

Operator: Columbia Gas Transmission Corp.

Farm: Joseph L. Elswick

Well No.: 9646

Location: Buchanan County
 2300' E of 82°12'30"
 1900' S of 37°20'

Elevation: 1165.82'

Remarks: Elevation and location of well site with reference to measured sections No. 211 and 178, indicate that well located about 135' below the Hagy coal, 45' below the Splash Dam coal, and about 205' above the Kennedy coal.

Formational boundaries determined from electrical logs by Marshall S. Miller, May, 1972. *Logs measured from M.B., 10 feet above ground level. Depths listed below are uncorrected*

<u>Formation</u>	<u>Top</u>	<u>Bottom</u>	<u>Thickness</u>
Pennsylvanian System			
Post Lee Formation "in at surface"		330	330'
		Splash Dam coal at -45'	
		Kennedy coal at 205'	
Lee Formation	330	1485	1155'
Upper Member 330-347		quartzose sand 330-347	17'
Middle Member 745-1118		quartzose sand 745- 842	97'
		quartzose sand 1002-1072	70'
		quartzose sand 1075-1118	43'
		War Creek Coal horizon at 1120'	
Lower Member 1210-1485		quartzose sand 1210-1360	150'
		quartzose sand 1455-1485	30'
		total quartzose sand	407'
Pocahontas Formation	1485	1500	15'
Mississippian System			
Bluestone Formation	1500	1924	424'
Pride Shale	1710	1924	214'
Princeton Interval	1924	2034	110'

Little Stone Gap Member	2034	?	?
Maxton Sands	2156	2178	22'
	2327	2365	38'
	2498	2579	81'
Greenbrier Formation	2622	3062	440'
MacCraday	3062		

Geologic supplementary log by Marshall S. Miller, May 1972,
Columbia Gas Well No. 9646.

1400-1415	15'	Shale, gray to dark gray, finely micaceous, silty
1415-1416	1'	Coal, bony and shaly in part
1416-1450	34'	Sandstone, white to light gray, very fine to fine grained, subangular to subround, moderately sorted, abundant muscovite, reddish brown hematite, rock fragments, abundant white clay matrix material, about 80% quartz
1450-1480	30'	Sandstone, white, quartzose, fine to medium grained, subround, well sorted, small amount of matrix material, rare muscovite, rare rock fragments, about 95% quartz, becomes coarse grained and conglomeratic in basal 10' (1470-1480)
Pocahontas Formation (1480-1500)		
1480-1490	10'	Shale, dark gray to black, hard, brittle
1490-1500	10'	Shale, gray, dark gray, greenish gray, silty in part
Bluestone Formation (1500)		
1500		Shale, red, pastel green, gray, slightly calcareous

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- 800-850 - Sandstone, f-grained, white
- 850-860 - Silstone, gray, v. sandy
- 860-880 - Sandstone, f-grained, white
- 880-890 - Sandstone, w/coal
- 890-1000 - Sandstone, f-grained, white
- 1000-1010 - Sandstone, w/coal
- 1010-1130 - Sandstone, f-grained, white
- 1130-1220 - Silstone, gray
- 1220-1360 - Sandstone, f-grained, gray-white
- 1360-1420 - Silstone, gray
- 1420-1480 - Sandstone, f-grained
- 1480-1520 - Silstone, gray, sdy
- 1520-1540 - Silstone, mod red
- 1540-1550 - Silstone, gray
- 1550-1580 - Silstone, mod red
- 1580-1610 - Silstone, green-gray
- 1610-1640 - Shale, gray-blk
- 1640-1680 - Silstone, gray
- 1680-1700 - Sandstone, med grained
- 1700-1730 - Silstone, mod red
- 1730-1800 - Silstone, gray, sdy
- 1800-1830 - Sandstone, med grained
- 1830-1930+ - Silstone, gray

CGT ELSWICK 9646 - W-3603 - Preliminary Log

280 - 350 SS, gray, mica.

350 - 450 Silt, gray.

450 - 560 SS, gray, mica.

560 - 650 Silt, gray.

650 - 680 SS, gray, mica.

680 - 800 SS, white, quartzose.