

Operator: Clinchfield Coal Corp.  
 Farm: J. C. Rasnick  
 Well No.: 103  
 Index No.: 39  
 Location: Dickenson County  
 2950' S of 37°05'  
 5150' W of 82°20'

Elevation: 1504.3'

Remarks: Elevation and location of well site with reference to: coal geology along the McClure River; measured section No. 146; and core No. S-22 as published in the Dickenson County Report; indicate that well spudded in about 70' below the Kennedy coal.

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

Post Lee Formation "in at surface"		603	603'
		Kennedy coal at -70'	
		Raven coal 169-170	
		Jawbone coal 343-344	

Lee Formation	603	1490	887'
		quartzose sand 603-643	40'
		quartzose sand 658-679	21'
		War Creek coal 1097-1098	
		quartzose sand 1362-1445	83'
		quartzose sand 1466-1490	24'
		total quartzose sand	168'

Pocahontas Formation	1490	1698	208'
		Pocahontas #4 coal 1514-1516	
		Pocahontas #3 coal 1525-1535	

Mississippian System

Bluestone Formation	1698	2234	536'
Pride Shale	2033	2234	201'
Princeton Interval	2234	2312	78'
Little Stone Gap Member	2312	2378	66'
Greenbrier Formation	3224	3858	634'

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Total Depth: 3910'

Remarks: Well has been sufficiently logged by Jean Sherman and Allen Williamson, U.S.G.S., 1950. The geological summary below was prepared by Marshall S. Miller to identify and describe the Lee quartz sand members, important stratigraphic horizons, and determine the presence of coal seams. All other correlations and formational boundaries are determined from the log of Sherman and Williamson.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
1- 28	28'	Sandstone, yellow, light tan, to grayish yellow, fine to coarse grained, subangular, very poorly sorted, abundant clay-silica matrix material, dark rounded rock fragments, scattered muscovite, traces of feldspar, about 80% quartz, 15% matrix, 5% rock fragments, less than 1% accessory minerals. (Basal part of McClure sandstone)
169-170	1'	Coal, dull luster, hard, shaly, with blocky fracture (Raven coal)
343-344	1'	Coal, dull luster, bony, impure, blocky fracture (Jawbone coal). Driller notes coal at 338-343
603-626	23'	Sandstone, white, except where iron stained, quartzose, fine to medium grained, subrounded, moderately sorted, with scattered dark rock fragments, and clay-silica matrix material, about 90% quartz, 5% matrix, 5% dark rock fragments. Scattered shale and silt fragments occur locally, more than likely due to contamination.
626-643	17'	Sandstone, white, quartzose, medium to coarse grained to granular, with scattered conglomeratic fragments, subangular to subround, poorly sorted, little or no matrix material, rare dark rock fragments, some dark grayish brown finely crystalline limestone, rare dark chert and quartzite fragment, about 95% quartz, 5% matrix and rock fragments

658-679	21'	Sandstone, white, quartzose, medium to coarse grained, granular and conglomeratic, subround to subangular, poorly sorted, little or no matrix material, secondary quartz overgrowths visible, also continued presence of gray, grayish brown limestone, and dark rock fragments, about 90 to 95% quartz
731-732	1'	Coal, good luster, blocky and conchoidal fracture
1097-1098	1'	Coal, dull, bony, silty
1182-1183	1'	Coal, good vitreous luster, pure with conchoidal fracture
1200-1201	1'	Coal, vitreous luster, conchoidal fracture
1266-1267	1'	Coal, a few fragments, appears pure, with vitreous luster
1362-1374	12'	Sandstone, white, quartzose, medium grained to granular, with scattered conglomeratic quartz pebble fragments, subangular to subround, poorly sorted, scattered dark rock fragments, some clay silica matrix, about 90% quartz, 5% matrix, 5% rock fragments
1374-1377	3'	Sandstone, white, fine to medium grained, subround to subangular, moderately sorted, little or no matrix material, scattered dark rock fragments, very rare muscovite and carbonaceous material, about 90% quartz
1377-1385	7'	No sample
1385-1393	8'	Sandstone, white, quartzose, medium grained to granular, subangular to subround, poorly sorted, small amounts of clay matrix, dark rock fragments, rare muscovite, generally 90% quartz
1393-1396	3'	Sandstone, white, quartzose, coarse grained and conglomeratic, subangular to subround, poorly sorted, no matrix material, rare dark rock fragments, some secondary quartz overgrowths visible, over 95% quartz

1396-1397	1'	Like 1393-1396, fine to medium grained, no conglomerate, over 95% quartz
1397-1410	13'	Like 1393-1396, medium to coarse grained, no conglomerate, over 95% quartz
1410-1411	1'	Coal, pure to impure, shaly
1411-1414	3'	Like 1393-1396, medium to coarse grained, no conglomerate, over 95% quartz
1414-1418	4'	Sandstone, white, quartzose, fine to medium grained, subround to subangular, moderately sorted, little or no matrix material, over 95% quartz
1418-1432	14'	Sandstone, white, quartzose, medium grained, subrounded, well sorted, over 95% quartz
1432-1445	13'	Sandstone, white, quartzose, medium to coarse grained, subangular to subround, poorly sorted, iron stained, about 90% quartz, 0-5% matrix, 5 to 10% rock fragments
1445-1466	21'	Sandstone, light gray, gray, very fine to fine grained, subangular, poorly sorted, considerable muscovite, abundant clay-silt matrix, some of which is calcareous, abundant dark rock fragments, reddish iron minerals, about 75% quartz
1466-1484	18'	Sandstone, white, quartzose, fine grained, occasionally medium grained, subrounded, moderately to well sorted, considerable clay-silt matrix, rare micas and dark rock fragments, about 90-95% quartz, 5-10% matrix
1484-1490	6'	Sandstone, white, quartzose, medium to coarse grained, occasionally granular, subangular to subround, extremely pure, 100% quartz

- unconformity -

1490-1497	7'	Shale, dark gray, finely micaceous, locally silty
1497-1498	1'	Coal, dull, bony, silty and impure
1498-1514	16'	Shale, dark gray, finely micaceous, silty, carbonaceous
1514-1516	2'	Coal, pure, good vitreous luster, blocky fracture
1516-1525	9'	Shale, dark gray, black, carbonaceous
1525-1535	10'	Coal, extremely good show, extremely pure, high vitreous luster, blocky and conchoidal fracture (Pocahontas #3 coal)
1535-1539	4'	Shale, dark gray, silty carbonaceous
1539-1555	16'	Sandstone, very fine to medium grained, mostly subangular, poorly sorted, rare flakes of micas, and some clay-silica cement, appears to be quartzose with over 90% quartz
1555-1563	8'	Sandstone, white, quartzose, coarse grained to granular and conglomeratic, subangular, to subround, poorly sorted, little or no matrix material, rare dark rock fragments, about 95% quartz
1563-1598	35'	Sandstone, white, quartzose, fine to coarse grained, subround to subangular, poorly to moderately sorted, little or no matrix material, over 90% quartz
1598-1600	2'	Coal, good vitreous luster, pure, blocky fracture
1600-1635	35'	Sandstone, gray, light gray, very fine to medium grained, angular to subround, poorly sorted, argillaceous with considerable amount of dark shaly rock fragments, silt-clay matrix, about 65% quartz
1635-1639	4'	Coal, high vitreous luster, pure, with scattered plant fossils

1639-1643	4'	Sandstone, light gray, gray, very fine grained to medium grained, subangular to subround, poorly sorted, silty with minor stringers and shale and siltstone
1643-1648	5'	Sandstone, white, quartzose, very fine to medium grained, subangular to subround, moderately to poorly sorted, little clay-silt matrix material, over 90% quartz
1648-1652	4'	Sandstone, gray, fine grained, silty, carbonaceous, interbedded with dark gray shale
1652-1654	2'	Coal, high vitreous luster, conchoidal and blocky fracture
1654-1668	14'	Sandstone, white, quartzose, fine to medium grained, subrounded, moderately sorted, little calcareous matrix material, and scattered carbonaceous material
1668-1678	10'	Siltstone, light greenish gray, with spherulitic siderite nodules
1678-1698	20'	Shale, gray, silty
1698		Shale and siltstone, greenish gray, reddish gray, reddish brown, calcareous (Represents top of Bluestone Formation)