Apache "13" Federal No. 5 Drilling Program Page 2	
8-5/8" Intermediate	
Casing @ 3845':	Cemented to surface with 1500 sx Halliburton Lite + 15#/sx salt + 1/4#/sx FC and 200 sx Class "C" + 2% CaCl ₂ .
5-1/2" Production	
Casing @ TD:	Cemented with 950 sx 50/50 Class H/Poz + 0.8% Halad 9 + 1/4 #/sx Flocele. This cement slurry is designed to bring TOC to 3400'.

5. <u>Minimum Specifications for Pressure Control</u>:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram-type (3000 psi WP) preventer and a bag-type (hydril) preventer (3000 psi WP). Both units will be hydraulically operated and the ram-type preventer will be equipped with blind rams on top and 4-1/2" drill pipe rams on bottom. Both BOP's will be nippled up on the 13-3/8" surface csg and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 1000 psi before drilling out of surface casing. Before drilling out of intermediate casing, the ram-type BOP and accessory equipment will be tested to 3000 psi and the hydril to 70% of rated working pressure (2100 psi).

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A 2" kill line and 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 3000 psi WP rating.

6. <u>Types and Characteristics of the Proposed Mud System</u>:

The well will be drilled to TD with a combination of fresh water, brine water and starch mud system. The applicable depths and properties of this system are as follows:

		Weight	Viscosity	Waterloss
<u>Depth</u>	<u>Type</u>	(ppg)	<u>(sec)</u>	<u>(cc)</u>
0-500'	Fresh Water (spud)	8.5	40-45	N.C.
500'-3845'	Brine Water	10.0	30	N.C.
3845′-TD	Fresh Water/Gel/Starch	8.5	30-32	50-60

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

7. <u>Auxiliary Well Control and Monitoring Equipment:</u>

(A) A kelly cock will be kept in the drill string at all times.