



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

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TO: John J. Linehan, Director, HLPD
Division of High-Level Waste Management, M/S 4-H-3

FROM: Paul T. Prestholt, Sr. On-Site Licensing Representative

DATE: September 29, 1989

SUBJECT: WEEKLY ACTIVITY REPORT, PROTOTYPE TESTING

Please find enclosed the above-referenced report (2) received in this office, i.e., week ending August 20, and August 27, 1989.

PTP:nan
Enclosure

cc: Carl Johnson
Agency for Nuclear Projects
Nuclear Waste Project Office
Capitol Complex
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WEEKLY ACTIVITY REPORT
PROTOTYPE TESTING
Week Ending - August 20, 1989

LLNL

Engineered Barrier - Horizontal:

REECO personnel continued to overcore hole NE-2A using the 12 inch overcore barrel. Core was drilled from 15.3 feet to a total depth of 25.7 feet. At 16.2 feet, the core broke off in the barrel. 6.5 feet of core was recovered from 10.2 feet to 16.7 feet and boxed. The driller had problems with the bit not cutting. He removed the bit and used a torch to remove every other tooth. This provided better cuttings removal and air circulation. Due to the bit hitting a rock bolt, (See August 13 report) the heater assembly was off center approximately 5 inches at the conclusion of the coring. Monday, August 14, 1989, was a lost day because the drill helper did not report to work. The driller performed maintenance and clean up the LY-38 drill rig.

USGS

Cross Hole:

There has not been any NTS activity during this reporting period. Modification of packers and instrumentation is continuing.

Wet and Dry Drilling:

Data collection is continuing on the four test holes located in the U12g12 drift. No further field work is planned for this test.

Drill Hole Instrumentation:

Data collection is continuing on the two test holes located near the end of the U12g12 drift. No further field work is anticipated for this test.

Blast Effects:

There has not been any NTS activity during this reporting period. Field work for this test is tentatively scheduled to begin on October 2, 1989.

Excavation Effects:

There has not been any NTS activity during this reporting period. Field work for this test is tentatively scheduled to begin on October 16, 1989.

Perched Water:

There has not been any NTS activity during this reporting period.

In-Situ Stress:

There has not been any NTS activity during this reporting period. Phase I field work for this test is now complete. Phase II field work will tentatively begin November 27, 1989.

Intact Fracture:

Two radial fracture drill holes, RF #7 and RF #8 were completed during this reporting period. The RF #7 hole was drilled twice. The first hole was drilled to a total depth of 2.4 feet using a 10 inch overcore barrel, but no core was recovered due to bad ground. The drill steel was repositioned, and RF #7 was then redrilled to a total depth of 2.0 feet. The core was then removed and wrapped, waxed, and boxed. The angle of the drill steel was again repositioned, and drilling progressed on RF #8. This hole was drilled to a total depth of 2.0 feet using a 10 inch overcore bit. The core was then removed, wrapped, waxed, and boxed. The drill rig was demobilized. The H&N surveyors took back sights and foresights of holes RF #4 through FR #8 for their as-built drawings.

Fran Ridge Mapping:

There has not been any NTS activity during this reporting period. The prototype mapping at Fran Ridge cannot begin until the proper permits are obtained from the state.

Optimal Rubble:

This test is located at the end of the Demo Drift on the right rib. REECO personnel drilled 25 holes of various depth at a distance of 19 feet from the centerline of the Demo drift, and blasted using 50 lbs of Iredyne powder in order to even up the face in order to use the drill jumbo. The drill jumbo was too big to turn the corner for drilling in the alcove. Jack legs are being used to dry drill a 5 foot round. This requires the holes at the top of the arch to be drilled out of the LHD bucket. Fifty 5 foot holes were drilled at a distance of 22 feet from the center line of the Demo Drift using jack leg drills. The round was loaded with 100 lbs of Iredyne powder, and blasted using non-el blast caps. The round pulled 2.5-3.0 feet, out of 5 feet, using a 4 inch burn hole and a spiral blast pattern. Total depth from centerline of the Demo Drift is 25 feet.

LANL

Diffusion Test:

Data collection is continuing for DH-2 in the Experiment Drift, and DH-3 in the CFE-3 and -4 drift. Phase II (instrumentation overcoring) cannot proceed until the CMM-2 drill is procured and delivered to G-Tunnel.

SNL

Thermal Stress:

There has not been any NTS activity during this reporting period. Field work for this test is tentatively scheduled to start on December 4, 1989.

G-Tunnel Drifting:

The Alpine Miner was brought back into G-Tunnel and trammed to the Thermal Stress Drift, where cutting commenced. A distance of 8 feet was cut. Approximately 16 8 feet long by 7/8 inch diameter epoxy rock bolts were installed and torqued to 60 ft-lbs. Total depth from the centerline of EV-6 drift is 51 feet.

EXPENDITURES

	Work Days Remain	<u>29</u>	Expended	<u>88</u> %
.Prototype Testing:				
.REECO: Current Week-Prototype Testing	\$	30,923	Year to Date	\$ 454,071
Current Week-G-Tunnel Operation	\$	27,752	Year to Date	\$ 961,036
.H&N: Current Week-Prototype Testing	\$	1,981	Year to Date	\$ 268,371
.F&S: Current Week-Prototype Testing	\$	6,596	Year to Date	\$ 153,112

WEEKLY ACTIVITY REPORT
PROTOTYPE TESTING
Week Ending - August 27, 1989

Participants:

- Los Alamos - manage and Integrate Prototype Testing and conduct tests.
- Sandia National Laboratories - manage the operations at G-Tunnel and perform tests.
- U. S. Geological Survey (U. S. Bureau of Reclamation, and Lawrence Berkeley Laboratory) - perform tests.
- Lawrence Livermore National Laboratory - perform tests.
- Holmes and Narver - provides surveying and other support.
- Fenix and Scisson of Nevada - provides plans, test networks, and cost estimates.
- REECo - provides mining equipment, performs drilling and mining, and provides support labor.
- Pan Am - provides photographic support.

Key Prototype Activities for the Reporting Period:

LLNL

Engineered Barrier - Overcore:

REECo personnel began demobilizing the LY 38 drill rig to begin the set up for hole P1. The rig had to be completely moved out of the alcove so that the REECo miners could blast a slab out of the left rib to accommodate the drill rig. H&N surveyed hole P1, and the LY 38 was up rigged to begin overcoring. REECo drillers will utilize the same drilling methods on P1 as was used on hole NE-2A. (Center the heater assembly for a 12 inch overcore and drill approximately 6.5 feet beyond the end of the assembly using water as a drilling medium). Drilling will begin on August 28, 1989.

USGS

Intact Fracture:

H&N surveyors established a back sight and a fore sight for rig installation on AF-6. REECo personnel mobilized the LY 34 drill rig in the RS-14 drift near the refuge station. The USGS PI will deepen

this hole in order to obtain approximately 2 feet of axial fractured core. Drilling in the RS-14 drift will begin on August 28, 1989.

Optimal Rubble (CBI):

This drift is being mined to obtain samples for the Optimum Rubble Test and provide a drilling alcove for the Excavation Effects Test and Phase II of the In-Situ Stress Test. Mining is being accomplished by using conventional drill and blast methods. Drift dimensions are 20 feet wide by 14 feet high (arched back). The back will be supported by using an 8 foot long by 7/8 inch diameter roof bolts that are installed using resin. Total depth to the face from the centerline of the Demo Drift is 16 feet. Drilling with a jack leg drill is progressing for a 5 foot buffer zone (see attached sheet). Holes are spaced one foot apart. This is being done in order to protect the pillar on the left rib. The same method will be utilized when the Demo Drift is extended, except the right rib will be used as a buffer zone. Ten 4.5 foot blast holes, 1 1/8 inch diameter were drilled and blasted. Each hole was loaded with 2.25 feet of 400 grain prima cord and blasted. This round pulled 4 feet. Fifty 8 foot long 1 1/8 inch diameter holes were dry drilled using the drill jumbo and the jack leg. The striker bar on the drill jumbo broke and was replaced. The round will be blasted Monday, August 26, 1989.

G-Tunnel Drifting:

The Demo #2 drift advanced 3 feet during this reporting period using the Alpine Miner. Total distance from the centerline of the EV-6 drift is 54 feet. Sixteen 8 foot long by 7/8 inch diameter resin rock bolts were installed in the #2 Demo drift along with wire mesh for personnel safety. The rock bolts were torqued to 60 ft-lbs. REECO personnel installed cross-ties and in the main drift, 2484 feet to 2548 feet.

Scheduled Activities:

1. Blast Effects - start October 9, 1989.
2. Excavation Effects - start October 23, 1989.
3. In-Situ Stress - Phase II - start December 4, 1989.
4. Thermal Stress - start December 11, 1989.

EXPENDITURES:

	Work Days Remain	24	Expended	90 %
.REECO: Current Week-Prototype Testing	\$	23,557	Year to Date	\$ 840,965
Current Week-G-Tunnel Operation	\$	36,493	Year to Date	\$ 997,529
.H&N: Current Week-Prototype Testing	\$	2,765	Year to Date	\$ 271,046
.F&S: Current Week-Prototype Testing	\$	4,635	Year to Date	\$ 157,747

