



Southwestern Drilling Mud Service, Inc.

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Recommended Drilling Fluid Properties (continued)

<u>DEPTH</u>	<u>WEIGHT</u>	<u>VISCOSITY</u>	<u>API FILTRATE</u>	<u>pH</u>
300-3500'	9.5-10.0	28	NC	10-11

Drill out from surface casing with brine water. Circulate reserve pit for best possible solids control. Use Caustic Soda to maintain pH for corrosion inhibition. Use Paper to control seepage. Should serious loss of circulation occur, we recommend the use of viscous pills containing Sea Mud, Paper, Fiber and Cottonseed Hulls. Sweep hole, as necessary, with viscous pills (using Sea Mud as viscosifier) for hole cleaning. Also, sweep hole prior to running casing.

3500-12,000'	8.8-9.2	28	NC	10-11
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Drill out from 9-5/8" casing with existing brine water fluid. Use fresh water additions for dilution and to build volume. Have fluid weight lowered to less than 9.0 lb/gal by 7000'. This will help prevent loss of circulation in the Bone Springs. Gas pressures could be encountered in the lower Bone Springs sands and/or the upper Wolfcamp requiring 9.0-9.5 lb/gal. Use brine water to adjust fluid weight as hole conditions dictate.

Continue using Caustic Soda to maintain pH. Corrosion inhibition can be improved with the use of OS-12, a liquid sulfite oxygen scavenger. Maintain a residual sulfite content of 75-100 ppm.

Use Paper to control seepage losses. Complete loss of circulation is a possibility in the Bone Springs. If these losses occur, use viscous pills containing Sea Mud, Paper, Fiber and Cottonseed Hulls. Viscous hole sweeps should be used, as necessary, for hole cleaning. We do recommend sweeping the hole before running any test, logs or running casing. Casing should be set into the top of the Wolfcamp.

12,000-14,300	12.0-13.0	38-45	10-15	10-10.5
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After drilling out cement with existing brine fluid, displace hole with pre-mixed, fresh water mud weighing - 10.5 lb/gal. Bring weight up to - 12.0 lb/gal, let hole conditions dictate any further mud weight changes. Expect pressures requiring - 13.0 lb/gal. weight by total depth.