

L. R. and J. A. Roberts No. 500 Well

Burning Springs District, Wirt County, W. Va.

By Glen W. Roberts, Elizabeth, W. Va.

1.0 mi. N. E. of Burning Springs.

5.49 mi. N. of 39° 55' and 1.35 mi. E. of 81° 20' -NE-Spencer Quadrangle.

Elevation 832 feet L.

Dry hole; salt water in Criskany.

Samples nearly complete from top to bottom; a few gaps in upper 500 feet filled in from driller's record.

Casing, 16 inch, 12½ feet; 13 3/8 inch, 259 feet; 10 3/4 inch, 1145 feet; 7 inch, 4685 feet.

Stratigraphic Summary of L. R. and J. A. Roberts No. 500 Well

	Top	Bottom	Thickness
Conemaugh and Allegheny formations	0	738	738
Pottsville formation	738	950	212
Greenbrier limestone	950	<del>1031</del> <sup>1059</sup>	<del>81</del> <sup>109</sup>
Pocono formation	<del>1031</del> <sup>1059</sup>	1499	<del>468</del> <sup>440</sup>
Devonian shales	1499	4651	3152
Huntersville chert	4651	4899	248
Helderberg group	4990	5281	291

It is possible that the lower part of what is called Helderberg belongs to one of the Silurian limestone formations.

Record of L. R. and J. A. Roberts No. 500 Well based on examination of samples

Depth, feet  
from to Thickness,  
feet

Conemaugh and Allegheny formations 738 feet

0	8	8	Clay, yellow
8	78	70	Shale, red
78	90	12	Sandstone, grayish-green, shaly
90	105	15	Shale, black
105	170	65	Shale, gray and grayish-green, mostly sandy
170	198	28	Shale, gray
198	215	17	Sandstone, soft
215	235	20	Shale, black
235	309	74	Sandstone, light-gray, medium-grained, micaceous

Depth, feet from	to	Thickness, feet	
309	360	51	Shale, gray
360	378	18	Sandstone, gray, very fine, with considerable darker gray shale
378	412	34	Sandstone, light-gray, medium-grained, micaceous
412	431	19	Shale, dark-gray, sandy
431	504	73	Sandstone, light-gray, medium-grained, micaceous
504	526	22	Sandstone, gray, fine, with some dark-gray, sandy shale
526	544	18	Shale, dark-gray, sandy
544	624	80	Sandstone, gray, fine, micaceous, with streaks of black carbonaceous material
624	738	104	Shale, dark-gray and black with some very sandy streaks
<u>Pottsville formation 212 feet</u>			
738	827	89	Sandstone, light-gray, fine hard; upper part breaks in large chips, lower part pounds up fine; gas at 814
827	836	9	Shale, black
836	853	17	Sandstone, gray, fine
853	901	48	Sandstone, light-gray, medium-to coarse-grained, with a few pebbles; drillers record shows shale at 868 to 870; gas at 890 to 910
901	950	49	Sandstone, yellow, medium-grained (probably light-gray to white if without iron rust stain)
<u>Greenbrier limestone 81 feet</u>			
950	1031	81	Limestone, gray
<u>Pocahontas formation 466 feet</u>			
1031	1059	28	Sandstone, nearly white with a few green specks, highly calcareous
1059	1095	36	Sandstone, light-gray, coarse, moderately calcareous
1095	1108	13	Sandstone, gray with a few green specks, fine, slightly calcareous
1108	1118	10	Sandstone, gray and light-brown, very fine, with some shale
1118	1136	18	Shale, gray, very sandy
1136	1138	2	Sandstone, light-brown, very fine
1138	1163	25	Shale, gray, very sandy
1163	1167	4	Sandstone, gray and light-brown, very fine, shaly
1167	1233	66	Shale, gray, sandy, with streaks of gray and light-brown very fine sandstone

Depth, feet from	to	Thickness, feet	
1233	1414	31	Shale, gray, sandy, interbedded with light-gray to greenish-gray very fine sandstone
1414	1473	59	Shale, dark-gray, sandy
1473	1492	19	Shale, very dark gray
1492	1499	7	Sandstone, gray, very fine (Berea)

Devonian shales 3152 feet

1499	1590	91	Shale, gray and grayish-green, very sandy, with thin layers of very fine shaly sandstone
1590	1608	18	Shale, brown and grayish-green, sandy
1608	1922	314	Shale, gray and grayish-green, sandy
1922	1965	43	Shale, gray and brown, sandy
1965	2183	218	Shale, gray to grayish-green, somewhat sandy
2183	2203	20	Shale, gray and brown, sandy
2203	2689	486	Shale, gray to grayish-green, somewhat sandy
2689	3403	714	Shale, gray, fairly dark, some pieces almost black; somewhat sandy
3403	3631	228	Shale, dark-gray, with considerable black
3631	3992	361	Shale, fairly dark gray
3992	4354	362	Shale, dark-gray
4354	4595	241	Shale, dark-gray to black; 50,000 cu. ft. gas
4595	4651	56	Shale, black and very dark brown, slightly calcareous; thin streak of rock with much biotite at base of shale

Huntersville chert 243 feet

4651	4666	15	Limestone, gray, cherty; contains some dolomite and a little glauconite
4666	4671	5	Limestone, dark-gray, cherty
4671	4695	14	Chert, gray, highly calcareous
4695	4701	16	Chert, very dark-gray, shaly, calcareous, with some small crystals of dolomite
4701	4709	8	Limestone, gray, very cherty
4709	4715 $\frac{1}{2}$	6 $\frac{1}{2}$	Chert, gray, highly calcareous
4715 $\frac{1}{2}$	4719 $\frac{1}{2}$	4	Chert, gray, calcareous; contains both light and dark-gray shaly fragments with abundant biotite

Depth, feet from	to	Thickness feet	
4719½	4722½	3	Chert, light-gray, calcareous and black fossiliferous shale; there is biotite in the black shale and also in some lighter colored shaly fragments
4722½	4742	19½	Chert, gray (mostly light), calcareous, with a little secondary crystalline quartz
4742	4766½	24½	Chert, gray, calcareous, sandy, with a little glauconite and very little sphalerite
4766½	4782	15½	Chert, gray, calcareous, with many small rhombs of dolomite
4782	4847½	65½	Chert, gray, highly calcareous, slightly sandy; contains many small rhombs of dolomite and a very little glauconite; some of this might be called very cherty limestone rather than chert
4847½	4858	10½	Chert, gray, sandy, calcareous, with some dolomite and a little glauconite. Depth corrected from 4858 to 4877; this may make the total thickness of the Huntersville chert too great by as much as 19 feet if the error had accumulated before the top of it was reached
4877	4899	22	Chert, same as from 4847½ to 4858 and coming immediately below it; a little very dark, sandy, glauconitic chert at the bottom
<u>Oriskany sandstone 91 feet</u>			
4899	4905	6	Sandstone, light-gray to white, fine, somewhat calcareous; water 4901-4905
4905	4951	46	Sandstone, white, fine, hard, slightly calcareous; samples are pounded very fine and most of grains in some of them are broken, so it is possible that some of it is medium- or coarse-grained in its natural condition
4951	4953½	2½	Sandstone, light-gray, fine, calcareous
4953½	4979½	26	Sandstone, white, fine-to medium-grained, some parts slightly calcareous
4979½	4985	6½	Sandstone, light-gray, medium- to fine-grained, slightly calcareous
4985	4990	5	Sandstone, white, medium- to fine-grained

Depth, feet  
from to  
Thickness,  
feet

Helderberg group 291+ feet

4990	4994	4	Sandstone, fairly dark gray, very fine, calcareous, with a little chert and glauconite, and many small specks of pyrite
4994	5000	6	Sandstone, dark-gray, very fine, calcareous; dark color is due at least partly to pyrite in small specks
5000	5017	17	Sandstone, dark-gray, very fine, calcareous, cherty; a few specks of glauconite in some samples
5017	5022½	5½	Sandstone, gray, fine, calcareous
5022½	5036	13½	Sandstone, dark-gray, very fine, calcareous
5036	5053	17	Sandstone, gray, very fine, cherty, calcareous, with a very few specks of glauconite; some of it might be called sandy chert rather than sandstone
5053	5081½	28½	Chert, dark-gray, calcareous, with many small dolomite crystals; broken very small
5081½	5103	21½	Chert, dark-gray, calcareous; contains many small dolomite crystals, a little very fine sand and a very little glauconite; some secondary crystalline quartz
5103	5108	5	Sandstone, gray, fine, hard, calcareous, with some muscovite and biotite
5108	5198	90	Chert, gray, sandy, calcareous, with a few small specks of glauconite; all of these samples are pounded up fine; some of them are brown from rust on fragments of metallic iron from drill, but the natural color is gray
5198	5231	33	Limestone, gray, cherty and sandy; contains a large proportion of insoluble material
5231	5273	42	Limestone, dark-gray, with some chert and very fine sand, but much less insoluble residue than the preceding; some doubly terminated quartz crystals in sample from 5253 to 5262½
5273	5281	8	Limestone, dark-gray, somewhat dolomitic; contains a little celestite