

SCANNED

EXHIBIT "A"

CASING PROGRAM Horizontal Hole

HOLE SIZE	SETTING DEPTH		AMOUNT			DESIGN FACTORS						
	FROM	TO				Internal Yield	Collapse (derated f/tension)	Tension (in air)	Tension w/ 100,000#OP	Cmt'ing Depths		
12-1/4"	0	320	320	8-5/8", 24#, J-55, R-3, STC	8.6	5.31 *	9.09	31.77	2.77	320'		320'
-7/8"	0	5014	5014	4-1/2", 10.5#, K-55, R-3, BTC	9.3	8.6 *	1.79	2.87	1.05	4875'-5014'		139'
-1/4"	5014	5474	460	4-1/2", 10.5#, K-55, R-3, BTC	9.3	8.6 *	1.79	2.87	1.05	5014'-5375'		361'

Pore Pressure of "Morrow" Sand estimated at ± 4.0 ppg EMW.

CEMENTING PROGRAM Horizontal Hole

Conductor:

Surface: 275 sx Class "A" + 3% CaCl₂ + 1/4#/sx celloflake mixed at 15.7 ppg & 1.17 ft³/sx

Intermediate:

Production: 80 sx Class "A" (or premium) + .6% FL28 + .5% CD31 + 3% KCL + 1/4#/sx celloflake (16.0 ppg & 1.13 ft³/sx) based on 35% excess

Liner:

MUD PROGRAM Horizontal Hole

Interval (MD)	Weight	Viscosity	Fluid Loss	Remarks
0 - 320	8.3 - 8.6	28 - 42	N/C	FW - Gel
320 - 4300	8.3 - 8.6	42 - 50	N/C	FW - Gel + LCM (if needed)
4300 - 5000	9.0 - 9.3	32 - 36	15 - 20	LSND + LCM (if needed)
5000 - 5474	9.0 - 9.3	34 - 45	6 - 8	LSND + LCM (if needed)