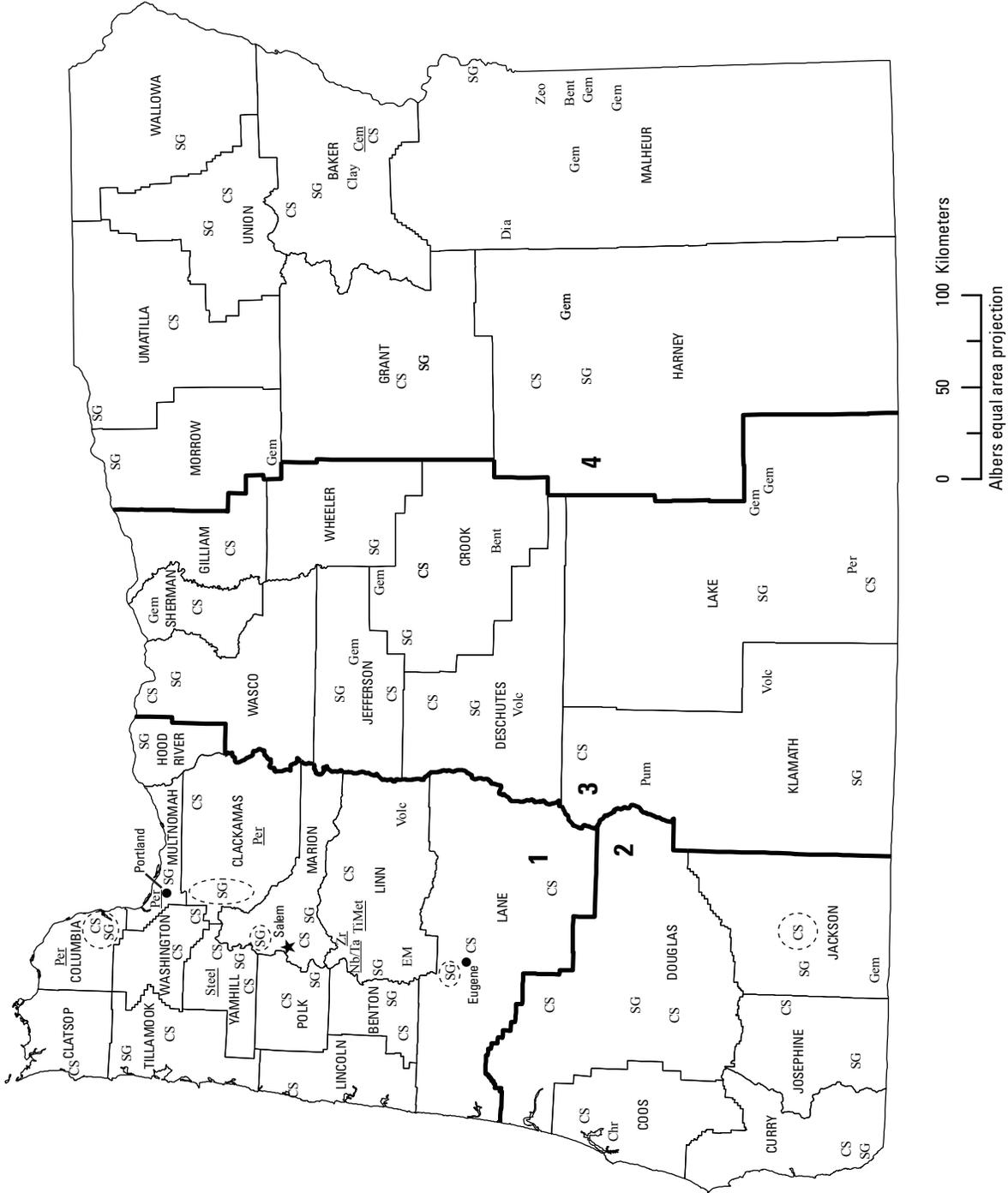




2012–2013 Minerals Yearbook

OREGON [ADVANCE RELEASE]

OREGON



Source: Oregon Department of Geology and Mineral Industries/U.S. Geological Survey (2012–13).

THE MINERAL INDUSTRY OF OREGON

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Oregon Department of Geology and Mineral Industries for collecting information on all nonfuel minerals.

In 2013, the value of the nonfuel mineral production¹ in the State of Oregon increased to \$346 million, 0.46% of the total U.S. nonfuel mineral production, ranking it 36th in the Nation. In 2012, the corresponding value was \$294 million, 0.39% of the U.S. total nonfuel mineral production, ranking it 38th among the 50 States. In 2013, on a per capita basis, nonfuel mineral production in Oregon had a value of \$88 compared with the national average of \$238. In 2012, the per capita value was \$75 compared with the national average of \$241.

The value of nonfuel mineral production in Oregon for the years 2006 through 2013 was as follows (in millions of dollars): \$539 (2006), \$506 (2007), \$402 (2008), \$313 (2009), \$306 (2010), \$302 (2011), \$294 (2012), and \$346 (2013).

In 2013, there were 1,170 employees in nonfuel mineral mines in Oregon and 189 in mills and preparation plants. In 2012, the corresponding numbers were 1,160 in nonfuel mineral mines and 241 in mills and preparation plants (U.S. Mine Safety and Health Administration, 2013, p. 14; 2014, p. 14). In 2013, the average annual wage in Oregon for all mining was \$48,399 compared with \$44,383 for all industries. In 2012, the corresponding figures were \$46,457 and \$43,693, respectively (National Mining Association, unpub. data, February 4, 2016).

In 2013, Oregon's leading mineral commodities on the basis of value were construction sand and gravel and crushed stone (table 1). For certain commodities, values at the State level were withheld to protect company proprietary data, but regional statistics were available. Production quantity from one cement plant in Oregon combined with three cement plants in Washington increased 27% in 2013 from 2012; nationally, cement production had increased by only 3%. Lime sold or used by producers in Oregon and nine other western States² increased 6% on the basis of quantity and 12% on the basis of value; nationally, the increases were 2% and 4%, respectively. Oregon's downstream metal plants used raw materials from other domestic and imported sources. Metals processed in the State included niobium, steel, tantalum, titanium, and zirconium.

In 2013, Oregon remained the only producer of emery in the United States. It was also the only State to produce chromite ore, which was processed into chromite foundry sand. However, the mineral separation plant was put on care-and-maintenance status at the end of 2012 and operated only in December of

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All USGS mineral production data published in this chapter are those available as of February 2016. Data in this report are rounded to three significant digits and percentages are calculated from unrounded data. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at <http://minerals.usgs.gov/minerals>.

²Arizona, California, Colorado, Idaho, Montana, Nevada, Utah, Washington, and Wyoming.

2013 (Papp, 2016, p. 17.1). On the basis of quantity, the State remained ranked second in the production of perlite out of six producing States, and dropped to second from first in pumice out of six producing States. Oregon ranked third in diatomite out of 4 producing States and fourth in the production of common clay out of 35 producing States. Though nationally less than 100 tons of culinary salt were produced annually (Bolen, 2015, p. 63.1), and for that reason were not included in USGS salt statistics, some culinary salt was produced from seawater along the Oregon coast.

In 2012 and 2013, Oregon also produced bentonite, gemstones, and zeolites. The State gemstone, sunstone, was mined commercially, as well as by individual gem collectors.

Commodity Review

Industrial Minerals

Mineral industry activity with respect to industrial minerals was as follows:

In June 2012, a Record of Decision was issued on the Final Environmental Impact Statement that would allow expansion of the State's only diatomite operation to proceed. The Celatom Mine Complex comprised three open pit mines: Kelley Field [on Bureau of Land Management (BLM)-administered land], Section 36 (on State land), and Beede Desert (on private land) for a total of about 188 hectares of Harney and Malheur Counties. In 2008, a new mine plan was submitted in order to expand the existing mines and to access other deposits of diatomite to meet demand for different grades for changing markets. Under the Record of Decision issued in 2012, the expansion of the existing mining areas on BLM-administered land would be approved and three new mining areas would be opened in the complex—North Kelley Field Mine (207 hectares), Hidden Valley Mine (103 hectares), and Eagle Mine (108 hectares). The life span was expected to be about 50 years (U.S. Department of the Interior, 2012a, b).

Plans were also underway to expand the Tucker Hill perlite quarry in Lake County. In 1996, BLM approved the initial mining plan for a 9-hectare quarry that would supply the perlite market on the west coast markets. Because the present mine was nearing the end of its productive life, the company filed a plan amendment with BLM in January 2012 to expand the quarry to 28 hectares over 15 years. Material mined at the quarry would continue to be transported to Lakeview for processing. In December 2012, the amendment request received an environmental assessment finding of no significant impact; no formal environmental impact statement would be required (U.S. Department of the Interior, 2012c).

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U.S. Mine Safety and Health Administration, [2013], Mine injury and worktime, quarterly, January–December 2012, Final, closeout edition, 33 p. (Accessed February 4, 2016, at http://arlweb.msha.gov/Stats/Part50/WQ/MasterFiles/MIWQ%20Master_20125.pdf.)

U.S. Mine Safety and Health Administration, [2014], Mine injury and worktime, quarterly, January–December 2013, Final, closeout edition, 34 p. (Accessed February 4, 2016, at http://arlweb.msha.gov/Stats/Part50/WQ/MasterFiles/MIWQ%20Master_20135.pdf.)

TABLE 1
NONFUEL MINERAL PRODUCTION IN OREGON^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2011		2012		2013	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	194	538	W	W	W	W
Gemstones, natural	NA	1,130	NA	1,150	NA	1,100
Sand and gravel, construction	11,300 ^r	86,900 ^r	10,400	89,500	11,500	97,700
Stone, crushed	14,900 ^r	118,000	14,800	110,000	16,400	129,000
Combined values of cement (portland), chromite ore, clays (bentonite), diatomite, emery (crude), lime, perlite (crude), pumice and pumicite, zeolites (2012–13), and values by symbol W	XX	95,400	XX	93,600	XX	118,000
Total	XX	302,000 ^r	XX	294,000	XX	346,000

^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data; included in “Combined values” data. XX Not applicable.

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

²Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 2
OREGON: CRUSHED STONE SOLD OR USED IN THE UNITED STATES, BY TYPE¹

Type	2012				2013			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone ²	2	1,250	\$7,740	\$6.20	2	1,260	\$7,720	\$6.12
Dolomite	--	--	--	--	--	--	--	--
Granite	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Traprock	89	6,940	52,700	7.59	88	7,170	58,600	8.18
Sandstone and quartzite ⁴	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Volcanic cinder and scoria	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Miscellaneous stone	62	6,660	49,100	7.38	70	8,010	62,900	7.85
Total or average	XX	14,800	110,000	7.38	XX	16,400	129,000	7.86

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

²Includes limestone-dolomite reported with no distinction between the two kinds of stone.

³Withheld to avoid disclosing company proprietary data; included with "Miscellaneous stone."

⁴Includes sandstone-quartzite reported with no distinction between the two kinds of stone.

TABLE 3
OREGON: CRUSHED STONE SOLD OR USED BY PRODUCERS BY USE¹

Use	2012			2013		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:						
Coarse aggregate (+1½ inch):						
Riprap and jetty stone	76	\$961	\$12.65	117	\$999	\$8.58
Filter stone	18	188	10.46	33	339	10.23
Unspecified coarse aggregate	241	1,710	7.10	71	557	7.86
Coarse aggregate, graded:						
Concrete aggregate, coarse	498	5,030	10.10	219	2,370	10.81
Bituminous aggregate, coarse	64	570	8.90	160	2,850	17.79
Bituminous surface-treatment aggregate	60	329	5.48	39	292	7.54
Railroad ballast	233	2,250	9.66	214	2,570	12.01
Unspecified graded coarse aggregate	82	791	9.65	W	W	W
Fine aggregate (-¾ inch):						
Stone sand, concrete	4	44	11.06	W	W	W
Stone sand, bituminous mix or seal	W	W	W	95	984	10.33
Screening, undesignated	40	218	5.46	117	815	6.99
Unspecified fine aggregate	65	369	5.68	18	70	3.88
Coarse and fine aggregates:						
Graded road base or subbase	1,400	10,500	7.48	1,740	13,600	7.84
Unpaved road surface	50	396	7.92	145	991	6.83
Terrazzo and exposed aggregate	1	6	6.07	--	--	--
Crusher run or fill or waste	34	211	6.21	74	432	5.82
Roofing granules	W	W	W	W	W	W
Unspecified coarse and fine aggregates	838	6,210	7.40	381	2,740	7.20
Unspecified and other construction materials	49	334	6.81	188	2,280	12.13
Agricultural:						
Unspecified and other agricultural uses	--	--	--	29	207	7.09
Chemical and metallurgical:						
Cement manufacture	498	2,750	5.52	--	--	--
Other miscellaneous uses and specified uses not listed	418	2,300	5.51			
Unspecified: ²						
Reported	4,830	34,600	7.17	5,350	40,200	7.51
Estimated	5,330	39,700	7.44	7,340	56,200	7.66
Total or average	14,800	110,000	7.38	16,400	129,000	7.86

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

¹Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

²Reported and estimated production without a breakdown by end use.

TABLE 4
OREGON: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2012, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	117	929	W	W	W	W
Coarse aggregate, graded ³	554	5,520	W	W	49	284
Fine aggregate (-¾ inch) ⁴	3	16	102	572	W	W
Coarse and fine aggregates ⁵	1,570	12,100	294	2,210	155	1,100
Other construction materials	--	--	26	116	1	2
Chemical and metallurgical ⁶	--	--	--	--	--	--
Other miscellaneous uses and specified uses not listed ⁷	--	--	--	--	--	--
Unspecified: ⁸						
Reported	2,060	15,000	749	5,440	466	3,660
Estimated	3,800	28,100	771	5,630	681	5,320
Total	8,100	61,700	2,080	15,400	1,470	11,100
Use	District 4		Unspecified districts			
	Quantity	Value	Quantity	Value		
Construction:						
Coarse aggregate (+1½ inch) ²	W	W	--	--		
Coarse aggregate, graded ³	W	W	18	100		
Fine aggregate (-¾ inch) ⁴	W	W	--	--		
Coarse and fine aggregates ⁵	271	1,890	51	42		
Other construction materials	22	215	--	--		
Chemical and metallurgical ⁶	498	2,750	--	--		
Other miscellaneous uses and specified uses not listed ⁷	418	2,300	--	--		
Unspecified: ⁸						
Reported	89	644	1,460	9,830		
Estimated	14	101	67	494		
Total	1,610	10,800	1,590	10,500		

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes riprap and jetty stone, filter stone, and unspecified coarse aggregate.

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

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

⁵Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, and unspecified coarse and fine aggregates.

⁶Includes cement manufacture.

⁷Includes drain fields, waste material, lightweight aggregate (slate), pipe bedding, refractory stone (including ganister), and other miscellaneous uses.

⁸Reported and estimated production without a breakdown by end use.

TABLE 5
 OREGON: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2013, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	168	1,370	25	280	W	W
Coarse aggregate, graded ³	161	1,660	W	W	96	952
Fine aggregate (-¾ inch) ⁴	171	1,230	58	457	W	W
Coarse and fine aggregates ⁵	1,410	10,400	361	3,000	294	2,340
Other construction materials	--	--	W	W	113	1,380
Agricultural ⁶	29	207	--	--	--	--
Unspecified: ⁷						
Reported	2,290	17,600	550	4,260	135	1,010
Estimated	4,970	39,400	617	5,020	727	5,740
Total	9,190	71,800	1,770	15,800	1,380	11,500
Use	District 4		Unspecified districts			
	Quantity	Value	Quantity	Value		
Construction:						
Coarse aggregate (+1½ inch) ²	W	W	8	49		
Coarse aggregate, graded ³	W	W	29	252		
Fine aggregate (-¾ inch) ⁴	W	W	--	--		
Coarse and fine aggregates ⁵	154	1,150	139	1,000		
Other construction materials	W	W	--	--		
Agricultural ⁶	--	--	--	--		
Unspecified: ⁷						
Reported	71	544	2,310	16,800		
Estimated	1,020	6,050	--	--		
Total	1,620	12,000	2,480	18,100		

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes riprap and jetty stone, filter stone, and unspecified coarse aggregate.

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

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

⁵Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, and unspecified coarse and fine aggregates.

⁶Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

⁷Reported and estimated production without a breakdown by end use.

TABLE 6
 OREGON: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2012,
 BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate and concrete products ²	1,590	\$14,000	\$8.81
Asphaltic concrete aggregates and other bituminous mixtures	315	2,070	6.57
Road base and coverings ³	1,570	11,700	7.45
Fill	30	159	5.30
Snow and ice control	9	127	14.11
Other miscellaneous uses ⁴	10	118	11.80
Unspecified: ⁵			
Reported	4,290	39,300	9.16
Estimated	2,550	21,900	8.59
Total or average	10,400	89,500	8.61

¹Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

²Includes plaster and gunite sands.

³Includes road and other stabilization (cement).

⁴Includes railroad ballast.

⁵Reported and estimated production without a breakdown by end use.

TABLE 7
 OREGON: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2013,
 BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate and concrete products ²	522	\$4,690	\$8.98
Asphaltic concrete aggregates and other bituminous mixtures	141	1,020	7.21
Road base and coverings ³	1,820	14,300	7.89
Fill	112	760	6.79
Other miscellaneous uses ⁴	86	627	7.29
Unspecified: ⁵			
Reported	4,790	43,000	8.97
Estimated	4,030	33,300	8.26
Total or average	11,500	97,700	8.50

¹Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

²Includes plaster and gunite sands.

³Includes road and other stabilization (cement).

⁴Includes railroad ballast, and snow and ice control.

⁵Reported and estimated production without a breakdown by end use.

TABLE 8
 OREGON: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2012,
 BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products ²	W	W	W	W	29	225
Asphaltic concrete aggregates and road base materials ³	W	W	W	W	73	676
Fill	14	67	8	66	3	3
Other miscellaneous uses ⁴	2	39	10	139	1	13
Unspecified: ⁵						
Reported	3,950	36,200	301	2,820	9	80
Estimated	1,350	11,800	205	1,820	462	4,030
Total	7,670	68,500	815	7,110	577	5,020
	District 4		Unspecified districts			
	Quantity	Value	Quantity	Value		
Concrete aggregate and concrete products ²	W	W	--	--		
Asphaltic concrete aggregates and road base materials ³	616	3,340	--	--		
Fill	W	W	--	--		
Other miscellaneous uses ⁴	6	54	--	--		
Unspecified: ⁵						
Reported	1	3	28	232		
Estimated	538	4,300	--	--		
Total	1,270	8,610	28	232		

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes plaster and gunite sands.

³Includes road and other stabilization (cement).

⁴Includes railroad ballast, and snow and ice control.

⁵Reported and estimated production without a breakdown by end use.

TABLE 9
 OREGON: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2013,
 BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products ²	W	W	W	W	W	W
Asphaltic concrete aggregates and road base materials ³	W	W	W	W	W	W
Fill	63	407	28	270	14	46
Other miscellaneous uses ⁴	45	344	36	220	--	--
Unspecified: ⁵						
Reported	4,100	38,000	430	4,030	67	593
Estimated	2,420	20,900	127	858	694	5,930
Total	8,040	71,100	790	6,970	1,140	9,450
	District 4		Unspecified districts			
	Quantity	Value	Quantity	Value		
Concrete aggregate and concrete products ²	83	797	--	--		
Asphaltic concrete aggregates and road base materials ³	441	3,300	--	--		
Fill	7	37	--	--		
Other miscellaneous uses ⁴	6	63	--	--		
Unspecified: ⁵						
Reported	--	--	197	434		
Estimated	792	5,600	--	--		
Total	1,330	9,800	197	434		

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes plaster and gunite sands.

³Includes road and other stabilization (cement).

⁴Includes railroad ballast, and snow and ice control.

⁵Reported and estimated production without a breakdown by end use.