

OPERATOR: Columbia Gas Transmission Corporation
FARM: Lynn Camp Coal Corporation
WELL NO. 9639
LOCATION: Buchanan County
2200' S of 37° - 20'
6300' W of 82° - 10'
ELEVATION: 1613.26' GR.
TOTAL DEPTH: 4328'
DRILLING COMMENCED: November 4, 1971
WELL COMPLETED: January 7, 1972
RESULT: Gas Well

Ben 110

WELL LOG

DEPTH
(feet)

0-300 No samples.

300-340 Sandstone - light gray (N7), medium to coarse grained, subangular clear quartz grains moderately sorted; siliceous; friable; micaceous, 3%; and 5%± medium dark gray siltstone; also, local feldspar and chlorite.

340-380 Sandstone - dark gray (N3), fine grained, subangular, moderately poor sorting; siliceous; hard; graywacke type - 40%± fine, dark gray siltstone fragments; coal.

380-650 No samples.

650-680 Sandstone - as 300-340; fine to medium.

680-710 As 300-340; subangular to subrounded; 1% fine rock fragments; coal; rose quartz.

710-750 As 680-710.

750-800 As 680-710.

800-990 Siltstone - dark gray (N3), sandy; hard; micaceous.

990-1030 Sandstone/Siltstone - 50% each; medium light gray siltstone, as 800-990; sandstone, fine to medium, subangular, moderate sorting; siliceous; sparsely micaceous.

1030-1220 Sandstone - light gray (N7), as 990-1030; 15% fine siltstone fragments; at 1070-1080 50% sandstone/siltstone again.

1220-1390 Sandstone - very light gray (N8), very fine to fine, subangular to subrounded, moderately well sorted; siliceous; feldspathic; locally silty; sparsely micaceous; medium sized grains.

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- 1390-1490 Sandstone - as 1030-1220; 7% rock fragments.
- 1490-1520 Sandstone - very pale yellowish brown (10YR 7/2), as 1220-1390; () iron stained.
- 1520-1710 Siltstone - as 800-990; coal at 1640.
- 1710-1890 Sandstone - very pale yellowish brown (10YR 7/2), as 1220-1390; medium to coarse.
- 1890-1910 Sandstone, calcareous - yellowish gray (5Y 8/1), very fine to fine, subangular, moderately well sorted; siliceous?; silty and calcareous; sparse mica and rock fragments.
- 1910-1950 Siltstone/Sandstone - 50% each; sandstone as above; siltstone, dark gray (N3), hard; fragments of greenish gray sandstone.
- 1950-1960 Siltstone - grayish red (10R 4/2).
- 1960-1990 No samples.
- 1990-2010 Sandstone, calcareous - as 1890-1910; with 10%± greenish gray sandstone fragments and 1-3%± siltstone, as 1950-1960.
- 2010-2030 Shale - dark gray (N3), hard, sparse carbonaceous plant fragments.
- 2030-2150 No samples.
- 2150-2400 Siltstone/Shale - approximately 50% each; dark gray (N3), hard siltstones and shales; coal fragments at 2300-2310.
- 2400-2510 Sandstone - light olive gray (5Y 6/1), very fine to fine, subrounded, well sorted; siliceous?; silty; sparse feldspar and mica.
- 2510-2610 Siltstones - medium dark gray (N4), firm; sandy or quartzose and 20%± grayish red, soft; some greenish gray.
- 2600-2680 Siltstone, calcareous - as above; calcareous - in siltstones and as fine white limestone? fragments; fine laminae of carbon at 2650-2660.
- 2680-2730 Siltstones, Sandstone - medium dark gray (N4), hard, quartzose; grayish red, soft; and 35%± sandstone - light grayish green, very fine to fine, subrounded, moderately sorted; siliceous; with varying amounts fine black rock fragments in fine laminae.
- 2730-2 20 Siltstone, Sandy - medium dark gray (N4), hard, brittle; quartzose with very fine quartz grains.

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- 2780-2820 Sandstone - light brownish gray (5YR 6/1), very fine to fine with some medium rounded grains, subrounded, moderate sorting; quartzose; locally feldspathic; 10%± siltstone fragments.
- 2820-3000 Siltstone - dark gray (N3), soft, massive, with some sandstone fragments; some shale fragments.
- 3000-3050 Sandstone, silty - light brownish gray (5YR 6/1), fine to medium, subrounded, moderately sorted; silty; siliceous?
- 3050-3100 Sandstone/Siltstone, calcareous - Sandstone, as 3000-3050; and Siltstone, medium dark gray, calcareous, granular appearance, soft; carbon/black streaks, possibly minor limestone beds.
- 3100-3200 Limestone, sandy - light brownish gray, white, dark gray; micritic phenocrysts; color types in roughly equal amounts at 3200; siltstone, dark gray, calcareous and finely sandy, in increasing amount to depth.
- 3200-3300 Limestone - light brownish gray (5YR 7/1), soft, fine grained and moderate amounts of white limestone, dark gray and brown gray; at 3200-3210, brownish gray limestone.
- 3300-3400 Limestone - as 3200-3300; dark gray silty limestone at 3340-3350.
- 3400-3520 Limestone - as 3200-3300.
- 3520-3610 Sandstones/Siltstone, calcareous - grayish red (10R 4/2); sample is coated with powdered siltstone, calcareous, grayish red, soft, to siltstone, sandy with the softer siltstone the calcareous one; other rock types are slightly calcareous Sandstones - medium gray (N5), graywacke type, very fine, subangular (?) clear quartz grains with occasional larger grains, poorly sorted; siliceous; silty; slightly calcareous; abundant black rock fragments; Coal in what appears to be broken plant fragments; pyrite. Sandstone - light gray (N7), as directly above but relatively clean, very sparse rock fragment and no coal. Sandstone - dark reddish brown (10R 3/4), as in the medium gray sample, but sparsely siliceous; silty; calcareous. Coal fragments; limestone fragment. (Note - interval seems to be a vertical sequence of several sandstones finely interlayered with limestones and thin laminae of coal. The sandstones vary laterally into sandy siltstones which appear to be more calcareous as they become less sandy).
- 3610-3765 Sandstones/Siltstones - dark gray (N3), light gray (N7)
Siltstone - dark gray, sandy, hard to soft as sand content varies; sand is very fine grained quartz; Sandstone - light gray (N7), very fine grained, subangular, moderately sorted clear quartz grains; moderately siliceous, silty, 3% to abundant dark rock fragments; percentage of types difficult to ascertain since sample contaminated by calcareous silt/crushed siltstone from above intervals. Occasional siltstone, sandy grayish red fragments. Sampling has circulation lag - not reflecting true lithology. Picks and lithology from Gamma Log.

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3765-4195 Siltstone - medium to dark gray (N5-N3), soft to firm; rare fine quartz grains at 37-3800 levels.

4195-4250 Sandstone - berea - hard, siliceous, fining downward sequence.

4250-4328 Siltstone - as 3765-4195.

J. K. Polzin