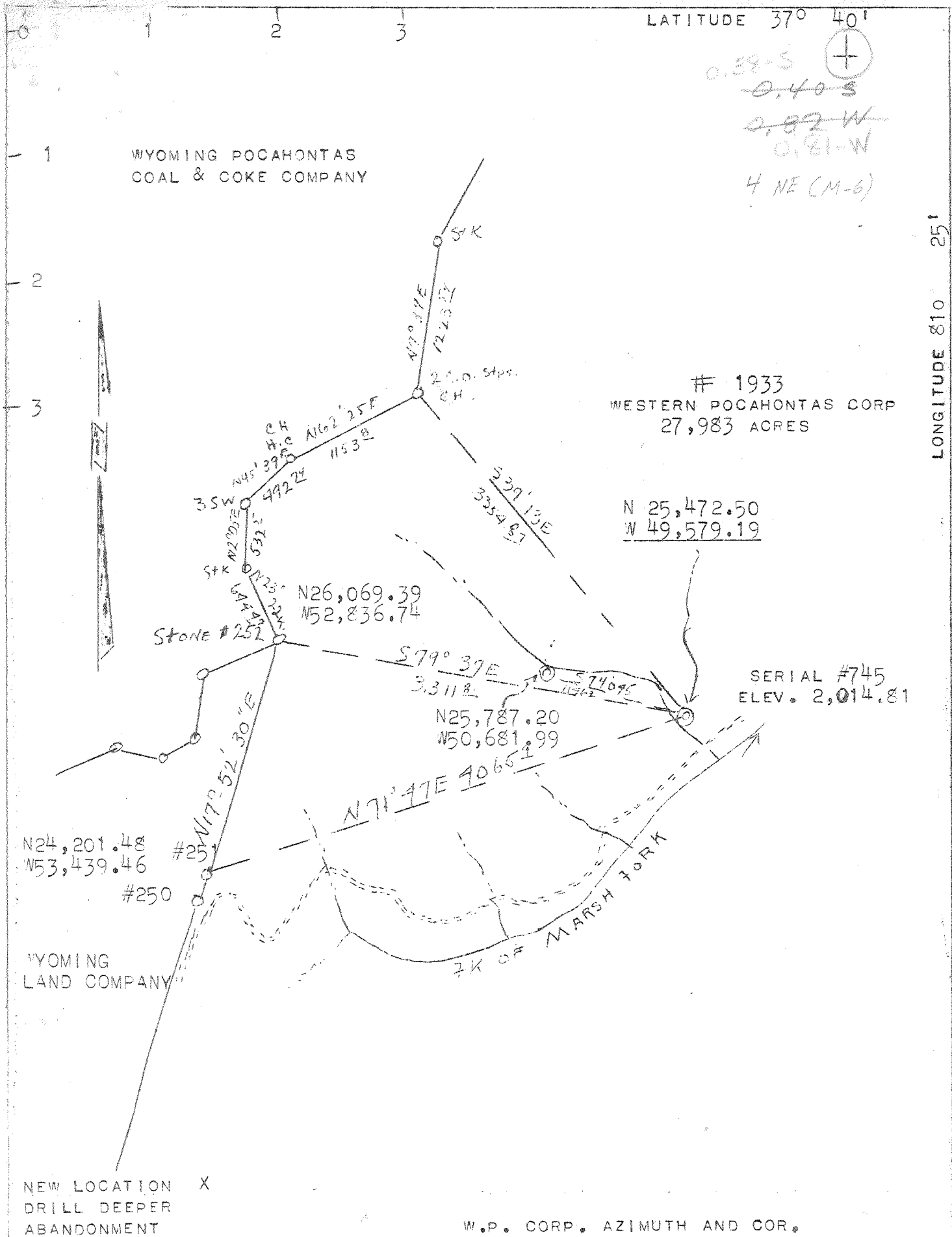


MAX

P

LATITUDE 37° 40'

0.39-S
~~0.40-S~~
~~0.82-W~~
0.81-W
4 NE (M-6)



1933
WESTERN POCAHONTAS CORP
27,983 ACRES

N 25,472.50
W 49,579.19

SERIAL #745
ELEV. 2,014.81

N24,201.48
N53,439.46

N26,069.39
N52,836.74

N25,787.20
N50,681.99

NEW LOCATION X
DRILL DEEPER
ABANDONMENT

W.P. CORP. AZIMUTH AND COR.

COMPANY OWENS, LIBBEY-OWENS, GAS DEPT
 ADDRESS BOX 2111, CHARLESTON 28, W.VA.
 FARM WESTERN POCAHONTAS CORP.
 TRACT ACRES 27,983 LEASE NO 1933
 FARM (WELL) NO. TWO SERIAL NO 745
 ELEVATION (SPIRIT LEVEL) 2014.81
 QUADRANGLE MULLENS 4 S-O.40" N-O.85"
 COUNTY WYOMING DISTRICT SLAB FORK
 ENGINEER T.S. FLOURNOY
 ENGINEER'S REGISTRATION NO. 269
 FILE NO _____ DRAWING NO _____
 DATE 2-22-46 SCALE 1" - 1000FT.

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON

WELL LOCATION MAP

FILE NO. WYO-126

+ DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS, SCALE 1 TO 62,500, LATITUDE AND LONGITUDE LINES BEING REPRESENTED BY BORDER LINES AS SHOWN.

- DENOTES ONE INCH SPACES ON BORDER LINE OF ORIGINAL TRACING. 3-0

Samples 18I + J (0-6885) Examined by R.R. Flowers 248
Deep Well P

Dry hole
w/ gas show
P4A

WEST VIRGINIA DEPARTMENT OF MINES
OIL & GAS DIVISION
W E L L R E C O R D

Permit No. Wyo 126

Mullens Quad.

Company

Address

Farm

Location

Well No.

District

Surface

Mineral

Commenced

Completed

Water

Owens-Libby Owens Gas Dept.

P.O. Box 4158, Charleston 4, W.Va.

Western Pocahontas Corp. A 27,983

Marsh Fork

2 W.P. Corp OLO No. 745 Elev. 2014.81

Slab Fork Wyoming County

Western Pocahontas Corp.

Huntington, W.Va.

Same

4-20-46

1-13-47

55' H.F.; 151' stood at 50'

Show water 2450'

---Well
CASING & TUBING

10 398 Pld.

8 1352

7 OD 2795

5 6642

PACKER

Spang Csg. Anchor

Size 276

Depth 2763-2765 Pld.

Top Soil	Y	S	0	10	Sand	R	H	3144	3198
Lime	Y	H	10	25	Lime	Dk	H	3198	3395
Sand, Slate	Dk&Wh	H&S	25	258	Slate	Gr&Dk	M	3395	3798
Lime	Dk	S	258	275	Lime & Slate	Dk	H&S	3798	3854
Slate & Shells	Dk	S	275	317	Slate & Shells	Dk	M	3854	3878
Lime & Sand	Lt	H	317	377	Lime, Slate & Shls	Gr&Bk	M	3878	4458
Slate	Dk	S	377	388	Lime	Gr	M	4458	4483
Sand	Lt	M	388	405	Lime	Dk	M	4483	4605
Lime & Slate	Dk	S	405	544	Sl&Shls	Dk	S	4605	4617
Sand	Wh	H	544	738	Lime	Dk&Gr	M&H	4617	5034
Slate Lime	Dk	S&M	738	769	Slate	Dk	S	5034	5040
Sand	Wh	H	769	828	Slate & Shells	Dk	M	5040	5057
Slate & Lime	Dk	M&H	828	925	Lime, Sl&Shls	Dk	M	5057	5159
Sand	Gr	H	925	956	Slate & Shells	Dk	S	5159	5209
Slate& Lime	Dk	M&S	956	1000	Lime	Gr	H	5209	5239
Sand & Lime	Lt	H	1000	1132	Lime, Sl&Shls	Dk	M&S	5239	5385
Red Rock		S	1132	1134	Lime	Gr	H	5385	5530
Lime		Dk	1134	1216	Slate, Lime & Shls.	Lt	S&H	5530	5638
Slate & Shells	Lt	S	1216	1221	Lime, Sl.&Shls	Dk	S&H	5638	5802
Lime	Gr	H	1221	1252	Shells	Lt	H	5802	5815
Red Rock		S	1252	1255	Lime	Dk	H	5815	5828
Slate & Shells	Gr	S	1255	1265	Sl. Shls. & Lime	Dk	S&H	5828	5906
Lime & Slate	Gr	S&H	1265	1339	Lime Shell	Lt	H	5906	5929
Sand	Wh	H	1339	1354	Lime & Sl.	Dk	S&H	5929	5978
Slate	Dk	S	1354	1357	Sl& Shls	Dk	S	5978	6024
Sand	Gr	H	1357	1381	Lime	Dk	S	6024	6044
Lime & Slate	Dk	M&S	1381	1485	Sl.&Shls	Dk	S	6044	6073
Sand	Gr	H	1485	1507	Lime, Slate & Shale		S&H	6073	6375
Slate	Dk	S	1507	1514	Lime	Gr	M	6375	6395
Lime	Dk& Lt	M&H	1514	1592	Sl&Shls	Lt	S	6395	6441
Sand	Gr	H	1592	1640	Shale, Lime	Dk	S&H	6441	6633
Slate	Dk	S	1640	1642	Cornif. Lime	Dk	H	6633	6729
Lime	Dk	H	1642	1691	Cornif. Lime	Gr	H	6729	6820
Red Rock		S	1691	1797	Cornif. Lime	Dk	H	6820	6889
Lime	Dk	H	1797	1827	Total Depth			6889	6889
Red Rock		M	1827	1854	Filled hole. 6889-6731	8	scks. cement	6731-	6667
Lime	Dk	M	1854	2030	6667, Ripped 5" csg.	1-13-47	shot 5" csg.		6522
Sand	Lt	H	2030	2033	6522 with 2 qts. Recovered	213	joints 5 1/2"		csg. Bridged hole
Lime	Gr	H	2033	2093	6522 with 2 qts. Recovered	213	joints 5 1/2"		5650-5554. Shot 1-23-47
Sand	Lt	H	2093	2096	csg. Bridged hole	5650-5554.	Shot 1-23-47		8200# Det. 4718-5554. Test B.S., 6/10 W 1"
Red Rock		M	2096	2102	8200# Det. 4718-5554. Test B.S.,	6/10 W 1"			Plate 19 M-15 Min A.S. 8/10 W 2" plate
Lime	Dk	H	2102	2111	Plate 19 M-15 Min A.S. 8/10 W 2"	plate			325 M. Shot 1-27-47 800# det. 3350-4429.
Sand	Lt	H	2111	2145	325 M. Shot 1-27-47 800# det.	3350-4429.			Test B.S. 10/10 W 1" Plate 25 M-15 Min A.S.
Lime	Dk	M	2145	2159	Test B.S. 10/10 W 1" Plate 25 M-15	Min A.S.			28/10 W 1" Plate 44 M. 1 hr. A.S. 10/10 W
Red Rock		S	2159	2164	28/10 W 1" Plate 44 M. 1 hr. A.S.	10/10 W			1" plate 25 M. Bridged hole at 3465 filled
Lime	Dk	M	2164	2176	1" plate 25 M. Bridged hole at	3465	filled		to 3400. Shot 1-27-47 500# det. 3347-3380
Sand	Lt	H	2176	2248	to 3400. Shot 1-27-47 500# det.	3347-3380			Test B.S. 10/10 W 1" plate 25 M-15 Min.
Lime	Dk	M	2248	2335	Test B.S. 10/10 W 1" plate 25 M-15	Min.			A.S. 64/10 W 1 1/2" plate 141 M. 1 Hr. A.S.
Slate & Shells		S	2335	2357	A.S. 64/10 W 1 1/2" plate 141 M.	1 Hr. A.S.			22/10 W 1 1/2" plate 83 M. Test 1-31-47
Lime	Dk	M	2357	2393	22/10 W 1 1/2" plate 83 M. Test	1-31-47			16/10 W 1" plate 31 M
Sand	Gr	H	2393	2506	16/10 W 1" plate 31 M				Gas 1612' 4544 C.F.; 1620' 4929 C.F.; 1622'
Slate	Dk	S	2506	2519	Gas 1612' 4544 C.F.; 1620' 4929	C.F.; 1622'			5400 C.F.; Test 1787 4678 C.F.; Gas 1808'
Lime	Dk	MH	2519	2607	5400 C.F.; Test 1787 4678 C.F.;	Gas 1808'			5620 C.F.; 1849 5832 C.F.; Test 1927' 5832
Slate & Shells	Dk	S	2607	2657	5620 C.F.; 1849 5832 C.F.;	Test 1927' 5832			C.F.; 1937' 9737 C.F.; Gas 1972' 12,996 CF
Lime	Dk	MH	2657	2752	C.F.; 1937' 9737 C.F.; Gas 1972'	12,996 CF			Test 2474, 10,604 C.F.; 2481-2484' 13,693 C.F.
Big Lime	Lt	H&S	2752	3124	Test 2474, 10,604 C.F.; 2481-	2484' 13,693 C.F.			Test 2766' 11,456 C.F.; 2785' 20317 C.F.; 2789
Lime	Dk	H	3124	3144	Test 2766' 11,456 C.F.; 2785'	20317 C.F.; 2789			29,326 C.F.; 2794' 1,162 M; Test 3023 33 M;
Test 4366'	25 M;	4380'	40M;	5081'	24,789 CF				Gas 3033' 38 M; 3348-3350' 38398 C.F.
5098'	31,358 CF								

6633
2015
4618

SM

WESTERN POCAHONTAS CORPORATION NO. 2 (745) WELL.

Slab Fork District, Wyoming County, W. Va.

By Owens, Libbey-Owens Gas Dept., Charleston, W. Va.

Located 0.39 mi. S. of 37° 40' and 0.82 mi. W. of 81° 25' - WC - Mullens Quadrangle.

Elevation, 2014.81' L.

Permit Wyo-126.

Sample record from Flowers March 14, 1950.

Top.	Bottom.	Thickness.	
			POTTSVILLE FORMATION, 1104 FEET
0	44	44	Sandstone, very light and light-gray to yellowish-gray and light olive gray, moderate to dark yellowish brown at the top (stained by iron oxides), very fine to fine-grained, hard, angular to subangular, kaolinitic; scattered dark streaks containing carbonaceous material, muscovite, and some siderite; also contains specks of chlorite and carbonaceous material; 25-44', a large amount of pale yellowish brown to brownish-gray (slightly to moderately sideritic), and brownish-black (highly sideritic), the dark streaks are more highly micaceous and less carbonaceous
44	52	8	Sandstone, light brownish gray to brownish-gray with dark-gray to brownish-black layers, and yellowish-brown specks of iron oxide and siderite, fine-grained to very fine grained; the dark layers are highly sideritic, micaceous, carbonaceous, and very shaly
52	58	8	Shale, dark-gray to dark brownish gray, moderately to highly sideritic, soft; some dusky-brown, highly sideritic shale
58	59	1	No sample
59	67	8	Sandstone, yellowish-gray to light brownish gray and brownish-gray (somewhat sideritic) with brownish-black and grayish-black to black (highly sideritic, carbonaceous, and micaceous) streaks; some dark-gray shale
67	88	21	Shale, dark-gray to brownish-gray, soft, moderately to highly sideritic; small amount of dark-brown siderite at the bottom
88	94	6	Sandstone, light-gray and yellowish-gray to brownish-gray, medium- to coarse-grained, subangular to subrounded, poorly sorted, hard, highly sideritic in part; somewhat chloritic and micaceous, some carbonaceous material
94	99	5	Sandstone, very light to light-gray, very fine to fine-grained, highly micaceous (muscovite), subangular to subrounded, contains some dark-gray to brownish-gray shale and some chlorite, somewhat sideritic
99	187	88	Sandstone, white to very light gray, fine to very fine grained, subrounded to rounded, somewhat micaceous and chloritic; considerable dark-gray to brownish-gray (sideritic) shale) at the top and 119 to 123'; in the upper part, some shale; 123-135', fine-grained; 135-139', very fine grained; 139 to 151', moderately sideritic; 151 to 187', white, quartzose, medium-grained
187	215	28	Sandstone; at the top, light olive gray to light-gray, a large number of siderite spherulites, fine-grained sand to coarse silt, small amount of dark-gray to black (highly carbonaceous) shale, highly micaceous; in the upper and middle parts, very light to light-gray, fine-grained, somewhat sideritic, with some coal in the upper part, somewhat micaceous; in the lower part of this interval, medium light to light-gray, fine-grained, contains much mica and carbonaceous material, some chlorite and some coal at the bottom, somewhat sideritic

(OVER)

Top.	Bottom.	Thickness.	
215	231	16	Shale, dark-gray to grayish-black, some brownish-black (highly sideritic), moderately sideritic; some coal at the bottom; some light-gray, fine-grained, partly sideritic sandstone at the bottom
231	246	15	Sandstone, very light gray to light greenish gray, fine-grained, subangular to subrounded, somewhat chloritic and micaceous, somewhat sideritic; a moderate amount of dark-gray to grayish-black, somewhat sideritic shale; small amount of dark-brown, sideritic shale
246	252	6	Shale, dark-gray to black (highly carbonaceous), somewhat sideritic and some brownish-black (highly sideritic), 70%; siltstone and silty shale, medium-gray to greenish-gray, highly micaceous, 30%
252	257	5	Siltstone, greenish-gray to medium-gray, some brownish-gray (sideritic), shaly in part, moderately to highly sideritic, highly micaceous
257	330	73	Siltstone, light brownish gray to brownish-black, some dark-gray and grayish-black, very highly micaceous, moderately to highly sideritic, somewhat kaolinitic; some very fine grained sandstone near the bottom
330	405	65	Sandstone, very light gray to light brownish gray, some brownish-gray (sideritic), fine-grained, moderately sideritic; slightly micaceous and chloritic; 341 to 350', very fine grained, very highly sideritic and carbonaceous in part; 383-405', fine-grained, with some medium grains, chloritic and micaceous, sideritic at the bottom; some moderate-brown clay at the bottom; a moderate amount of interbedded, dark-gray to black (carbonaceous) and brownish-black (sideritic) shale throughout most of the interval and a large amount at the top
405	411	6	Shale (very silty) and siltstone, dark-gray to grayish-black, some brownish-gray to brownish-black, highly micaceous, highly sideritic, somewhat calcareous and dolomitic
411	423	12	Siltstone (coarse at top) to sandstone (very fine at the bottom), brownish-gray to brownish- and grayish-black at the top, light-gray to brownish-gray at the bottom, kaolinitic, highly micaceous at the top, carbonaceous in part, moderately sideritic at the top to slightly sideritic toward the bottom
423	476	53	Shale, dark-gray to brownish- and grayish-black, somewhat micaceous, slightly sideritic, highly sideritic in part, somewhat carbonaceous
476	490	14	Sandstone, medium light and medium-gray to brownish-gray, fine to very fine grained, some medium grains, subangular, poorly sorted, contains carbonaceous and kaolinitic material, mica, iron oxides (partly hematite), highly sideritic, 60% at the top to 30% at the bottom; interbedded, dark-gray to black (highly carbonaceous), brownish-gray to dusky-brown (highly sideritic) shale 40% at top to 70% at bottom; small amount of blackish-red to very dusky-red hematitic (?), sideritic shale
490	504	14	Siltstone (at the top) to very fine sandstone (at the bottom), medium light to medium-gray and brownish-gray, (highly sideritic), highly micaceous and somewhat carbonaceous, kaolinitic; some interbedded dark-gray and dusky-brown (sideritic) shale

Top. Bottom. Thickness.

Top.	Bottom.	Thickness.	
504	524	20	Shale and siltstone, medium- and dark-gray to greenish-gray and olive-gray, moderately sideritic in part, highly micaceous; a moderate amount of interbedded dark yellowish brown to dusky-brown, highly sideritic shale; at the bottom, considerable dark-gray to brownish-black and black, highly carbonaceous shale with streaks of coal and a small amount of pyrite -
524	735	211	Sandstone, white to very light gray, fine-grained, subangular to subrounded, quartzose except at top 40 feet and 584 to 590', slightly micaceous and slightly chloritic, some of the quartz grains show secondary crystal facets; a small amount of dark-gray to brownish-black and black carbonaceous and somewhat sideritic shale; the top forty feet of this sandstone is very light to light-gray, some brownish-gray (moderately to highly sideritic), fine- to medium-grained, somewhat chloritic and micaceous, considerable dark-gray to black (carbonaceous) and brownish-black (sideritic) shale; 584 to 590', considerable dark-gray to black and brownish-black (sideritic) shale, some brownish-gray, sideritic sandstone; 718-727', a moderate amount of dark-gray to brownish-black and black, partly sideritic shale, some medium light gray, moderately sideritic sandstone; at the bottom a small amount of red ferruginous cement
735	739	4	Sandstone, light-gray with brownish-gray streaks, fine-grained, highly sideritic in part, 50%; shale and siltstone, medium- to dark-gray (highly micaceous), grayish-black to black (highly carbonaceous), dark yellowish brown to very dusky brown (highly sideritic), 50%; a small amount is ferruginous
739	743	4	Shale, medium dark to dark-gray, soft, highly sideritic in part, some dark to dusky yellowish brown, highly sideritic shale
743	747	4	Shale, medium dark to dark-gray, some dark to dusky yellowish brown (sideritic), soft, 60%; sandstone, light-gray to yellowish-gray, fine to very fine grained, 40%
747	750	3	Shale, medium dark to dark-gray with black, highly carbonaceous streaks, 60%; sandstone (very fine) to siltstone, light-gray to brownish-gray (sideritic), some dark yellowish brown (highly sideritic), somewhat micaceous, 50%
750	753	3	Shale, medium dark gray, some dark-gray with black carbonaceous streaks, and some dark, sideritic spherulites; some light to medium-gray siltstone
753	761	8	Sandstone, light to medium-gray, some greenish-gray, highly micaceous and kaolinitic, some chlorite, very fine grained to siltstone, shaly in part, 70%; shale, medium dark to dark-gray with black carbonaceous streaks, 30%; some dusky-brown to blackish-red, sideritic shale
761	769	8	Siltstone to very fine sandstone, very light to medium-gray, micaceous, some carbonaceous material, 50%; shale, medium-gray to brownish-gray (sideritic) to black (carbonaceous), 10%; sandstone, white, medium-grained to very coarse grained, quartzose, 40%
769	818	49	Sandstone, white at the top to very light gray in the middle part to light-gray toward the bottom (small amount of carbonaceous material), medium- to fine-grained, some coarse grains, but at the top and bottom medium to very coarse grained, quartzose, subangular to subrounded
818	824	6	Conglomerate, very light gray, mostly quartz, some brownish-black and black, carbonaceous and sideritic shale

Top. Bottom. Thickness.

824 - 830	6	Conglomerate, very light gray, mostly quartz, with some brown black and black, carbonaceous and sideritic shale, 40%; sandstone, brownish-gray to medium-gray, fine- to medium-grained, moderately to highly sideritic, some carbonaceous material, some chlorite
830 - 849	19	Siltstone and shale (very silty), medium dark to dark-gray, some brownish-gray, slightly to moderately sideritic, contains mica and carbonaceous material; some light-gray to brownish-gray, sideritic sandstone, at the top; in the middle, some medium-gray, fine-grained sandstone; at the bottom, some black "coaly" shale and some olive-gray, slightly sideritic siltstone; a small amount of dark yellowish brown, highly sideritic shale throughout the interval
849 - 864	15	Siltstone, medium light to medium-gray, very sandy, highly micaceous; contains chlorite, carbonaceous, and kaolinitic material; small amount of dusky-brown, sideritic shale
864 - 876	12	Shale, medium- to dark-gray, some greenish-gray, some grayish-black to black in upper part, soft; some light-gray to brownish-gray, silty, carbonaceous, sideritic sandstone at the top; some medium-gray to brownish-gray, micaceous siltstone and silty shale at the bottom
876 - 882	6	Shale, medium- to dark-gray, some brownish-black and black, soft, 40%; siltstone, medium light to medium-gray, coarse, highly micaceous and kaolinitic, contains some chlorite, slightly sideritic, 60%; small amount of dark yellowish brown, sideritic shale
882 - 889	7	Sandstone, medium light gray, some light-gray and medium-gray fine to very fine grained, chloritic and kaolinitic, moderate amount of brownish-black to black (carbonaceous) shale grains, somewhat micaceous, some dark yellowish brown (sideritic) and some very dusky-red (ferruginous) cementing material
889 - 896	7	Shale, medium- to dark-gray, some brownish-gray, (somewhat sideritic), some black (carbonaceous) and dark yellowish brown (highly sideritic), 50%; sandstone, light to medium light gray, fine-grained, chloritic, with iron oxides and siderite cementing material, many of the grains are shale fragments, somewhat micaceous, 50%
896 - 956	60	Sandstone, light to medium light gray, some light brownish gray at the bottom, fine-grained, fine- to medium-grained in part, chloritic, many of the grains are dark to black shale fragments, contains siderite, carbonaceous material, iron oxides, and clayey material as a cement, the chlorite content decreases toward the bottom; near the bottom, dark streaks of highly sideritic and carbonaceous shaly material; at the bottom, considerable iron oxide and siderite cementing material
956 - 966	10	Sandstone, medium light gray to light brownish gray, fine-grained, chloritic, siderite and iron oxide cement, 30%; shale and siltstone, medium-gray to brownish-gray, highly micaceous, some black (highly carbonaceous), some dark yellowish brown (highly sideritic), 70%
966 - 986	20	Shale, medium to medium dark gray, some dark-gray to black (highly carbonaceous), some dark yellowish brown (highly sideritic); considerable interbedded, medium light gray to brownish-gray, moderately to highly sideritic (with very highly sideritic and carbonaceous shaly streaks), micaceous, fine sandstone to coarse siltstone

(Contd. on p. 5)

Top. Bottom. Thickness.

986 - 996	10	Shale, medium- to dark-gray (micaceous), some black (carbonaceous); considerable interbedded, fine sandstone to coarse siltstone, medium light to medium-gray, slightly to moderately sideritic, micaceous
996 - 1003	7	Siltstone, brownish-black to black, sandy, very shaly, very highly carbonaceous and sideritic, micaceous; considerable interbedded, medium light gray to brownish-gray, fine to very fine grained sandstone, moderately sideritic, chloritic; small amount of medium- to dark-gray, dark yellowish brown (highly sideritic) shale
1003 - 1010	7	Shale (silty) and siltstone, light olive gray to brownish-gray and medium-gray, some dark-gray to black (highly carbonaceous), 60%; sandstone, medium light gray to medium-gray, fine-grained, chloritic, siderite and some iron oxide cement, 30%; trace of coal (Pocahontas No. 3?)
1010 - 1050	40	Sandstone, medium light gray with some light- and some medium-gray in the upper part, brownish-gray with some medium-gray in the lower part, fine-grained, very fine grained at the top, chloritic and micaceous, highly micaceous at the top, chloritic and micaceous, highly micaceous at the top, slightly to moderately sideritic (cement) in the upper part, moderately sideritic in lower part, highly sideritic at the bottom (cement and concretions?), slightly calcareous near the center
1050 - 1055	5	Shale, medium- to dark-gray, some grayish-black to black (highly carbonaceous), 50%; sandstone, light-gray, very fine to fine-grained, kaolinitic, some mica and chlorite, slightly sideritic, 50%
1055 - 1097	42	Sandstone, white to light-gray, light-gray to light brownish gray at the top, fine-grained, slightly to moderately sideritic and fine to very fine grained at the top; small amount of dark-gray to black (carbonaceous) and dark yellowish brown (sideritic) shale throughout the interval
1097 - 1104	7	Shale, (very silty) to siltstone, medium- to dark-gray and brownish-gray, highly micaceous, slightly to highly sideritic, contains dark streaks of highly sideritic and highly carbonaceous material
MAUCH CHUNK GROUP, 1641 FEET		
1104 - 1117	13	Siltstone and shale, light olive gray, highly spotted with dark to dusky tallowish brown siderite spherulites, contains considerable muscovite and some kaolinitic material; a moderate amount of dark-gray to black (highly carbonaceous) shale
1117 - 1125	8	Siltstone and shale, greenish-gray to light-gray, some light-gray to light olivegray, (highly sideritic - spherulites), slightly to moderately sideritic, highly micaceous; small amount of dark-gray to black (carbonaceous) shale
1125 - 1133	8	Siltstone and shale (silty), greenish-gray, some medium-gray to brownish-gray (sideritic), moderately calcareous and dolomitic in part, moderately to highly sideritic in part
1133 - 1142	9	Shale and silty shale, medium- to dark-gray, grayish-brown to dusky-brown, greenish-gray, some grayish-black to black (carbonaceous), sideritic (spherulites) and micaceous in part; some of the greenish-gray is siltstone
1142 - 1147	5	Siltstone, medium and medium dark gray to greenish-gray, highly micaceous, sideritic in part, some carbonaceous material; small amount of dark-gray to black (carbonaceous) shale

Top.	Bottom.	Thickness.	
1147	- 1157	10	Siltstone, medium- to dark-gray, highly micaceous, shaly, carbonaceous, slightly to moderately sideritic, contains highly sideritic and highly carbonaceous streaks
1157	- 1181	24	Sandstone (very fine) to siltstone (coarse), light-gray to medium-gray and brownish-gray, with brownish-black to black (highly carbonaceous) streaks, carbonaceous, micaceous, some kaolinitic material, slightly to moderately sideritic, slightly dolomitic
1181	- 1189	8	Sandstone, light to medium light gray and brownish-gray with brownish-black to black (highly carbonaceous and micaceous, shaly, streaks), fine to very fine grained, slightly to moderately sideritic, slightly calcareous, kaolinitic, micaceous
1189	- 1193	4	Siltstone to sandstone (fine), light- to medium dark gray, somewhat shaly, highly micaceous and kaolinitic, some carbonaceous material, slightly to moderately sideritic, 70%; sandstone, very light to light-gray, medium-grained, some chlorite, a little siderite, 30%
1193	- 1201	8	Sandstone, very light to light-gray, some medium light gray, fine- to medium-grained, subrounded, slightly calcareous, slightly to moderately sideritic, highly sideritic in part, kaolinitic, some chlorite
1201	- 1211	10	Sandstone, light- to medium-gray, very fine to fine-grained, kaolinitic, chloritic, slightly calcareous, slightly to moderately sideritic, shaly (highly carbonaceous) and micaceous) towards the bottom; some medium dark to dark-gray, micaceous, silty shale in the upper and middle parts
1211	- 1216	5	Shale (silty) to siltstone (shaly) to sandstone (fine), medium dark gray to grayish-black (highly micaceous), somewhat carbonaceous), light- to medium-gray and brownish-gray (slightly to moderately sideritic, chloritic, kaolinitic); some moderate-brown to dark yellowish brown, highly sideritic siltstone
1216	- 1221	5	Shale (silty) to siltstone (shaly), medium dark to dark-gray, some brownish-gray, highly micaceous, slightly sideritic, moderately sideritic in part
1221	- 1230	9	Sandstone, light to medium light gray and brownish-gray, fine to very fine grained, very fine grained to siltstone (with black, carbonaceous and highly micaceous streaks) at the top; kaolinitic, micaceous, somewhat chloritic, moderately sideritic (at the top) to slightly sideritic (at the bottom)
1230	- 1250	20	Sandstone, very light to light-gray, medium-grained, fine- to medium-grained at the top, the quartz is subangular to subrounded, some secondary crystal facets, chloritic, very slightly calcareous at the top, moderately calcareous and dolomitic in the lower part to highly dolomitic at the bottom, slightly sideritic, some of the grains are dark-gray shale; considerable brownish-gray to dark-gray, highly micaceous, slightly sideritic shale in the upper and middle parts
1250	- 1260	10	Shale, grayish-brown and dusky-brown to brownish-gray, 80% at top to 50% at the bottom; shale, greenish-gray to light olive gray to olive-gray, somewhat calcareous, highly dolomitic in part, some carbonaceous material, 20% at the top to 50% at the bottom.

(Contd. on p. 7)

Top. Bottom. Thickness.

1260 - 1265	5	Shale, grayish- and dusky-brown to brownish-gray; light olive gray to olive-gray (calcareous and dolomitic), medium-gray to greenish-gray (shale and siltstone); some light-gray to light greenish gray, dolomitic, fine-grained sandstone; small amount of dark-gray to black (carbonaceous) shale
1265 - 1278	13	Sandstone (fine, light-gray to light greenish gray), to siltstone (medium light gray to greenish-gray), contains some chlorite, mica, kaolinitic material, and some shale, moderately calcareous and dolomitic; considerable interbedded shale, grayish- and dusky-brown to brownish-gray, greenish-gray to light olive gray (dolomitic) and calcareous, to medium- and dark-gray
1278 - 1281	3	Siltstone, greenish-gray to olive-gray, slightly to moderately sideritic; some medium to dark-gray shale; small amount of black shale
1281 - 1336	55	Sandstone, light-gray to medium light gray, mostly light-gray in the middle part, fine to very fine grained, very fine grained to siltstone at the top (some medium-gray and brownish-gray), kaolinitic, somewhat carbonaceous and chloritic, slightly to moderately sideritic, moderately dolomitic; slightly calcareous; some grayish-brown to dusky-brown shale at the top; a moderate amount of medium-gray, micaceous shale in the lower part
1336 - 1339	3	Shale and siltstone, medium- to dark-gray, somewhat sideritic, 80%; sandstone, light-gray, fine to very fine grained, 20%
1339 - 1340	1	Shale, medium- to dark-gray, 40%; sandstone, very light to light-gray with medium light to medium-gray streaks (fine-grained), fine to medium-grained, 60%; small amount of dark yellowish brown, highly sideritic shale
1340 - 1352	12	Sandstone, very light to light-gray in the upper part, light-gray to light brownish gray in the lower part, fine- to medium-grained, quartz grains are subangular to subrounded showing some secondary crystal facets, slightly calcareous and dolomitic in the upper part; a moderate (at the middle) to a large amount (at the bottom) of plate to moderate yellowish brown dolomite and dark to dusky-brown siderite
1352 - 1357	5	Shale, medium dark to dark-gray; small amount of dark to dusky yellowish brown sideritic shale; small amount of light-gray, fine- to medium-grained sandstone
1357 - 1360	3	Shale, grayish-black to black (highly carbonaceous), some dark-gray, 50%; sandstone, very light gray to light olive gray, slightly to moderately sideritic, 50%
1360 - 1380	20	Sandstone, very light to medium light gray (with brownish-gray to black, highly carbonaceous, shaly streaks at the bottom), very fine grained, micaceous in part, kaolinitic in part, moderately dolomitic and somewhat sideritic at the top, slightly sideritic toward the bottom
1380 - 1384	4	Sandstone, light- to medium-gray, very fine grained, silty, 20%; shale and siltstone, dark-gray to grayish-black, some medium dark gray, sideritic in part, micaceous, 80%; small amount of dark to dusky yellowish brown siderite; small amount of pyrite
1384 - 1413	29	Shale (silty) and siltstone, dark-gray to grayish-black, some olive-black, some medium dark gray, micaceous, slightly to moderately sideritic, highly sideritic in part; some light-gray, very fine grained sandstone at the top (cavings?)

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Top.	Bottom.	Thickness.	
1413	- 1474	61	Shale, dark-gray to grayish-black, some olive-black and brownish-black, some medium dark gray, some moderately brown to brownish-gray in upper part, slightly sideritic, calcareous and dolomitic in part at the bottom
1474	- 1482	8	Shale, dark-gray to grayish-black, 50%; sandstone, light-gray, very fine grained, 50%
1482	- 1503	21	Sandstone, light-gray and pinkish-gray to light brownish gray, very fine grained, kaolinitic, slightly chloritic and micaceous, somewhat dolomitic and sideritic in the upper part to very slightly dolomitic and sideritic at the bottom; considerable interbedded, dark-gray to grayish-black shale in the upper part
1503	- 1510	7	Sandstone (very fine) to siltstone, light-gray to light brownish gray, kaolinitic, sideritic in part, 30%; shale, medium dark gray to grayish-black (with black, highly carbonaceous streaks); some dark yellowish brown, sideritic shale; small amount of grayish-red to very dusky red shale
1510	- 1553	43	Shale, medium dark gray to grayish-black (with black highly carbonaceous streaks at the bottom) to siltstone, medium light to medium and brownish-gray (somewhat sideritic), micaceous and kaolinitic
1553	- 1558	5	Shale, medium dark gray to grayish-black (with some black carbonaceous streaks), 70%; sandstone, light-gray, very fine grained, silty, 30%
1558	- 1563	5	Sandstone, light-gray, very fine grained, silty, subrounded to rounded, somewhat sideritic; some medium dark to dark-gray shale
1563	- 1581	18	Shale, greenish-gray, some medium-gray, small amount of siderite, soft, silty and sandy at the bottom to siltstone and very fine sandstone; some light-gray, very fine grained, with silt and fine sand, calcareous sandstone in the upper part
1581	- 1585	4	Shale, greenish-gray, 30%; shale and siltstone, medium- to dark-gray, some olive-gray (slightly sideritic), some grayish-black to black (carbonaceous), 70%; small amount of white, medium-grained sandstone
1585	- 1640	55	Sandstone, white to light-gray, 1585-1620' (medium-grained but fine-grained in part); 1620-1627' (fine- to medium-grained); 1627-1630' (fine to very fine grained), and from 1630 to 1640' (very fine grained), subangular to subrounded, mostly quartz, slightly calcareous at the bottom; a large amount of greenish-gray, dark-gray to grayish-black shale (probably cavings)
1640	- 1646	6	Shale, medium-gray to dark-gray, soft, dolomitic in part
1646	- 1682	36	Shale, highly calcareous, highly dolomitic, moderately sideritic, medium- to dark-gray in the upper part to a somewhat sideritic, dolomitic, shaly limestone, brownish-gray to brownish-black with light-gray spots in the lower part (Avis Limestone)
1682	- 1691	9	Limestone, brownish-gray to brownish-black, dolomitic, shaly, 20%; shale, grayish-red to grayish-brown, medium- to dark-gray, 70%; siltstone, greenish-gray to brownish-gray and grayish-brown, 10%
1691	- 1801	110	Shale and clay-shale, grayish-red to grayish-brown, a little dark-gray to black (carbonaceous), calcareous and dolomitic in part, at the top, some brownish-gray to medium-gray and a little greenish-gray; 1735-1741', some grayish-red to dusky-brown siltstone; 1747-1753', considerable interbedded medium-

Top. Bottom. Thickness.

Top.	Bottom.	Thickness.	
			gray to brownish-gray and greenish-gray shale; at the bottom, considerable brownish-gray and some medium- to dark-gray shale
1801	1818	17	Shale, grayish-red to grayish-brown, medium-gray to dark-gray, some black (carbonaceous); considerable greenish-gray and brownish-gray shale and siltstone in the lower part, part of the shales are calcareous and dolomitic and highly dolomitic in the middle part
1818	1824	6	Shale, (silty) and siltstone, medium light to medium-gray, partly dolomitic; considerable dark-gray to black (carbonaceous) and some grayish-red to grayish-brown shale
1824	1832	8	Shale, grayish-red to grayish-brown, calcareous in part, 60%; shale, medium-gray and greenish-gray, dolomitic in part, 40%
1832	1849	17	Shale and siltstone, very dusky red to dusky-brown at the top to grayish-red and grayish-brown at the bottom, somewhat calcareous and dolomitic
1849	1858	9	Clay and shale, grayish-red to grayish-brown and dusky-brown, slightly calcareous and dolomitic
1858	1869	11	Shale, grayish-brown and dusky-brown to very dusky red, slightly dolomitic in part, 50%; clay-shale and shale, medium to medium dark gray, some greenish-gray, some brownish-gray, moderately dolomitic, somewhat calcareous in part
1869	1922	53	Shale, grayish-red to grayish-brown and dusky-brown at the top, and grayish-brown to dusky-brown at the bottom, a large amount of grayish-brown to dusky-brown siltstone in the middle part, a large amount of medium-gray to brownish-gray shale below the middle part, slightly calcareous and slightly dolomitic in part
1922	1963	41	Siltstone, greenish-gray, slightly calcareous, somewhat dolomitic, kaolinitic, somewhat micaceous and chloritic; some medium-gray to greenish-gray shale (considerable at the top); some grayish-red to grayish-brown shale at the top (cavings?); at the bottom, a moderate amount of medium-gray to brownish-gray dolomite and some light brownish gray to olive-gray calcareous dolomite
1963	1972	9	Shale, grayish-brown to dusky-brown, greenish-gray to medium- and dark-gray, some brownish-gray; some light olive gray to brownish-gray, somewhat calcareous dolomite, shaly in part
1972	1999	27	Siltstone and shale, greenish-gray to medium-gray, olive-gray to brownish-gray, some grayish-red to grayish-brown, some dark-gray to black; small amount of light olive gray to greenish-gray dolomite; 1979 to 1985', a large part is medium dark gray to grayish-black shale with considerable medium-gray to brownish-gray calcareous dolomite
1999	2019	20	Shale and siltstone, grayish-red to grayish-brown to brownish gray, medium-gray to greenish-gray (somewhat dolomitic), some dark-gray
2019	2024	5	Shale and siltstone, medium dark to dark-gray with a few black "coaly" streaks, dolomitic in part, a little grayish-red to grayish-brown; some grayish-black to black dolomite; small amount of pyrite; a small amount of light-gray, very fine sandstone
2024	2047	23	Sandstone, greenish-gray to light- and medium-gray, very fine to fine-grained, some siltstone, slightly calcareous in part; a large amount of medium dark to dark-gray shale and siltstone at the top and middle part; 2033 to 2036', shale, dark-gray to grayish-black with some micaceous and carbonaceous

Top. Bottom. Thickness.

Top.	Bottom.	Thickness.	
			siltstone and some sandstone (the sandstone is very light to light-gray in the bottom part of the interval
2047	2059	12	Shale, medium dark to dark-gray; some dark-gray to grayish-black, fossiliferous, calcareous dolomite and dolomite shale, and some medium-gray to greenish-gray siltstone in the upper part
2059	2073	14	Shale and some siltstone, greenish-gray, medium- to dark-gray, grayish-red to grayish-brown, some grayish-black to black (carbonaceous), greenish-gray and gray in the upper part, grayish-red and grayish-brown to greenish-gray and medium-gray in the lower part
2073	2090	17	Siltstone and shale, medium light gray to dark-gray; a moderate amount of grayish-black to black (highly carbonaceous) shale in the upper part; some greenish-gray siltstone in the lower part; small amount of limestone
2090	2094	4	Shale (calcareous and dolomitic) to a dolomitic limestone (shaly), grayish-brown to grayish-red and very dusky red, some brownish-gray and greenish-gray; considerable greenish-gray to medium- and dark-gray shale; some fine-grained, pinkish-gray to very light gray sandstone at the bottom
2094	2096	2	Sandstone, white to pinkish-gray with light-gray to grayish-red streaks, moderately calcareous and somewhat dolomitic; considerable greenish-gray to medium- and dark-gray, grayish-red and some black shale (cavings?)
2096	2101	5	Shale, grayish-brown to grayish-red and very dusky red, some brownish-gray, some medium- to dark-gray; small amount of light olive gray to grayish-red limestone; some dolomitic calcareous, fine-grained sandstone
2101	2117	16	Siltstone to very fine sandstone, greenish-gray to medium- and brownish-gray; considerable grayish-brown to grayish-red and very dusky red shale in the upper part
2117	2121	4	Sandstone, white to very light-gray, very fine grained, 60%; shale, medium dark to dark-gray, silty, micaceous, 40%; small amount of greenish-gray to medium-gray, very fine sandstone
2121	2145	24	Sandstone, white to light-gray, (with some medium- to dark-gray, shaly streaks), very fine grained, mostly quartz, slightly calcareous at the bottom; some medium-to dark-gray, silty, micaceous shale; considerable greenish-gray, soft shale in the bottom 10 feet
2145	2149	4	Shale and some siltstone, greenish-gray to medium-gray, medium dark gray to black (carbonaceous); some olive-gray to medium- and dark-gray dolomite; at the top, a small amount of white to light-gray, very fine grained sandstone
2149	2157	8	Shale, medium dark gray to grayish-black, a moderate amount of black (highly carbonaceous with a little pyrite); some greenish-gray siltstone; some grayish-brown to grayish-red shale at the bottom
2157	2174	17	Shale with siltstone toward the bottom, grayish-brown to grayish-red, greenish-gray to medium-gray, some dark-gray to grayish-black, considerable greenish-gray to medium- and brownish-gray in the lower part; small amount of light olive gray to dark-gray, calcareous, dolomitic shale

(Contd. - p. 11)

Top. Bottom. Thickness.

2174 - 2178	4	Shale, dark-gray to grayish-black, some black (highly carbonaceous), some grayish-brown to grayish-red, some greenish-gray to medium-gray (calcareous and dolomitic); some pyrite; some very light gray, fine-grained sandstone
2178 - 2248	70	Sandstone, white to very light gray, with very light gray to light greenish gray at the top, light-gray to light-brownish-gray at the bottom, fine-grained, subangular to subrounded, 2178 to 2195' (very fine grained); 2207 to 2211' (fine to very fine grained), very fine grained for the bottom 10 feet, mostly quartz, small amount of shale scattered throughout the interval; 2178 to 2191' and 2237 to 2240', considerable dark-gray to black shale; trace of calcite (cement)
2248 - 2260	12	Dolomite, brownish-gray to medium- and dark-gray, shaly; shale, greenish-gray to medium-gray, dolomitic; the lower part is mostly greenish-gray shale with some dark-gray to black shale; a small amount of light-gray, fine-grained, sandstone at the top
2260 - 2278	18	Shale, greenish-gray to medium-gray, medium-gray to black (carbonaceous); shale (silty) to siltstone brownish-gray to grayish-brown; some greenish-gray siltstone and medium- to dark-gray dolomite, at the top; at the bottom, a small amount of very fine grained, light greenish gray to light-gray sandstone
2278 - 2296	18	Sandstone, light-gray to light greenish gray, very fine grained to a kaolinitic and micaceous, medium light to dark-gray siltstone containing some carbonaceous material; considerable interbedded, dark-gray to black (highly carbonaceous) shale; at the top, a large amount of greenish-gray to medium-gray shale, some grayish-brown to brownish-gray shale, and some medium dark to dark-gray shaly dolomite (cavings?)
2296 - 2325	29	Shale and siltstone, greenish-gray to medium-gray; shale, medium- to dark-gray, some grayish-black to black (carbonaceous); mostly greenish-gray in the upper part to mostly dark-gray in the bottom part; some medium- to dark-gray dolomite and dolomitic shale at the top; some brownish-gray and dark-gray limestone and calcareous shale toward the bottom
2325 - 2335	10	Shale, dark-gray to grayish-black, slightly to moderately dolomitic, and siltstone, medium-gray in the upper part; shale, dark-greenish gray to olive-gray, soft, 60% in the upper part and shale, dark-gray to grayish-black dolomitic in part, 40%, in the lower part of the interval
2335 - 2351	16	Siltstone and some shale, grayish-red to grayish-brown, brownish-gray to greenish-gray, micaceous; some dark-gray to grayish-black, somewhat dolomitic shale
2351 - 2357	6	Shale, medium-gray to grayish-black, moderately to highly dolomitic; shale, greenish-gray (soft), some brownish-gray to grayish-brown; some dark greenish gray to olive-gray and medium-gray siltstone
2357 - 2374	17	Shale (dolomitic at top, calcareous at bottom) to calcareous dolomite in the upper part to a dolomitic limestone in the lower part, medium-gray to dark-gray; considerable greenish-gray to medium-gray soft shale at the top and some in the lower part
2374 - 2387	13	Dolomite (highly calcareous) to limestone (highly dolomitic), dark-gray to grayish-black with some medium-gray spots, shaly in part; a moderate amount of greenish-gray to medium- and dark-gray shale in the upper part

Top.	Bottom.	Thickness.	
2387	- 2393	6	Limestone, dark-gray to grayish-black, highly dolomitic; shale, dark-gray to black, highly carbonaceous ("coaly" in part); small amount of light-gray to medium-gray, very fine grained sandstone
2393	- 2395	2	Sandstone, very light to light-gray, very fine grained; a very large amount of dark-gray to black (carbonaceous) shale and dark-gray to grayish-black limestone (cavings)
2395	- 2494	99	Sandstone, white to light-gray, light brownish gray in part, very fine grained, fine to very fine grained in part, 2437 to 2450' and 2480 to 2494' (fine to very fine grained), very slightly calcareous, mostly quartz, slightly carbonaceous (scattered streaks and specks of carbonaceous material), shaly in part; a small amount of dark-gray to black, silty and carbonaceous shale throughout the interval; a large amount of grayish-black to black, highly carbonaceous shale in the upper 25 feet (probably mostly cavings) (Maxton Sandstone, 2392-2506', from driller's log)
2494	- 2511	17	No samples
2511	- 2562	51	Shale, dark-gray to grayish-black, some black (carbonaceous), slightly calcareous; limestone, dark-gray to grayish-black, some brownish-black, some medium- to dark-gray, dolomitic in part, contains many fossil fragments, very shaly in part; mostly shale with some medium- to dark-gray limestone at the top; mostly dark-gray to grayish-black limestone with some dark-gray to grayish-black shale at the bottom
2562	- 2580	18	Limestone, dark-gray to brownish-black and black, some medium-gray spots, very shaly, contains many fossil fragments, somewhat dolomitic in part, oolitic in part; a moderate amount of medium-dark to grayish-black shale at the top
2580	- 2595	15	Limestone, grayish-black to black, some brownish-black at the bottom, some light- to medium-gray (matrix), clastic texture, highly oolitic, mostly oolites at the top, contains many fossil fragments in the middle and lower parts, very shaly in part
2595	- 2602	7	Dolomite, greenish-gray, calcareous to shale, medium-gray and greenish-gray, somewhat calcareous and dolomitic, the shale contains many fossil fragments, mostly shale in the lower part; some grayish-black limestone at the top
2602	- 2636	34	Shale, medium- to medium dark gray, some greenish-gray, highly calcareous (mostly fossil fragments), somewhat dolomitic
2636	- 2656	20	Shale, medium and medium dark gray to dark greenish gray, highly fossiliferous, highly calcareous (fossil fragments), somewhat dolomitic
2656	- 2673	17	Limestone, brownish-gray to brownish-black, shaly, somewhat fossiliferous to a highly calcareous shale that is highly fossiliferous, mostly shale at the top but very little at the bottom
2673	- 2678	5	Shale, dark greenish gray to olive-gray, highly calcareous, moderately dolomitic, somewhat fossiliferous, 70%; shale, medium-gray and greenish-gray to dark-gray, some black, somewhat calcareous and dolomitic, 30%; small amount of dark-gray to brownish-black limestone
2678	- 2695	17	Shale, greenish-gray to medium-gray (highly dolomitic), calcareous, grayish-brown to grayish-red and brownish-gray (highly calcareous, dolomitic); the greenish-gray is highly calcareous in part (mostly fossils)

Top.	Bottom.	Thickness.	
2695	- 2711	16	Limestone, medium- to dark-gray, highly fossiliferous, partly shaly to highly calcareous (mostly fossil fragments), shale, greenish-gray to medium-gray, silty
2711	- 2732	21	Shale, medium dark gray (highly calcareous, dolomitic) at the top to a brownish-gray, very shaly limestone and highly calcareous shale at the bottom; the limestone has medium-gray, highly fossiliferous spots; the shales have many fossil fragments
2732	- 2738	6	Shale, brownish-black to black, highly calcareous at the top to a very shaly, brownish-black limestone at the bottom
2738	- 2745	7	Shale, medium dark to dark-gray, very silty, very highly calcareous to a very silty and shaly limestone, brownish-black to dark-gray; considerable medium-gray limestone with light-gray fossil fragments
GREENBRIER LIMESTONE, 393 FEET			
2745	- 2753	8	Limestone, some medium-gray (fossiliferous) at the top, brownish-gray to medium-gray with white to light-gray spots (mostly oolites), clastic texture; considerable medium dark to dark-gray and brownish-black highly calcareous shale (cavings?) (Big Line, 2747-3144', from driller's log)
2753	- 2756	3	Limestone, medium-gray to brownish-gray with white to light-gray spots, clastic texture, mostly oolites, occasional pore space between the oolites; some medium to dark-gray shale
2756	- 2764	8	Limestone, brownish-gray to medium-gray with light-gray spots, some light brownish gray, moderately to highly oolitic, somewhat sandy and silty
2764	- 2782	18	Limestone, light brownish gray (at the top) to brownish-gray and brownish-black with light brownish gray spots (in middle and lower parts), clastic texture, mostly oolites with calcite cement, slightly sandy in part
2782	- 2789	7	Limestone, light to dark brownish gray, oolitic in part
2789	- 2795	6	No sample
2795	- 2798	3	Limestone, brownish-gray, some light brownish gray; small amount of dark-gray shale; small amount of white dolomite?
2798	- 2809	11	Limestone, brownish-gray to brownish-black, some light brownish gray, clastic texture, slightly sandy, fossiliferous and oolitic in part, very slightly dolomitic in part, an increase in the amount of oolitic and fossiliferous limestone toward the bottom; small amount of white dolomite?
2809	- 2825	16	Limestone, brownish-gray to dark-gray (with a large amount of white to light-gray) at the top, brownish-gray to dark-gray and brownish-black (with some light-gray) at the bottom, clastic texture, a large amount of fossil fragments in the upper part, oolitic
2825	- 2856	31	Limestone, brownish-gray to dark-gray, some brownish-black, some light-gray to light brownish gray, crystalline texture except for oolitic streaks or layers, fine-grained, medium- to coarse-grained in part, somewhat shaly and silty, slightly dolomitic in part
2856	- 2874	18	Limestone, brownish-black (at the top) to dark brownish gray (at the bottom), crystalline texture, very fine grained, some coarser grains, shaly and silty, some fossil fragments, somewhat oolitic

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Top. Section. Thickness.

- 274 - 275 24 Limestone, brownish-gray to yellow-gray, and light-gray, very shaly and silty in upper part to somewhat shaly and silty at the bottom, highly calcitic at the top, slightly dolomitic in part, crystalline texture except at top, very fine to fine-grained, surface-grained in part
- 275 - 276 27 Limestone, light brownish gray to yellow-gray, and brownish-gray limestone and greenish-gray highly calcareous, dolomitic beds at the top, somewhat shaly in the upper part, very highly calcitic at the top and middle, somewhat dolomitic in part, crystalline texture, very fine grained, and surface and wave grain
- 276 - 277 14 Limestone, brownish-gray to yellow- and light-gray to brownish-black, and light-gray, shaly and very shaly in part, slightly to moderately dolomitic in part, crystalline texture, fine-grained
- 277 - 280 21 Limestone, light brownish gray to brownish- and yellow-gray, very shaly, slightly silty at the top to slightly shaly and very silty at the bottom, crystalline texture, fine-grained, slightly to moderately dolomitic in part
- 280 - 281 27 Limestone, brownish-gray to yellow-gray, and very light to light-gray (mostly white), shaly texture, highly calcitic, silty in part, and shaly limestone near the middle, a very large amount of light-gray, highly calcitic limestone toward the bottom
- 281 - 282 14 Limestone, light olive gray and greenish-gray to brownish-gray, very shaly and silty, moderately to highly dolomitic; considerable brownish-gray limestone at the bottom
- 282 - 283 19 Limestone, brownish-gray and yellow- dark gray to brownish-black, and yellow-gray, very slightly to slightly dolomitic, crystalline texture, fine-grained; considerable yellow-gray to brownish-gray, highly calcareous, silty shaly at the bottom
- 283 - 284 19 Limestone, light brownish gray and light-gray (at the top), to brownish-gray (at the bottom), very slightly to somewhat dolomitic, crystalline texture, very fine grained, somewhat silty and shaly; some dark brownish gray, dolomitic limestone at the bottom
- 284 - 285 15 Limestone, dark brownish gray and yellowish to brownish-black, crystalline texture, fine-grained, slightly to moderately dolomitic, and calcareous dolomite at the bottom
- 285 - 286 19 Marble, brownish-black to black, highly calcareous, very shaly to a dolomitic shaly, somewhat silty; some light- to yellowish-gray and brownish-gray, dolomitic limestone at the bottom
- 286 - 287 15 Argillite with some green, white to light-gray, 70% limestone (brownish-black, dolomitic) to dolomite (yellow- and brown-gray, white-gray), somewhat shaly and silty, and some brownish-gray limestone, 30%
- 287 - 288 14 Dolomite, olive-gray to brownish-gray, very shaly and silty, somewhat shaly, highly calcareous; some yellowish-gray to greenish-gray limestone; a moderate amount of white to light-gray calcite in the upper part
somewhat massive, 50% pure
- 288 - 289 6 Limestone, yellow-gray to greenish- and brownish-gray, shaly (very fine), silty and, slightly dolomitic, 60%; limestone, dark reddish brown to very shaly and and greenish-brown, slightly dolomitic to a silty dolomite, 40%; some a blue-gray to grayish-black dolomite (cont. p. 1) + some

Top. Bottom. Thickness.

3144 - 3188	44	Siltstone and shale (silty), very dusky red to grayish-brown, brownish-gray to greenish-gray and medium-gray, some dusky-red to very dark red in the upper and middle parts, mostly grayish-brown to brownish-gray in the upper part and medium-gray and greenish-gray to brownish-gray toward the bottom, slightly dolomitic at top and bottom, highly micaceous
3188 - 3198	10	Siltstone with some shaly (silty), greenish-gray to brownish-gray with some very dark red in the upper part, greenish-gray to medium-gray with some brownish-gray and a little very dark red in the lower part of the interval, very slightly dolomitic, micaceous and chloritic; considerable medium dark gray shale at the bottom; trace of pyrite
3198 - 3210	12	Siltstone and shale, medium dark to dark-gray (shale), with some greenish-gray to brownish-gray (siltstone) in the upper part, grayish-brown to brownish-gray and greenish-gray (siltstone) with some medium- to dark-gray (shale) in the bottom part, micaceous, the greenish-gray siltstone contains some glauconite?; some medium- to dark-gray limestone (cavings?)
310 - 3222	12	Siltstone, grayish-brown to grayish-red, some greenish-gray to medium- and dark-gray, slightly dolomitic, slightly glauconitic in part, ferruginous (cement giving red-brown color), somewhat micaceous; at the bottom, some brownish-gray to greenish-gray, sandy, akolintitic siltstone; small amount of white dolomite
POCONO FORMATION, 553 FEET		
3222 - 3254	32	Siltstone (coarse) to sandstone (very fine), medium-gray and greenish-gray to light olive gray and light brownish gray at the top to light olive gray and medium-gray at the bottom, kaolinitic, contains grains of rock fragments and a little carbonaceous material; a very large amount of interbedded, medium dark to dark-gray silty shale in the upper part, trace of pyrite; trace of limestone
3254 - 3258	4	Siltstone, light olive gray to medium-gray, kaolinitic, 20%; shale and siltstone, medium-gray to grayish-black (somewhat carbonaceous), micaceous, 80%
3258 - 3298	40	Siltstone (light olive gray and medium- to dark-gray) and shale (medium dark gray to dark-gray, some grayish-black), kaolinitic, micaceous, contains some carbonaceous material, slightly to moderately sideritic in part
3298 - 3302	4	Shale and siltstone, medium- to dark-gray, 60%; sandstone, greenish-gray to light brownish gray and medium-gray, kaolinitic, very slightly pyritic, 40%
3302 - 3311	9	Sandstone, light olive gray to medium-gray and greenish-gray, very fine grained, silty, kaolinitic, contains grains or rock fragments (grayish-brown, dark-gray), very slightly pyritic; small amount of calcite in the lower part
3311 - 3340	29	Siltstone and shale, medium- to dark-gray, micaceous, kaolinitic, some carbonaceous material at the top, slightly to moderately sideritic, very slightly dolomitic at the bottom; a small amount of light- to medium-gray, fine-grained sandstone containing carbonaceous material, some coarse grains
3340 - 3391	51	Sandstone, medium light to medium dark gray, medium dark gray to brownish-gray in lower part and medium light gray to light olive gray for the bottom 15 feet, very fine grained, some medium and coarse grains at the top, carbonaceous, somewhat kaolinitic and micaceous, very slightly calcareous and

Top.	Bottom.	Thickness.	
			sideritic; considerable interbedded, medium- to dark-gray shale and siltstone at the top (cavings?)
3391 - 3400		9	Sandstone, medium light gray and light olive gray to medium-gray, very fine grained, contains brown iron oxide cement, some kaolinite, some mica, and some carbonaceous material, slightly calcareous, 60%; shale, medium dark to dark-gray, some brownish-gray (somewhat sideritic), 40%
3400 - 3481		81	Shale, medium dark to dark-gray; small amount of dark to dusky yellowish brown, sideritic shale and siderite; some light- to medium-gray, kaolinitic siltstone at the bottom; at the top, some light- to medium-gray, very fine grained sandstone (probably cavings)
3481 - 3702		221	Siltstone, light- to medium-gray, kaolinitic, micaceous, some carbonaceous shaly streaks, sideritic in part; interbedded shale, medium dark to dark-gray; small amount of moderate to dark yellowish brown, highly sideritic shale
3702 - 3724		22	Siltstone, dark-gray to grayish-black, shaly, somewhat carbonaceous; siltstone, medium- to dark-gray, kaolinitic and micaceous; shale, medium dark to dark-gray
3724 - 3744		20	Shale, grayish-black to black (highly carbonaceous), some dark-gray, some brownish-black (silty and slightly pyritic) in the lower part; small amount of light- to medium-gray shale and siltstone
3744 - 3765		21	Shale, grayish-black to black (highly carbonaceous), brownish-black (silty, slightly pyritic); some interbedded, light olive gray to medium-gray and brownish-gray (somewhat sideritic) siltstone and shale
3765 - 3775		10	Shale, grayish-black to black (highly carbonaceous), brownish-black (silty, slightly pyritic), medium dark to dark-gray; some siltstone (sandy) to sandstone (very fine grained), light- to medium-gray (Berea); small amount of brownish-gray somewhat sideritic siltstone
			DEVONIAN SHALES, 2859 FEET
3775 - 3810		35	Siltstone and shale, medium light to medium dark gray, kaolinitic, micaceous
3810 - 3819		9	Sandstone (very fine) to siltstone, very light gray to medium light gray, somewhat kaolinitic; interbedded shale, medium dark to dark-gray
3819 - 3854		35	Siltstone, light-gray and light greenish gray to medium-gray, somewhat kaolinitic and micaceous; a large amount of interbedded, shale, medium dark to dark-gray
3854 - 6623		2769	Samples not described
6623 - 6634		11	Shale, black, very highly carbonaceous, moderately to highly calcareous, somewhat dolomitic, contains streaks of highly pyritic shale; small amount of medium- to dark-gray shale; small amount of brownish-gray to dark-gray limestone
			HUNTERSVILLE CHERT, 30 FEET
6634 - 6637		3	Chert, light- to medium-gray and brownish-gray, calcareous to a cherty limestone, 20% to 30%; shale, grayish-black to black, very highly carbonaceous, pyritic, calcareous, ("coaly" in the bottom part), 70% to 80% (mostly cavings?)
6637 - 6642		5	Chert (calcareous) to limestone (cherty), light- to medium-gray and brownish-gray, 40% at top to 80% at bottom; shale, grayish-black to black (very highly carbonaceous), some dark-gray, pyritic in part, calcareous, 60% at top to 20% at bottom (cavings)

Top. Bottom. Thickness.

6642	- 6646	4	Chert (calcareous) and limestone (cherty), light- to dark-gray and brownish-gray, very shaly
6647	- 6648	2	Contains chert but are too highly contaminated to examine
6648	- 6660	12	Chert, calcareous, shaly, too highly contaminated with iron rust and steel chips for detailed description
6660	- 6661	1	Chert, light- to medium-gray (glassy), dark-gray to black (very shaly), calcareous, glauconitic, some pyrite
6661	- 6664	3	Chert (calcareous at top) to limestone (cherty, at bottom), light- to medium-gray (glassy to milky), dark-gray to brownish-gray to black (very shaly)
6664	- 6667	3	Sandstone (very cherty, much of the grains are shale) to shale (sandy and cherty), calcareous; some moderate reddish-brown clay
6667	- 6670	3	Sandstone (very fine to fine-grained, very shaly), to a shale (very sandy), grayish-black to black, most of the grains are quartz and shaly chert with a shale and dolomite matrix, glauconitic
6670	- 6672	2	Chert, very light gray to light-gray (glassy to milky) and dark-gray to black (very shaly), 50% (at top) to 40% (at bottom); sandstone (shaly) to shale (sandy), grayish-black to black, some medium to dark-gray (at the bottom), dolomitic, glauconitic, 50% (at top) to 60% (at bottom) ORISKANY SANDSTONE, 12 FEET
6672	- 6674	2	Sandstone, very light to light-gray, fine to very fine grained, subangular to subrounded, some rounded medium grains, small amount of glauconite (included in chips of the sandstone), slightly calcareous; small amount of limestone; a large amount of dark-gray to black shale and chert (cavings?)
6674	- 6684	10	Sandstone, very light to light-gray, fine-grained, subrounded, some medium (rounded) grains, contains many shale grains and a little glauconite; at the bottom (6683-6684) a large amount of coarse to very coarse grains, some granules. This sample shows very poor sorting and contains much shale. (Conglomeratic or gravel cavings?) HELDERBERG LIMESTONE, 168 FEET.
6684	- 6686	2	Sandstone, medium- to dark-gray, very fine to medium-grained, slightly cherty, slightly glauconitic, moderately to highly carbonaceous, moderately calcareous; some black, very carbonaceous, sandy shale at the bottom
6686	- 6693	7	Sandstone, medium- to dark-gray, some black (particularly in upper part and at bottom), light- to medium-gray (in the lower part), fine- to medium-grained, subrounded to rounded, some coarse well-rounded grains, moderately to very highly carbonaceous, slightly to moderately calcareous
6693	- 6695	2	Sandstone, medium- to dark-gray, fine- to medium-grained, rounded, highly calcareous to a very sandy limestone
6695	- 6700	5	Sandstone, medium- to dark-gray, very fine to fine-grained, some medium (rounded) grains, highly calcareous at top to moderately calcareous at the bottom, somewhat silty and shaly
6700	- 6704	4	Sandstone, light- to medium-gray, some dark-gray, fine-grained, very highly calcareous (at top) to a very sandy limestone (at the bottom)
6704	- 6713	9	Sandstone, white to very light gray, fine to very fine grained, subrounded, some (medium grained rounded) quartz grains, highly calcareous (at the top) to somewhat calcareous (at the bottom), slightly carbonaceous; trace of chert

Top. Bottom. Thickness.

6713 - 6714	1	Limestone (very sandy) to sandstone (highly calcareous), light- to medium-gray, slightly carbonaceous
6714 - 6720	6	Sandstone, very light to light-gray, fine to very fine grained, highly calcareous
6720 - 6722	2	Sandstone (very highly calcareous) to a limestone (very sandy), light- to medium-gray. (6722' corrected to 6720')
6720 - 6725	5	Sandstone, light- to medium-gray, fine to very fine grained, silty, very cherty (6723-6724' very cherty to chert), very highly calcareous
6725 - 6729	4	Chert (sandy) to a sandstone (very fine, very cherty), light-gray, some medium-gray, very highly calcareous; trace of glauconite
6729 - 6734	5	Siltstone, light olive gray to light-gray, some medium-gray, very cherty, very highly calcareous, to a very silty limestone
6734 - 6735	1	Sandstone, light-gray, very fine grained, highly calcareous, cherty
6735 - 6740	5	Limestone, (very sandy) to sandstone (very fine, highly calcareous), light- to medium-gray, very silty, cherty at the top, shaly at the bottom
6740 - 6742	2	Limestone, very light to medium light gray, some dark-gray, very silty and sandy, moderately cherty and shaly
6742 - 6747	5	Limestone, medium- to dark-gray and brownish-gray, very shaly to a highly calcareous shale, very silty, sandy (very sandy at the bottom)), slightly cherty, contains fossil fragments
6747 - 6762	15	Limestone (at the top), very sandy, light- to medium-gray, (a few dark-gray streaks) to a sandstone (at the bottom), fine (rounded) light-gray, very highly calcareous
6762 - 6778	16	Limestone, medium- to dark-gray, and brownish-gray, some light-gray, very sandy and shaly at the top, shaly, and very silty and very cherty in the middle, cherty and shaly and sandy at the bottom, slightly glauconitic, some fossil fragments
6778 - 6782	4	Limestone, light- to medium-gray; chert, white to light-gray; shale (dark-gray to grayish-black, brownish-gray) to a very sandy, very shaly limestone
6782 - 6784	2	Limestone, medium- to dark-gray (very shaly) with light-gray spots, very shaly, very cherty and sandy, contains many fossil fragments
6784 - 6785	1	Limestone, medium- to dark-gray and brownish-gray, very sandy and silty, shaly, cherty
6785 - 6806	21	Limestone, light- to medium-gray with dark-gray spots and streaks, highly fossiliferous, very cherty, shaly and silty, very silty and sandy at the bottom
6806 - 6812	6	Sandstone (light-gray, very fine, highly calcareous), to limestone (very sandy, shaly to very shaly, medium- to dark-gray) and shale (highly calcareous, silty, cherty, dark-gray)
6812 - 6825	13	Shale (dark-gray to grayish-black, highly calcareous) to limestone (brownish-gray to medium-gray, very shaly), very cherty, silty and sandy, mostly shale at the top to mostly limestone at the bottom
6825 - 6839	14	Limestone, dark-gray to grayish-black, some medium-gray, considerable medium-gray at the top, highly fossiliferous, very shaly and cherty at the top to shaly, silty and sandy at the bottom
6839 - 6852	13	Limestone, dark-gray to grayish-black, clastic texture, mostly oolites with light- to medium-gray matrix, somewhat silty and sandy; small amount of pyrite

Top.	Bottom.	Thickness.	CAYUGAN GROUP, 33+ FEET
6852	- 6862	10	Limestone (brownish-black to black, somewhat dolomitic) at the top to dolomite (grayish-black to black, calcareous, very silty) at the bottom, some fossil fragments
6862	- 6879	17	Dolomite, medium dark to dark-gray and grayish-black to black, moderately to highly calcareous; some brownish-black, somewhat dolomitic limestone at the bottom
6879	- 6885	6	Limestone, brownish-black to black, dolomitic and dolomite, grayish-black to black, calcareous
	6889		Total depth