

DEVON ENERGY

Operator: DEVON ENERGY CORP	Well Name: TODD FEDERAL AREA
Project ID:	Location: T23S-R31E

Design Parameters:

Mud weight (9.80 ppg) : 0.509 psi/ft
 Shot in surface pressure : 3457 psi
 Internal gradient (burst) : 0.100 psi/ft
 Annular gradient (burst) : 0.000 psi/ft
 Tensile load is determined using air weight
 Service rating is "Sweet"

Design Factors:

Collapse : 1.125
 Burst : 1.00
 8 Round : 1.80 (J)
 Buttress : 9.89 (J)
 Body Yield : 1.50 (S)
 Overpull : 0 lbs.

Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost		
1	4,400	8-5/8"	32.00	J-55	ST&C	4,400	7.875		
	Load (psi)	Collapse Strgth (psi)	S.F.	Burst Load (psi)	Min Int Strgth (psi)	Yield S.F.	Tension Load (kips)	Strgth (kips)	S.F.
1	2240	2530	1.129	3527	3930	1.11	140.80	372	2.64 J

Prepared by : CHUCK HORSMAN, Oklahoma City, OK
 Date : 06-04-1993
 Remarks :

Minimum segment length for the 4,400 foot well is 800 feet.

Surface/Intermediate string:

Next string will set at 8,400 ft. with 9.00 ppg mud (pore pressure of 3,927 psi.) The frac gradient of 1.000 at the casing seat results in an injection pressure of 4,400 psi. Effective BHP (for burst) is 3,527 psi.

NOTE: The design factors used in this casing string design are as shown above. As a general guideline, Lone Star Steel recommends using minimum design factors of 1.125 - Collapse (with evacuated casing), 1.0 - Burst, 1.8 - 8 Round Tension, 1.6 - Buttress Tension, and 1.5 - Body Yield. Collapse strength under axial tension was calculated based on the Westcott, Dunlap and Kessler curve. Engineering responsibility for use of this design will be that of the purchaser. Costs for this design are based on a 1990 pricing model. (Version 1.06)