

CALIFORNIA NON-FUEL MINERALS 2004

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Based on the U.S. Geological Survey's (USGS) preliminary data for 2004, California ranked first among the states in non-fuel mineral production, accounting for approximately 8% of the United States' total. Mineral production for California amounted to \$3.6 billion, about a 5% increase from the previous year. Production of at least 30 types of industrial minerals in the state accounted for about 99% of the total value, with metals (gold and silver) accounting for 1% of the total. California was the only producer of boron and led the nation in the production of sand and gravel, diatomite, and natural sodium sulfate. California ranked second behind Texas in the production of portland cement. California dropped to 5th rank for the nation's gold production behind Nevada (first), Alaska (second), Colorado (third) and Utah (fourth). Other minerals produced in California include bentonite clay (including hectorite), common clay, crushed stone, dimension stone, feldspar, fuller's earth, gemstones, gypsum, iron ore, kaolin clay, lime, magnesium compounds, perlite, pumice, pumicite, pyrophyllite, salt, silver, soda ash, and zeolites.

There are about 1,156 active mines producing non-fuel minerals in the state. Approximately 11,000 people are employed at these mines and their processing plants.

INDUSTRIAL MINERALS

Construction sand and gravel was California's leading industrial mineral with a total value of \$1.24 billion produced for the year, an 8% increase from 2003 (final USGS data). Sand and gravel production was estimated to be 177.5 million tons, a 6% increase from 2003. Vulcan Materials Company/Western Division's Boulevard Plant (Los Angeles County) continued to lead the state and the nation in sand and gravel production. Portland cement was the second largest industrial mineral produced in the state with a total of 13.2 million tons valued at about \$1.04 billion. Although production of cement increased by a modest 3.5 %, the value of Portland cement experienced a 17.2 % increase from 2003. Boron valued at about \$517million, was the third largest commodity produced in California and crushed stone ranked fourth with a value of \$362 million.

Construction Aggregate

Importation of aggregate by ship and barge from Canada and Mexico to California ports continues to take place in the San Francisco and San Diego bay areas. California imported about 2 million tons of sand and gravel during 2004.

After 10 years of negotiations, United Rock Products Corp. and the city of Irwindale (Los Angeles County) agreed to a settlement in August 2004 that will allow deepening of two of the company's existing pits down to 410 and 440 feet. The increased mining depth will allow United Rock to mine an additional 40 million tons of aggregate that will supply the San Gabriel Valley area. The settlement also includes United Rock to pay the city of Irwindale about \$4 million in back mining taxes.



United Rock Products Corporation's alluvial sand and gravel Pit #2 located in the city of Irwindale (Los Angeles County). An extension of the pits mining depth to 410 feet added 17 million tons of high-quality construction grade aggregate reserves to the greater Los Angeles area. Mining at United Rock's Pit #2 will continue for approximately 15 years at which time reclamation will commence. *(Photo by Bret Koehler)*

Kiewit Pacific Co. acquired a permit in September of 2004 to mine about 4 million tons of crushed rock in the Newberry Springs Area (San Bernardino County). The mine site will also include an asphalt plant. Kiewit plans to use the rock and asphalt for its own construction projects such as the Caltrans rehabilitation of Interstate 15 between Barstow and Rasor Road.

Rhodes and Jamieson LLC submitted a draft EIR to the Alameda County Planning Commission in December 2004 to mine 212 acres of alluvial sand and gravel in the Pleasanton Area. If approved, the proposed project would provide approximately 50 million tons of construction-grade sand and gravel to the South San Francisco Bay Region.

Santa Fe Aggregates Inc. received county approval in March 2004 to mine a 34-acre site along the Tuolumne River (Stanislaus County) containing 4.8 million tons of alluvial sand and gravel. The project is currently in litigation. The company also received approval in January 2004 to mine a 419-acre expansion area of their Winton mining operation located along the Merced River (Merced County). The expansion will add 25.5 million tons of alluvial sand and gravel reserves to the Merced area.

Eleven years after the initial approval of the project, a ruling made in November 2004 by the Court of Appeal in San Francisco allows Mission Valley Rock Co. to mine 43 million tons of construction-grade sand and gravel from a 139-acre site in the city of Sunol (Alameda County). Mission Valley Rock plans to start producing sand and gravel from the site sometime in 2007-2008.

Vulcan submitted an application to Alameda County in fall, 2004 to mine 360-acres of land located adjacent to their current operation in Pleasanton.

Kaweah River Rock Co. continued the permitting process to mine 280 acres of land south of their existing operation. If approved, the permit will add an additional 15-20 million tons of reserves to the northern Tulare County area. A final decision by the County Board of Supervisors is expected in spring of 2005.

RMC Pacific Materials Inc. continued its permitting process to mine 220 million tons of crushed stone at Jessie Morrow Mountain (Fresno County) near the town of Friant.

Cemex's controversial proposed 460-acre, 78 million ton, Soledad Canyon sand and gravel mining project (Los Angeles County) was approved by the County Board of Supervisors in June, 2004. The project was denied by the board in 2002 and has been in litigation since then.

Cemex, the worlds third largest cement producer, announced in September, its plans to acquire RMC Pacific Materials Inc. The proposed \$5.8 billion acquisition would make Cemex the worlds largest concrete company. RMC Pacific Materials Inc., the current largest supplier of ready-mixed concrete operates 9 aggregate mines, 55 ready mix facilities, and 4 cement facilities in the San Francisco Bay, Monterey Bay, and Central California regions.

Other Industrial Minerals

Molycorp Inc.'s EIR and subsequent permit was approved in July 2004 to enlarge the current pit and construct a new on-site tailings impoundment and evaporation pond for their Mountain Pass rare earths mine (San Bernardino County). The approval will allow the existing pit to be mined down to 750 feet below ground surface (an additional 250 feet) and will increase mine life by 30-years.

The Mountain Pass Mine has been shut down since 1998 when Molycorp Inc. was cited for spilling low-level radioactive waste from a broken pipeline. Until its closure, Molycorp was the only producer of rare earths in the United States. The company is evaluating the economic viability of reopening the mine due to competition from Chinese rare earth production.

Mitsubishi Cement Corp. received its permit for a 200-acre expansion of their Cushenbury Limestone Mine (San Bernardino County) in October of 2004. The expansion will add at least 50 million tons of cement-grade limestone reserves to the existing mine. Mining of the expanded area is expected to begin in May of 2005.

METALS

Despite the increase in gold prices, California's production continues to decline drastically. In 2004, annual production amounted to 88,800 ounces, down 37% from 2003. Total value amounted to about \$36.3 million, down about 29% from last year's value of \$51.3 million. In the last five years (since 1999) California's gold production has decreased by almost 85% while the nations gold production has decreased 28%.

California had only four major producing gold mines in 2004. These include Glamis Rand Mining Company's Rand Mine (Kern County), Canyon Resources Corporation's Briggs Mine (Inyo County), Western Goldfields Inc.'s Mesquite Mine (Imperial County), and Quest Capital Corporation's and MK Resources Company's Castle Mountain Mine joint venture (San Bernardino County). Mining is no longer taking place at these four properties but gold processing continues from heap leaching.

The Briggs Mine led the state in gold production. Mining operations ceased in April of 2004 but ore processing continued from heap leaching to produce a total of 29,662 ounces of gold for the year. Leaching of the 23.5 million tons of ore on the pad should be completed by the end of 2005. During the mine's 8-year life span up through 2004, the Briggs Mine has produced 543,300 ounces of gold and 152,432 ounces of silver. Gold production is expected to continue through 2005. There are no current plans to re-open or expand the mine.

California's second largest gold producer for the year was Western Goldfields Inc.'s Mesquite Mine, acquired from Newmont Mining Corp. in November of 2003. Mining operations ceased in May of 2001 but Western Goldfields Inc. has announced plans to re-start open-pit mining operations late 2005 in a expanded portion of the mine that was permitted in spring of 2002. The company also is considering retreating the existing heaps for additional gold recovery. The new expanded area is believed to contain almost 50 million tons of gold ore averaging .021 ounces per ton yielding roughly one million ounces of gold.

The Rand Mine ceased mining operations in January of 2003 and mining equipment has been moved to the company's Marigold Mine in Nevada. Glamis has operated the Rand Mine since 1984. Upon completion of the heap leaching expected in early 2005, the mine will have recovered nearly one million ounces of gold during its 15-year life.



Glamis Rand Mining Company's Rand gold mine (Kern County). Mining operations ceased in January of 2003 after 15 years of operation. Production is expected to reach nearly one million ounces of gold by the time heap leaching is completed sometime in early 2005. *(Photo by Jim Pompy)*

Ore recovery continued at the Castle Mountain Mine through 2004. Mining ceased in 2001. The mine is currently undergoing reclamation activities.

In addition to the above-mentioned mines, gold is produced as a secondary mineral at numerous alluvial sand and gravel mines located mainly in the northern and central part of the state. California also has several small underground gold mines that mainly produce specimen gold.

Silver production makes up less than 1% of California's total metal production. All of the silver produced in California is a byproduct of gold production. Iron ore mined in California is used in the production of portland cement and is considered an industrial mineral.

MINERAL RESOURCE CONSERVATION

The California Geological Survey (CGS) Mineral Land Classification Project, a mandate of the Surface Mining and Reclamation Act, continued to provide lead agencies with mineral resource maps that have proved to be of great value in land-use planning and mineral resource conservation. To date, CGS has classified a little over one third of the state for mineral resources. CGS has recently completed a comprehensive aggregate resource study for Sonoma County (CGS Special Report 175). The report includes an aggregate resource classification map of the county at 1:125,000 scale, an evaluation of permitted and non-permitted aggregate resources including quantity estimates, a 50-year aggregate demand projection, and an evaluation of potential alternative resources. CGS also had ongoing aggregate Classification projects in the San Bernardino and Palm Springs area (San Bernardino County) and the Claremont-Upland area (Los Angeles County). CGS staff is currently conducting a state wide constituent survey to determine the most critical areas in the state that are in need of Mineral Land Classification.

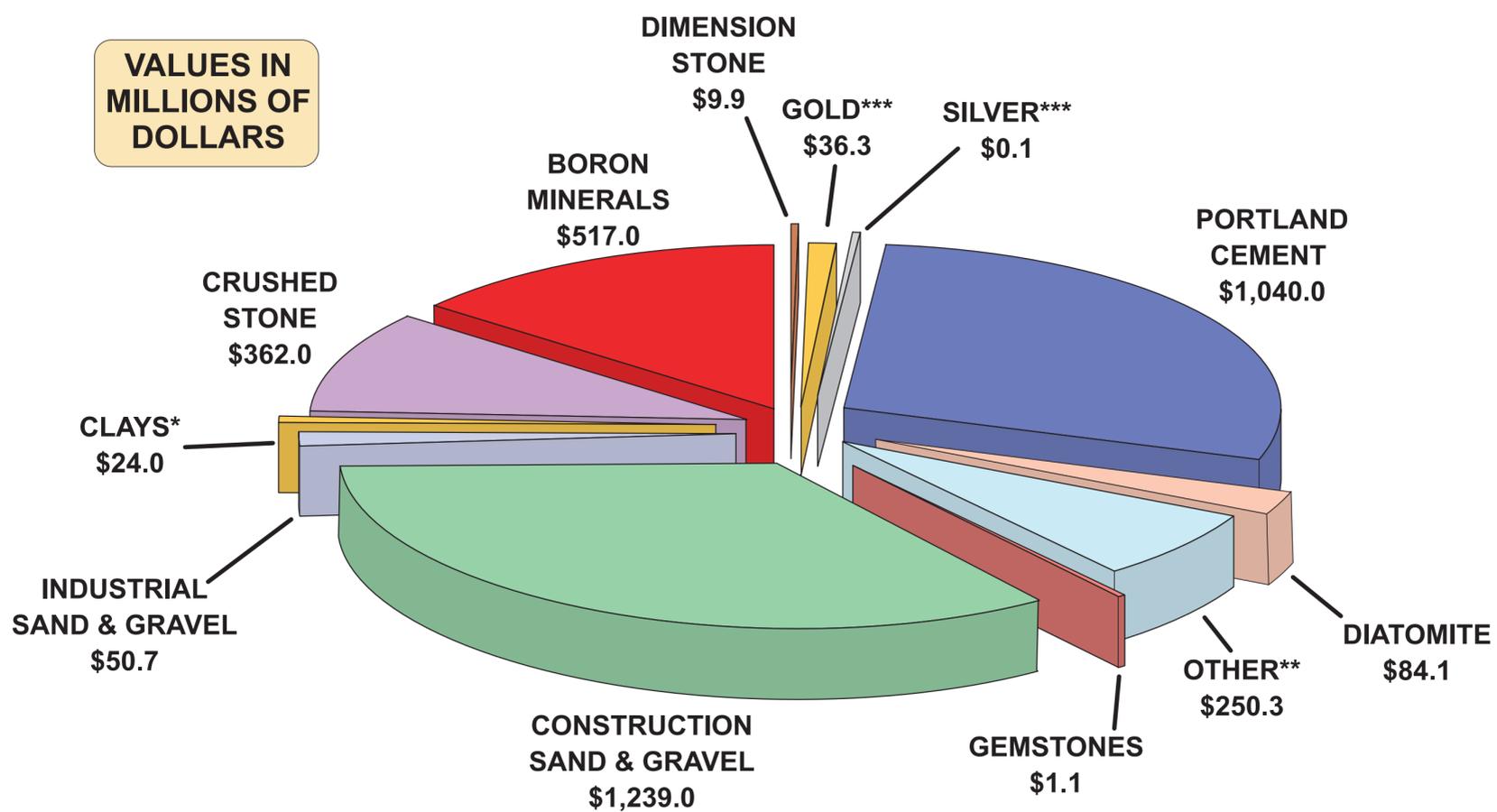
Amount and value of non-fuel mineral production for 2002, 2003, 2004.^{1,2}

Mineral	2002		2003		2004 ^P		
	Quantity	Value (thousands \$)	Quantity	Value (thousands \$)	Quantity	Value (thousands \$)	
Asbestos	short tons	3,100	1,400	NP	NP	NP	NP
Boron Minerals (B ₂ O ₃)	short tons	683,600	468,400	590,900	590,800	620,000	517,000
Cement (Portland)	short tons	^e 12,310,500	^e 853,000	^e 12,781,300	^e 887,400	^e 13,230,000	^e 1,040,000
Clays							
Bentonite	short tons	28,700	2,800	25,400	2,600	28,700	2,500
Common	short tons	1,132,300	21,400	1,366,000	19,100	2,729,000	21,500
Diatomite	short tons	W	W	W	W	261,000	84,100
Gemstones		NA	1,000	NA	1,100	NA	1,100
Gold ³	troy ounces	⁴ 306,300	⁴ 95,400	⁵ 141,000	⁴ 51,300	⁴ 88,800	⁴ 36,300
Sand and gravel:							
Construction	short tons	166,624,100	1,107,500	167,586,600	1,146,800	177,503,000	1,239,000
Industrial	short tons	1,986,700	48,000	1,968,000	50,100	1,971,000	50,700
Silver ³	troy ounces	⁴ 112,200	⁴ 500	⁵ 17,600	⁴ 90	⁴ 13,600	⁴ 90
Stone:							
Crushed	short tons	74,277,600	423,400	61,206,400	366,000	59,535,000	362,000
Dimension	short tons	45,200	9,900	44,100	10,000	46,000	9,900
Combined value of diatomite (2002 & 2003), feldspar, fuller's earth, gypsum iron ore (usable), kaolin, lime, masonry cement, magnesium compounds, perlite (crude), pumice and pumicite, pyrophyllite, salt, soda ash, sodium sulfate, zeolites and combined values of W							
		XX	311,500	XX	323,200	XX	250,300
		XX	3,344,100	XX	3,448,500	XX	3,614,500
¹ Production as measured by mine shipments, sales, or marketable production (including consumption by producers). ² Quantity data are rounded to the nearest 100; values are rounded to the nearest \$100,000. ³ Recoverable content of ores, etc. ⁴ Data from California Department of Conservation, California Geological Survey. ⁵ Data from California Department of Conservation, Office of Mine Reclamation. ⁶ Includes calcined, byproduct and crude gypsum. ^P Preliminary. ^e Estimate. NA=Not available. W=Withheld to avoid disclosing company proprietary data; value included with "combined value" data. XX = Not applicable, NP=No Production							

Modified from unpublished U.S. Geological Survey (USGS) data, subject to change; official USGS preliminary 2003 data will be published in the California chapter of the USGS Mineral Yearbook, Area Reports: Domestic 2003, Volume II.

CALIFORNIA NON-FUEL MINERAL PRODUCTION 2004

Total Value \$3.61 Billion



*CLAYS Except:
kaolin and fuller's earth

**OTHER Includes:
feldspar, fuller's earth, gypsum, iron ore, kaolin, lime,
magnesium compounds, masonry cement, perlite,
pumice and pumicite, pyrophyllite, salt, soda ash, talc,
sodium sulfate, and zeolites

*** Data from California Geological Survey
Data from unpublished U.S. Geological Survey (USGS) and Subject to change; Official USGS preliminary 2004 data will be published in the California Chapter of the USGS Mineral Year Book, Area Reports: Domestic 2004, Volume II.