

# DRILLING PLAN

Attachment to BLM Form 3160-3

ARCO Permian

Well: Hilltop Federal #2

Unit Letter - L

2130 FSL, 660 FWL

Section 1, T21S-R21E

Eddy County, New Mexico

## 1. Surface Geological Formation

Quaternary Formation

## 2. Estimated Tops of Geological Markers

<u>Formation</u>	<u>TVD</u>
Glorieta	1530
Tubb Sand	2940
Abo Dolomite	3500
Cisco	6200
Canyon	6625
Strawn	7250
Atoka	7560
Lower Morrow	7825
Mississippian	8550

## 3. Estimated Tops of Possible Water, Oil, Gas or Mineral:

Sands above 300'	Water
Cisco and Morrow	Oil or Gas

## 4. Pressure Control Equipment

<u>Interval, TVD</u>	<u>Pressure Control Equipment</u>
0' – 1400'	Rotating Head
1400' – TD	11", 3M psi double ram preventer and 3M psi annular preventer

Exhibits 1, 2 and 3 show the BOP stack arrangement, the choke manifold arrangements and the BOP specifications, respectively. The BOPE will be hydraulically tested per BLM requirements outlined by Onshore Oil and Gas Order No. 2. Pipe rams and blind rams will be functioned on each trip out of the hole. All BOPE checks and testes will be witnessed by ARCO's representative and will be noted on the IADC daily drilling report. Accessories to BOPE will include an upper kelly cock, lower kelly cock, and floor safety valve; all with pressure rating equivalent to the BOP stack.

## 5. Proposed Casing and Cementing Program

	<u>Hole Size</u>	<u>Interval M.D.</u>	<u>Casing Size</u>	<u>Weight &amp; Grade</u>
Surface	12-1/4"	0'-1400'	8-5/8"	32.0# J-55
Production	7-7/8"	0'-8600'	5-1/2"	17.0# J-55

**Cement Program:** (Actual volumes will be based on caliper log when available)

Surface – Cement to surface as follows:

Lead – 460 sxs Class “C” + 5 #/sx Gilsonite + 1/4 #/sx Flocele + 2% CaCl

Tail – 150 sxs “C” + 2% CaCl

If cement does not circulate will run temperature survey to determine TOC. Will run 1” tubing down the hole beside the 8 5/8” casing and cement to surface using Class “C” + 2% CaCl mixed in 100 sx stages.

Production - Cement to 5000’ as follows:

Lead - 133 sx Class “C” + 2 lb/sk Salt + .4% FL-25 + 15% gel

Tail – 396 sx 15:61:11 POZ:C:CSE + .3% FL-25 + .3% FL-52

#### 6. **Mud Program**

<u>Depth</u>	<u>Mud Type</u>	<u>Weight ppg</u>	<u>Funnel Viscosity</u>	<u>Water Loss</u>
0’-1400’	Air Drilled			
1400-6750’	FW/Brine	8.4/9.0	28-30	NC
6750-8600’	XCD Polymer	9.0/9.2	34-36	8-10 cc

#### 7. **Auxiliary Equipment**

Upper Kelly Cock, Lower Kelly Cock, and Full Opening Stabbing Valve

#### 8. **Testing, Coring and Logging Program**

- A. Drill Stem Tests – None planned
- B. Coring – None planned
- C. Logging – Mud logging planned from 1400’ to TD
- D. Electric Logs
  - Open Hole: GR, DLL/MLL, CNL/LDT Shoe of 8-5/8” csg to TD
  - Cased Hole: GR/CCL TD to top cement in prod csg

#### 9. **Anticipated Abnormal Temperature, Pressure, or Hazards**

Normally have severe lost circulation from surface to 1400’. Air drilling should alleviate this. Lost circulation is not anticipated below 1400’.

#### 10. **Anticipated Starting Date and Duration of Operations**

Pending favorable weather and permit approval, construction work on this location is planned to begin in April, 2001. Construction work will require 5 days, move-in and rig up rotary tools, 1 day, drill and complete, 30 days. It is planned to spud the well in May, 2001.