

HORSESHOE GALLUP UNIT WELLS
PLUGGING AND ABANDONMENT PROCEDURE

1. MIRU.
2. Release packer and pull tubing and packer out of hole.
3. RIH with tbg open-ended to below the bottom perforation and pump sufficient cement to cover top perforation by 50' inside the casing.
4. POH w/tbg. GIH w/wireline and shoot 3 to 4 holes in production string opposite 150' above top perforation to allow cement squeezing of zone. (This may be necessary since the original cement job may not have covered the Gallup formation by 50'). Squeeze sufficient cement to place a 100' plug outside the casing. Also, leave a 100' plug inside the casing. If unable to squeeze plug outside the casing, leave a 100' plug inside the casing.
5. POH w/tbg. GIH w/wireline and shoot enough holes in production casing opposite a point 50' below the surface casing shoe to allow squeezing cement.
6. RIH w/tbg open-ended and perform a braden-head squeeze of the perforations. Use sufficient cement for a 100' column behind the casing and a 100' plug inside the casing.
7. POH, cut casing one foot below ground level, place a 30' cement plug inside casing, weld on a steel plate, weld a dry hole marker on the steel plate, fill hole and move off.
8. Rehabilitate location and access road using stipulations supplied by the surface management agency.

NOTE: BOP's will not be needed in most cases because expected reservoir pressure of the Gallup in the area of abandonment is very low. If pressure does exist on any of the subject wells, bleed it off, install BOP's if needed, and commence with above procedure.

SMB
T.K.P.