MON-112

M. E. Petty No. 1 Well

Clay District, Monongalia County, W. Va.

By J. I. Eddy and Co., Brave, Pennsylvania.

Located 3.1 mi. W. of 80°05' and 2.85 mi. S. of 39°40' on Blacksville Quadrangle; 0.3 mi. W. of Hagans.

Elevation, 1223' L.

Permit, Mon-112.

Drilling commenced Sept. 28, 1939; completed (to 2447'), Nov. 10, 1939; deepened to 5100', Feb.-Mar. 1940.

Gas well, volume 964,000 cu. ft.; rock pressure, 505 lbs. in 24 hrs.

Fresh water at 68 and 1550'.

10" casing, 585'8"; 8¼", 1471'8"; 6-5/8", 1825'7"; all left in.

Coal was encountered at 212-218, 484-492, 548-551, 568-575, 640-645, 1281-1284, and 1406-1409'.

From the surface to a depth of 235 feet the samples are incomplete and the description of formations is based largely on the drillers' record. Below that depth down to 2442 feet the samples are nearly complete, but the thickness and position of the coals are as given by the drillers, since the coals are not well shown by the samples. It has been possible to assign names to a considerable number of members of the Permian and Pennsylvanian formations, corresponding to stratigraphic units described from surface outcrops in northern West Virginia and southwestern Pennsylvania. Neither the Buffalo nor Mahoning Sandstone seems to be present at this locality, the place where they might be expected being occupied by shale and siltstone. Since the Upper Freeport Coal is missing from this area the location of the boundary between the Conemaugh and the Allegheny is somewhat uncertain.

Top	Bottom	Thickness	Dunkard Group, 218+ feet
0	15	15	Clay, yellow, soft
15	35	20	Clay, gray, soft
35	85	50	Shale, dark, soft (fresh water at 68'; some coal in sample from 61 to 65')
85	97	12	Lime, gray, hard

Top	Bottom	Thickness	
97	130	37	Limestone, yellow, silty, 70%; gray, micaceous siltstone, 30% (one sample; lower Washington and Bristol Limestones)
130	165	35	Clay, gray, sandy (one sample)
165	180	15	Sandstone, light-gray, micaceous, 50%; brown sandy limestone, 50% (Waynesburg Sandstone)
180	190	10	No sample, reported as hard gray sand
190	195	5	Limestone, brown, very sandy, 50%; gray shale, 50% (Elm Grove Limestone)
195	212	17	Shale, gray to black, with plant fossils (Cassville Plant Shale)
			<u>Monongahela Formation, 363 feet</u>
212	218	6	Coal, black, soft (Waynesburg Coal; does not show in samples)
218	235	17	No samples; reported as lime but is probably siltstone or very fine sandstone
235	245	10	Sandstone, gray, very fine, calcareous (Gilboy Sandstone)
245	255	10	Shale, gray, silty, with large amount of siderite concretions
255	260	5	Shale, gray, silty, with large amount of siderite concretions and a little coal (Gilboy Coal)
260	275	15	Limestone, brown, very fine textured (Waynesburg Limestone)
275	280	5	Shale, gray, soft, clay-like
280	285	5	No sample; reported as hard gray lime
285	295	10	Siltstone, gray, shaly, micaceous; some siderite concretions
295	300	5	Shale, dark-gray to black, with siderite concretions (Uniontown Coal horizon)
300	305	5	Limestone, brown, 50%; dark-gray shale, 50% (Uniontown Limestone)
305	310	5	Shale, dark-gray, soft; some limestone as above

Top	Bottom	Thickness	
310	330	10	Limestone, light-brown, very fine textured
330	340	20	Siltstone, grayish-green, shaly, 70%; yellow to light-brown limestone, 30%
340	355	15	Limestone, light-brown, 80%; green shale and siltstone, 20%
355	370	15	Siltstone and shale, green, 80%; yellow limestone, 20%, occurring at least partly as nodules or concretions (Fulton Green Shale)
370	409	39	Limestone, brown, mostly rather light; small amounts of soft green and gray shale, but perhaps much more was washed out (Benwood Limestone, 370 to 460')
409	420	11	Siltstone, green, shaly, calcareous, 50%; brown limestone, 50%
420	440	20	Limestone, light-brown; small amounts of soft green and gray shale
440	460	20	Limestone, brown, 60%; green calcareous siltstone, 40%
460	484	24	Siltstone and silty shale, dark-gray, micaceous (Sewickley Sandstone horizon)
484	492	8	Coal (Sewickley Coal)
492	506	14	Shale, dark, soft
506	548	42	Limestone, brown, very fine textured; samples mostly contain some soft gray or green shale of which more has probably been washed out (Sewickley Limestone)
548	551	3	Coal, black, soft (Redstone Coal)
551	562	11	Limestone, brown (Red Stone Limestone)
562	568	6	Shale, black
568	575	7	Coal (Pittsburgh Coal)
			Conemaugh Formation, 575 feet
575	585	10	Shale, dark, soft
585	595	10	Sandstone, light-gray, very fine (Lower Pittsburgh Sandstone, 585 to 615')
595	615	20	Sandstone nearly white, medium-grained

Top	Bottom	Thickness	
615	653	38	Shale and siltstone, gray, micaceous; contains concretions and spherulites of siderite
653	667	14	Limestone, brown (Upper and Lower Pittsburgh Limestone; coal reported at 640 to 645', probably Little Pittsburgh)
667	683	16	Siltstone, green, shaly, 60%; brown limestone, 40%
683	675	7	No sample; reported as hard gray lime
675	680	5	Shale, gray and red, soft, 70%; brown and gray limestone, 30%
680	711	31	Sandstone, light-gray, medium-grained; contains mica, chlorite, and siderite (Connellsville Sandstone)
711	725	14	Limestone, brown, 70%; gray shale, 30%
725	733	8	Shale, gray, soft, 70%; brown limestone, 25%; coal, 5% or less
733	740	7	Shale, gray, silty
740	745	5	No sample; reported as hard gray lime
745	755	10	Limestone, brown, 70%; green shale and siltstone, 30% (Clarksburg Limestone)
755	808	53	Clay, red and yellow, calcareous; some green clay or soft shale, 780 to 768' (Clarksburg Red Shale)
808	835	27	Shale, gray and green, soft; about 20% limestone, at least part of which occurs as limestone nodules in the shale
835	841	6	Shale, dark-gray, silty
841	857	16	Shale and siltstone, green, calcareous
857	865	8	Limestone, light-gray to yellowish, 60%; soft green shale, 40%; a few crinoid fragments (Ames Limestone)
865	908	43	Shale, green and gray, soft, 70 to 80%; limestone, light-gray to yellowish, 30 to 20%; there are some fossil shells, which appear to be in the shale as well as the limestone
908	925	17	Shale, red, green, gray and yellow; two or more colors in most of the fragments; soft and clay-like and contains many small limestone nodules (Pittsburgh Red Shales)

Top	Bottom	Thickness	
925	945	20	Shale, green; large amount of cavings
945	970	25	Sandstone, green, very fine, shaly, calcareous; much of this could better be called siltstone; no sample, 955 to 963' (Saltsburg Sandstone)
970	980	10	Limestone, light-gray to yellowish, 80%; the rest mostly soft gray and red clay or shale and very fine sandstone as above (Pine Creek Limestone)
980	1014	34	Shale, gray, silty; sample from 1005 to 1014' contains an increased amount of soft red shale, which perhaps belongs there
1014	1023	9	Siltstone, green, calcareous, grading into brown silty limestone; sample also contains large amount of gray, red, and green shale
1023	1035	12	Shale, gray, silty, with many siderite spherulites
1035	1080	45	Shale, dark-gray, very silty (no sample 1040 to 1060')
1080	1110	30	Shale, gray, with siderite spherulites; also much siltstone
1110	1154	34	Siltstone, light-green, calcareous
1154	1150	16	Shale, gray, with siderite spherulites

Allegheny Formation, 263 feet

1150	1160	10	Siltstone, gray, shaly, micaceous
1160	1200	40	Sandstone, nearly white, medium-grained, slightly calcareous (Upper Freeport Sandstone)
1200	1226	26	Shale, gray, partly silty
1226	1234	8	Shale, black, highly carbonaceous, 50%; gray shale, 50%
1234	1251	17	Siltstone and shale, gray
1251	1258	7	Shale, gray, soft, 70%; brown limestone, 30%
1258	1273	15	Shale, and siltstone, gray
1273	1281	8	Shale, dark-gray to black
1281	1284	3	Coal (Upper Kittanning Coal)
1284	1300	16	Sandstone, white, medium-grained, micaceous
1300	1316	16	Shale, gray, silty, with streaks of light-gray fine sandstone
1316	1375	59	Shale and siltstone, dark-gray, grading into shaly sandstone toward bottom

Top	Bottom	Thickness	
1375	1406	31	Sandstone, nearly white, medium-grained (Clarion Sandstone)
1406	1409	3	Coal (Clarion Coal)
1409	1413	4	Shale, brownish-gray, soft
			Pottsville Formation, 233 feet
1413	1448	35	Sandstone, white, medium-grained (Homewood Sandstone)
1448	1500	52	Shale, dark-gray, silty
1500	1523	23	Sandstone, very light brownish-gray, fine- to medium-grained, with considerable amount of mica and kaolin (Upper Connoquenessing Sandstone, 1500 to 1612')
1523	1612	89	Sandstone, white with small amount of rust stain, medium- to coarse-grained, nearly all quartz (fresh water, 1550')
1612	1624	12	Shale, gray, 50%; white sandstone, 50%
1624	1646	22	Sandstone, nearly white, medium-grained (Sharon Sandstone)
			Mauch Chunk Group, 179 feet
1646	1657	11	Limestone, light-brown; also considerable sandstone as above and some gray and green shale
1657	1680	23	Siltstone, dark-gray, shaly and sandy
1680	1710	30	Shale and siltstone, dark-gray; contains siderite concretions
1710	1722	12	No sample; reported as soft gray slate
1722	1730	8	Siltstone, light-green, dolomitic
1730	1752	22	Shale, red, soft, calcareous, 50%; green shale and siltstone, 50%
1752	1775	23	Siltstone, light-green, calcareous; also some red and gray shale
1775	1785	10	Shale, gray, soft, 70%; Brown fossiliferous limestone, 30%
1785	1808	23	Limestone, brown, fossiliferous, 70%; soft, mostly gray, shale, 30%
1808	1820	12	Shale, gray and green, soft
1820	1826	6	Shale, grayish-red, soft

Top	Bottom	Thickness	
			Greenbrier Limestone, 163 feet
1825	1830	5	No sample; reported as hard gray lime
1830	1841	11	Limestone, light-brown, fossiliferous, 40%; soft gray and green shale (cavings), 60%
1841	1870	29	Limestone, light-brown (gray when dry)
1870-	1888	18	Limestone, dark-brown; a little green sandy shale, 1877 to 1887'
1888	1905	17	Limestone, light brownish gray; a little fine white sandstone, 1900 to 1905' (gas, 1895'; 6/10 W. in 1")
1905	1915	10	Limestone, light brownish gray, sandy, 70%; green sandy shale, 20%; fine white sandstone, 10%
1915	1920	5	Limestone, light-brown, oolitic, 70%; green sandy shale and white to green fine sandstone, 30%
1920	1930	10	Limestone, nearly white, sandy, oolitic
1930	1945	15	Sandstone, nearly white, highly calcareous, medium-grained, with larger grains rounded and frosted
1945	1988	43	Sandstone, nearly white, dolomitic, medium- grained, with larger grains rounded and frosted; similar to interval above except that carbonate is mostly dolomite rather than calcite
			Lower Mississippian and Upper Devonian, 1113 feet
1988	2045	57	Sandstone, white, medium-grained; a little light-green sandstone at top; some thin streaks of gray shale (Big Injun Sand)
2045	2063	18	Shale, gray
2063	2105	42	Siltstone, gray, 60 to 80%; darker gray shale, 40 to 20%
2105	2115	10	Sandstone, gray; mostly very fine but contains a few coarser grains
2115	2141	26	Sandstone, nearly white, fine (depths on samples not clear; there may be some shale in this interval)
2141	2145	4	Shale, gray, sandy
2145	2180	35	Sandstone, gray, fine to very fine, 50%; gray shale and siltstone, 50%
2180	2385	205	Shale and siltstone, gray; several samples also contain some very fine sandstone

Top	Bottom	Thickness	
2385	2390	5	Siltstone, green, shaly
2390	2430	40	Shale and siltstone, gray; some thin streaks of sandstone
2430	2435	5	Sandstone, white; mostly fine, but poorly sorted
2435	2439	4	Shale, gray, silty
2439	2442	3	Sandstone, white, coarse, pebbly (gas, 2439'; 30/10 Mcfo. in 2")
2442	2447	5	Sandstone
	2447		Total depth as originally drilled
	5100		Total depth after deepening March, 1940