



General geology

The Gap SW quadrangle is in Campbell County, Wyoming, on the eastern flank of the Powder River Basin. The geology has been mapped by Grazioplene (1974). Regional dip is westward about 1 degree toward the axis of the basin. The Eocene Wasatch Formation is exposed at the surface over most of the quadrangle. The Wasatch averages 300 ft (91.4 m) in thickness and is composed of shale in the lower part and fine-grained sandstone and shale in the upper part.

The lower contact of the Wasatch used by Grazzi (1974) is the top of the Wyodak coal bed, the uppermost bed of the Paleocene Fort Union Formation. The Wyodak, the thickest coal in the area, ranges in depth from less than 100 ft (30.5 m) on the east edge of the quadrangle to at least 500 ft (152 m) on the west.

Wyodak coal bed

In this quadrangle, the Wyodak coal bed is a single unit that ranges in thickness from 60 to 100 ft (18.3 - 30.5 m) and averages about 75 ft (23 m). It gradually thickens westward across the quadrangle. Coal rank is subbituminous C, with an ash content of 5.3 percent, a sulfur content of 0.6 percent, and a heating value of 8,820 Btu/lb. (as-received). These values were taken from an analysis of a Wyodak coal sample from the Amax Belle Ayr Mine in the northeastern part of the quadrangle.

Coal resources

Data from well logs were used to correlate the coal beds and then to draw isopachs of the coal thickness of the Wyodak bed.

Coal resources were calculated using the conversion factor of 1,770 short tons (1,607 t) per acre-foot of subbituminous coal. Total resources for the Wyodak coal bed in The Gap SW quadrangle are approximately 3,831 million tons (3,474 million t). Of this total, 2,801 million tons (2,490 million t) are on Federal nonleased land; 659 million tons (598 million t) are on Federal leased land; and 370 million tons (336 million t) are on private land. The northeastern part of the quadrangle is under lease with the Anax Bel Air Mine (currently operating), and a lease application has been filed for an extension in the north-central part of the map area.

Reference cited

Grazis, S.L., 1974, Preliminary geologic map and coal resources of The Gap SW quadrangle, Campbell County, Wyoming: U.S. Geol. Survey Open-File Rept. 74-24. (In press, 1976, for publication as Coal Inv. Map C-78)

Strippable coal resources of the Wyodak coal bed

(To convert short tons to metric tonnes, multiply by 0.9078)

Overburden thickness (feet)	Strippable coal (short tons)
<u>Federal nonleased coal</u>	
0-200 -----	51,373,207
200-500 -----	2,749,657,372
TOTAL -----	2,801,030,579
<u>Federal leased coal</u>	
0-200 -----	450,641,700
200-500 -----	208,618,469
TOTAL -----	659,260,169
<u>Non-Federal coal</u>	
0-200 -----	81,983,740
200-500 -----	288,972,053
TOTAL -----	370,955,793
GRAND TOTAL -----	3,831,246,541

PRELIMINARY COAL RESOURCE OCCURRENCE MAP OF THE WYODAK BED IN THE GAP SW QUADRANGLE, CAMPBELL COUNTY, WYOMING

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

