

3000 PSI TWO-RAM BOP WITH ANNULAR

BOP EQUIPMENT

1. BOP's to be fluid operated. BOP's and all fittings must be in good condition and rated at 3000 psi w.p. minimum. (Reference Drilling Provisions for H₂S trim and rotating head requirements.)
2. Equipment through which the bit must pass shall be at least as large as casing size being drilled through.
3. Fill-up line will be connected to the bell nipple. Kill line will not be used for fill-up line.
4. Ram arrangement in preventers will be as follows:*

	<u>Drilling</u>	<u>Running Casing</u>
Bag	Bag	Bag
Upper Ram	Drill Pipe	Casing
Lower Ram	Blind	Blind

5. BOP's to be pressure tested with clear water, (see Drilling Provisions).
6. Only original manufactures replacement parts for blowout preventers and choke manifolds will be accepted.

CHOKE MANIFOLD

1. All equipment from the drilling spool to the chokes, including kill line equipment, shall be flanged or clamped and of a test pressure no less than that of the blowout preventer. Pressure gauge to be Cameron type or equivalent.
2. Valves upstream of chokes, including kill line valves, will be gate valves, slab type, with metal-to-metal seals. Valves downstream of chokes may be gate or plug valves. Valve next to drilling spool must be 3". Valves between cross and chokes will be 2" minimum. Valves downstream of chokes will be 2" minimum with a minimum pressure rating of 2000 psi.
3. Line and valves from the drilling spool to manifold cross and straight through to the pit to be a minimum of 3", with minimum bends. One HCR valve required on this line upstream of manifold cross. Valves on this line must be minimum of 3" gate valves with metal-to-metal seals. Manifold, header and all lines must be adequately supported and properly anchored.
4. Two inch (2") lines and valves are permitted on the kill line and flare lines downstream of chokes.
5. Chokes will be one hydraulic adjustable and one manual adjustable.
6. If downstream manifolding of flare lines occurs then valves will be required between the chokes and the manifold header with minimum pressure rating of 2000 psi.

ACCUMULATOR

1. Blowout preventer closing unit equipment to include an accumulator capable of closing, opening and closing the pipe rams, closing the bag and opening the HCR valve with a minimum remaining pressure of 1200 psi.
2. Operating time for closing the bag preventer and the pipe rams shall not be greater than one minute with charging pump shut down. Time test must be witnessed by Amoco representative while nipling up and test results reported on IADC report. Failure to meet these conditions will necessitate corrective action by contractor and retesting at contractor's expense.