BLOWOUT PREVENTER REQUIREMENTS

Well Name: James E No. 11

I. Blowout preventer equipment, installation, testing and responsibilities will be in accordance with Phillips Petroleum Company's Blowout Preventer Standards.

II. Figure Nos. 7-9 or 7-10 (Drawing Attached): Casing String 13-3/8" BOP Size 13-3/8 ; Working Pressure 3000 psi

III. Equipment to be furnished by Contractor:

A. Ram Type BOPs:
   1. No. Required 2
   2. Acceptable Manufacturers & Types
      a. Cameron Iron Works: QRC; F; SS; U
      b. Shaffer Tool Works: B; E; LWS; LWP
      c. Hydril

B. Annular Type BOPs:
   1. No. Required 0
   2. Acceptable Manufacturers & Types
      a. Hydril - GK
      b. Shaffer - Spherical
      c. Cameron - D

C. Preventer Operating Equipment
   1. Hydraulic Pump - air, steam or electrically operated of sufficient volume and pressure capacity to close the largest ram type preventer in less than 30 seconds. Electrically operated pump must be equipped with explosion proof motor and controls.
   2. Manifold with a control valve for each preventer.
   3. A Hydril or equivalent regulator for each annular type preventer.
   4. Accumulator of sufficient volume and pressure capacity to close all preventers in the assembly without recharging. If the pump in C.1. is incapable of recharging the accumulator in excess of 1500 psi, a separate pump capable of this is to be furnished.
   5. Remote control panel with a station for each preventer control valve.
   6. Steel piping to connect hydraulic closing units to preventers.
   7. Choke manifold with seamless steel piping and flanged or clamp hub connections. Choke manifold assembly and piping sizes as specified, on the attached drawing. All working lines, except hydraulic closing lines, shall have flanged or clamp hub connections to preventers, spools and casing heads.
   8. Full opening drill string safety valve (I.D. equal or larger than I.D. of tool joint in use). Working pressure to equal or exceed specified BOP working pressure. O.D. and configuration such that valve can be run in the hole with adequate clearance.
   9. Full opening upper Kelly cock. Working pressure to equal or exceed specified BOP working pressure.

10. Hydraulic pump of sufficient pressure rating to test preventer assembly to rated working pressure with necessary hose and fittings to connect the pump to drill pipe box or safety valve pin.
11. Drilling spool for use with single ram type preventers or with dual ram type preventers which do not have outlets between the rams.
12. Two valves on each side of drilling spool or dual preventers, one side for choke manifold connection and the other for kill line connection.
13. Hand wheels and extensions for manual operation of the ram type preventers. U-joints, extension guides, working platform(s) as necessary.
14. A 1" - 5000 psi WP plug valve on the closing side of the annular type preventer using a XXE 1" X 4" nipple.
15. Flowlines from choke manifold to pits.
16. Pressure gauge with pressure range at least equivalent to BOP WP.

IV. Equipment to be Furnished by Phillips:
- A. Test plug to seat in casinghead.
- B. Remote controlled chokes, if installed.
- C. Casinghead with valves on outlets.
- D. Inside blowout preventer, if required.
- E. Mud-gas separator, if required, and necessary piping.

V. Location of Equipment & Controls:

A. Remote control panel on the rig floor adjacent to drillers position and stairway exit from the floor.

B. Accumulator-Hydraulic Control Valve Unit to be placed minimum of 50 feet from wellbore in easily accessible location.

C. Choke Manifold located 5 feet or more from the BOPs with minimum number of turns in the run.

D. Manual closing facilities installed so handwheels are outside the substructures in unobstructed location. U-joints, extension guides and working platforms installed as necessary for proper and safe operation.

E. Choke Manifold connection, where possible, is to be made between the two bottom ram type preventers through use of a drilling spool or by connecting between rams of dual type units with outlets so installed.
1. On dual type preventers where outlets are not installed between rams, connection is to be made to a drilling spool installed between the ram type and annular type preventers.

F. Position and Type Rams will be as shown on the attached drawing.

G. Fill up line to be tied into the bell nipple above annular preventers.

H. Safety Valve, open with connections and/or subs available to fit any tool joint in use, shall be on the rig floor at all times.

VI. Testing

A. Initial Installation Test
Immediately after installation, each component part of the blowout preventer assembly including choke lines, valves and closing facilities will be tested individually by steps as outlined in the Blowout Preventer Testing Procedure section of Phillips' Blowout Preventer Standards. The test pressure will be at the working pressure specified in Item II. All components must be satisfactorily tested before drilling out.

B. Ram Change or Repair Test
1. After each ram change or when any component part of the preventer assembly, including lines and valves, is disturbed, the disturbed portion is to be tested to working pressure specified in Item II.
2. Installation of casing rams is not required for running casing.

C. Weekly Pressure Test
The first trip out of the hole after 12:01 AM, Tuesday, weekly test will be performed as outlined in the Blowout Preventer Testing Procedure which includes testing the entire assembly with water to 1/2 the specified working pressure for 10 minutes. The Kelly cock and safety valve are to be tested to the specified working pressure. The weekly test is not required where the test falls within three days after the initial installation test.

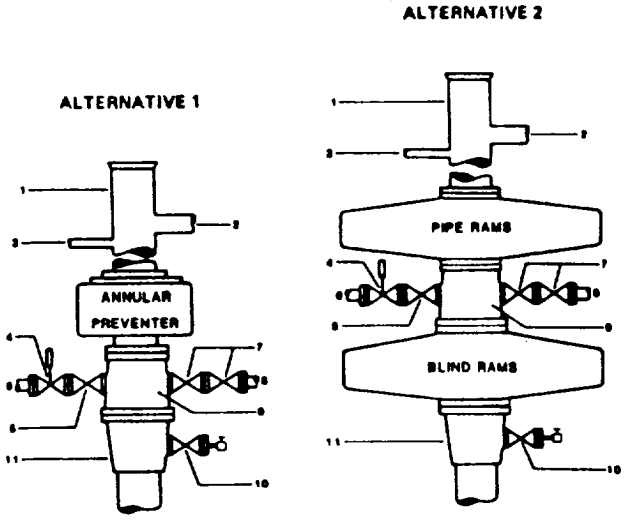
D. Operational Test
Each preventer unit is to be closed and opened on each trip or at least once each 48 hours (trip is not required just to actuate blind rams or pipe rams that do not fit top section of tapered string.)

VII. Responsibilities

A. Contractor is to install and test the blowout preventer assembly as specified.

B. The driller is to check and record the accumulator pressure on the daily drilling report at the beginning of each tour.

C. Expense of rig time and pressure testing services for initial and weekly tests will be borne by:
1. Contractor while on footage contract.
2. Owner while on daywork contract.



NOTE: THE DRILLING SPOOL MAY BE LOCATED BELOW BOTH SETS OF RAMS IF A DOUBLE PREVENTER IS USED AND IT DOES NOT HAVE SUITABLE OUTLETS BETWEEN RAMS

Figure 7-9. Standard Hydraulic Blowout Preventer Assembly (2 M or 3 M Working Pressure) Alternative 1

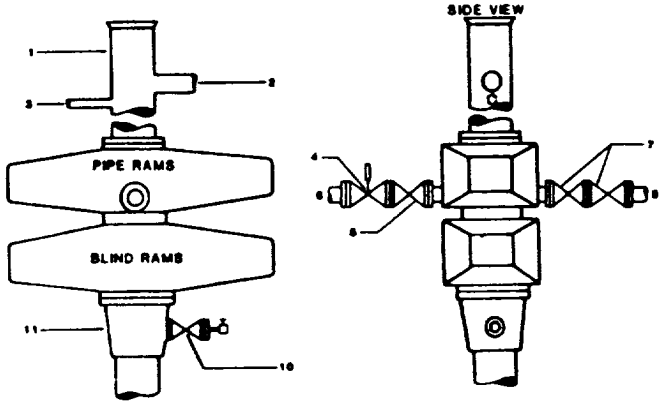


Figure 7-10. Standard Hydraulic Blowout Preventer Assembly (2 M or 3 M Working Pressure) Alternative 3 (without Drilling Spool)

PROPOSED CEMENT PROGRAM

JAMES "E" WELL NOS. 11, 12, 13, & 14

13 3/8" 54.5 lb/ft K-55 Surface Casing Set at 475' - 17 1/2" Hole:

Circulate to surface with 700 sacks of Class "C" + 2% $CaCl_2$.

Slurry Weight:	14.8 ppg
Slurry Yield:	1.32 ft^3/sx
Water Requirement:	6.3 gals/sx

8 5/8" 24 lb/ft K-55 Intermediate Casing Set at 3700' - 12 1/4" Hole:

Lead: 1000 sx Class "C" 65/35 Poz + 6% Bentonite + 15 lb/sx Salt.

Slurry Weight:	13.2 ppg
Slurry Yield:	1.92 ft^3/sx
Water Requirement:	9.9 gals/sx

Tail: 200 sx Class "C" + 10 #/sx salt.

Slurry Weight:	15.2 ppg
Slurry Yield:	1.38 ft^3/sx
Water Requirement:	6.3 gals/sx

5 1/2" 15.5 lb/ft K-55 Production Casing Set at 7700' - 7 7/8" Hole:

Lead: 250 sx Class "C" + 20% Diacel "D". Desired TOC = 3000'.

Slurry Weight:	12.0 ppg
Slurry Yield:	2.69 ft^3/sx
Water Requirement:	15.5 gals/sx

Tail: 600 sx Class "C" Neat. Desired TOC = 5000'.

Slurry Weight:	14.8 ppg
Slurry Yield:	1.32 ft^3/sx
Water Requirement:	6.3 gals/sx

MUD PROGRAM

JAMES E WELL NOS. 11, 12, 13, & 14

DEPTH	MUD WEIGHT	VISCOSITY	FLUID LOSS	CL PPM	% SOLIDS	ADDITIVES
Surf - 475'	8.3-9.0 ppg	28-36 sec/1000 cc	-	-	-	Native Solids
475' - 3700'	10.0 ppg	29-32 sec/1000 cc	-	Saturated	-	Native Solids
3700' - 4500'	8.3-9.5 ppg	28-36 sec/1000 cc	-	-	-	
4500' - 7700'	8.5-9.0 ppg	32-38 sec/1000 cc	15 cc or less	-	-	Gel/Drispac Plus

Remarks: Use DBX dripped into flowline 10-15' upstream from lower end if extra settling of solids is desired while circulating the reserve.

The Mud Engineer shall include on each test report the materials used for the previous 24 hr. period. Twice weekly mail copies of the test reports to:

A. C. Sewell
4001 Penbrook
Odessa, Texas 79762

Send two copies of the Well Recap (Final Cost & Engineering Summaries) to A. C. Sewell at the above address.