Pressure Control Equipment:

The BOP system used to drill the 17-1/2" hole will consist of a 20" 2M Annular preventer. The BOP system will be tested as a 2M system per BLM Onshore Oil and Gas Order 2 prior to drilling out the casing shoe.

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the first intermediate hole section. The BOP system will be tested as a 3M system per BLM Onshore Oil and Gas Order 2 prior to drilling out the casing shoe.

A 5M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the second intermediate hole section. The BOP system will be tested as a 5M system per BLM Onshore Oil and Gas Order 2 prior to drilling out the casing shoe.

A 10M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the third intermediate and open/injection hole sections. The BOP system will be tested as a 10M system per BLM Onshore Oil and Gas Order 2 prior to drilling out the casing shoe.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 10,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line); **if an H&P rig drills this well. Otherwise no flex line is needed**. The line will be kept as straight as possible with minimal turns.

Auxiliary Well Control and Monitoring Equipment:

a. A Kelly cock will be in the drill string at all times.
b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

3. Casing Program:

Hole Size	Hole Interval	Casing OD	Casing Interval	Weight (lb/ft)	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
26"	0 - 750'	20"	0 - 750'	94	BTC	J-55	1.41	5.71	20.16
17-1/2"	750-5300'	13-3/8"	0-5300'	68	BTC	HCP-110	1.09	1.25	3.16
12-1/4"	5300-12485'	9-5/8"	0-12485'	47	BTC	HCP-110	1.22	1.45	2.56
8-1/2"	12485-18733'	7-5/8"	11985-18733'	47.1	BTC	P-110	1.10	1.05	1.75
6-1/8"	18733-21000'	Open hole							

Casing Notes:

- All casing is new and API approved
- Casing will never be completely evacuated

Maximum TVD: 21000'

4. Proposed mud Circulations System:

Depth	Mud Weight	Viscosity	Fluid Loss	Type System
0 - 750'	8.3	30-34	N/C	FW
750-5300'	10.0	28-32	N/C	Brine
5300-12485'	10	28-32	N/C	FW
12485-18733'	12.2-15.5	28-32	N/C	FW
18733-21000'	8.3-8.6	28-32	N/C	FW

The necessary mud products for weight addition and fluid loss control will be on location at all times. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume. If abnormal pressures are encountered, electronic/mechanical mud monitoring equipment will be installed.

5. Cementing Table:

String	Number of sx	Weight lbs/gal	Water Volume gal/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
20" Surface	1730	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water
13-3/8" 1st Intermediate	2750	12.9	9.81	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 71.4 % Fresh Water
	950	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water
9-5/8" 2nd Intermediate	1260	12.9	9.81	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 71.4 % Fresh Water
	590	14.4	5.75	1.24	Tail	50% Premium H / 50% PozMix + 0.2% BWOC Halad-9 + 0.2% BWOC HR-800 + 64.7% Fresh Water
7-5/8" Drilling Liner	270	12.5	10.86	1.96	Lead	(65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 74.1 % Fresh Water
	170	14.5	5.31	1.21	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.25% bwoc CFR-3 + 0.2% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water

TOC for all Strings:

Surface	@	0'
Intermediate I	@	0'
Intermediate II	@	4800'
Production	@	11485'

Notes:

- Cement volumes Surface 100%, 1st Intermediate 75%, 2nd Intermediate 50% and 3rd Intermediate based on at least 25% excess.
- Actual cement volumes will be adjusted based on fluid caliper and/or caliper log data