

C-101 - Mud, Csg, Cmt, BOP Attachment
Park State 36 Com No. 2
SHL 660 FNL & 500 FWL, BHL 330 FSL & 375 FWL
36-24S-26E
Eddy County, NM

30-015-37179

1. Location: SHL 660 FNL & 500 FWL
BHL 330 FSL & 375 FWL
2. Elevation above sea level: 3579' GR
3. Geologic name of surface formation: Quaternary Alluvium Deposits
4. Drilling tools and associated equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal.
5. Proposed drilling depth: MD 9398' TVD 5138'
6. Estimated tops of geological markers:

Top Salt	433'
Base Salt	1253'
Bell Canyon	1513'
Cherry Canyon	2583'
Brushy Canyon	4103'
Brushy Canyon LWR C	5123'
Brushy LWR C Target	5138'
Bone Spring	5303'
7. Possible mineral bearing formations:

Brushy Canyon	Oil
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8. Proposed drilling Plan

After drilling and setting surface casing, drill to vertical TD 5300' and log. Set 5½" casing to 4877' and cross over to 2⅝" 2000 psi IJ fiberglass tubing underneath to 5300' and cement in place. Drill out of the bottom of the 5½" with a 4¾" bit and through cement and fiberglass tubing to KOP @ 4947' and kick off to drill the lateral. The fiberglass tubing effectively circulates cement to surface and plugs back the open hole.

Kick off 4¾" hole @ 4947.' Drill to TD 9398.' Run 2⅝" PEAK liner from RSB packer @ 4847' to TD @ 9398.' Fracture treat through iso-ports using iso-packers.

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9. Mud Circulating System:

Depth			Mud Wt	Visc	Fluid Loss	Type Mud
0'	to	330'	8.4 - 8.6	30-32	NC	FW spud mud. Add FW to control weight & viscosity and paper to prevent seepage.
0'	to	5,300'	9.9 - 10.0	28-29	NC	Saturated Brine. Sweep as needed to clean hole.
4,847'	to	9,398'	9.5 - 9.8	28-30	NC	Cut brine. Sweep as needed to clean hole.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

10. Casing Program:

	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface	12 1/4"	0' to 330'	New 8 1/2"	24#	STC	J-55
Production	7 1/4"	0' to 4877'	New 5 1/2"	17#	LTC	J-55
Fiberglass tbg	7 1/4"	4877' to 5300'	New 2 3/4"	2.18#	Fiberglass	IJ
Lateral	4 1/4"	4847' to 9398'	New 2 3/4"	6.5#	EUE	L-80

11. Cementing Program:

Surface Casing	Lead: 150 sx 10:2 RFC (Class A) + 4 pps D24 + 0.125 pps D130, 14.20 ppg, 1.62 cuft/sx, 7.5 gps. Tail: 150 sx Class C + 2% S1 + 0.125 pps D130, 14.80 ppg, 1.34 cuft/sx, 6.29 gps. TOC Surface
Production casing and Fiberglass tubing	Lead: 550 sx 50:50 Poz:Class H + 5% D44 (bwow) + 6% D20 + 0.2% D46 + 0.125 pps D130, 11.90 ppg, 2.38 cuft/sx, 13.68 gps. Tail: 400 sx TXI Lightweight + 1.33% D44 (bwow) + 0.1% D167 + 0.1% D65 + 0.1% D13, 13.00 ppg, 1.40 cuft/sx, 7.24 gps. TOC Surface
Lateral	PEAK completion assembly will be used, so no cement is required.

Fresh water zones will be protected by setting 8 1/2" casing at 330' and cementing to surface. Hydrocarbon zones will be protected by setting 5 1/2" casing at 4877' and 2 3/4" fiberglass tubing at 5300' and cementing to surface.

<u>Collapse Factor</u>	<u>Burst Factor</u>	<u>Tension Factor</u>
1.125	1.125	1.6

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12. Pressure control Equipment:

Exhibit "E". A 12¼" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000 # annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 330.' A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. BOP will be nipped up and operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system.

We are requesting a variance for testing the 8½" surface casing from Onshore Order No. 2, which states that all casing strings below the conductor shall be pressure tested to 0.22 psi per foot or 1500 psi, whichever is greater, but not to exceed 70% of the manufacturer's stated maximum internal yield. We are requesting to test the 8½" casing to 1000 psi using rig pumps. The BOP will be tested to 3000 psi by an independent service company.