

SUPPLEMENTAL DRILLING DATA

HARLAN OIL COMPANY
WELL #3 SOUTHERN UNION-FEDERAL
2310' FSL & 950' FWL SEC 30-19S-31E

1. SURFACE FORMATION: Quaternary.
2. ESTIMATED TOPS OF GEOLOGIC MARKERS:

Anhydrite	320'	Yates	1970'
Salt	490'	Reef	2130'
Base Salt	1800'		
3. ANTICIPATED POROSITY ZONES:

Water	Above 320'
Oil	1970 - 2150'
4. CASING DESIGN:

<u>Size</u>	<u>Interval</u>	<u>Weight</u>	<u>Grade</u>	<u>Joint</u>	<u>Condition</u>
8 5/8"	0 - 400'	23 #	X-42	STC	New
4 1/2"	0 - 2500'	9.5#	K-55	STC	New
5. PRESSURE CONTROL EQUIPMENT: Double Ram-Type Preventer (600 Series).
6. CIRCULATING MEDIUM:

0 - 400'	Fresh water mud with gel or lime as needed for viscosity control.
400 - 2500'	Salt water mud, conditioned as necessary for control of viscosity and water loss. At 100' above TD, sweep hole with salt water gel, conditioning mud to 36 viscosity.
7. AUXILIARY EQUIPMENT: Drill string safety valve.
8. TESTING, LOGGING AND CORING PROGRAMS: No coring or DST's are planned. Electric logs will include a CNL-FDC w/GR.
9. ABNORMAL PRESSURES, TEMPERATURES OR HYDROGEN SULFIDE GAS: None anticipated.
10. ANTICIPATED STARTING DATE:
 - A. Road and pad construction: May 11, 1981
 - B. Spudding well: May 15, 1981
 - C. Duration of drilling and completion operations should be 10 to 30 days.