

**U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE
MANAGEMENT**

**NUCLEAR WASTE TECHNICAL REVIEW BOARD
FULL BOARD MEETING**

**SUBJECT: EXPLORATORY STUDIES FACILITY
CONSTRUCTION UPDATE**

PRESENTER: RICHARD CRAUN

**PRESENTER'S TITLE
AND ORGANIZATION: ASSISTANT MANAGER FOR ENGINEERING AND FIELD OPERATIONS
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE
LAS VEGAS, NEVADA**

TELEPHONE NUMBER: (702) 794-5429

**JULY 9 - 10, 1996
DENVER, COLORADO**

Outline

- **Tunnel Boring Machine Operations Update**
- **Operational Issues**
- **Change Request - 3 Shifts**
- **Alcove Construction**
- **Tunneling Consulting Board**

ESF Tunneling Operations Update

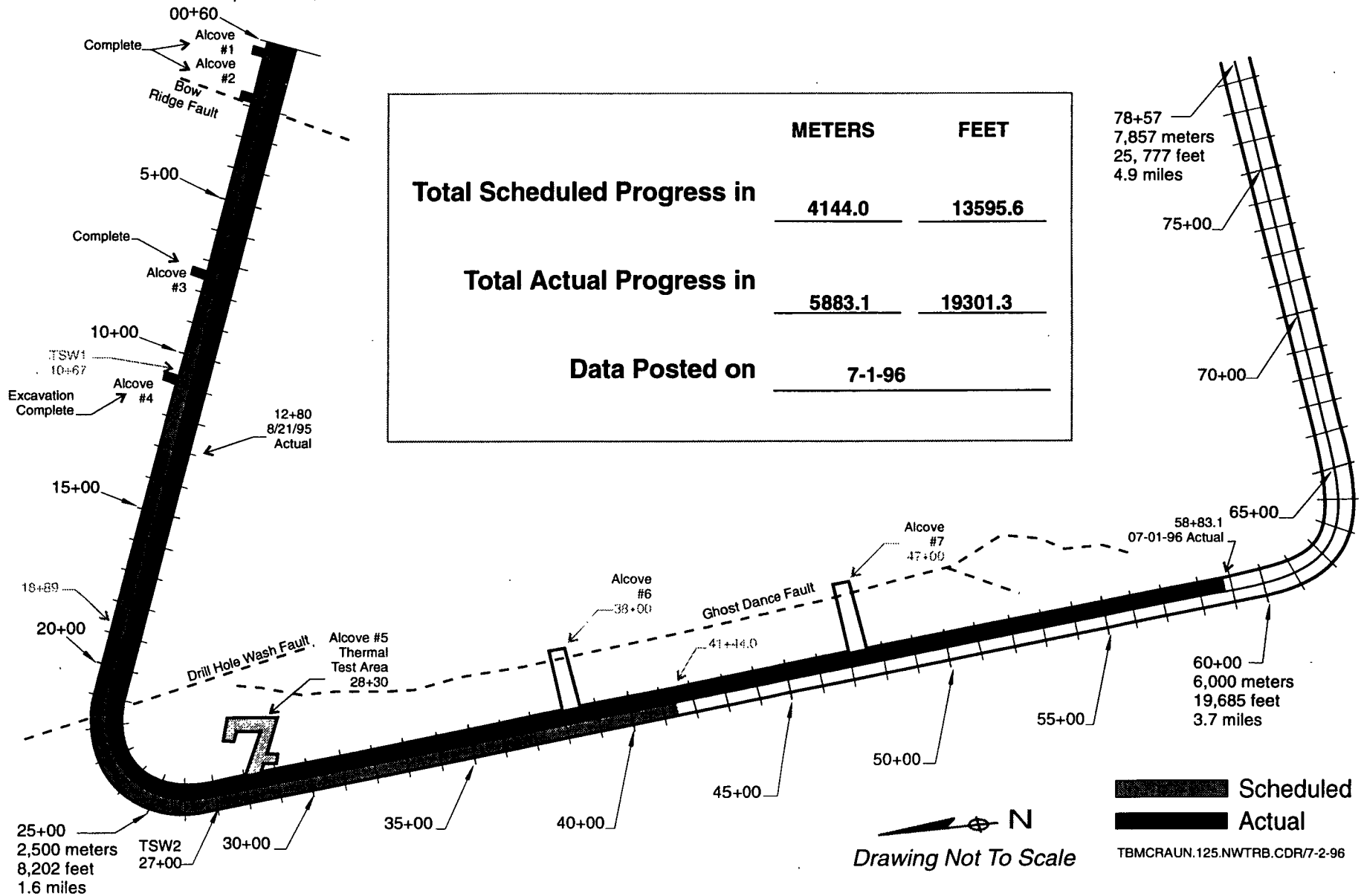
- **TBM at Station 58 + 98 on July 2, 1996**
- **Forecast “Hole Out” - March 1997**
- **Started excavation of north Ghost Dance fault access (Alcove #6) on May 10, 1996**
- **Heater test access observation drift (Alcove #5) completed June 14, 1996**
- **Next week the TBM will pass the three and three-quarter mile mark**

TUNNEL BORING MACHINE PROGRESS

North Portal

Starting Date
September 20, 1994

South Portal



	METERS	FEET
Total Scheduled Progress in	<u>4144.0</u>	<u>13595.6</u>
Total Actual Progress in	<u>5883.1</u>	<u>19301.3</u>
Data Posted on	<u>7-1-96</u>	

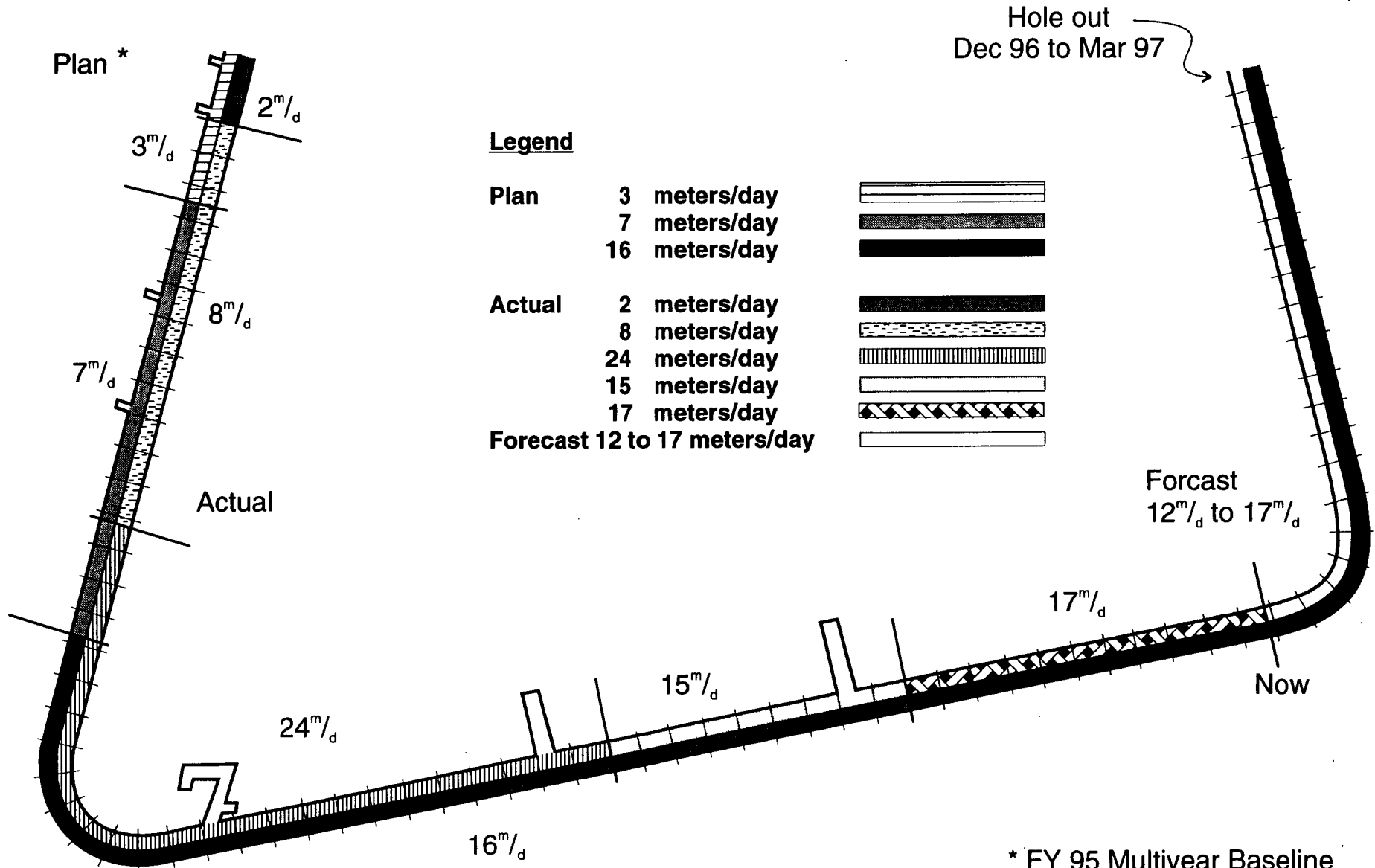
78+57
7,857 meters
25,777 feet
4.9 miles

60+00
6,000 meters
19,685 feet
3.7 miles

 Scheduled
 Actual

TBMCRAUN.125.NWTRB.CDR7-2-96

Tunnel Boring Machine Hole Out Projections



* FY 95 Multiyear Baseline

ESF Tunneling Operations Update

(CONTINUED)

- **Tunneling Rates**

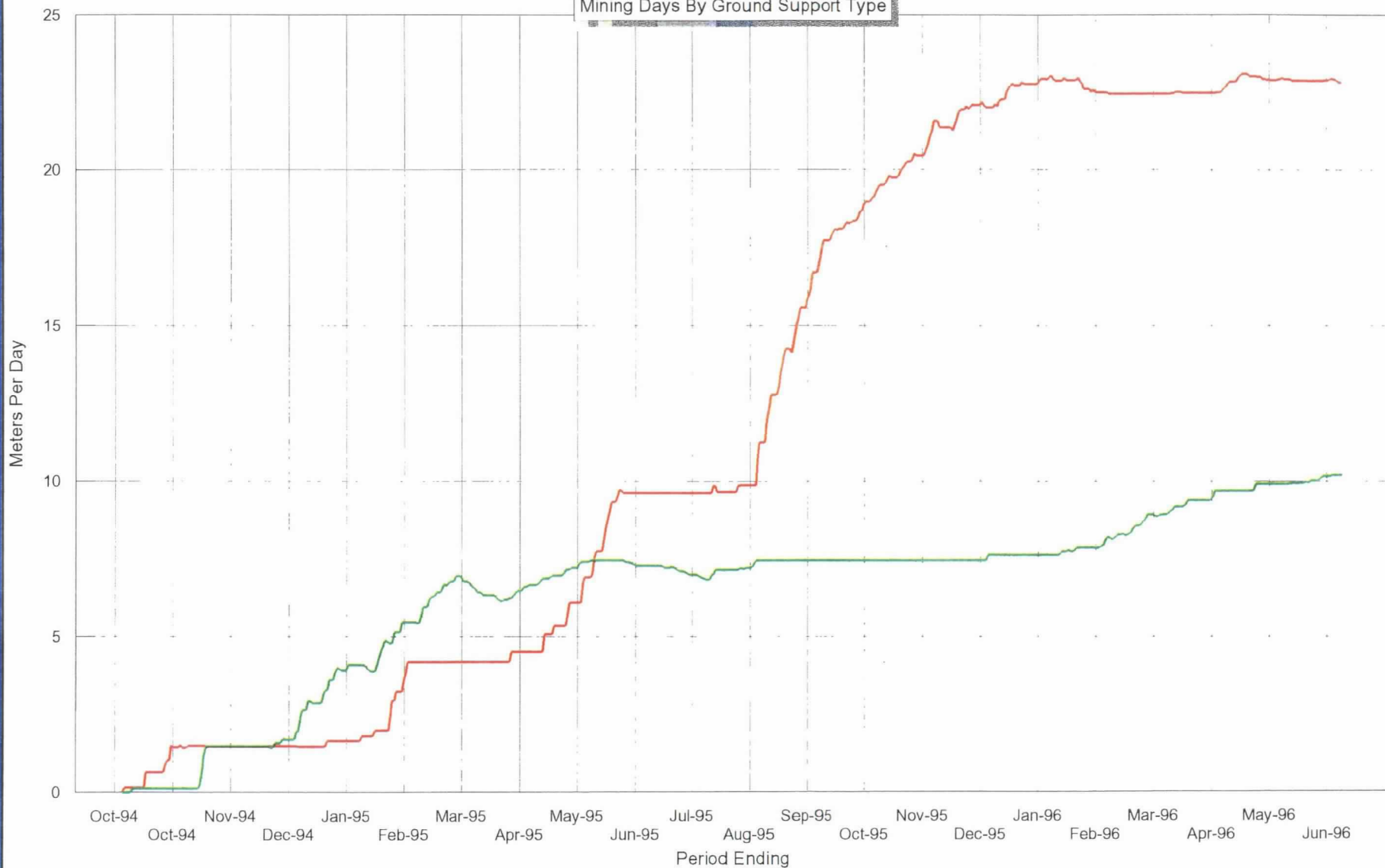
- **Dependent on ground support**

	<u>Early Average</u>	<u>Recent Average</u>
Category I	29.5 meter/day	30.4 meter/day
Category IV	15.1 meter/day	17.4 meter/day

- **Although our rate in Category IV has improved, we have experienced more Category IV recently, lowering overall average**

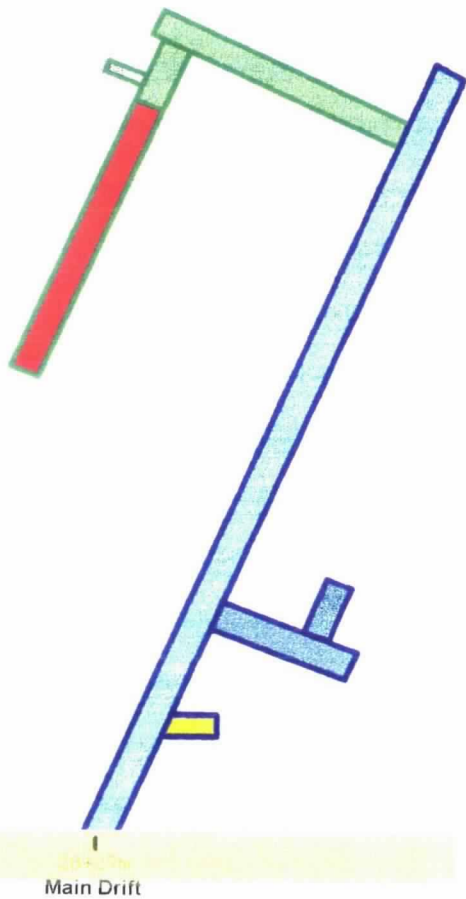
Excavation Rates

Mining Days By Ground Support Type



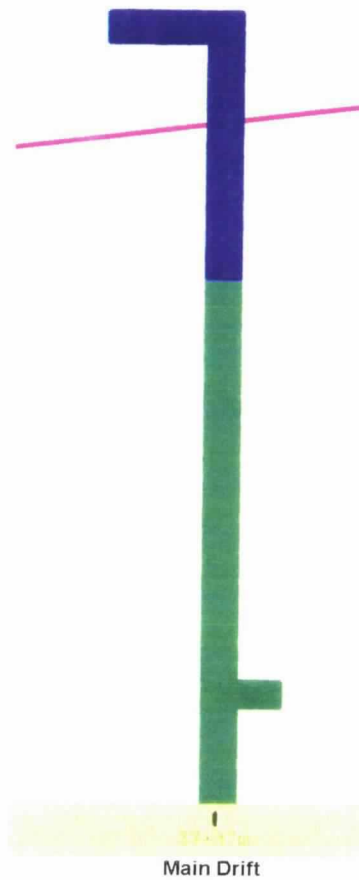
— Cat. I Weekly Ave. — Cat. IV Weekly Ave.

Thermomechanical Testing Alcove



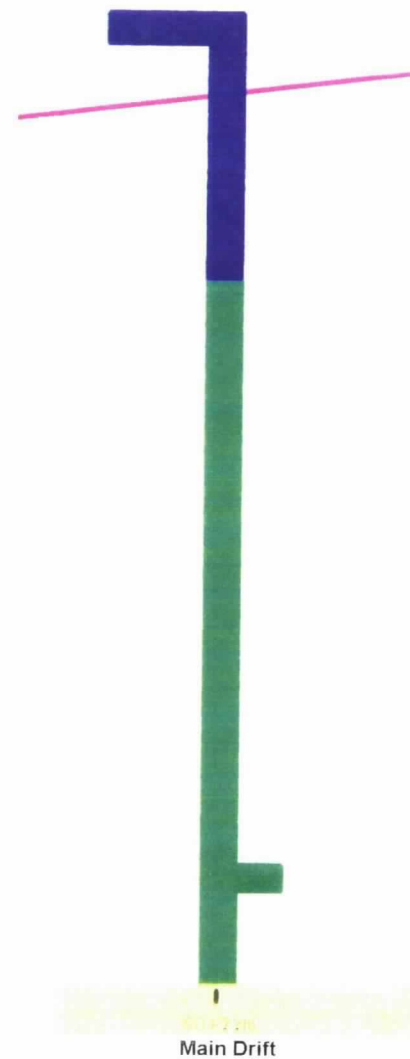
- Phase 1 - 19 Jan 96 to 11 June 96
 - Turnaround Bay
 - Thermomechanical Alcove
 - Access / Observation Drift
- Phase 2 - 10 Sept 96 to 26 March 97
 - Connecting Drift
 - Plate Loading Niche
 - Heated Drift

Northern Ghost Dance Fault Alcove



- Phase 1 - Access Drift
27 April 96 to 09 Sept 96
- Phase 2 - Drill / Test Room
07 Jan 97 to 25 Feb 97
- Ghost Dance Fault

Southern Ghost Dance Fault Alcove



- Phase 1 - Access Drift
07 Oct 96 to 13 Feb 97
- Phase 2 - Drill / Test Room
10 June 97 to 28 July 97
- Ghost Dance Fault

Tunneling Consulting Board

- **Final Tunneling Consulting Board Report issued June 20, 1996**
- **M&O is evaluating recommendations and developing a plan for implementation**





**DANGER
BLASTING
ZONE**

DANGER
**NO SMOKING
OR OPEN FLAMES**









#27: ESF-TMA-ERT-4
MOISTURE MEASUREMENTS
(ELECTRICAL RESISTIVITY TOMOGRAPHY (ERT))
NEUTRON LOGGING HOLES (RESISTIVE TEMPERATURE PROBES)
7.87 cm DIAMETER (ING-3 DIAMOND BIT), 8.5 IN LONG, 7.5 DEGREE UP
May 5, 1993

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last

#15: ESF-TMA-NEU-1
MOISTURE/TEMPERATURE MEASUREMENTS
(NEUTRON LOGGING HOLES/RESISTIVE TEMPERATURE PROBES)
7.87 cm DIAMETER (ING-3 DIAMOND BIT), 8.5 IN LONG, 7.5 DEGREE UP
May 5, 1993

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#16: ESF-TMA-NEU-2
MOISTURE/TEMPERATURE MEASUREMENTS
(NEUTRON LOGGING HOLES/RESISTIVE TEMPERATURE PROBES)
7.87 cm DIAMETER (ING-3 DIAMOND BIT), 8.5 IN LONG, 7.5 DEGREE UP
May 5, 1993

#18: ESF-TMA-NEU-4
MOISTURE/TEMPERATURE MEASUREMENTS
(NEUTRON LOGGING HOLES/RESISTIVE TEMPERATURE PROBES)
7.87 cm DIAMETER (ING-3 DIAMOND BIT), 8.5 IN LONG, 6.5 DEGREE DOWN
DATE DRILLING/LOGGING: May 5, 1993

#17: ESF-TMA-NEU-3
MOISTURE/TEMPERATURE MEASUREMENTS
(NEUTRON LOGGING HOLES/RESISTIVE TEMPERATURE PROBES)
7.87 cm DIAMETER (ING-3 DIAMOND BIT), 8.5 IN LONG, 7.5 DEGREE DOWN
DATE DRILLING/LOGGING: May 5, 1993

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