

8/15/49

West Virginia Power and Transmission Co. No. 1(A-418)

Dry Fork District, Tucker County, W. Va.

By Cumberland and Allegheny Gas Co., 800 Union Trust Bldg., Pittsburgh, Pa.

Located 4.9 Mi. S. of 39° 10' and 2.95 Mi. W. of 79° 20' - C

Davis quadrangle

Elevation 3296' L.

Permit - Tucker- 3

Drilling commenced May, 1948; Completed January 22, 1949

Gas Well - Volume, 537,000 cu. ft.

No coal encountered

SECTION BASED ON SAMPLES from 160' to 820', EXAMINED BY RUSSELL R. FLOWERS

Top Bottom Thickness

HAMPSHIRE FORMATION, 2117 FEET

Top	Bottom	Thickness	Description
160	185	15	Clay-shale, very dusky red to grayish-brown and dusky-brown, silty to argillaceous siltstone, (somewhat sandy) at the top, somewhat dolomitic in the middle part; some interbedded siltstone and shale, greenish-gray, some medium-gray, sandy in part; some sandstone (very fine) to siltstone, greenish-gray and light-gray to grayish-red at the top
185	267	82	Shale (soft) and siltstone (micaceous), very dusky red to dusky-brown, some grayish-brown, sandy in part; some interbedded, greenish-gray to grayish-red siltstone and shale, dolomitic in part, a moderate amount at the bottom
267	290	23	Shale and siltstone, grayish-red and very dusky red to grayish-brown and dusky-brown, some blackish-red, some brownish-gray, very sandy in part; a moderate amount of interbedded, medium light to medium dark gray siltstone and shale, but a large amount at the top; some greenish-gray to brownish-gray, very silty, micaceous sandstone in the lower part; small amount ^{is} of dolomite

290	298	8	Sandstone (very silty) to siltstone (very sandy) and shale, greenish-gray to medium-gray (with black and carbonaceous "coaly" streaks), kaolinitic, micaceous, somewhat sideritic in part; small amount of grayish-brown to very dusky red shale; trace of pyrite
298	304	6	Siltstone and shale, greenish-gray to medium-gray, pyritic in part, sandy in part, 50%; shale with some siltstone, grayish-red and very dusky red to grayish-brown and dusky-brown, dolomitic in part, 50%
304	319	15	Siltstone and shale, medium to medium dark gray to dark greenish gray (chloritic toward the bottom), somewhat micaceous and kaolinitic, slightly to moderately sideritic; small amount of light-gray sandstone with yellowish-brown spots; some grayish-brown to grayish-red and very dusky red shale in the upper part; some brownish-gray, sandy micaceous siltstone in the bottom part
319	356	37	Sandstone, greenish-gray to dark greenish gray, greenish-gray to brownish-gray at the top and bottom, very fine grained, some fine grains and some silt, highly chloritic and kaolinitic, micaceous, also contains shale fragments and some carbonaceous material
356	365	9	Sandstone, brownish-gray to dusky-brown, very fine grained, chloritic and micaceous
365	381	16	Sandstone, brownish-gray to greenish-gray, mostly greenish-gray in the lower part, very fine grained, chloritic, micaceous and kaolinitic; some grayish-red to grayish-brown shale and greenish-gray shale in the middle and lower parts
381	384	3	Sandstone, light-gray to greenish-gray, fine-grained, somewhat dolomitic, some carbonaceous streaks

384	400	16	Sandstone, greenish-gray to medium-gray, very fine to fine-grained, highly dolomitic to dolomite, 60% at top to 40% at bottom; shale, grayish-red to very dusky red to grayish-brown, 40% at top to 60% at bottom; trace of black, carbonaceous shale
400	416	16	Shale, grayish-brown to very dusky red; some greenish-gray to medium-gray, dolomitic sandstone and dolomite at the top
416	438	22	Shale and siltstone, dusky-brown to very dusky red, some grayish-brown, very sandy and micaceous in the lower part; some greenish-gray to medium-gray, dolomitic sandstone and dolomite at the bottom
438	493	55	Sandstone, very light gray to greenish-gray in the upper part to very light gray and light greenish gray in the lower part, very fine to fine-grained, chloritic and micaceous, somewhat kaolinitic, somewhat dolomitic (cement); a large amount of dusky-brown to brownish-gray, sandy siltstone and shale in the upper part
493	501	8	Sandstone, light- to medium-gray to greenish-gray (with some black, carbonaceous spots and streaks), fine-grained, dolomitic in part, highly chloritic, micaceous and kaolinitic
501	508	7	Sandstone, light- to medium-gray to greenish-gray, fine-grained, 60%; shale and siltstone, grayish-brown to very dusky-red, medium-gray to greenish-gray, 30%, sandstone, grayish-brown to brownish-gray, very fine to fine grained, 10%
508	524	16	Sandstone, grayish-brown to brownish-gray, greenish-gray to medium-gray, fine-grained, some very fine grains, small part is dolomitic, chloritic, micaceous and kaolinitic; mostly grayish-brown to brownish-gray, greenish-gray to medium-gray shale at the top

- 524 546 22 Sandstone, greenish-gray to medium light gray, small amount of grayish-brown to brownish-gray but a moderate amount at the bottom, fine to very fine grained, highly chloritic, micaceous, somewhat kaolinitic and carbonaceous, slightly dolomitic; some interbedded, grayish-brown to brownish-gray and greenish-gray to medium-gray shale
- 546 592 46 1/2 Siltstone and shale, grayish-brown and dusky-brown to very dusky red, micaceous and chloritic, small amount ^{is} ~~of~~ dolomitic; 563-572 a moderate amount of dusky-brown to very dusky red, fine to very fine grained sandstone; a moderate amount of greenish-gray to medium-gray and grayish brown fine to very fine grained sandstone at the top
- 592 650 58 Sandstone, brownish-gray to dusky-brown, some greenish-gray and light-gray but a moderate amount at the bottom, very fine to fine grained, very silty at the top, highly micaceous and chloritic, slightly dolomitic in the lower part and moderately dolomitic at the bottom, contains a large amount of shale grains; some grayish-red to grayish-brown shale
- 650 661 11 Sandstone, light greenish to greenish-gray, fine to very fine grained, highly chloritic, somewhat kaolinitic, moderately dolomitic; small amount of brownish-gray to dusky-brown, fine sandstone
- 661 665 4 Shale (sandy and silty) to sandstone (shaly), very fine to fine), brownish-gray to dusky-brown, some greenish-gray, chloritic, somewhat micaceous; small amount of dolomite, greenish-gray
- 665 668 3 Sandstone (fine) to sandstone (silty and shaly) to shale (sandy and silty), light greenish gray to greenish-gray and medium-gray, highly dolomitic in part, highly chloritic, kaolinitic
- 668 674 6 Sandstone, light greenish to greenish-gray, dusky-brown to brownish-gray, fine to very fine grained, chloritic, somewhat kaolinitic, somewhat dolomitic in part, the brownish-gray is shaly to a sandy shale

- 674 694 20 Sandstone, light greenish to greenish-gray, fine to very fine grained, mostly fine-grained at the bottom, chloritic, small amount of carbonaceous material in the middle part, slightly dolomitic at the top to moderately dolomitic at the bottom
- 694 715 21 Sandstone (with very high shale content) to shale (very sandy), brownish-gray to dusky-brown, sand grains are fine to very fine, micaceous, kaolinitic, and chloritic, moderately dolomitic at the top to slightly dolomitic at the bottom
- 715 721 6 Sandstone, brownish-gray to dusky-brown, with some grayish-brown shale, 60%; sandstone to shale, light greenish to greenish-gray, fine to very fine grained, some medium grains, moderately to highly dolomitic, 40%
- 721 738 17 Sandstone, light greenish to greenish-gray (with some very light gray and some dark-gray spots), very fine to fine grained, some medium grains, highly dolomitic, some dolomite, ~~xx~~ chloritic, somewhat kaolinitic and carbonaceous
- 738 746 8 Sandstone, greenish-gray, very fine to fine grained, dolomitic, 40%; sandstone, brownish-gray to dusky-brown, very fine, dolomitic in part, shaly to sandy shale and some grayish-brown shale, 60%
- 746 752 6 Sandstone (with high shale content) to shale (sandy), brownish-gray to dusky-brown, some grayish-brown, micaceous, chloritic, and kaolinitic, moderately dolomitic
 ✓ in part
- 752 772 20 Sandstone, light greenish to greenish-gray and medium-gray, some brownish-gray to dusky-brown in the lower part, fine to very fine grained, highly chloritic, kaolinitic, some mica and carbonaceous material, moderately dolomitic
- 772 783 11 Sandstone, greenish-gray, fine ~~to~~ very fine grained, dolomitic, 30%; sandstone (fine to very fine with a high shale content) to shale (very silty and sandy), brownish-gray to grayish-brown, 70%
 ✓

- 783 825 42 Siltstone and shale, grayish-brown to dusky-brown, some very dusky red at the bottom, somewhat sandy, with spots and streaks of dolomite; at the top, sandstone, grayish-brown to dusky-brown, very fine grained, high shale content
- 825 837 12 Shale, grayish-red to very dusky red; some greenish-gray siltstone and shale in the lower part; some brownish-gray to dusky-brown siltstone and shale; trace of dolomite
- 837 849 12 ✓ Shale and siltstone, grayish-brown and dusky-brown to brownish-gray, some grayish-red to very dusky red, micaceous in part
- 849 860 11 Sandstone (very fine) to siltstone, grayish-brown to dusky-
✓ brown, some brownish-gray, some ^every dusky red, micaceous
✓ in part
- 860 867 7 Sandstone (very shaly) to shale (sandy and silty), grayish-brown to dusky-brown, the sand grains are very fine, very highly micaceous (much of it is biotite); some grayish-red to very dusky red shale
- 867 885 18 Shale, grayish-red to grayish-brown, at the top, a very large amount of sandstone (shaly and silty) to silty shale, grayish-brown to dusky-brown, highly micaceous
- 885 897 12 Sandstone, brownish-gray to dusky-brown, light-gray to greenish-gray, fine to very fine grained; a large amount of interbedded, grayish-red to grayish-brown shale
- 897 909 12 Shale and siltstone, grayish-red to very dusky red to
✓ grayish-brown (some spots and streaks of dolomite)
- 909 943 34 Sandstone (silty with high shale content) to shale (very silty), grayish-red to very dusky red to grayish-brown
- 943 957 14 Shale (very silty and sandy) to sandstone (very high shale content, silty), grayish-red, some very dusky red, somewhat micaceous, small amount dolomitic; in the upper part, some very light gray to pinkish-gray, fine sandstone
- 957 982 25 Sandstone (very fine) to siltstone, grayish-red to very dusky red, very high shale content

- 1214 1245 31 Sandstone, grayish-brown to dusky-brown to grayish-red; fine to very fine grained at the top to very fine grained, silty ~~shaly~~ at the bottom, very shaly to sandy and silty shale, somewhat dolomitic in the middle part, micaceous, highly micaceous at the top
- 1245 1261 16 Sandstone, medium- to dark-gray to greenish-gray, very fine to coarse grained, slightly dolomitic; a moderate amount of grayish-brown to dusky-brown to grayish-red, sandy siltstone and shale
- 1261 1273 12 Sandstone, medium- to dark-gray (carbonaceous) to greenish-gray (chloritic) and shale, medium- to dark-gray, 40%; shale (very silty and sandy) to sandstone (very fine, very shaly and silty), grayish-brown to dusky-brown to grayish-red, micaceous in part, 60%
- 1273 1297 28 Shale and siltstone, grayish-brown to dusky-brown, some grayish-red, very sandy (very fine to fine) to sandstone (medium- to dark-gray, some brownish and greenish gray) at the bottom; small amount is dolomitic; some greenish-gray shale in the middle part
- 1297 1308 11 No sample
- 1308 1327 19 Shale and siltstone, grayish-red to very dusky red, some grayish-brown, sandy in part, moderately dolomitic at the top; considerable medium- to dark-gray (carbonaceous cement), sandy siltstone at the bottom
- 1327 1339 12 Shale, grayish-red to grayish-brown, some very dusky red, medium- to dark-gray, small amount of grayish-black, 70%; sandstone, light-to medium-gray, very fine to siltstone, micaceous in part, slightly pyritic
- 1339 1345 6 Sandstone, medium light to dark-gray (shaly), very fine to silt; a large amount of dark-gray to grayish-black (carbonaceous) shale, some black (highly carbonaceous), and some grayish-red
- 1345 1363 18 Shale, grayish-red to very dusky red, medium-gray to grayish-black (carbonaceous) some black (highly carbonaceous), small amount is dolomitic; a large amount of siltstone and shale (silty), medium-gray to greenish-gray, slightly sideritic

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1373 1407 44 Sandstone, medium light to dark-gray, very fine grained, silty, somewhat micaceous and carbonaceous; a very large amount of dark-gray to black shale in the middle part and a large amount of medium- to dark-gray shale at the bottom; small amount of siderite but moderate amount at the center
- 1407 1421 14 Shale and siltstone, grayish-red to very dusky red, some grayish-brown, somewhat micaceous, 90%; ~~XXXXXXGRAYISH~~
~~BROWN~~ sandstone and shale, medium- to dark-gray, 10%
- 1421 1450 29 Sandstone, medium dark to dark-gray, some medium-gray, moderately carbonaceous, somewhat micaceous; a very
✓ large amount of interbedded shale and siltstone, grayish-red to grayish-brown, some greenish-gray to medium-gray, dolomitic in part
- 1450 1455 5 Sandstone, light- to medium-gray, fine-grained, small amount of chloritic and carbonaceous material; small amount of dolomite
- 1455 1481 26 Sandstone, light- to medium-gray, fine-grained, some medium grains, contains streaks of medium dark gray, micaceous, kaolinitic siltstone and shale, highly dolomitic to dolomite (particularly at the top)
- 1481 1505 24 Sandstone, very light gray to light greenish-gray, some greenish-gray, fine-grained, fine to very fine grained in the lower part, slightly to moderately dolomitic, some chlorite; considerable interbedded, medium- to dark-gray and some greenish-gray siltstone and shale
- 1505 1510 5 Sandstone, very light gray to greenish-gray, and siltstone and shale, greenish-gray to medium-gray, 20%; shale and siltstone (wandy) to sandstone (very silty and shaly), grayish-red to grayish-brown, some very dusky red and dusky-brown, 80%
- 1510 1544 34 Shale and siltstone, grayish-red to grayish-brown, some very dusky red to dusky-brown, some medium-gray to greenish-gray, micaceous; some sandstone (fine) and siltstone, greenish-gray to medium-gray (cavings)

- 1544 1563 19 Shale and siltstone, grayish-red to very dusky red, some dusky-brown and grayish-brown (present in increasing amount toward the bottom), partly micaceous, small amount is dolomitic
- 1563 1587 24 Sandstone, medium-light to dark-gray, fine to very fine grained, moderately to highly dolomitic, some carbonaceous material; a large amount of interbedded medium dark to dark-gray shale, sandy in part; some grayish-red to grayish brown siltstone and shale and some greenish-gray shale (probably mostly cavings except at the top)
- 1587 1609 22 Sandstone, light- to medium-gray, fine to very fine grained, very fine grained at the bottom, some rounded medium grains at the top, somewhat dolomitic at the bottom, slightly to moderately carbonaceous
- 1609 1628 19 Sandstone, light-gray to medium-gray and greenish-gray, ~~xx~~ very fine grained, silty, slightly dolomitic, chloritic; considerable medium- to dark-gray, moderately carbonaceous, very fine sandstone at the top
- 1628 1655 27 Sandstone, medium to medium dark gray, very fine to fine grained, moderately to highly carbonaceous; some dark-gray to black (highly carbonaceous) shale
- 1655 1663 8 Shale, medium- to dark-gray, some dark greenish gray, some grayish-red, 85%; sandstone, medium light to medium-gray, and greenish-gray, slightly to moderately carbonaceous, 15%
- 1663 1671 8 Shale, medium- to dark-gray, some dark greenish gray, small amount of grayish-red to grayish-brown, 40%; sandstone, medium light to medium dark gray, very fine to fine grained, slightly to moderately carbonaceous, 60%; small amount of greenish-gray, fine sandstone
- 1671 1709 38 Sandstone, light- to medium-gray, some greenish-gray in the lower part, very fine to fine grained, some medium and coarse grains, conglomeratic at the top (some very coarse, broken grains), chloritic at the bottom; small amount is dolomitic, moderate amount is dolomitic at the bottom; small amount of carbonaceous material in the upper part; a large amount of interbedded, medium- to dark-gray and greenish-gray, very sandy siltstone at 1684 to 1694 and some in the lower part

1709	1737	28	Sandstone, light greenish gray and pale-red at the top to light and medium light gray to greenish-gray at the bottom, fine to very fine grained, chloritic, somewhat kaolinitic and carbonaceous, and fine-grained, very silty at the bottom
1737	1746	9	Sandstone, light- to medium-gray to greenish-gray, conglomeratic, very fine to very coarse grained, slightly to moderately dolomitic, 70%; siltstone and shale, medium-gray to greenish-gray, 30%
1746	1754	8	Siltstone and shale, dark greenish gray to, medium dark gray, a few scattered coarse quartz grains
1754	1759	5	Siltstone to sandstone (very fine) medium light to medium dark gray; a large amount of medium dark to medium-gray shale
1759	1775	16	Shale and some siltstone, medium to medium dark gray, some greenish-gray
1775	1813	38	Siltstone to sandstone (very fine and silty) greenish-gray to dark greenish gray with dark-gray to black spots (carbonaceous) containing very coarse grains to pebbles of light-gray quartz; a very large amount of interbedded, dark greenish gray to medium and medium dark gray shale
1813	1893	80	Shale and siltstone, greenish and dark greenish gray to medium and dark-gray, mostly siltstone and slightly dolomitic in the lower part, mostly shale at the top
1893	1905	12	No sample
1905	1937	32	Siltstone, dusky-brown to very dusky red, small amount of grayish-red to grayish-brown, micaceous; small amount of greenish-gray siltstone
1937	1938	1	No sample
1938	1957	19	Shale, grayish-red to very dusky red, greenish-gray to medium-gray (with a few carbonaceous streaks); some interbedded, greenish-gray sandstone (very fine) to siltstone
1957	1971	14	Sandstone, greenish-gray with some grayish-red spots, fine to very fine grained, chloritic, somewhat kaolinitic; some grayish-red to dusky-brown siltstone and shale

- 1971 1995 24 Siltstone and shale, grayish-red to very dusky red, sandy in part; a moderate amount of greenish-gray, fine to very fine grained sandstone (cavings ?)
- 1995 2014 19 Shale and siltstone, grayish-red to very dusky red to grayish-brown, sandy in part, 60% to 70%; siltstone to ✓ sandstone (very fine), light-to dark-gray (contains black, carbonaceous specks and streaks), 30% to 40%; some medium dark gray shale
- 2014 2158 144 Siltstone and shale, greenish-gray to medium-gray; some ✓ dark-gray to grayish-black, highly carbonaceous siltstone in the lower part
- 2158 2173 15 Siltstone and some shale, medium to medium dark gray, some greenish-gray; a large amount of shale (silty and sandy) to sandstone (silty and shaly), dark-gray to black, moderately to highly carbonaceous, slightly dolomitic
- 2173 2184 11 No sample
- 2184 2192 8 Siltstone and shale, grayish-red to very dusky red, some ✓ ^{ay} greenish-brown, sandy to very sandy; a moderate amount of interbedded, light-gray to greenish-gray, sandstone, very fine to fine grained; some medium-gray to greenish-gray siltstone and shale
- 2192 2216 24 Siltstone and some shale, medium to medium dark gray, some greenish-gray
- 2216 2255 39 Sandstone, very light gray to light greenish gray, some ✓ light-gray to greenish-gray, fine to very fine grained, somewhat micaceous and kaolinitic, chloritic; a large amount of medium- to dark-gray and greenish-gray shale and siltstone at the top; small amount is dolomitic
- 2255 2267 12 Sandstone, greenish-gray to medium-gray, fine to very fine grained, silty, 60% to 70%; shale, medium to medium dark gray, 30% to 40%
- 2267 2277 10 Siltstone, grayish-brown to dusky-brown to very dusky red, very sandy to a very fine sandstone with green spots (shale grains), slightly dolomitic; a moderate amount of greenish-gray to medium-gray, fine to very fine sandstone; a moderate amount of medium to medium dark gray shale at the top

Chemung, Portage, Genesee Formations, 5107 Feet

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| 2277 | 2307 | 30 | Sandstone, greenish-gray to medium-gray, some medium dark gray, very fine grained to siltstone, slightly dolomitic; a large amount of interbedded, medium to medium dark gray shale, sandy in part |
| 2307 | 2319 | 12 | Sandstone, very light gray to light greenish gray, very fine grained, slightly dolomitic; some greenish-gray to medium-gray, very fine sandstone at the top; small amount of medium-gray shale at the bottom |
| 2319 | 2331 | 12 | Shale and siltstone, medium to medium dark gray and dark greenish gray |
| 2331 | 2391 | 60 | Siltstone, medium light to medium dark gray, somewhat dark-gray at 2363' to 2372', kaolinitic, somewhat micaceous, moderately to highly dolomitic at the top and slightly to moderately dolomitic at the bottom |
| 2391 | 2430 | 39 | Siltstone and some shale, medium light to medium dark gray and greenish-gray, some brownish-gray in the middle and lower part, moderately dolomitic at the top to slightly dolomitic at the bottom, kaolinitic and micaceous |
| 2430 | 2445 | 15 | Siltstone, medium light to medium dark gray, some dark-gray to grayish-black (carbonaceous), somewhat dolomitic |
| 2445 | 2463 | 18 | Siltstone and some shale, medium to medium dark gray, some medium light gray, small amount of dark-gray at the bottom |
| 2463 | 2480 | 17 | Siltstone and some shale, greenish-gray and medium light gray to medium dark gray; a large amount of interbedded sandstone (very fine) to siltstone, olive-gray to brownish-gray; slightly to moderately dolomitic, moderately to highly dolomitic in part at the top |
| 2480 | 2500 | 20 | Siltstone and shale, medium to medium dark gray to dark greenish-gray, small amount of olive-gray |
| 2500 | 2559 | 59 | Siltstone to sandstone (very fine) and shale; at the top, dark greenish-gray, some medium to medium dark gray, a little dark-gray; in the middle, dark greenish-gray to olive-gray and brownish-gray, medium to medium dark gray; at the bottom, medium to medium dark gray and dark greenish gray |

2559	2565	6	Sandstone (very fine) to siltstone, greenish-gray and olive-gray to medium and medium dark gray, somewhat dolomitic
2565	2585	20	Shale, medium to medium dark gray; siltstone to sandstone, (very fine), dark greenish gray to medium-gray
2585	2604	19	Sandstone (very fine) to siltstone, medium light to medium-gray, some greenish-gray, somewhat dolomitic; a large amount of medium dark gray shale
2604	2616	12	✓ Siltstone, greenish-gray and dark greenish gray to medium-gray; some medium- to dark-gray shale; small amount of olive-gray and brownish-gray to dark-gray, moderately dolomitic sandstone (very fine)
2616	2632	16	No sample
2632	2658	26	Shale and siltstone, dark-gray to grayish-black, some brownish-black, slightly to moderately dolomitic in part; a moderate amount of medium- to dark-gray and dark greenish gray siltstone and shale
2658	2691	33	Sandstone, light- to medium-gray, some greenish-gray, some dark-gray (carbonaceous spots and streaks), very fine to very coarse grained, shaly and silty in part, slightly to moderately dolomitic; a large amount of medium- to dark-gray siltstone and shale
2691	2701	10	Siltstone, greenish-gray and medium light to dark-gray, sandy; small amount of light- to medium-gray, fine- to coarse-grained sandstone
2701	2715	14	Siltstone and shale, greenish-gray to medium-gray, some dark-gray to grayish-black; a very large amount of sandstone, light- to medium-gray, some greenish-gray, some dark-gray (black specks), very fine to very coarse grained, silty in part (cavings ?)
2715	2765	50	Siltstone and some shale, greenish and dark greenish gray to medium and medium dark gray, sandy in part, very sandy to sandstone (fine to very fine) and a large amount of shale at the bottom, dolomitic in part
2765	2822	57	Shale, medium to medium dark gray to olive gray, sandy to a greenish and dark greenish gray sandstone (fine-grained)

- 2822 2843 21 Sandstone, medium- to dark-gray (black spots and streaks of carbonaceous material), fine to very fine grained, and some very light gray to light greenish gray, fine to very coarse grained; some medium- to dark-gray sandstone and siltstone (mostly cavings)
- 2843 2877 34 Shale, dark-gray to brownish-gray, some olive-black, very silty, slightly sideritic; small amount of light- to medium-gray, very fine sandstone at the bottom
- 2877 2890 13 Shale and siltstone, dark-gray, some brownish-black, 50%; sandstone (very fine) to siltstone, greenish-gray to medium-gray, calcareous in part, moderately to highly dolomitic, 50%
- 2890 2899 9 No sample
- 2899 2916 17 Sandstone (very fine) to siltstone, very light to medium-light gray, some greenish-gray at the top, slightly to moderately dolomitic with highly calcareous spots; some dark-gray to brownish-black siltstone (cavings ?)
- 2916 2944 28 Siltstone, medium to medium dark gray to dark greenish gray, much of the greenish-gray at the top contains grayish-brown spots of dolomitic siderite, micaceous, kaolinitic
- 2944 2958 14 Siltstone (sandy) to sandstone (very fine), medium-gray to greenish-gray (with grayish-brown, dolomitic, siderite spots)
- 2958 2971 13 Siltstone, medium-gray to greenish-gray in the upper part to siltstone and sandstone (very fine), greenish-gray to medium-gray with grayish-brown spots, slightly to moderately sideritic
- 2971 3037 66 Siltstone (sandy) to sandstone (very fine, silty), greenish and dark greenish gray to medium and medium dark gray (with grayish-brown to yellowish-brown, slightly dolomitic, sideritic spots); trace of calcite; mostly greenish to dark greenish gray siltstone and sandstone in the upper part; some medium to medium dark gray shale

- 3037 3095 58 Siltstone, greenish to dark greenish gray (with light- to dark-gray, fossiliferous, highly calcareous spots and streaks), slightly to moderately dolomitic, very highly fossiliferous at 3048 to 3051'; a large amount of interbedded, medium- to dark-gray and some dark greenish gray shale
- 3095 3109 14 Siltstone, dark-gray to grayish-black, very shaly, moderately dolomitic; some greenish-gray and medium- to dark-gray shale
- 3109 3145 36 Siltstone, greenish to dark greenish gray and medium to medium dark gray, mostly greenish-gray in the lower part, micaceous, somewhat kaolinitic; some dark-gray to grayish black, shaly siltstone at the top
- 3145 3533 388 Siltstone and shale, greenish-gray to medium-gray (with light- to dark gray, highly calcareous, dolomitic, fossiliferous spots and streaks in the upper part), some medium dark gray; trace of dark-gray sandstone at the bottom
- 3533 3540 7 Sandstone, dark-gray to grayish-black, very fine grained, silty with medium to very coarse, glassy to milky quartz grains, very shaly, highly carbonaceous; trace of calcite
- 3540 3548 8 Sandstone, dark-gray to grayish-black, very fine grained with medium to very coarse grains, 40%; shale and siltstone, medium-gray and dark greenish gray to olive-gray, and some medium dark gray, 60%
- 3548 3605 57 Siltstone and shale, medium-gray to dark greenish gray to olive-gray, some medium dark gray; trace of calcite at the bottom
- 3605 3768 163 Siltstone and shale, medium to medium dark gray to dark greenish gray; a large amount of interbedded, light-gray to light olive gray, very fine sandstone at 3651 to 3675'; a moderate amount of interbedded, light-gray to light olive gray, very fine, slightly to moderately calcareous and dolomitic sandstone in the lower part
- 3768 3780 12 Siltstone and shale, medium light to dark-gray, some greenish-gray, a few calcareous fossil fragments

- 3780 3789 9 Siltstone and shale, medium light to dark-gray, and some greenish-gray, 40%; sandstone (very fine) to siltstone (sandy), dark-gray to grayish-black (with some light- to dark-gray conglomerate) very shaly, contains spots and streaks of calcite, carbonaceous, 60%
- 3789 3798 9 Sandstone, dark-gray to grayish- and brownish-black, very fine to fine grained with medium to very coarse grains, very silty and shaly, highly carbonaceous, some very highly micaceous streaks, slightly to moderately pyritic in part; small amount of calcite
- 3798 3818 20 Sandstone, dark-gray to grayish-black, very fine grained, some fine to coarse grains at the top, highly carbonaceous trace of calcite, somewhat sideritic
- 3818 3837 19 Shale and siltstone, medium- to dark-gray, some olive-gray; some light to medium light gray, very fine sandstone to siltstone, somewhat calcareous and dolomitic; some dark-gray to grayish-black, carbonaceous, very fine sandstone in the upper part
- 3837 3949 112 Shale and siltstone, medium- to dark-gray, some medium light gray (calcareous and dolomitic, at the top and bottom), some olive-gray, and some greenish to dark greenish-gray; a large amount of interbedded, grayish-
black to black, carbonaceous shale at the top and a moderate amount toward the bottom
- 3949 4209 260 Siltstone, medium light gray to greenish-gray; shale, medium to medium dark gray, some dark-gray; some calcareous and dolomitic siltstone near the top and bottom
- 4209 4244 35 Siltstone to sandstone (very fine), medium light to medium dark gray to greenish-gray, small amount of calcareous, kaolinitic, micaceous; some greenish-black to black, highly carbonaceous, silty shale at the top and bottom; a large amount of medium- to dark-gray shale in the upper part
- 4244 4315 71 Shale, grayish- and brownish-black to black, highly carbonaceous, very silty in part to siltstone; some interbedded shale, medium- to dark-gray, some greenish-gray

- 4315 4426 111 Shale and siltstone, grayish- and brownish-black to black (highly carbonaceous), medium- to dark gray to brownish-gray, some medium light gray to greenish-gray (calcareous in part) at the bottom, a very large amount of grayish- and brownish-black to black in the upper part
- 4426 4549 123 Siltstone, greenish-gray to medium light gray, some medium-gray, calcareous and dolomitic in part; shale, medium to medium dark gray, some dark-gray
- 4549 4590 41 Shale, siltstone, and some sandstone (very fine), dark-gray and brownish-gray to grayish- and brownish-black (somewhat carbonaceous), some medium-gray to olive-gray and greenish-gray; small amount of siltstone is dolomitic
- 4590 4708 118 Siltstone, greenish-gray to medium light and medium gray; shale, medium- to dark-gray; some of the siltstone is moderately calcareous and dolomitic
- 4708 4852 144 Siltstone and shale, medium to medium dark gray, greenish to dark greenish gray, some dark-gray; mostly shale at the bottom
- 4852 4895 43 Siltstone, light olive gray to medium-gray, kaolinitic, micaceous, small amount is dolomitic; trace of calcite; shale, medium to medium dark gray, some dark-gray, small amount of grayish-black to black in the upper part
- 4895 5011 116 Shale, medium to medium dark gray; some light olive gray to medium-gray siltstone
- 5011 5099 88 Shale and siltstone, medium to medium dark gray, some olive-gray to brownish-gray, a large amount of dark-gray to black (carbonaceous, somewhat dolomitic) in the lower part, some dark-gray in the upper part
- 5099 5191 92 Siltstone and some sandstone (very fine), greenish-gray and light olive gray to medium light and medium-gray, dolomitic in part; a moderate amount of interbedded, medium- to dark-gray shale; some grayish-black to black, highly carbonaceous, somewhat dolomitic shale in the upper and middle parts

- 5191 5311 120 Siltstone, medium light gray to greenish-gray to medium-gray, small amount is dolomitic; shale, medium to medium dark gray, some dark-gray
- 5311 5555 244 Siltstone and shale, medium dark gray, some olive-gray, some light-gray, some dark-gray, some grayish-black to black (carbonaceous) at the bottom
- 5555 5683 128 Shale, grayish- and brownish-black to black, highly carbonaceous, slightly dolomitic in part, very silty; shale and some siltstone, medium to dark-gray, some olive-gray to greenish-gray
- 5683 5825 142 Shale, medium- to dark-gray with grayish-black to black carbonaceous streaks; some siltstone, medium light gray and greenish-gray to medium-gray and olive-gray, a moderate amount at the top; trace of clear, glassy quartz
- 5825 6259 434 Shale, medium to medium dark gray, some dark-gray to black (highly carbonaceous); siltstone, greenish-gray and light olive gray to medium light gray
(5985 corrected to 5970)
- 6259 6339 80 Shale and siltstone, medium to medium dark gray, some dark-gray, some dark greenish gray, small amount of olive-gray (sideritic)
- 6339 6500 161 Shale, medium dark to dark-gray, some dark greenish gray, some medium-gray, some grayish-black and an increase in dark-gray in the lower part
- 6500 6550 50 Shale, medium dark gray to grayish-black (carbonaceous), small amount of medium-gray to greenish-gray, pyritic in part
- 6550 6589 39 Shale (very silty), brownish- and grayish-black to black, highly carbonaceous, slightly dolomitic; shale and siltstone, medium- to dark-gray, some medium light gray and some greenish-gray
- 6589 6741 152 Shale, medium to medium dark gray, some dark-gray to black (carbonaceous), some olive-gray; some siltstone, medium light gray to greenish-gray; a large amount of dark-gray to grayish-black shale at 6713 - 6734'
- 6741 6840 99 Shale, medium dark to dark-gray, some grayish-black to black to black (carbonaceous)

- 6840 6915 75 ✓ Shale and some siltstone, medium dark to dark-gray, some olive-gray to medium-gray, some grayish- and brownish-black to black
- 6915 7052 137 Shale (very silty in part), some siltstone, dark-gray to grayish-black, some olive-gray to brownish-black, some medium to medium dark gray, the medium dark gray and olive-gray increases in amount toward the bottom
- 7052 7214 162 Shale, dark-gray to greenish-black (carbonaceous), with small amount of white, vein dolomite, silty; some medium to medium dark gray shale. There is no sharp separation of the shale at the top with the above interval
- 7214 7384 170 Shale, black, some greenish-black, very highly carbonaceous, slightly to moderately calcareous and somewhat dolomitic in the upper part, contains veinlets of calcite and dolomite

Tully Limestone, 44 Feet.

- 7384 7409 25 Shale, black, some grayish-black, very highly carbonaceous with a very small amount of white vein calcite; some limestone, brownish-gray to brownish-black; some of the shale and limestone contain small specks of pyrite
- 7409 7428 19 Shale, black, some grayish-black, very highly carbonaceous with very small amount of white vein calcite, 80%; limestone, brownish-gray to brownish-black, shaly, dolomitic to dolomitic^e (small part), 20%

Hamilton and Marcellus Shales, 532 Feet.

- 7428 7455 27 Shale, black to grayish-black, highly carbonaceous with ✓ a very small amount of white to light-gray, vein calcite; small amount of brownish-gray to brownish-black limestone, dolomitic in part, shaly; some of the shale and limestone contains specks of pyrite
- 7455 7535 80 Shale, grayish-black to black, highly carbonaceous; small amount of brownish-black limestone at the top; trace of ✓ light-gray, highly calcareous shale at the bottom

- 7535 7810 275 Shale, grayish-black to black, increase in black toward the bottom, very highly carbonaceous, small amount of white, vein calcite, pyritic in part toward the bottom, slightly to moderately calcareous from 7760 to 7810'
- 7810 7820 10 Shale, dark-gray to grayish-black, some black (highly carbonaceous), moderately calcareous and moderately dolomitic; trace of pyrite
- 7820 7900 80 Shale, black, with some grayish-black in the upper part, very highly carbonaceous, moderately to highly calcareous in part, pyritic in part; small amount of white vein calcite; small amount of brownish-black, very highly micaceous shale and small amount of very highly pyritic shale at the bottom
- 7900 7922 22 Shale, black, some grayish-black, very highly carbonaceous, highly calcareous to a shaly limestone; some brownish-gray to brownish-black highly micaceous (altered biotite) shale; small amount of white vein calcite, small amount of highly pyritic shale
- 7922 7933 11 Shale, grayish-black to black, highly carbonaceous, highly calcareous, small amount is highly pyritic; small amount of medium- to dark-gray, dolomitic shale
- 7933 7935 2 Shale, grayish-black to black, highly carbonaceous, moderately to highly calcareous, 80%; shale, medium to dark-gray, dolomitic, 20%; small amount of white vein calcite
- 7935 7959 24 ✓ Shale, medium- to dark-gray, moderately dolomitic in the upper part, moderately calcareous and moderately dolomitic in the lower part, and highly calcareous and somewhat dolomitic at the bottom
- 7959 7960 1 ✓ Shale, medium- to dark-gray, a moderate amount of grayish-black to black (carbonaceous), moderately calcareous
- Huntersville Chert, 96 Feet.
- 7960 7963 3 Chert, medium-gray to grayish-black, some light-gray, somewhat calcareous and dolomitic, 50%; shale, grayish-black to black, carbonaceous, calcareous, 50%
- 7963 7965 2 Chert, medium-gray to black (silicified shale, carbonaceous) some light to medium light gray, slightly to moderately calcareous; some grayish-black to black shale

- 7965 7971 6 No Sample
- 7971 7978 7 Chert, medium-gray to brownish- and grayish-black, some black (carbonaceous, silicified shale), some white to, light-gray; a large amount of grayish-black to black, highly carbonaceous shale, somewhat calcareous; some medium- to dark-gray to black (carbonaceous, silicified shale), 10%; shale, grayish- and brownish-black to black, highly carbonaceous, very hard, slightly calcareous, 90%
- 7993 8037 54 ✓ Shale, dark-gray to grayish-black, some black, carbonaceous, slightly calcareous at the top, slightly to moderately dolomitic at the bottom; a very small amount of white, vein calcite
- 8037 8044 7 Shale, dark-gray to grayish-black, slightly dolomitic, silicified in part; small amount of medium- to dark-gray chert with shale content
- 8044 8056 12 Shale, dark-gray to grayish-black, silicified in part, slightly calcareous at the top to moderately calcareous at the bottom with a very small amount of white, vein calcite; some medium to dark-gray chert in the upper part
- Helderberg Limestone, 73 Feet.
- 8056 8067 11 Sandstone (very fine to siltstone, very highly calcareous) to limestone (very sandy and silty), medium-gray to grayish-black with light-gray spots, very shaly in part, somewhat cherty; a large amount of white, vein calcite at the top; a large amount of dark-gray to black shale (cavings)
- 8067 8076 9 ✓ Limestone, medium- to dark-gray (with a small amount of white, vein calcite), very sandy (very fine) and very silty with some medium to coarse grains in the lower part, very sandy to a highly calcareous sandstone in the middle part, shaly in part, trace of chert, trace of pyrite at the top; some dark-gray to black shale (cavings)
- 8076 8078 2 Limestone, medium- to dark-gray, very sandy, somewhat cherty
 ✓ this interval is mostly grayish-black to black shale (cavings)

- 8078 8084 6 Limestone, medium light to dark-gray, very sandy (very fine to medium grained), somewhat cherty, slightly shaly; some dark-gray to black shale (cavings)
- 8084 8089 5 Sandstone, light- to medium-grained, very cherty, very highly calcareous to a very sandy limestone at the bottom, contains some carbonaceous material
- 8089⁹ 8093 4 Sandstone (very fine, silty), dark-gray to grayish-black (shaly) with light- to medium-gray spots, very highly calcareous with some limestone (very sandy)
- 8093 8103 10 Sandstone, medium-gray to grayish-black with a small amount of white, vein calcite, very fine grained with some medium grains in the upper part and a large amount of medium grains in the lower part, contains some shale, carbonaceous material and a few fossil fragments
- 8103 8107 4 Sandstone, light- to medium-gray, very fine to fine-grained with some^e medium grains at the top, highly calcareous, contains some shaly, carbonaceous material
- 8107 8111 4 Sandstone, medium- to dark-gray, coarse to very coarse grained with a large amount of fine to medium grains in the lower part, highly calcareous, somewhat dolomitic, contains some carbonaceous material
- 8111 8116 5 Sandstone, medium- to dark-gray, some grayish-black (carbonaceous, shaly), highly calcareous, very fine to fine-grained, some medium grains, cherty
- 8116 8120 4 Sandstone, dark-gray to grayish-black, very fine to fine-grained with medium to coarse, subrounded to rounded grains, contains much carbonaceous, shaly material, moderately calcareous
- 8120 8124 4 Sandstone, medium-gray to grayish-black, very fine to fine-grained with a few medium grains, moderately calcareous, slightly dolomitic, very shaly in part
- 8124 8125 1 No sample
- 8125 8127 2 Sandstone, medium- to dark-gray, very fine grained, some fine grains, moderately calcareous, shaly in part

- 8127 8129 2 Sandstone, medium-gray to grayish-black, very fine to fine-grained, moderately to highly calcareous, 60%;
 ✓ sandstone, very light to light-gray, fine- to medium-grained, quartzose (clear and glassy), slightly calcareous, some carbonaceous material, 40%

Oriskany Sandstone, 41 Feet.

- 8129 8135 6 Sandstone, very light to light-gray, quartzose, fine- to medium-grained, most of the quartz grains are clear and glassy, subrounded, hard, slightly calcareous, (Gas at 8129-8134')
- 8135 8141 6 Sandstone, very light to light-gray, fine-grained, some medium and some very fine grains, slightly calcareous, moderately calcareous at the bottom
- 8141 8144 3 Sandstone, very light to light-gray, fine to very fine grained, mostly quartz, moderately calcareous, highly calcareous in part; a very large amount of dark-gray to grayish-black shale cavings
- 8144 8148 4 Sandstone, very light to light-gray, fine-grained, very fine to fine grained at the bottom, moderately calcareous, mostly quartz (Gas at 8148')
- 8148 8154 ✓ 6 Sandstone, very light to light-gray, ^{fine-to medium-grained,} ~~very fine grained~~ _{(with some medium light to medium-gray, very fine grained streaks in the lower part),} some rounded coarse grains in the upper part, highly calcareous
- 8154 8156 2 Sandstone, light-gray, very fine to ~~st~~ fine grained, highly to very highly calcareous
- 8156 8160 4 Sandstone, light- to medium-gray, fine to very fine grained, mostly quartz with calcite cement (highly to very highly calcareous)
- 8160 8163 3 Sandstone, medium-gray, some light-gray with dark-gray streaks, fine-grained, some medium and some very fine grains, very highly calcareous
- 8163 8170 7 Sandstone, light-gray, fine-grained, very fine to fine-grained toward the bottom, highly calcareous

Helderberg Limestone, 31, plus, Feet.

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|------|------|----|--|
| 8170 | 8172 | 2 | Sandstone, light- to medium-gray, some dark-gray, fine to very fine grained, highly calcareous to a very sandy limestone |
| 8172 | 8187 | 15 | Sandstone, medium- to dark-gray with light gray spots, very fine grained with some fine grains, very highly calcareous to a very sandy limestone, contains some carbonaceous, shaly material |
| 8187 | 8190 | 3 | Sandstone, light- to medium-gray with some dark-gray streaks, very fine grained to siltstone, very highly calcareous, contains a little carbonaceous, shaly material |
| 8190 | 8193 | 3 | Limestone, medium- to dark-gray with light-gray spots, very sandy to silty to a highly calcareous, silty sandstone (very fine) contains a small amount of carbonaceous shaly material and a few fossil fragments |
| 8193 | 8197 | 4 | No Sample |
| 8197 | 8201 | 4 | Sandstone, medium-gray to grayish-black with light-gray spots, very fine grained to coarse silt with some medium to very coarse grains, some carbonaceous, shaly material, highly calcareous |