Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.



OPERATIONS PLAN

San Juan 29-7 Unit #11B Well Name:

455'FSL, 680'FWL, Section 3, T-29-N, R-7-W Location:

Rio Arriba County, New Mexico

Latitude 36° 44.9, Longitude 107° 33.9

Bottom hole Location: 1780'FSL, 2390'FWL, Section 3, T-29-N, R-7-W

Formation: Blanco Mesaverde

6234 'GL Elevation:

Formation Tops:	Measured Depth	Top True Vertical	Bottom True Vertical	Contents
	_	Depth	Depth	
Surface	San Jose	San Jose	2116'	
Ojo Alamo	2466.64	2116'	2266 ′	aquifer
Kirtland	2669.70'	2266'	2616 '	gas
Fruitland	3143.50'	2616'	3081 ′	gas
Pictured Cliffs	3718.92'	3081 '	3186 ′	gas
	3833.90'	3186′	3816 '	gas
Lewis	4262.76'	3600'		
Intermediate casing	4479.58'	3816'	4101'	gas
Huerfanito Bentonite	4764.63'	4101'	4836 ′	gas
Chacra	5499.63'	4836'	4936'	gas
Cliff House	5599.63'	4936'	5271 ′	gas
Menefee	5934.63'	5271 ′	5671 ′	gas
Point Lookout Total Depth	6334.63 MD	5671' TVD		

Logging Program:

Cased hole - CBL-GR - TD to surface

Mud Program:				
Interval	Type	<u>Weight</u>		Fluid Loss
0- 120'	Spud	8.4-8.9	40-50	no control
0- 4138' MD	Non-dispersed	8.4-9.0	30-60	less than 8

n/a 4138- 6327' MD air/mist n/a n/a

Drilling:

Surface:

Drill to surface casing point of 120' and set 9 5/8" casing.

Intermediate:

Mud drill to the kick off point of 250'. At this point, the well will be directionally drilled by building 3.5 degrees per 100' with an azimuth of 53 degrees. The end of the build will be at a TVD of 1428', a MD of 1535.82', VS of 427', and an angle of 42 degrees. This angle will be held at an azimuth of 53 degrees until 2696' TVD, and 3251.9' MD. The angle will then be dropped at 3.5 degrees per 100' at an azimuth of 53 degrees until intermediate casing point of 3600' TVD, 4262.76' MD, and 5 degrees inclination.

Production Hole:

The production hole will be drilled with an air hammer. It will drill out at intermediate casing point and fall at approximately 2 to 3 degrees per 100 feet and be vertical at a TD of 5671' TVD and 6334.63' TMD.

Materials:

Casing Program:

Hole Size (inches)	Measured Depth (ft)	TVD (ft)	Casing Size (in)	Weight (lbs/ft)	Grade
12 1/4"	120'	120'	9 5/8"	32.3	H-40
8 3/4"	4262.76'	3600'	7"	20.0	J-55
6 1/4"	6334.63'	5671'	4 1/2"	10.5	J-55

Casing Equipment:

- 9 5/8" surface casing sawtooth guide shoe.
- 7" intermediate casing cement nose guide shoe on bottom, float collar one joint off bottom. Centralizers spaced as follows: (25) spaced every fourth joint from bottom to surface. Two turbolizing type centralizers, one below and one into the Ojo Alamo at 2593' TMD.
- 4 1/2" production casing float shoe on bottom, float collar, 6327' of 4 1/2" 10.5# J-55 ST&C csg.

Tubing:

6327' of 2 3/8", 4.7#, J-55 8rd EUE tubing with seating nipple one joint off bottom and an expendable check valve on bottom.

Wellhead Equipment:

9 5/8" x 7" x 2 3/8" - 11" (2000 psi) wellhead assembly.

Cementing

- 9 5/8" surface casing cement with 80 sx Type III cement with 0.25 pps cellophane and 2% calcium chloride (113 cu.ft. of slurry, 200% excess to circulate to surface). WOC 8 hrs. Test casing to 600 psi for 30 minutes.
- 7" intermediate casing Lead w/380 sx Premium Lite cement w/3% calcium chloride, 0.25 pps
 Flocele, 5 pps LCM-1, 0.4% fluid loss, 0.4% sodium metasilicate. Tail
 w/90 sx Type III cement w/1% calcium chloride, 0.25 pps Flocele, 0.2%
 fluid loss (933 cu.ft. of slurry, 50% excess to circulate to surface.)
 WOC minimum of 8 hours before drilling out intermediate casing. If
 cement does not circulate to surface, a CBL will be run during completion
 operations to determine TOC. Test casing to 1500 psi for 30 minutes.

See attached alternative intermediate lead slurry.

7" intermediate casing alternative two stage: Stage collar 3115'. First stage: lead with w/50 sx Premium Lite cement w/3% calcium chloride, 0.25 pps Flocele, 5 pps LCM-1, 0.4% fluid loss, 0.4% sodium metasilicate. Tailed w/90 sx Type III cement w/1% calcium chloride, 0.25 pps Flocele, 0.2% fluid loss. Second stage: cement with 330 sx Premium Lite cement w/3% calcium chloride, 0.25 pps Flocele, 5 pps LCM-1, 0.4% fluid loss, 0.4% sodium metasilicate (933 cu.ft., 50% excess to circulate to surface).

4 1/2" production casing - cement with 411 sx Premium Lite HS FM cement w/0.3% CD-32, 6.25 pps LCM-1, 0.25% Flocele, 0.1% fluid loss (335 cu.ft.), 40% excess to cement 4 1/2" x 7" overlap). WOC a minimum of 18 hrs prior to completing.

Cement float shoe on bottom with float collar spaced on top of float shoe.

BOP and Tests

Surface to intermediate TD - 11", 2000 psi double gate BOP stack (Reference Figure #1). Prior to drilling out surface casing, test rams and casing to 700 psi for 30 minutes.

Intermediate TD to Total Depth - 10" nominal, 2000 psi (minimum) double gate BOP stack (Reference Figure #1). Prior to drilling out intermediate casing, test rams and casing to 1500 psi (minimum) for 30 minutes.

Surface to Total Depth - choke manifold (Reference Figure #2).

Pipe rams will be actuated at least once each day and blind rams will be actuated once each trip to test proper functioning. A kelly cock valve and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional Information:

• The Mesaverde formation will be completed.

No abnormal temperatures or hazards are anticipated.

Anticipated pore pressures are as follows:

Fruitland Coal 300 psi Pictured Cliffs 600 psi Mesa Verde 700 psi

- Sufficient LCM will be added to the mud system to maintain well control, if lost circulation is encountered.
- The west half of Section 3 is dedicated to the Mesaverde in this well.

This gas is dedicated.

Date