

By Natural Resources Corporation, P. O. Box 612, Morgantown, W. Va.
 Located 1.26 Mi. S. of 39° 10' Lat. and 4.34 Mi. W. of 79° 39' Long.
 Parsons Quadrangle - C
 St. George District, Tucker County, W. Va.
 Elevation 1586'.

Permit Tuc-8.

Section based on samples from ¹⁶³⁰0-4995'; examined by Russell R. Flowers.

Top	Bottom	Thickness	
10	25	15	Siltstone and some shale, medium dark gray, some medium dark gray to olive black, some medium gray
25	120	95	Siltstone, dark gray and brownish gray to grayish black shale; siltstone, medium dark gray with greenish olive casts, shaly in part; some calcified fossil fragments (brachiopods and rare gastropods)
120	161	41	Siltstone, brownish gray to dark gray, argillaceous; some medium dark gray siltstone, shaly
161	190	29	Siltstone, medium dark to dark gray with olive gray and greenish gray casts, shaly in part
190	220	30	Siltstone and some silty shale, medium to medium dark gray, highly calcareous in the upper part, moderately calcareous in the lower part; most of the calcareous material is fossil fragments
220	241	21	Siltstone and some shale, medium dark gray, many calcified fossil fragments
241	255	14	Sandstone (very fine) to siltstone, medium to medium dark gray, some olive gray, highly calcareous
255	315	60	Siltstone, medium dark gray with greenish cast; some shale, medium dark to dark gray
315	355	40	Siltstone, medium dark gray, some medium dark gray to dark gray, somewhat calcareous, shaly in part, some calcified fossil fragments
355	400	45	Siltstone and silty shale, dark gray to brownish gray and brownish black, some calcified fossil fragments; siltstone and shale, medium dark to dark gray; mostly medium dark to dark gray shale and siltstone from 384-390
400	420	20	Siltstone and shale, medium dark to dark gray; some medium light to medium gray siltstone, somewhat dolomitic
420	488	68	Siltstone, medium to medium dark gray and shale, medium dark to dark gray, from 450-488 siltstone, medium to medium dark gray with some grayish black streaks and some calcified fossil fragments
488	515	37	Siltstone and shale, medium to medium dark gray, some dark gray, small amount is slightly calcareous and somewhat dolomitic
515	526	11	Siltstone and shale, dark gray; siltstone and some shale, medium dark to dark gray; some medium gray, slightly dolomitic siltstone in the upper part

526	569	43	Siltstone and shale, medium dark gray, medium dark to medium gray with greenish cast in the lower part, some dark gray siltstone and shale
569	588	19	Shale and siltstone, medium dark to dark gray, some medium gray (highly calcareous with fossil fragments)
588	600	12	Siltstone and shale, medium dark to dark gray
600	647	47	Siltstone, medium dark gray; siltstone and shale, medium dark gray to dark gray; some calcified fossil fragments in the lower part
647	674	27	Siltstone, medium to medium dark gray, some dark gray, contains many calcified fossil fragments; a large amount of medium dark to dark gray shale in the lower part
674	682	8	Shale, dark gray; some medium dark gray to dark gray siltstone and shale
682	700	18	Siltstone and shale, medium dark to dark gray; some dark gray shale; an occasional calcified fossil fragment
700	715	15	Siltstone, medium to medium dark gray; some dark gray shale
715	722	7	Siltstone, medium to medium dark gray, some dark gray to brownish black, silty shale
722	735	13	Siltstone and shale, medium gray to dark gray; small amount dark yellowish brown shale
735	775	40	Siltstone and shale, medium dark to dark gray, a large amount of medium dark gray in the lower part
775	795	20	Siltstone, medium to medium dark gray; some medium dark gray to grayish black shale and siltstone
795	805	10	No sample
805	835	30	Siltstone, medium to medium dark gray; some medium dark to dark gray shale, a large amount at the bottom
835	875	40	Siltstone, medium to medium dark gray with grayish black shaly streak and some calcified fossil fragments; some medium dark to dark gray shale
875	885	10	No sample
885	905	20	Siltstone and shale, brownish gray to brownish black interbedded with medium dark gray siltstone and shale, some calcified fossil fragments in the lower part
905	915	10	Siltstone and shale, dark gray, some medium to medium dark gray
915	955	40	Shale, medium dark to dark gray, silty; siltstone, medium to medium dark gray
955	975	20	Siltstone, medium dark gray, some dark gray to brownish gray and brownish black; some medium dark to dark gray shale
975	995	20	Siltstone, brownish gray to brownish black and grayish black, argillaceous, interbedded with medium dark to dark gray shale and some siltstone

995	1015	20	Siltstone, brownish gray to brownish black and grayish black, argillaceous, interbedded with medium dark to dark gray shale and siltstone
1015	1055	40	Shale, medium dark gray to dark gray, interbedded with siltstone, medium dark gray with a greenish gray and olive gray cast, some calcified fossil fragments; small amount of brownish gray to brownish black and grayish black, silty shale at the top and bottom
1055	1075	20	Siltstone and shale, medium dark gray, some medium to medium dark gray, moderate amount of shale, dark gray to brownish black and grayish black, silty
1075	1125	50	Siltstone, medium dark to medium gray with olive gray cast; a moderate to large amount of shale , medium dark to dark gray and some grayish black shale medium dark to dark gray and some grayish black shale
1125	1215	90	Shale, medium dark to dark gray with moderate to large amount of interbedded medium dark gray siltstone with olive gray cast and rare calcified fossil fragments
1215	1235	20	Siltstone, medium to medium dark gray, slightly dolomitic; some medium dark to dark gray shale
1235	1255	20	Siltstone, medium dark gray with olive gray cast; shale, medium dark to dark gray (somewhat discolored with heat?)
1255	1275	20	Siltstone and shale, medium dark to dark gray (most of the sample is discolored by excessive heat when drying)
1275	1342	67	Siltstone, medium dark gray; moderate to large amount of moderate dark gray to grayish black shale interbedded with siltstone
1342	1407	65	Shale, medium dark gray and medium dark to dark gray; siltstone, medium dark gray with olive gray cast; mostly shale in the upper part and at the bottom
1407	1430	23	Siltstone, medium to medium dark gray; some medium dark to dark gray shale
1430	1485	55	Siltstone, medium dark gray; shale, medium to dark gray
1485	1510	25	Siltstone, medium dark gray with a very small amount of white calcite; some medium dark to dark gray shale
1510	1610	100	Shale, medium dark gray to dark gray; some medium dark gray siltstone; a large amount of siltstone from from 1530-37 and 1549-62
1610	1655	45	Shale and siltstone, medium dark to dark gray, a large amount of dark gray at the top
1655	1714	59	Shale, medium dark to dark gray, some dark gray in the lower part; some medium dark gray siltstone
1714	1755	41	Shale and siltstone, medium dark to dark gray, some dark gray to black; some medium dark gray siltstone with olive gray cast
1755	1782	27	Shale, dark gray, some dark gray to grayish black; some medium to medium dark gray siltstone in the upper part

1782	1790	8	Siltstone, brownish black to grayish black, very shaly; a large amount of medium dark to dark gray shale
1790	1806	16	Shale, dark gray and medium dark to dark gray; medium dark to dark gray a moderate amount of brownish black to grayish black siltstone
1806	1827	21	Shale, medium dark gray, some dark gray; some medium dark gray to light gray siltstone
1827	1860	33	Shale, dark gray; shale and some siltstone, medium dark to dark gray; some dark gray to grayish black shale at the bottom
1860	1890	30	Shale, medium dark to dark gray, small amount of dark gray to grayish black; some medium dark gray to olive gray siltstone
1890	1930	40	Shale, medium dark to dark gray, small amount of grayish black to dark gray; siltstone, medium dark gray with green and olive casts
1930	1966	36	Shale, medium dark to dark gray, interbedded with some olive gray to medium dark gray and dark gray siltstone
1966	1992	26	Siltstone, medium dark to dark gray, some medium to medium dark gray, interbedded with some medium dark to dark gray shale
1992	2047	55	Siltstone and shale, medium dark to dark gray
2047	2065	18	Siltstone, medium dark to dark gray; some medium dark to dark gray shale
2065	2249	184	Siltstone to shale, medium dark to dark gray
2249	2265	16	Siltstone, medium dark to dark gray; some medium dark to dark gray shale
2265	2272	7	Siltstone, dark gray, shaly
2272	2284	12	Siltstone, medium dark gray; some medium dark to dark gray; a large amount of medium dark to dark gray shale in the lower part
2284	2305	21	Shale and siltstone, medium dark to dark gray, mostly medium dark gray siltstone in the lower part
2305	2315	10	Siltstone and shale, medium dark to dark gray with grayish black (carbonaceous) streaks, rare calcified fossiliferous fragments
2315	2374	59	Shale interbedded with siltstone, medium dark to dark gray
2374	2423	49	Siltstone, medium dark gray, moderate amount of dark gray shaly; a moderate amount of medium dark gray to dark gray shale in the upper and lower part
2423	2464	41	Shale and siltstone, medium dark to dark gray, and mostly shale from 2440 to 2450
	2499		
2464	2499	35	Shale and some siltstone, medium dark to dark gray, a large amount of siltstone in the upper part
2499	2506	7	Siltstone (coarse) to sandstone (very fine grained), light to medium gray, moderately dolomitic

2506	2516	10	Shale, dark gray, very silty
2516	2531	15	Siltstone, (coarse), medium gray, some medium to medium dark gray, slightly dolomitic
2531	2564	33	Shale and siltstone, medium dark to dark gray, some dark gray, in the upper part
2564	2601	37	Siltstone, medium to medium dark gray, medium gray and coarse in the lower part; a moderate amount of medium dark to dark gray shale
2601	2615	14	Shale, dark gray, silty
2615	2666	51	Siltstone, medium to medium dark gray, some dark gray in the upper part, small amount is dolomite; some shale, dark gray and medium dark to dark gray
2666	2685	19	Shale to siltstone, medium dark to dark gray
2685	2703	18	Siltstone, medium dark gray; some medium dark gray to dark gray shale
2703	2744	41	Siltstone, medium to medium dark gray; some medium dark to dark gray shale; a large amount of medium dark to dark gray and some grayish black shale in the lower part
2744	2765	21	Siltstone and/ ^{some} shale, medium dark to dark gray
2765	2776	11	Siltstone, medium dark to medium gray, small amount is dolomite, interbedded with a large amount of medium dark to dark gray shale; some dark gray to grayish black shale; some dark gray to grayish black shale in the lower part
2776	2784	28	Shale, dark gray, some medium dark to dark gray; some medium dark gray to olive gray, highly dolomitic siltstone
2784	2820	36	Shale, medium dark to dark gray, some dark gray; a large amount of medium dark gray siltstone in the lower part
<u>GENESEE (HARRELL)?</u> _____ Feet			
2820	2873	53	Shale, grayish black and dark gray to grayish black, interbedded with medium dark to dark gray shale, mostly dark gray to grayish black in the lower part
2873	2941	68	Shale, grayish black, a large amount of dark gray to grayish black in the upper part, contains very small amount of calcite
2941	2982	41	Shale, dark gray to grayish black with a very small amount of calcite
2982	2997	15	Shale, grayish black, some grayish black to black (carbonaceous)
2997	3141	144	Shale, dark gray to grayish black, some medium dark to dark gray
3141	3191	50	Shale, dark gray, interbedded with medium dark to dark gray, contains a very small amount of calcified fossil fragments
3191	3301	110	Shale, dark gray and dark gray to grayish black; some medium dark to dark gray
3301	3335	34	Shale, grayish black, some dark gray to grayish black, silty; some medium dark to dark gray siltstone and shale in the lower part
3335	3353	18	Shale, dark gray, a moderate amount of medium dark to dark gray, some grayish black at the top and bottom
3353	3844	491	Shale, dark gray to greenish black with small amount of medium dark to dark gray and brownish gray siltstone in the upper part, mostly grayish black in the lower part

3844	3928	84	Shale, dark gray to grayish black, mostly grayish black in the lower part
3928	3956	28	Shale, grayish black
3956	3981	25	Shale, dark gray to grayish black
3981	4003	22	Shale, dark gray, some dark gray to grayish black; trace of calcite
4003	4035	32	Shale, dark gray to grayish black
4035	4061	26	Shale, dark gray, some grayish black, a large amount of medium gray dark to dark gray; some medium dark gray siltstone in the lower part
4061	4087	26	Shale and some siltstone, medium dark to dark gray, some interbedded dark gray to grayish black shale
4087	4098	11	Shale, dark gray, some medium dark to dark gray (shale and siltstone), some dark gray to grayish black
4098	4167	69	Shale, dark gray, some interbedded dark gray to grayish black; some medium dark gray, somewhat dolomitic siltstone; small amount of calcite (fossil fragments?)
4167	4188	21	Shale, dark gray to grayish black, much is silty and dolomitic in part with small amount of dolomite; a large amount of dark gray and some medium dark to dark gray (silty) shale
4188	4203	15	Shale, grayish black, interbedded with dark gray to medium dark gray shales and some siltstone
4203	4267	64	Shale, grayish black; some olive gray to dark gray shale and siltstone, most of the samples contain a small amount of calcite
4267	4355	88	Shale, dark gray to grayish black, interbedded with medium dark to dark gray shale to fine siltstone, some of the samples contain a small amount of calcite
4355	4390	35	Shale to fine siltstone, medium dark to dark gray; some dark gray to grayish black shale
4390	4407	17	Shale, dark gray to grayish black, silty, dolomitic in part; some medium to medium dark gray, dolomitic siltstone
4407	4450	43	Shale, medium dark to dark gray with some siltstone, moderate dark gray; some dark gray to grayish black shale
4450	4490	40	Shale, dark gray to grayish black; a moderate to large amount of medium dark to dark gray shale
4490	4528	38	Shale, medium dark gray to dark gray with some grayish black; a moderate amount of grayish black shale at the top; a very small amount of calcite
4528	4556	28	Shale, dark gray
4556	4630	74	Shale, dark gray to grayish black, a moderate amount of grayish black at the bottom, very silty
4630	4643	13	Shale, medium to dark gray, some dark gray to grayish black in the lower part
4643	4673	30	Shale, dark gray; very small amount of white vein calcite in the middle and lower part
4673	4711	38	Shale, medium dark to dark gray, some dark gray to grayish black from 4692-4700; small amount of white to clear calcite at the top

- 4711 4747 36 Shale, dark gray, some dark gray to grayish black; a very small amount of white vein calcite at the top and at 4735-39
- 4747 4860 113 - Shale, grayish black to black, calcareous with small amount of vein calcite, slightly pyritic, carbonaceous
- 4860 4930 70 Shale, grayish black to black, carbonaceous, somewhat pyritic calcite at the bottom; a large amount of grayish black shale at the bottom
- 4930 4941 11 Shale, black, highly carbonaceous, somewhat pyritic, calcareous in part, coaly and many of the pieces show slickensides

TULLY LIMESTONE, 87 FEET

- 4941 4953 12 Limestone, olive gray to brownish black, argillaceous, somewhat fossiliferous; very fine to extremely fine crystalline; a large amount of black slickensided shale; small amount of pyrite
- 4971 18
4953 ~~4953~~ Shale, grayish black to black, carbonaceous; calcareous in part; many of the shale pieces are slickensided; some limestone as above
- 4971 4988 17 Limestone, olive gray to brownish black, argillaceous, pyritic in part, very fine to extremely fine crystalline; a moderate amount of grayish black to black carbonaceous shale, calcareous in part

HAMILTON AND MARCELLUS SHALES 246 Feet

- 4988 ~~4998~~ ⁵⁰⁰⁰ ₁₂ ¹² ₅ Shale, brownish black to grayish black, highly calcareous, pyritic in part, *some grayish black, non calcareous shale at the bottom*

5000	5017	17	Shale, dark gray to grayish black, somewhat pyritic, very small amount of calcite
5017	5206	189	Shale, grayish black, moderately carbonaceous, small amount is calcareous
5206	5265	59	Shale, grayish black to black, carbonaceous, some of the cuttings have slickensides
5265	5290	25	Shale, grayish black to black, shaly calcareous in the lower part, carbonaceous, somewhat pyritic
5290	5303	13	Shale, dark gray, calcareous at the top to highly calcareous in the lower part
5303	5334	31	Shale, grayish black to black, highly carbonaceous, calcareous, pyritic
5334	<u>ONONDAGA AND HUNTERSVILLE CHERT, 218 FEET.</u>		
5334	5344	10	Metabentonite, brownish gray to dark yellowish brown, pyritic; shale grayish black to black, highly calcareous, pyritic
5344	5359	15	Shale, grayish black, highly calcareous, with some impure limestone; a large amount of metabentonite at the top and some in the middle and lower part, somewhat pyritic
5359	5371	12	Shale, grayish black, highly calcareous, somewhat pyritic
5371	5375	4	Chert, light to dark gray (shaly) and some dark gray, silicified siltstone, calcareous, somewhat dolomitic; shale, dark gray to grayish black, moderately pyritic, glauconitic in part, calcareous
5375	5385	10	Chert, mottled light to medium gray, (translucent) and dark gray to grayish black (argillaceous), calcareous, dolomitic in the lower part, spicular
5385	5396	11	Chert, mottled light to medium gray (transparent to translucent), with some dark gray (argillaceous) and moderate to large amount of dark gray to grayish black (argillaceous) from 5390 to 5393, somewhat calcareous, dolomitic at the top
5396	5405	9	Chert, very light to medium gray (transparent) with small amount of dark gray to grayish black (argillaceous), somewhat calcareous in the upper part, slightly dolomitic, spicular
5405	5415	10	Chert, transparent to milky ^{to white and} mottled with some dark gray to grayish black (argillaceous), slightly dolomitic, highly spicular
5415	5430	15	Chert, transparent to milky, mottled with some dark gray to grayish black (argillaceous), very slightly dolomitic, highly spicular
5430	5435	5	Chert, transparent to milky, mottled with dark gray to grayish black (argillaceous), highly spicular, very slightly dolomitic
5435	5455	20	Chert, medium (translucent) to medium dark gray and dark gray to grayish black (argillaceous to shaly), small amount is dolomitic

5455	5480	25	Chert, medium dark to dark gray (argillaceous) to grayish black, silicified shale
5480	5500	20	Chert (highly argillaceous) to shale (silicified), grayish black with some light to dark gray in the upper part
5500	5520	20	Shale, grayish black, highly silicified, small amount is pyritic
5520	5544	24	Shale, grayish black, large amount of dark gray in the lower part, silicified in part, pyritic (very finely disseminated)
5544	5552	8	Shale, dark gray to grayish black, calcareous; trace of light gray transparent chert

ORISKANY SANDSTONE, 78, plus, FEET

5552	5570	18	Sandstone, light to medium gray, very fine grained, some fine to medium (rounded) grains, very highly calcareous, small amount of interstitial (argillaceous) material, silty
5570	5575	5	Sandstone, light gray, very fine to fine grained, some fine to medium grained, large grains rounded, some dark shaly material, somewhat silty, calcareous
5575	5580	5	Sandstone (very fine grained) to siltstone, (coarse), medium gray, some fine to medium (rounded), grains, highly calcareous, argillaceous
5580	5585	5	Sandstone, light to medium gray, very fine to fine grained with coarse silt and some medium (rounded) sand grains, highly calcareous, contains some dark (shaly) material
5585	5590	5	Sandstone, medium to dark gray, very fine grained, very silty (coarse), some fine to medium (rounded) grains, highly calcareous, argillaceous
5590	5595-	5	Sandstone, medium light gray, very fine to fine grained, some medium grains, very silty, highly calcareous, somewhat argillaceous; trace of chert
5595	5605	10	Sandstone, light to medium gray, very fine grained, some fine grains in the upper part, very silty in the lower part; highly calcareous; trace of chert
5605	5625	25	Sandstone (very fine grained) to siltstone (coarse); light to medium gray, some fine to medium (rounded) grains at the top, highly calcareous; trace of chert; small amount of dark (shaly) material
5625	5630	5	Sandstone, medium gray, very fine to fine grained, a few medium grains, silty, some argillaceous (dark) interstitial material, very highly calcareous