

Well Name	Guttersen State DD17-78HN
Pilot Hole TVD	7429 x
Pilot Hole MD	7457.1 x
Planned LP TVD	x
Original KOP	6011.4 x
Max Tang Inc	12.05 x
Step Out N/S	-197.6 x
Step Out E/W	236.9 x
Total Step out	308.5
Rig	H&P 315

**Plug 1 Details**

Top MD	6957.1
Bottom MD	7457.1

**Plug 2 Details**

Top MD	6357.1
Bottom MD	6857.1

**Viscous pill depth:** 6350

**Plug 3 Details**

Top MD	5650
Bottom MD	6250

**Plug Back Procedure:**

1) Pump Cement Plug 1 (Bottom MD to Top MD):

- 38 BBLS 13.5 PPG water based tuned spacer
- 180 sks 15.8 ppg plug cement (36 BBLS)
- 5.1 bbls 13.5 ppg water based tuned spacer

2) Pump Cement Plug 2 (Bottom MD to Top MD):

- 38 BBLS 13.5 PPG water based tuned spacer
- 180 sks 15.8 ppg plug cement (36 BBLS)
- 5.1 bbls 13.5 ppg water based tuned spacer

3) Pump 7.5 BBLS Viscous Pill, 14.0 ppg, 40-50 viscosity

4) Pump cement plug 3 (Bottom MD to Top MD):

- 38 BBLS 13.5 PPG water based tuned spacer
- 270 sks 17.5 ppg plug cement (44.6 BBLS)
- 5.5 bbls 13.5 ppg water based tuned spacer

5) Time drill off of top plug to get departure from pilot hole

6) Begin drilling curve as originally permitted