

Bethel Heldreth No. 1 Well

Eagle District, Harrison County, W. Va.

By Eagle Gas Company, Lumberport, W. Va.

Located 0.12 mi. W. of 80°25' and 0.67 mi. S. of 38°25' -WC- Clarksburg Quadrangle.

Elevation 1147.89 feet, level.

Drilled under permit (Har-69.)

Commenced April 19, 1939; completed, September 19, 1939.

Shot August 9, 1939 - depth 2385-2462'.

Volume 136,000 cu. ft.; rock pressure 48 lbs. in 36 hours.

Fresh water at 185'; salt water at 1090'.

Coal at 232 to 240'.

10" casing, 289'; 8 1/2", 1567'; 3" tubing 2738'.

Section based on samples from 240' to 2720' examined by J. H. C. Martens. A few scattered samples taken above the Pittsburgh Coal show large amounts of limestone but are not complete enough stratigraphic description. According to the geologic map the well starts about 50 feet below the Waynesburg Coal horizon.

Top	Bottom	Thickness	
<u>Monongahela Formation, 240+ feet</u>			
232	240	8	Pittsburgh coal (from driller's record)
<u>Conasaugh Formation, 568 feet</u>			
240	247	7	Limestone, grayish-brown, with much gray shale
247	254	7	No sample
254	296	42	Sandstone, light-gray, medium- to fine-grained; contains pyrite, muscovite, biotite, chlorite, and kaolin
296	310	14	Limestone, brown, fine, textured, pyritic
314	332	18	Limestone, gray to brown, fine textured, pyritic; some shale and fine sandstone included in this interval at the bottom
332	349	17	Shale, gray, enclosing many siderite spherulites; also much gray siltstone in samples
349	355	6	Sandstone, light-green fine; with large amount of brown limestone and some gray shale
355	360	5	Shale, gray; with some impure, pyritic coal

Top	Bottom	Thickness	
360	379	19	Limestone, dark-brown, very fine textured, pyritic; some pyritic coal and black shale
379	406	27	Shale, red, soft, calcareous
406	418	12	Sandstone, light-green, fine- to medium-grained
418	448	30	Sandstone, white, coarse; samples from 426 to 448' contain about 10 per cent of bright green siltstone
448	455	7	Sandstone, green, fine, and gray limestone and calcareous clay
455	479	24	Shale, red, soft, calcareous
479	491	12	Shale, gray and green, partly silty
491	503	12	Clay, yellow, red, and gray, with small limestone nodules
503	509	6	Siltstone, green
509	516	7	Shale, greenish-gray, silty, 70%; yellow, fine textured limestone, 30 percent
516	529	13	Shale, dark-gray
529	549	20	Limestone, gray, very fine textured except for some fossil shells which are distinctly crystalline; samples also contain a little gray shale
549	574	25	Clay, red; some gray, calcareous shale
574	586	12	Limestone, gray to yellow, impure; with large amount of gray shale and siltstone
586	610	24	Siltstone, gray, shaly, containing many siderite spherulites; large proportion of shale from 598 to 604'; very dark gray from 604 to 610'
610	650	40	Sandstone, light-brown, medium-grained, containing pyrite and probably siderite; samples from 630 to 650' are about half shale of various kinds, probably cavings or material thrown in the hole; gas and show of oil at 633'
650	670	20	Shale, gray, soft; and yellow to gray limestone; some red shale etc., probably cavings
670	676	6	Siltstone, green
676	720	44	Shale, very dark gray; coarser toward top, with much siltstone from 676 to 694'
720	733	13	Clay, light-gray, with about 10 percent of white to light-brown limestone

Top	Bottom	Thickness	
733	761	28	Siltstone, green, micaceous; some light gray sandstone and a little limestone from 747 to 761'
782	800	18	Shale, dark-gray, grading into lighter gray micaceous siltstone at top
<u>Allegheny and Pottsville, 606 feet</u>			
800	818	18	Sandstone, fine, light-green, micaceous; a little light-brown, fine textured limestone at or near top
818	843	25	Shale and siltstone, gray
843	865	22	Sandstone, nearly white, medium-grained, micaceous and calcareous
865	882	17	Siltstone, gray, shaly
882	888	6	Sandstone, light-gray, fine, micaceous
888	894	6	Clay, dark-gray and light-green, 80%; dark-brown limestone, 40%
894	900	6	Clay, light-gray, with conchoidal fracture; some fragments are translucent and some contain many small specks of siderite
900	919	19	Siltstone, light-gray, 80%; the rest is mostly light-gray to nearly white clay and shale, partly similar to that from 894-900' and partly having more tendency to disintegrate in water
919	973	54	Sandstone, white, medium- to coarse-grained
973	979	6	Shale, black; a little coal
979	991	12	Sandstone, nearly white, medium- to coarse-grained
991	1004	13	Siltstone, dark-gray to black
1004	1016	12	Shale and siltstone, dark-gray to black, 80%; coal, 20%
1016	1153	117	Sandstone, very light gray to white, medium-grained; more nearly pure quartz below 1088'
1133	1147	14	Shale, very dark brownish-gray, silty; a little coal
1147	1240	93	Sandstone, nearly white, fine- to medium-grained; about 10% of gray to black shale from 1205 to 1240'
1240	1253	13	Siltstone, dark-gray, shaly
1253	1303	50	Sandstone, light-gray to white, medium-grained
1303	1317	14	Sandstone, light-gray, fine to very fine

Top	Bottom	Thickness	
1317	1362	45	Sandstone, very light gray, fine- to medium-grained
1362	1365	3	Sandstone, white, coarse
1365	1370	5	Shale, black, silty
1370	1376	6	Siltstone, gray, with fragmentary carbonized plant remains
1376	1382	6	Shale, gray, silty, not distinctly laminated
1382	1389	7	Shale, black, 95%; coal, 5%
1389	1397	8	Siltstone, gray, with carbonized plant fossils
1397	1406	9	Shale, gray, sandy, containing siderite spherulites
<u>Mauch Chunk Group, 122 feet</u>			
1406	1431	25	Shale, light-gray to grayish-green, silty; contains abundant small siderite spherulites
1431	1461	30	Shale, red and green, calcareous; contains limestone nodules
1461	1475	14	Shale, green, silty
1475	1491	16	Siltstone, light-gray
1491	1500	9	Limestone, brown, highly fossiliferous; also a little soft gray shale
1500	1528	28	Shale, gray and green, soft; a little fossiliferous limestone, lighter colored than that above; samples consist mostly of red shale cavings, so true nature of this interval is in doubt
<u>Greenbrier Limestone, 162 feet</u>			
1528	1567	39 -	Limestone, very light brown
1567	1584	17	Limestone, brown
1584	1594	10	Sandstone, nearly white, calcareous
1594	1603	9	Limestone, nearly white, partly sandy
1603	1627	24	Sandstone, white, fine, calcareous; grains are frosted and fairly well rounded (gas, 1607-1615')
1627	1640	13	Sandstone, as above, 90%; green sandy shale, 10%
1640	1665	25	Limestone, nearly white, very sandy; contains a few small colites
1665	1690	25	Limestone, white, very sandy, highly dolomitic; many of sand grains are rounded and frosted

Top Bottom Thickness

Lower Mississippian and Upper Devonian, 1030+ feet

Top	Bottom	Thickness	
1690	1696	6	Siltstone, light-green
1696	1733	37	Shale and siltstone, gray to green
1733	1739	6	Sandstone, white, fine
1739	1744	5	Shale, gray
1744	1761	17	Sandstone, white, fine, 60%; gray shale, 40%
1761	1845	84	Siltstone, gray to grayish-green, sandy, 70 to 80%; gray silty shale, 30 to 20%
1845	1880	35	Sandstone, light-gray, very fine
1880	1921	41	Siltstone, light-gray, sandy, little different from sandstone above; also some gray shale
1921	1941	20	Shale and siltstone, gray
1941	1993	52	Siltstone, gray
1993	2058	65	Shale and siltstone, gray (gas 2024-2054')
2058	2112	54	Siltstone, light-gray, sandy, 60 to 70%; gray shale, 40 to 30%; rock in this interval is distinctly lighter in color and coarser textured than that next above
2112	2132	20	Siltstone, gray, shaly
2132	2170	38	Shale and siltstone, gray
2170	2190	20	Sandstone, nearly white; mostly fine but contains a few very coarse quartz grains (gas, 2177-2183')
2190	2220	30	Sandstone, white to light-green; mostly fine with a few very coarse grains; a little red shale and siltstone, 2190-2200'
2220	2255	35	Shale, gray
2255	2275	20	Sandstone, white, very coarse; some fine sandstone near top (gas, 2265-2270')
2275	2295	20	Shale, gray
2295	2311	16	Sandstone, white, red, and green, fine, 60%; gray, red and green shale, 40%
2311	2324	13	Sandstone, white to greenish, mostly fine
2324	2328	4	Shale, red, 60%; fine to very coarse sandstone, 40%
2328	2365	37	Sandstone, white to green and gray, fine, 60%; gray and green shale, 40%

Top	Bottom	Thickness	
2365	2403	38	Sandstone, white, medium- to coarse-grained, poorly sorted; small to moderate amounts of gray and green shale (gas 2387-2390')
2403	2409	6	Shale, gray
2409	2430	21	Sandstone, light-gray, fine, poorly sorted
2430	2458	28	Sandstone, white, very coarse; contains pebble fragments
2458	2477	19	Sandstone, light-gray to green, very fine, 60 to 80%; gray silty shale, 40 to 20%
2477	2488	11	Sandstone, light-gray; mostly fine, with a few coarse grains
2488	2534	46	Shale, siltstone and very fine sandstone, gray (gas, 2488-2493')
2534	2631	97	Shale, gray silty, interstratified with small amounts of siltstone and very fine sandstone
2631	2720	69	Siltstone and silty shale (small show of oil, 2665-2703')
	2720		Total depth