U. S. Geological Survey

- 9. Casing Setting Depth and Cementing Program:
  - a. Surface casing will be 16" casing set at 400' and cemented with 200 sacks of lightweight cement plus 200 sacks of Class "C" Neat cement with 2% CaCl<sub>2</sub>.
  - b. 1st intermediate casing will be 10-3/4" set at approximately 2650' and cemented with 900 sacks Class "C" with 16% gel and ½# flocele per sack.
  - c. 2nd intermediate casing will be 7-5/8" set at 11,000' and cemented with 500 sacks Class "H" with .5% CFR-2, estimated TOC at 7000'.
  - d. Production casing will be a 5" liner set from 10,800' to 12,800' and cemented with Class "H" cement with 1.0% friction reducer and .5% Halad-9. Cement volume will be determined from caliper log.
- 10. <u>Pressure Control Equipment</u>: The minimum specifications for pressure control equipment can be seen on the attached Drawing No. 4 of Gulf's blowout preventer hook-up for 5000 psi working pressure.

11.	Circulating Media:	0' - 400'	Fresh water spud mud
		400 <b>'</b> - 2,700 <b>'</b>	Saturated brine water
		2,700' - 11,000'	Brackish water; weight as needed to control well. Change to saturated brine water at
			top of Wolfcamp
		11,000' - 12,000'	Fresh water chemical mud; weight 11.5-11.9
			ppg, filtrate 10 cc's or less. Weight will
			be adjusted upwards with barite if necessary
		12,000' - 12,800'	Same fluid as above with filtrate 5 cc's or
		··· , ··· , ··	less. Add 2-3% KCL to inhibit shales.
			Watch for possibility of loss of returns in
			the lower Morrow or upper Barnett

- 12. Testing, Logging and Coring Programs:
  - a. Formation testing may be done at any depth where samples, drilling rate or log information indicate a possible show or oil or gas.
  - b. Open hole logs will be run at total depth.
  - c. No cores are anticipated.
- 13. <u>Abnormal Pressure or Temperature and Hydrogen Sulfide Gas</u>: We do not anticipate any abnormal pressure or temperature; however, BOP's with remote control and choke manifold as shown on Drawing No. 4 will be installed prior to drilling below surface casing.

The presence of hydrogen sulfide gas is not anticipated.

(Continued)