To:	**John Drahota/Roger Foster H&P 322**	**Don Cox, Chuck Mallary**
Re:	**Alter C16-28D**	Date: **January 28, 2012**

Wellbore Info

Surface Casing: 8-5/8" 24# J-55 set @ 749' MD
7-7/8" production hole
Sussex Top: 4605' MD
Niobrara Top: 7043' MD
TD: 7498' MD

Sidetrack Plug Procedure

1. Pick up 600' 2 7/8" EUE tubing stinger and crossover to 4.5" drill pipe (4.5" 16.6#). TIH to 7450' KB.
2. Circulate at 350-400 GPM.
3. Pump 18.1 bbls 150sec/qt viscous, 12.5lb/gal pill and displace with 99.15 bbls drilling mud [287' of 2-7/8" 6.5# tbg (1.81 bbls) + 6850' of 4.5" 16.6# DP (97.34 bbls)] to spot pill from 7450' to 7150' KB.
4. TOH to 7150' KB, circ & condition 2x bottoms up and until mud in properties match mud out.
5. RU Halliburton.
6. Pump 10 bbls Tuned spacer followed by 50 sacks (13.5 bbls) of 15.8 PPG Class G cement mixed with 35% bwoc SSA (silica flour), 0.2% bwoc Hallide 322 (fluid loss, retarder), and 0.2% bwoc HR-5 (Retarder, dispersant) yielding 1.52 ft^3/sk with 6.21 gal/sk mix water. Displace with 1.0 bbl Tuned spacer behind cement followed by 95.26 bbls mud displacement [366' of 2-7/8" 6.5# tbg (2.12 bbls) + 6550' of 4.5" 16.6# DP (93.14 bbls)]. The slurry volume places the **abandonment plug across the Niobrara top** (7043' MD) **from 7150' to 6925'**.
7. Slowly pull out of plug (15'/min) and once free POOH to 6000' KB gently (slow pump rate) circulating out any remaining cement. Continue POOH to 4925' KB.
8. Pump 13 bbls 150sec/qt viscous, 12.5lb/gal pill and displace with 63.81 bbls drilling mud [400' of 2-7/8" 6.5# tbg (2.31 bbls) + 4325' of 4.5" 16.6# DP (61.50 bbls)] to spot pill from 4925' to 4725' KB.
9. TOH to 4725' KB.
10. Pump 10 bbls Tuned spacer followed by 50 sacks (13.5 bbls) of 15.8 PPG Class G cement mixed with 35% bwoc SSA (silica flour), 0.2% bwoc Hallide 322 (fluid loss,

retarder), and 0.2% bwoc HR-5 (Retarder, dispersant) yielding 1.52 ft^3/sk with 6.21 gal/sk mix water. Displace with 1.0 bbl Tuned spacer behind cement followed by 60.78 bbls mud displacement [366' of 2-7/8" 6.5# tbg (2.12 bbls) + 4125' of 4.5" 16.6# DP (58.66 bbls)]. The slurry volume places the **abandonment plug across the Sussex top** (4605' MD) **from 4725' to 4490'**.

11. Slowly pull out of plug (15'/min) and once free POOH to 3500' KB gently (slow pump rate) circulating out any remaining cement. Continue POOH to 2500' KB.
12. Break circulation and pump 20 bbl 150sec/qt, 12.5 lb/gal pill and displace with 29.1 bbls drilling mud [255' of 2-7/8" 6.5# tbg (1.47 bbls) + 1945' of 4.5" 16.6# DP (27.65 bbls)] to spot pill from 2500' to 2200' KB.
13. TOH to 2200' KB.
14. Pump 10 bbls Tuned spacer. Mix and pump 200 sacks (33.5 bbl) of 17.5 PPG Class G cement mixed with 0.75 % bwoc CFR-3 (friction reducer, fluid loss) yielding 0.94 ft^3/sk with 3.42 gal/sk mix water. Displace cement with 2.0 bbl Tuned spacer followed by 23.2 bbls drilling mud [100' of 2-7/8" 6.5# tbg (0.57 bbls) + 1600' of 4.5" 16.6# DP (22.75 bbls)]. **Assuming 15% excess over gauge hole the slurry volume places the sidetrack plug from 2200' KB to 1700' KB.**
15. Slowly pull out of plug (3 minutes per joint) and once free POOH to 1000' KB gently (slow pump rate) circulate out any remaining cement.
16. Continue POOH and lay down 2 7/8" stinger and crossover.
17. PU 7 7/8" milled tooth Tri-cone bit, bit sub, and 15 joints HWDP. TIH to TOC. Ensure a minimum of 12 hours WOC time before TOC tag.
18. Drill cement to 1900' KB. WOC longer if green cement drilling time or surface samples indicate more WOC time is needed. Ensure directional drillers are on the floor to verify the plug's hardness and kick off suitability.
19. <u>If plug has adequate hardness, side track at plan KOP (2100' KB) or above.</u> Dress plug to KOP and circulate clean. C & C mud raising MW to 9.2 ppg. POOH and lay down BHA.
20. PU directional tools: 7 7/8" milled tooth tri-cone bit, bit sub, 1.75 degree bent motor, 15 joints HWDP.
21. RIH to TOC.
22. Minimum total WOC time is 24 hours.
23. Control drill to kick-off the plug and proceed to drill side track per plan. Proceed to drill sidetrack and advise if any problems maintaining plan.

24. Once +/-400' of new formation has been cut, trip for PDC bit and 1.5 degree bent motor.