



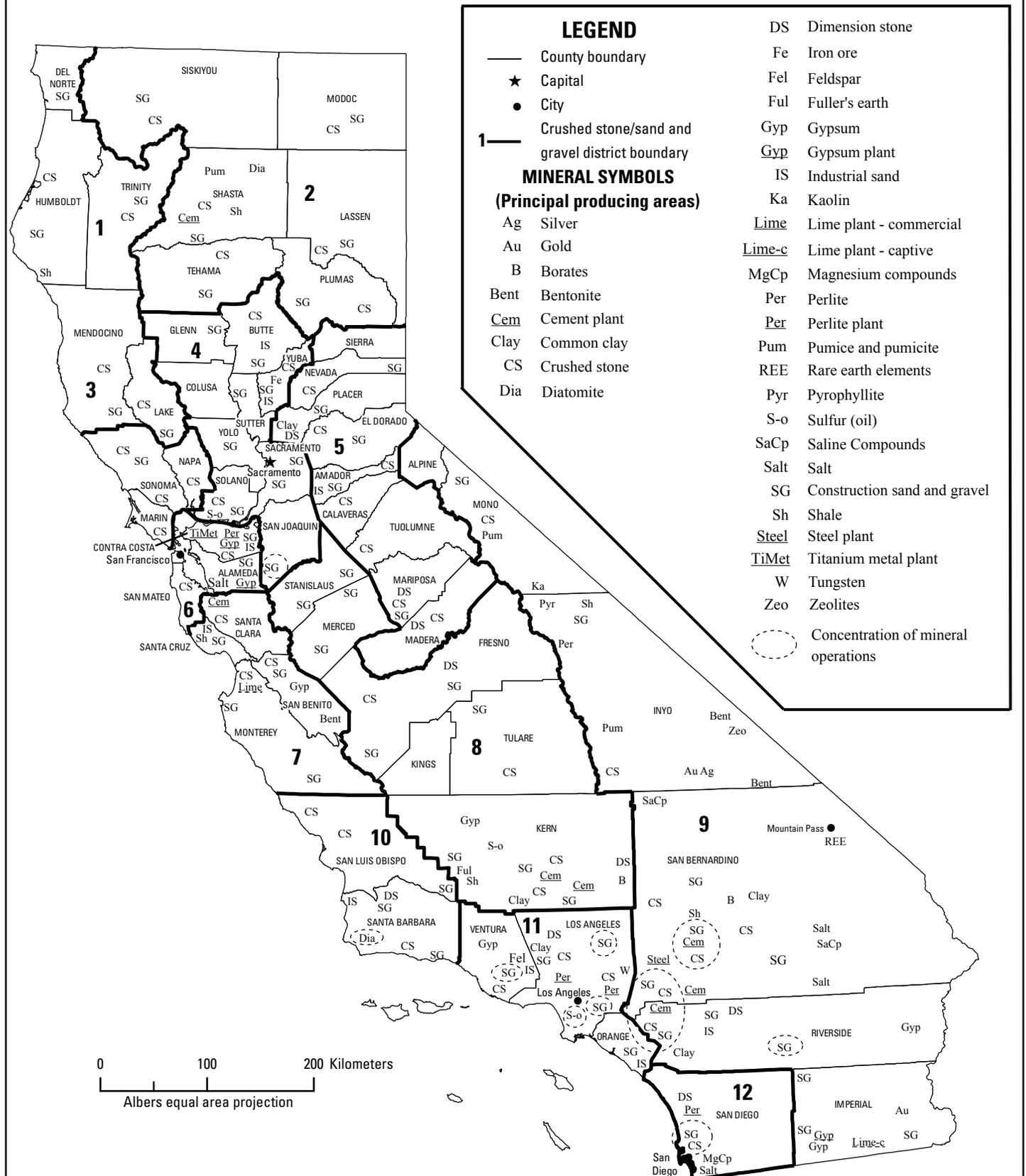
# 2009 Minerals Yearbook

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**CALIFORNIA [ADVANCE RELEASE]**

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# CALIFORNIA



Source: California Geological Survey/ U.S. Geological Survey (2009).

# THE MINERAL INDUSTRY OF CALIFORNIA

**This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the California Geological Survey for collecting information on all nonfuel minerals.**

In 2009, California's nonfuel raw mineral production<sup>1</sup> was valued at \$3.07 billion, based upon annual U.S. Geological Survey (USGS) data. This was a \$1.13 billion, or 27%, decrease from the State's total nonfuel mineral value in 2008, \$4.2 billion, which had decreased by \$215 million, or about 4.9%, from a total of \$4.42 billion in 2007. In 2009, the State, after 3 consecutive years ranking third among the 50 States in total nonfuel mineral production value, decreased in rank to fifth, having been second in 2005 and first in the Nation for 6 consecutive years from 1999 through 2004. Utah remained fourth, with Florida rising from fifth in 2008 to third in 2009, primarily due to increases in the production value of phosphate rock in that State. California accounted for 5.2% of the U.S. total nonfuel mineral production value, a decrease of 0.7% from the U.S. total production value in 2008. For the 1999–2004 period, when the State ranked first in the Nation based on total production value, the State's highest percentage of the U.S. total production value was 9% in 2002.

Industrial minerals accounted for almost 95% of California's nonfuel mineral production value. In 2009, California continued as the leading construction sand-and-gravel-producing State, accounting for 9% of the commodity's total U.S. production, down from 14% in 2008, and accounting for 11% of the Nation's total production value for that mineral commodity, down from 16% in 2008. Construction sand and gravel was also the State's leading mineral commodity, by production value, accounting for almost 30% of the State's total nonfuel mineral production value. Construction sand and gravel was followed by cement (portland and masonry), boron minerals, crushed stone, gold, and soda ash; these six mineral commodities accounted for almost 93% of the State's total nonfuel mineral value (table 1). The major metal produced in the State was gold, with limited production of silver (as a byproduct of gold production) and very small quantities of iron ore and tungsten.

In 2009, only two mineral commodities produced in California increased in production value by more than \$1 million—gold and salt (actual values withheld—company proprietary data). Smaller increases occurred in the production value of pumice and pumicite and silver (actual values withheld—company proprietary data).

While these increases in production value were notable, all other mineral commodities produced in the State declined in production value, led by decreases in portland cement,

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<sup>1</sup>The 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 2009 USGS mineral production data published in this chapter are those available as of September 2011. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

construction sand and gravel, and crushed stone. These three mineral commodities were down \$384 million, \$348 million, and \$194 million, respectively, and, combined, accounted for almost 82% of the total decrease in the State's total nonfuel mineral production value in 2009. Declines in the production values of boron minerals, diatomite, masonry cement, and soda ash accounted for most of the remaining percentage of the State's decrease in total production value.

Construction sand and gravel had the greatest decrease in production of any mineral commodity produced in the State in 2009, down almost 32 million metric tons (Mt) to 79 Mt in 2009 from 111 Mt produced in 2008. Crushed stone and portland cement were down a combined 12.7 Mt from 2008 to 2009.

In 2009, California continued to be the Nation's only State to produce boron compounds and remained first in the quantities of construction sand and gravel produced, first of four diatomite-producing States, and first in masonry cement production. California rose from second to first in pumice and pumicite production and from fifth to fourth in gemstone production (based upon production value). The State also continued to rank second in portland cement (behind Texas) and fire clay production, and was the second of two States that produced soda ash; third in feldspar; sixth of the 11 gold-producing States; seventh in bentonite clay production; and ninth in the production of salt. California ranked first for the total number of mineral commodities produced in any single State, with 27 raw nonfuel mineral commodities produced, followed by Nevada ranking second with 23, followed by Idaho, Texas, and Utah, each with 20, respectively.

The following narrative information was provided by the California Geological Survey<sup>2</sup> (CGS). The CGS production data and information, except where otherwise noted, were based upon the agency's own surveys and mine inquiries, company annual reports, and data and information derived from other State government agency sources. These data may differ from USGS annual production figures, which were based upon company responses to USGS surveys and upon USGS estimates.

## Overview

California produced more than two dozen different industrial minerals during the year. In addition to those nonfuel mineral commodities ranked above, the State led the Nation in the production of natural sodium sulfate. There were about 700 active mines producing nonfuel minerals during 2009. More than 5,000 people were employed at these mines and their mineral processing plants.

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<sup>2</sup>John Clinkenbeard, Supervising Engineering Geologist, and Joshua Smith, Engineering Geologist, authored the text of information submitted by the California Geological Survey.

## Commodity Review

### *Industrial Minerals*

The continuing downturn in the State, national, and global economies affected California's mineral industries during 2009. Particularly affected were construction materials such as construction sand and gravel, crushed stone, and portland cement. Low levels of residential and commercial construction again led to reduced demand for these mineral commodities.

**Cement.**—California's continuing low levels of residential and commercial construction during 2009 contributed to a further drop in both cement production and cement imports for the year, compared to previous years. Many plants continued to operate on a reduced schedule to accommodate the lower demand.

Cement imports through California ports continued to decline as demand fell. For example, the port of Stockton, San Joaquin County, experienced a 45% decrease from 0.30 Mt of imports in 2008 to 0.17 Mt of imports in 2009. Compared with the 2.2 Mt of cement imports in 2006, the decline in 2009 was about 92%.

CEMEX announced the permanent closure of its Davenport cement plant in Santa Cruz County in January 2010. The company had announced a temporary closure of the plant in March 2009 due to declining demand for cement during the recession. The plant, originally constructed in 1906 by the Standard Portland Cement Co., primarily served the San Francisco Bay region. For more than 100 years, the plant had supplied cement for projects, including the rebuilding of San Francisco after the 1906 earthquake, the Golden Gate Bridge, the California Aqueduct, the Bay Area Rapid Transit system, Pearl Harbor Naval Base in Hawaii, and the Panama Canal (Alexander, 2010).

Texas Industries Inc., of Dallas, TX, shut down the white cement kilns at its Crestmore cement plant located in Riverside County in December 2008. The plant, comprising facilities for white cement production and gray cement grinding, remained idled throughout 2009. Texas Industries also briefly idled its Oro Grande facility in San Bernardino County at the end of January 2009, in order to control inventories (Texas Industries Inc., 2010, p. 3).

**Rare Earths.**—The Mountain Pass rare-earth mine, San Bernardino County, was purchased from Chevron Mining Inc. (a wholly owned subsidiary of Chevron Corp.) by a group of U.S. based investors on September 30, 2008, forming Molycorp Mining LLC (formerly Molycorp Minerals LLC), a Denver-based company that owns and operates the mine. In 2009, the new company began separating rare-earth compounds from stockpiled rare-earth concentrates (Molycorp Inc., 2012).

**Sand and Gravel, Construction.**—In February 2009, the America Recovery and Reinvestment Act (ARRA), of which a portion focused on the development and enhancement of physical infrastructure throughout the Nation, was signed into law by the President of the United States. The Governor of California announced in September 2009 that over \$2 billion in ARRA funds had been federally obligated to 620 transportation infrastructure projects statewide (California Department of

Transportation, 2009a). Many of these projects were anticipated to require large amounts of construction aggregates and a full list of projects was available through the California Department of Transportation (California Department of Transportation, 2009b).

The Dutra Group's San Rafael rock quarry in Marin County gained approval of their proposed environmental impact statement from the county supervisors in October 2009. The quarry will increase its depth of mining, increase its resources, and extend the mine's life span for another 17 years (Marin County Board of Supervisors, 2009).

Vulcan Materials Company's Fish Canyon mining operation in Azusa, Los Angeles County, was in the process of revising its mining plan. The proposed revisions would shift future mining from 32 hectares (ha) of unmined land on its eastern property line to 32 ha of unmined land near its western property line. The proposed changes had been met with resistance from the neighboring community of Duarte, from which the mining along the western property line would be visible. A draft environmental impact report (DEIR) was filed in December 2009. Approval from the Azusa City Council was expected in the summer of 2010 (Tedford, 2009).

Granite Construction Co. applied for a conditional use permit in February 2008 and submitted a DEIR in September 2009, proposing the development of the 26-ha sand and gravel Kunzler Terrace Mine, 1.6 km north of Ukiah in Mendocino County, south of Mendocino Lake (Granite Construction Co., 2008). The proposed mine would produce an estimated 90,000 to 181,000 metric tons per year with total estimated production over 20 years of expected mining totaling more than 3 Mt (Granite Construction Co., 2009).

Triangle Rock Products Inc. of Los Angeles, CA (a wholly owned subsidiary of Vulcan Materials Co.), received approval from the Sacramento County Board of Supervisors in February 2009 to expand its current operation north of Florin Road, southeast of Sacramento and south of Mather Air Force Base in Sacramento County, to a 40-hectare (ha) site south of Florin Road. Under the proposed plan, the mine expansion was expected to yield about 9.7 Mt of gravel during a 12-year lifespan. The plan also called for the preservation of a 9-ha wildlife corridor along Laguna Creek west of the proposed mined area (Sacramento County Board of Supervisors, 2009).

About 13 km southeast of Orland, Glenn County, North Valley Rock LLC received a permit to mine sand and gravel at the Finch Ranch Mine. The company applied for a permit in June 2008 and expected the Mine to produce over 10 Mt of sand and gravel over an estimated 25 years of mining (North Valley Rock Products, LLC, 2008).

**Stone, Crushed.**—The permitting process for Granite Construction Co.'s 167-ha Liberty Quarry project continued throughout the year. The project's approval would allow Granite Construction to mine a total of more than 180 Mt of crushed rock over several decades from a granite deposit located in southeastern Riverside County about 5 km south of Temecula, on the border with San Diego County (Shyong, 2012). A DEIR for the project was released in July 2009, with public comment to continue through November 2009 (Riverside County Planning Department, 2009). In December 2008, the city of

Temecula filed an application to annex about 2,000 ha in the vicinity of, and including, the Liberty Quarry project site, which if approved would change the permitting agency for the quarry from Riverside County to the city of Temecula. In June 2009, this application was denied by the Riverside Local Agency Formation Commission (LAFCO) (Kelly, 2009). LAFCOs are legislative regulatory agencies created in 1963 by the California Legislature, governed by the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, with the mission to promote orderly development among competing interests (Riverside Local Agency Formation Commission, 2004).

## Metals

The leading metals produced in California in 2009 were gold and silver; silver production was comparatively very small to that of gold, being produced only as a byproduct of gold production. Silver production made up less than 0.1% of California's total metal production in 2009. Iron ore, mined in relatively small quantities at one location in San Bernardino County, was used in the production of portland cement and was considered to be an industrial mineral. Tungsten concentrates were produced and shipped from the Andrew Mine in Los Angeles County (Shedd, 2011, p. 79.1).

**Gold.**—Gold continued to dominate California's metal production in 2009, comprising about 99% of the value of the State's metals production. According to the CGS (as derived from State government agency sources and CGS individual mine inquiries), annual production continued to increase sharply to almost 5,000 kilograms (kg) (almost 160,000 troy ounces) in 2009, an almost 39% increase as compared with the almost 3,600 kg (about 115,000 troy ounces) in 2008, which in turn was a 494% increase as compared with production of about 600 kg (less than 19,500 troy ounces) in 2007. Similarly the value of gold production in the State increased to almost \$138.5 million in 2009, up from \$100.6 million, or almost 38%, in 2008, which in turn was up dramatically from \$13.0 million in 2007, a 674% increase.

The State's leading gold producer was New Gold Inc. (Vancouver, British Columbia, Canada), which acquired the Mesquite gold mine in Imperial County in June 2009 from Western Goldfields Inc (New Gold Inc., 2009). The mine produced approximately 4,700 kg (150,000 troy ounces) of gold by yearend (New Gold Inc., 2010a, p. 36). Prior to the acquisition by New Gold, Western Goldfields, which had acquired the mine from Newmont Mining Co. in 2003, had restarted operations in 2007, with the first gold pour in January 2008. New Gold, by yearend 2009, had announced updated proven and probable reserves totaling approximately 96,000 (kg) (3.1 million troy ounces) and an additional 150,000 kg (4.9 million troy ounces) of measured and indicated resources (inclusive of reserves), while the company anticipated total 2010 production to remain near that of 2009 (New Gold Inc., 2010b).

The other major gold producer in California was the Briggs Mine, in Inyo County, of Atna Resources, Ltd (Golden, CO). The mine was reopened after the merger of the previous

owner, Canyon Resource Corp. and Atna Resources, in March 2008. The Briggs mine resumed production in May 2009 and produced approximately 340 kg (11,000 troy ounces) of gold by yearend (Atna Resources, Ltd., 2009, p. 16).

In addition to the above-mentioned lode gold mines, placer gold was produced as a byproduct mineral from numerous sand and gravel mines located in the northern and central part of the State. California also has several small underground gold mines that mainly produce specimen gold, including gold in quartz matrix for jewelry.

## Legislation and Government Programs

**State Mineral Land Classification Project.**—The California Geological Survey's Mineral Land Classification Project, a mandate of the State's Surface Mining and Reclamation Act, continued to provide lead agencies with mineral resource maps that have been of significant value in land-use planning and mineral resource conservation (California Department of Conservation Office of Mine Reclamation, 2007, p. 49). At yearend, the CGS had completed mineral resource studies in about one-third of the State. During the year, the CGS completed an updated classification project in Kern, Riverside, and Sacramento Counties. Classification updates are ongoing in the San Luis Obispo-Santa Barbara area, the Stockton-Lodi area, the San Gabriel Valley, and the northern San Francisco Bay region. CGS also assisted the State Mining and Geology Board in the designation process for the Palm Springs Production-Consumption Region in Riverside County and the Claremont-Upland Production-Consumption Region in Los Angeles and San Bernardino Counties.

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TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN CALIFORNIA<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Mineral	2007		2008		2009	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	522	68,900 <sup>e</sup>	337	43,600 <sup>e</sup>	236	28,100 <sup>e</sup>
Portland	10,800	1,180,000 <sup>e</sup>	9,880	1,030,000 <sup>e</sup>	7,150	646,000 <sup>e</sup>
Clays:						
Bentonite	29	3,090	30	3,360	22	2,310
Common	549	3,390	469	3,570	318	2,370
Fire	W	W	118	W	W	W
Gemstones, natural	NA	818	NA	732	NA	727
Gypsum, crude	1,150	6,980	861	6,390	825	5,850
Sand and gravel:						
Construction	142,000 <sup>r</sup>	1,530,000 <sup>r</sup>	111,000 <sup>r</sup>	1,260,000 <sup>r</sup>	79,200	912,000
Industrial	1,850	43,400	1,500	42,300	1,300	35,800
Stone:						
Crushed	51,000	533,000	51,400 <sup>r</sup>	572,000 <sup>r</sup>	41,400	378,000
Dimension	39	12,300	26	7,320	25	6,100
Combined values of boron minerals, clays (fuller's earth, kaolin), diatomite, feldspar, gold, iron ore (usable shipped), lime, magnesium compounds, perlite (crude), pumice and pumicite, pyrophyllite (2009), salt, silver, soda ash, talc [crude (2007–08)], tungsten, zeolites, and values indicated by symbol W	XX	1,030,000 <sup>r</sup>	XX	1,240,000 <sup>r</sup>	XX	1,050,000
Total	XX	4,420,000	XX	4,200,000	XX	3,070,000

<sup>e</sup>Estimated. <sup>r</sup>Revised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" data. XX Not applicable.

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

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

TABLE 2  
CALIFORNIA: CRUSHED STONE SOLD OR USED, BY TYPE<sup>1</sup>

Type	2008			2009		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone <sup>2</sup>	32 <sup>r</sup>	29,000 <sup>r</sup>	\$343,000 <sup>r</sup>	25	16,400	\$105,000
Dolomite	4	210	1,080	4	131	1,300
Granite	31	11,000	108,000	30	9,780	101,000
Traprock	25	4,930	51,500	20	4,540	48,900
Marble	--	--	--	4	2,490	30,700
Sandstone & quartzite	11	1,780	21,200	8	1,120	11,500
Slate	3	160	1,560	3	102	1,180
Volcanic cinder and scoria	8 <sup>r</sup>	436 <sup>r</sup>	5,450 <sup>r</sup>	11	333	4,360
Miscellaneous stone	50	3,790	39,000	46	6,460	72,900
Total	XX	51,400 <sup>r</sup>	572,000 <sup>r</sup>	XX	41,400	378,000

<sup>r</sup>Revised. XX Not applicable. -- Zero.

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

<sup>2</sup>Includes limestone-dolomite reported with no distinction between the two.

TABLE 3  
CALIFORNIA: CRUSHED STONE SOLD OR USED BY PRODUCERS  
IN 2009, BY USE<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	184	4,110
Filter stone	12	220
Other coarse aggregate	21	234
Coarse aggregate, graded:		
Concrete aggregate, coarse	606	10,100
Bituminous surface-treatment aggregate	W	W
Railroad ballast	W	W
Other graded coarse aggregate	1,080	12,900
Fine aggregate (-¾ inch):		
Stone sand, concrete	300	3,750
Stone sand, bituminous mix or seal	344	3,310
Screening, undesignated	65	802
Other fine aggregate	722	7,040
Coarse and fine aggregates:		
Graded road base or subbase	807	8,870
Unpaved road surfacing	141	1,110
Terrazzo and exposed aggregate	33	814
Crusher run or fill or waste	489	2,460
Other coarse and fine aggregates	1,240	8,290
Other construction materials	185	2,350
Agricultural:		
Limestone	W	W
Poultry grit and mineral food	221	11,000
Other agricultural uses	95	1,400
Chemical and metallurgical:		
Cement manufacture	10,900	37,100
Glass manufacture	W	W
Sulfur oxide removal	W	W
Special:		
Asphalt fillers or extenders	W	W
Whiting or whiting substitute	W	W
Other fillers or extenders	W	W
Other miscellaneous uses and specified uses not listed	282	16,400
Unspecified: <sup>2</sup>		
Reported	11,100	108,000
Estimated	11,900	128,000
Total	41,400	378,000

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

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

<sup>2</sup>Reported and estimated production without a breakdown by end use.

TABLE 4  
CALIFORNIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2009, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4		District 5	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:										
Coarse aggregate (+1½ inch) <sup>2</sup>	W	W	31	529	W	W	W	W	W	W
Coarse aggregate, graded <sup>3</sup>	W	W	W	W	W	W	W	W	W	W
Fine aggregate (-¾ inch) <sup>4</sup>	W	W	92	905	W	W	W	W	W	W
Coarse and fine aggregates <sup>5</sup>	105	1,380	403	4,360	W	W	W	W	W	W
Other construction materials	--	--	--	--	--	--	--	--	--	--
Agricultural <sup>6</sup>	--	--	W	W	W	W	--	--	W	W
Chemical and metallurgical <sup>7</sup>	--	--	W	W	--	--	--	--	W	W
Special <sup>8</sup>	--	--	W	W	--	--	--	--	W	W
Other miscellaneous uses	--	--	--	--	--	--	--	--	281	16,300
Unspecified: <sup>9</sup>										
Reported	139	339	39	444	751	8,790	1,050	12,300	275	674
Estimated	195	2,650	260	3,170	1,030	13,200	362	4,350	724	8,350
Total	560	6,720	1,110	10,600	2,340	30,800	1,980	22,200	1,550	33,300
	District 6		District 7		District 8		District 9		District 10	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:										
Coarse aggregate (+1½ inch) <sup>2</sup>	W	W	--	--	W	W	W	W	W	W
Coarse aggregate, graded <sup>3</sup>	642	9,640	W	W	W	W	W	W	--	--
Fine aggregate (-¾ inch) <sup>4</sup>	W	W	W	W	W	W	W	W	W	W
Coarse and fine aggregates <sup>5</sup>	W	W	--	--	W	W	W	W	W	W
Other construction materials	--	--	--	--	--	--	1	15	--	--
Agricultural <sup>6</sup>	W	W	--	--	--	--	W	W	W	W
Chemical and metallurgical <sup>7</sup>	--	--	W	W	W	W	W	W	W	W
Special <sup>8</sup>	--	--	--	--	--	--	--	--	W	W
Other miscellaneous uses	--	--	--	--	--	--	1	54	--	--
Unspecified: <sup>9</sup>										
Reported	--	--	1,510	7,630	340	1,860	2,180	26,200	533	4,110
Estimated	403	4,720	2,450	26,900	761	4,070	3,790	37,700	527	6,170
Total	1,370	16,900	4,020	35,200	2,010	9,440	17,900	119,000	1,260	14,500
	District 11		District 12		Unspecified districts					
	Quantity	Value	Quantity	Value	Quantity	Value				
Construction:										
Coarse aggregate (+1½ inch) <sup>2</sup>	W	W	--	--	--	--				
Coarse aggregate, graded <sup>3</sup>	W	W	--	--	--	--				
Fine aggregate (-¾ inch) <sup>4</sup>	W	W	--	--	--	--				
Coarse and fine aggregates <sup>5</sup>	W	W	--	--	--	--				
Other construction materials	184	2,340	--	--	--	--				
Agricultural <sup>6</sup>	--	--	--	--	--	--				
Chemical and metallurgical <sup>7</sup>	W	W	--	--	--	--				
Special <sup>8</sup>	--	--	--	--	--	--				
Other miscellaneous uses	--	--	--	--	--	--				
Unspecified: <sup>9</sup>										
Reported	3,780	42,000	374	3,700	87	213				
Estimated	1,190	13,900	225	2,630	--	--				
Total	6,590	72,200	599	6,330	87	213				

See footnotes at end of table.

TABLE 4—Continued.  
CALIFORNIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2009, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

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

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

<sup>2</sup>Includes filter stone, riprap and jetty stone, and other coarse aggregate.

<sup>3</sup>Includes bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregate.

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

<sup>5</sup>Includes crusher run or fill or waste, graded road base or subbase, terrazzo and exposed aggregate, unpaved road surfacing, and other coarse and fine aggregates.

<sup>6</sup>Includes limestone, poultry grit and mineral food, and other agricultural uses.

<sup>7</sup>Includes cement and glass manufacture, and sulfur oxide removal.

<sup>8</sup>Includes asphalt fillers or extenders, whiting or whiting substitute, and other fillers or extenders.

<sup>9</sup>Reported and estimated production without a breakdown by end use.

TABLE 5  
CALIFORNIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2009,  
BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	14,400	\$169,000	\$11.79
Plaster and gunite sands	2,180	27,200	12.53
Concrete products (blocks, bricks, pipe, decorative, etc.)	690	7,860	11.39
Asphaltic concrete aggregates and other bituminous mixtures	8,740	116,000	13.24
Road base and coverings	5,740	56,300	9.82
Road and other stabilization (cement)	270	2,180	8.07
Fill	2,730	24,500	8.97
Snow and ice control	18	223	12.39
Other miscellaneous uses <sup>2</sup>	518	5,510	10.63
Unspecified. <sup>3</sup>			
Reported	20,000	220,000	10.98
Estimated	24,000	284,000	11.84
Total or average	79,200	912,000	11.52

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

<sup>2</sup>Includes railroad ballast.

<sup>3</sup>Reported and estimated production without a breakdown by end use.

TABLE 6  
CALIFORNIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2009, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	W	W	347	4,010	W	W
Asphaltic concrete aggregates and road base materials <sup>3</sup>	W	W	548	6,160	W	W
Fill	27	258	3	17	70	691
Other miscellaneous uses <sup>4</sup>	204	3,390	28	410	--	--
Unspecified: <sup>5</sup>						
Reported	101	1,150	131	1,560	111	1,260
Estimated	606	7,090	804	9,440	13	147
Total	1,110	13,800	1,860	21,600	343	3,820
	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	1,760	18,000	48	644	W	W
Asphaltic concrete aggregates and road base materials <sup>3</sup>	2,570	24,700	110	1,210	W	W
Fill	373	3,640	26	151	733	9,590
Other miscellaneous uses <sup>4</sup>	9	270	2	19	--	--
Unspecified: <sup>5</sup>						
Reported	7,600	80,500	412	4,550	1,470	18,600
Estimated	1,100	12,900	712	8,170	1,700	20,500
Total	13,400	140,000	1,310	14,700	4,690	60,100
	District 7		District 8		District 9	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	341	4,440	2,350	27,300	5,090	54,200
Asphaltic concrete aggregates and road base materials <sup>3</sup>	97	1,460	2,600	28,200	5,350	64,900
Fill	33	331	192	2,550	393	1,800
Other miscellaneous uses <sup>4</sup>	4	38	23	238	142	1,410
Unspecified: <sup>5</sup>						
Reported	116	1,320	1,910	22,000	3,100	36,600
Estimated	695	10,800	2,370	28,300	11,600	135,000
Total	1,290	18,300	9,440	109,000	25,600	294,000
	District 10		District 11		District 12	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	W	W	5,580	68,700	536	8,210
Asphaltic concrete aggregates and road base materials <sup>3</sup>	W	W	1,840	26,700	808	10,600
Fill	74	734	575	3,910	232	809
Other miscellaneous uses <sup>4</sup>	301	5,040	302	3,000	11	176
Unspecified: <sup>5</sup>						
Reported	989	11,600	2,180	26,500	308	4,060
Estimated	223	2,620	2,780	32,500	1,380	16,100
Total	1,990	26,000	13,300	161,000	3,280	39,900
	Unspecified districts					
	Quantity	Value				
Concrete aggregate and concrete products <sup>2</sup>	--	--				
Asphaltic concrete aggregates and road base materials <sup>3</sup>	--	--				
Fill	--	--				
Other miscellaneous uses <sup>4</sup>	--	--				
Unspecified: <sup>5</sup>						
Reported	1,580	10,100				
Estimated	--	--				
Total	1,580	10,100				

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

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

<sup>2</sup>Includes plaster and gunite sands.

<sup>3</sup>Includes road and other stabilization (cement).

<sup>4</sup>Includes railroad ballast, and snow and ice control.

<sup>5</sup>Reported and estimated production without a breakdown by end use.