

THE MINERAL INDUSTRY OF TENNESSEE

This chapter has been prepared under a Memorandum of Understanding between the U.S. Bureau of Mines, U.S. Department of the Interior, and the Tennessee Division of Geology for collecting information on all nonfuel minerals.

Tennessee ranked 18th among the 50 States in total nonfuel mineral value¹ in 1994, moving up from its 1993 standing of 19th, according to the U.S. Bureau of Mines. The estimated value for 1994 was \$577 million, a 13% increase from the almost \$510 million achieved in 1993. This increase followed a more than 11% decrease from 1992 to 1993. The State accounted for more than 1.5% of the U.S. total. This fluctuating pattern in values was mostly driven by similar decreases in 1993, followed by increases in 1994 for crushed stone and zinc, the State's two most valuable commodities. Other mineral commodities with similar patterns but less impact on total values were construction sand and gravel, lime, and fuller's earth. Crushed stone has been Tennessee's leading commodity for more than 25 years, except for 1981 when zinc was first. Industrial minerals accounted for 78% of Tennessee's total nonfuel mineral value, while crushed stone represented more than 47% of the total. Compared with 1993, the value of crushed stone, zinc, construction sand and gravel, ball clays, industrial sand and gravel, fuller's earth, masonry cement, dimension stone, and copper increased. Decreases occurred in portland cement, lime, and common clays.

Based on a comparison of estimated quantities of mineral produced in the 50 States, Tennessee remained the leading gemstone- and ball clay-producing State, 2d in zinc, 7th in fuller's earth, and 11th in crushed stone. The

State ranked 10th in the production of primary aluminum, which was produced from materials received from foreign sources. Tennessee was one of two States that produced cadmium as a byproduct of the processing of domestically mined zinc ore. One company in each State recovered cadmium during the smelting and refining process of its zinc concentrates. Additionally, small amounts of gold from placer deposits were recovered in Monroe County in southeastern Tennessee.

According to the Tennessee Division of Geology, the State's zinc mining industry had a very active year. ASARCO Inc.'s east Tennessee zinc mining operations continued on a 7-day work week that began in 1992. Approximately 600 employees produced about 67,500 metric tons (149 million pounds) of zinc in concentrate for Asarco in 1994. Also of note was the completion of the Gann air shaft servicing the eastern down dip portion of Asarco's Immel Mine. The assets of Union Zinc Co. were purchased by Savage Resources, Ltd., of Sydney, Australia. These included Union's Jersey-Miniere Zinc, Inc. (JMZ) division, which operated the Gordonsville-Elmwood-Cumberland mining and milling complex, the Jefferson City Zinc Mine and mill, and the Clinch Valley Zinc Mine and mill (formerly named the Idol Mine). Also included in the transaction was the JMZ electrolytic refinery at Clarksville, TN. All of the aforementioned properties are operated by Savage Zinc, Inc., the U.S. subsidiary of

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN TENNESSEE¹

Mineral	1992		1993		1994 ^p	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Clays ² thousand metric tons	574	\$24,097	607	\$25,703	641	\$27,500
Gemstones	NA	23,347	NA	21,795	NA	W
Sand and gravel:						
Construction thousand metric tons	7,691	35,077	^e 7,200	^e 34,000	8,100	38,900
Industrial do.	614	10,665	644	11,736	W	W
Stone:						
Crushed do.	^e 42,366	^e 243,800	43,534	226,521	^e 50,000	^e 273,000
Dimension metric tons	^e 3,084	^e 320	4,553	552	W	W
Combined value of cement, clays (bentonite, common, fuller's earth), copper, lead, lime, silver (1992-93), zinc, and values indicated by symbol W						
Total	XX	238,498	XX	189,358	XX	238,000
		575,804		509,665		³ 577,000

^eEstimated. ^pPreliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" data.

XX Not applicable.

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

²Excludes certain clays; kind and value included with "Combined value" data.

³Data do not add to total shown because of independent rounding.

TABLE 2
TENNESSEE: CRUSHED STONE¹ SOLD OR USED BY PRODUCERS IN 1993, BY USE

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch):			
Macadam	137	\$707	\$5.16
Riprap and jetty stone	1,039	5,198	5.00
Filter stone	246	1,137	4.62
Other coarse aggregate	192	723	3.77
Coarse aggregate, graded:			
Concrete aggregate, coarse	3,602	18,374	5.10
Bituminous aggregate, coarse	9,523	45,563	4.78
Bituminous surface-treatment aggregate	1,514	9,616	6.35
Railroad ballast	W	W	4.36
Other graded coarse aggregate	W	W	4.47
Fine aggregate (-3/8 inch):			
Stone sand, concrete	1,227	8,298	6.76
Stone sand, bituminous mix or seal	594	2,936	4.94
Screening, undesignated	2,569	13,533	5.27
Other fine aggregate	44	165	3.75
Coarse and fine aggregates:			
Graded road base or subbase	9,567	46,808	4.89
Unpaved road surfacing	317	1,664	5.25
Terrazzo and exposed aggregate	W	W	4.59
Crusher run or fill or waste	1,885	8,218	4.36
Other coarse and fine aggregates	1,153	4,902	4.25
Other construction materials ²	2,008	9,394	4.68
Agricultural:			
Agricultural limestone ³	545	4,092	7.51
Chemical and metallurgical:			
Cement manufacture	(4)	(4)	4.88
Lime manufacture	(4)	(4)	16.53
Sulfur oxide removal	(4)	(4)	4.07
Special:			
Mine dusting or acid water treatment	W	W	15.67
Asphalt fillers or extenders	W	W	5.51
Whiting or whiting substitute	W	W	11.03
Other fillers or extenders ⁵	591	5,777	9.77
Other specified uses not listed	1,986	12,480	6.28
Unspecified:⁶			
Actual	3,002	17,240	5.74
Estimated	1,796	9,695	5.40
Total ⁷	43,534	226,521	5.20
Total ^{8 9}	47,988	226,521	4.72

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."

¹Includes dolomite, granite, limestone, limestone-dolomite, miscellaneous stone, and sandstone.

²Includes building products.

³Includes poultry grit and mineral food.

⁴Withheld to avoid disclosing company proprietary data; included with "Other specified uses not listed."

⁵Includes mine dust or acid water treatment, asphalt filler or extenders, and whiting or whiting substitute.

⁶Includes production reported without a breakdown by use and estimates for nonrespondents.

⁷Data may not add to totals shown because of independent rounding.

⁸One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

⁹Total shown in thousand short tons and thousand dollars.

Savage Resources. In the Coker Creek gold district of Monroe County, the East Coast Prospectors Club, headquartered in Elijay, GA, has a lease on private land that was formerly under lease by Weekend Gold Miners, Inc. Members mine placer gold using portable dredges and pans. Coker Creek Village operates a pan-for-fee operation

for naturally occurring placer gold deposits.

¹The term value means the total monetary value as represented by either mine shipments, mineral commodity sales, or marketable production as is applicable to the individual mineral commodities.

TABLE 3
TENNESSEE: CRUSHED STONE SOLD OR USED, BY KIND

Kind	1991 ¹				1993			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	108	34,948	\$196,188	\$5.61	¹ 106	¹ 38,754	¹ \$203,672	¹ \$5.26
Dolomite	11	W	W	4.65	9	W	W	4.71
Granite	2	W	1,927	W	1	W	W	4.96
Sandstone	3	W	W	13.27	1	W	W	5.51
Miscellaneous stone	1	W	W	5.62	1	W	W	5.26
Total ²	XX	39,996	223,561	5.59	XX	43,534	226,521	5.20
Total ^{3 4}	XX	44,088	223,561	5.07	XX	47,988	226,521	4.72

¹Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

²Includes "Limestone-dolomite," reported with no distinction between the two.

³Data may not add to totals shown because of independent rounding.

⁴One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

⁵Total shown in thousand short tons and thousand dollars.