

MAP SHOWING PROJECTED LAND DISTURBANCE BY SURFACE MINING OF COAL IN CAMPBELL COUNTY, WYOMING

by Nancy J. Noreen and David W. Moore

About 16,480 hectares of land may be disturbed by the surface mining of coal in the eastern Powder River Basin, Campbell County, Wyoming; this figure is a projected figure and is subject to change. Data used to compile this map are current as of December 1, 1977, and were obtained from unpublished mining and reclamation plans submitted to the U.S. Geological Survey Area Mining Supervisor in Casper, Wyoming. The projected sequence of mining was compiled by each company, showing areas to be disturbed annually for the life of the mine. For this report the units are periods of five years except the years prior to 1980 and after 1995, which are one unit each.

The areas of disturbance projected for each mine were measured individually on 1:24,000 scale maps with an electronic planimeter. The 16,480 hectare value is the sum of these individual measurements and should vary less than  $\pm 25$  hectares in 2 out of 3 repeated measurements by the same operator. The source of greatest uncertainty is not the map measurements themselves, but rather the projections of mining which could change due to fluctuation in the future need for coal. Figure 1 summarizes the area projected to be disturbed. In this study no estimation of areas to be reclaimed was attempted because the necessary data are not available.

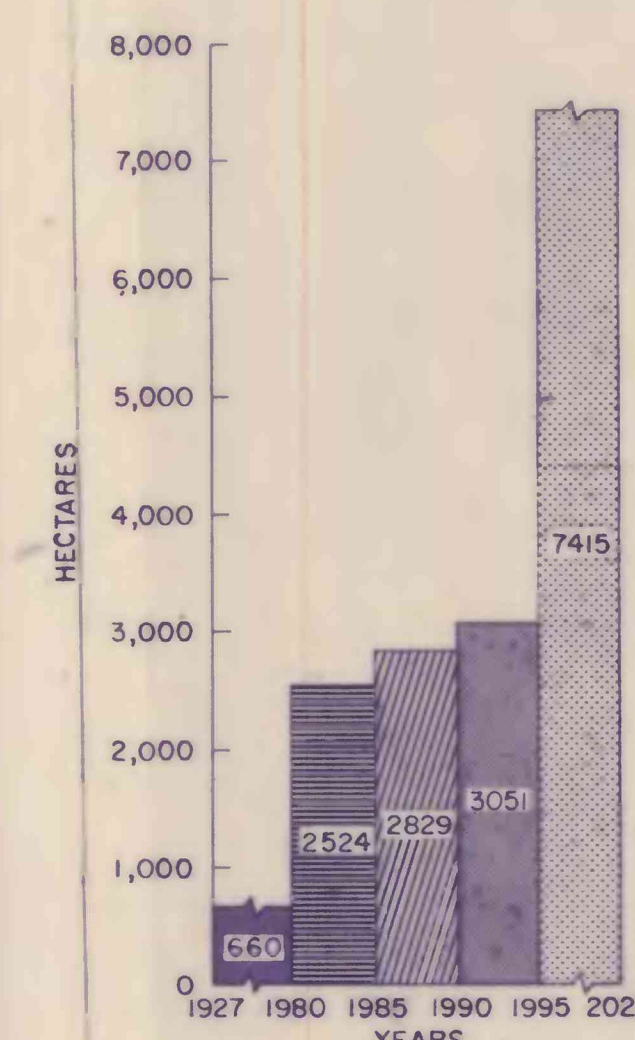


Figure 1.—Histogram showing area which may be disturbed by the thirteen mines shown on the map. The area includes federal and state leases and fee lands. The time interval begins with the opening of the earliest mining operation, 1927, and ends at the projected closing date of the last mining operation, 2022.

The subbituminous Wyodak-Anderson coal bed, the major seam being mined in this area, occurs in the upper part of the Fort Union Formation of Paleocene age and in the lower part of the Wasatch Formation of Eocene age (Denson, Kaefer, and Horn, 1973). All thirteen surface mines in the map area lie within the strippable coal boundary. On the map, the east line approximately marks the coal outcrop and the west line marks the 90 m overburden thickness (generalized from unpub. data, S. T. Buck, N. M. Denson, J. H. Dover, G. C. Martin, L. M. Omonson, W. M. Purdon, F. R. Shaw, U.S. Geological Survey, 1977).

Mining will occur outside several of the federal and state leases where fee lands were acquired by the company from adjoining private land owners. This circumstance may be seen on the map for all mines except the Buckskin, Eagle Butte, Pronghorn, Coal Creek, and Black Thunder mines.

The projected cumulative total of the land to be disturbed by the mining operations is shown in figure 2. In addition to the area shown in figure 2, approximately 520 hectares will be disturbed by mine facilities, such as buildings and shops (U.S. Dept. of Interior, 1974). The existing and proposed railroad lines will disturb even additional area but it was not measured in this analysis. The Burlington-Northern railroad plans to service coal mines from the Buckskin mine about 16 kilometers north of Gillette, Wyoming, to the Black Thunder mine about 17 kilometers southeast of Reno Junction, Wyoming (written commun., W. H. Ferryman, Burlington-Northern railroad, 1977). The railroad is under construction southward from Black Thunder mine to Douglas and northward from North Rawhide mine.

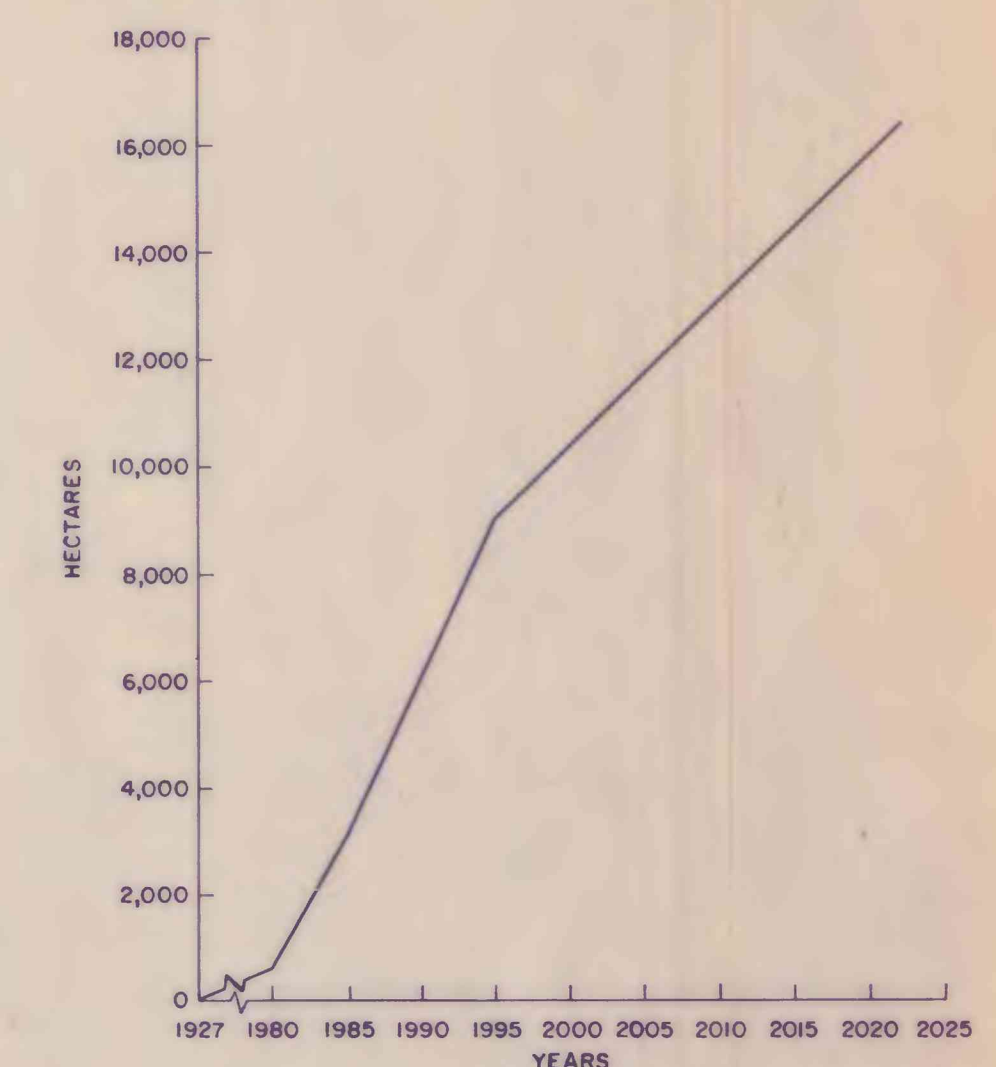
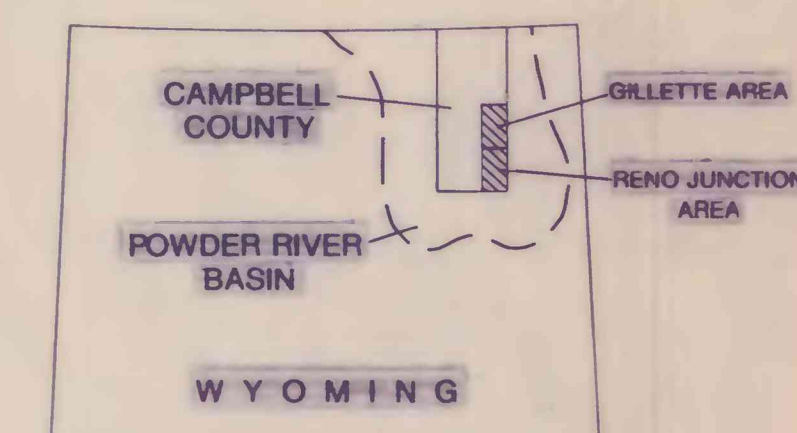


Figure 2.—Graph showing projected cumulative area to be disturbed for the same area and time interval as figure 1. The area includes federal and state leases and fee lands.

The mines which are planned or are operating in the map area as of December, 1977, are listed in Table 1.

Table 1.—Mines planned or operating in part of Campbell County, Wyoming

Name of mine	Owner or Operator	
Coal shipping progress		
Wyodak	Wyodak Resources Development Corporation	
Belle Ayr	Anax Coal Company	
Cordero	Sun Oil Company	
North Rawhide	Cartier Mining Company	
Overburden removal underway		
Black Thunder	Atlantic Richfield Company	
Jacobs Ranch	Kerr-McGee Company	
Eagle Butte	Anax Coal Company	
Mine in planning stages		
Buckskin	Shell Oil Company	
East Gillette	Kerr-McGee Company	
Caballo	Cartier Mining Company	
Pronghorn	Mobil Oil Corporation and Consolidation Coal Company	
Coal Creek	Atlantic Richfield Company	
Rehelle	Peabody Coal Company	



Index map showing location of this report

# REFERENCES

- Denson, N. M., Kaefer, W. R., and Horn, G. H., 1973, Coal resources of the Gillette area, Wyoming: U.S. Geol. Survey Misc. Inv. Ser. I-848 C (1974).
- Denson, N. M., and Kaefer, W. R., 1974, Map of the Wyodak-Anderson coal bed in the Gillette area, Campbell County, Wyoming: U.S. Geol. Survey Misc. Inv. Ser. I-848 D.
- U.S. Department of Interior, 1974, Final environmental impact statement, eastern Powder River Coal Basin of Wyoming, v. 1, 458 p.

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1978

Base from U.S. Geological Survey,  
Gillette, 1972

SCALE 1:100,000

### CONTOUR VALUES

Feet	Meters	Feet	Meters
4000	1219.2	5000	1524.0
4200	1280.2	5200	1584.0
4400	1341.2	5400	1645.0
4600	1402.2	5600	1705.0
4800	1463.2	5800	1765.0
5000	1524.0	6000	1828.8
5200	1584.0	6200	1889.6
5400	1645.0	6400	1950.4
5600	1705.0	6600	2011.2
5800	1765.0	6800	2072.0
6000	1828.8	7000	2132.8

Meters equal feet times 0.3048

### LEGEND

- Perennial stream, lake
- Intermittent stream, lake
- Village or locality
- Landmark structure

