

DEVON ENERGY

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

Design Parameters:

Mud weight (9.00 ppg) : 0.468 psi/ft
 Shut in surface pressure : 3316 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"

*** WARNING *** Design factor for joint strength exceeded in design!

Design Factors:

Collapse : 1.125
 Burst : 1.00
 8 Round : 1.50 (67)
 Buttress : 1.50 (67)
 Body Yield : 1.50 (67)
 Overpull : 0 lbs.

	Length (feet)	Size (in.)	Weight (lb/ft)	Grade	Joint	Depth (feet)	Drift (in.)	Cost
1	1,200	5-1/2"	17.00	J-55	LT&C	1,200	4.767	
2	6,200	5-1/2"	15.50	J-55	LT&C	7,400	4.825	
3	1,350	5-1/2"	17.00	J-55	LT&C	8,750	4.767	

	Load (psi)	Collapse Strgth (psi)	S.F.	Load (psi)	Burst Strgth (psi)	Min Int Yield S.F.	Load (kips)	Tension Strgth (kips)	S.F.
1	561	3897	6.947	3336	5320	1.59	139.45	247	1.77 J
2	3460	3927	1.135	3956	4810	1.22	119.05	217	1.82 J
3	4091	4910	1.200	4091	5320	1.30	22.95	247	10.76 J

Prepared by : TOM PEPPER, Oklahoma City, OK

Date : 07-10-1995

Remarks :

Minimum segment length for the 8,750 foot well is 500 feet.

The mud gradient and bottom hole pressures (for burst) are 0.468 psi/ft and 4.891 psi, respectively.

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, 1.5 - 8 Round Tension, 1.5 - Buttress Tension, and 1.5 - Body Yield. Collapse strength under axial tension was calculated based on the Westcott, Dunlop and Keeler 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 1.02)