## JONES, RICHARD W., Wyoming Geological Survey

## Wyoming Coal Developments and Future Prospects

Wyoming continued its hold on third place in U.S. coal production in 1984 with 130.7 million tons produced. The state was behind only Kentucky ( 165.5 million tons) and West Virginia ( 130.9 million tons) in total production; the state has led the nation in surface-mined coal since 1980 and currently produces about one-fourth of the nation's surface-mined coal. Wyoming's 1984 production increases of more than sixteen percent over 1983 production is the highest annual rate of increase since 1980 and is related to a decrease in the price of coal, an increased demand for coalgenerated electricity, and the availability of low-priced coal from a large over-capacity at many of the state's mines.

In 1984, Campbell County recorded a twenty percent increase over 1983's production and now accounts for over eighty percent of the state's total production. The Powder River Basin's seventeen coal mines accounted for 86 percent of the state's coal production in 1984. Most of the growth in Wyoming's coal industry in the early 1970's was in southern Wyoming, especially in the Hanna and Green River

Basins. Since 1977, the Powder River Basin has accounted for most of the state's increases. Production in southern Wyoming has been gradually decreasing since 1980.

Despite coal production increases, employment at Wyoming mines continues to decrease; current employment of 5,336 is at the lowest level since 1979. This reflects decreased production in southern Wyoming and a shift to less labor intensive, more efficient surface mines in the Powder River Basin. Overall productivity in the state's coal mines is over four times the national average and has increased annually since 1979. Surface mine productivity is about three times the national average and about 1.3 times the Western Region average. Differences in productivity from southern Wyoming and Powder River Basin mines, as well as the employment and production decreases in southern Wyoming, can ultimately be related to inherent geologic differences between the two areas.

In 1983, Wyoming coal was used in 23 states, with Texas and Wyoming the largest consumers. Eighty percent of the state's production went to only seven different states. Nearly 98 percent of the state's coal is used by the electric utility industry; 99 percent of the coal shipped out-of-state is also used for power generation, the remaining twelve percent is used in other mineral-related industries (trona, bentonite, cement, and form coke) as well as in sugar plants and for residential/commercial heating.

Ninety percent of the state's coal was transported by rail in 1983, with Burlington Northern accounting for 79 percent of the total. In 1984, three railroad companies, including the newly completed Union Pacific/Chicago North Western joint venture, hauled Wyoming coal. Projecting future trends for the state's coal production are very difficult under today's unstable economic and market conditions. Short-term predictions are difficult, as the unexpected increase in coal production from 1983 to 1984 showed, and long-range forecasting can be even more difficult.

However, because many of the state's coal contracts call for long-term (20 year plus) deliveries to steam plants committed to burning low sulfur subbituminous western coal, a knowledge of these coal contracts, combined with information on coal mine production capacities and coal mine construction/expansion, does improve the forecasting.

Wyoming's coal production is still expected to increase each year, although at a much lower rate than experienced in previous years. An average annual rate of increase of one to three percent each year will result in about 14.5 million tons being produced by 1990. Wyoming mines have produced about eight percent less than contract amounts for three years preceding 1984. The production surge in 1984 resulted in actual production being only two percent under the contracted production. If the rate of production increase each year levels off at one to three percent, it is expected that by 1989, actual production will equal the contracted production of 145.5 million tons.

