

3. MINIMUM SPECS FOR PRESSURE CONTROL (CONTINUED):

- d. The BOP Equipment, nipped-up on the 13-5/8" 3000 psi x 11" 5000 psi cross-over spool for the 12-1/4" intermediate hole, and the 13-5/8" 3000 psi x 11" 5000 psi casing spools for the 8-3/4" production hole, will be as follows:
 - i. An 11" Nom. 5000 psi WP(min) mud cross with a 2" 5000 psi WP(min) FO FE kill-side inlet and a 4" 5000 psi WP(min) FO FE choke-side outlet.
 - ii. An 11" Nom. 5000 psi WP(min) double gate (or dual equivalent single gate) hydraulic ram-type preventer with Pipe Rams over Blind Rams. Pipe rams are anticipated to be 4-1/2".
 - iii. An 11" Nom. 5000 psi WP(min) hydraulic annular preventer.
 - iv. An 11" Nom. rotating head with fill-up and flow-line connections. The flow-line will tie-in to a gas buster.
 - v. A choke manifold consisting of an inside 4" 5000 psi WP(min) FO FE master gate valve run in the CLOSED position (at the wellhead) with an outside mounted 4" 5000 psi WP(min) Hydraulic FO FE Master Valve run in the OPEN position, a 4"(min nom) x 5,000 psi WP(min) FE welded choke line between the master valves and the choke manifold - consisting of a 2 x 4" and 2 x 2" 5000 psi WP(min) FE cross with a 4" 5000 psi WP(min) FO FE gate valve immediately upstream, and a 4" 5000 psi WP(min) ball/gate valve immediately downstream, of the manifold cross. Between the downstream 4" 5000 psi WP(min) FO FE ball/gate valve and the manifold cross will be a 4"x4"x2" 5000 psi WP(min) FO FE tee with a 2" 5000 psi WP(min) FO FE ball/gate valve with a 2" 5000 psi WP(min) Gauge Assembly for monitoring pressure at the choke manifold. The choke manifold will have 2: 2" 5000 psi FO FE ball/gate valves between the manifold cross and the 2: 2" FO FE 5000 psi(min) adjustable chokes (a total of 4: 2" 5000 psi ball/gate valves - 2 on each wing). One of these adjustable chokes will be hydraulically operated. Provision will be made to tie in DST surface lines to the choke manifold thru an optional 2" 5000 psi WP(min) FO FE tee above the 2" 5000 psi WP(min) ball/gate valve down stream of the choke manifold cross. The 4" bleed line downstream of the choke manifold will be staked down and targeted in the flare pit. The 2: 2" lines downstream of the chokes will be appropriately staked down to return mud to the mud tanks via a gas buster, fluids to a test tank, and gas to a flare pit.

The hydraulic choke and PVT system will be installed after the 9-5/8" Intermediate Casing is set & cemented to surface.