

OPEN FILE

VDMR Well No. W-717

BV-23

Operator: United Fuel Gas Company
Farm: Pocahontas Mining Corporation
Well No.: 9140-T
Location: Buchanan County
1200' N. of 37°15')
7700' E. of 81°50') approximate
Elevation: 1962.28' Ground
Total Depth: 5030'
Drilling Commenced: June 3, 1962
Drilling Completed: June 21, 1962
Result: Dry hole
Geologic log and summary by Marshall S. Miller

*Well samples are from an air rotary and considerable contamination is present. However, the Pennsylvanian section is logged with as much detail as possible. The drillers log and geophysical logs are used to supplement the study of the Pennsylvanian cuttings and for correlating the entire Mississippian section. The Little Stone Gap Member was identified by microscope.

100-130	30'	Sandstone, light gray, subround, medium sorted, medium grained, occasionally coarse grained, interstitially silty with coal fragments, chlorite, muscovite, and biotite
130-230	100'	Shale, gray, finely micaceous and locally carbonaceous, locally silty fair fissility; coal in interval 180-190, (182-184) according to driller. Few stringers of "dirty" fine grained sandstone in lower interval 200-230. *Also coal in interval (210-220); (212-214) See drillers log.
230-250	20'	Sandstone, light gray, hard, well cemented, medium grained, well sorted, large mica flakes and coal fragments give a "speckled" appearance, also lesser amounts of feldspar, phlogopite (red mica), chlorite and biotite, rare hematite also *occasionally coarse grained and approaches a conglomeratic nature in lower interval (240-250) Mostly quartz pebbles, but also hematitic and chloritic pebbles

250-320	80'	Shale, dark gray, locally carbonaceous, locally silty, becomes more siltier downward, which in turn grades into a fine grained "dirty" sandstone
320-390	70'	Sandstone, fine grained, "dirty" and silty, feldspathic and micaceous, calcareous, cementing
390-410	20'	Shale, dark gray, few stringers of sandstone like interval above
410-440	30'	Interbedded sandstone and shale like those described above
440-450	10'	Siltstone, dirty brown and coal (440-443) See drillers log.
450-510	60'	Sandstone, white, medium to fine grained, subround, occasional pebble quartz present, is fairly clean in upper interval (80% quartz) with lesser amounts of large muscovite flakes, feldspar, hematite, and coal fragments, grades downward to a less quartzose (60%) quartz), micaceous, fine grained, sandstone which is interstitially silty.
510-550	40'	Interbedded siltstone and sandstone, slightly calcareous, brown in color.
550-560	10'	Siltstone, dullish brown-gray
560-600	40'	Sandstone, light gray fine to medium grained, subround to subangular, interstitially silty, poorly sorted, micaceous
600-750	150'	Siltstone brownish-gray, locally shaly; coal in intervals (623-626), (687-690), (747-750) See drillers log.
750-840	90'	Sandstone, light gray, fine grained, subround to subangular, well sorted, poorly cemented, micaceous, interstitially silty, few stringers of siltstone present, becomes interbedded in interval (780-820) with siltstone and shales, becomes medium grained downward
840-950	110'	Siltstone, light gray-light brown, coal present in interval 890-900, 913-915, few sandstone stringers present in lower interval

950- 980	30'	Shale, gray to dark gray, locally silty, coal (963-965), grades downward to a siltstone
980-1020	40'	Siltstone, light brown, soft, slightly calcareous
1020-1045	25'	Shale, gray, locally silty, carbonaceous; coal (1042-1045)
1045-1050	5'	Siltstone, like siltstone interval above
1050-1130	80'	Sandstone, light gray to white, fine to medium grained, subangular, moderately sorted, interstitially silty, 75-80% quartz, with rare micas and feldspars present, also rare coal fragments, becomes interbedded with silty shales by interval 1080.
1130-1140	10'	Sandstone, white, medium grained, subround, medium sorted, visible porosity, with rare amounts of chlorite, biotite, muscovite, and coal fragments: Gamma-ray log indicates sand interval continues to 1162'. Sand interval 1135-1162 is probably the Flat Top Mountain Sandstone.
1140-1320	180'	Siltstone, light brown to brown to gray; coal (1239-1241), (1266-1268), and interbeds of sandstones progressively downward
1320-1340	20'	Sandstone, fine grained, loosely cemented, visible porosity, subrounded, medium sorted, with abundant reworked siltstone and shale pebbles present
1340-1390	50'	Shale, gray, finely micaceous, good fissility, brittle and hard. Interbeds and grades back into the sandstone as described above
1390-1470	80'	Sandstone like previous sandstone interval above. Coal (1425-1431)
1470-1550	90'	Sandstone, white to light gray, fine to medium grained, subrounded and moderately sorted with rare chlorite, muscovite and feldspar, loosely cemented, 75% quartz. A fairly massive interval. Coal (1541-1543)
1550-1570	20'	Shale, gray, and interbedded sandstone, "dirty" and fine grained

1570-1600	30'	Sandstone, fine grained, silty, light gray, fairly well sorted, loosely cemented
1600-1610	10'	Sandstone, white, (moderately quartzose) 85-90% quartz, medium grained, subround to subangular, some coal present, 1608-1614 according to drillers log, would probably be Pocahontas No. 3 coal.
1610-1630	20'	Shale, dark gray, fissile and carbonaceous, some coal present
1630-1690	60'	Siltstone, brownish gray
1690-1710	20'	Sandstone, white to light gray, fine to medium grained, subround, interbedded with siltstone
1710-1800	90'	Siltstone, gray, locally shaly, and sandstone, like that above and shale with plant fossil fragments, rarely calcareous
		Bluestone Formation
1800-1810	10'	Reddish, green, and gray shales and siltstone, locally calcareous
1810-1820	10'	Missing
1820-1840	20'	Red, green and gray calcareous shales, with fine grained sandstone stringers, increasing downward, mostly sand by 1830'
1840-1850	10'	Missing
1850-1860	10'	Dark gray shale, noncalcareous
1860-1870	10'	Missing
1870-1910	40'	Red, green, and gray calcareous shales and siltstones with occasional sand stringers
1910-1930	20'	Siltstone, light gray, tan, siliceous
1930-2160	230'	Dark gray, shale, finely micaceous and locally carbonaceous, locally silty, typical Pride lithology generally noncalcareous

2160-2210	50'	Sandstone, fine grained, subrounded, well sorted, locally silty and interbedded with a silty shale (2200-2210)
2210-2230	20'	Shale, gray, silty, micaceous
2230-2270	40'	Interbedded, shale and sandstone like that above
2270-2290	20'	Sandstone, light gray, buff, very fine to fine grained, silty
2290-2320	30'	Shale, gray, calcareous
2320-2400	80'	Siltstone, gray, brown, argillaceous and siliceous, grades downward to a very fine grained sandstone by 2350'
2400-2440	40'	Gray, very calcareous shale, and gray argillaceous limestone with fragmental fossils, pyrite is visible accessory mineral; Little Stone Gap Member
2440-2480	40'	Sandstone, with lesser amounts of green, gray and red siltstone
2480		Red calcareous shales

Buchanan County
 Pocahontas Mining Corp.
 Well No.: 9140-T
 Location: 1200' N of 37°15'
 7700' E of 81°50'
 Elevation: 1962.28'
 Total Depth: 5030'

Well location and elevation of well site indicate well located below the Kennedy coal, above the Jawbone and Tiller coals, and near the Raven coal horizon.

Formational boundaries determined from geological log (0-2480), and geophysical well logs (0-5030), which are measured from 10 feet above ground level. Depths below are uncorrected. Correlations by Marshall Miller, 1970-74, VDMR.

<u>Formation</u>	<u>Top</u>	<u>Bottom</u>	<u>Thickness</u>
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Pennsylvanian System

New River Formation "in at surface"	1280'?		1280'
Kennedy coal horizon at -170'			
Raven coal at surface			
Jawbone coal at 180'			
Tiller coal at 212'			
*Greasy Creek coal 623-626			
*Middle Seaboard coal 687-690			
*Lower Seaboard coal 747-750			
Upper Horsepen coal 890-?			
*Middle Horsepen coal 913-915			
*War Creek coal 1042-1045			
*Pocahontas #9 coal 1239-1241			
*Pocahontas #8 coal 1266-1268			

*Coals noted by driller and verified in cuttings.

Pocahontas Formation	1280?	1800	520'
*Pocahontas #6 coal 1425-1431			
*Pocahontas #4 coal 1541-1543			
*Pocahontas #3 coal 1608-1614			

Mississippian System

Bluestone Formation	1800	2160	360'
Pride Shale	1930	2160	230'
Princeton Interval?	2160	2400	240'
Little Stone Gap Member	2400	2440	40'
Stony Gap Sandstone Member	3062	3133	71'
Greenbrier Formation	3463	4299	836'
Maccrady	4299		