

Santa Fe Energy Operating Partners, L.P.  
P. G. "4" Federal No.1  
Bottom Hole Location: 660' FSL & 1980' FWL, Sec. 4  
Surface Location: 990' FNL & 1980' FWL, Sec. 9  
T-23S, R-32E, Eddy County, New Mexico

Generalized Directional Drilling Procedure

1. Drill a 17 1/2" hole to 600' and set 13 3/8" casing, circulate cement to surface.
2. Drill a 12 1/4" hole to 4150' and set 9 5/8" casing, circulate cement to surface.
3. Run a Gyroscopic Survey on wireline while WOC.
4. Drill out with an 8 3/4" bit and a non-magnetic drill collar in the BHA, keeping wellbore as near vertical as possible, will drop a Multishot Survey at 6000' and survey back to 9 5/8" to establish a bottom hole location at KOP.
5. Pick up Deflecting Assembly No. 1 consisting of : 6 1/2" Slow-Speed mud motor, 8 3/4" 3-type insert bit and 1.5 deg. deflecting sub back to non-magnetic drill collars and BHA.
6. Orient Deflecting Assembly with a surface readout steering tool to the desired azimuth, (North), drill with Deflecting Assembly until 5-6 deg of inclination and correct azimuth has been achieved.
7. TOH for conventional fulcrum assembly consisting of: 8 3/4" 3-type insert bit w/ extension sub, 8 3/4" near bit stabilizer, non-magnetic drill collars, one steel drill collar, string stabilizer, drill collars, 3-pt roller reamer, and drill pipe.
8. Drill with fulcrum assembly until maximum inclination has been achieved or a correction motor run is required.
9. Once maximum inclination and desired azimuth has been accomplished, a recommended lock-up assembly will be run to maintain trajectory.
10. A 30'-60' pendulum assembly will be utilized to start the trajectory down based on 1 deg/100' of drop.
11. With the wellbore at a TVD of 12,000' and near vertical, 7" intermediate casing will be run and cemented with a TOC at 8000'.
12. A 6 1/8" hole will be drilled vertically to a TVD of 15,000'. A 4 1/2" liner will be hung from the 7" intermediate casing and cemented in place.

BEFORE EXAMINER CATANACH	
OIL CONSERVATION DIVISION	
<i>Santa Fe</i>	EXHIBIT NO. <u>4</u>
CASE NO. <u>10098</u>	