

Intermediate Casing (Lost Circulation - Capitan Reef):

12 1/4" hole is to be drilled below the salt protection casing to an anticipated depth of 400' (in top of Delaware) using fresh water. A loss of drilling fluid is anticipated in Capitan Reef -- a gradual fluid loss is expected in the top of the reef with a complete loss of circulation lower in the reef. The hole is to be dry drilled to the casing point --- sufficient fluid is to be pumped to insure clean hole conditions below the lost circulation zone. Casing setting is anticipated as follows:

<u>No Jts</u>	<u>Description</u>	<u>Thds Off Length</u>	<u>From</u>	<u>To</u>
--	Rotary correction	14	0	14
58	8 5/8" OD 32#/ft K-55 ST&C casing	2184	14	2198
--	Halliburton DV tool	2	2198	2200
--	B.O.T. pin packer	6	2200	2206
46	8 5/8" OD 32#/ft K-55 ST&C casing	1752	2206	3958
--	Float collar	2	3958	3960
1	8 5/8" OD 32#/ft K-55 ST&C casing	38	3960	3998
--	Float shoe*	2	3998	4000

*The float shoe is to be equipped with lateral exits for cement as it is intended to rest part of the casing weight on bottom.

The 8 5/8" OD casing is to be drifted for a 7 7/8" bit and is to be inspected using a combination mechanical optical and magnetic particle inspection - full length.

8 5/8" OD casing is to be pressure tested externally using Gator-Hawk, to 1650 psi. (60% of rated collapse).

Prior to running the 8 5/8" casing, a caliper survey is to be run to determine actual cement volume required.

Since a complete loss of circulation is assumed in the Capitan Reef, a B.O.T. pin packer with Halliburton DV tool above, is to be set above the lost circulation zone and not less than 100' below the top of the Capitan Reef to insure a cement job on the 8 5/8" casing above the zone of loss. The exact pin packer point is to be picked from the caliper survey. Cementing will be done in two stages as follows:

First Stage: Cement the lower part of the 8 5/8" casing with 1 1/2 times the volume calculated to fill from bottom to the top of the Capitan Reef. API class "C" containing 2% CaCl₂ is to be used

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