

CONFIDENTIAL

WELL DRILLING PROGRAM

WELL: Socony Mobil Oil Western Minerals Whitestone YT N 26  
LOCATION: Latitude 66° 06' N  
Longitude 138° 20' W  
GROUND ELEVATION: 2268 EST  
KB ELEVATION: 2280 EST  
CONTRACTOR: Company Tools Rig 4  
TOTAL DEPTH: 7870  
PROGNOSIS: See attached  
PROGRAM: Drill 8 5/8" hole to 150 using air. The drilling will consist of:

- 1 8 5/8 rock bit
- 1 Mission Air Hammer
- 1 8 5/8" square collar w/saver sub.
- 1 8 5/8 Reamer Stabilizer
- 6 1/4" Collars to surface

Deviation is to be checked every 30 feet and must not exceed 1/2 degree at any time.

Ream hole to 125 using air. The reaming string will consist of:

- 1 15" Pilot reamer w/8 5/8" bit
- 6 1/4" Drill collars to surface

Ream 24" hole to 100' using air. The reaming string will consist of:

- 1 24" Pilot reamer
- 6 1/4" Drill collars to surface

Run 100' of 18" 0.250 Wall Spiral weld casing with one centralizer 10' from bottom and cement in the following manner:

Weld on cementing swedge and pump 3 bbls of water ahead of cement. Mix 150 sacks cement with 18 bbls of water to which 400 lbs of CaCl<sub>2</sub> has been added. Displace the cement with 23 bbls of water (Casing capacity 29.7 bbls) leaving 25' of fill in the casing. Slurry weight should be 14.8 ppg Slurry yield 1.24 cu ft/sack of cement.

WOC 24 hours



N.B. PILOT TEST CEMENT AND WATER AND RAISE WATER TEMPERATURE SO THAT FINAL SLURRY TEMPERATURE IS BETWEEN 50 DEGREES F AND 80 DEGREES F.

Rig up BOP stack assembly consisting of:

- 18" x 12" Ser 900 Welding Flange
- 1 12" Drilling Spool w/2 outlets
- 1 12" Hydril preventor
- 1 12"-900 Grant Rotating Head

Mix 500 bbls of aquagel and water the properties are to be:

- Viscosity 50 - 60 sec/qt.
- Filter Loss 12 cc approx.
- Mud Weight 9.5 lbs/gal

After WOC drill the cement with a 12 $\frac{1}{4}$ " bit using water to circulate. Discard water and clean tanks after cement has been drilled out.

Drill 8 5/8" hole to 1,000' using air.

The drilling string will be:

- 1 8 5/8 rock bit
- 1 8 5/8" Air Hammer
- 1 8 5/8" 3 point reamer stabilizer
- 1 8 5/8" square collar
- 1 8 5/8" square collar saver sub.
- 1 Shock sub (if required)
- 270' 6 $\frac{1}{4}$ " drill collars
- 4 1/2" drill pipe to surface.

Check deviation every 30 feet, not to exceed one degree at any time.

Ream 8 5/8" to 12 $\frac{1}{4}$ " to 1,000 ft. using air and the following assembly.

- 1 12 $\frac{1}{4}$ " pilot reamer w/8 5/8" bit.
- 270 6 $\frac{1}{4}$ " drill collars
- Shock sub (if required)
- 4 1/2" drill pipe to surface.

Remove airhead and BOP assembly and weld on 18" flow nipple.

Ream 12 $\frac{1}{4}$ " to 17" to 1,000 ft. using mud and the following assembly:

- 1 17" pilot reamer w/12 $\frac{1}{4}$ " bit.  
Shock Sub (if required)
- 270' 6 $\frac{1}{4}$ " drill collars
- 4 1/2" drill pipe to surface.

At 1,000' circulate and condition hole and mud,  
make dummy trip.

Run 1,000 ft 13 3/8" 54.5#/ft J-55 casing with  
float collar and guide shoe on bottom joint. Run  
one centralizer on shoe joint and on the joint above  
and one on the first joint below surface. Shoe  
joint to be welded above float and shoe. Cement  
with 750 sacks cement, using 110 bbls of water to  
which 2,200 lbs of CaCl<sub>2</sub> has been added. Pilot  
test cement to obtain final slurry temperature  
of 50 to 80 degrees F. Slurry weight 14.8 lbs/gals.  
Slurry volume designed for 25% excess on gauge  
hole.

Run top and bottom rubber plugs and bump plug  
with 600 psi. Land casing on bottom. WOC 12  
hours before slacking off and 24 hours before  
drilling out.

Nipple up with the following BOP stack assembly.

- 13 3/8" x 12 Ser 900 Weld on casing bowl.
- 1 12" Ser 900 Drilling spool w/2 side  
outlets
- 1 12" Ser 900 Double gate preventor
- 1 12" Ser 900 Drilling spool w/2 side  
outlets
- 1 12" Ser 900 Hydril BOP
- 1 12" Rotating Head  
2" Dual Bleed off lines w/2"  
adjustable chokes  
2" Fill up line

ALL FITTINGS AND VALUES ARE TO BE RATED AT 3000 PSI  
WORKING PRESSURE.

PRESSURE TEST CASING TO 1500 PSI.

DRILL OUT CEMENT AND PLUGS USING MUD AND 12 $\frac{1}{4}$ " BIT.  
TREAT OUT CEMENT CONTAMINATION. TEST FORMATION TO  
500 PSI.

DRY OUT THE CASING USING MICROCELLE E.

CLEAN OUT RAT HOLE AND DRILL AHEAD WITH AIR USING  
THE FOLLOWING ASSEMBLY:

8 5/8" bits  
Mission Air Hammer  
3 Point Reamer Stabilizer  
Square Drill Collar  
Square Collar saver sub  
Shock Sub (if required)  
25 (plus) 6 1/4" drill collars  
Drill pipe to surface

Surveys are to be conducted at least every 300 feet if deviation remains below 3 degrees. If deviation goes above 3 degrees, specific survey intervals will be determined.

Mud will be maintain as per the attached program.

LOGGING: Logs will be run before reaming the hole larger than 8 5/8". Logging program will be determined by the Exploration group at Dawson Creek.

N.B. IT IS PLANNED TO USE A FLY IN UNIT ON THIS HOLE AND ADEQUATE TIME (10 DAYS) WILL BE REQUIRED TO OBTAIN THIS EQUIPMENT.

TESTING: Conventional bottom hole tests may be run to evaluate any porosity as it is encountered or to evaluate a hydrocarbon reservoir after coring. Straddle test may be run to evaluate any zones of interest after completion of logging.

CORING: Coring will commence when ever porosity is encountered and will continue until such time as water is encountered or until porosity terminates. Further coring may be done for lithologic correlation or for spore determination at the discretion of the wellsite geologist.

SAMPLING: Two samples will be caught at ten foot intervals from surface to total depth for the Department of Northern Affairs and Canadian Stratigraphic Service. Sample intervals will be reduced to five feet over zones of interest. Washed and dried sample cuts will be obtained for Socony Mobil Oil and Western Minerals.

ALL water, oil or gas recoveries shall be adequately sampled and carefully retained to prevent loss or contamination.

CASING:

Intermediate casing or production casing may be run depending on conditions encountered. If these are required, a separate program will be issued.



R. L. SLAVIN  
District Exploration  
Superintendent



J. A. KELLY  
District Production Superintendent

## DRILLING MUD PROGRAM

### WHITESTONE YT N 26

#### Surface Hole

Prepare an Aquagel mud to drill the surface hole. The mud characteristics should be controlled as follows:

Viscosity	- 50 to 60 sec/qt.
Filter Loss	- 12 cc
Mud Weight	- 9.5 ppg

#### Under Surface to Total Depth

Drill out with the mud from surface hole, clean the mud tanks and displace the system with fresh water. Treat out any excessive cement contamination with sodium bicarbonate. It is not necessary to remove all of the calcium or reduce the pH below 11.

Prepare a Caustic-Q-Broxin mud to drill the entire hole below surface. Mud properties will have to be altered with depth. A low mud weight and viscosity are certainly recommended to 4,000 to speed up penetration as much as possible. The following mud characteristics should be maintained to 4,000 feet:

Mud Weight	- 9.0 ppg
Viscosity	- 32 sec/qt.
Filter Loss	- 8 cc

The viscosity may have to be raised temporarily for a drill stem test, but this can be done rapidly and economically with H.V. Cellex.

From 4,000 feet to total depth the mud properties should be maintained as follows:

Mud Weight	- 10 ppg
Viscosity	- 40-70 sec/qt.
Filter Loss	- 6 cc or less

The mud weight and viscosity may have to be changed from those suggested to cope with local conditions.

PROGNOSIS; SOCONY MOBIL

WESTERN MINERALS WHITESTONE YT N 26

NAME: Socony Mobil Western Minerals Whitestone YT N 26  
LOCATION: 66° 06' N, 138° 20' W.  
ELEVATION: Ground 2268' (est.) K.B. 2280' (est.).  
TOTAL DEPTH: 7,870 feet.  
BOTTOM FORMATION: Mississippian Parkin Creek.  
OBJECTIVES: To evaluate all potential reservoirs down to and including the upper 200 feet of the Mississippian Parkin Creek formation. Primary objective is sandstones of the Permo-Pennsylvanian Alder formation. Secondary objective is the Lower Cretaceous Blackie sand.

Geological Prognosis:

FORMATION OR MARKER	DEPTH	ELEVATIONS
Cretaceous		
Cody Creek formation	Surface	
Blackie sand	2800	- 520
New formation	3130	- 850
Permo-Pennsylvanian		
Alder formation	6109	-3829
Mississippian		
Parkin Creek formation	7667	-5387
Total Depth	7870	-5590