

# THE MINERAL INDUSTRY OF OREGON

For the 4th year in a row and the 6th in the last 8 years, Oregon was 38th among the 50 States in total nonfuel mineral value<sup>1</sup> in 1994, according to the U.S. Bureau of Mines (USBM). The estimated value for 1994 was more than \$253 million, nearly a 12% increase compared with that of 1993. This followed a more than 5.5% increase from 1992 to 1993. The State accounted for less than 1% of the U.S. total value. Industrial minerals accounted for nearly all of the State's total nonfuel mineral value, less than 0.5% of which resulted from metal production; a minimal quantity of copper was produced as a result of cleanup at Formosa Resources Corp.'s Silver Butte copper and zinc mine, which ceased operation in 1993. Construction materials—crushed stone, construction sand and gravel, and portland cement—continued to be the State's most valuable minerals produced. These three mineral commodities each had significant increases in value, and together accounted for more than 85% of the State's total nonfuel mineral value. Compared with 1993, the mineral commodity values increased for the following: crushed stone, construction sand and gravel, portland cement, lime, copper, and gemstones. Decreases occurred

in diatomite, pumice, and common clays.

Based on USBM estimates of the quantities of minerals produced in the United States during 1994, Oregon remained the Nation's leading pumice-producing State out of six States that produced the mineral. The State also remained third in the production of diatomite, one of the top seven States to produce bentonite clays, and ninth in copper. Oregon dropped from 9th to 10th in the production of talc and pyrophyllite. Cominco American Inc.'s Nickel Mountain Mine, of late the sole domestic producer of primary nickel, remained closed. According to the company, the mine was shut down in the latter half of 1993 due to market disruptions and low nickel prices caused, in part, by Russian nickel imports. Production of other metals, especially primary aluminum and raw steel, resulted from the processing of materials received from other domestic and foreign sources. Oregon ranked 13th in the Nation in the production of primary aluminum, moving up from 14th in 1993.

According to the State of Oregon's Department of Geology and Mineral Industries, Oregon experienced very strong construction markets for housing and nonresidential

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN OREGON<sup>1</sup>

Mineral	1992		1993		1994 <sup>p</sup>	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Clays thousand metric tons	<sup>2</sup> 203	<sup>3</sup> \$326	221	\$1,410	160	\$1,320
Copper <sup>3</sup> metric tons	152	361	703	1,420	106	260
Gemstones	NA	2,723	NA	2,143	NA	2,280
Nickel ore <sup>4</sup> metric tons	6,671	W	2,464	W	—	—
Sand and gravel (construction) thousand metric tons	14,958	69,536	<sup>e</sup> 15,800	<sup>e</sup> 74,800	18,000	86,400
Silver <sup>3</sup> metric tons	( <sup>5</sup> )	1	—	—	—	—
Stone (crushed) thousand metric tons	<sup>e</sup> 15,241	<sup>e</sup> 74,900	18,891	84,655	<sup>e</sup> 20,300	<sup>e</sup> 95,400
Talc and pyrophyllite metric tons	64	67	64	67	W	W
Combined value of cement [masonry (1992), portland], clays [bentonite (1992)], diatomite, emery (1992-93), gold (1992), lime, pumice, stone [crushed slate (1992)], and values indicated by symbol W	XX	66,256	XX	61,613	XX	67,200
Total	XX	214,170	XX	226,108	XX	<sup>7</sup> 253,000

<sup>1</sup>Estimated. <sup>p</sup>Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" data. XX Not applicable.

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

<sup>3</sup>Excludes certain clays; kind and value included with "Combined value" data.

<sup>4</sup>Recoverable content of ores, etc.

<sup>5</sup>The Riddle nickel smelter uses lateritic ore mined on Nickel Mountain, lateritic ore imported from New Caledonia, and small tonnages of recycled Ni-bearing catalysts. In 1989, the Glenbrook Nickel Co. purchased the idled mining and smelting complex and restarted the operation. Production of ferronickel on a contained Ni basis has been as follows: 1992—8,962 metric tons (mt) valued at \$62.7 million; and 1993—4,878 mt valued at \$28.0 million.

<sup>6</sup>Less than 1/2 unit.

<sup>e</sup>Excludes certain stones; kind and value included with "Combined value" data.

<sup>7</sup>Data do not add to total shown because of independent rounding.

buildings in 1994. Demand for construction aggregates was high, resulting in supply shortages in some parts of the State. Supplies were particularly tight around the Portland metropolitan area. Gemstone production in Oregon increased in 1994 in response to greater interest in opals and sunstones.

<sup>1</sup>The term value, referring throughout this document to that of nonfuel minerals, here addresses 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 2  
OREGON: CRUSHED STONE<sup>1</sup> SOLD OR USED BY PRODUCERS IN 1993, BY USE

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
<b>Coarse aggregate (+1 1/2 inch):</b>			
Macadam	39	\$68	\$1.74
Riprap and jetty stone	167	573	3.43
Filter stone	113	549	4.86
Other coarse aggregate	208	977	4.70
<b>Coarse aggregate, graded:</b>			
Concrete aggregate, coarse	92	410	4.46
Bituminous aggregate, coarse	1,003	5,017	5.00
Bituminous surface-treatment aggregate	414	2,827	6.83
Railroad ballast	480	2,595	5.41
Other graded coarse aggregate	W	W	5.51
<b>Fine aggregate (-3/8 inch):</b>			
Stone sand, concrete	95	423	4.45
Stone sand, bituminous mix or seal	280	1,902	6.79
Screening, undesignated	102	416	4.08
<b>Coarse and fine aggregates:</b>			
Graded road base or subbase	5,929	25,570	4.31
Unpaved road surfacing	2,194	10,035	4.57
Terrazzo and exposed aggregate	W	W	2.36
Crusher run or fill or waste	896	3,831	4.28
Other coarse and fine aggregates	430	1,944	4.52
Other construction materials <sup>2</sup>	997	5,473	5.49
Special: Asphalt fillers or extenders	22	170	7.73
Other specified uses not listed <sup>3</sup>	756	1,875	2.48
<b>Unspecified:<sup>4</sup></b>			
Actual	2,194	9,137	4.16
Estimated	2,479	10,863	4.38
Total <sup>5</sup>	18,891	84,655	4.48
Total <sup>6 7</sup>	20,824	84,655	4.07

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

<sup>1</sup>Includes granite, limestone, miscellaneous stone, sandstone, slate, traprock, and volcanic cinder and scoria.

<sup>2</sup>Includes drain fields.

<sup>3</sup>Includes cement manufacture.

<sup>4</sup>Includes production reported without a breakdown by use and estimates for nonrespondents.

<sup>5</sup>Data may not add to totals shown because of independent rounding.

<sup>6</sup>One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

<sup>7</sup>Total shown in thousand short tons and thousand dollars.

TABLE 3  
OREGON: 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	'2	W	W	'\$5.30	2	W	W	\$3.67
Granite	'28	'78	'\$376	'4.82	28	91	\$482	5.30
Traprock	'224	'16,001	'76,131	'4.76	287	15,878	71,318	4.49
Sandstone	52	312	1,589	5.09	51	W	W	5.71
Slate	'1	W	W	'5.29	1	W	W	5.73
Volcanic cinder and scoria	53	270	1,316	4.87	51	116	682	5.88
Miscellaneous stone	'40	'1,048	'4,803	'4.58	14	1,546	7,213	4.67
Total <sup>1</sup>	XX	'18,773	'89,847	'4.79	XX	18,891	84,655	4.48
Total <sup>2,3</sup>	XX	20,694	'89,847	'4.34	XX	20,824	84,655	4.07

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

<sup>2</sup>Data may not add to totals shown because of independent rounding.

<sup>3</sup>One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

<sup>4</sup>Total shown in thousand short tons and thousand dollars.

TABLE 4  
**OREGON: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1993, BY USE AND DISTRICT**

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Construction aggregates:</b>						
Coarse aggregate (+1 1/2 inch) <sup>1</sup>	432	1,810	71	261	20	66
Coarse aggregate, graded <sup>2</sup>	1,077	5,175	92	718	348	W
Fine aggregate (-3/8 inch) <sup>3</sup>	384	2,306	—	—	W	W
Coarse and fine aggregate <sup>4</sup>	6,316	28,590	1,837	7,383	W	W
Other construction materials <sup>5</sup>	69	301	—	—	793	5,936
Special <sup>6</sup>	—	—	—	—	22	170
Other miscellaneous uses <sup>7</sup>	( <sup>8</sup> )	( <sup>8</sup> )	45	87	—	—
<b>Unspecified:<sup>9</sup></b>						
Actual	( <sup>8</sup> )	( <sup>8</sup> )	—	—	—	—
Estimated	1,259	5,942	26	797	958	4,125
Total <sup>10</sup>	10,947	50,206	2,307	9,245	2,141	10,297
Total <sup>11 12</sup>	12,067	50,206	2,543	9,245	2,360	10,297
	District 4		Within all districts			
	Quantity	Value	Quantity	Value		
<b>Construction aggregates:</b>						
Coarse aggregate (+1 1/2 inch) <sup>1</sup>	5	30	—	—		
Coarse aggregate, graded <sup>2</sup>	652	W	—	—		
Fine aggregate (-3/8 inch) <sup>3</sup>	W	W	—	—		
Coarse and fine aggregate <sup>4</sup>	W	W	—	—		
Other construction materials <sup>5</sup>	677	6,095	667	3,939		
Special <sup>6</sup>	—	—	—	—		
Other miscellaneous uses <sup>7</sup>	( <sup>8</sup> )	( <sup>8</sup> )	—	—		
<b>Unspecified:<sup>9</sup></b>						
Actual	( <sup>8</sup> )	( <sup>8</sup> )	—	—		
Estimated	—	—	—	—		
Total <sup>10</sup>	2,829	10,968	667	3,939		
Total <sup>11 12</sup>	3,118	10,968	735	3,939		

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

<sup>1</sup>Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregate.

<sup>2</sup>Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregate.

<sup>3</sup>Includes tone sand (concrete), stone sand (bituminous mix or seal), and screening (undesignated).

<sup>4</sup>Includes graded roadbase or subbase, terrazzo and exposed aggregate, unpaved road surfacing, crusher run (select material or fill), and other coarse and fine aggregates.

<sup>5</sup>Includes drain fields.

<sup>6</sup>Includes asphalt fillers or extenders.

<sup>7</sup>Includes cement manufacture and other specified uses not listed.

<sup>8</sup>Withheld to avoid disclosing company proprietary data; included with "Total."

<sup>9</sup>Includes production reported without a breakdown by use and estimates for nonrespondents.

<sup>10</sup>Data may not add to totals shown because of independent rounding.

<sup>11</sup>One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

<sup>12</sup>Total shown in thousand short tons and thousand dollars.