

APPENDIX (C)

DRILLING LOG

For English Engineering Corporation Date 6-8-71

On English Run Watershed Twp. Pine County Lycoming State Pa.

Hole No. 1 Size 8" El. 1633.67 Remarks water el. 1541.67

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Overburden	5.0	5.0
Conglomerate	18.0	23.0
Coal (E)	2.8	25.8
Conglomerate	4.2	30.0
Sandstone	39.0	69.0
Shale	23.0	92.0
Claystone	15.0	107.0
Coal (C')	1.0	108.0
Sandstone	10.0	118.0
No. 1A Size 8" El. 1620.74, water el. 1539.84 7-28-71		
Overburden & Mudstone	11.0	11.0
Coal (E)	2.7	13.7
Mudstone	3.3	17.0
Conglomerate	3.0	20.0
Sandstone	73.1	93.1
Coal (C')	2.9	96.0
Shale	4.0	100.0
Coal (C)	2.4	102.4
Shale	20.6	123.0
No. 2 Size 8" El. 1597.82 6-8-71		
Overburden	4.0	4.0
Shale	12.0	16.0
Coal (C)	5.0	21.0
Conglomerate	4.0	25.0
Sandstone	10.0	35.0
No. 2A Size 8" El. 1591.48, water el. 1502.48 7-28-71		
Overburden & Mudstone	10.0	10
Conglomerate	15.0	25
Mudstone	7.0	32
Conglomerate	10.0	42
Sandstone	10.0	52
Conglomerate	5.8	57.8
Coal	3.0	60.8
Shale (Parting)	2.2	63.0
Coal	1.7	64.7
Claystone	5.3	70.0
Shale	29.0	99.0
Coal	4.1	103.1
Slate	9.9	123.0

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On English Run Watershed Twp. Pine County Lycoming State Pa.

Hole No. 3 Size 8" El. 1599.70 Remarks _____

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Overburden	5.0	5.0
Shale	24.0	29.0
Coal (C)	3.0	32.0
Shale	3.0	35.0
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No. 3A Size 8" El. 1602.87, hit opening at 110.0 7-28-71		
Overburden	4.0	4.0
Conglomerate	6.0	10.0
Sandstone	5.0	15.0
Mudstone	3.0	18.0
Sandstone	2.0	20.0
Conglomerate	5.0	25.0
Shale	3.0	28.0
Sandstone	13.0	41.0
Conglomerate	2.0	43.0
Shale	4.0	47.0
Sandstone	25.8	72.8
Coal	2.2	75.0
Shale	2.3	77.3
Coal	1.5	78.8
Shale	1.2	80.0
Conglomerate	30.0	110.0
Water el. 1502.77		
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No. 4 Size 8" El. 1600.75 6-8-71		
Overburden	6.0	6.0
Shale	14.0	20.0
Sandstone	5.0	25.0
Conglomerate	7.0	32.0
Coal (C)	3.0	35.0
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No. 4A Size 8" El. 1603.34, hit opening at 113.0 7-28-71		
Overburden	5.0	5.0
Conglomerate	5.0	10.0
Sandstone	3.0	18.0
Conglomerate	12.0	30.0
Sandstone	42.0	72.0
Coal	2.7	74.7
Shale	2.6	77.3
Coal	2.1	79.4
Conglomerate	3.6	113.0
Water el. 1502.44		

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Hole No. 5 Size 8" El. 1600.20 Remarks hit opening at 34.0'

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Overburden	3.0	3.0
Shale	11.0	14.0
Sandstone	12.0	26.0
Conglomerate	8.0	34.0
Opening	-	-
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No. 5A Size 8" El. 1612.61, water el. 1542.61		
Overburden (Backfill)	5.0	5.0
Conglomerate	31.0	36.0
Mudstone	4.0	40.0
Sandstone	2.0	42.0
Conglomerate	12.5	54.5
Coal	2.2	56.7
Shale	1.3	58.0
Conglomerate	12.0	70.0
Shale (Water)	5.0	75.0
Conglomerate	20.1	95.1
Coal	4.0	99.1
Conglomerate	-	-
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No. 6 Size 8" El. 1599.49 6-9-71		
Overburden	7.0	7.0
Shale	15.0	22.0
Sandstone	4.0	26.0
Conglomerate	8.0	34.0
Coal (C)	3.0	37.0
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No. 6A Size 8" El. 1633.45		
Mudstone	13.0	13.0
Conglomerate	7.0	20.0
Sandstone	5.0	25.0
Conglomerate	13.0	38.0
Shale	12.0	50.0
Conglomerate	2.0	52.0
Coal	0.7	52.7
Shale	15.3	68.0
Coal	2.0	70.0
Shale	5.0	75.0
Conglomerate	1.0	76.0
Coal	2.8	78.8
Shale	21.2	100.0
Conglomerate	7.6	107.6
Coal	4.0	111.6

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On English Run Watershed Twp. Pine County Lycoming State Pa.

Hole No. 7 Size 8" El. 1597.74 Remarks _____

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Overburden	5.0	5.0
Shale	18.0	23.0
Sandstone	4.0	27.0
Conglomerate	10.0	37.0
Coal (C)	3.0	40.0
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No. 7A Size 8" El. 1632.52 7-29-71		
Overburden	6.0	6.0
Sandstone	19.0	25.0
Conglomerate	10.0	35.0
Shale	6.0	41.0
Conglomerate	24.0	65.0
Coal	2.5	67.5
Shale	2.5	70.0
Slate	2.5	72.5
Coal	2.5	75.0
Slate	28.8	103.8
Coal	3.3	107.1
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No. 8 Size 8" El. 1595.09 6-9-71		
Overburden	4.0	4.0
Shale	19.0	23.0
Sandstone	4.0	27.0
Conglomerate	10.0	37.0
Coal (C)	3.0	40.0
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No. 8A Size 8" El. 1634.00, hit opening at 103.50' (no water) 7-29-71		
Overburden	9.0	9.0
Conglomerate	3.0	12.0
Sandstone	7.0	19.0
Conglomerate	45.7	64.7
Coal	2.4	67.1
Shale	3.2	70.3
Coal	2.0	72.3
Shale	2.7	75.0
Slate	28.5	103.5
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No. 9A Size 8" El. 1634.09		
Overburden	7.0	7.0
Conglomerate	2.0	9.0
Sandstone	22.0	33.0
Conglomerate	33.0	66.0
Coal	2.0	68.0
Shale	2.0	70.0
Coal	2.0	72.0
Slate	34.0	106.0
Coal	3.5	109.5

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On English Run Watershed Twp. Pine County Lycoming State Pa.

Hole No. 9 Size 8" El. 1593.70 Remarks _____

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Overburden	5.0	5.0
Shale	18.0	23.0
Sandstone	5.0	28.0
Conglomerate	9.0	37.0
Coal (C)	2.6	39.6
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No. 10 Size 8" El. 1619.79, Water at 1551.79		
Overburden	3.0	3.0
Shale	7.0	10.0
Sandstone	13.0	23.0
Conglomerate	5.8	28.8
Coal (E)	3.5	32.3
Mudstone	5.7	38.0
Conglomerate	10.0	48.0
Coal (C')	3.8	51.8
Shale	0.9	52.7
Coal (C)	2.0	54.7
Slate	31.3	86.0
Opening (Gob Area)	3.0	89.0
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No. 11 Size 8" El. 1619.63		
Overburden	3.0	3.0
Shale	10.0	13.0
Sandstone	10.0	23.0
Conglomerate	6.3	29.3
Coal (E)	2.5	31.8
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No. 12 Size 8" El. 1619.49 6-10-71		
Overburden	3.0	3.0
Shale	11.0	14.0
Sandstone	8.0	22.0
Conglomerate	8.0	30.0
Coal (E)	3.0	33.0
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No. 13 Size 8" El. 1616.44, Water @ 1541.44'		
Overburden	4.0	4.0
Shale	15.0	19.0
Sandstone	3.0	22.0
Conglomerate	1.0	23.0
Coal (E)	3.5	26.5
Shale	3.5	30.0
Sandstone	5.0	35.0
Conglomerate	5.0	40.0
Coal (C')	2.6	42.6
Shale	3.9	46.5
Coal (C)	1.5	48.0
Slate	3.0	51.0
Sandstone	4.0	55.0
Conglomerate	25.0	80.0
Water	2.6	82.6

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On English Run Watershed Twp. Pine County Lycoming State Pa.

Hole No. 14 Size 8" El. 1610.98 Remarks Hit opening at 28.0'

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Overburden	2.0	2.0
Shale	6.0	8.0
Conglomerate	7.0	15.0
Out Crop (E-Coal)	2.0	17.0
Shale	2.0	19.0
Sandstone	3.0	22.0
Conglomerate	6.0	28.0
Opening	5.0	33.0
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No. 15 Size 8" El. 1610.41, hit opening at 28.0'		
Overburden	2.0	2.0
Conglomerate	7.0	9.0
Out Crop (E-Coal)	1.5	10.5
Shale	17.5	28.0
Opening	6.0	34.0
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No. 16 Size 8" El. 1610.59, hit opening at 35.0'		
Overburden	2.0	2.0
Conglomerate	7.0	9.0
Out Crop (E-Coal)	0.5	9.5
Shale	16.5	26.0
Sandstone	3.0	29.0
Conglomerate	6.0	35.0
Opening	4.0	39.0
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No. 17 Size 8 El. 1588.86, water at 1563.66		
Overburden	4.0	4.0
Shale	14.0	18.0
Sandstone	5.0	23.0
Conglomerate	3.0	26.0
Out Crop (E-Coal)	-	26.0
Shale	7.0	33.0
Coal	3.1	36.1
Shale	7.9	44.0
Coal	2.5	46.5
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No. 18 Size 8" El. 1592.06, hit opening at 33.0'		
Overburden	5.0	5.0
Shale	13.0	18.0
Sandstone	5.0	23.0
Conglomerate	3.0	26.0
Out Crop (E-Coal)	0.7	26.7
Shale	6.3	33.0
Opening	4.0	37.0

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Hole No. 19 Size 8" El. 1594.80 Remarks hit opening at 35.0'

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Water at 1565.10		
Overburden	3.0	3.0
Shale	14.0	17.0
Sandstone	4.0	21.0
Conglomerate	6.7	27.7
Out Crop (E-Coal)	-	27.7
Shale	7.3	35.0
Opening	2.8	37.8
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No. 20 Size 8" El. 1600.14, hit opening at 35.5'		
Overburden	3.0	3.0
Shale	15.0	18.0
Sandstone	7.0	25.0
Shale	1.7	26.7
Out Crop (E-Coal)	-	26.7
Shale	8.9	35.6
Opening	2.4	38.0
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No. 21 Size 8" El. 1607.53, hit opening at 36.0'		
Overburden	3.0	3.0
Shale	17.0	20.0
Sandstone	5.0	25.0
Conglomerate	11.0	36.0
Opening	3.2	39.2
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No. 22 Size 8" El. 1599.39, water at 1537.69		
Overburden	5.0	5.0
Mudstone	17.0	22.0
Coal (C')	3.0	25.0
Shale	3.9	28.9
Coal (C)	2.1	31.0
Shale	27.0	58.0
Slate	2.0	60.0
Shale	2.0	62.0
Coal (B)	3.0	65.0
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No. 23 Size 8" El. 1623.19		
Overburden	3.0	3.0
Mudstone	26.4	29.4
Out Crop (E-Coal)	-	29.4
Shale	1.0	30.4
Coal (C')	3.3	33.7
Shale	20.3	54.0
Coal (C)	2.7	56.7
Shale	11.3	68.0
Sandstone	10.0	78.0
Shale	7.0	85.0
Coal (B)	3.1	88.1

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Hole No. 24 Size 8" El. 1606.65 Remarks _____

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Overburden	3.0	3.0
Shale	5.7	8.7
Coal (E)	1.9	10.6
Shale	5.4	16.0
Sandstone	2.0	18.0
Conglomerate	7.0	25.0
Coal (C')	2.7	27.7
Shale	3.0	30.7
Coal (C)	1.8	32.5
Shale	10.5	43.0
Sandstone	5.0	48.0
Shale	10.0	58.0
Sandstone	10.0	68.0
Coal (B)	3.0	71.0
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No. 25 Size 8" El. 1629.49, water at 1561.19		
Overburden	5.0	5.0
Shale	10.0	15.0
Sandstone	9.0	24.0
Shale	7.0	31.0
Sandstone	4.0	35.0
Shale	9.5	44.5
Coal (E)	1.5	46.0
Shale	2.0	48.0
Mudstone	12.0	60.0
Coal (C')	2.7	62.7
Shale	5.0	67.7
Coal (C)	1.6	69.3
Shale	22.7	92.0
Sandstone	4.0	96.0
Conglomerate	4.0	100.0
Coal (A)	1.0	101
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No. 26 Size 8" El. 1619.34, hit opening at 50.0'		
Overburden	4.0	4.0
Shale	14.0	18.0
Sandstone	13.0	31.0
Shale	3.0	34.0
Coal (E)	1.0	35.5
Shale	5.5	41.0
Sandstone	9.0	50.0
Opening	3.2	53.2

DRILLING LOG

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On English Run Watershed Twp. Pine County Lycoming State Pa.

Hole No. 27 Size 8" El. 1631.80 Remarks Water at 1578.80

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Overburden	4.0	4.0
Hard Clay & Sandstone	6.0	10.0
Shale	12.5	22.5
Coal (E)	3.5	26.0
Conglomerate	6.0	32.0
Sandstone	16.0	48.0
Conglomerate	7.0	55.0
Sandstone	10.0	65.0
Conglomerate	12.5	77.5
Coal (C')	1.2	78.7
Shale	21.3	100.0
Coal	3.7	103.7
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No. 28 Size 8" El. 1617.87, water at 1547.87		
Overburden	3.0	3.0
Claystone	14.0	17.0
Shale	5.0	22.0
Coal (E)	4.0	26.0
Shale	4.0	30.0
Conglomerate	4.0	34.0
Sandstone	26.0	60.0
Conglomerate	17.0	77.0
Coal (C')	1.8	78.8
Shale	6.2	85.0
Coal (C)	2.7	87.7
Slate	-	-
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No. 29 Size 8" El. 1598.89, water at 1591.69		
Overburden	13.0	13.0
Coal (E) and Water	3.8	16.8
Shale	3.2	20.0
Conglomerate	12.0	32.0
Sandstone	19.0	72.0
Conglomerate	21.0	72.0
Coal (C')	-	-
Note: at 72.0', driller hit coal, the pressure of E-Coal water became too great for air pressure; unable to determine depth of lower coals.		

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On English Run Watershed Twp. Pine County Lycoming State Pa.

Hole No. 30 Size 8" El. 1615.34 Remarks hit opening at 90.0'

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Overburden	3.0	3.0
Claystone	3.0	6.0
Conglomerate	27.5	33.5
Coal (E)	1.6	35.1
Shale	4.9	40.0
Conglomerat	3.0	43.0
Shale	5.0	48.0
Coal (C')	3.0	51.0
Shale	4.0	55.0
Coal (C)	2.5	57.5
Slate	2.5	60.0
Sandstone	30.0	90.0
Opening	-	90.0
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No. 31 Size 8" El. 1611.04, hit opening at 46.0'		
Overburden	4.0	4.0
Mudstone	3.0	7.0
Conglomerate	18.0	25.0
Shale	3.7	28.7
Coal (E)	1.8	30.5
Shale	6.5	37.0
Slate	3.0	40.0
Shale	6.0	46.0
Opening	2.0	48.0
Water at 1565.24		
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No. 32 Size 8" El. 1599.89, hit opening at 31.5'		
Overburden	5.0	5.0
Conglomerate	13.0	18.0
Shale	4.0	22.0
Coal (E)	2.0	24.0
Shale	4.5	28.5
Sandstone	3.0	31.5
Opening	-	-
Water at 1565.19		

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On English Run Watershed Twp. Pine County Lycoming State Pa.

Hole No. 33 Size 8" El. 1597.61 Remarks Water at 1512.71

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Overburden	5.0	5.0
Claystone	7.0	12.0
Sandstone	6.0	18.0
Shale	7.0	25.0
Coal (E)	2.0	27.0
Shale	3.0	30.0
Conglomerate	8.0	38.0
Shale	9.0	47.8
Coal (C')	3.1	50.9
Shale	0.7	51.6
Coal (C)	2.4	54.0
Slate	28.0	82.0
Coal (B)	2.8	84.8
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No. 34 Size 8" El. 1595.75, water el. 1548.65		
Overburden	5.0	5.0
Claystone	8.0	13.0
Conglomerate	15.0	28.0
Shale	3.5	31.5
Coal (E)	2.0	33.5
Shale	4.5	38.0
Conglomerate	3.0	41.0
Shale	7.0	48.0
Coal (C')	3.7	51.7
Shale	3.0	54.7
Coal (C)	2.4	57.1
Sandstone	3.9	61.0
Slate	24.0	85.0
Coal (B)	3.5	88.5
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No. 35 Size 8" El. 1593.57, water at 1555.37		
Overburden	3.0	3.0
Conglomerate	21.5	24.5
Coal (E)	0.5	25.0
Shale	0.4	25.4
Coal (E)	2.0	27.4
Shale	20.6	48.0
Coal (C')	3.8	51.8
Sandstone	3.7	55.5
Coal (C)	3.0	58.5
Sandstone	19.5	78.0
Slate	7.0	85.0
Coal (B)	3.0	88.0

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On English Run Watershed Twp. Pine County Lycoming State Pa.

Hole No. 36 Size 8" El. 1598.84 Remarks Shut down because of rain

CLASSIFICATION	Thickness of Strata FEET	Depth From Surface FEET
Topsoil	3.0	3.0
Mudstone	7.0	10.0
Conglomerate	13.0	23.0
Sandstone	8.7	31.7