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The Beaver Coal Company No. 23(1163) Well

Town District, Raleigh County, W. Va.

By Godfrey L. Cabot, Inc., Charleston, W. Va.

Located 5.73 ^{mi} S. of 37°50' and 0.49 ^{mi} W. of 81°10' - SW*

Beckley Quadrangle.

Elevation, 2198.56' L

Permit Ral-51

Drilling completed March 31, 1945.

Dry hole.

Fresh water at 575', 3 bailers at one run, exhausted.

Salt water at 900', 1 bailer per hour; 2420', small show.

Section based on samples from 457 to 1762' and 2229 to 3584',

examined by J. H. C. Martens.

| Top | Bottom | Thickness | <u>Pottsville Formation (from surface) 655⁺ feet</u> |
|-----|--------|---------------------------|--|
| 457 | 460 | 5 ³ | Sandstone, light-gray, very fine |
| 460 | 477 | 17 | Shale, black |
| 477 | 483 | 6 | Sandstone, gray, very fine, 50%; dark-gray shale and siltstone, 50% |
| 483 | 493 | 10 | Shale, very dark gray |
| 493 | 510 | 17 | No samples |
| 510 | 515 | 5 | Sandstone, gray, very fine |
| 515 | 532 | 17 | Siltstone, gray, coarse |
| 532 | 568 | 36 | Sandstone, nearly white, medium-grained; large amount of rust stain, 532-563' |
| 568 | 573 | 5 | Sandstone, white, fine, 60%; gray siltstone, 40% |
| 573 | 595 | 22 | Sandstone, light-gray, medium-grained |
| 595 | 615 | 20 | Shale, dark-gray, silty |
| 615 | 622 | 7 | Siltstone, dark-gray, sandy |
| 622 | 645 | 23 | Sandstone, light-gray, fine to very fine, 70 to 90%; gray shale and siltstone, 30 to 10% |
| 645 | 655 | 10 | Shale and siltstone, dark-gray |
| | | | <u>Mauch Chunk Group, ¹⁶⁹³1703 feet</u> |
| 655 | 662 | 7 | Shale, gray to dark-grey, soft; a few pieces of light-green shale |
| 662 | 670 | 8 | Shale, gray to green, silty, 80%; red shale, 10%; brown dolomitic limestone, 10% |

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| 670 | 675 | 5 | Sandstone, light-green, very fine, calcareous |
| 675 | 699 | 24 | Shale, red |
| 699 | 706 | 7 | No sample |
| 706 | 712 | 6 | Shale, dark-grey, silty |
| 712 | 740 | 28 | Sandstone, light-gray to white, very fine |
| 740 | 745 | 5 | Shale, red and green |
| 745 | 780 | 35 | Shale, gray |
| 780 | 795 | 15 | Shale, very dark gray, 70%; gray siltstone, 30% |
| 795 | ⁸⁰⁸ 808 | 13 | Siltstone, gray, 80%; gray shale, 20% |
| 808 | 818 | 10 | Shale, gray, 80%; red shale, 20% |
| 818 | 823 | 5 | Shale, red, partly calcareous |
| 823 | 835 | 12 | Siltstone, green and gray, coarse, calcareous |
| 835 | 880 | 45 | Sandstone, white, medium-grained; some very coarse quartz grains near bottom |
| 880 | 885 | 5 | Siltstone, dark-gray, 50%; white, medium-grained sandstone, 50% |
| 885 | 895 | 10 | Siltstone, dark-gray |
| 895 | 905 | 10 | Siltstone, dark-gray, 60%; white, coarse sandstone, 40% |
| 905 | 933 | 28 | Siltstone, gray, sandy |
| 933 | 985 | 52 | Shale, black |
| 985 | 995 | 10 | Shale, gray |
| 995 | 1000 | 5 | Shale, very dark gray |
| 1000 | 1005 | 5 | Shale, gray |
| 1005 | 1010 | 5 | No sample |
| 1010 | 1017 | 7 | Shale, gray, very sandy |
| 1017 | 1075 | 58 | Sandstone, white, fine to very fine |
| 1075 | 1081 | 6 | Shale, dark-gray |
| 1081 | 1090 | 9 | Sandstone, white, very fine |
| 1090 | 1098 | 8 | Shale, green and red, 60%; light-brown dolomitic limestone, 40% |
| 1098 | 1115 | 17 | Shale, red |
| 1115 | 1123 | 8 | Shale, grayish-green, 60%; dark-gray shale, 40% |
| 1123 | 1130 | 7 | Shale, green, dolomitic |
| 1130 | 1197 | 67 | Limestone, dark-gray, shaly; contains some fossils |
| 1197 | 1244 | 47 | Shale, red, slightly calcareous |
| 1244 | 1268 | ²⁴ 22 | Siltstone, red, sandy, slightly dolomitic |

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| 1268 | 1312 | 44 | Shale, red, partly calcareous |
| 1312 | 1320 | 8 | Siltstone, red, 70%; red shale, 30% |
| 1320 | 1330 | 10 | Shale, red |
| 1330 | 1340 | 10 | Siltstone, red, calcareous |
| 1340 | 1350 | 10 | Shale, red, silty |
| 1350 | 1360 | 10 | Shale, red, slightly dolomitic |
| 1360 | 1370 | 10 | Sandstone, white, very fine, calcareous, 70%; red and green shale, 20%; limestone, 10% |
| 1370 | 1380 | 10 | Shale, red, calcareous |
| 1380 | 1400 | 20 | Siltstone, red, dolomitic |
| 1400 | 1430 | 30 | Shale, red |
| 1430 | 1450 | 20 | Shale, red, silty |
| 1450 | 1500 | 70 | Shale, red |
| 1520 | 1530 | 10 | Shale, gray, 60%; gray, dolomitic limestone, 40% |
| 1530 | 1536 | 6 | Shale, green, with red spots |
| 1536 | 1584 | 48 | Shale, red |
| 1584 | 1593 | 9 | Siltstone, grayish-red |
| 1593 | 1600 | 7 | Siltstone, gray, 70%; gray to dark-gray shale, 30% |
| 1600 | 1610 | 10 | Sandstone, light-gray, very fine |
| 1610 | 1620 | 10 | Siltstone, gray |
| 1620 | 1630 | 10 | Shale, gray, silty |
| 1630 | 1650 | 20 | Shale, dark-gray, highly calcareous |
| 1650 | 1660 | 10 | Shale, gray, calcareous, 70%; gray and green siltstone, 30% |
| 1660 | 1680 | 20 | Shale, grayish-green |
| 1680 | 1697 | 17 | Shale, red, dolomitic |
| 1697 | 1701 | 4 | Siltstone, light-red, coarse |
| 1701 | 1736 | 35 | No samples |
| 1736 | 1744 | 8 | Shale, gray, green, and red |
| 1744 | 1752 | 8 | Shale, red and gray, dolomitic; small amount of white anhydrite |
| 1752 | 1762 | 10 | Siltstone, light-red, sandy |
| 1762 | 2229 | 467 | No samples |
| 2229 | 2233 | 4 | Limestone, dark-gray, 80%; soft gray shale, 20% (gas, 2229', 15,000 cu. ft.) |
| 2233 | 2250 | 17 | Limestone, gray, 60%; gray shale, 40% (gas, 2337', 94,000 cu. ft.) |

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| 2250 | 2263 | 13 | Limestone, brown, 80%; gray shale, 20% |
| 2263 | 2283 | 20 | Shale, gray, silty, calcareous |
| 2283 | 2320 | 37 | Shale, very dark gray, calcareous |
| 2320 | 2330 | 10 | Shale, very dark gray, 70%; gray limestone, 30% |
| 2330 | 2337 | 7 | Shale, light-green, highly calcareous, 50%; very dark gray shale, 50% |
| 2337 | 2348 | 11 | Shale, light-green, calcareous |
| <u>Greenbrier Limestone, 487 feet</u> | | | |
| 2348 | 2356 | 8 | Shale, gray and green, 80%; light-gray limestone, 20% |
| 2356 | 2395 | 36 ³⁹ | Limestone, gray |
| 2395 | 2410 | 15 | Limestone, very light brown to nearly white |
| 2410 | 2488 | 78 | Limestone, brown to light-brown; some oolites at 2455' |
| 2488 | 2558 | 70 | Limestone, dark-brown |
| 2558 | 2585 | 27 | Limestone, brown |
| 2585 | 2599 | 14 | Limestone, light-brown, with a few green spots |
| 2599 | 2617 | 18 | Limestone, dark-brown |
| 2617 | 2657 | 40 | Limestone, brown |
| 2657 | 2663 | 6 | Limestone, gray |
| 2663 | 2671 | 8 | No sample |
| 2671 | 2681 | 10 | Limestone, gray |
| 2681 | 2687 | 6 | Limestone, brown, 70%; gray, oolitic limestone, 30% |
| 2687 | 2751 | 64 | Limestone, brown to gray |
| 2751 | 2772 | 21 | Limestone, light-brown |
| 2772 | 2790 | 18 | No samples |
| 2790 | 2798 | 8 | Dolomite, very light brown, with trace of anhydrite and fluorite |
| 2798 | 2806 | 8 | Dolomite, very light brown, very fine textured |
| 2806 | 2815 | 9 | Dolomite, very light brown, 85%; white anhydrite, 10%; green silty shale, 5% |
| 2815 | 2835 | 20 | Limestone, brown |
| <u>Maccrady Formation, 47 feet</u> | | | |
| 2835 | 2843 | 8 | Shale, red, 70%; gray to greenish dolomite, 25%; white anhydrite, 5%; at least part of the anhydrite occurs in the red shale |
| 2843 | 2854 | 11 | Shale, red, white, with a little anhydrite |

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| 2854 | 2861 | 7 | Shale and siltstone, red and green |
| 2861 | 2882 | 21 | Siltstone, red and grayish-green |
| <u>Pocono Formation, 623 feet</u> | | | |
| 2882 | 2944 | 62 | Siltstone, gray to dark-gray |
| 2944 | 2962 | 18 | Siltstone, gray, with green specks, dolomitic |
| 2962 | 2981 | 19 | Siltstone, gray to grayish-green, slightly dolomitic |
| 2981 | 2988 | 7 | Siltstone, red and grayish-green |
| 2988 | 3054 | 66 | Siltstone, gray to light-gray, sandy; a little dark-gray shale in some samples |
| 3054 | 3058 | 4 | No sample |
| 3058 | 3066 | 8 | Sandstone, grayish-green, very fine |
| 3066 | 3074 | 8 | Sandstone, grayish-green, with some red specks, medium-grained |
| 3074 | 3082 | 8 | Sandstone, grayish-green, medium-grained, 80%; gray sandy shale, 20% |
| 3082 | 3094 | 12 | Sandstone, nearly white, fine to medium-grained |
| 3094 | 3114 | 20 | Shale, dark-gray |
| 3114 | 3180 | 66 | Shale, dark-gray, with small amount of siltstone |
| 3150 | 3238 | 58 | Siltstone, gray to light-gray, 80%; dark-gray shale, 20% |
| 3238 | 3248 | 10 | Shale and siltstone, dark-gray |
| 3248 | 3257 | 9 | Siltstone, light-gray, sandy, 70%; dark-gray shale, 30% |
| 3257 | 3301 | 44 | Shale, dark-gray, 70%; gray siltstone, 30% |
| 3301 | 3392 | 91 | Siltstone, gray, 70 to 90%; dark-gray shale, 30 to 10% |
| 3392 | 3431 | 39 | Shale, dark-gray, 50 to 60%; gray siltstone, 50 to 40% |
| 3431 | 3437 | 6 | Siltstone, gray, 60%; gray siltstone, 40% |
| 3437 | 3450 | 13 | Siltstone, gray to dark-gray |
| 3450 | 3465 | 15 | Shale, very dark gray, 60%; gray siltstone, 40% |
| 3465 | 3497 | 32 | Shale, dark-gray to black (Sunbury Shale) |
| 3497 | 3505 | 8 | Siltstone, gray, sandy (Berea Sandstone horizon) |
| Devonian Shales, 79½ feet | | | |
| 3505 | 3525 | 20 | Shale, gray to very dark gray, 60%; gray siltstone, 40% |
| 3525 | 3584 | 59 | Siltstone, gray, 60%; dark-gray shale, 40% |
| 3575 | | | Total depth in record |