

Company: United Producing Co., Inc.  
 Farm: Yukon Pocahontas Coal Co., et al  
 Well No.: 12-1812  
 Elevation: 1305.6'  
 Total Depth: 6112'  
 Located: Buchanan County  
           11,725' S. of 37°15'  
           5,250' W. of 82°00'  
 Drilling Commenced: 5/28/51  
 Well Completed: 11/16/51  
 Result: Dry hole

Geologic Log  
 Samples studied  
 and described by:  
 John M. Wilson  
 Virginia Division of  
 Mineral Resources  
 May, 1963

## GEOLOGIC LOG

Depth	Thickness	Description
0-1642		No samples
1642-1684	42	Sandstone, grading locally to a sandy Siltstone, white, light gray, moderately cemented, very fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; common biotite, common muscovite, rare carbonaceous material. Nonporous
1684-1691	7	Siltstone, finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with; abundant biotite, abundant muscovite, common iron oxide stains
1691-1715	24	Interbedded; Siltstone, as in 1684-1691, with; Sandstone, white, light gray, well cemented, very fine to fine grained, well sorted, rounded to subangular, interstitially silty, siliceous, with; common biotite, rare muscovite, rare iron oxide stains. Nonporous to slightly porous
1715-1721	6	Sandstone, white, light gray, moderately cemented, very fine to fine grained, well sorted, subangular to angular, interstitially silty, siliceous, with; common biotite, common muscovite, common chlorite, rare carbonaceous material, abundant iron oxide stains. Nonporous to slightly porous

1721-1752	31	Siltstone, locally finely sandy, light to medium gray, moderately soft, flaky, no apparent bedding, locally calcareous, argillaceous, with; abundant biotite, common muscovite, rare carbonaceous material
1752-1842	90	Siltstone, shaly, medium to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; rare biotite, common muscovite
1842-1864	22	Shale, locally silty, dark gray, moderately soft, flaky, good fissility, argillaceous, with; rare muscovite, rare pyrite, common carbonaceous material, common iron oxide stains
1864-1875	11	Limestone, light gray, light brown, light green, moderately hard, fossils (abundant brachiopod fragments, and crinoid stems) no apparent bedding, cryptocrystalline to microcrystalline, with; rare mica, abundant calcite, common carbonaceous material
1875-1906	31	Shale, medium to dark gray, moderately soft, flaky, fair to good fissility, argillaceous, with; rare muscovite, common pyrite, stringers of Limestone, as in 1864-1875
1906-1926	20	Sandstone, white, light gray-green, moderately cemented, very fine to fine grained, well sorted, subrounded to angular, interstitially silty, siliceous, slightly calcareous, with; rare biotite, rare muscovite, common chlorite, rare iron oxide stains, common silty-micaceous partings, Nonporous to slightly porous
1926-1949	23	Siltstone, shaly, dark gray(rare); green, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous; with abundant biotite, common muscovite, common carbonaceous material, abundant iron oxide stains
1949-1987	38	Siltstone, shaly, carbonaceous (locally), medium to dark gray, moderately hard, brittle, poor to fair fissility, argillaceous, with; rare muscovite, rare pyrite, abundant carbonaceous material
1987-2021	34	Sandstone, white, light gray, moderately cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; rare biotite, common muscovite, common chlorite, abundant carbonaceous material, abundant iron oxide stains, abundant silty-micaceous partings (contamination?). Slightly porous
2021-2089	68	Sandstone, white, clear, moderately cemented, fine to medium grained, well sorted, subrounded to angular,

- siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, abundant iron oxide stains. Slightly porous to porous
- 2089-2166 77 Limestone, light to dark gray, moderately hard fossils (brachiopods & crinoids), platy, cryptocrystalline, with; common mica, common pyrite, abundant calcite, common iron oxide staining
- 2166-2193 27 Siltstone, red, green (rare), moderately soft, flaky, no apparent bedding, ferruginous, with; common biotite, abundant muscovite, rare pyrite
- 2193-2221 28 Siltstone, as in 2166-2193, with minor stringers of Sandstone, white, red, moderately cemented, very fine to medium grained, medium sorted, subrounded to subangular, interstitially silty, ferruginous, with; abundant biotite, abundant muscovite. Slightly porous to porous
- 2221-2284 63 Sandstone, white, light gray, poorly cemented, very fine to medium grained, medium sorted, subrounded to angular, interstitially silty, siliceous, with; common biotite, common muscovite, common chlorite, abundant iron oxide stains, stringers of. Nonporous to slightly porous  
Siltstone, locally finely sandy, light to medium gray, red (dark), moderately hard, brittle, no apparent bedding, argillaceous, ferruginous, with; common biotite, common muscovite, abundant pyrite, abundant iron oxide stains
- 2284-2300 16 Siltstone, shaly, medium to dark gray, moderately hard, brittle, poor to fair fissility, argillaceous, with; common muscovite, rare pyrite, rare carbonaceous material, stringers of Limestone, shaly, silty, light gray, green, moderately hard, fragmental (rare) fossil content, platy, cryptocrystalline, with; rare calcite
- 2300-2345 45 Siltstone, locally finely sandy, maroon-drab, moderately hard, brittle, poor to fair fissility, slightly calcareous, argillaceous, with; abundant muscovite, common iron oxide stains
- 2345-2390 45 Siltstone, as in 2300-2345, with stringers of Limestone, shaly, light to dark gray, moderately hard, fragmental (rare) fossil content, no apparent bedding to platy, cryptocrystalline, with; rare mica, common calcite, common carbonaceous material
- 2390-2420 Shale, silty, light to medium gray, moderately soft, flaky, fair to good fissility, (locally) calcareous, argillaceous, with; common biotite, common muscovite, rare pyrite, rare carbonaceous material

2420-2430	10	Shale, as in 2390-2420, with stringers of Sandstone, white, clear, moderately cemented, very fine to fine grained, well sorted, subangular to angular, siliceous, with; rare muscovite, common iron oxide stains. Nonporous to slightly porous
2430-2458	28	Shale, silty, light to dark gray, moderately hard, brittle, fair to good fissility, calcareous (locally), argillaceous, with; rare biotite, rare muscovite, rare carbonaceous material, common iron oxide stains
2458-2493	35	Siltstone, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (locally), argillaceous, with; common biotite, common muscovite, rare pyrite, common carbonaceous material, rare iron oxide stains
2493-2398	5	Sandstone, white, milky white, well cemented, very fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; common biotite, rare muscovite, common iron oxide stains. Nonporous. Siltstone, as in 2458-2493
2498-2505	7	Shale, locally silty, light to medium gray, moderately soft, flaky, fair to good fissility, argillaceous, with; rare biotite, rare muscovite, common carbonaceous material, rare iron oxide stains
2505-2546	41	Siltstone, locally finely sandy, medium gray, red, green, moderately hard, brittle, no apparent bedding, argillaceous, with; common biotite, abundant muscovite, rare carbonaceous material
2546-2572	26	Siltstone, shaly, medium to dark gray, moderately soft, flaky, poor to fair fissility, calcareous (slightly), argillaceous, with; common muscovite, common pyrite, abundant carbonaceous material
2572-2717	145	Siltstone, locally finely sandy, locally shaly, medium to dark gray, red (rare), green, moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (locally), argillaceous, with; common biotite, common muscovite, rare pyrite, common carbonaceous material
2717-2757	40	Siltstone, variegated, locally finely sandy, light to dark gray, red, green, brown (light), moderately hard, brittle, no apparent bedding, argillaceous, ferruginous, with; abundant biotite, abundant muscovite, rare pyrite,
2757-2761	4	Interbedded; Siltstone, as in 2717-2757, with; Sandstone, white, clear, moderately cemented, very fine to fine grained, well sorted, subrounded, to subangular, interstitially silty, siliceous,

		with; rare biotite, common iron oxide stains, Nonporous to slightly porous
2761-2816	55	Siltstone, shaly, medium gray, green, moderately soft, flaky, fair to good fissility, argillaceous, with; common muscovite, abundant carbonaceous material, rare iron oxide stains
2816-2829	13	Sandstone, white, clear, well cemented, very fine to fine grained, well sorted, subangular to angular, siliceous, with; rare biotite, rare carbonaceous material, abundant iron oxide stains, stringers of. Nonporous to slightly porous. Siltstone, as in 2761-2816 (contamination?)
2829-2854	25	Siltstone, locally shaly, light to medium gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; common biotite, common muscovite, rare carbonaceous material, rare iron oxide stains
2854-2878	24	Limestone, shaly, dark gray, dark brown, moderately hard, no apparent fossil content, no apparent bedding to platy, cryptocrystalline, with; common mica, rare calcite, rare iron oxide staining
2878-2930	52	Siltstone, locally finely sandy, medium to dark gray, red, green (rare), moderately hard, brittle, no apparent bedding, calcareous (slightly), argillaceous, ferruginous, with; rare biotite, abundant muscovite, rare carbonaceous material, fossils-brachiopod at 2881
2930-3000	7	Siltstone, as in 2878-2930, with stringers of Sandstone, white, light gray, moderately cemented, very fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; abundant biotite, common muscovite, rare carbonaceous material,
3000-3036	36	Shale, locally silty, dark gray, brown (dark), moderately soft, flaky, poor to fair fissility, argillaceous, with rare muscovite
3036-3061	25	Shale, as in 3000-3036, slightly calcareous,
3061-3127	66	Limestone, shaly, light to dark gray, moderately hard, fossils (common brachiopod), platy, cryptocrystalline, with; rare mica, rare pyrite, common calcite

3127-3138	11	Limestone, dark gray, moderately hard, oolitic, fragmental fossil content, no apparent bedding, microcrystalline, with; rare pyrite, common calcite
3138-3171	33	Limestone, light greenish-gray, moderately hard, fragmental (rare) fossil content, no apparent bedding, cryptocrystalline, with rare pyrite, rare calcite
3171-3209	38	Limestone, dark gray, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with; common pyrite, rare calcite, common carbonaceous material
3209-3259	9	Limestone, light to dark gray, white, moderately hard, fragmental (abundant-crinoids, brachiopods) fossil content, no apparent bedding, microcrystalline, with; abundant calcite, rare carbonaceous material
3259-3318	59	Limestone, locally carbonaceous, dark gray, moderately hard, fragmental fossil content, no apparent bedding, cryptocrystalline, with; rare mica, common pyrite, common calcite, abundant carbonaceous material
3318-3362	44	Limestone, light gray, white, moderately hard, fragmental fossil content, no apparent bedding, microcrystalline, with; rare pyrite, abundant calcite
3362-3367	5	No samples
3367-3401	34	Limestone, dark gray, light to dark brown, moderately hard, fragmental (rare) fossil content, no apparent bedding, cryptocrystalline to microcrystalline, with; rare mica, abundant calcite, common iron oxide staining
3401-3455	54	Limestone, light to dark gray, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with; rare mica, abundant calcite, abundant carbonaceous material
3455-3508	53	Limestone, light gray, tan, white, moderately soft, fragmental (rare) fossil content, no apparent bedding, cryptocrystalline, with; rare mica, rare calcite, rare iron oxide staining
3508-3516	18	No samples

3516-3535

19

Limestone, light to dark gray, moderately hard, oolitic, fragmental fossil content, no apparent bedding, microcrystalline, with; rare pyrite, abundant calcite

3535-3563

28

Limestone, light to dark brown, white, moderately hard, fragmental (rare) fossil content, no apparent bedding, cryptocrystalline, with; common calcite, rare iron oxide staining

3563-3587

24

Limestone, light brown, white, moderately soft, no apparent fossil content, no apparent bedding, cryptocrystalline, with; rare calcite, rare iron oxide staining

3587-3684

97

Limestone, light to dark gray, moderately hard, fragmental fossil content, no apparent bedding, microcrystalline, with; rare calcite, common iron oxide staining

3684-3704

20

Limestone, dark brown, hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with; rare calcite, common iron oxide staining

3704-3752

48

Limestone, light to dark brown, white, moderately hard, fragmental (rare) fossil content, no apparent bedding, cryptocrystalline, with; abundant chert, abundant calcite, rare iron oxide staining

3752-3760

8

Siltstone, locally finely sandy, red, moderately hard, brittle, no apparent bedding, argillaceous, ferruginous, with; common biotite, common muscovite, rare iron oxide stains

3760-3786

26

Siltstone, locally finely sandy, light gray, red (rare), moderately hard, flaky, no apparent bedding, argillaceous, with; common biotite, common muscovite, common pyrite, rare carbonaceous material

3786-3791

5

Siltstone, locally finely sandy, light gray, red, moderately soft, flaky, no apparent bedding, argillaceous, ferruginous, with; rare biotite, common muscovite, abundant pyrite, common iron oxide stains

3791-4177  
3791  
368

86  
266

Siltstone, finely sandy, light gray, red (rare), moderately hard, brittle, no apparent bedding, argillaceous, with; common biotite, common muscovite, abundant pyrite, rare iron oxide stains

4177-4357

180

Shale, dark gray, moderately soft, flaky, good fissility, argillaceous, with; rare muscovite, rare pyrite

4357-4370	13	Shale, carbonaceous, silty, black, moderately soft, flaky, fair to good fissility, argillaceous, with; common muscovite, common pyrite, abundant carbonaceous material, rare iron oxide stains
4370-4402	32	Interbedded; Shale, as in 4357-4370, with; Siltstone, locally shaly, light to medium gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; common muscovite, rare iron oxide stains
4402-4468	66	Shale, silty, (locally), light to dark gray, moderately hard, flaky, fair to good fissility, argillaceous, with; rare biotite, common muscovite, common pyrite, common carbonaceous material
4468-4536	68	Interbedded; Shale, as in 4402-4468, with; Siltstone, locally finely sandy, light gray, moderately hard, brittle, no apparent bedding, argillaceous, with; rare biotite, rare muscovite
4536-4546	10	No samples
4546-4609	63	Lithologies as in 4468-4536
4609-4737	128	Siltstone, locally shaly, light to dark gray, moderately soft, flaky, no apparent bedding, to poorly fissile, argillaceous, with; common biotite, abundant muscovite, rare pyrite, common iron oxide stains
4737-5144	404	No samples
5144-5422	278	Siltstone, locally shaly, light to dark gray, moderately soft, flaky, poor to fair fissility, argillaceous, with; rare biotite, common muscovite, rare iron oxide stains
5422-5427	5	No samples
5427-5656	239	Interbedded Shale, carbonaceous, black, moderately soft, flaky, fair to good fissility, argillaceous, with; common muscovite, rare pyrite, rare carbonaceous material Siltstone, locally finely sandy, light gray, moderately hard, flaky, no apparent bedding, argillaceous, with; common biotite, common muscovite, common pyrite
5656-5797	141	Siltstone, locally finely sandy, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; common biotite, common muscovite, abundant pyrite, rare carbonaceous material

5797-5827

30

Siltstone, as in 5656-5797, slightly calcareous

5827-6112

285

No samples 6112' - T.D.

GEOLOGIC SUMMARY

Mississippian System

Bluestone Formation	in	1642
	bottom	1906
TALLERY - 82 (JKP) <del>Princeton</del> Sandstone	top	1906
	bottom	2089
Hinton Formation	top	2089
	bottom	(?)
Stony Gap Sandstone	top	(?)
	bottom	(?)
Bluefield Formation	top	(?)
	bottom	3061
Greenbrier Limestone	top	3061
	bottom	3752
Maccrady-Price Formations	top	3752
	bottom	4177

Mississippian-Devonian Systems

Big Stone Gap Shale	top	4177
	bottom	4468

Devonian - Pre-Devonian Systems

Devonian - Pre-Devonian undivided	top	4468
	(deepest sample	5827)

Correlations by: J. M. Wilson and R. C. Milici

September 1963