

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

**LITHOLOGIC AND GEOPHYSICAL LOGS OF HOLES DRILLED IN THE
SEMINOE DAM SE AND PATS BOTTOM QUADRANGLES, CARBON COUNTY, WYOMING**

By

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**This report has not been edited
for conformity with Geological
Survey editorial standards or
stratigraphic nomenclature.**

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Lithologic descriptions in this report are based on sample descriptions made in the field by L. F. Blanchard and T. J. Pike. As samples were collected over 5-foot intervals, two or more lithologies are commonly included in the sample descriptions. Multiple lithologies are listed in decreasing abundance, with relative abundances of less than 5 percent indicated as trace amounts.

In the lithologic descriptions included in this report, sandstone refers to a rock in which sand-size quartz grains compositionally predominate over other constituents. Shale refers to a rock displaying fissility, and compositionally dominated by the clay-sized fraction; if fissility is not present, it is classed as mudstone. Silty shale means a fissile rock in which clay and silt are in subequal proportions. Siltstone refers to a rock lacking visible fissility and dominated by the silt-size fraction. A rock intermediate between coal and carbonaceous shale is described as a shaly coal.

In the coal sections presented in figures 3 and 4, the thickness, depth, and quality of the coal beds shown were based on the geophysical logs, supplemented by the sample descriptions.

ACKNOWLEDGMENTS

The drill rig was operated by a U.S. Geological Survey crew consisting of J. D. Cathcart (driller), J. P. Abbott and Hugh Blevins. Geophysical logging was provided by the U.S. Geological Survey, Cheyenne, Wyoming.

**Table 1.--Drill-hole locations, elevations, and drilling
and logging depths**

(All depths stated herein are in feet; to convert to meters, multiply by 0.3048.)

Hole no.	Location	Surface elevation	Total depth drilled	Depth logged
SD-1-28	NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 28 T. 24 N., R. 83 W.	6,450	530	510
SD-1-30	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 24 N., R. 83 W.	6,575	130	113
SD-2-30	SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 24 N., R. 83 W.	6,625	510	410
SD-1-32	NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 24 N., R. 83 W.	6,555	218	218
SD-1-36	SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 36, T. 24 N., R. 84 W.	6,475	410	405
PB-1-4	SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 4, T. 23 N., R. 83 W.	6,565	430	429
PB-1-6	SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 6, T. 23 N., R. 83 W.	6,530	270	263
PB-2-6	SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, T. 23 N., R. 83 W.	6,465	330	303
PB-1-8	SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 23 N., R. 83 W.	6,610	430	429
PB-1-18	SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 23 N., R. 83 W.	6,530	410	406

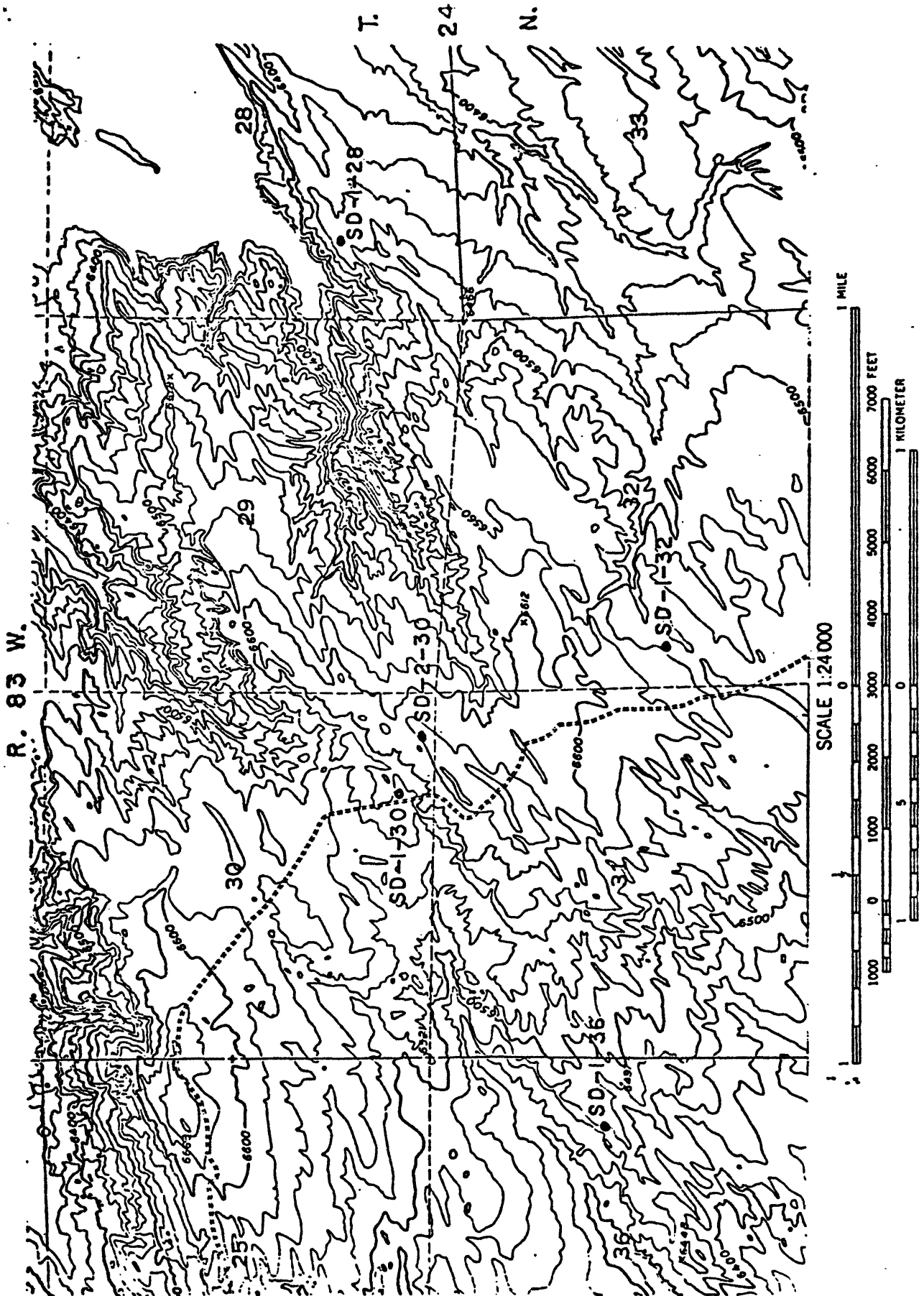


Figure 1.--Drill-hole locations in the Seminole Dam SE quadrangle, Carbon County, Wyoming.

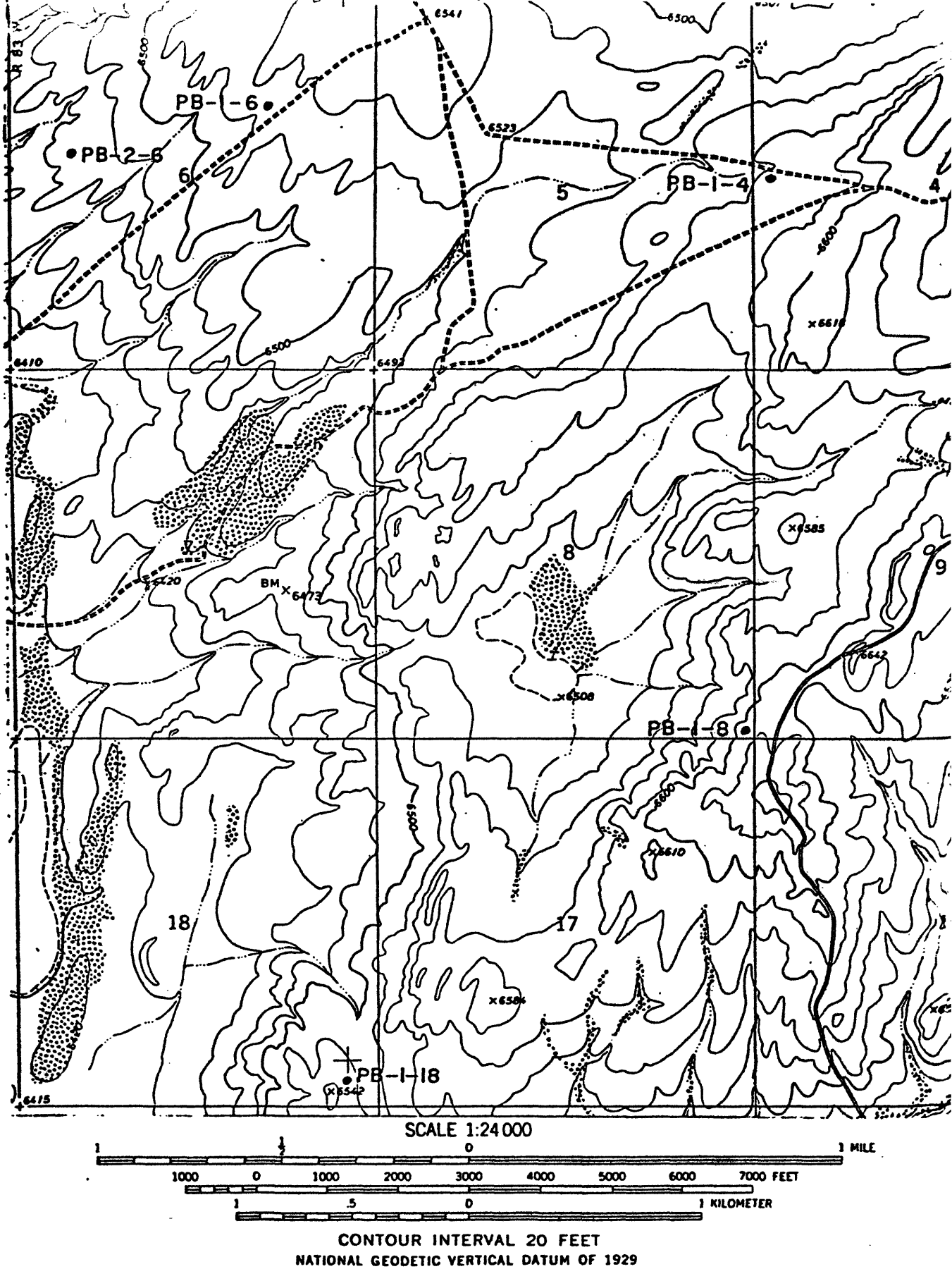


Figure 2.—Drill-hole locations in the Pats Bottom quadrangle, Carbon County, Wyoming

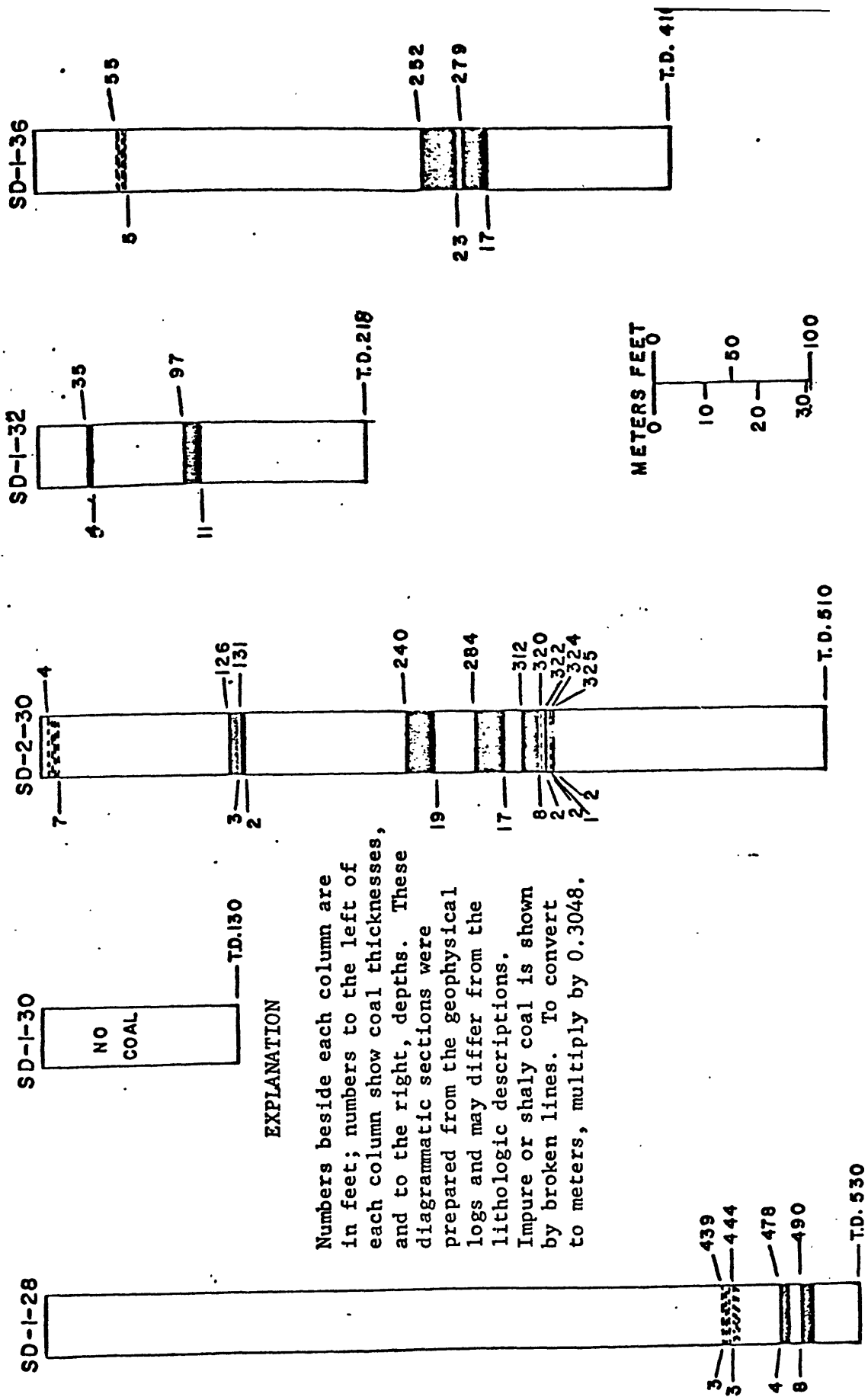


Figure 3.--Coal sections from holes drilled in the Seminole Dam SE quadrangle, Carbon County, Wyoming.

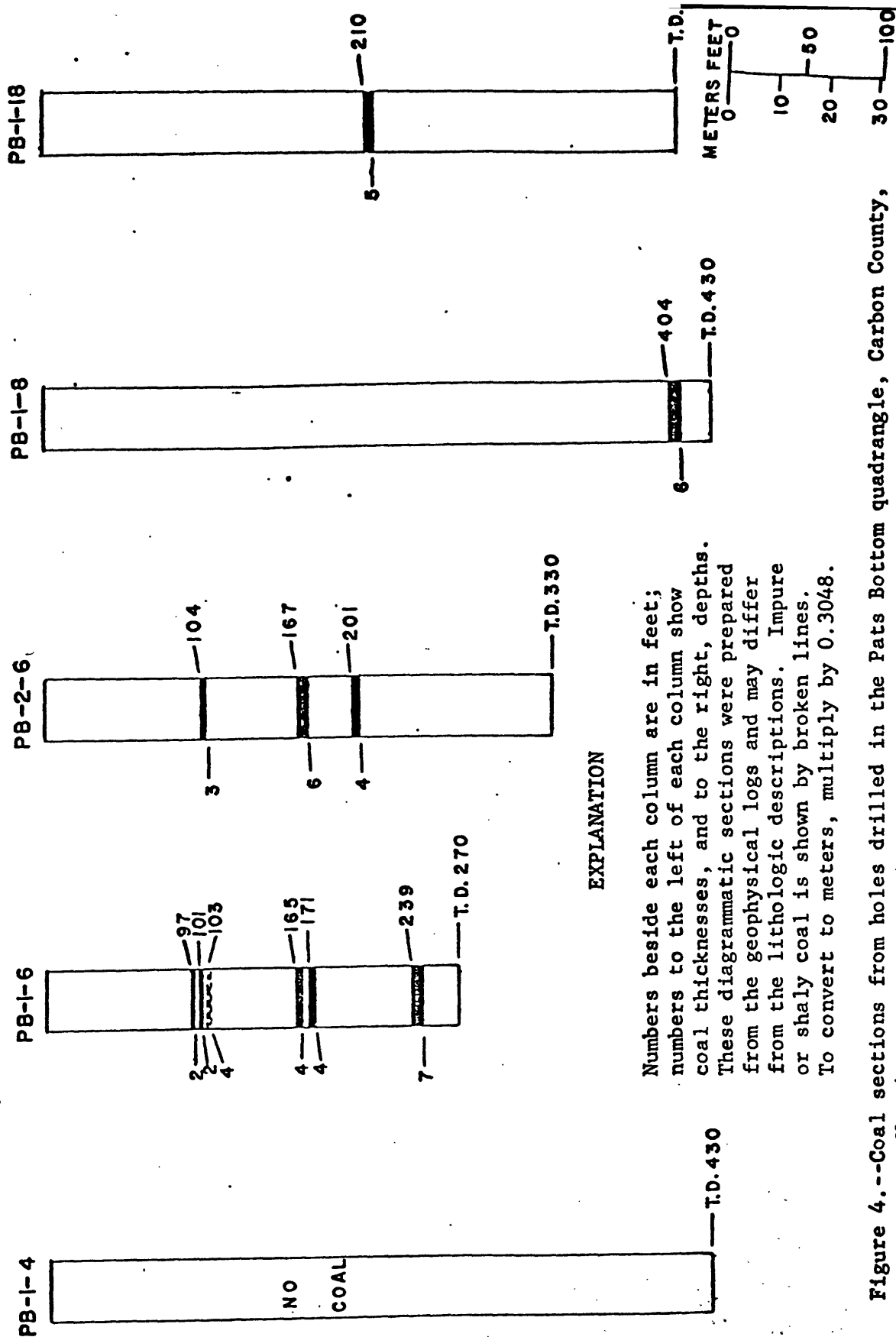


Figure 4.--Coal sections from holes drilled in the Pats Bottom quadrangle, Carbon County, Wyoming.

Drill-hole SD-1-28

[All depths stated herein are in feet; to convert to meters, multiply by 0.3048.]

Location: NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 28, T. 24 N., R. 83 W., 6th P.M., Seminole Dam SE quadrangle
Carbon County, Wyoming

Collar elevation: 6,450 feet

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, carbonaceous, silty-----	2	5
Mudstone, gray-brown-----	5	10
Mudstone, gray-brown; sandstone, tan, fine-grained-----	10	15
Shale, carbonaceous; sandstone, tan, fine-grained-----	15	20
No sample-----	20	25
Sandstone, tan, very fine grained-----	25	30
Mudstone, dark-gray; siltstone, gray-----	30	35
Sandstone, tan, very fine to fine-grained-----	35	40
Sandstone, buff to tan, fine-grained; shale, carbonaceous----	40	45
Mudstone, carbonaceous; mudstone, light-brown-----	45	50
Shale, carbonaceous; sandstone, fine-grained; trace coal-----	50	55
Shale, carbonaceous; sandstone, gray, fine-grained-----	55	60
Sandstone, gray, very fine grained-----	60	65
Shale, carbonaceous; mudstone, carbonaceous-----	65	70
Shale, gray, silty; sandstone, very fine grained-----	70	75
Shale, dark-gray, silty-----	75	80
Sandstone, gray, medium-grained-----	80	85
Shale, carbonaceous; sandstone, gray, very fine grained-----	85	90
Shale, gray; sandstone, gray, fine-grained-----	90	95
Shale, carbonaceous-----	95	100
Sandstone, gray, very fine grained-----	100	105

Drill-hole SD-1-28 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, carbonaceous; coal; sandstone, fine-grained-----	105	110
Sandstone, gray, fine-grained-----	110	115
Mudstone, dark-gray-----	115	120
Shale, carbonaceous; shale; coal-----	120	125
Shale, dark-gray, silty; siltstone, gray-----	125	130
Shale, gray, bentonitic-----	130	135
Shale, carbonaceous-----	135	140
Shale, gray, silty-----	140	145
Sandstone, gray, very fine grained; siltstone, gray; shale, gray-----	145	150
Mudstone, carbonaceous; sandstone, gray, fine-grained-----	150	155
Shale, gray, silty; siltstone, gray-----	155	160
Mudstone, gray, silty; mudstone, carbonaceous-----	160	165
Shale, carbonaceous; trace coal-----	165	170
Shale, gray, bentonitic; shale, dark-gray-----	170	175
Shale, gray, silty-----	175	180
Siltstone, gray-----	180	185
Siltstone, gray-----	185	190
Sandstone, gray, fine-grained; shale, gray, silty-----	190	195
Sandstone, gray, fine-grained; siltstone, gray-----	195	200
Sandstone, gray, fine-grained; mudstone, carbonaceous-----	200	205
Shale, carbonaceous; sandstone, gray, fine-grained-----	205	210
Sandstone, gray, fine-grained-----	210	215
Shale, carbonaceous; mudstone, gray-----	215	220

Drill-hole SD-1-28 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, carbonaceous; sandstone, gray, fine-grained-----	220	225
Sandstone, dark-gray, fine-grained; shale, carbonaceous, silty-----	225	230
Sandstone, gray, fine-grained; shale, carbonaceous-----	230	235
Sandstone, gray, medium-grained; mudstone, gray-----	235	240
Shale, carbonaceous-----	240	245
Shale, carbonaceous; sandstone, gray, fine-grained-----	245	250
Siltstone, gray-----	250	255
Shale, dark-gray, silty-----	255	260
Sandstone, coarse-grained; shale, dark-gray; sandstone, very fine grained-----	260	265
Siltstone, gray; mudstone, dark-gray-----	265	270
Siltstone, gray; shale, dark-gray-----	270	275
Sandstone, fine-grained; siltstone, gray-----	275	280
Shale, slightly carbonaceous-----	280	285
Shale, slightly carbonaceous-----	285	290
Shale, dark-gray, silty; siltstone, tan to reddish-brown-----	290	295
Shale, dark-gray; sandstone, dark-gray-----	295	300
Shale, dark-gray-----	300	305
Sandstone, fine-grained; shale, dark-gray-----	305	310
Shale, dark-gray-----	310	315
Shale, dark-gray-----	315	320
Shale, dark-gray-----	320	325

Drill-hole SD-1-28 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, dark-gray-----	325	330
Shale, dark-gray; mudstone, dark-gray-----	330	335
Shale, dark-gray; sandstone, dark-gray-----	335	340
Shale, dark-gray; sandstone, medium-grained; mudstone, yellowish-brown-----	340	345
Shale, gray, slightly silty-----	345	350
Siltstone, gray; shale, carbonaceous-----	350	355
Sandstone, gray, fine-grained-----	355	360
Sandstone, gray, fine-grained-----	360	365
Shale, gray, silty-----	365	370
Sandstone, gray, very fine grained-----	370	375
Sandstone, gray, fine-grained; shale, carbonaceous-----	375	380
Siltstone, dark-gray-----	380	385
Shale, carbonaceous; siltstone, gray-----	385	390
Siltstone, gray and tan-----	390	395
Shale, carbonaceous; siltstone, tan-----	395	400
Shale, carbonaceous-----	400	405
Shale, carbonaceous-----	405	410
Shale, carbonaceous; mudstone, brown-----	410	415
Siltstone, carbonaceous; shale, carbonaceous-----	415	420
Shale, carbonaceous-----	420	425
Sandstone, medium- to coarse-grained; shale, carbonaceous----	425	430
Shale, carbonaceous, slightly silty-----	430	435
Shale, carbonaceous-----	435	440

Drill-hole SD-1-28 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shaly coal; coal; shale, carbonaceous-----	440	445
Shale, carbonaceous; siltstone; sandstone-----	445	450
Sandstone, gray, very fine grained; shale, gray; mudstone, brown-----	450	455
Sandstone, brown, fine-grained; siltstone, gray-----	455	460
Shale, carbonaceous; sandstone, gray, fine-grained-----	460	465
Sandstone, gray, fine-grained; shale, carbonaceous; mudstone, brown-----	465	470
Shale, carbonaceous; siltstone, gray-----	470	475
Shale, carbonaceous; trace coal-----	475	480
Coal; shale, carbonaceous; mudstone-----	480	485
Coal; shale, carbonaceous-----	485	490
Coal; shale, carbonaceous-----	490	495
Coal; shale, carbonaceous-----	495	500
Sandstone, brown, fine-grained; trace coal-----	500	505
Sandstone, gray, fine-grained; trace coal-----	505	510
Shale, carbonaceous; mudstone-----	510	515
Sandstone, fine-grained; shale, carbonaceous-----	515	520
Shale, gray, silty; shale, carbonaceous-----	520	525
Shale, gray, slightly silty-----	525	530
Total depth - 530 ft.		

Drill-hole SP-1-30

[All depths stated herein are in feet; to convert to meters, multiply by 0.3048.]

Location: SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 24 N., R. 83 W., 6th P.M., Seminole Dam SE quadrangle
Carbon County, Wyoming

Collar elevation: 6,575 ft

<u>Lithologic description</u>	Depth (ft)	
	<u>From</u>	<u>To</u>
Shale, light-brown, silty-----	0	5
Shale, light-brown, silty-----	5	10
Siltstone, ochre, coarse-grained-----	10	15
Shale, gray-----	15	20
Sandstone, yellow-brown, fine-grained-----	20	25
Shale, gray, silty-----	25	30
Siltstone, gray-----	30	35
Shale and siltstone, gray-----	35	40
Shale, gray, silty-----	40	45
Sandstone, pink; shale, gray, silty-----	45	50
Sandstone, pink, fine-grained; shale, dark-gray, silty-----	50	55
Sandstone, reddish-brown-----	55	60
Sandstone, pink, fine-grained; siltstone; shale-----	60	65
Sandstone, pink, fine-grained-----	65	70
Sandstone, pink, fine-grained-----	70	75
Sandstone, pink, fine-grained; shale, gray; siltstone-----	75	80
Shale, gray, silty-----	80	85
Mudstone, carbonaceous; coal and shaly coal-----	85	90
Shale, carbonaceous-----	90	95

Drill-hole SD-1-30 - Continued

<u>Lithologic description</u>	Depth (ft)	
	<u>From</u>	<u>To</u>
Sandstone, tan, medium-grained-----	95	100

Total depth - 130 ft.

Note: From 100 ft to total depth of 130 ft, poor return or no return on samples due to lost circulation and caving.

Drill-hole SD-2-30

[All depths stated herein are in feet; to convert to meters, multiply by 0.3048.]

Location: SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 24 N., R. 83 W., 6th P.M., Seminole Dam SE quadrangle,
Carbon County, Wyoming

Collar elevation: 6,625 ft

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Soil; sandstone, buff, fine-grained; shale, carbonaceous;		
coal-----	0	5
Coal-----	5	10
Coal; shale, carbonaceous; shale, gray, silty-----	10	15
Shale, gray, silty; shale, carbonaceous; coal, trace-----	15	20
Sandstone, gray-brown, fine-grained-----	20	25
Shale, gray-----	25	30
Shale, gray, silty; siltstone-----	30	35
Shale, carbonaceous; shale, gray-----	35	40
Shaly coal; shale, carbonaceous; sandstone, gray-----	40	45
Siltstone, gray-----	45	50
Shale, silty, gray-----	50	55
Shale, gray, slightly silty-----	55	60
Shale, carbonaceous; shale, gray; trace coal-----	60	65
Sandstone, gray, fine-grained; siltstone-----	65	70
Siltstone, gray; trace coal; trace shale, carbonaceous-----	70	75
Shale, carbonaceous; coal; shale, gray, slightly silty-----	75	80
Sandstone, gray, fine-grained-----	80	85
Siltstone, gray; sandstone, gray, fine-grained-----	85	90
Shale, carbonaceous; coal; siltstone, gray-----	90	95

Drill-hole SD-2-30 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Sandstone, gray, fine-grained; siltstone-----	95	100
Siltstone; shale, gray, silty-----	100	105
Siltstone, gray; shale; shale, carbonaceous; coal; shaly coal-----	105	110
Sandstone, gray, fine-grained; shale, carbonaceous-----	110	115
Shale, gray, silty-----	115	120
Siltstone, gray; shale, carbonaceous-----	120	125
Shale, carbonaceous; trace coal; trace shaly coal-----	125	130
Coal; shaly coal; shale, carbonaceous-----	130	135
Shale, carbonaceous; shaly coal; coal-----	135	140
Shale, carbonaceous; siltstone, gray-----	140	145
Shale, dark-gray, silty-----	145	150
Shale, carbonaceous; coal; siltstone-----	150	155
Shale, gray, silty; sandstone, gray, fine-grained-----	155	160
Shale, carbonaceous; coal; siltstone, gray-----	160	165
Shale, carbonaceous; coal; sandstone, gray, fine-grained-----	165	170
Coal; shale, carbonaceous; siltstone, gray; sandstone, tan, very fine grained-----	170	175
Siltstone, gray; sandstone, gray, fine-grained-----	175	180
Siltstone, gray; shale, carbonaceous-----	180	185
Shale, gray, silty-----	185	190
Shale, dark-gray, silty-----	190	195
Shale, carbonaceous, bentonitic-----	195	200
Siltstone, dark-gray-----	200	205

Drill-hole SD-2-30 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Siltstone, dary-gray-----	205	210
Mudstone, dark-gray, silty-----	210	215
Shale, dark-gray, silty-----	215	220
Sandstone, gray, very fine grained-----	220	225
Sandstone, gray, very fine grained; siltstone, gray-----	225	230
Siltstone, carbonaceous-----	230	235
Shale, carbonaceous-----	235	240
Coal; trace shale, carbonaceous-----	240	245
Coal-----	245	250
Coal-----	250	255
Coal-----	255	260
Coal; shale, carbonaceous-----	260	265
Shale, carbonaceous; siltstone, carbonaceous; trace coal-----	265	270
Siltstone, carbonaceous; coal-----	270	275
Shale, carbonaceous, silty-----	275	280
Coal; shale, carbonaceous-----	280	285
Shale, carbonaceous; bone; trace coal-----	285	290
Coal-----	290	295
Coal; trace shale, carbonaceous-----	295	300
Coal; shale, carbonaceous-----	300	305
Coal; sandstone, gray, fine-grained-----	305	310
Coal; trace shale, carbonaceous-----	310	315
Coal; shale, carbonaceous-----	315	320
Coal; shale, carbonaceous-----	320	325

Drill-hole SD-2-30 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Coal; siltstone, carbonaceous-----	325	330
Shale, carbonaceous; coal-----	330	335
Siltstone, carbonaceous-----	335	340
Shale, carbonaceous-----	340	345
Shale, carbonaceous-----	345	350
Coal; shale, carbonaceous-----	350	355
Coal; sandstone, gray, fine-grained; shale, carbonaceous-----	355	360
Coal; sandstone, gray, fine-grained; shale, carbonaceous-----	360	365
Sandstone, gray, coarse-grained-----	365	370
Coal; shale, carbonaceous; siltstone-----	370	375
Coal; sandstone, brown, fine-grained-----	375	380
Coal; shale, carbonaceous; sandstone, brown-----	380	385
Sandstone, brown, medium-grained-----	385	390
Sandstone, brown, medium- to coarse-grained-----	390	395
Sandstone, brown, medium- to coarse-grained-----	395	400
Sandstone, brown, medium- to coarse-grained-----	400	405
Sandstone, brown, medium-grained-----	405	410
Coal; trace shale, carbonaceous-----	410	415
Coal; siltstone, carbonaceous-----	415	420
Coal; shale, carbonaceous; siltstone, carbonaceous-----	420	425
Coal; siltstone, carbonaceous-----	425	430
Coal; sandstone, brown, fine- to medium-grained-----	430	435
Shale, carbonaceous; siltstone, gray-----	435	440
Shale, carbonaceous-----	440	445

Drill-hole SD-2-30 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, carbonaceous-----	445	450
Siltstone, gray-----	450	455
Shale, carbonaceous; sandstone, gray, fine-grained-----	455	460
Shale, dark-gray-----	460	465
Sandstone, gray, fine-grained-----	465	470
Siltstone, gray-----	470	475
Sandstone, gray, fine-grained; shale, gray, silty-----	475	480
Sandstone, gray, fine-grained; shale, carbonaceous-----	480	485
Shale, carbonaceous; sandstone, gray, fine-grained-----	485	490
Shale, carbonaceous-----	490	495
Shale, carbonaceous-----	495	500
Shale, dark-gray, silty; sandstone, fine-grained-----	500	505
Shale, carbonaceous, silty; sandstone, gray, fine-grained----	505	510
Total depth - 510 ft.		

Drill-hole SD-1-32

[All depths stated herein are in feet; to convert to meters, multiply by 0.3048.]

Location: NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 24 N., R. 83 W., 6th P.M., Seminole Dam SE quadrangle
Carbon County, Wyoming

Collar elevation: 6,555 ft

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, carbonaceous-----	0	5
Mudstone, carbonaceous; shale, carbonaceous-----	5	10
Shale, light-brown, silty; shale, gray, silty-----	10	15
Shale, carbonaceous; sandstone, gray, fine-grained-----	15	20
Sandstone, light-brown, fine-grained; shale, gray, bentonitic-----	20	25
Sandstone, gray-brown, fine-grained-----	25	30
Sandstone, brown, fine-grained; shale, carbonaceous, bentonitic-----	30	35
Sandstone, light-brown, very fine grained-----	40	45
Shale, light-brown, silty; shale, gray, silty-----	45	50
Shale, carbonaceous-----	50	55
Shale, dark-gray, bentonitic-----	55	60
Siltstone, gray-----	60	65
Sandstone, gray, fine-grained-----	65	70
Sandstone, tan-brown, fine-grained-----	70	75
Sandstone, gray and brown, fine-grained; trace shale, gray---	75	80
Shale, carbonaceous; trace coal; trace shale, gray, bentonitic-----	80	85
Shale, gray, silty; shale, carbonaceous-----	85	90

Drill-hole SD-1-32--Continued

<u>Lithologic description</u>	Depth (ft)	
	<u>From</u>	<u>To</u>
Siltstone, gray-----	90	95
Sandstone, gray, medium-grained-----	95	100
Sandstone, gray-brown, coarse-grained; coal; shale, carbonaceous-----	100	105
Coal; trace shale, carbonaceous-----	105	110
Shale, gray, silty; shale, carbonaceous-----	110	115
Shale, gray, silty; sandstone, gray, very fine grained-----	115	120
Siltstone, gray-----	120	125
Siltstone, gray-----	125	130
Sandstone, gray, fine-grained-----	130	135
Sandstone, gray, fine-grained-----	135	140
Coal; shale, carbonaceous-----	140	145
Shale, gray, bentonitic; shale, carbonaceous-----	145	150
Shale, carbonaceous; sandstone, gray, fine-grained-----	150	155
Siltstone, gray-----	155	160
Shale, gray, silty; siltstone, gray-----	160	165
Shale, gray; shale, brown, carbonaceous; sandstone, silty, gray-----	165	170
Shale, gray, slightly silty; sandstone, gray, fine-grained; shale, carbonaceous-----	170	175
Shale, gray, silty; siltstone, gray-----	175	180
Siltstone, gray-----	180	185
Shale, carbonaceous; mudstone, carbonaceous-----	185	190
Shale, carbonaceous; coal-----	190	195
Siltstone; shale, silty, carbonaceous-----	195	200

Drill-hole SD-1-32 - Continued

<u>Lithologic description</u>	Depth (ft)	
	<u>From</u>	<u>To</u>
Shale, gray, slightly silty-----	200	205
Sandstone, gray, fine-grained-----	205	210
Shale, slightly silty, gray; siltstone, gray-----	210	215
Total depth - 218 ft.		

Drill-hole SD-1-36

[All depths stated herein are in feet; to convert to meters, multiply by 0.3048.]

Location: SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 36, T. 24 N., R. 84 W., 6th P.M., Seminoe Dam SE quadrangle
Carbon County, Wyoming

Collar elevation: 6,475 ft

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Sandstone, tan, very fine grained; shale, gray, silty-----	0	5
Shale, dark-gray; siltstone, tan; sandstone, tan, fairly coarse-----	5	10
Siltstone, gray, slightly shaly-----	10	15
Shale, brown, carbonaceous; sandstone, very fine grained; mudstone, gray, silty-----	15	20
Sandstone, buff, fine-grained; coal-----	20	25
Coal; shale, carbonaceous-----	25	30
Siltstone, gray-----	30	35
Siltstone, gray; sandstone, brown, fine-grained-----	35	40
Siltstone, shaly, gray-----	40	45
Siltstone, shaly, gray-----	45	50
Shale, gray, slightly silty, carbonaceous-----	50	55
Coal; shaly coal; shale, carbonaceous-----	55	60
Shale, carbonaceous-----	60	65
Shale, carbonaceous-----	65	70
Shale, carbonaceous; siltstone, gray-----	70	75
Shale, gray, silty-----	75	80
Shale, carbonaceous-----	80	85
Shale, carbonaceous; shaly coal-----	85	90
Siltstone, gray-----	90	95

Drill-hole SD-1-36 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, gray, slightly silty-----	95	100
Sandstone, gray, fine-grained-----	100	105
Sandstone, gray, fine-grained-----	105	110
Shale, gray, very silty-----	110	115
Siltstone, gray-----	115	120
Shale, gray, silty-----	120	125
Shale, carbonaceous-----	125	130
Shale, gray-----	130	135
Shale, gray-----	135	140
Shale, gray-----	140	145
Shale, gray-----	145	150
Shale, gray-----	150	155
Siltstone, gray-----	155	160
Siltstone, gray-----	160	165
Siltstone, gray-----	165	170
Siltstone, gray-----	170	175
Sandstone, gray, very fine grained-----	175	180
Sandstone, gray, very fine grained-----	180	185
Shale, gray, silty; mudstone, brown-----	185	190
Mudstone, gray; shale, carbonaceous-----	190	195
Shale, gray, silty; mudstone, brown-----	195	200
Shale, dary-gray; mudstone, gray-----	200	205
Siltstone, gray; shale, carbonaceous; trace coal-----	205	210
Siltstone, gray-----	210	215

Drill-hole SD-1-36 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, carbonaceous; trace coal-----	215	220
Shale, carbonaceous-----	220	225
Shale, gray, silty-----	225	230
Shale, gray, slightly carbonaceous-----	230	235
Siltstone, gray-----	235	240
Shale, gray, slightly silty-----	240	245
Shale, carbonaceous-----	245	250
Coal-----	250	255
Coal-----	255	260
Coal-----	260	265
Coal-----	265	270
Coal; trace shale, carbonaceous-----	270	275
Coal; trace shale, carbonaceous-----	275	280
Coal-----	280	285
Coal-----	285	290
Coal; shale, carbonaceous; shaly coal-----	290	295
Sandstone, fine-grained; shaly coal; shale, carbonaceous-----	295	300
Sandstone, gray, fine-grained-----	300	305
Shale, carbonaceous; shaly coal; siltstone-----	305	310
Shale, gray, silty-----	310	315
Sandstone, gray, fine-grained; mudstone, gray-----	315	320
Sandstone, gray, fine-grained-----	320	325
Siltstone, gray-----	325	330
Siltstone, gray-----	330	335

Drill-hole SD-1-36 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, gray, slightly silty and carbonaceous; siltstone, gray-----	335	340
Shale, carbonaceous-----	340	345
Shale, gray, silty-----	345	350
Shale, carbonaceous-----	350	355
Shale, carbonaceous-----	355	360
Shale, carbonaceous; shale, gray, silty-----	360	365
Shale, gray, silty-----	365	370
Shale, carbonaceous; shaly coal-----	370	375
Shale, gray, slightly silty; shale, carbonaceous-----	375	380
Shale, gray, silty; siltstone, gray-----	380	385
Siltstone, gray; mudstone, slightly carbonaceous-----	385	390
Sandstone, gray, fine-grained; mudstone, brown-----	390	395
Sandstone, gray, fine-grained-----	395	400
Siltstone, gray; siltstone, tan; mudstone, gray-----	400	405
Sandstone, gray and tan-----	405	410
Total depth - 410 ft.		

Drill-hole PB-1-4

(All depths stated herein are in feet; to convert to meters, multiply by 0.3048.)

Location: SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 4, T. 23 N., R. 83 W., 6th P.M., Pats Bottom quadrangle,
Carbon County, Wyoming

Collar elevation: 6,565 ft

<u>Lithologic description</u>	Depth (ft)	
	<u>From</u>	<u>To</u>
Sandstone, fine, brown-----	0	5
Sandstone, brown, fine-grained-----	5	10
Mudstone, tan, silty; sandstone, gray-----	10	15
Mudstone, dark-brown, silty; sandstone, gray, fine-grained---	15	20
Shale, carbonaceous; mudstone, gray-----	20	25
Shale, carbonaceous; sandstone, fine, gray; mudstone, dark- gray-----	25	30
Mudstone, dark-gray; sandstone, gray-----	30	35
Shale, carbonaceous; mudstone, dark gray-----	35	40
Mudstone, gray, silty-----	40	45
Sandstone, gray, fine; coal; trace shale, carbonaceous-----	45	50
Sandstone, light-gray, medium-grained-----	50	55
Sandstone, light-gray, medium-grained-----	55	60
Sandstone, gray, fine-grained; shale, dark-gray-----	60	65
Sandstone, gray, fine-grained; shale, gray-----	65	70
Sandstone, gray, fine-grained; siltstone, gray-----	70	75
Shale, gray, silty; trace coal-----	75	80
Sandstone, gray, fine-grained-----	80	85
Sandstone, gray, fine- to medium-grained-----	85	90
Shale, gray, slightly silty, bentonitic-----	90	95
Shale, brown, carbonaceous; shale, gray-----	95	100

Drill-hole PB-1-4 - Continued

<u>Lithologic description</u>	Depth (ft)	
	<u>From</u>	<u>To</u>
Shale, brown, carbonaceous; shale, gray-----	100	105
Sandstone, gray, fine-grained-----	105	110
Shale, gray, silty; trace coal-----	110	115
Siltstone, dark-gray; sandstone, gray, fine-grained-----	115	120
Sandstone, gray, fine-grained; siltstone, gray-----	120	125
Siltstone, gray; sandstone, gray-----	125	130
Mudstone, dark-gray; shale, gray, slightly silty-----	130	135
Shale, gray, silty-----	135	140
Siltstone, gray-----	140	145
Sandstone, gray, fine-grained-----	145	150
Shale, gray, silty; sandstone, gray; trace shale, carbonaceous-----	150	155
Siltstone, gray; shale, carbonaceous-----	155	160
Sandstone, gray, fine-grained; trace shale, gray, silty-----	160	165
Sandstone, gray, medium-grained-----	165	170
Sandstone, gray, medium-grained-----	170	175
Shale, carbonaceous, silty; trace coal; trace mudstone, carbonaceous-----	175	180
Shale, carbonaceous; trace coal-----	180	185
Shale, carbonaceous; trace coal; trace siltstone, gray-----	185	190
Shale, carbonaceous; shale, gray, silty; sandstone, gray, fine-grained; trace coal-----	190	195
Sandstone, gray, fine-grained-----	195	200
Sandstone, gray, fine-grained-----	200	205

Drill-hole PB-1-4 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Sandstone, gray, fine-grained-----	205	210
Sandstone, gray, fine-grained-----	210	215
Sandstone, gray, fine-grained; shale, carbonaceous-----	215	220
Shale, carbonaceous; trace coal-----	220	225
Shale, gray, silty; siltstone, gray-----	225	230
Siltstone, gray-----	230	235
Shale, gray, silty-----	235	240
Shale, carbonaceous-----	240	245
Shale, carbonaceous-----	245	250
Sandstone, gray, fine-grained-----	250	255
Sandstone, gray, fine-grained; shale, carbonaceous-----	255	260
Shale, gray, fine-grained; sandstone, gray, fine-grained-----	260	265
Shale, gray; siltstone, gray; trace shale, carbonaceous-----	265	270
Shale, carbonaceous; trace coal-----	270	275
Siltstone, gray-----	275	280
Shale, gray, silty-----	280	285
Sandstone, gray, fine-grained-----	285	290
Sandstone, gray, fine-grained; siltstone, gray-----	290	295
Sandstone, gray, fine-grained; shale, gray, silty-----	295	300
Siltstone; shale, gray, silty-----	300	305
Siltstone, gray-----	305	310
Siltstone, dark-gray; sandstone, gray, very fine grained-----	310	315
Shale, dark-gray, carbonaceous; siltstone, gray-----	315	320
Shale, carbonaceous; shaly coal-----	320	325

Drill-hole PB-1-4 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, carbonaceous; mudstone, carbonaceous; shaly coal-----	325	330
Shale, carbonaceous-----	330	335
Shale, carbonaceous, silty-----	335	340
Shale, carbonaceous; trace coal-----	340	345
Shale, carbonaceous; trace coal-----	345	350
Shale, carbonaceous; trace coal-----	350	355
Shale, carbonaceous; trace coal-----	355	360
Siltstone, gray-----	360	365
Shale, gray, silty; shale, carbonaceous; trace coal-----	365	370
Coal; shale, carbonaceous; siltstone, carbonaceous-----	370	375
Shale, carbonaceous; trace coal; trace siltstone, gray-----	375	380
Shale, gray, silty; trace coal-----	380	385
Shale, dark-gray, silty-----	385	390
Shale, carbonaceous; coal-----	390	395
Shale, carbonaceous; coal-----	395	400
Mudstone, gray; shale, carbonaceous; coal-----	400	405
Mudstone, carbonaceous; trace coal-----	405	410
Mudstone, gray; shale, carbonaceous; trace coal-----	410	415
Shale, gray, silty-----	415	420
Siltstone, gray-----	420	425
Siltstone, gray-----	425	430
Total depth - 430 ft.		

Drill-hole PB-1-6

[All depths stated herein are in feet; to convert to meters, multiply by 0.3048.]

Location: SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 6, T. 23 N., R. 83 W., 6th P.M., Pats Bottom quadrangle,
Carbon County, Wyoming

Collar elevation: 6,530 ft

<u>Lithologic description</u>	Depth (ft)	
	<u>From</u>	<u>To</u>
Sandstone, gray, fine-grained; shale, gray, silty-----	0	5
Mudstone, brown; sandstone, buff, fine- to medium-grained----	5	10
Shale, carbonaceous; mudstone, brown-----	10	15
Shale, carbonaceous, slightly boney; shale, brown, silty-----	15	20
Sandstone, buff, very fine grained; shale, gray-----	20	25
Shale, gray, silty; siltstone, gray-----	25	30
Sandstone, tan, fine-grained; shale, gray, silty-----	30	35
Shale, carbonaceous; trace coal; shale, carbonaceous, silty--	35	40
Coal; shale, carbonaceous; shale, silty-----	40	45
Shale, dark-gray, silty, slightly carbonaceous-----	45	50
Sandstone, gray, fine-grained; shale, carbonaceous; coal----	50	55
Coal; shale, carbonaceous; mudstone, dark-gray; shale, gray, silty-----	55	60
Shale, gray, silty; sandstone, gray, fine-grained-----	60	65
Sandstone, light-gray, fine-grained; siltstone, gray-----	65	70
Mudstone, dark-gray, slightly carbonaceous, silty-----	70	75
Shale, carbonaceous, silty-----	75	80
Shale, carbonaceous, silty-----	80	85
Shale, carbonaceous, silty; shale, carbonaceous; sandstone, fine-grained; coal-----	85	90

Drill-hole PB-1-6 - Continued

<u>Lithologic description</u>	Depth (ft)	
	<u>From</u>	<u>To</u>
Shale, carbonaceous, very silty-----	90	95
Coal; shale, carbonaceous; shale, gray, silty-----	95	100
Shale, carbonaceous; trace coal-----	100	105-
Coal; shaly coal-----	105	110
Siltstone, gray-----	110	115
Siltstone, gray-----	115	120
Shale, gray, silty; shale, carbonaceous-----	120	125
Siltstone, gray, fine-grained-----	125	130
Siltstone, gray-----	130	135
Siltstone, gray-----	135	140
Siltstone, gray-----	140	145
Siltstone, gray-----	145	150
Sandstone, gray, fine-grained-----	150	155
Sandstone, gray, fine-grained-----	155	160
Shale, dark-gray, silty; shale, carbonaceous-----	160	165
Coal; shale, carbonaceous-----	165	170
Coal; shale, carbonaceous-----	170	175
Siltstone, gray; coal-----	175	180
Siltstone, gray; sandstone, gray, fine- to medium-grained---	180	185
Shale, dark-gray, silty; shale, carbonaceous-----	185	190
Shale, dark-gray, silty-----	190	195
Siltstone, gray; mudstone, gray, silty-----	195	200
Sandstone, gray, fine-grained-----	200	205
Sandstone, gray, medium- to coarse-grained-----	205	210

Drill-hole PB-1-6 - Continued

<u>Lithologic description</u>	Depth (ft)	
	<u>From</u>	<u>To</u>
Sandstone, gray, medium-grained; sandstone, fine-grained-----	210	215
Shale, carbonaceous; sandstone, gray, medium-grained-----	215	220
Shale, carbonaceous-----	220	225
Sandstone, gray, coarse-grained-----	225	230
Sandstone, gray, coarse-grained-----	230	235
Shale, dark-gray-----	235	240
Coal; shale, gray, silty-----	240	245
Coal; shale, carbonaceous; shaly coal-----	245	250
Siltstone, gray-----	250	255
Siltstone, gray; sandstone, gray, fine-grained-----	255	260
Sandstone, gray, fine-grained-----	260	265
Sandstone, gray, medium-grained-----	265	270
Total depth - 270 ft.		

Drill-hole PB-2-6

[All depths stated herein are in feet; to convert to meters, multiply by 0.3048.]

Location: SW¹/₄NW¹/₄ sec. 6, T. 23 N., R. 83 W., 6th P.M., Pats Bottom quadrangle,
Carbon County, Wyoming

Collar elevation: 6,465 ft

<u>Lithologic description</u>	Depth (ft)	
	<u>From</u>	<u>To</u>
Sandstone, brown, fine-grained-----	0	5
Shale, carbonaceous-----	5	10
Shale, gray, silty-----	10	15
Sandstone, buff, silty-----	15	20
Sandstone, brown, fine-grained-----	20	25
Sandstone, brown, fine-grained-----	25	30
Coal; sandstone, light-brown, fine-grained-----	30	35
Shale, gray, silty, bentonitic-----	35	40
Shale, gray, silty; siltstone, gray-----	40	45
Sandstone, gray, fine-grained-----	45	50
Sandstone, gray, fine-grained-----	50	55
Sandstone, gray and brown, fine-grained-----	55	60
Sandstone, gray, medium-grained-----	60	65
Shale, gray, silty; sandstone, fine-grained-----	65	70
Shale, brown, carbonaceous; shale, gray-----	70	75
Shale, gray, silty-----	75	80
Shale, gray, silty-----	80	85
Shale, gray, silty-----	85	90
Shale, dark-gray, bentonitic-----	90	95
Shale, dark-gray, bentonitic-----	95	100

Drill-hole PB-2-6 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Siltstone, gray-----	100	105
Sandstone, gray, fine-grained; shale, carbonaceous; trace coal-----	105	110
Shale, gray, silty; sandstone, gray, fine-grained; trace coal-----	110	115
Shale, gray, silty-----	115	120
Shale, gray, silty-----	120	125
Shale, dark-gray; sandstone, gray, fine-grained-----	125	130
Sandstone, gray, fine-grained-----	130	135
Sandstone, gray, fine-grained-----	135	140
Sandstone, gray, fine-grained-----	140	145
Sandstone, gray, medium-grained-----	145	150
Sandstone, gray, fine-grained; trace shaly coal; trace coal--	150	155
Sandstone, gray, fine-grained; shale, carbonaceous; shaly coal; coal-----	155	160
Shale, carbonaceous; coal; sandstone, gray, fine-grained-----	160	165
Shale, carbonaceous-----	165	170
Shale, carbonaceous-----	170	175
Shale, carbonaceous; coal-----	175	180
Shale, gray, slightly silty-----	180	185
Sandstone, gray, medium-grained; siltstone, gray-----	185	190
Sandstone, gray, medium-grained; siltstone, gray-----	190	195
Sandstone, gray, coarse-grained-----	195	200
Coal; mudstone, gray-----	200	205

Drill-hole PB-2-6 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Coal; shale, carbonaceous; siltstone, gray-----	205	210
Shale, silty, gray; mudstone, brown-----	210	215
Siltstone, gray-----	215	220
Shale, gray-----	220	225
Siltstone, gray; shale, gray, silty-----	225	230
Sandstone, gray, fine-grained-----	230	235
Sandstone, gray, medium-grained-----	235	240
Sandstone, gray, medium- to fine-grained-----	240	245
Shale, carbonaceous-----	245	250
Sandstone, gray, medium-grained-----	250	255
Sandstone, gray, coarse-grained-----	255	260
Siltstone, gray; sandstone, gray, coarse-grained-----	260	265
Sandstone, gray, medium- to coarse-grained-----	265	270
Sandstone, gray, coarse-grained-----	270	275

Total depth - 330 ft.

Note: Samples from 275 feet to total depth of 330 feet consisted of caved material and therefore are not included in this description.

Drill-hole PB-1-8

[All depths stated herein are in feet; to convert to meters, multiply by 0.3048.]

Location: SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 23 N., R. 83 W., 6th P.M., Pats Bottom quadrangle,
Carbon County, Wyoming

Collar elevation: 6,610 ft

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Sandstone, brown, fine-grained; shale, gray-----	0	5
Sandstone, brown, coarse-grained-----	5	10
Siltstone, light-brown to gray-----	10	15
Mudstone, carbonaceous; shale, light-brown-----	15	20
Sandstone, light-brown, fine-grained-----	20	25
Sandstone, light-brown, fine-grained-----	25	30
Sandstone, light-gray, fine-grained-----	30	35
Shale, carbonaceous; coal-----	35	40
Shale, carbonaceous; coal-----	40	45
Shale, gray, slightly silty-----	45	50
Shale, dark-gray-----	50	55
Sandstone, light-gray, very fine grained-----	55	60
Shale, gray, silty-----	60	65
Siltstone, gray-----	65	70
Shale, carbonaceous; shaly coal; trace coal-----	70	75
Shale, carbonaceous; trace coal-----	75	80
Shale, carbonaceous; shaly coal; trace coal-----	80	85
Shale, carbonaceous; mudstone, carbonaceous-----	85	90
Shale, carbonaceous-----	90	95
Shale, carbonaceous-----	95	100

Drill-hole PB-1-8 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Sandstone, gray, very fine grained-----	100	105
Shale, carbonaceous-----	105	110
Shale, carbonaceous-----	110	115
Shale, gray; shale, carbonaceous-----	115	120
Shale, carbonaceous-----	120	125
Sandstone, gray, fine-grained; shale, gray-----	125	130
Siltstone, carbonaceous; shale, carbonaceous-----	130	135
Siltstone, gray-----	135	140
Siltstone, gray-----	140	145
Sandstone, gray, very fine grained-----	145	150
Shale, carbonaceous; trace coal-----	150	155
Shale, gray, silty-----	155	160
Sandstone, gray, medium-grained-----	160	165
Sandstone, gray, medium-grained; siltstone, gray-----	165	170
Shale, gray, silty-----	170	175
Shale, gray, silty-----	175	180
Sandstone, gray, fine-grained-----	180	185
Siltstone, gray-----	185	190
Sandstone, gray, medium-grained-----	190	195
Sandstone, gray, fine-grained-----	195	200
Sandstone, gray, medium-grained-----	200	205
Sandstone, gray, coarse-grained-----	205	210
Siltstone, gray-----	210	215
Sandstone, gray, coarse-grained-----	215	220

Drill-hole PB-1-8 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Sandstone, gray, coarse-grained; trace shale, carbonaceous---	220	225
Sandstone, gray, medium-grained; shale, gray, bentonitic----	225	230
Sandstone, gray, coarse-grained; siltstone, gray-----	230	235
Sandstone, gray, medium-grained-----	235	240
Sandstone, gray, coarse-grained-----	240	245
Sandstone, gray, coarse-grained-----	245	250
Shale, carbonaceous; trace coal-----	250	255
Siltstone, carbonaceous-----	255	260
Siltstone, gray; shale, carbonaceous; coal; shale, bentonitic-----	260	265
Siltstone, gray; mudstone, gray-----	265	270
Shale, gray, silty; shale, carbonaceous-----	270	275
Shale, gray, silty-----	275	280
Sandstone, gray, very fine grained-----	280	285
Sandstone, gray, fine-grained-----	285	290
Sandstone, gray, fine-grained-----	290	295
Sandstone, gray, fine-grained-----	295	300
Sandstone, gray, fine-grained-----	300	305
Sandstone, gray, fine-grained-----	305	310
Sandstone, gray, fine-grained-----	310	315
Sandstone, gray, fine-grained-----	315	320
Sandstone, gray, fine-grained-----	320	325
Sandstone, gray, medium-grained-----	325	330
Sandstone, gray, coarse-grained-----	330	335

Drill-hole PB-1-8 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Sandstone, gray, coarse-grained-----	335	340
Sandstone, gray, medium-grained-----	340	345
Sandstone, gray, coarse-grained-----	345	350
Sandstone, gray, very coarse grained-----	350	355
Sandstone, gray, coarse-grained-----	355	360
Sandstone, gray, fine-grained-----	360	365

Total depth - 430 ft.

Note: Samples from 365 ft to total depth of 430 ft consisted of caved material and therefore are not included in this description.

Drill-hole PB-1-18

[All depths stated herein are in feet; to convert to meters, multiply by 0.3048.]

Location: SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 23 N., R. 83 W., 6th P.M., Pats Bottom quadrangle,
Carbon County, Wyoming

Collar elevation: 6,530 ft

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Sandstone, brown, fine-grained; shale, brown-----	0	5
Siltstone, brown-----	5	10
Sandstone, brown, fine-grained-----	10	15
Shale, light-brown, silty-----	15	20
Shale, gray, silty-----	20	25
Sandstone, gray, fine-grained-----	25	30
Shale, carbonaceous; sandstone, fine-grained, brown-----	30	35
Shale, carbonaceous-----	35	40
Coal; shale, carbonaceous-----	40	45
Shale, carbonaceous; coal-----	45	50
Sandstone, gray, fine-grained-----	50	55
Shale, carbonaceous-----	55	60
Shale, carbonaceous-----	60	65
Shale, carbonaceous; siltstone, gray-----	75	70
Shale, gray, silty-----	70	75
Siltstone, gray-----	75	80
Shale, carbonaceous; trace coal-----	80	85
Siltstone, gray-----	85	90
Coal; trace shale, carbonaceous-----	90	95
Shale, carbonaceous-----	95	100

Drill-hole PB-1-18 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Shale, carbonaceous, silty; shale, gray, silty-----	100	105
Mudstone, carbonaceous; coal; shale, silty, gray-----	105	110
Mudstone, dark-gray, bentonitic-----	110	115
Mudstone, gray-brown, bentonitic-----	115	120
Shale, dark-gray, silty-----	120	125
Shale, gray, silty-----	125	130
Sandstone, gray, fine-grained-----	130	135
Sandstone, gray, fine-grained-----	135	140
Shale, gray, silty; trace coal-----	140	145
Sandstone, gray, fine-grained-----	145	150
Shale, gray, silty; shale, carbonaceous-----	150	155
Sandstone, gray, fine-grained-----	155	160
Shale, carbonaceous-----	160	165
Siltstone, gray-----	165	170
Sandstone, gray, fine-grained-----	170	175
Shale, gray, silty; shale, carbonaceous-----	175	180
Shale, carbonaceous; siltstone, gray-----	180	185
Shale, carbonaceous-----	185	190
Sandstone, gray, fine-grained; shale, gray, silty-----	190	195
Sandstone, gray, fine-grained; shale, gray, silty-----	195	200
Shale, carbonaceous-----	200	205
Siltstone, gray-----	205	210
Coal; trace shale, carbonaceous-----	210	215
Sandstone, gray, medium-grained-----	215	220

Drill-hole PB-1-18 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Sandstone, gray, medium-grained-----	220	225
Sandstone, gray, medium-grained-----	225	230
Sandstone, gray, medium-grained-----	230	235
Sandstone, gray, medium-grained-----	235	240
Sandstone, gray, fine-grained-----	240	245
Sandstone, gray, fine-grained-----	245	250
Sandstone, gray, medium-grained-----	250	255
Sandstone, gray, medium-grained-----	255	260
Sandstone, gray, fine-grained-----	260	265
Sandstone, gray, fine-grained-----	265	270
Shale, carbonaceous; siltstone, gray-----	270	725
Sandstone, gray, fine-grained; shale, carbonaceous-----	275	280
Shale, gray, silty; shale, carbonaceous-----	280	285
Sandstone, gray, fine-grained; shale, gray, silty-----	285	290
Sandstone, gray, fine-grained; siltstone, gray-----	290	295
Siltstone, gray; sandstone, gray, fine-grained-----	295	300
Sandstone, gray, fine-grained; shale, gray, silty-----	300	305
Sandstone, gray, fine-grained-----	305	310
Sandstone, gray, fine-grained-----	310	315
Sandstone, gray, fine-grained-----	315	320
Sandstone, gray, medium-grained-----	320	325
Sandstone, gray, fine-grained-----	325	330
Shale, gray, silty; trace shaly coal-----	330	335
Siltstone, gray-----	335	340

Drill-hole PB-1-18 - Continued

<u>Lithologic description</u>	<u>Depth (ft)</u>	
	<u>From</u>	<u>To</u>
Sandstone, gray, fine- to medium-grained-----	340	345
Siltstone, gray; shale, gray, silty-----	345	350
Siltstone, gray; trace shale, carbonaceous; trace shaly coal-	350	355
Shale, gray; shale, dark-gray; sandstone, gray, fine-grained-	355	360
Siltstone, gray-----	360	365
Shale, gray, silty; sandstone, gray, fine-grained-----	365	370
Sandstone, gray, fine-grained; shale, carbonaceous-----	370	375
Shale, silty, dark-gray; shale, carbonaceous; sandstone, gray, medium-grained-----	375	380
Siltstone, gray; shale, gray, silty-----	380	385
Sandstone, gray, fine-grained-----	385	390
Sandstone, gray, fine-grained; siltstone, gray-----	390	395
Sandstone, gray, fine-grained-----	395	400
Sandstone, gray, fine-grained-----	400	405
Sandstone, gray, fine-grained-----	405	410
Total depth - 410 ft.		