

A. P. Booth et al, No. 1 (4895 Well

Union District, Wayne County, W. Va.

By United Fuel Gas Company, Charleston, W. Va.

Located 3.10 mi. W. of 82°25' and 0.58 mi. S. of 38°15' -NW- Wayne Quadrangle; 2 mi. E. W. of Wayne (town).

Elevation, 762.2' L.

Permit, Way-199.

Drilling commenced June 8, 1940; completed, August 25, 1940.

10" casing, 16'; 8 1/4", 460'; 6 5/8", 1674'.

Well was shot both in the shales and in the "Corniferous Lime" without increasing the small shows of gas; abandoned as dry.

The well starts in the Conemaugh Formation about 215 feet (estimated from structure contour) below the Pittsburgh Coal. The drillers' record is given for the interval from the surface to 400 feet and below that the record is based on samples, for most of which the depth is given only to the nearest 10 feet.

Top	Bottom	Thickness	
<u>Conemaugh Formation, 325+ feet</u>			
0	16	16	Conductor
16	35	19	Clay, yellow
35	130	95	Slate
130	150	20	Red rock
150	240	90	Slate
240	323	83	Sand
<u>Allegheny and Pottsville Formations, 844 feet</u>			
323	330	7	Coal (Upper Freeport)
330	365	35	Slate
365	400	35	Sand
400	570	170	Sandstone, very light gray to slightly greenish; contains muscovite, biotite, chlorite, siderite, and carbonaceous matter; calcareous from 450 to 470 and 530 to 550'; micaceous minerals and coaly material are partly concentrated in thin streaks (1 bailer of water per hour at 475')
570	610	40	Shale, gray, silty, micaceous
610	670	60	Sandstone, light-gray, fine, micaceous; mostly somewhat shaly, but especially so in top 10 feet; contains thin streaks of coal
670	700	30	Shale, gray, very silty, micaceous
700	760	60	Sandstone, light-gray, fine (show of oil at 715')

Top	Bottom	Thickness	
760	850	90	Siltstone and shale, gray; in some samples also includes considerable amount of very fine sandstone
850	870	20	Sandstone, light-gray, very fine
870	900	30	Sandstone, light-gray, very fine, shaly, 60%; darker gray shale and siltstone, 40%
900	920	20	Shale, gray
920	1030	110	Sandstone, white, medium-grained, nearly all quartz; mostly broken up into individual grains, many of which have crystal faces (hole full of water at 935')
1030	1050	20	Sandstone, white, coarse
1050	1070	20	Sandstone, gray, fine
1070	1167	97	Sandstone, white, medium-grained, nearly all quartz; coarser from 1140 to 1167'
<u>Mauch Chunk Group, 23 feet</u>			
1167	1180	13	Limestone, brownish-gray, 60%; greenish-gray shale, 40%
1180	1190	10	Shale, gray, soft (driller's record gives "red rock" from 1134 to 1186'; this does not show in samples)
<u>Greenbrier Limestone, 210 feet</u>			
1190	1230	40	Limestone, dark-gray to dark-brown, with some soft gray to green shale
1230	1290	60	Limestone, very light brown, to nearly white
1290	1320	30	Limestone, very light brown, moderately sandy
1320	1330	10	Limestone, white, oolitic
1330	1340	10	Limestone, nearly white, not oolitic, somewhat dolomitic (sample probably out of place)
1340	1350	10	Limestone, white, oolitic
1350	1360	10	Limestone, nearly white, very fine textured
1360	1380	20	Limestone, light-brown, oolitic, somewhat sandy
1380	1400	20	Limestone, light-gray and light-brown, dolomitic; contains some sand
<u>Pocono Formation, 630 feet</u>			
1400	1470	70	Sandstone, gray, very fine; a very few rounded coarse sand grains, 1450 to 1470'
1470	1500	30	Sandstone, gray, very fine, almost a siltstone; contains a few fossil shells
1500	1510	10	Shale, gray

Top	Bottom	Thickness	
1510	1560	50	Sandstone, gray, very fine; contains a few fossil shells (1½ bailers water per hour at 1560')
1560	1610	50	Siltstone, gray
1610	1940	330	Shale, gray, silty, micaceous; interbedded with smaller amounts of lighter gray siltstone and very fine sandstone; the shale and associated siltstone and sandstone contain flake of both biotite and muscovite and small pieces of coal or related carbonaceous matter
1940	2005	65	Siltstone, gray, 60 to 80%; gray shale, 40 to 20%; considerable very fine sandstone is included with the siltstone
2005	2024	19	Shale, dark-gray to black (Sunbury Shale)
2024	2030	6	Sandstone, nearly white, fine to very fine, partly pyritic (Berea Sandstone; position of top from drillers' record)
<u>Devonian Shales, 1110 feet</u>			
2030	2110	80	Siltstone, gray and brown, 60 to 80%; gray shale, 40 to 20%; much of the material included under siltstone is nearly or quite coarse enough to be called sandstone (show of oil, 2030 to 2038')
2110	2120	10	Shale, gray, with small amount of brown siltstone
2120	2130	10	Siltstone, brown and gray, shaly, 70%; gray shale, 30%
2130	2140	10	Shale, gray, with small amount of siltstone as above
2140	2148	8	Siltstone, gray and brown, shaly
2148	2230	82	Shale, very dark gray to black; mostly silty
2230	2280	50	Shale, dark-gray, 80%; medium-gray shale, 20%
2280	2370	90	Shale, medium-gray; also small amounts of siltstone and dark- gray shale
2370	2540	170	Shale, very dark gray to black, mostly silty and micaceous; some portions contain small brown spores of waxy appearance
2540	2560	20	Shale, medium-gray
2560	2810	250	Shale, very dark gray to black; some fragments contain yellow to brown spores (show of gas at 2700 to 2840')
2810	2900	90	Shale, black; mostly somewhat brownish when wet; contains abundant brown spore; also small specks of pyrite and fragments of pyrite concretions
2900	3020	120	Shale, gray to grayish-green; some calcareous material throughout and a little fine-textured limestone, 2960 to 2980'

Top	Bottom	Thickness	
3020	3070	50	Shale, gray to grayish-green, somewhat calcareous, 70%; dark-gray to black shale, 30%
3070	3140	70	Shale, dark-gray and dark-brown to black, pyritic, partly calcareous
<u>Helderberg Limestone, 140 feet</u>			
3140	3160	20	Limestone, brown, very cherty, somewhat dolomitic; sample from 3143 to 3150' is nearly all chert; chert is brown to light gray
3160	3205	45	Limestone, light-brown to very light yellowish-gray, cherty, slightly dolomitic; most of chert is nearly white and translucent
3205	3245	40	Limestone, nearly white, cherty, somewhat dolomitic; contains small to moderate amount of very fine angular quartz sand slight trace of glauconite, 3230-3235' (gas, 3834-3838', 26,000 cu. ft. per day when drilled)
3245	3250	5	Limestone, very sandy, dolomitic; sand grains are mostly fine, well rounded, and frosted (gas, 3842-3847', 43,000 cu. ft. per day when drilled)
3250	3275	25	Limestone, brownish-gray, cherty and silty; contains some dolomite and glauconite; except in top 5 feet chert is mostly very impure; a few rounded sand grains, 3270 to 3275'
3275	3280	5	Limestone, gray, ^{highly} lightly fossiliferous; contains considerable amount of pyrite, some chert, silt and dolomite and a few rounded sand grains
<u>Salina Formation, etc., 597 feet</u>			
3280	3305	25	Limestone, light-brown, very fine textured; contains oolites or small round bodies resembling them; contains small amount of dolomite
3305	3335	30	Dolomite, brownish-gray, becoming browner toward bottom; not quite so fine as the limestone above; solution from acid treatment has dark-brown material in suspension
3335	3370	35	Dolomite, brown
3370	3400	30	Dolomite-anhydrite rock, brown; contains about 30 or 40% of anhydrite, mostly white
3400	3410	10	Dolomite, brown, with some anhydrite
3410	3438	28	Dolomite, brown
3438	3511	73	Dolomite-anhydrite rock, brown and white

	Top	Bottom	Thickness	
	3511	3710	199	Dolomite, brown; mostly contains some anhydrite
Sulina → mk	3710	3720	10	Dolomite-anhydrite rock, brown, 80%; green shale, 20%
	3720	3735	15	Dolomite, brown, with some anhydrite and green shale; similar to interval above but perhaps less anhydrite and shale
	3735	3776	41	Dolomite, gray, with some brown; containing a little anhydrite; also about 10 to 20% of green shale and shaly dolomite
	3776	3800	24	Dolomite, dark brownish gray; contains many small round objects which might be recrystallized oolites
	3800	3861	61	Dolomite, brown to brownish-gray, mostly fine-granular; some fine sand 3853-3858'
	3861	3877	16	Dolomite, grayish-brown; slightly sandy at top, becoming much more so toward bottom of interval; contains pyrite, partly in octahedral crystals
	<u>Clinton Formation, 14+ feet</u>			
	3877	3891	14	Sandstone, light-gray, very fine, slightly dolomitic; interbedded with some gray, silty and dolomitic shale (Keefer Sandstone)
	3885			Total depth in drillers' record