PREPARED FOR:

Mr. Butch Willis
NEARBURG PRODUCING COMPANY
Midland, Texas

Kudu 9 Federal # 7
Section 9
T-19-S
R-33-E
Lea County, New Mexico

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DRILLING FLUID SYNOPSIS

Kudu 9 Federal # 7
Section 9
T-19-S
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Recommended Casing

8 5/8" at 1,550'

4 1/2" at 4,000'

DEPTH	MUD WEIGHT	VISCOSITY	FLUID LOSS	DRILL SOLIDS	COMMENTS
0'-1,550'	8.4 to 8.5	28 to 29	No Control	<1%	Fresh Water, Star NP-110, Lime, Paper
1,550'-3,000'	9.0 to 10.0	28 to 29	No Control	<1%	Cut Brine, Star NP-110, Caustic, Paper
3,000'-4,000'	9.0 to 10.0	30 to 32	<20cc	<5%	Star NP-110, Starch, Caustic

ESTIMATED FORMATION TOPS

RUSTLER	1,530'
TANSILL	3,120'
YATES	3,350'
SEVEN RIVER	3,680'
TD	4,000'

RECOMMENDED CASING PROGRAM

8 5/8"	at	1,550'
4 1/2"	at	4,000'

RECOMMENDED DRILLING FLUID PROGRAM

DEPTH	WEIGHT	VISCOSITY	FILTRATE
0'-1,550'	**8.4-8.5**	**28-29**	**No Control**

Spud with an Amgel and Lime type fluid, circulating through the working pits. Use Paper, as needed, for seepage control and for sweeps. If lost returns are encountered, please refer to **Ambar Lone Star's Lost Circulation Procedure.**

DEPTH	WEIGHT	VISCOSITY	FILTRATE
1,550'-3,000'	**9.0-10.0**	**28-29**	**No Control**

Drill out with Cut Brine, circulating through the reserve. Maintain a 9.0 to 9.5 pH with Caustic. Utilize Star NP-110 for sweeps and for solids control. Use Paper for seepage control and for sweeps. Monitor background gas and adjust the fluid weight if needed, with additions of Brine. There is a potential for lost returns in this interval. If lost returns are encountered, please refer to **Ambar Lone Star Mud's Lost Circulation Procedure.** If a mud is required in this interval for evaluation, we recommend mudding up as discused in the next interval.

DEPTH	WEIGHT	VISCOSITY	FILTRATE
3,000'-4,000'	**9.0-10.0**	**30-32**	**<20cc**

At **3,600'**, or as conditions dictate, return to the working pits and mud up with a **Star NP-110/Starch** system. Maintain a 9.0 to 9.5 pH with Caustic. Maintain an API fluid loss of less than 20cc with Starch. It will be necessary to monitor sulfite-reducing bacteria with this system. Our engineer will perform this test at the well, and recommend additions of Starhib TSW as needed to control. If abnormal pressure is encountered, adjust the fluid weight with Brine as required. There is a potential for lost returns in this interval. If lost returns are encountered, please refer to **Ambar Lone Star's Lost Circulation Procedure.** Prior to evaluation or running pipe, sweep the hole with a viscous Salt Gel sweep.

Estimated Drilling Fluid Cost: $4,000.00 to $8,000.00
Estimated Drilling Days: 7 to 9

Estimates are based on a 600 bbl system and do not reflect lost circulation, water flows, or abnormal pressures.

AMBAR LONE STAR FLUID SERVICES
LOST CIRCULATION PROCEDURES

Loss of circulation is a possibility on this well. Although each well is different, there are some basic procedures and drilling practices that can aid in reducing the severity or, in some cases, prevent lost circulation. Below is a list, which may prove helpful.

1. Maintain viscosities as low as possible and still clean the hole. We recommend a viscosity of 28 to 32 on this well.
2. Maintain mud weights as low as possible without jeopardizing safety.
3. Use slow trip speeds to prevent swabbing and surging.
4. Break circulation in stages with reduced pump strokes while tripping in the hole.
5. Rotate pipe prior to and while tripping in the hole.
6. Use an optimum hydraulics program.

Severe seepage to total loss of circulation may occur even when the above procedures are followed. For severe seepage, we recommend circulating pills (50-100 bbls. depending on hole size) containing 10-30 ppb of various (fibrous and flake) lost circulation material. It would be helpful to reduce pump rates until full returns are established. Once full returns are regained, normal pump rates should be returned to in stages. The inclusion of lost circulation material in the entire system is recommended only if the above procedures do not adequately seal off the loss zone.

For total loss of circulation, we recommend pulling enough stands to place the bit above the loss zone. A viscous pill containing the appropriate type of loss circulation material should be spotted. The size of the pill should be determined by hole size and should contain at <u>least</u> 30 ppb lost circulation material. Several attempts should be made before considering other alternatives. After returns are regained, we recommend staging back to bottom using the procedure outlined above.

If returns are not fully re-established, consideration should be given to dry drilling while pumping periodic sweeps to ensure hole cleaning.