

A. P. D. (cont.)
Thirteen Point Surface Use Plan
Indian Hills Unit #41

Each stage will be preceded by an appropriate mud flush. Actual production hole volumes will be based on the caliper volume plus 20% excess.

Centralizer Program:

9 5/8" Conventional centralizers. Bottom 3 joints and every fourth joint to surface.

7-0" Conventional centralizers middle of first jt. Then every jt. to 7500', and 1 cent. every fourth jt. Thereafter to 8500'.

5. Mud Program

---DEPTH---		MUD TYPE	WEIGHT		WL	ADDITIVES	VISUAL
FROM	TO		(PPG)	VIS	CC		MONTR.
0	1800'	fresh water	8.3	28	N/A	Gel, Lime	Reserve
1800'	5000'	fresh/produced	8.5	28-32	N/C	Gel, caustic, H ₂ S Scavenger	Reserve
5000'	7000'	fresh/ produced	8.9	32-36	N/C	Gel, caustic, H ₂ S Scavenger	Reserve
7000'	8500'	fresh/produced	8.9	32-36	<20	Gel, caustic, H ₂ S Scavenger	Steel Pits

Sufficient quantities of additives will be on location to maintain above mud properties for any anticipated well conditions.

6. Logging, Testing & Coring Programs:

LOG/TEST/CORE/MUDLOG/OTHER	--INTERVAL--		REMARKS
	FROM	TO	
DLL/MSFL/GR/CNL/LDT/CAL	TD	5000'	
LDT/CNL/GR/CAL	TD	surf casing	
MUD LOGGER	6000'	TD	ROP, Lithology, Gas Analysis, Chromatograph
NO CORES OR DST'S			

7. Abnormal Pressures, Temperatures or Potential Hazards:

None anticipated. Possible H₂S in Cisco & Upper Penn. See H₂S Drilling Operations Plan.

8. Other Information:

Anticipated Starting Date: As soon as possible.

Duration of Well: drilling - 25 days, completion - 10 days.

This well shall be directionally drilled to a Standard Upper Penn. BHL. The directional plan for this well will be provided by Baker Inteq.