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Office of Civilian Radioactive Waste Management
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FIELD TEST COORDINATION REPORT FOR THE WEEK ENDING JULY 25, 1997

The enclosure lists site characterization field activities that are currently active. Many of these are ongoing monitoring and mapping activities; therefore, only those activities having significant status change are addressed below.

C-HOLE COMPLEX HYDRAULIC INTERFERENCE TESTING

Sampling and analysis of the water pumped from C#3 continues. Pyridone concentration has "peaked" and is now tailing or leveling off. The injection tubing has been removed from C#1 and C#2. Pumping and sampling is now expected to continue through July 1997 followed by a one month recovery period. Tracer testing helps to understand flow in the saturated zone and yields data to help model the travel of radionuclides in the saturated zone.

ENGINEERED BARRIER - LARGE BLOCK TEST

Lawrence Livermore National Laboratory continues the thermal testing at the Large Block. The Large Block Test will yield information on movement of water under thermal load, geochemistry of refluxing water, and biological organism (microbe) activity. The greatest temperature in the plane of the heater elements was reported to be 128.0°C as of Tuesday, July 29, 1997.

BOREHOLE USW WT-24

The Stratmaster drill was set up over the hole and drilling began on Wednesday, July 23, 1997. A Level 3 deliverable was met by letter from the Civilian Radioactive Waste Management System Management and Operating Contractor announcing that drilling had started at WT-24. As of the end of this reporting period, a conductor casing was set and cemented in place at 2.0 meters (6.5 feet). Drilling will continue next week on a two shift schedule (day and swing shifts).

EXPLORATORY STUDIES FACILITY (ESF) TESTING

Data collection in support of construction monitoring continues. Reviews of the mapping are now in progress. Some mapping remains to be completed in Alcoves 6 and 7 and for the Niche studies.

ESF Alcove 5 (Thermal Testing Facility Access/Observation Drift, Connecting Drift, and Heated Drift):
Installation of instrumentation such as wing heaters, multi-point borehole extensometers, and others is continuing in the Heated Drift Test (HDT).

The HDT will heat approximately 15,000 cubic meters of the rock of the repository horizon to a temperature of 100°C or greater in order to investigate the coupled processes under thermal loading.

ESF Alcove 5 (Thermomechanical Alcove):
The Single Heater Test (SHT) started on schedule on August 26, 1996. The heater was turned off at 1:30 p.m. on Wednesday, May 28, 1997. The heater element was removed on Thursday, July 17, 1997. The remaining instruments are being monitored during a six-to-nine month cool down period.

The following temperature readings have been reported from three thermocouple holes parallel to the heater. The holes are at radial distances from the heater of 0.33, 0.67, and 1.48 meters. Each measurement is made at an axial distance along the thermocouple hole that puts the measurements at the mid-length of the heater. These measurements were made on July 24, 1997, and continue to show a decrease in temperature.

Radial Distance from Heater Center Point (m)	Temperature in Degrees Celsius
0.33 m	45.5°C
0.67 m	45.6°C
1.48 m	45.0°C

The purpose of this test is to understand heat related processes and measure physical parameters. Some of these processes include heat transfer (conduction and convection), moisture movement, and geochemical changes (water chemistry changes due to heating of the rock). In addition, the results from the SHT will provide guidance for instrumentation and conducting the Drift Scale Test in Alcove 5. The results will be available for the Viability Assessment (VA) design; specifically, thermal properties, deformation of the rock at elevated temperatures, and performance of rock bolts at elevated temperatures.

ESF Alcove 6 (Northern Ghost Dance Fault Alcove):
The U.S. Geological Survey (USGS) continues the air permeability testing in Alcove 6. Last weeks report that this had been discontinued was in error.

ESF Alcove 7 (Southern Ghost Dance Fault Alcove):
The USGS air permeability testing of the splay of the Ghost Dance Fault was completed this week. The Alpine Miner resumed excavation in Alcove 7 on July 24, 1997, and progressed 1.5 meters from station 1+50.9 to 1+52.4 meters. The excavation will continue to approximately station 1+84 meters to allow USGS testing across the Ghost Dance Fault. The testing will be Hydrologic Properties of Faults testing and will consist of gas sampling and air permeability measurements.

Niche Drift Study - Niche #1:
Excavation of the niche started on Wednesday, June 18, 1997, and was completed on June 25, 1997. A permanent bulkhead to prevent moisture loss has been constructed.

Niche #2:
Testing of air permeability and cross-hole tracer testing is underway in the seven boreholes drilled in and around the outline of Niche #2. Excavation of Niche #2 using an Alpine Miner is expected to begin following completion of excavation in Alcove 7.

Niche studies are part of the Risk Reduction Strategy for VA and focus on unsaturated zone hydrology and hydrochemistry testing.

Moisture Study Boreholes:
Drilling of 40 boreholes in the non-welded units in the South Ramp started on July 21, 1997. The holes will be approximately 2 meters in depth,are planned to be drilled mostly in the non-welded units (Ptn) but a few of the locations are in the densely welded units. The following holes were completed this week:

Hole Name	Start	Finish	Depth (m)	T-M unit	Location
ESF-SR-MOISTSTDY #3	7/21/97	7/21/97	2.1 m	Tsw2	59+65
ESF-SR-MOISTSTDY #4	7/22/97	7/24/97	2.1 m	Tsw2	61+65
ESF-SR-MOISTSTDY #8	7/25/97	In Progress	0.3 m	Tsw2	66+41

Core from the moisture studies boreholes will be analyzed for saturation, porosity, and other moisture related characteristics. The holes are instrumented to collect information on how fast the tunnel walls dry out following excavation.

If you have any questions, please contact me at 295-7825.

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Field Test Coordination
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AML:DHC-2030

Enclosure:
Site Characterization Field
Activities in Progress

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Records Processing Center = "10"

Site Characterization Field Activities in Progress

SCP ACTIVITY	TITLE	ACTIVITY
8.3.1.3.2.1	Mineralogy, Petrology, and Rock Chemistry of Transport Pathways	ESF Sampling, Borehole Sampling
8.3.1.3.2.2	Mineralogic and Geochemical Alteration	ESF Sampling, Borehole Sampling
8.3.1.4.2.2	Structural Features Within Site Area	Surface & ESF Mapping
8.3.1.17.4.3	Quaternary Faulting Within 100 km of Yucca Mtn.	Surface Mapping
8.3.1.17.4.4	Quaternary Faulting in NE-Trending Fault Zones	Surface Mapping
8.3.1.17.4.6	Quaternary Faulting Within Site Area	Trench Logging
8.3.1.2.1.1	Precipitation and Meteorological Monitoring for Regional Hydrology	Ongoing Measurements
8.3.1.2.1.2	Runoff and Streamflow	Ongoing Measurements
8.3.1.4.2.1	Characterization of Vertical/Lateral Distribution Stratigraphic Units in Site Area	Core Logging (all boreholes), surfaceof geophysical surveys
8.3.1.2.1.3	Regional Groundwater Flow System	Ongoing monitoring
8.3.1.2.2.1	Unsaturated Zone Infiltration	Shallow borehole neutron logging
8.3.1.2.2.2	Water Movement Tracer Tests	Cl^{36} measurements (SBT drillholes, ESF)

Site Characterization Field Activities in Progress Continued

SCP ACTIVITY	TITLE	ACTIVITY
8.3.1.2.2.4	Characterization of Unsaturated Zone (ESF)	Hydrochemistry/Radial Boreholes testing
8.3.1.2.2.6	Gaseous Phase Movement in the Unsaturated Zone	Pneumatic pathways monitoring
8.3.1.2.3.1	Site Saturated Zone Groundwater Flow System	Ongoing monitoring, C-well testing
8.3.1.2.3.2	Saturated Zone Hydrochemistry	Ongoing monitoring
8.3.1.4.3.1	Systematic Acquisition of Site Specific Subsurface Information	Core logging
8.3.1.15.1.8	In Situ Design verification	Construction monitoring/testing
8.3.1.9.2.1	Natural Resource Assessment of Yucca Mountain	Rock sampling
8.3.1.3.4.2	Biological Sorption and Transport	Sampling in ESF
8.3.1.19.5.1	Engineered Barrier System Field Tests	Sampling in ESF