

CALIFORNIA NON-FUEL MINERALS 2010

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Based on the U.S. Geological Survey's (USGS) preliminary data for 2010, California ranked sixth after Alaska, Minnesota, Utah, Arizona and Nevada in the value of non-fuel mineral production, accounting for approximately 4.2 percent of the nation's total. The market value of non-fuel mineral production for California was \$2.9 billion. California produced more than two dozen different industrial minerals during the year. California led the nation in the production of diatomite and natural sodium sulfate, and was the only producer of boron compounds and rare earth minerals. The state ranked second behind Texas for portland cement production. The only metals produced in California were gold and silver. California ranked 6th in gold production out of eleven states that reported for the year. Other minerals produced commercially include common clay, bentonite clay (including hectorite), crushed stone, dimension stone, feldspar, fuller's earth, gemstones, gypsum, iron ore (used in cement manufacture), kaolin clay, lime, magnesium compounds, perlite, pumice, pumicite, salt, soda ash, and zeolites.

There were about 700 active mines in California producing non-fuel minerals during 2010. Approximately 5,300 people were employed at these mines and their processing facilities.

INDUSTRIAL MINERALS

The continuing slow recovery of the economy again impacted California's mineral industries during 2010. Particularly hard hit were construction materials such as sand and gravel, crushed stone, and portland cement as low levels of commercial and residential construction resulted in reduced demand for these commodities.

Construction grade sand and gravel continued to be California's leading industrial mineral commodity, with an estimated total value of \$809 million for 82 million tons produced. Boron minerals were the second largest dollar value mineral commodity produced in California in 2010. Because there are only two producers of boron minerals in the state, specific production values are withheld and are included in the "other" category in the table and figure. Boron makes up more than 60 percent of the "other" category. The third largest mineral commodity was portland cement valued at \$546 million for 7.2 million tons

produced. Crushed stone ranked fourth in the state with a value of \$513 million for 45 million tons produced.

Labor disputes at the Rio Tinto Borax, Boron facility in Kern County led to a 15 week slowdown of operations beginning in late January. Production continued during the slowdown with a contingency workforce. In mid-May new contracts were agreed upon and workers were able to return to work. The Boron mine is the largest open pit mine in California and supplies a significant portion of the worldwide borate demand. In late December 2010, heavy rains caused flooding of the Boron mine disrupting production for 3-4 weeks until the pit could be dewatered and the mine reopened in January 2011.

Aggregate

Both production and value of construction aggregate (sand and gravel and crushed stone) decreased again in 2010. Total production of these two commodities in 2010 was 127.5 million tons valued at \$1,190 million. The total production of 127.5 million tons in 2010 compares to 133.5 million tons in 2009, 156.7 million tons in 2008, 208 million tons in 2007, and 246 million tons in 2006. While the 2010 production represents a decrease of 48.2 percent since the beginning of the economic recession in 2006, the decrease from 2009 to 2010 was only 4.5 percent, much less than the year to year drop in the preceding years of the recession.

Vulcan Materials Company's Fish Canyon mining operation continued the process of revising its mining plan. The proposed revisions would shift future mining from the eastern area of the property to the western area. The proposed changes have met with resistance from the adjacent community of Duarte, from which mining along the western property line would be visible. A draft environmental impacts report was filed in December 2009. In July 2010 the Environmental Impact Report and Conditional Use Permit for the project were approved by the Azusa City Council. The approval was contested and taken to court by the City of Duarte in 2011.

The permitting process for Granite Construction Company's Liberty Quarry project, located in southeastern Riverside County about three miles south of the City of Temecula, continued throughout 2010. A DEIR was released in July 2009 and public comment continued throughout 2010.

Cement

California's continuing low levels of residential and commercial construction during 2010 contributed to a further drop in both cement production and cement

imports for the year. Many plants continued to operate on a reduced schedule to accommodate the lower demand. California's production of portland cement for 2010 was estimated at approximately 7.2 million tons valued at \$546 million.

In January 2010, CEMEX announced the permanent closure of its Davenport cement plant, Santa Cruz County. The plant, originally constructed in 1906 by the Standard Portland Cement Company, primarily served the San Francisco Bay Area. Over its 100+ year history it supplied cement for projects ranging from the rebuilding of San Francisco after the 1906 earthquake to construction of the Bay Area Rapid Transit (BART) system. The plant also supplied materials used in the construction of Pearl Harbor in Hawaii and the Panama Canal.

Overall, cement imports through California ports remained flat in 2010 reflecting the continued low levels of commercial and residential construction in the State. The Port of Stockton, San Joaquin County, experienced a small increase in cement imports in 2010 with 244,000 tons passing through the facility. This represents a 33 percent increase over the 2009 value of 184,000 tons, but is still only about 10 percent of the 2.4 million tons which passed through the port in 2006 prior to the recession.

Rare Earth Elements

The Mountain Pass Rare Earth Mine, San Bernardino County operated by Molycorp Minerals LLC. resumed mining operations in the fourth quarter of 2010 for the first time since 2002.

The existing processing plant at the mine has a capacity of about 3,000 tons of rare earth products per year but construction of a new rare earth element processing facility commenced in the fourth quarter of 2010. The "state of the art" facility is part of Molycorp's "Mine to Magnet" plan of production and is expected to produce 40,000 tons of rare earth products per year by 2013.

METALS

The only metals produced in California in 2010 were gold and silver. Gold dominated California's metal production in 2010 – comprising over 99.9 percent of the value of the state's metals production. Gold production increased to 198,980 ounces in 2010, a 24 percent increase from 2009 production of 159,900 ounces. The value of gold production in the state increased to \$239.7 million from \$138.5 million in 2009. The increase in value of gold produced is in part related to the record breaking price of gold.

The State's largest gold producer was the New Gold Inc., Mesquite gold mine in Imperial County – producing approximately 169,000 ounces for the year. New Gold has identified an estimated 3.1 million ounces in reserves and an additional 4.9 million ounces of measured and indicated resources.

The other major producer of gold in California was the Atna Resources Ltd., Briggs mine in Inyo County. The Briggs mine resumed gold production in early 2009 and produced about 25,000 ounces in 2010

In addition to the above mentioned lode mines, placer gold is produced as a by-product from many sand and gravel mines in the northern and central parts of the state. California also has several small lode mines that sporadically produce specimen gold including gold in quartz for use in jewelry.

Silver is produced as a by-product of gold production and makes up less than one tenth of one percent of California's total metal production. The increase in silver production in 2010 can be directly attributed to the increase in gold production compared to 2009.

Iron ore, mined in one location in San Bernardino County, is considered an industrial mineral because it is used for the production of portland cement.

In January, Golden Queen Mining Company Inc. received a conditional use permit from Kern County to mine gold and silver from its Soledad Mountain Project located south of the City of Mojave. Once production begins the newly permitted mine will be the first open pit, heap leach operation in California to incorporate backfilling of mined out open pits as part of its reclamation plan since the State Mining and Geology Board incorporate the requirement for backfilling metallic mines into Surface Mining and Reclamation Act (SMARA) regulations in 2002. Approximately 905 acres of the 2,500 acre site will be mined with gold and silver as the primary commodities produced as well as construction aggregate to be produced as a secondary commodity. The Soledad Mountain area has been mined sporadically since the early 20th Century.

THE CALIFORNIA GEOLOGICAL SURVEY

The California Geological Survey's (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 completed mineral resource studies in about one third of the state. During the year, CGS completed and updated classification projects in Butte County, Los

Angeles County, and Sacramento County. CGS also assisted the State Mining and Geology Board in the designation process for the Bakersfield Production-Consumption Region in Kern County, and the San Bernardino Production-Consumption Region in San Bernardino and Riverside Counties. Classification updates are ongoing in the San Luis Obispo/Santa Barbara area, the Stockton-Lodi area, and the North San Francisco Bay area.

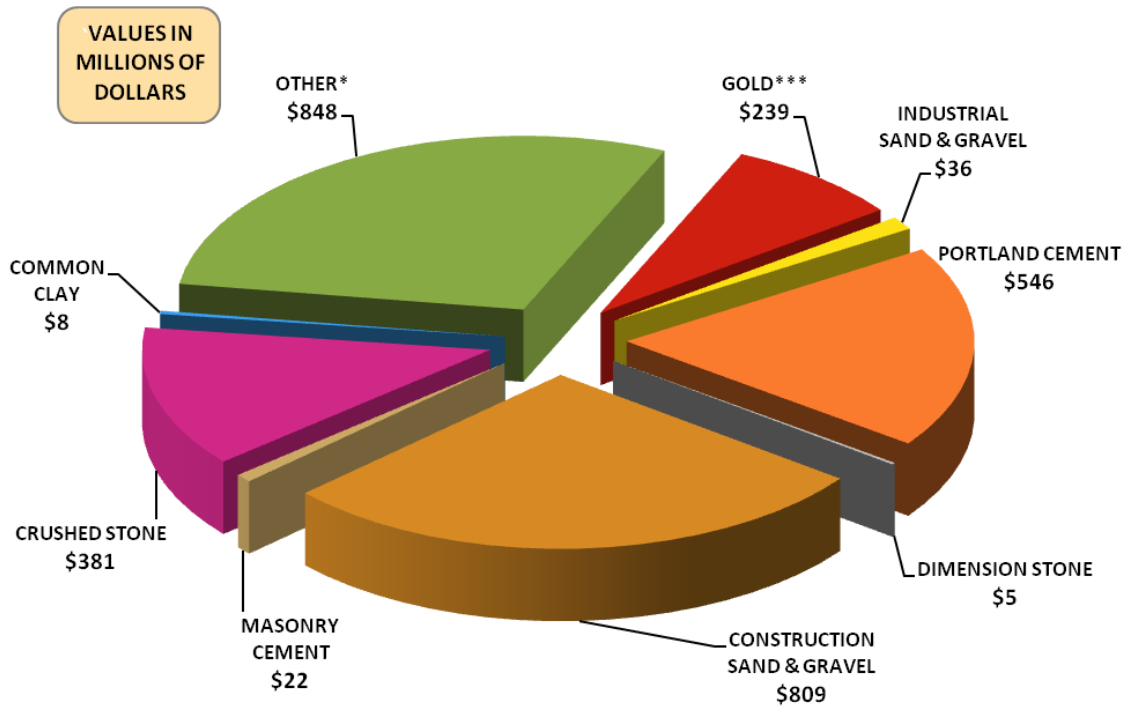
Amount and value of non-fuel mineral production for 2008, 2009, 2010. ^{1,2}

Mineral	2008		2009		2010	
	Quantity	Value (thousands \$)	Quantity	Value (thousands \$)	Quantity	Value (thousands \$)
Boron Minerals short tons	W	^e 4700,000	W	W	W	W
Cement						
Masonry short tons	^e 377,000	^e 46,000	^e 270,000	^e 31,700	^e 218,000	^e 22,400
Portland short tons	^e 10,496,000	^e 1,091,000	^e 9,348,000	^e 855,000	^e 7,166,000	^e 546,000
Clays:						
Bentonite short tons	33,000	3,200	21,000	2,300	24,000	W
Common short tons	515,000	3,400	318,000	2,300	468,000	7,700
Gemstones	NA	700	NA	700	NA	750
Gold ³ troy ounces	⁴ 119,300	⁴ 104,100	⁴ 159,900	⁴ 138,500	⁴ 199,000	⁴ 239,000
Sand and gravel:						
Construction short tons	108,529,000	1,105,100	85,112,000	905,500	82,359,000	809,000
Industrial short tons	1,940,000	42,900	1,606,000	42,800	1,431,000	36,000
Silver ³ troy ounces	3,590	50	11,100	130	24,000	430
Stone:						
Crushed short tons	48,196,000	480,300	48,386,000	512,800	45,157,000	381,000
Dimension short tons	47,000	12,200	30,000	7,600	23,000	5,200
Values for boron (2009, 2010) diatomite, feldspar, gypsum (calcined), iron ore (usable shipped), clays (bentonite, fire, and kaolin), lime, magnesium compounds, perlite (crude), pumice and pumicite, rare earths, salt, soda ash, ⁴ sodium sulfate and zeolites are combined to avoid disclosing company proprietary data.						
Total combined and W values		393,300		920,000		848,000
Total annual value-all minerals		3,978,800		3,419,300		2,895,000
^P roduction as measured by mine shipments, sales, or marketable production (including consumption by producers). ^Q uantity and value data are rounded to the nearest 100 units except for silver and gemstones (rounded to nearest 10 units). ^R ecoverable content of ores, etc. ^D ata from California Department of Conservation, California Geological Survey. ^P reliminary. ^e Estimate. NA=Not available. W=Withheld to avoid disclosing company proprietary data; value included with "combined value" data.						

Modified from unpublished U.S. Geological Survey (USGS) data, subject to change; official USGS final 2010 data will be published in the California chapter of the USGS Mineral Yearbook, Area Reports: Domestic 2010, Volume II.

CALIFORNIA NON-FUEL MINERAL PRODUCTION 2010

Total Value \$2.9 Billion



* OTHER Includes:
boron minerals, clays (bentonite, fire, and kaolin)
diatomite, feldspar, gemstones, gypsum, iron ore, lime,
magnesium compounds, perlite, salt, silver,
soda ash, talc, and zeolites

*** Data from California Geological Survey
Information modified from preliminary unpublished U.S. Geological Survey (USGS) data and subject to change;
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Area Reports: Domestic 2010 Volume II.