

SIEVERS LE10-78HN P&A Procedure

- 1) Pick up ~853 foot 2 7/8" EUE tubing stinger and crossover to 4" XT-39 drill pipe. TIH to 10 ft above TD of the vertical pilot hole (7390')
- 2) Circulate at 450-500 GPM. Circ & condition 2x bottoms up and until mud in properties match mud out.
- 3) RU Halliburton cementers and pump plug #1 as outlined below:

Stage	Weight (ppg)	Sacks	Yield (ft ³ /sk)	Mix Water (gal/sk)	Rate (bpm)	Pump Time (min)	Volume (bbls)
Ahead: Tuned Spacer 3	13.5				1.5	24.6	37.0
Cement Plug #1	15.8	218	1.15	5.00	1.0	44.6	44.6
Displacement: Tuned Spacer 3	13.5				1.5	3.7	5.5
Displacement: Mud					2.0	33.4	66.8
Total:		218				69.3	153.8

- 4) Slowly pull out of plug (30'/min) and once free POOH to 6700' (100 ft above the calculated TOC).
- 5) Circulate 2x DP volume through the DP (long way) to gently (slow pump rate) circulating out any remaining cement.
- 6) Pump plug #2 as outlined below:

Stage	Weight (ppg)	Sacks	Yield (ft ³ /sk)	Mix Water (gal/sk)	Rate (bpm)	Pump Time (min)	Volume (bbls)
Ahead: Tuned Spacer 3	13.5				1.5	24.6	36.9
Cement Plug #2	15.8	218	1.15	5.00	1.0	44.6	44.6
Displacement: Tuned Spacer 3	13.5				1.5	3.7	5.5
Displacement: Mud					2.0	29.5	59.1
Total:		218				69.2	146.1

- 7) Slowly pull out of plug (30'/min) and once free POOH to 3600'
- 8) Circulate 2x DP volume through the DP (long way) to gently (slow pump rate) circulating out any remaining cement.

- 9) Pump plug #3 as outlined below:

Stage	Weight (ppg)	Sacks	Yield (ft ³ /sk)	Mix Water (gal/sk)	Rate (bpm)	Pump Time (min)	Volume (bbls)
Ahead: Tuned Spacer 3	13.5				1.5	24.6	36.9
Cement Plug #3	17.5	267	0.94	3.94	1.0	44.6	44.6
Displacement: Tuned Spacer 3	13.5				1.5	3.7	5.5
Displacement: Mud					2.0	12.7	25.5
Total:		267				69.2	112.5

- 10) Slowly pull out of plug (30'/min) and once free POOH to 2000'

- 11) Circulate 2x DP volume through the DP (long way) to gently (slow pump rate) circulating out any remaining cement.

- 12) Pump plug #4 as outlined below:

Stage	Weight (ppg)	Sacks	Yield (ft ³ /sk)	Mix Water (gal/sk)	Rate (bpm)	Pump Time (min)	Volume (bbls)
Ahead: Tuned Spacer 3	13.5				1.5	24.6	36.9
Cement Plug #4	15.8	218	1.15	5.00	1.0	44.6	44.6
Displacement: Tuned Spacer 3	13.5				1.5	3.7	5.5
Displacement: Mud					2.0	4.1	8.1
Total:		218				69.2	95.1

- 13) Slowly pull out of plug (30'/min) and once free POOH to 900' (2-7/8" stinger + 1 jt drill pipe)

- 14) Circulate 2x DP volume through the DP (long way) to gently (slow pump rate) circulating out any remaining cement.

- 15) Pump plug #5 as outlined below:

Stage	Weight (ppg)	Sacks	Yield (ft ³ /sk)	Mix Water (gal/sk)	Rate (bpm)	Pump Time (min)	Volume (bbls)
Cement Plug to surface	15.8	386	1.15	5.00	1.0	75.0	79.0
Total:		368				79.0	79.0

- 16) POOH slowly (no more than 30'/min) and lay down 2 7/8" stinger and crossover.