

THE MINERAL INDUSTRY OF NEW MEXICO

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 New Mexico Bureau of Mines and Mineral Resources for collecting information on all nonfuel minerals.

New Mexico ranked 12th nationally in total nonfuel mineral value¹ in 1994, climbing from 15th in 1993. The estimated value for 1994 was \$914 million, a nearly 14% increase compared with that of 1993. This increase followed an 8% decrease that occurred from 1992 to 1993. The State accounted for about 3% of the U.S. total mineral value. The increased value of copper accounted for the largest portion of the substantial 1994 rise. Following a declining trend begun in 1990, copper's production value significantly rebounded in 1994 to above its 1992 value, while production also increased a small amount. Based on value, copper and potash are the top two nonfuel minerals, respectively, that are mined in the State. The value for the two combined amounted to 10 times the value of any other single mineral commodity produced in the State. While having much less impact than that of copper, construction sand and gravel, and portland cement values significantly increased in 1994 compared with those of 1993 and together provided most of the remainder of New Mexico's nonfuel mineral value increase for the year. In contrast, 1993 increases in portland cement, construction sand and gravel, and crushed stone values compared with those of

1992 only moderately offset fairly steep declines in copper and potash. Relative to 1993 State performance, mineral values during 1994 increased for the following: copper, construction sand and gravel, portland cement, crushed stone, perlite, salt, pumice, gypsum, masonry cement, iron ore, and common clays. Decreases occurred in potash, gold, silver, dimension stone, molybdenum, and gemstones.

Based on USBM estimates of the quantities of minerals produced in the United States during 1994, New Mexico continued to lead the Nation both in potash and perlite. The State also retained its 1993 rank in a number of other mineral commodities—it was second in pumice production, third in copper, and ninth in silver. In gypsum and gold production, New Mexico continued as 10th and 13th, respectively. The State climbed in rank from seventh to sixth in the production of iron ore, while dropping from second to third in mica and from fifth to sixth in molybdenum. In addition, New Mexico's mines produced significant quantities of construction sand and gravel and dimension stone, while similar production of portland cement was achieved at manufacturing plants within the State.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN NEW MEXICO¹

Mineral	1992		1993		1994 ^P	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Clays ² thousand metric tons	33	\$79	33	\$101	56	\$129
Copper ³ metric tons	211,337	500,504	224,305	452,771	229,000	545,000
Gemstones	NA	34	NA	10	NA	W
Gold ³ kilograms	W	W	995	11,550	⁴ 933	⁴ 10,800
Potash thousand metric tons	1,436	256,620	1,311	215,858	1,150	212,000
Sand and gravel (construction) do.	10,170	46,176	⁵ 11,100	⁵ 51,100	13,500	63,400
Silver ³ metric tons	W	W	22	3,089	19	2,630
Stone (crushed) thousand metric tons	⁶ 2,722	⁶ 14,400	⁵ 3,503	⁵ 18,411	⁶ 53,800	⁶ 520,700
Combined value of cement, clays (fire), gypsum (crude), iron ore [usable (1993-94)], lead (1992), mica (scrap), molybdenum, perlite, pumice, salt, stone [crushed quartzite (1993-94), dimension], and values indicated by symbol W	XX	53,466	XX	51,159	XX	58,300
Total	XX	871,279	XX	804,049	XX	⁹ 914,000

¹Estimated. ^PPreliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" data. XX Not applicable.

²Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

³Excludes certain clays; value included with "Combined value" data.

⁴Recoverable content of ores, etc.

⁵Placer canvassing discontinued beginning 1994.

⁶Excludes certain stones; value included with "Combined value" data.

⁹Data does not add to total shown because of independent rounding.

According to the New Mexico Bureau of Mines and Mineral Resources, promulgation of rules to implement the New Mexico Mining Act of 1993 dominated State mining news in 1994. Under the Act, which took effect on July 12, a "New Mexico Mining Commission" was established to oversee and enforce regulations covering most sectors of the hardrock mining industry Statewide. Excluded were operations involving the exploration for or extraction of potash, sand and gravel, caliche, borrow materials and quarry rock, petroleum products, coal, and geothermal resources, as well as smelting, refining, and other offsite activities. The new regulations required a permit for all other mining operations, such as gold, copper, and molybdenum, that produced "marketable" minerals for a total of at least 2 years after January 1, 1970. Permits were required under the new law for all similar new operations, applications for those currently in the planning stage being due by December 31, 1995. The regulations created a system of permit fees based upon the type and extent of operations. Permit applications for exploration programs were required to be filed no less than 120 days prior to commencement of exploration. A provision was included in the Act in which some very small operations might qualify for less stringent requirements under what would be categorized as "minimal impact status." State Bureau officials reported, "First indications are that the Act has had a decidedly negative impact on mining in general, and most specifically upon the smaller operations and exploration activity." The Mining Act met with some opposition, particularly from the small mining sector, and the constitutionality of the Act was being challenged in at least one lawsuit.

Phelps Dodge Corp. was the State's largest mining company, mining or producing copper at the Chino Mine, the Hurley smelter, and the Tyrone Mine, all in Grant County, and at the Playas smelter in Hidalgo County. Each company division achieved new production records or production milestones during the year. A major milestone

at Chino at midyear was the production of the 2-billionth-short-ton (st), or more than 1.8 billion metric tons (mt) of ore, along with a record annual production of nearly 160,000 st, or 145,000 mt, of copper. The Hurley smelter established a record, casting 180,000 st (163,000 mt) of copper anode. Tyrone produced its 1-billionth-pound (more than 450,000 mt) of cathode copper in its solvent extraction-electrowinning plant, which began operations a decade ago. According to Phelps Dodge's annual report, nearly 250,000 st (almost 228,000 mt) of copper anode—another record—were cast at the Hidalgo smelter. Also, as a result of one of the few exploration programs in New Mexico in 1994 (especially for those at operating properties), Phelps Dodge substantially increased its ore reserves at both Chino and Tyrone.

Elsewhere, Royalstar Resources Ltd.'s garnet mining operation at its San Pedro Mine in Santa Fe County ended the year on standby status, owing to legal difficulties. State mining officials reported that the Santa Fe County Planning Commission insisted that the company obtain a new mining operation permit under the county's recently adopted mining regulations. However, Royalstar countered that San Pedro was an "active" operation under the county's regulations and that a new permit should not be required.

Alta Gold Corp. completed its purchase of the Copper Flat property, near Hillsboro in Sierra County, from Gold Express Corp. Alta was required to complete an environmental impact statement (EIS) before the U.S. Bureau of Land Management could grant approval to the company to resume mining operations. Alta reportedly planned to complete the EIS during 1995 in an effort to begin production the following year.

¹The term value, throughout this document, refers to the monetary value of nonfuel minerals as represented by either mine shipments, mineral commodity sales, or marketable production as is applicable to the individual mineral commodities.

TABLE 2
NEW MEXICO: 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):			
Riprap and jetty stone	34	\$280	\$8.24
Filter stone	W	W	1.53
Other coarse aggregate	3	3	1.00
Coarse aggregate, graded:			
Concrete aggregate, coarse	269	957	3.56
Bituminous aggregate, coarse	172	1,102	6.41
Bituminous surface-treatment aggregate	250	1,752	7.01
Railroad ballast	W	W	7.16
Fine aggregate (-3/8 inch):			
Stone sand, concrete	93	653	7.02
Stone sand, bituminous mix or seal	7	32	4.57
Screening, undesignated	W	W	1.94
Other fine aggregate	W	W	10.48
Coarse and fine aggregates:			
Graded road base or subbase	547	1,957	3.58
Unpaved road surfacing	129	187	1.45
Terrazzo and exposed aggregate	147	1,626	11.06
Crusher run or fill or waste	33	113	3.42
Other construction materials	767	4,929	6.43
Roofing granules	W	W	13.40
Chemical and metallurgical:			
Cement manufacture	(?)	(?)	4.32
Other specified uses not listed:			
	(?)	(?)	1.21
Unspecified:³			
Actual	(?)	(?)	4.21
Estimated	<u>285</u>	<u>1,558</u>	<u>5.47</u>
Total ⁴	3,503	18,411	5.26
Total ^{5 6}	3,861	18,411	4.77

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

¹Includes granite, limestone, sandstone, traprock, volcanic cinder and scoria, and miscellaneous stone; excludes quartzite from State total to avoid disclosing company proprietary data.

²Withheld to avoid disclosing company proprietary data; included with "Total."

³Includes production reported without a breakdown by use and estimates for nonrespondents.

⁴Data may not add to totals shown because of independent rounding.

⁵One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

⁶Total shown in thousand short tons and thousand dollars.

TABLE 3
NEW MEXICO: CRUSHED STONE SOLD OR USED, BY KIND

Kind	1991				1993			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	22	1,169	\$4,285	\$3.67	24	1,238	\$5,234	\$4.23
Granite	7	818	5,286	6.46	13	1,511	9,865	6.53
Traprock	2	113	267	2.36	1	168	371	2.21
Sandstone	1	1	3	3.00	1	101	112	1.11
Quartzite	1	W	W	7.75	(¹)	(¹)	(¹)	(¹)
Volcanic cinder and scoria	9	241	2,142	8.89	9	277	1,852	6.69
Miscellaneous stone	2	W	W	4.34	3	207	977	4.72
Total ²	XX	2,541	13,089	5.15	XX	3,503	18,411	5.26
Total ^{3,4}	XX	2,801	13,089	4.67	XX	3,861	18,411	4.77

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

²Excludes quartzite from State total to avoid disclosing company proprietary data.

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.

TABLE 4
NEW MEXICO: CRUSHED STONE¹ SOLD OR USED BY PRODUCERS IN 1993, BY USE AND DISTRICT

(Thousand metric tons and thousand dollars)

Use	District 1		District 2	
	Quantity	Value	Quantity	Value
Construction aggregates:				
Coarse aggregate (+1 1/2 inch) ²	32	W	8	W
Coarse aggregate, graded ³	W	W	W	W
Fine aggregate (-3/8 inch) ⁴	W	W	W	W
Coarse and fine aggregate ⁵	657	3,158	203	764
Other construction materials ⁶	1,379	8,476	173	1,192
Chemical and metallurgical ⁷	(⁸)	(⁸)	—	—
Other miscellaneous uses ⁹	(⁸)	(⁸)	(⁸)	(⁸)
Unspecified: ¹⁰				
Actual	(⁸)	(⁸)	(⁸)	(⁸)
Estimated	22	106	263	1,452
Total ¹¹	2,838	14,983	665	3,428
Total ^{12,13}	3,128	14,983	733	3,428

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

¹Excludes quartzite from State total to avoid disclosing company proprietary data.

²Include filter stone, riprap and jetty stone, and other coarse aggregate.

³Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, and railroad ballast.

⁴Includes stone sand (concrete), stone sand (bituminous mix or seal), screening (undesignated), and other fine aggregate.

⁵Includes graded road base or subbase, terrazzo and exposed aggregate, and crusher run (select material or fill).

⁶Includes roofing granules.

⁷Includes cement manufacture.

⁸Withheld to avoid disclosing company proprietary data; included with "Total."

⁹Includes other special uses not listed.

¹⁰Includes production reported without a breakdown by use and estimates for nonrespondents.

¹¹Data may not add to totals shown because of independent rounding.

¹²One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

¹³Total shown in thousand short tons and thousand dollars.