







METHOD OF PLUGGING

WELL NO. BW-21

PERMIT NUMBER 55143

NW 1/4 SW 1/4 SECTION 24, T36N, R49E

INTENT NO. 19850

Following the installation of 40 inch conductor casing to 50 feet and cementing it in place, a 17 1/2 inch diameter reverse circulation borehole was drilled to a depth of 839 feet. Due to swelling and caving clays, this borehole was reamed to a diameter of 38 inches to a depth of 275 feet. During this drilling phase a majority of the drill cuttings fell into the 'pilot' borehole and begin to fill it. The borehole collapsed during an attempt to set an intermediate casing string.(32-inch 0.375 wall) The borehole collapsed up to 222 feet and following the removal of the casing, the decision was to abandoned the borehole.

26 pallets of bentonite hole plug were placed from a depth of 222 feet up to a depth of 203 feet. This was followed by the placement of 64 yards of cement grout from 203 feet up to a depth of 50 feet via a tremie pipe and grout pump. 9 yards of cement were then placed from 50 feet to 4 feet with the casing cut off just below ground surface.

Please contact Scott Campbell or Robert M. Huskisson of Layne-Western Company, Inc. at 602-895-9404 with any further information concerning this well abandonment. Thank you.