



2014 Minerals Yearbook

CALIFORNIA [ADVANCE RELEASE]

EXPLANATION

- County producing only construction sand and gravel
- County producing only crushed stone
- County producing both aggregate types

— County boundary

★ Capital city

Nonfuel mineral commodity

- Au Gold
- B Boron
- Bent Bentonite
- Cem Cement plant
- Clay Common clay and (or) shale
- Dia Diatomite
- DS Dimension stone
- Fel Feldspar
- Ful Fuller's earth
- Gyp Gypsum
- IS Industrial sand
- Ka Kaolin
- Lime Lime plant
- MgCp Magnesium compounds
- NaC Soda ash
- Pum Pumice
- Salt Salt
- Talc Talc
- W Tungsten plant
- Zeo Zeolites



Base from U.S. Geological Survey digital data
Albers Equal-Area Conic projection

Figure 1. Map showing major nonfuel-mineral-producing areas in California in 2014. Sources: California Department of Conservation, California Geological Survey and U.S. Geological Survey.

THE MINERAL INDUSTRY OF CALIFORNIA

By Madan M. Singh

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 2014, the value of nonfuel mineral production¹ in the State of California was \$3.15 billion. This was a 6.1% decrease from the State's revised nonfuel mineral production value of \$3.35 billion in 2013 (table 1). Nonfuel mineral production in the State surpassed \$4 billion in value in 2005, but dropped below that figure in 2009 and has remained below \$4 billion since then (fig. 1). California accounted for approximately 3.9% of the total U.S. nonfuel mineral production value in 2014, which ranked it eighth among the 50 States. On a per capita basis, California's nonfuel mineral production value was \$81 in 2014 compared with the national average of \$252. The number of mines and the mine employment both increased from the prior year (table 2).

In 2014, the leading minerals in the State with published values, in descending order, were construction sand and gravel, portland cement, and crushed stone. Gemstones produced in California include aquamarine, beryl, kunzite, lepidolite, morganite, quartz crystal, spodumene, tourmaline, and turquoise. California had 20,973 active claims on Federal lands at fiscal yearend 2014, which covered 271,086 hectares (669,863 acres) (Bureau of Land Management, 2015, p. 140).

Events, Trends, and Issues

There were 493 active mines in California producing nonfuel minerals during 2014. During the year, five environmental

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 June 2017. 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>.

impact reports for aggregate quarries were in progress, and one conditional permit was approved by the court. In 2014, work on the new chloralkali plant and an expanded leach system were completed at the Mountain Pass rare-earths mine. Sutter Gold Mining Inc. placed its Lincoln project in Amador County on care-and-maintenance status in March 2014. Golden Queen Mining Co. Ltd continued development of the Soledad Mountain gold-silver project south of Mohave in Kern County. The small amount of iron produced from a few small iron operations is used in portland cement manufacturing (John Clinkenbeard, Supervising Engineering Geologist, California Geological Survey, written commun., May 31, 2017).

In 2014, the production quantity of construction sand and gravel decreased 1.4% and crushed stone increased 6.5% from the previous year (table 1).

Aggregates by State and End Use

A companion dataset, "Aggregates by State and End Use," replaces the discrete aggregate tables that were included in the individual State chapters prior to 2014 and is available on the State Minerals Statistics and Information web page at <https://minerals.usgs.gov/minerals/pubs/state/>. This dataset is updated annually.

Reference Cited

Bureau of Land Management, 2015, Public land statistics 2014: Bureau of Land Management, v. 199, May, 269 p. (Accessed May 23, 2018, at <https://www.blm.gov/sites/blm.gov/files/pls2014.pdf>.)

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN CALIFORNIA^{1,2,3}

(Thousand metric tons and thousand dollars)

Mineral	2012		2013		2014	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	152	15,900 ^e	178	19,600 ^e	186	20,100 ^e
Portland	8,400	621,000 ^e	9,260	714,000 ^e	9,810	829,000 ^e
Clays, bentonite	50	4,290	W	W	W	W
Gemstones, natural ^e	NA	966	NA	1,220	NA	1,210
Gypsum, crude	705 ^f	4,940 ^f	892 ^f	15,400 ^f	689	6,030
Rare earths ⁴	metric tons	3,000	W	5,500	W	5,400
Sand and gravel:						
Construction	79,700 ^f	870,000 ^f	85,600 ^f	954,000 ^f	84,400	1,010,000
Industrial	1,010	37,600	863	42,500	1,520	52,500
Stone:						
Crushed	31,900 ^f	308,000 ^f	33,600 ^f	320,000 ^f	35,800	314,000
Dimension	23	9,200	24	9,210	23	9,170
Combined values of boron minerals, clays (common, fuller's earth, kaolin), diatomite, feldspar, gold, lime, magnesium compounds, perlite [crude (2013)], pumice and pumicite, salt, silver, soda ash, tungsten, zeolites, and values indicated by symbol W						
	XX	1,390,000	XX	1,270,000	XX	906,000
Total	XX	3,260,000 ^f	XX	3,350,000 ^f	XX	3,150,000

^eEstimated. ^fRevised. NA Not available. W Withheld to avoid disclosing company proprietary data; included in "Combined values" data. XX Not applicable.

¹Includes data available through June 2017.

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

³Data are rounded to no more than three significant digits; may not add to totals shown.

⁴Rare-earth-oxide (REO) basis.

TABLE 2
MINING ACTIVITY IN CALIFORNIA¹

Mining activity	2012	2013	2014
State rank	8	8	8
Employment, number: ²			
Nonfuel mineral mines	4,202	4,119	4,193
Mills and plants	2,313	2,479	2,516
Number of nonfuel mineral mines ²	500	488	493
Number of mills and plants ²	48	50	50
Average annual wage, all mining ³	dollars per year	71,858	74,227
Average annual wage, all industries ³	do.	56,293	58,512
Per capita value	dollars per person	86	87
National per capita value	do.	241	252

do. Ditto.

¹Data rounded to no more than three significant digits for "Per capita value" and "National per capita value."

²Source: U.S. Mine Safety and Health Administration.

³Source: National Mining Association.

TABLE 3
STRUCTURE OF THE NONFUEL MINERAL INDUSTRY IN CALIFORNIA

(Nonfuel-mineral-producing companies, not including aggregate producers)

Commodity	Company	County
Boron	Rio Tinto plc	Kern
Do.	Searles Valley Minerals Inc.	San Bernardino
Cement	CalPortland Co. (Mojave plant)	Kern
Do.	CEMEX Inc. (Victorville plant)	San Bernardino
Do.	Lehigh Cement Co. (Permanente plant)	Santa Clara
Do.	Lehigh Cement Co. (Redding plant)	Shasta
Do.	Lehigh Cement Co. (Tehachapi plant)	Kern
Do.	Martin Marietta Co. (Crestmore plant)	Riverside
Do.	Martin Marietta Co. (Oro Grande plant)	San Bernardino
Do.	National Cement Co. (Lebec plant)	Kern
Do.	Mitsubishi Cement Co. (Lucerne Valley)	San Bernardino
Clays:		
Bentonite	Elements Specialties Inc.	Do.
Do.	Nestle Purina Petcare Co.	Kern
Do.	Pfizer, Inc. (Ibex-Bentonite Mine)	Inyo
Do.	Vanderbilt Minerals LLC	Do.
Do.	Wilbur-Ellis Co.	San Benito
Common clay	Castaic Clay Manufacturing Co.	Los Angeles
Do.	Atkinson Brick Co.	Do.
Do.	CBR Cement Co./Calaveras Cement Co.	Shasta
Do.	Gladding McBean and Co.	Placer
Do.	National Cement Co. of California, Inc.	Kern
Do.	Pacific Clay Products Co.	Riverside
Do.	Pacific Customs Materials	Ventura
Do.	Martin Marietta	San Bernardino
Fuller's earth, montmorillonite	Nestle Purina Petcare Co.	Kern
Do.	Oil Dri Corp	Do.
Kaolin	Ione Minerals Inc.	Amador
Diatomite	Celtite Corp. (2 mines)	Santa Barbara
Do.	Dicalite Corp.	Shasta
Do.	GF Industries	Kern
Feldspar	G3 Enterprises Inc	Contra Costa
Do.	Granite Rock Co.	Santa Cruz
Do.	P.W. Gillibrand Co.	Ventura
Gemstones: ¹		
Aquamarine, beryl, quartz, tourmaline	Audrey Lynn Mine - Cahnulla Mountain	Riverside
Beryl, kunzite, lepidolite, quartz crystal, spodumene, tourmaline	The Reed Operations (Elizabeth R Mine)	San Diego
Do.	The Pala Chief Mine - Gem	Do.
Lepidolite, morganite, tourmaline	Stewart Lithia Mine	Do.
Turquoise	Apache Canyon and New Himalaya, West Camp, Turquoise Mountains	San Bernardino
Gold	Atna Resources, Ltd.	Inyo
Do.	New Gold Inc	Imperial
Gold, placers	Various	Various
Gypsum	Buffalo Gypsum Inc	San Benito
Do.	Dalton Trucking Inc	San Bernardino
Do.	H Lima Co Inc.	Do.
Do.	H M Holloway Inc.	Kern
Do.	JR Simplot Co.	San Joaquin
Do.	Sun Services Inc	Riverside
Do.	United States Gypsum Co.	Imperial
Lime	Lhoist North America Co.	Monterey
Do.	Spreckles Sugar Co.	Imperial
Magnesium compounds	South Bay Salt Works	San Diego
Pumice and pumicite	Global Pumice LLC	San Bernardino
Do.	California Lightweight Pumice	Inyo

See footnotes at end of table.

TABLE 3—Continued
STRUCTURE OF THE NONFUEL MINERAL INDUSTRY IN CALIFORNIA

(Nonfuel-mineral-producing companies, not including aggregate producers)

Commodity	Company	County
Pumice and pumicite—Continued		
Do.	Quikrete	Siskiyou
Do.	Packway Metals Inc.	Shasta
Do.	US Pumice Co.	Mono
Do.	Ward Pumice Co.	Siskiyou
Rare earths	Molycorp, Inc.	San Bernardino
Salt	Cargill Inc.	Alameda
Do.	Morton International Inc.	Alameda and Los Angeles
Do.	National Chloride Co.	Los Angeles
Do.	South Bay Salt Works	San Diego
Sand and gravel, industrial	Lapeyre Industrial Sands Inc.	Orange
Do.	Mineral Resources LLC	Butte
Do.	P.W. Gillibrand Co., Inc.	Ventura
Do.	Pioneer Natural Resources	Riverside
Do.	Barney Northcote Inc	Do.
Do.	Granite Rock Co.	Santa Cruz
Do.	Sierra Silica Resources LLC	Butte
Do.	Unimin Corp.	Amador and Contra Costa
Do.	US Mine Corp	Amador
Soda Ash	Searles Valley Minerals Inc.	San Bernardino
Stone, dimension	Cold Spring Granite Co.	Fresno and Madera
Do.	Painted Hills Mining Co.	Riverside
Do.	Mariposa Flagstone Co.	Mariposa
Do.	National Quarries	San Diego
Do.	Antolini & Son	Santa Barbara
Do.	Raymond Granite Co.	Madera
Talc, soapstone, pyrophyllite	Caltalc Inc.	San Bernardino
Do.	Standard Industrial Minerals	Inyo
Tungsten (Andrew Mine)	Curtis Mining Co.	Los Angeles
Zeolites	KMI Zeolite Inc.	Inyo
Do.	St. Cloud Mining Co.	Do.
Do.	Steelhead Specialty Minerals	San Bernadino
Do. Ditto.		

¹Most natural gemstone producers in the United States are small businesses that are widely dispersed and operate independently.

- EXPLANATION**
- Other
 - Boron compounds
 - Cement (masonry)
 - Cement (portland)
 - Clays (common clay)
 - Gold (lode)
 - Gypsum (crude)
 - Sand and gravel (industrial)
 - Stone (dimension)
 - Sand and gravel (construction)
 - Stone (crushed)

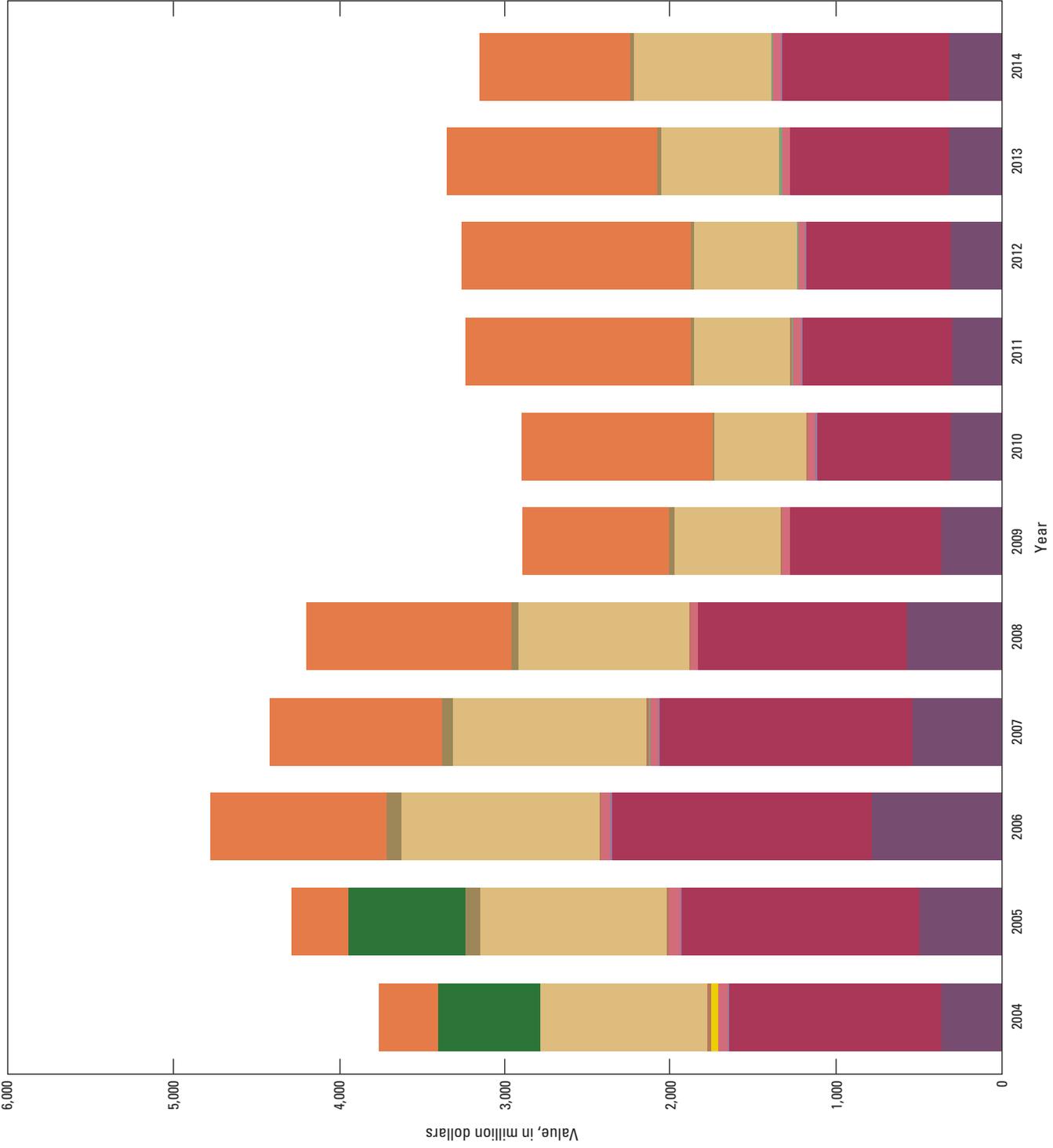


Figure 2. The production value of nonfuel mineral commodities from 2004 through 2014 in California. Values less than \$5 million are not shown. "Other" includes the "Combined values" data listed in table 1. For a complete list of nonfuel mineral commodities and production values for all States, please refer to the Statistical Summary chapter (tables 5, 6).