

MINERALS REPORT 3

MINERAL PRODUCTION IN SOUTH DAKOTA

IN 1958

Prepared by the
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South Dakota State Geological Survey

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SOUTH DAKOTA GEOLOGICAL SURVEY
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PRELIMINARY ANNUAL FIGURES

Mineral production in South Dakota in 1958 was valued at \$42.6 million, an increase of 6 percent compared with 1957.

Metals produced (gold, silver, beryllium, columbium-tantalum, and uranium) declined in value nearly 1 percent as compared with 1957 and represented 47 percent of the State's total mineral production. Gains were noted in the value of output of columbium-tantalum and silver, but gold declined slightly, and beryllium and uranium decreased substantially. Uranium ore produced declined 52 percent in quantity, but only 18 percent in value. The grade of the ore produced increased from 0.17 percent to 0.23 percent uranium oxide, a gain of 35 percent.

Nonmetal commodities, as a group, increased 14 percent in value compared with 1957. Substantial gains in the value of cement and sheet mica (51 and 50 percent, respectively) were recorded. Miscellaneous clay and scrap mica declined in total value, and modest gains ranging from 1 to 4 percent were noted for other non-metal products. Sand and gravel, cement, and stone, in that order, were the most important of the nonmetals and represented 93 percent of the value of nonmetal production and 47 percent of the value of the State's total mineral production.

The mineral fuels--petroleum and coal (lignite)--produced in 1958 represented less than 1 percent of the total value of the State's mineral production. A gain of 6 percent was recorded in the value of petroleum production which has been gradually increasing since the discovery of the Buffalo field in 1954.

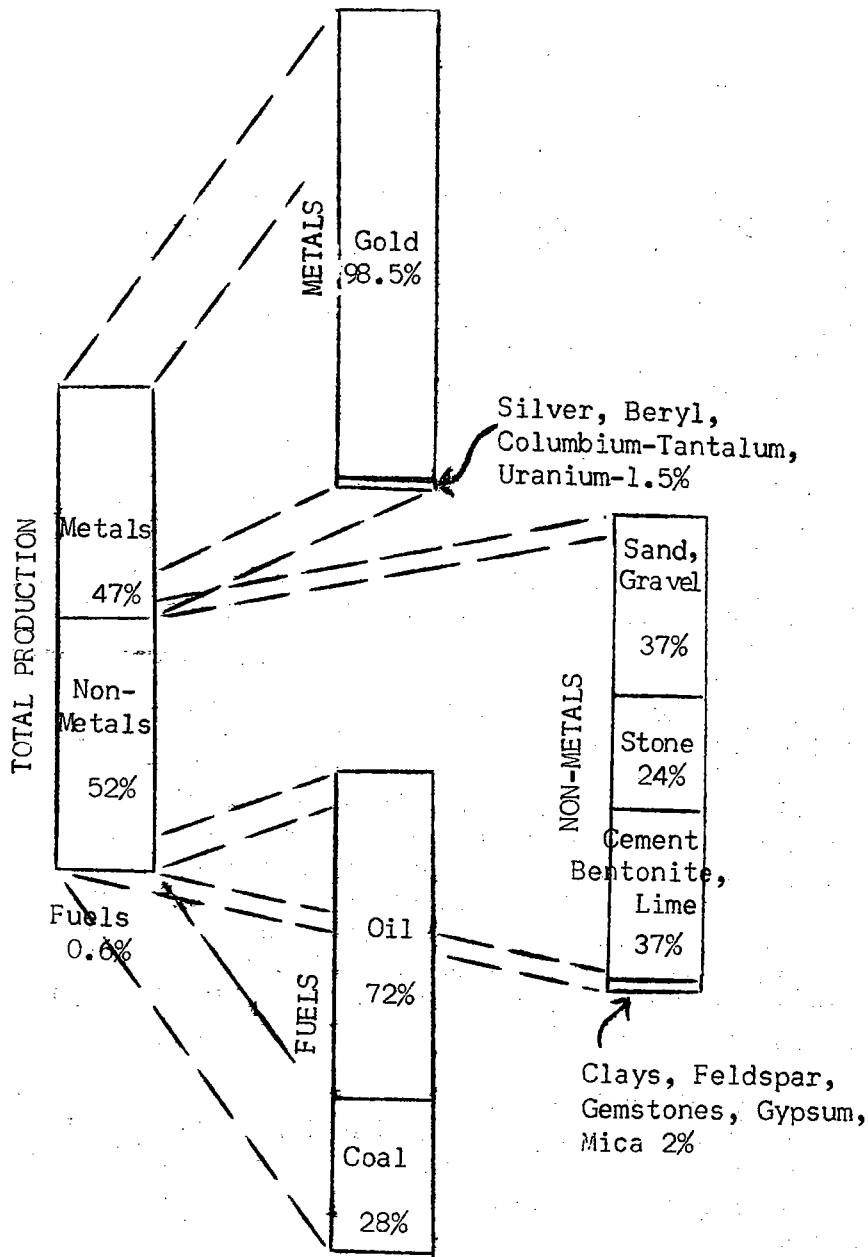


Figure 1.--Value of Mineral Production, 1958

METALS

The production of beryllium concentrate (beryl) declined, whereas the production of columbium-tantalum concentrates (columbite-tantalite) increased in 1958, compared with 1957. Both are recovered as byproducts in the mining of pegmatite deposits.

The output of gold declined slightly, but silver production increased 11 percent. Gold production at Homestake Mining Co., the leading producer of gold in the Nation, increased but production of silver declined. At the Bald Mountain Mining Co. gold production declined 21 percent but silver production was more than double that in 1957.

Uranium production in 1958, mainly from Fall River County, declined 53 percent, compared with 1957. The grade of the ore mined, however, increased from 0.17 percent (3.4 pounds per ton) to 0.23 percent (4.6 pounds per ton) of uranium oxide. The production and treatment of uranium ores containing less than 0.20 percent (4.0 pounds per ton) of uranium oxide has become economically difficult to both the producer and processor; consequently more high-grade material was produced. Mines Development, Inc., operated its 300-ton-a-day mill at Edgemont the entire year. Following a study by the Atomic Energy Commission (AEC) late in 1957 to determine the adequacy of uranium milling capacity in the various producing areas, a recommendation for a 600-ton-a-day plant to process the uraniumiferous lignites of North and South Dakota was made. A proposal by International Resources Corp. to build such a mill in either North or South Dakota had not been acted upon at year's end.

TABLE 1.--Mineral production in South Dakota, 1957-58 1/

Mineral	1957		1958 (preliminary)	
	Thousand short tons (unless otherwise stated)	Value (thousands)	Thousand short tons (unless otherwise stated)	Value (thousands)
Beryllium concentrate-----short tons, gross weight--	268	\$145	225	\$124
Clays 2/-----	176	176	150	150
Coal (lignite)-----	21	79	16	(3)
Columbium-tantalum concentrate-----thousand pounds--	2	6	3	9
Feldspar-----thousand long tons--	41	267	41	265
Gem stones-----	(4)	15	(4)	15
Gold (recoverable content of ores, etc.) thousand troy ounces--	568	19,885	568	19,880
Gypsum (crude)-----	13	53	14	55
Mica:				
Scrap-----	2	43	2	38
Sheet-----thousand pounds--	9	46	15	77
Sand and gravel-----	14,758	8,001	15,201	8,241
Silver (recoverable content of ores, etc.) thousand troy ounces--	135	122	150	136
Stone-----	1,718	5,068	1,770	5,220
Uranium ore-----	70	760	33	622
Value of items that cannot be disclosed: Bentonite, cement, iron ore (1957), lime, petroleum, and values indicated by footnote 3-----		6,090		8,461
Total 5/-----		39,997		42,558

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Excludes bentonite; value included with "Items that cannot be disclosed."

3/ Figure withheld to avoid disclosing individual company confidential data; value included with "Items that cannot be disclosed."

4/ Weight not recorded.

5/ Total has been adjusted to eliminate duplication in the value of raw materials used in manufacturing cement and lime.

NONMETALS

Shipments of portland cement in 1958 from the State-owned plant at Rapid City rose sharply compared with 1957. The State Cement Commission, operator of the plant, continued a program of expansion; 6 slurry storage tanks having a combined capacity of 12,000 barrels were completed and an additional 900,000-barrel kiln reportedly will be added to the plant in 1959. Upon completion of the program, annual capacity of the plant will be 3.3 million barrels. The Commission mined limestone, clay, and gypsum used in the manufacturing process from deposits near the plant.

The production of miscellaneous clays for the manufacture of cement, clay products, and light-weight aggregates declined 15 percent. Bentonite from deposits near Belle Fourche was produced at approximately the same rate as in 1957. Raw material for the two bentonite processing plants at Belle Fourche, active the entire year, came largely from deposits in Wyoming.

The feldspar grinding plant of Consolidated Feldspar Department, International Minerals & Chemical Corp., at Custer was destroyed by fire on July 30. Rebuilding of the plant was started in September and operation of the plant began early in December, although construction was not entirely completed. Feldspar produced by the corporation and by individual operators was stockpiled at the plant site pending rebuilding of the mill. Production in 1958 was the same as in 1957.

Sheet and scrap mica were produced as primary and coproducts of feldspar mining in Custer and Pennington Counties. The quantity of scrap mica recovered was the same as in 1957, whereas the quantity of sheet mica recovered by individuals and the General Services Administration (GSA) from hand-cobbed mica at its processing plant at Custer increased 67 percent. The value per pound of the sheet mica recovered increased slightly, indicating that a better product was delivered to the GSA plant compared to 1957.

Production of sand and gravel advanced slightly from 1957. The bulk of the sand and gravel produced was used in road building. During the first 10 months of 1958, 7.2 miles of the national interstate program were completed ^{1/}. Under a special program based on the Federal-Aid Highway Act of April 16, 1958, to accelerate progress of construction of the interstate system, 17.8 miles of highway were completed and 210.3 miles were under construction. Under the continuing program of Federal assistance for the improvement of Federal-aid primary and secondary highway systems and their urban extensions, from July 1, 1956, through October 1958, 2,369.4 miles had been completed and 338.3 miles were under construction.

Crushed limestone, principally for cement, concrete aggregate, and road construction, was produced in the western counties. The production of dimension granite at quarries in Grant County continued. Total stone production increased slightly compared with 1957.

^{1/} United States Department of Commerce, Bureau of Public Roads, Status of Federal-Aid Highway Programs, October 1958: BPR 58-31.

MINERAL FUELS

Coal (lignite), from mines producing in excess of 1,000 tons, came from strip operations in Dewey County. Lesser quantities for local consumption was produced at mines in the northwestern counties. Production in 1958 declined 24 percent and was comparable to the national decline in coal output.

Petroleum production from wells in the Buffalo field in Harding County increased 13 percent, compared with 1957. Exploratory drilling declined slightly compared with the previous year. Reports of the State Geologist show 15 wells completed; of these, one was classified as a discovery, and one was an extension of the Buffalo pool. This discovery, in the southern end of the Williston Basin in Harding County, recovered gas-cut oil on a drill stem test from a depth of 8,485 feet in the Red River formation, and has a potential pump production of 288 bbl oil per day.