

Example:

Circulating pressure = 1,000 psig.

Shut-in drill pipe pressure = 300 psi.

Safety margin = 200 psi.

Pressure on drill pipe while circulating to be $1,000 + 300 + 200 = 1,500$ psi.

Continue circulating with the original mud until the well is purged of gas.

- (7) Using the initial shut-in standpipe pressure, determine the additional mud weight required to balance the formation pressure from attached Figure No. 1. To determine the new mud weight, add this increase to the original mud weight plus an additional 0.5 lb./gal. as a trip margin.
- (8) Circulate the mud with the increased density. Choose a circulating rate at which this increase in density can be uniformly mixed.
- (9) As the new mud is being pumped down the drill pipe, maintain the annulus pressure equal to the initial shut-in drill pipe pressure plus 200 psi.
- (10) When the new mud reaches the bit, read the drill pipe pressure. Use a constant circulation rate and adjust the annulus choke to maintain this drill pipe pressure until the new mud reaches the surface.

G. SWABBING

If the hole fails to take enough mud when starting a trip, check the mud flow properties. Maintaining a low yield point is particularly important in preventing swabbing. Yield points in the following ranges are recommended:

Mud Wt. #/Gal.	Yield Point #/100 Ft. ²
13	7-14
14	8-15
15	9-16
16	10-17
17	11-18