

VDMR Well No. 126

Company: United Producing Company, Inc.
Farm: Pocahontas Mining Corporation
Well No.: 2-2415
Elevation: 2202.02' Ground
Total Depth: 5008'
Location: Buchanan County
7400' N of 37°15'
9200' W of 81°50'
Drilling Commenced:
Well Completed:
Result: Gas well

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

Formation tops by
Marshall Miller

<u>Formation</u>	<u>Top</u>	<u>Bottom</u>	<u>Thickness</u>	<u>Remarks</u>
Mississippian System				
Bluestone	2021?	2449	428'	*Top of Princeton ss, difficult to determine
Pride Shale	2239	2449	210'	
Princeton SS	2449?	2589'	140'	
Little Stone Gap	2589	2668	79'/160	
Hinton Fm.	?	3063		
Stony Gap SS	2938	3063	125'	
Bluefield Fm.	3063	3595	532'	
Greenbrier Fm.	3595	4357	762'	
McCraday	4357			

2155

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GEOLOGIC LOG

<u>Sample</u>	<u>Interval</u>	<u>Description</u>
0-2021	2021	No samples
2021-2043	22	Siltstone, variegated, locally shaly, light gray, red, green, tan, moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (slightly), argillaceous, with: common biotite, common muscovite.
2043-2066	23	Siltstone, grades locally to very fine-grained sandstone, locally finely sandy, light gray, red, green, moderately soft, brittle, no apparent bedding, calcareous (slightly), siliceous, argillaceous, with: abundant biotite, abundant muscovite, rare carbonaceous material, and rare iron oxide stains.
2066-2075	9	Siltstone, locally finely sandy, light gray, red, green, moderately hard, brittle, no apparent bedding, calcareous (slightly), argillaceous, with: common biotite, common muscovite, abundant chert (rounded brown nodules), rare carbonaceous material, and rare iron oxide stains.

2075-2093	18	Interbedded; Siltstone as in 2066-2075, without red. Sandstone, white, light green, moderately cemented, very fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, calcareous (locally), with: rare biotite, rare muscovite, common iron oxide stains. Nonporous.
2093-2117	24	Sandstone, as in 2075-2093, with minor stringers of Siltstone, as in 2075-2093.
2117-2145	28	No samples
2145-2239	94	Interbedded; Sandstone, white, light gray, moderately cemented, very fine-to fine-grained, well sorted, rounded to subangular, interstitially silty, siliceous, calcareous (slightly), with abundant biotite, common muscovite and rare iron oxide stains. Nonporous to slightly porous. Siltstone, locally shaly, medium to dark gray, moderately soft, brittle, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, rare muscovite, common carbonaceous material, and common carbonaceous laminae.
2239-2344	105	Shale, silty, dark gray, black, moderately hard, brittle, poor to good fissility, argillaceous, with: rare biotite, rare muscovite, and common carbonaceous material.
2344-2367	23	Interbedded; Siltstone, locally shaly, carbonaceous, dark gray, black, moderately soft, brittle, poor to fair fissility, argillaceous, with: rare biotite, rare muscovite, abundant carbonaceous material, and abundant carbonaceous laminae. Sandstone, white, light gray, moderately cemented, fine-to medium-grained, well sorted, subrounded to angular, interstitially silty, siliceous, with: rare biotite, rare muscovite, rare carbonaceous material, and rare iron oxide stains. Slightly porous.

2367-2387	20	Interbedded; limestone, shaly, light to dark brown, moderately hard, oolitic, fossil fragmental (rare), no apparent bedding, microcrystalline, with: rare calcite. Shale, carbonaceous, dark gray, black, moderately hard, brittle, fair fissility, argillaceous, with: rare biotite, and rare muscovite.
2387-2449	62	Siltstone, locally finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with: common biotite, common muscovite, and rare carbonaceous material.
2449-2457	8	Sandstone, white, clear, moderately cemented, very fine-to fine-grained, well sorted, subrounded to subangular, siliceous, with: rare biotite, rare muscovite, rare pyrite, Nonporous to slightly porous. With stringers of Siltstone, locally finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with: rare biotite, rare muscovite, rare pyrite.
2457-2483	26	Siltstone, locally finely sandy, light gray, dark gray, greenish-gray, moderately hard, brittle, no apparent bedding, calcareous (locally), siliceous, argillaceous, with: abundant biotite, common muscovite, and rare carbonaceous material.
2483-2503	20	Interbedded; Sandstone, white, light gray, moderately cemented, very fine-to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite, common iron oxide stains. Nonporous to slightly porous. Siltstone, locally shaly, light to dark gray, black, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, rare muscovite, and common iron oxide stains.
2503-2570	67	Siltstone, locally finely sandy, locally shaly, light to dark gray, moderately soft, brittle, no apparent bedding to poorly fissile, siliceous, argillaceous, with: common biotite, common muscovite, rare pyrite, abundant carbonaceous material, rare carbonaceous laminae, and rare iron oxide stains.

2570-2589	19	Sandstone, white, light gray, moderately cemented, very fine-to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: abundant biotite, abundant muscovite, rare iron oxide stains. Nonporous to slightly porous.
2589-2668	79	Limestone, shaly, silty, light to dark gray, moderately hard, fossil fragmental (common- crinoid stems, brachiopods), no apparent bedding to platy, microcrystalline, with: rare mica, and common calcite.
2668-2678	10	Siltstone, locally shaly, medium gray, red, green, moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (slightly), argillaceous, with: rare biotite, rare muscovite.
2678-2730	52	Siltstone, locally shaly, red, moderately soft, brittle, no apparent bedding to poorly fissile, argillaceous, ferruginous, with: common biotite, abundant muscovite.
2730-2750	20	Siltstone, shaly, red (rare), green, moderately hard, brittle, poorly fissile, argillaceous, with: rare biotite, rare muscovite
2750-2797	47	Interbedded; Siltstone, shaly, light to medium gray, red, moderately hard, brittle, poorly fissile, argillaceous, ferruginous, with: rare biotite, rare muscovite, and rare carbonaceous material. Sandstone, white, light gray, moderately cemented, very fine-to medium-grained, medium sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, rare muscovite. Slightly porous.
2797-2820	23	Shale, silty, medium to dark gray, moderately hard, brittle, poor to fair fissility, calcareous (slightly), argillaceous, with: rare biotite, rare muscovite, and common carbonaceous material.

2820-2890	70	Siltstone, variegated, locally shaly, light to dark gray, red, green, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, ferruginous, with: rare biotite, common muscovite, and rare carbonaceous laminae.
2890-2906	16	Siltstone, locally shaly, medium gray, moderately hard, brittle, no apparent bedding, argillaceous, with: common biotite, common muscovite, rare pyrite, and rare iron oxide stains.
2906-2918	12	No samples
2918-2938	20	Siltstone, locally finely sandy, light to dark gray, red, moderately hard, brittle, no apparent bedding, argillaceous, ferruginous, with: common biotite, abundant muscovite, and rare pyrite.
2938-2990	52	Sandstone, white, clear, moderately cemented, fine-to medium-grained, well sorted, subangular to angular, calcareous, with: rare biotite, rare muscovite, rare iron oxide stains. Nonporous to slightly porous. With stringers of Siltstone, locally shaly, light to medium gray, red, moderately hard, tough, no apparent bedding, argillaceous, with: rare biotite, rare muscovite, rare iron oxide stains.
2990-2995	5	Siltstone, light to dark gray, black, moderately hard, brittle, no apparent bedding, calcareous, argillaceous, with: common biotite, common muscovite, and common iron oxide stains.
2995-3018	23	Siltstone, locally finely sandy, light to dark gray, red, green, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, rare muscovite, and rare iron oxide stains. With stringers of Sandstone, white, light gray, poorly cemented, very fine-to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite, rare carbonaceous material, and rare iron oxide stains. Slightly porous.

3018-3043	25	Siltstone, shaly, medium to dark gray, red (rare), hard, tough, no apparent bedding to poorly fissile, argillaceous, with: rare muscovite, and rare iron oxide stains.
3043-3063	20	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, rare carbonaceous material, rare iron oxide stains. Nonporous.
3063-3132	59	Siltstone, shaly, medium to dark gray, black, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, rare muscovite, common pyrite, and common iron oxide stains.
3132-3147	15	Siltstone as in 3063-3132, with stringers of Sandstone, milky white, light gray, moderately cemented, very fine-to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite, rare carbonaceous material, and rare iron oxide stains. Nonporous to slightly porous.
3147-3182	35	No samples.
3182-3200	18	Siltstone, locally shaly, medium to dark gray, green (dark), hard, tough, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, rare muscovite, and rare carbonaceous material.
3200-3215	15	No samples.
3215-3230	15	Siltstone, shaly, light to dark gray, moderately hard, tough, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, rare muscovite, abundant pyrite, abundant carbonaceous material, and common iron oxide stains. With stringers of Sandstone, white, light gray, moderately cemented, very fine-to medium-grained, medium sorted, rounded to subangular, interstitially silty, siliceous, with: common biotite, common muscovite, rare pyrite, common carbonaceous material, rare iron oxide stains. Nonporous to slightly porous.

3230-3274	44	Sandstone, as in 3215-3230, with stringers of Siltstone, as in 3215-3230.
3274-3300	26	Siltstone, shaly, light to dark gray, hard, tough, poor to fair fissility, argillaceous, with: rare muscovite, common pyrite, common carbonaceous material.
3300-3326	26	Shale, locally silty, light to medium gray, moderately hard, brittle, fair to good fissility, argillaceous, with: rare muscovite, common pyrite, and rare carbonaceous material.
3326-3400	74	Siltstone, grades in places to a very fine-grained Sandstone, locally finely sandy, locally shaly, light to dark gray, moderately hard, tough, no apparent bedding, siliceous, argillaceous, with: common biotite, common muscovite, common pyrite, rare carbonaceous material, and rare iron oxide stains.
3400-3435	35	Shale, silty, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (slightly), siliceous, argillaceous, with: rare biotite, rare muscovite, rare carbonaceous material, and rare carbonaceous laminae.
3435-3451	16	Limestone, shaly, silty, light to dark gray, moderately hard, fragmental (rare), no apparent bedding, cryptocrystalline, with: rare mica, rare chert, and rare iron oxide staining.
3451-3462	11	Siltstone, locally finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, calcareous, (slightly), argillaceous, with: rare biotite, common muscovite, and rare carbonaceous material.
3462-3501	39	Interbedded; Siltstone, as in 3451-3462, with: Sandstone, white, light gray, well cemented, very fine-to fine-grained, well sorted, sub-rounded to subangular, interstitially silty, siliceous, calcareous, with: common biotite, common muscovite, rare pyrite, rare iron oxide stains. Nonporous to slightly porous.

3501-3521	20	Sandstone, as in 3462-3501
3521-3561	40	Shale, medium to dark gray, moderately soft, brittle, fair to good fissility, argillaceous, with: rare biotite, rare muscovite.
3561-3595	34	Shale, light to medium gray, moderately hard, brittle, fair to good fissility, calcareous, argillaceous, with: rare biotite, rare muscovite, rare calcite.
3595-3643	48	Limestone, shaly, light to dark gray, moderately soft, fragmental (rare), platy, cryptocrystalline to microcrystalline, with: rare mica, common calcite.
3643-3684	41	Limestone, silty, dark gray, light to dark brown, moderately hard, oolitic (rare), fossils (crinoid stems) no apparent bedding, cryptocrystalline, with: rare mica, common calcite, and rare iron oxide staining.
3684-3701	17	No samples
3701-3736	35	Limestone, shaly, dark gray, moderately hard, fragmental (rare), no apparent bedding, cryptocrystalline, with: rare mica, rare chert, rare calcite, and common iron oxide staining.
3736-3786	50	Limestone, light to dark gray, moderately hard, fragmental, no apparent bedding, cryptocrystalline to microcrystalline, with: rare mica, and abundant calcite.
3786-3816	30	Limestone, light to dark gray, moderately hard, oolitic, fragmental (common), no apparent bedding, microcrystalline, with: rare mica, abundant calcite
3816-3835	19	Limestone, dark gray, moderately hard, no apparent fossil content, no apparent bedding to platy, cryptocrystalline, with: common pyrite, and rare calcite.
3835-3880	45	Limestone, light to dark gray, moderately soft, oolitic, fragmental (common), no apparent bedding, cryptocrystalline to microcrystalline, with: rare mica, and abundant calcite.

3880-3904	24	No sample.
3904-3914	10	Limestone, as in 3835-3880.
3914-3990	76	Limestone, light to dark gray, tan, white, moderately hard, oolitic (rare), fragmental (rare), no apparent bedding, microcrystalline, with: abundant calcite, and rare iron oxide staining.
3990-4010	20	Limestone, light gray, dark brown, moderately hard, fragmental (common), no apparent bedding, cryptocrystalline, with: common mica, common calcite, and iron oxide staining.
4010-4020	10	Limestone, light gray, light to dark brown, moderately hard, oolitic, fragmental, no apparent bedding, microcrystalline, with: rare mica, rare pyrite, common calcite, and rare iron oxide staining.
4020-4030	10	Limestone, light gray, white, moderately hard, oolitic, fragmental (abundant), no apparent bedding, cryptocrystalline, with: abundant calcite, rare iron oxide staining.
4030-4054	24	Limestone, light gray, tan, white, green, moderately hard, fragmental (rare), no apparent bedding, cryptocrystalline to microcrystalline, with: rare pyrite, common calcite, and rare iron oxide staining.
4054-4081	27	Limestone, light to dark gray, moderately hard, oolitic, fragmental (common), no apparent bedding, microcrystalline, with: abundant calcite, and rare iron oxide staining.
4081-4215	134	Limestone, light gray, light to dark brown, moderately hard, fragmental (rare), no apparent bedding, cryptocrystalline, with: rare calcite, and rare iron oxide staining.
4215-4252	37	Limestone, light gray, tan, white, moderately hard, oolitic, fragmental (rare), no apparent bedding, microcrystalline, with: common calcite.

4252-4357	105	Limestone, light gray, light brown, moderately hard, no apparent fossil content, no apparent bedding, microcrystalline, with: rare chert, common calcite, and rare iron oxide stains.
4357-4421	64	Siltstone, medium gray, red, green, moderately hard, brittle, no apparent bedding, calcareous (slightly), argillaceous, with: rare biotite, rare muscovite, rare pyrite, and common calcite.
4421-4634	211	Siltstone, locally finely sandy, light to dark gray, moderately soft, flaky, no apparent bedding, siliceous, argillaceous, with: rare biotite, rare muscovite, and rare iron oxide stains.
4634-4645	11	No samples.
4645-4686	41	Siltstone, locally finely sandy, light to medium gray, moderately soft, brittle, no apparent bedding, argillaceous, with: common biotite, common muscovite, rare pyrite, and rare carbonaceous material.
4686-4772	86	Shale, locally silty, light to dark gray, moderately soft, flaky, fair to good fissility, argillaceous, with: rare muscovite, and rare iron oxide stains.
4772-4782	10	No samples.
4782-4903	121	Shale, as in 4686-4772.
4903-4936	33	Shale, as in 4686-4772, with stringers of Siltstone, locally finely sandy, light to medium gray, moderately soft, brittle, no apparent bedding, siliceous, argillaceous, with: common biotite, common muscovite, abundant pyrite, and rare carbonaceous material.
4936-4977	41	Interbedded; Shale, carbonaceous, black, moderately soft, flaky, good fissility, argillaceous, with: rare muscovite, rare pyrite, abundant carbonaceous material. Shale, locally silty, light gray, moderately soft, flaky, fair to good fissility, argillaceous, with: common biotite, common muscovite.

4977-4991	14	Interbedded; Sandstone, white, light gray, well cemented, very fine-to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, calcareous, (slightly), with: rare biotite, rare muscovite, and common iron oxide stains. Nonporous. Siltstone, locally finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with: rare biotite, rare muscovite, and rare carbonaceous material.
4991-4993	2	No samples.
4993-5008	15	Lithologies as in 4977-4991.

GEOLOGIC SUMMARY

Mississippian System

Bluestone Formation	in	2021
	bottom	2386
Princeton Sandstone	top	2386
	bottom	2589
Hinton Formation	top	2589
	bottom	3274
Stony Gap Sandstone	top	2938
	bottom	3274
Bluefield Formation	top	3274
	bottom	3595
Greenbrier Limestone	top	3595
	bottom	4357
Maccrady-Price Formations	top	4357
	bottom	4686

Mississippian-Devonian Systems

Big Stone Gap Shale	top	4686
	bottom	4977

Devonian System

Devonian undivided	top	4977
	in	5008 (deepest sample)

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

September 1963