

October 1940

Empire, No. 4 Meyers
NW SE SW 21-19S-9W
Elevation 1717 feet
Cable Tool Disposal Well

Pennsylvanian
Marmaton

3197 to 3210 feet Dense buff limestone with slight reddish tinge, interbedded red and green shale.

Conglomerate sink fill

3210 to 3270 feet Detrital Arbuckle cherts, sand, red and green clay, drab-green sandy clay (re-worked or leached Simpson?), and local minor amounts oxidized pink dolomite. Interpreted as Pennsylvanian detritus filling sink in Arbuckle. Leached Simpson possibly also present. See notes below.

Ordovician (and Cambrian ?)

Arbuckle (Restored top 3211 feet or 1494 feet subsea) Penetration 437'
(Actual top 3270 feet or 1553 feet subsea)

3270 to 3527 feet Cotter cherty dolomite.

3527 to 3707 feet Pre-Cotter dolomite grading through sandy dolomite below 3637 feet into dolomitic sandstone. The basal sandy beds are believed younger than Everleigh and probably are Boyce, with possible pre-Boyce but post-Everleigh equivalents from 3688 to 3707 feet.

Pre-Cambrian (or Cambrian ?)

3707 to 3725 feet Quartzite and quartzitic sand with minor amounts arkosic materials. Some granularity still retained. May be Cambrian.

Pre-Cambrian

3725 to 3751 feet Total Depth. Pink biotite granite, slightly altered at top.

Remarks:

The Arbuckle section in this test has lost all post-Cotter beds through solution, and the upper part of the Cotter has also been leached and compacted. On the basis of altered Arbuckle dolomite traces present in the fill, the top of the Arbuckle may be restored for regional purposes to 3211 feet, or 1494 feet subsea. On this datum the well might have made a producer had normal Miller-Purcell been present, as it is only 6 feet and 4 feet lower than respective west and north offset production.

FBC