Test Pits (Phase II)	8/17/92	10/31/92	TBD	Williams	Completed.
Fran Ridge Test Pit No. 1	8/24/92	9/15/92	N/A	Girdley	Fracture network mapping underway.
Lathrop Wells Cinder Cone Volcanic Trenching	9/8/92	9/16/92	9/16/93	Cooper	Continuation of the volcanic studies.
Unsaturated Zone Borehole No. 16	5/27/92	3/24/93	N/A	Long	Unsaturated zone site characterization and vertical seismic profiling.
Neutron-Access Boreholes Phase II (12 boreholes)	8/3/92	TBD	N/A	Girdley	Core taken from these holes will be used by USGS for determination of moisture content and to construct tritium profiles.

BOLD INDICATES REVISIONS AND NEW INFORMATION

**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

DRILLING, TRENCHING, AND TEST PIT ACTIVITIES
10/23/92

<u>DESIGNATION</u>	<u>PLANNED START DATE</u>	<u>PLANNED END DATE</u>	<u>BACKFILL DATE</u>	<u>YMPO SITE CONTACT</u>	<u>COMMENTS</u>
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BOLD INDICATES REVISIONS AND NEW INFORMATION
**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**



Department of Energy
Yucca Mountain Site Characterization
Project Office
P. O. Box 98608
Las Vegas, NV 89193-8608

WES 1.2.3
QA: N/A

NOV 02 1992

J. Russell Dyer, YMP, NV
Winfred A. Wilson, YMP, Mercury, NV, M/S 717

FIELD TEST COORDINATOR'S REPORT FOR THE WEEK ENDING OCTOBER 23, 1992

UZ-16

Scope of Activity: A borehole approximately 1700 feet in depth will be drilled using the LM-300 drilling system. The primary purpose of the hole will be for vertical seismic profile testing, although other tests such as air permeability, hydrogeochemistry, and matrix hydrologic properties are also being planned. Drilling is scheduled from May through December 1992, following pad construction in March 1992.

Status as of October 23, 1992: Borehole UZ-16 continues to be drilled with the LM-300 drill rig. Coring continued from 859.23 feet to 899.23 feet and the borehole was reamed from 851.74 feet to 879.23 feet. On October 19 and 20, 1992, deviation surveys were run at a depth of 859 feet using a 6 degree tool. Deviation of the hole was found to be between 1 degree and 55 minutes and 2 degrees and 5 minutes off vertical. On October 22, 1992, a deviation survey was performed at a depth of 879 feet using a 6 degree tool. Deviation was found to be 2 degrees and 0 minutes off vertical. a modified bottom drill string hole assembly and continued implementation of revised drilling procedures are being utilized in an attempt to return the borehole closer to vertical.

NEUTRON-ACCESS BOREHOLES

Scope of Activity: Approximately 24 shallow boreholes will be drilled/cored for neutron logging by the U.S. Geological Survey (USGS) in order to evaluate natural infiltration. Core taken from these holes will be used by USGS for determination of moisture content and to construct tritium profiles. The drilling operation utilizes an Odex drilling system, which produces HQ core and a cased hole having a diameter of approximately six inches. The drilling program is being implemented in two phases, each consisting of 12 boreholes that will take several months to complete.

Status as of October 23, 1992: Drilling continued with the CME-850 drill rig on borehole USW UZN-35. By the end of shift on Friday, October 23, 1992, coring had reached a depth of 175.81 feet; ream depth was 163.12 feet. Target depth of the hole prior to commencement of drilling was 100 feet. Depth was extended to penetrate the Ghost Dance fault zone. SF₆ tracer gas was injected during drilling operations. Borehole USW UZN-35 is located (approximate state plane coordinates are North 762,200 and East 562,350) in an unnamed wash west to northwest of borehole UZ-16.

ENCLOSURE 3

NOV 02 1992

Grading and leveling operations for access road improvements and the drilling support area for boreholes USW UZN-57, 58, 59, and 61 commenced on Thursday, October 22, 1992, and were completed by the end of shift on Friday, October 23, 1992. Following completion of drilling borehole USW UZN-35 the 850 CME drill rig and support equipment will be mobilized to this area.

NRG-6

Scope of Activity: A borehole approximately 1100 feet in depth will be drilled using the Joy 225 drilling system. The primary purpose of this hole is to provide core for determination of stratigraphy and engineering characteristics of the rocks at or near the planned Exploratory Studies Facility North Access Ramp. Drilling is scheduled from November through December 1992.

Status as of October 23, 1992: NRG-6 drill and support equipment pad construction commenced on October 19, 1992. Drilling will begin in November 1992 following completion of the pad.

QUATERNARY FAULTING WITHIN THE SITE AREA INVESTIGATIONS

Scope of Activity: Pavements and trenches will be excavated to provide exposures of Quaternary deposits and faults for mapping by geologists from the USGS as described in Study Plan 8.3.1.17.4.6 Quaternary Faulting in the Site Area. Planned activities include excavation of new trenches and modification of existing trenches on the Windy Wash fault, Solitario Canyon fault, and Stagecoach Road fault, and modification of existing exposures of the Paintbrush Canyon fault west of Busted Butte in the sand ramps by developing pavements.

Status as of October 23, 1992: Geologic mapping, sampling, and interpretation continues on trench excavations completed during previous weeks in Midway Valley and Solitario Canyon.

SOIL AND ROCK PROPERTIES

Scope of Activity: Objectives of this investigation are to characterize the soil and rock conditions that will influence or be influenced by the construction of the Exploratory Studies Facility surface and subsurface access facilities. This activity is comprised of a total of 32 test pits and one drill hole (NRG-1). Ongoing Phase II activities include 41 additional test pits and pavement clearing at NRG-1.

Status as of October 23, 1992: No field activities were performed during this period.

NOV 02 1992

CHARACTERIZATION OF STRUCTURAL FEATURES IN THE SITE AREA

Scope of Activity: Objectives of this investigation are to conduct prototype work for development of equipment and techniques for shaft mapping in the Exploratory Studies Facility. Developmental work is to be completed in an enlarged and deepened circular test pit on the east side of Fran Ridge. The area around the pit disturbed during the original excavation will be cleaned to the rock surface for use in pavement studies for Surface Fracture Network Studies.

Status as of September October 23, 1992: Fracture mapping was performed on October 20-23, 1992, at the Fran Ridge and NRG-1 pavement clearings. Additional mapping of these areas will be performed the week of November 16, 1992.

VOLCANISM EXCAVATIONS

Scope of Activity: Test pits and trenches will be excavated at the Lathrop Wells Volcanic Center and at the Cima volcanic field in order to test alternative models of eruptive histories of cinder cone volcanic activity. The excavations will provide exposures of volcanic materials (lava flows, pyroclastic deposits) and soils for examination and collection of samples. Planned activities include collection of samples for age determinations by multiple methods, description and collection of samples for evaluation of soil development on volcanic units, exposure of contact relations to aid stratigraphic studies for mapping of volcanic centers, and collection of samples for petrologic analysis.

Status as of October 23, 1992: On October 16, 19, and 20, 1992, the LW-1 trench, located at the Cind-R-Lite volcanic center, (formerly the Lathrop Wells volcanic center), was deepened (> 20 feet) by REECO using a track-mounted, large backhoe. The base of the Q₁ lava flow was exposed in the north end of the trench and the stratigraphic relations between the Q₁ flow and the Q_s/Q₁ units were exposed in the south end of the trench. The contacts between the pyroclastic surge deposit and the Q₁, Q_s, Q₁ units were exposed in the LW-1 trench and a newly constructed trench located west of LW-1. The pyroclastic surge unit overlies all the lava units on the north flank of the volcanic center. Thus a key stratigraphic relationship has been established. Two scoria mounds were dissected by trenches (LW-3 and LW-4) to establish the stratigraphic position of the mounds and expose volcanic bombs for sampling for paleomagnetic studies.


NOV 02 1992

BOREHOLE SECURITY

Scope of Activity: Objectives of this activity are the locking and securing of boreholes drilled during site characterization efforts and tracking of testing conducted in individual boreholes. Over 200 boreholes will be secured during the next several months.

Status as of October 23, 1992: To date a total of 30 boreholes have been secured with padlocks and caps, completing Borehole Security Phase I activities.

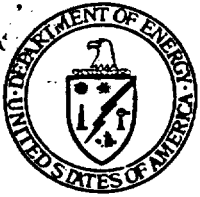
If you have any questions, please contact Kenneth J. Skipper at 794-7944.


Uel S. Clanton, Chief
Site Investigations Branch
Regulatory & Site Evaluation Division

RSED:KJS-676

cc:

J. R. Stockey, HQ (RW-22) FORS
R. W. Craig, USGS, Las Vegas, NV
K. J. Skipper, USBR, YMP, NV
T. E. Blejwas, SNL, 6310, Albuquerque, NM
B. W. Distel, M&O/WCC, Las Vegas, NV
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Department of Energy
Yucca Mountain Site Characterization
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P. O. Box 98608
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WBS 1.2.3.5
QA: N/A

NOV 12 1992

Carl H. Johnson, State of Nevada, Carson City, NV
Phillip Niedzielski-Eichner, Nye County, Chantilly, VA
Dennis A. Bechtel, Clark County, Las Vegas, NV
Albert C. Douglas, City of Las Vegas, Las Vegas, NV
~~Philip S. Justus, NRC, Las Vegas, NV~~

DAILY OPERATIONS REPORTS AND WEEKLY INTERACTIONS CALENDAR

Enclosed for your information are copies of the Daily Operations Reports for Yucca Mountain Site Characterization Project drill holes UE-25 UZ16, USW UZ N35, and USW UZ N57 (enclosure 1). These reports were prepared by Raytheon Services Nevada and cover October 26-30, 1992.

A copy of the Weekly Interactions Calendar (enclosure 2) is enclosed for your information. It includes a section providing the status of boreholes, trenches, and test pits.

A copy of the field test coordinator's report (enclosure 3) summarizing activities of the previous week and forecasting the activities planned for the current week is also included for your information.

If you need additional information regarding these reports, please contact Uel S. Clanton at (702) 794-7943.

J. Timothy Sullivan for

J. Russell Dyer, Director
Regulatory & Site Evaluation Division

RSED:USC-889

Enclosures:

1. Daily Operations Reports
2. Weekly Interactions Calendar
3. Field Test Coordinator's Report

**RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT**

Report Time: 7:30

Date: October 27, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Reaming

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: October 26, 1992 (Rig Day 99)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0848	Service and warm up equipment.
0848 - 0918	Pull out of the hole with core assembly.
0918 - 1115	Pull out of the hole with dual wall drill pipe and lay down open-centered bit.
1115 - 1200	Pick up tri-cone bit and trip in hole with dual wall drill pipe.
1200 - 1230	Lunch
1230 - 1318	Trip in hole with dual wall drill pipe.
1318 - 1615	Ream cycle #64 from 879.23' - 891.65'
1615 - 1630	Shut down and secure rig.

CORING:	Average air rate	N/A SCFM
	Average vacuum rate	N/A SCFM

REAMING:	Average air rate	754 SCFM
	Average vacuum rate	1331 SCFM

Ending Depth:	Cored 899.23'	Reamed 891.65'	Drilled 0
Daily Footage:	Cored 00.00'	Reamed 12.42	Drilled 0

Drilling Rep: Dick Sowards, REECO
A/E Rep: David Putnam, RSN
Personnel On Site: 1-RSN; 8-REECO; 1-USGS; 3-SMF
Visitors On Site: RSN - Ricks, Wright; SAIC - Moyer

Field Report Prepared By: David Putnam
Office Report Prepared By: David Putnam and Richard Wright

ENCLOSURE 1

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30 hrs
Date: October 27, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N35

Drill Rig: CME-850

Activity: Rigging down and moving to new location

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 100'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: October 26, 1992 (Rig Day 10)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and start up rig and equipment.
0830 - 0925	Ream cycle #17 from 163.12' - 175.81' (55 mins).
0925 - 0935	Blow out hole.
0935 - 1010	Pull out of hole with Odex hammer. Lay down drill rods on trip out.
1010 - 1040	Break down Odex hammer.
1040 - 1200	Rigging down.
1200 - 1230	Lunch.
1230 - 1630	Rigging down and moving to new location.

Average Air Rates: Coring N/A SCFM
 Reaming 349 SCFM

NOTE: Total Depth 175.81'. Bill Davies, USGS, verified that sufficient depth was attained to penetrate through the Ghost Dance fault 5' - 10'.

FINAL REPORT

Ending Depth:	Cored 175.81'	Reamed 175.81'	Drilled 0'
Daily Footage:	Cored 0'	Reamed 12.69'	Drilled 0'

Drilling Rep: Neal Walker, REEC0

A/E Rep: James Anthony

Personnel On Site: 1-RSN; 4-REEC0; 1-USGS; 3-SMF

Visitors On Site:

Field Report Prepared By: James Anthony

Office Report Prepared By: James Anthony

RAYTHEON SERVICES NEVADA **DAILY OPERATIONS REPORT** **YUCCA MOUNTAIN PROJECT**

Report Time: 7:30
Date: October 28, 1992
Page: 1 of 1

Job Package No.: 92-03
Station: UE-25 UZ16
Drill Rig: LM300
Activity: Reaming

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: October 27, 1992 (Rig Day 100)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and warm up equipment.
0830 - 1130	Complete ream cycle #64 to 899.12'.
1130 - 1150	Rig up and run deviation survey at 899', found deviation to be 2 degrees 0 minutes from vertical with a 6 degree tool.
1150 - 1200	Pull out of the hole with dual wall drill pipe.
1200 - 1230	Lunch
1230 - 1310	Pull out of the hole with dual wall drill pipe.
1310 - 1325	Survey derrick.
1325 - 1415	Pull out of the hole with dual wall drill pipe and remove tri- cone bit.
1415 - 1542	Pick up open-centered bit and trip in hole with dual wall drill pipe.
1542 - 1622	Ream 20' to bottom.
1622 - 1630	Shut down and secure rig.

CORING:	Average air rate	N/A SCFM
	Average vacuum rate	N/A SCFM
REAMING:	Average air rate	747 SCFM
	Average vacuum rate	1307 SCFM

Ending Depth:	Cored 899.23'	Reamed 899.12'	Drilled 0
Daily Footage:	Cored 00.00'	Reamed 7.47	Drilled 0

Drilling Rep: Dick Sowards, REECO
A/E Rep: David Putnam and Richard Wright, RSN
Personnel On Site: 1-RSN; 8-REECO; 1-USGS; 1-SMF
Visitors On Site: RSN - Lindquist; DOE - Tunnell, White; CLV/State - Douglas; M&O - Cameron; TRW - Hendel, Robertson, Houston.

Field Report Prepared By: David Putnam and Richard Wright
Office Report Prepared By: David Putnam and Richard Wright

**RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT**

Report Time: 7:30
Date: October 29, 1992
Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Trip out of the hole with dual wall drill pipe

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: October 28, 1992 (Rig Day 101)

<u>HOURS FROM - TO</u>	<u>OPERATIONS DESCRIPTION</u>
0800 - 0815	Service and warm up equipment.
0815 - 0931	Trip in hole with core assembly.
0931 - 1225	Core run #203 from 899.23' - 909.28' (155 min.) 9.5' Rec.
1225 - 1500	Core run #204 from 909.28' - 919.21' (142 min.) 8.4' Rec.
1500 - 1615	Pull out of the hole with coring assembly.
1615 - 1630	Shut down and secure rig.

CORING:	Average air rate	741 SCFM
	Average vacuum rate	1117 SCFM
REAMING:	Average air rate	N/A SCFM
	Average vacuum rate	N/A SCFM

Ending Depth:	Cored 919.21'	Reamed 899.12'	Drilled 0
Daily Footage:	Cored 19.98'	Reamed 0.00	Drilled 0

Drilling Rep: Dick Sowards, REECO
A/E Rep: David Putnam and Richard Wright, RSN
Personnel On Site: 1-RSN; 8-REECO; 1-USGS; 1-SMF; 1-DOE
Visitors On Site: RSN - Lindquist; SAIC - Roesner

Field Report Prepared By: David Putnam and Richard Wright
Office Report Prepared By: David Putnam and Richard Wright

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30 hrs

Date: October 29, 1992

Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N57

Drill Rig: CME-850

Activity: Coring

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 120'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: October 28, 1992 (Rig Day 1)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 1200	Move in and rig up equipment.
1200 - 1230	Lunch.
1230 - 1308	Complete rigging up.
1308 - 1320	Drive sample #1 from 0' - 1.19' (1 min) 1.1' Rec.
1320 - 1334	Drive sample #2 from 1.19' - 1.22' (1 min) 0.3' Rec.
1334 - 1351	Pick up coring assembly. Run bit RSN #33, serial #2S27751, a Christensen carbonado.
1351 - 1418	Core run #1 from 1.22' - 4.49' (14 mins) 3.8' Rec.
1418 - 1452	Core run #2 from 4.49' - 9.48' (25 mins) 5.0' Rec.
1452 - 1527	Core run #3 from 9.48' - 14.48' (25 mins) 5.0' Rec.
1527 - 1558	Core run #4 from 14.48' - 19.48' (22 mins) 5.0' Rec.
1558 - 1630	Shut down and secure rig.

Average Air Rates: Coring 148 SCFM
Reaming N/A SCFM

NOTE: E-core on core run #1 is pending resolution until further review.

Ending Depth:	Cored 19.48'	Reamed 0'	Drilled 0'
Daily Footage:	Cored 19.48'	Reamed 0'	Drilled 0'

Drilling Rep: Neal Walker, REECe
A/E Rep: James Anthony
Personnel On Site: 1-RSN; 4-REECo; 1-USGS; 3-SMF; 4-Visitors
Visitors On Site: REECe - Mason, Joyce; SAIC - Drew, Chapman

Field Report Prepared By: James Anthony
Office Report Prepared By: James Anthony

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30

Date: October 30, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Reaming

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum.
3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: October 29, 1992 (Rig Day 102)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0830	Service and warm up equipment.
0830 - 1015	Pull out of the hole with dual wall drill pipe and lay down open centered bit.
1015 - 1135	Pick up tri-cone bit and trip in hole with dual wall drill pipe.
1135 - 1615	Ream cycle #65 from 899.12' - 915.21'.
1615 - 1630	Shut down and secure rig.

CORING:	Average air rate	N/A SCFM
	Average vacuum rate	N/A SCFM

REAMING:	Average air rate	737 SCFM
	Average vacuum rate	1343 SCFM

Ending Depth:	Cored 919.21'	Reamed 915.21'	Drilled 0
Daily Footage:	Cored 00.00'	Reamed 16.09'	Drilled 0

Drilling Rep: Dick Sowards, REECO
A/E Rep: David Putnam, RSN
Personnel On Site: 1-RSN; 8-REECO; 1-USGS; 2-SMF
Visitors On Site: RSN - Lindquist; CLV/STATE - Douglas; DOE - Baumeister; TRW - Eichel

Field Report Prepared By: David Putnam
Office Report Prepared By: David Putnam and Richard Wright

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30 hrs
Date: October 30, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N57

Drill Rig: CME-850

Activity: Coring

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 120'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: October 29, 1992 (Rig Day 2)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0830	Service and start up rig and equipment.
0830 - 0845	Pull coring assembly from hole for steel line measurement. Re-run coring assembly. Total length of assembly 23.47', stick up 3.99', Total Depth at 19.48'
0845 - 0946	Core run #5 from 19.48' - 24.48' (49 mins) 5.0' Rec.
0946 - 1040	Core run #6 from 24.48' - 29.48' (44 mins) 5.0' Rec.
1040 - 1106	Pull out of hole with coring assembly. Trip in hole with Odex hammer. Rig up to ream.
1106 - 1200	Ream cycle #1
1200 - 1230	Lunch
1230 - 1409	Continue ream cycle #1 from G.L. - 29.48'. (153 mins)
1409 - 1424	Pull out of hole with Odex Hammer. Trip in hole with coring assembly. Rerun RSN #33, a Christensen carbonado. Rig up to core.
1424 - 1455	Core run #7 from 29.48' - 34.48' (22 mins) 5.0' Rec.
1455 - 1526	Core run #8 from 34.48' - 39.48' (23 mins) 5.0' Rec.
1526 - 1556	Core run #9 from 39.48' - 44.48' (20 mins) 5.0' Rec.
1556 - 1630	Shut down and secure rig.

Average Air Rates: Coring 269 SCFM
 Reaming 353 SCFM

NOTE: A resolution meeting was held on 10/29/92 to resolve the E-core on run #1. There was no extra core

Ending Depth:	Cored 44.48'	Reamed 29.48'	Drilled 0'
Daily Footage:	Cored 25.00'	Reamed 29.48'	Drilled 0'

Drilling Rep: Neal Walker, REEC

A/E Rep: James Anthony

Personnel On Site: 1-RSN; 4-REEC; 1-USGS; 3-SMF; 1-DOE; 7-Visitors

Visitors On Site: RSN - Cunningham, Lindquist; SAIC - Scroggins, McCarthy; TRW - Eichel;
DOE - Girdley, Baumeister.

Field Report Prepared By: James Anthony

Office Report Prepared By: James Anthony

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30

Date: November 2, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Going in the Hole with Core Rods

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: October 30, 1992 (Rig Day 103)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0820	Service and warm up equipment.
0820 - 1030	Complete Ream cycle #65 from 899.12' - 919.08'.
1030 - 1200	Pull out of the hole with dual wall drill pipe.
1200 - 1230	Lunch
1230 - 1300	Continue pulling out of the hole with dual wall drill pipe. Lay down tri-cone bit
1300 - 1530	Pick up open center reaming bit with alternating cones and trip in hole with dual wall drill pipe.
1530 - 1555	Rig up and run deviation survey at 919', found deviation to be 2 degrees 9 minutes from vertical with a 6 degree tool.
1555 - 1615	Trip in the hole with core barrel and rods.
1615 - 1630	Shut down and secure rig.

CORING:	Average air rate	N/A SCFM
	Average vacuum rate	N/A SCFM

REAMING:	Average air rate	807 SCFM
	Average vacuum rate	1365 SCFM

Ending Depth:	Cored 919.21'	Reamed 919.08'	Drilled 0
Daily Footage:	Cored 00.00'	Reamed 3.87'	Drilled 0

Drilling Rep: Dick Sowards, REECO
A/E Rep: David Putnam, RSN
Personnel On Site: 1-RSN; 9-REECO; 1-USGS; 1-SMF
Visitors On Site: RSN - Lindquist, Cunningham

Field Report Prepared By: David Putnam
Office Report Prepared By: David Putnam and Don Cunningham

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30 hrs
Date: November 2, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N57

Drill Rig: CME-850

Activity: Coring

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 120'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: October 30, 1992 (Rig Day 3)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and start up rig and equipment.
0830 - 0853	Monitor weather. High humidity and heavy cloud cover present.
0853 - 0926	Core run #10 from 44.48' - 49.48' (23 mins) 5.0' Rec.
0926 - 1021	Core run #11 from 49.48' - 54.48' (47 mins) 5.0' Rec.
1021 - 1050	Pull out of hole with coring assembly. Trip in hole with Odex hammer. Rig up to ream.
1050 - 1200	Ream cycle #2.
1200 - 1230	Lunch.
1230 - 1311	Continue ream cycle #2 from 29.48' - 54.48'.
1311 - 1345	Pull out of hole with Odex hammer. Trip in hole with coring assembly. Rerun RSN #33, a Christensen carbonado. Change out core barrel and core rods.
1345 - 1418	Core run #12 from 54.48' - 59.51' (21 mins) 5.0' Rec.
1418 - 1452	Core run #13 from 59.51' - 64.51' (26 mins) 5.0' Rec.
1425 - 1538	Core run #14 from 64.51' - 59.51' (37 mins) 5.0' Rec.
1538 - 1600	Work on rotating head.
1600 - 1630	Shut down and secure rig.

Average Air Rates: Coring 274 SCFM
Reaming 337 SCFM

Ending Depth:	Cored 69.51'	Reamed 54.48'	Drilled 0'
Daily Footage:	Cored 25.03'	Reamed 25.00'	Drilled 0'

Drilling Rep: Neal Walker, REECO
A/E Rep: James Anthony
Personnel On Site: 1-RSN; 4-REECO; 1-USGS; 3-SMF; 4-Visitors
Visitors On Site: REECO - Henze; SAIC - Pitterle; RSN - Cunningham, Lindquist

Field Report Prepared By: James Anthony
Office Report Prepared By: James Anthony

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PRELIMINARY FIELD COMPOSITE BOREHOLE LOG

BOREHOLE ID: USW UZN-57

STUDY PLAN NO: _____

CORE SIZE: HQ 2.4"DRILL DATES: 10/28/92-

GROUND ELEV: _____

COORDINATES: N: _____

E: _____

TOTAL DEPTH: _____

ANGLE FROM VERT: _____ BEARING: _____



ALLUVIUM



NON-WELDED



PARTIALLY WELDED



DENSELY WELDED



VITROPHYRE



BEDDED TUFF

Logging by Drilling Support Division, Drilling Support and Sample Management Dept,

RUNS DATES BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC FREQ (/ 5 ft)		DEPTH GRAPHIC LOG	LITHOLOGY/ REMARK
		0	10	20	0	50		
		20	70	120	50	100		
DC-1		71.4			NO DATA			<p>Page <u>1</u> of <u> </u></p> <p>Alluvium: silt>sand>cobbles>pebbles, no apparent boulders, occasional organics, no clay horizon.</p> <p>No progress made on DC-2</p> <p>1.2-xxxx Ashflow tuff: grayish red, densely welded, devitrified; 30% phenocrysts of feldspar and biotite, calcite on fracture surfaces.</p>
1 DC-2			14.0	1.8		37	5	
2			12.0			28	10	
3			12.0			17	15	
4			13.6			16	20	
5 10/29/92		6.1				11	25	
6		6.8				14		

RUNS DATES BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC FREQ (/ 5 ft)		DEPTH GRAPHIC LOG	LITHOLOGY/ REMARK
		0	10	20	0	50		
		20	70	120	50	100		
6		6.8			14			
7		13.6			14		30	
8		13.0			8		35	
9		15.0			10		40	
10	25.0/25.0 100%						45	
10	10/30/92	13.0			16		50	
11		6.1			15		55	
12		14.3			8		60	
13		11.5			12		65	
14		8.1			12			
	25.0/25.0 100%							
							70	

USW UZN-S7 Page 2 of

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 10/30/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
11/4-6/92 Las Vegas, NV (Plaza Suite Hotel)	NWTRB SG&G Panel Workshop		Cooper (Hoffman-M&O)	M&O	Discuss ESF alternative design and construction strategies.
11/16-17/92 Bethesda, MD	ACNW 48th Meeting		Gil (LeRoy-M&O)		Agenda TBD.
11/18/92 Bethesda, MD	ACNW WG Climate		Gil (LeRoy-M&O)		Discuss the potential for climate changes in Southern Basin and Range and the impact on natural processes affecting PA of potential repository at YM. Original scheduled 11/19/91, this has been rescheduled from 4/22/92.
Date and Location TBD Rockville, MD	Interaction Planning Meeting	Bjerstedt (LeRoy-M&O)	Bjerstedt (LeRoy-M&O)	M&O	Discuss/plan DOE/NRC interactions for first half 1993. Previously scheduled 11/18/92.

BOLD INDICATES REVISIONS AND NEW INFORMATION
**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

ENCLOSURE 2

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 10/30/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
11/18-20/92 Albuquerque, NM	DOE Workshop on Expert Judgment	Dyer/Boak (Yunker-M&O, Van Luik-M&O, Weaver-M&O)	Simmons (Hoffman-M&O)	M&O	Examine DOE's use of expert judgment for YMP, learn how other projects have used expert judgment, make recommendations for future use, fulfill NWTRB recommendation to hold workshop.
12/14-15/92 Rockville, MD	NRC TE: Total System Performance Assessment	Boak (Pahwa-M&O)	Bjerstedt (LeRoy-M&O)	M&O SNL PNL	
12/16/92 Bethesda, MD	ACNW WG on PA - Phase 2 HLW Interactive PA by NRC	Boak (Van Luik-M&O)	Gil (LeRoy-M&O)	M&O SNL	Will discuss progress of Phase 2 PA effort. Also will hear briefing from DOE on status of TSPA.
12/17-18/92 Bethesda, MD	ACNW 49th Meeting		Gil (LeRoy-M&O)		Agenda TBD.
Delayed to early 1993 Albuquerque, NM	NRC TE: Volcanism	Cooper (Jerez-M&O)	Bjerstedt (LeRoy-M&O)	M&O LANL	Discuss DOE volcanism studies as detailed in LANL report.

BOLD INDICATES REVISIONS AND NEW INFORMATION

**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 10/30/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
Delayed to early 1993 (January) Albuquerque, NM	WIPP Roundtable discussion - NRC observation	Boak (Van Luik-M&O)	Bjerstedt (LeRoy-M&O)	M&O SNL PNL	NRC staff observe interaction between YMPO PA and WIPP PA. Previously scheduled 10/27/92.
Delayed to early 1993 (January) Carlsbad, NM	Tour of WIPP Site **	Boak (Van Luik-M&O)	Bjerstedt (LeRoy-M&O)	M&O	Previously scheduled 10/28/92.
1/5-6/93 Arlington, VA	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		M&O systems update and ESF and respository design follow-up.
2/93 or 3/93 TBD	NWTRB HG&G Panel Meeting		Cooper (Hoffman-M&O)		Agenda TBD.
4/20-23/93 Reno, NV	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		Agenda TBD.
6/1/93 TBD	NWTRB International Trip **		Cooper (Hoffman-M&O)		Agenda TBD.
7/12-15/93 Denver, CO	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		Agenda TBD.

BOLD INDICATES REVISIONS AND NEW INFORMATION

**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 10/30/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
10/19-22/93 Las Vegas, NV	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		Agenda TBD.

BOLD INDICATES REVISIONS AND NEW INFORMATION
**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

DRILLING, TRENCHING, AND TEST PIT ACTIVITIES 10/30/92

<u>DESIGNATION</u>	<u>PLANNED START DATE</u>	<u>PLANNED END DATE</u>	<u>BACKFILL DATE</u>	<u>YMPO SITE CONTACT</u>	<u>COMMENTS</u>
Midway Valley Investigations	10/27/92	11/20/92	11/20/92	Sullivan	Trench MWV-T7 will be excavated within ESF North access site area.
Soil and Rock Properties Test Pits (Phase II)	8/17/92	10/31/92	TBD	Williams	Completed.
Fran Ridge Test Pit No. 1	8/24/92	12/1/92	N/A	Girdley	Fracture network mapping underway. Pit mapping activity rescheduled until 11/17/92.
Lathrop Wells Cinder Cone Volcanic Trenching	9/8/92	9/16/92	9/16/93	Cooper	Continuation of the volcanic studies.
Unsaturated Zone Borehole No. 16	5/27/92	3/24/93	N/A	Long	Unsaturated zone site characterization and vertical seismic profiling.
Neutron-Access Boreholes Phase II (12 boreholes)	8/3/92	TBD	N/A	Girdley	Core taken from these holes will be used by USGS for determination of moisture content and to construct tritium profiles.

BOLD INDICATES REVISIONS AND NEW INFORMATION

**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

DRILLING, TRENCHING, AND TEST PIT ACTIVITIES
10/30/92

<u>DESIGNATION</u>	<u>PLANNED START DATE</u>	<u>PLANNED END DATE</u>	<u>BACKFILL DATE</u>	<u>YMPO SITE CONTACT</u>	<u>COMMENTS</u>
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BOLD INDICATES REVISIONS AND NEW INFORMATION
**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**



Department of Energy
Yucca Mountain Site Characterization
Project Office
P. O. Box 98608
Las Vegas, NV 89193-8608

WBS 1.2.3
QA: N/A

NOV 06 1992

J. Russell Dyer, YMP, NV
Winfred A. Wilson, YMP, Mercury, NV, M/S 717

FIELD TEST COORDINATOR'S REPORT FOR THE WEEK ENDING OCTOBER 30, 1992

UZ-16

Scope of Activity: A borehole approximately 1700 feet in depth will be drilled using the LM-300 drilling system. The primary purpose of the hole will be for vertical seismic profile testing, although other tests such as air permeability, hydrogeochemistry, and matrix hydrologic properties are also being planned. Drilling is scheduled from May through December 1992, following pad construction in March 1992.

Status as of October 30, 1992: Borehole UZ-16 continues to be drilled with the LM-300 drill rig. Coring continued from 899.23 feet to 919.21 feet and the borehole was reamed from 879.23 feet to 919.08 feet. On October 27, 1992, a deviation survey was run at a depth of 899 feet using a 6 degree tool. Deviation of the hole was found to be 2 degrees and 0 minutes off vertical. On October 30, 1992, a deviation survey was performed at a depth of 919 feet using a 6 degree tool. Deviation of the hole was found to be 2 degrees and 9 minutes off vertical. A modified bottom drill string hole assembly and continued implementation of revised drilling procedures are being utilized in an attempt to return the borehole closer to vertical.

NEUTRON-ACCESS BOREHOLES

Scope of Activity: Approximately 24 shallow boreholes will be drilled/cored for neutron logging by the U.S. Geological Survey (USGS) in order to evaluate natural infiltration. Core taken from these holes will be used by USGS for determination of moisture content and to construct tritium profiles. The drilling operation utilizes an Odex drilling system, which produces HQ core and a cased hole having a diameter of approximately six inches. The drilling program is being implemented in two phases, each consisting of 12 boreholes that will take several months to complete.

Status as of October 30, 1992: Drilling of borehole USW-UZN-35 with the CME-850 drill rig was completed on October 27, 1992. Total hole depth cored and reamed was 175.81 feet. Target depth of the hole prior to commencement of drilling was 100 feet, however was extended to penetrate the Ghost Dance fault zone. SF6 tracer gas was injected during drilling operations. Borehole USW-UZN-35 is located (approximate state plane coordinates are north 762,200 and east 562,350) in an unnamed wash west to northwest of borehole UZ-16.

NOV 06 1992

Multiple Addressees

-2-

Commencement of drilling on borehole USW-UZN-57 with the CME-850 drill rig began on October 28, 1992. By the end of shift on Friday, October 30, 1992, coring had reached a depth of 69.51 feet and ream depth of 54.48 feet. Borehole USW-UZN-57 along with future borehole locations USW-UZN-58, 59, and 61 are located in Abandoned Wash.

NRG-6

Scope of Activity: A borehole approximately 1100 feet in depth will be drilled using the Joy 225 drilling system. The primary purpose of this hole is to provide core for determination of stratigraphy and engineering characteristics of the rocks at or near the planned Exploratory Studies Facility North Access Ramp. Drilling is scheduled from November through December 1992.

Status as of October 30, 1992: NRG-6 drill and support equipment pad construction commenced on October 19, 1992. Drilling will begin in November 1992 following completion of the pad.

QUATERNARY FAULTING WITHIN THE SITE AREA INVESTIGATIONS

Scope of Activity: Pavements and trenches will be excavated to provide exposures of Quaternary deposits and faults for mapping by geologists from the USGS as described in Study Plan 8.3.1.17.4.6 Quaternary Faulting in the Site Area. Planned activities include excavation of new trenches and modification of existing trenches on the Windy Wash fault, Solitario Canyon fault, and Stagecoach Road fault, and modification of existing exposures of the Paintbrush Canyon fault west of Busted Butte in the sand ramps by developing pavements.

Status as of October 30, 1992: Geologic mapping, sampling, and interpretation continues on trench excavations completed during previous weeks in Midway Valley and Solitario Canyon.

MIDWAY VALLEY INVESTIGATIONS (JP 92-05)

Scope of Activity: Test pits and trenches are being excavated to provide exposures for mapping by geologists from the U.S. Geological Survey and Geomatrix Consultants, Inc., in the the Midway Valley area east of Yucca Mountain. The focus of this investigation is a determination of the location and recency of faulting near prospective surface facilities.

Status as of October 30, 1992: Excavation of Trench MWV-7 began this week. The trench is located in Midway Valley approximately 200 feet north of previously excavated trench MWV-T5A. The trench is being excavated by bulldozer to an initial depth of 20 feet. The primary objective of Trench MWV-T7 is to characterize bedrock structures exposed in MWV-T5A.

NOV 06 1992

Multiple Addressees

-3-

SOIL AND ROCK PROPERTIES

Scope of Activity: Objectives of this investigation are to characterize the soil and rock conditions that will influence or be influenced by the construction of the Exploratory Studies Facility surface and subsurface access facilities. This activity is comprised of a total of 32 test pits and one drill hole (NRG-1). Ongoing Phase II activities include 41 additional test pits and pavement clearing at NRG-1.

Status as of October 30, 1992: No field activities were performed during this period.

CHARACTERIZATION OF STRUCTURAL FEATURES IN THE SITE AREA

Scope of Activity: Objectives of this investigation are to conduct prototype work for development of equipment and techniques for shaft mapping in the Exploratory Studies Facility. Developmental work is to be completed in an enlarged and deepened circular test pit on the east side of Fran Ridge. The area around the pit disturbed during the original excavation will be cleaned to the rock surface for use in pavement studies for Surface Fracture Network Studies.

Status as of October 30, 1992: No field activities were performed during this period.

VOLCANISM EXCAVATIONS

Scope of Activity: Test pits and trenches will be excavated at the Lathrop Wells Volcanic Center and at the Cima volcanic field in order to test alternative models of eruptive histories of cinder cone volcanic activity. The excavations will provide exposures of volcanic materials (lava flows, pyroclastic deposits) and soils for examination and collection of samples. Planned activities include collection of samples for age determinations by multiple methods, description and collection of samples for evaluation of soil development on volcanic units, exposure of contact relations to aid stratigraphic studies for mapping of volcanic centers, and collection of samples for petrologic analysis.

Status as of October 30, 1992: No field activities were performed during this period.


NOV 06 1992

BOREHOLE SECURITY

Scope of Activity: Objectives of this activity are the locking and securing of boreholes drilled during site characterization efforts and tracking of testing conducted in individual boreholes. Over 200 boreholes will be secured during the next several months.

Status as of October 30, 1992: A total of 30 boreholes to date have been secured with padlocks and caps completing Borehole Security Phase I activities.

If you have any questions, please contact Kenneth J. Skipper at 794-7944.


Ueli S. Clanton, Chief
Site Investigations Branch
Regulatory & Site Evaluation Division

RSED:KJS-844

CC:

J. R. Summerson, HQ (RW-22) FORS
R. W. Craig, USGS, Las Vegas, NV
K. J. Skipper, USBR, YMP, NV
T. E. Blejwas, SNL, 6310, Albuquerque, NM
B. W. Distel, M&O/WCC, Las Vegas, NV
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L. F. Quering, YMP, NV
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ENCLOSURE 3



Department of Energy
Yucca Mountain Site Characterization
Project Office
P. O. Box 98608
Las Vegas, NV 89193-8608

WBS 1.2.3.5
QA: N/A

NOV 24 1992

Carl H. Johnson, State of Nevada, Carson City, NV
Phillip Niedzielski-Eichner, Nye County, Chantilly, VA
Dennis A. Bechtel, Clark County, Las Vegas, NV
Albert C. Douglas, City of Las Vegas, Las Vegas, NV
~~Phillip S. Justice, NRC, Las Vegas, NV~~

DAILY OPERATIONS REPORTS AND WEEKLY INTERACTIONS CALENDAR

Enclosed for your information are copies of the Daily Operations Reports for Yucca Mountain Site Characterization Project drill holes UE-25 NRG-1, UE-25 UZ16, and USW UZ N58 (enclosure 1). These reports were prepared by Raytheon Services Nevada and cover November 9-13, 1992.

A copy of the Weekly Interactions Calendar (enclosure 2) is enclosed for your information. It includes a section providing the status of boreholes, trenches, and test pits.

A copy of the field test coordinator's report (enclosure 3) summarizing activities of the previous week and forecasting the activities planned for the current week is also included for your information.

If you need additional information regarding these reports, please contact Uel S. Clanton at (702) 794-7943.

J. Russell Dyer, Director
Regulatory & Site Evaluation Division

RSED:USC-1144

Enclosures:

1. Daily Operations Reports
2. Weekly Interactions Calendar
3. Field Test Coordinator's Report

**RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT**

Report Time: 7:30 hrs
Date: November 16, 1992
Page: 1 of 1

Job Package No.: 92-2

Station: UE-25 NRG-1, North Portal Ramp Borehole

Drill Rig: CME-550

Activity: Rigging up

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with HQ-3 and/or NQ-3 wireline Coring system & inject SF₆ tracer gas to a total depth of $\pm 150'$. 3) Remove Odex casing except 10' & install Cal-Seal surface plug. 7) Run geophysical logs. 8) Demobilize equipment. 9) Prepared final location and elevation survey.

REPORT FOR: November 13, 1992 (Rig Day 9)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 1630 Move in and rig up equipment.

Ending Depth: Cored 150.12 Reamed 85.12 Drilled 0
Daily Footage: Cored 0 Reamed 0 Drilled 0

Drilling Rep: Richard Sowards, REEC

A/E Rep: Richard W. Wright

Personnel On Site: 1-RSN; 3-REEC

Field Report Prepared By: Richard W. Wright

Office Report Prepared By: Richard W. Wright

ENCLOSURE 1

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30

Date: November 16, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Reaming

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: November 13, 1992 (Rig Day 112)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0821	Service and warm up equipment.
0821 - 1004	Complete ream cycle #69 from 979.15' to 999.15'.
1004 - 1034	Rig up and run deviation survey at 999', found deviation to be 2 degrees 0 minutes from vertical with a 7 degree tool.
1034 - 1135	Go in hole with core assembly. Ran a new Christensen Strata Pac bit, RSN #19, SN 2S-26967, 18 - 5/16" cutters, 12 airways.
1135 - 1328	Core run #220 from 999.22' to 1009.15' (93 min), 9.6' Rec.
1328 - 1410	Core run #221 from 1009.15' to 1019.22' (29 min), 9.6' Rec.
1410 - 1510	Pull out of hole with the core assembly.
1510 - 1615	Ream cycle #70 from 999.15' to 1006.20'.
1615 - 1630	Shut down and secure rig.

CORING: Average air rate 572 SCFM
Average vacuum rate 1063 SCFM

REAMING: Average air rate 585 SCFM
Average vacuum rate 1319 SCFM

Ending Depth: Cored 1019.22' Reamed 1006.20' Drilled 0
Daily Footage: Cored 20.00' Reamed 14.07' Drilled 0

Drilling Rep: Dick Sowards, REECO
A/E Rep: David Putnam, RSN
Personnel On Site: 1-RSN; 6-REECO; 1-USGS; 2-SMF
Visitors On Site: RSN - Lindquist; DOE - Tunnel; T&MSS - McCarthy

Field Report Prepared By: David Putnam
Office Report Prepared By: David Putnam and Richard W. Wright

[illegible]

CORE RUNS, DATES, BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC FREQ (/5 ft)		DEPTH/ GRAPHIC LOG	LITHOLOGY/REMARKS
		0	10	20	0	50		
		20	70	120	50	100		
17.9/17.0 95%							935	
207 11/3/92	2.4	2.2/2.4 109%			13			
208 11/4/92					9		940	
			15.6		5		945	
209					2		950	
17.3/14.8 86%		9.0					955	
210 11/5/92	4.8	3.8/2.6 68%			9			
211 11/6/92	4.8				8		960	
					4		965	
212	1.0						970	
213	5.6				9			
214 20.0/16.4 82%	7.1				15		975	
			215 11/10/92					
			216 13.2 18.0				980	

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30 hrs
Date: November 16, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N58

Drill Rig: CME-850

Activity: No activity

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 120'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: November 13, 1992 (Rig Day 6)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0829	Service and warm up equipment.
0829 - 0905	Core run #15 from 70.08' - 75.08' (30 min.), Rec. 5.0'.
0905 - 0928	Core run #16 from 75.08' - 80.08' (15 min.), Rec. 5.0'.
0928 - 0952	Core run #17 from 80.08' - 85.08' (16 min.), Rec. 5.0'.
0952 - 1013	Core run #18 from 85.08' - 90.08' (13 min.), Rec. 5.0'.
1013 - 1034	Core run #19 from 90.08' - 95.08' (12 min.), Rec. 4.4'.
1034 - 1110	Pull out of the hole with coring assembly. Trip in the hole with Odex Hammer.
1110 - 1200	Ream cycle #12.
1200 - 1230	Lunch
1230 - 1357	Ream cycle #12 from 55.03' to 95.08'.
1357 - 1420	Pull out of the hole with Odex hammer. Trip in the hole with coring assembly and run RSN# 42, a Christensen diamond impregnated bit with 10 airways.
1420 - 1438	Core run #20 from 95.08' - 100.08' (18 min.), Rec. 2.7'.
1438 - 1504	Pull out of the hole with coring assembly. Trip in the hole with Odex Hammer.
1504 - 1514	Ream cycle #13 from 95.08' to 100.08'.
1514 - 1525	Pull out of the hole with Odex hammer.
1525 - 1630	Shut down and secure rig.

Average Air Rates: Coring 227 SCFM
 Reaming 343 SCFM

Ending Depth:	Cored 100.08'	Reamed 100.08'	Drilled 0'
Daily Footage:	Cored 30.00'	Reamed 45.05'	Drilled 0'

Drilling Rep: Neal Walker, REECe
A/E Rep: James Anthony, RSN
Personnel On Site: 1-RSN; 4-REECo; 1-USGS; 3-SMF
Visitors On Site: RSN - Wright, Lindquist

Field Report Prepared By: James Anthony
Office Report Prepared By: Richard Wright

RUNS DATES BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC H-REQ (/ 5 ft)			DEPTH GRAPHIC LOG	LITHOLOGY/ REMARK
		0	10	20	0	50			
		20	70	120	50	100			
4	80%	5.8							
5 11/10/92		5.4			11				
6		8.7			20			30	
7		10.6			60			35	
8		2.6						40	
9		6.4			14				
10		6.2			10			45	
23.6/23.6 100%								50	
11 11/12/92		2.5			13				
12		9.2			22			55	
13		14.3			14			60	
14		13.6			10			65	
20.1/20.1 100%								70	
15 11/13/92		10.0			19				

USW UZN-58

Page 2 of

RUNS DATES BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC FREQ (/ 5 ft)		DEPTH GRAPHIC LOG	LITHOLOGY/ REMARK
		0	10	20	0	50		
		20	70	120	50	100		
15 11/13/92		10.0			19		75	
16		20.0			9		80	
17		18.8			11		85	
18		23.1			31		90	
19		25.2			43		95	
20		16.7			21		100	
30.0/27.3 91%							105	
							110	
							115	

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30

Date: November 13, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Reaming

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum.
3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: November 12, 1992 (Rig Day 111)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0830	Service and warm up equipment.
0830 - 1047	Change hydraulic filters in the Haz Vac Unit.
1047 - 1105	Core run #219 from 996.34' to 999.22' (18 min), 2.7' Rec.
1105 - 1120	Lay down core.
1120 - 1123	Pull out of hole with the core assembly.
1123 - 1230	Evacuation exercise.
1230 - 1300	Lunch
1300 - 1350	Continue to pull out of hole with the core assembly.
1350 - 1615	Ream cycle #69 from 979.15' to 992.13'.
1615 - 1630	Shut down and secure rig.

CORING:	Average air rate	551 SCFM
	Average vacuum rate	1315 SCFM

REAMING:	Average air rate	593 SCFM
	Average vacuum rate	1337 SCFM

Ending Depth:	Cored 999.22'	Reamed 992.13'	Drilled 0
Daily Footage:	Cored 2.88'	Reamed 12.98'	Drilled 0

Drilling Rep: Dick Sowards, REECO

A/E Rep: David Putnam, RSN

Personnel On Site: 1-RSN; 8-REECO; 1-USGS; 3-SMF

Visitors On Site: RSN - Cunningham, Wright, Lindquist; DOE - Martin, Morris; SAIC - Pysto; REECO - Mason, Joyce

Field Report Prepared By: David Putnam

Office Report Prepared By: David Putnam and Richard W. Wright

CORE RUNS, DATES, BITS	CODE LOG	DRILLING RATE (ft/hr)			NEW RATE (/5 ft)		DEPTH/ GRAPHIC LOG
		0	10	20	0	50	
		20	70	120	50	100	
17.9/17.0 95%							935
207 11/3/92	2.4	2.2/2.4 109%			13		
208 11/4/92							940
					9		
							945
					5		
							950
209					2		
17.3/14.8 86%							955
210 11/5/92	4.8	3.8/2.6 68%			9		
211 11/6/92							960
	4.8				8		
							965
					4		
212	11.0						
213							970
	5.6				9		
							975
214 20.0/16.4 82%	7.1						
		216					
		217					
		13.2					
		18.0					
							980

LITHOLOGY/REMARKS

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30 hrs
Date: November 13, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N58

Drill Rig: CME-850

Activity: Coring

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 120'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: November 12, 1992 (Rig Day 5)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and warm equipment.
0830 - 0850	Safety meeting.
0850 - 1058	Core run #11 from 50.03' - 55.03' (121 min.), Rec. 5.0'.
1058 - 1115	Pull out of the hole with coring assembly. Trip in hole with the Odex Hammer.
1115 - 1125	Ream cycle #11.
1125 - 1235	Evacuation drill.
1235 - 1305	Lunch
1305 - 1337	Ream cycle #11 from 40.59' to 55.03'.
1337 - 1356	Pull out of the hole with Odex hammer. Trip in the hole with coring assembly and run RSN# 31, a Christensen PDC bit.
1356 - 1449	Core run #12 from 55.03' - 60.08' (33 min.), Rec. 5.0'.
1449 - 1515	Core run #13 from 60.08' - 65.08' (21 min.), Rec. 5.0'.
1515 - 1550	Core run #14 from 65.08' - 70.08' (22 min.), Rec. 5.1'.
1550 - 1630	Shut down and secure rig.

Average Air Rates: Coring 226 SCFM
 Reaming 339 SCFM

Ending Depth:	Cored 70.08'	Reamed 55.03'	Drilled 0'
Daily Footage:	Cored 20.05'	Reamed 14.44'	Drilled 0'

Drilling Rep: Neal Walker, REEC

A/E Rep: James Anthony, RSN

Personnel On Site: 1-RSN; 4-REEC; 1-USGS; 3-SMF; 5-Visitors

Visitors On Site: RSN - Cunningham, Wright, Lindquist; REEC - Mason, Joyce

Field Report Prepared By: James Anthony

Office Report Prepared By: Richard Wright

USW UZN-58

Page 2 of

RUNS DATES BITS	CORE LOG	(ft/hr)			(/ 5 ft)		DEPTH GRAPHIC LOG	LITHOLOGY/ REMARK
		0	10	20	0	50		
		20	70	120	50	100		
4	80%	5.8						
5	11/10/92	5.4			11			
6		8.7			20		30	
7		10.6			60		35	
8		2.6					40	
9		6.4			14			
10		6.2			10		45	
	23.6/23.6 100%						50	
11	11/12/92	2.5			13			
12		9.2			22		55	
13		14.3			14		60	
14		13.6			10		65	
	20.1/20.1 100%						70	

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30 hrs
Date: November 12, 1992
Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ:N58

Drill Rig: CME-850

Activity: Coring

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 120'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: November 10, 1992 (Rig Day 4)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0830	Service and warm equipment.
0830 - 0907	Pull out of the hole with the coring assembly. Trip in the hole with the Odex Hammer.
0907 - 0941	Ream cycle #9 from 17.26' - 26.42' (34 mins).
0941 - 0956	Pull out of the hole with the Odex hammer. Trip in the hole with the coring assembly.
0956 - 1046	Core run #5 from 26.42' - 30.00' (10 min.), Rec. 3.6'.
1046 - 1131	Core run #6 from 30.00' - 35.07' (10 min.), Rec. 5.1'.
1131 - 1205	Core run #7 from 35.07' - 39.64' (8 min.), Rec. 4.5'.
1205 - 1235	Lunch.
1235 - 1311	Core run #8 from 39.64' - 40.59' (14 min.), Rec. 1.0'.
1311 - 1324	Pull out of the hole with the coring assembly. Trip in the hole with the Odex Hammer.
1324 - 1405	Ream cycle #10 from 26.42' - 40.59' (41 mins).
1405 - 1421	Pull out of the hole with the Odex hammer. Trip in the hole with the coring assembly.
1421 - 1511	Core run #9 from 40.59' - 45.03' (8 min.), Rec. 4.3'.
1511 - 1604	Core run #7 from 45.03' - 50.03' (5 min.), Rec. 5.0'.
1604 - 1630	Shut down and secure rig.

Average Air Rates: Coring 272 SCFM
 Reaming 317 SCFM

Ending Depth:	Cored 50.03'	Reamed 40.59'	Drilled 0'
Daily Footage:	Cored 23.61'	Reamed 23.33'	Drilled 0'

Drilling Rep: Neal Walker, REEC

A/E Rep: James Anthony, RSN

Personnel On Site: 1-RSN; 4-REEC; 1-USGS; 3-SMF; 4-Visitors

Visitors On Site: RSN - Cunningham, Wright, Lindquist; CLV - Douglas

Field Report Prepared By: James Anthony

Office Report Prepared By: Don Cunningham

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PRELIMINARY FIELD COMPOSITE BOREHOLE LOG

BOREHOLE ID: USW UZN-58STUDY PLAN NO: 8.3.1.2.2.1CORE SIZE: HX 2.4"DRILL DATES: 11/5/92

GROUND ELEV: _____

COORDINATES: N: _____

E: _____

TOTAL DEPTH: _____

ANGLE FROM VERT: 0 BEARING: NA

ALLUVIUM



NON-WELDED



PARTIALLY WELDED



DENSELY WELDED



VITROPHYRE



BEDDED TUFF

Logging by Drilling Support Division, Drilling Support and Sample Management Dept

RUNS DATES BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC FREQ (/ 5 ft)		DEPTH GRAPHIC LOG	LITHOLOGY/ REMARKS
		0	10	20	0	50		
		20	70	120	50	100		
11/5/92				161.4	NO DATA			Alluvium: gravel>sand>silt, occasional organics decreasing with depth
DC-1								
DC-2		21.9						
DC-3								
6.2/5.5 89%			83.7				5	
11/6/92		48.3						
DC-4								
DC-5		25.5	7.5					
DC-6								
1		6.7					10	
DC-7				126.0	NO DATA			
DC-8		41.1						
DC-9			60.0					
11.1/11.1							15	
DC-10		24.75						
100%			5.4					
DC-11		4.5						
11/9/92								
2							20	
3		3.5						
							25	
9.1/7.3								
80%		5.8						
5 11/10/92			5.4					
							32	
							11	

@20.8 Fault Breccia/ Alluvium
Topopah Spring Contact

20.8-xx.x Quartz latite: grayish pink to pale red; partially welded, devitrified; 10% phenocrysts, sanidine and plagioclase; 3-7% pumice fragments; pumice fragments altering to clay.

RUNS DATES BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC FREQ (/ 5 ft)		DEPTH GRAPHIC LOG	LITHOLOGY/ REMARK
		0	10	20	0	50		
		20	70	120	50	100		
5	80%	5.8						
11/10/92		5.4			11			
6		8.7			20		30	
7		10.6			60		35	
8		2.6					40	
9		6.4			14		45	
		6.2			10		50	
23.6/23.6	100%							
							55	
							60	
							65	
							70	

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30

Date: November 12, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Work on Haz-Vac

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: November 10, 1992 (Rig Day 110)

HOURS FROM - TO	OPERATIONS DESCRIPTION
0800 - 0810	Service and warm up equipment.
0810 - 0815	Circulate and clean out to bottom of hole.
0815 - 0840	Rig up and run deviation survey at 979', found deviation to be 2 degrees 3 minutes from vertical with a 7 degree tool.
0840 - 0900	Go in hole with core assembly. Ran a new Christensen Strata Pac bit, RSN #18, SN 2S-24193, 18 - 5/16" cutters, 12 - 3/16" x 3/16" airways, 15 stones/ct.
0900 - 0915	Survey rig.
0915 - 1016	Continue going in the hole with core assembly.
1016 - 1043	Core run #215 from 979.18' to 979.61' (2 min.), 0.4' Rec.
1043 - 1108	Core run #216 from 979.61' to 979.91' (1 min.), 0.2' Rec.
1108 - 1248	Core run #217 from 979.91' to 989.93' (81 min.), 10.0' Rec.
1248 - 1326	Core run #218 from 989.93' to 996.34' (38 min.), 6.4' Rec.
1326 - 1515	Work on Haz-Vac.
1515 - 1530	Lay down core.
1530 - 1615	Work on Haz-Vac.
1615 - 1630	Shut down and secure rig.

CORING: Average air rate 519 SCFM
Average vacuum rate 1022 SCFM

REAMING: Average air rate N/A SCFM
Average vacuum rate N/A SCFM

Ending Depth: Cored 996.34' Reamed 979.15' Drilled 0
Daily Footage: Cored 17.16' Reamed 0 Drilled 0

Drilling Rep: Dick Sowards, REECO
A/E Rep: David Putnam, RSN
Personnel On Site: 1-RSN; 8-REECO; 1-USGS; 3-SMF
Visitors On Site: RSN - Cunningham, Wright, Lindquist; DOE - Williams; CLV/State - Douglas

Field Report Prepared By: David Putnam
Office Report Prepared By: David Putnam and Richard W. Wright

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30 hrs

Date: November 10, 1992

Page: 1 of 1

Job Package No.: 91-9, Phase 2 Revision 4

Station: USW UZ N58

Drill Rig: CME-850

Activity: Reaming

Objectives: 1) Mobilize drill rig & drilling system. 2) Continuous core with wire line coring system to a total depth of approximately $\pm 120'$. 3) Ream down core track while coring with 6-inch bit & 5.5-inch O.D. Odex steel casing. 4) Demobilize equipment. 5) Prepared final location and elevation survey.

REPORT FOR: November 9, 1992 (Rig Day 3)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0830	Service and warm equipment.
0830 - 1158	Work on drilling head (leaking air).
1158 - 1202	Ream cycle #8 from 15.61' - 17.26' (4 mins).
1202 - 1232	Lunch.
1232 - 1250	Pull out of the hole with the Odex hammer. Trip in the hole with the drive sampler.
1250 - 1257	Drive sample #11 from 17.26' - 17.53' (1 min) 0.0' Rec.
1257 - 1309	Pull drive sampler. Trip in the hole with the Coring assembly. Rerun RSN #33, a Christensen Carbonado.
1309 - 1352	Core run #2 from 17.53' - 20.00' (10 min.), Rec. 1.4'.
1352 - 1530	Core run #3 from 20.00' - 24.96' (13 min.), Rec. 4.3'.
1530 - 1550	Core run #4 from 24.96' - 26.42' (5 min.), Rec. 1.4'.
1550 - 1600	Pull out of the hole with coring assembly.
1600 - 1630	Shut down and secure rig.

Average Air Rates: Coring 253 SCFM
 Reaming 446 SCFM

Ending Depth:	Cored 26.42'	Reamed 17.26'	Drilled 0'
Daily Footage:	Cored 9.16'	Reamed 1.65'	Drilled 0'

Drilling Rep: Neal Walker, REECo
A/E Rep: James Anthony, RSN
Personnel On Site: 1-RSN; 4-REECo; 1-USGS; 3-SMF; 4-Visitors
Visitors On Site: RSN - Cunningham, Wright, Davis; M/O - Cameron;

Field Report Prepared By: James Anthony
Office Report Prepared By: Don Cunningham

RAYTHEON SERVICES NEVADA
DAILY OPERATIONS REPORT
YUCCA MOUNTAIN PROJECT

Report Time: 7:30

Date: November 10, 1992

Page: 1 of 1

Job Package No.: 92-03

Station: UE-25 UZ16

Drill Rig: LM300

Activity: Deviation survey

Objectives: 1) Mobilize drill rig. 2) Continuous core/drive sample from ground level to 50' minimum. 3) Vacuum drill 22 inch hole and set 16" OD casing to total depth. 4) Cement casing to surface. 5) Continuously core and ream to 1663'. 6) Prepare final location and elevation survey. 7) Install wellhead box

REPORT FOR: November 9, 1992 (Rig Day 109)

**HOURS
FROM - TO**

OPERATIONS DESCRIPTION

0800 - 0834

Service and warm up equipment, safety meeting.

0834 - 1125

Ream cycle #68, reamed from 959.12' to 961.90', emptied sample collector, cuttings were very damp. Checked for free water by circulating hole, no water recovered. Ream sample from 961.90' to 962.90' was dry. No water present in air processing unit.

1125 - 1200

Work on Haz-Vac, break out air manifold from Sullair compressor.

1200 - 1230

Lunch

1230 - 1410

Rig down Haz-Vac, move to subdock, clean and return to location, rig up. Move out one Sullair compressor.

1410 - 1430

Work on Haz-Vac.

1430 - 1605

Continue ream cycle #68 from 959.12' to 979.15'.

1605 - 1615

Rig up to run deviation survey.

1615 - 1630

Shut down and secure rig.

CORING:

Average air rate

N/A SCFM

Average vacuum rate

N/A SCFM

REAMING:

Average air rate

712 SCFM

Average vacuum rate

1137 SCFM

Ending Depth:

Cored 979.18'

Reamed 979.15'

Drilled 0

Daily Footage:

Cored 00.00'

Reamed 20.03'

Drilled 0

Drilling Rep: Dick Sowards, REECO

A/E Rep: David Putnam, RSN

Personnel On Site: 1-RSN; 8-REECO; 1-USGS; 2-SMF

Visitors On Site: RSN - Cunningham, Wright; SAIC - Moyer

Field Report Prepared By: David Putnam

Office Report Prepared By: David Putnam and Richard W. Wright

**REECO RIG AND CREW SCHEDULE
MONTH OF NOVEMBER 1992**

RIG & CREW	NOV 9	NOV 10	NOV 11 OFF HOLIDAY	NOV 12	NOV 13
LM-300	UZ16	UZ16	OFF	UZ16	UZ16
CME-850	N58	N58	OFF	N58	N58
CME-550			OFF		
JOY 1			OFF		

NOV 16	NOV 17	NOV 18	NOV 19	NOV 20
UZ16	UZ16	UZ16	UZ16	UZ16
NRG-1 CLEAN OUT				
	NRG-6 START DRILLING	NRG-6	NRG-6	NRG-6

NOV 23	NOV 24	NOV 25	NOV 26 OFF HOLIDAY	NOV 27 OFF HOLIDAY
UZ16	UZ16	UZ16	OFF	OFF
			OFF	OFF
NRG-1 PLUG*	NRG-1 PLUG*		OFF	OFF
	NRG-6	NRG-6	OFF	OFF

NOTE: *Plug and abandonment of UE25 RF #9,
RF #10 & RF #11 will be done after
the completion of NRG-1.

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 11/13/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
11/18/92 Bethesda, MD	ACNW WG Climate	Crawley	Gil (LeRoy-M&O)		Discuss the potential for climate changes in Southern Basin and Range and the impact on natural processes affecting PA of potential repository at YM. Original scheduled 11/19/91, this has been rescheduled from 4/22/92.
11/18-20/92 Albuquerque, NM	DOE Workshop on Expert Judgment	Dyer/Boak (Yunker-M&O, Van Luik-M&O, Weaver-M&O)	Simmons (Hoffman-M&O)	M&O SNL	Examine DOE's use of expert judgment for YMP, learn how other projects have used expert judgment, make recommendations for future use, fulfill NWTRB recommendation to hold workshop.

BOLD INDICATES REVISIONS AND NEW INFORMATION

** = MEETINGS THAT ARE CLOSED TO THE PUBLIC

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 11/13/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
11/19-20/92 Bethesda, MD	ACNW 48th Meeting		Gil (LeRoy-M&O)		Review STP on fault avoidance. Consider potential impacts that different waste forms could have on repository performance. Discuss use of the collective dose concept in HLW repository licensing.
11/24/92 Video Conference	Interaction Planning Meeting	Bjerstedt (LeRoy-M&O)	Bjerstedt (LeRoy-M&O)	M&O	Discuss/plan DOE/NRC interactions for first half 1993. Previously scheduled 11/18/92. (11:30a ET /8:30aPST)
12/14-15/92 Rockville, MD	NRC TE: Total System Performance Assessment	Boak (Pahwa-M&O)	Bjerstedt (LeRoy-M&O)	M&O SNL PNL	Discuss the DOE TSPA (methodology, results, lessons, learned, future plans), and NRC IPE.
12/16/92 Bethesda, MD	ACNW WG on PA - Phase 2 HLW Interactive PA by NRC	Boak (Van Luik-M&O)	Gil (LeRoy-M&O)	M&O SNL PNL	Will discuss progress of Phase 2 PA effort. Also will hear briefing from DOE on status of TSPA.
12/17-18/92 Bethesda, MD	ACNW 49th Meeting		Gil (LeRoy-M&O)		Agenda TBD.
1/27-28/92 Bethesda, MD	ACNW 50th Meeting		Gil (LeRoy-M&O)		Agenda TBD.

BOLD INDICATES REVISIONS AND NEW INFORMATION

**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 11/13/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
2/24-25/93 Bethesda, MD	ACNW 51st Meeting		Gil (LeRoy-M&O)		Agenda TBD.
Delayed to early 1993 Albuquerque, NM	NRC TE: Volcanism	Cooper (Jerez-M&O)	Bjerstedt (LeRoy-M&O)	M&O LANL	Discuss DOE volcanism studies as detailed in LANL report.
1/13/93	WIPP Roundtable discussion - NRC observation	Boak (Van Luik-M&O)	Bjerstedt (LeRoy-M&O)	M&O SNL	NRC staff observe interaction between YMPO PA and WIPP PA. Previously scheduled 10/27/92.
1/14/93 Carlsbad, NM	Tour of WIPP Site **	Boak (Van Luik-M&O)	Bjerstedt (LeRoy-M&O)	M&O SNL	Previously scheduled 10/28/92.
1/5-6/93 Arlington, VA	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		M&O systems update and ESF and respository design follow-up.
2/93 or 3/93 TBD	NWTRB HG&G Panel Meeting		Cooper (Hoffman-M&O)		Agenda TBD.
4/20-23/93 Reno, NV	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		Agenda TBD.
6/1/93 TBD	NWTRB International Trip **		Cooper (Hoffman-M&O)		Agenda TBD.

BOLD INDICATES REVISIONS AND NEW INFORMATION

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WEEKLY INTERACTIONS CALENDAR

STATUS OF DOE NWTRB, ACNW, AND NRC MEETINGS FOR WEEK ENDING 11/13/92

<u>DATE/LOC.</u>	<u>TOPIC</u>	<u>TECHNICAL LEAD (SUPPORT)</u>	<u>CONTACT (SUPPORT)</u>	<u>PARTICIPANT (SUPPORT)</u>	<u>COMMENTS</u>
7/12-15/93 Denver, CO	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		Agenda TBD.
10/19-22/93 Las Vegas, NV	NWTRB Full Board Meeting		Cooper (Hoffman-M&O)		Agenda TBD.

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WEEKLY INTERACTIONS CALENDAR

DRILLING, TRENCHING, AND TEST PIT ACTIVITIES 11/13/92

<u>DESIGNATION</u>	<u>PLANNED START DATE</u>	<u>PLANNED END DATE</u>	<u>BACKFILL DATE</u>	<u>YMPO SITE CONTACT</u>	<u>COMMENTS</u>
Midway Valley Investigations	10/27/92	11/20/92	11/20/92	Sullivan	Trench MWV-T7 will be excavated within ESF North access site area.
Fran Ridge Test Pit No. 1	8/24/92	9/15/92	N/A	Girdley	Fracture network mapping underway.
Lathrop Wells Cinder Cone Volcanic Trenching	9/8/92	9/16/92	9/16/93	Cooper	Continuation of the volcanic studies.
Unsaturated Zone Borehole No. 16	5/27/92	3/24/93	N/A	Long	Unsaturated zone site characterization and vertical seismic profiling.
Neutron-Access Boreholes Phase II (12 boreholes)	8/3/92	TBD	N/A	Girdley	Core taken from these holes will be used by USGS for determination of moisture content and to construct tritium profiles.

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**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**

WEEKLY INTERACTIONS CALENDAR

DRILLING, TRENCHING, AND TEST PIT ACTIVITIES 11/13/92

<u>DESIGNATION</u>	<u>PLANNED START DATE</u>	<u>PLANNED END DATE</u>	<u>BACKFILL DATE</u>	<u>YMPO SITE CONTACT</u>	<u>COMMENTS</u>
North Ramp Geologic-6	11/16/92	2/12/93	N/A	Williams	Borehole to provide core to determine stratigraphic and engineering rock characteristics near planned ESF North Access Ramp. Estimated total depth 1100.

BOLD INDICATES REVISIONS AND NEW INFORMATION
**** = MEETINGS THAT ARE CLOSED TO THE PUBLIC**



Department of Energy
Yucca Mountain Site Characterization
Project Office
P. O. Box 98608
Las Vegas, NV 89193-8608

WBS 1.2.3
QA: N/A

NOV 20 1992

J. Russell Dyer, YMP, NV
Winfred A. Wilson, YMP, Mercury, NV, M/S 717

FIELD TEST COORDINATOR'S REPORT FOR THE WEEK ENDING NOVEMBER 13, 1992

UZ-16

Scope of Activity: A borehole approximately 1700 feet in depth will be drilled using the LM-300 drilling system. The primary purpose of the hole will be for vertical seismic profile testing, although other tests such as air permeability, hydrogeochemistry, and matrix hydrologic properties are also being planned. Drilling is scheduled from May through March 1993, following pad construction in March 1992.

Status as of November 13, 1992: Borehole UZ-16 continues to be drilled with the LM-300 drill rig. Coring continued from 979.18 feet to 1019.22 feet and the borehole was reamed from 959.12 feet to 1006.20 feet. On November 10, 1992, a deviation survey was run at a depth of 979 feet using a 7 degree tool. Deviation of the hole was found to be 2 degrees and 3 minutes off vertical. On November 13, 1992, a deviation survey was performed at a depth of 999 feet using a 7 degree tool. Deviation of the hole was found to be 2 degrees and 0 minutes off vertical. Borehole surveys completed during the reporting period of November 9-13 indicate no further detectable deviation of the borehole from vertical. Surveys to detect deviation of the borehole from vertical will continue to be conducted following reaming cycles to monitor this condition.

NEUTRON-ACCESS BOREHOLES

Scope of Activity: Approximately 24 shallow boreholes will be drilled/cored for neutron logging by the U.S. Geological Survey (USGS) in order to evaluate natural infiltration. Core taken from these holes will be used by USGS for determination of moisture content and to construct tritium profiles. The drilling operation utilizes an Odex drilling system, which produces HQ core and a cased hole having a diameter of approximately six inches. The drilling program is being implemented in two phases, each consisting of 12 boreholes that will take several months to complete.

Status as of November 13, 1992: Commencement of drilling on borehole USW-UZN-58 with the CME-850 drill rig began on November 5, 1992. By the end of shift on Friday, November 13, 1992, coring had reached a depth of 100.08 feet and a ream depth of 100.08 feet. Boreholes USW-UZN-57 and USW-UZN-58 along with future boreholes USW-UZN-59 and USW-UZN-61 are located in Abandoned Wash.

Multiple Addressees

-2-

NRG-6

Scope of Activity: A borehole approximately 1100 feet in depth will be drilled using the Joy 225 drilling system. The primary purpose of this hole is to provide core for determination of stratigraphy and engineering characteristics of the rocks at or near the planned Exploratory Studies Facility North Access Ramp. Drilling is scheduled from November through December 1992.

Status as of November 13, 1992: NRG-6 drill and support equipment pad construction commenced on October 19, 1992, and is ongoing. Drilling will begin in November 1992 following completion of the pad.

QUATERNARY FAULTING WITHIN THE SITE AREA INVESTIGATIONS

Scope of Activity: Pavements and trenches will be excavated to provide exposures of Quaternary deposits and faults for mapping by geologists from the USGS as described in Study Plan 8.3.1.17.4.6 Quaternary Faulting in the Site Area. Planned activities include excavation of new trenches and modification of existing trenches on the Windy Wash fault, Solitario Canyon fault, and Stagecoach Road fault, and modification of existing exposures of the Paintbrush Canyon fault west of Busted Butte in the sand ramps by developing pavements.

Status as of November 13, 1992: Geologic mapping, sampling and interpretation continues on trench excavations completed during previous weeks in Midway Valley and Solitario Canyon.

MIDWAY VALLEY INVESTIGATIONS

Scope of Activity: Test pits and trenches are being excavated to provide exposures for mapping by geologists from the U.S. Geological Survey and Geomatrix Consultants, Inc., in the the Midway Valley area east of Yucca Mountain. The focus of this investigation is a determination of the location and recency of faulting near prospective surface facilities.

Status as of November 13, 1992: To further investigate the bedrock structure exposed in Trench MWV-T7, the eastern section of the trench will be deepened about 5 feet. The MWV-T7 trench was excavated by bulldozer the previous week to an initial depth of about 20 feet. The primary objective of Trench MWV-T7 is to characterize the bedrock structures exposed in Trench MWV-T5A. Additional excavation to deepen the trench will begin November 16, 1992. The trench is located in Midway Valley approximately 200 feet north of previously excavated trench MWV-5A.

SOIL AND ROCK PROPERTIES

Scope of Activity: Objectives of this investigation are to characterize the soil and rock conditions that will influence or be influenced by the construction of the Exploratory Studies Facility surface and subsurface access facilities. This activity is comprised of a total of 32 test pits and one drill hole (NRG-1). Ongoing Phase II activities include 41 additional test pits and pavement clearing at NRG-1.

Status as of November 13, 1992: No field activities were performed during this period.

CHARACTERIZATION OF STRUCTURAL FEATURES IN THE SITE AREA

Scope of Activity: Objectives of this investigation are to conduct prototype work for development of equipment and techniques for shaft mapping in the Exploratory Studies Facility. Developmental work is to be completed in an enlarged and deepened circular test pit on the east side of Fran Ridge. The area around the pit disturbed during the original excavation will be cleaned to the rock surface for use in pavement studies for Surface Fracture Network Studies.

Status as of November 13, 1992: No field activities were performed during this period.

VOLCANISM EXCAVATIONS

Scope of Activity: Test pits and trenches will be excavated at the Lathrop Wells Volcanic Center and at the Cima volcanic field in order to test alternative models of eruptive histories of cinder cone volcanic activity. The excavations will provide exposures of volcanic materials (lava flows, pyroclastic deposits) and soils for examination and collection of samples. Planned activities include collection of samples for age determinations by multiple methods, description and collection of samples for evaluation of soil development on volcanic units, exposure of contact relations to aid stratigraphic studies for mapping of volcanic centers, and collection of samples for petrologic analysis.

Status as of November 13, 1992: No field activities were performed during this period.

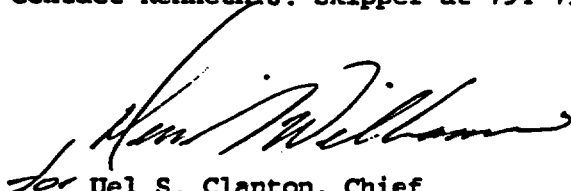
NOV 20 1992

BOREHOLE SECURITY

Scope of Activity: Objectives of this activity are the locking and securing of boreholes drilled during site characterization efforts and tracking of testing conducted in individual boreholes. Over 200 boreholes will be secured during the next several months.

Status as of November 13, 1992: A total of 30 boreholes to date have been secured with padlocks and caps completing Borehole Security Phase I activities.

If you have any questions, please contact Kenneth J. Skipper at 794-7944.



Uel S. Clanton, Chief
Site Investigations Branch
Regulatory & Site Evaluation Division

RSED:KJS-1128

CC:

J. R. Summerson, HQ (RW-22) FORS
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K. J. Skipper, USBR, YMP, NV
L. E. Shephard, SNL, 6310, Albuquerque, NM
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Department of Energy

Yucca Mountain Site Characterization

WBS 1.2.3.5

QA: N/A

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NOV 20 1992

Carl H. Johnson, State of Nevada, Carson City, NV
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Dennis A. Bechtel, Clark County, Las Vegas, NV
Albert C. Douglas, City of Las Vegas, Las Vegas, NV
Philip S. Justus, NRC, Las Vegas, NV

PRELIMINARY FIELD COMPOSITE BOREHOLE LOGS

For your information, enclosed is a copy of the Preliminary Field Composite Borehole Log for borehole USW UZN-57 which was developed by the Drilling Support and Sample Management Department of Technical and Management Support Services. Drilling of the borehole was completed on November 4, 1992.

If you need additional information regarding the log, please contact Uel S. Clanton at (702) 794-7943.

J. Timothy Sullivan for

J. Russell Dyer, Director
Regulatory & Site Evaluation Division

RSED:USC-1099

Enclosure:
Preliminary Field Composite
Borehole Log

Received: *Return*
11/24 *ASAP;*
PHIL: Saw ☒ *me*
Wants copy? ☐
Wants orig? ☐

JOHN: Saw ☐
Wants copy? ☐
Wants orig? ☐

Other instructions?

BIFG

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT

PRELIMINARY FIELD COMPOSITE BOREHOLE LOG

BOREHOLE ID: USW UZN-57

STUDY PLAN NO: 8.3.1.2.2.1

CORE SIZE: HQ 2.4"

DRILL DATES: 10/28/92-11/4/92

GROUND ELEV: 4200' (EST.)

COORDINATES: N: 755,075' (EST.)

E: 561,100' (EST.)

TOTAL DEPTH: 118.9'

ANGLE FROM VERT: NA BEARING: NA



ALLUVIUM



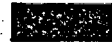
NON-WELDED



PARTIALLY WELDED



DENSELY WELDED



VITROPHYRE



BEDDED TUFF

LOG FINAL DATE:

11/12/92

Logging by Drilling Support Division, Drilling Support and Sample Management Dept., T&MSS

RUNS DATES BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC FREQ (/ 5 ft)		DEPTH GRAPHIC LOG	LITHOLOGY/ REMARKS
		0	10	20	0	50		
		20	70	120	50	100		
DC-1		71.4			NO DATA			Alluvium: silt>sand>cobbles>pebbles, no apparent boulders, occasional organics, no clay horizon
1 DC-2			1.8					No footage drilled on DC-2.
10/28/92		14.0			37		5	1.2-14.5 Ashflow tuff: grayish red, densely welded, devitrified; 30% phenocrysts of feldspar and biotite, calcite on fracture surfaces
2		12.0			28		10	
3		12.0			17		15	
4		13.6			16		20	14.5- 118.9 Topopah Spring member, ash-flow tuff; pale red, moderately welded, devitrified, 15% phenocrysts of sanidine, minor plagioclase and rare biotite
19.5/19.9 102%							25	
5 10/29/92		6.1			11			
6		6.8			14			

Page 1 of 4

ENCLOSURE 1

RUNS DATES BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC FREQ (/ 5 ft)		DEPTH GRAPHIC LOG	LITHOLOGY/ REMARKS
		0	10	20	0	50		
		20	70	120	50	100		
6 5		6.8			14			
7		13.6			14		30	
8		13.0			8		35	
9		15.0			10		40	
25.0/25.0 100%								
10		13.0			16		45	
10/30/92								
11		6.1			15		50	
12		14.3			18		55	
13		11.5			12		60	
14		8.1			12		65	
25.0/25.0 100%								
15 11/2/82		7.7			10		70	

RUNS DATES BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC FREQ (/ 5 ft)		DEPTH GRAPHIC LOG	LITHOLOGY/ REMARKS
		0	10	20	0	50		
		20	70	120	50	100		
15		5.7			11			
16		13.6			18		75	
17		12.5			17		80	
18		10.7			26		85	
19		8.6			28		90	
20		8.8			41		95	
21		34.2			47		100	
22		6.1			47		105	
23		4.9			29		110	
24		5.5					115	

© 99.5, 5-10% Lithophysae.

RUNS DATES BITS	CORE LOSS	DRILLING RATE (ft/hr)			FRAC FREQ (/ 5 ft)			DEPTH GRAPHIC LOG	LITHOLOGY/ REMARKS
		0	10	20	0	50	100		
		20	70	120	50	100	150		
24									
9.9/8.8 89%		5.5			13				
								120	
								125	
								130	
								135	
								140	
								145	
								150	
								155	
								160	

Total Depth@ 118.9
Cumulative Totals: 118.9/114.7
96%