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2008 Minerals Yearbook

OKLAHOMA

U.S. Department of the Interior
U.S. Geological Survey

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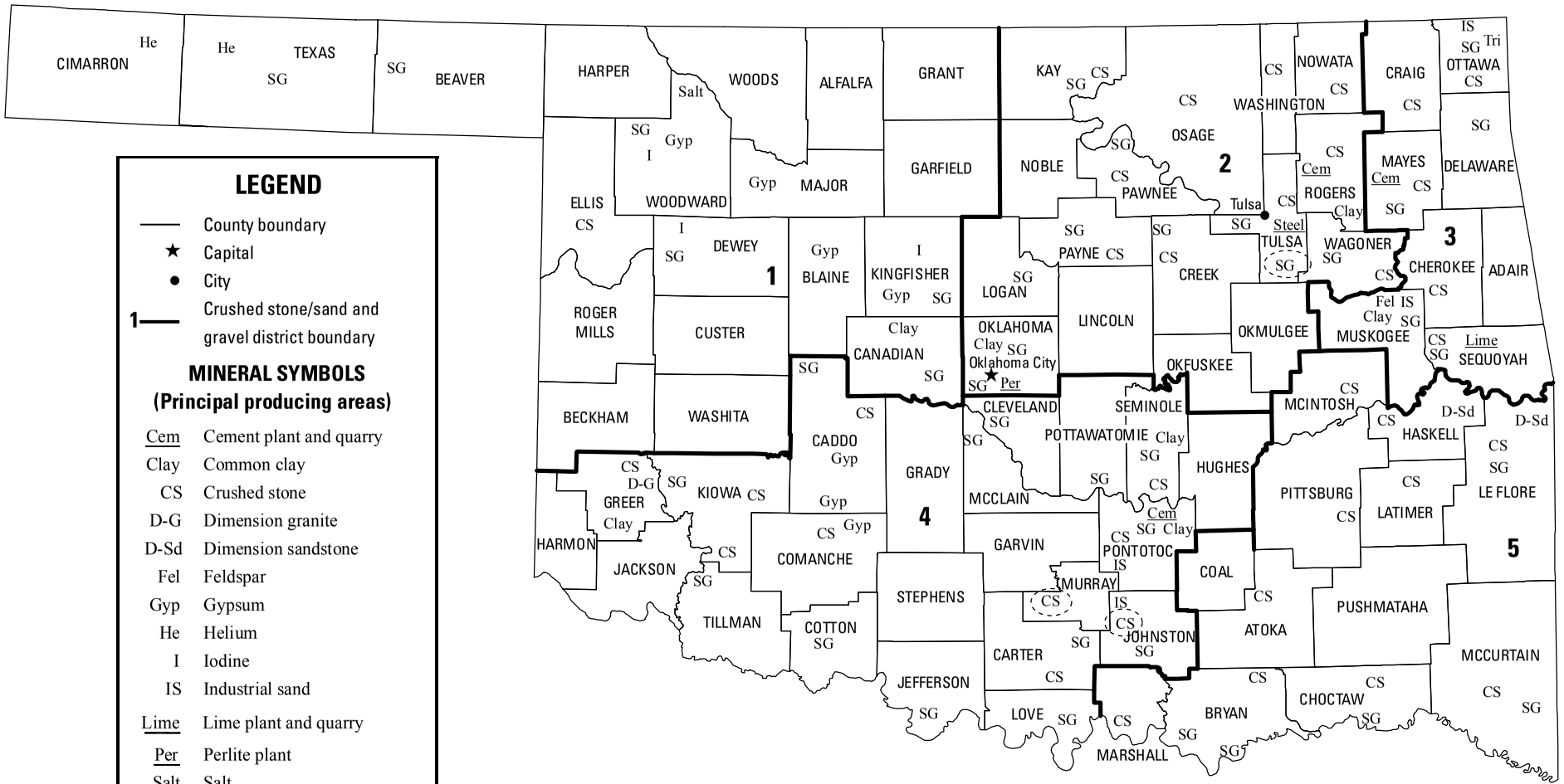
OKLAHOMA



LEGEND

- County boundary
- ★ Capital
- ● City
- 1 Crushed stone/sand and gravel district boundary

MINERAL SYMBOLS
(Principal producing areas)

Cem	Cement plant and quarry
Clay	Common clay
CS	Crushed stone
D-G	Dimension granite
D-Sd	Dimension sandstone
Fel	Feldspar
Gyp	Gypsum
He	Helium
I	Iodine
IS	Industrial sand
Lime	Lime plant and quarry
Per	Perlite plant
Salt	Salt
SG	Construction sand and gravel
Steel	Steel plant
Tri	Tripoli
⬭	Concentration of mineral operations

Source: Oklahoma Geological Survey/U.S. Geological Survey (2008).

The Mineral Industry of Oklahoma

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

In 2008, Oklahoma's nonfuel raw mineral production[1] was valued at $810 million, based upon annual U.S. Geological Survey (USGS) data. This was a $67 million, or 9%, increase from the State's total nonfuel mineral value for 2007, which then had increased by $47 million, or almost 7%, from that of 2006. The State increased to 27th from 31st in rank among the 50 States in total nonfuel mineral production value, accounting for more than 1.1% of the U.S. total value. This is the highest ranking of Oklahoma's total nonfuel mineral production value since at least 1978;[2] the State was also 27th in 1982 and again in 2002.

In 2008, crushed stone continued to be Oklahoma's leading nonfuel mineral commodity, based upon value, accounting for just over 42% of the State's total nonfuel mineral production value. Crushed stone was followed by portland cement, construction sand and gravel, industrial sand and gravel, iodine, and Grade-A helium (descending order of value). The combined values of three of Oklahoma's industrial minerals—crushed stone, construction sand and gravel, industrial sand and gravel, and crude gypsum—accounted for 63% of the State's total value. (Data for portland cement were withheld—company proprietary data.)

The increase in the total production value in 2008 resulted from increases in the production values, in descending order of change, of crushed stone, up by almost $43 million, and industrial sand and gravel, up by $19 million, and portland cement (withheld—company proprietary data). Smaller yet significant increases in value also took place in Grade-A helium, salt, lime, and iodine. The largest decreases in value took place in crude gypsum, down by more than $13 million, followed by dimension stone, down almost $3 million.

No metals were mined in the State in 2008. In 2008, Oklahoma continued to be the only State that produced iodine and rose to first from second among the four tripoli-producing States and from sixth to fourth in industrial sand and gravel. The State remained fourth in the production of feldspar. The State decreased from first to fourth in the production of crude gypsum, to eighth from seventh in common clays, and to 11th from being tied for 10th in 2007 in the production of masonry cement.

[1]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 2008 USGS mineral production data published in this chapter are those available as of July 2010. 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.

[2]Starting in 1978, the responsibility for the collection of data on energy minerals was transferred to the newly created Department of Energy. Prior to 1978, the State totals included energy minerals and thus these totals are not directly comparable with those after 1978.

The narrative information that follows was provided by the Oklahoma Geological Survey[3] (OGS). Production and other data in the text that follow are those reported by the OGS based upon that agency's own surveys and estimates.

Overview and Employment

In 2008, the Oklahoma Department of Mines recorded that 405 mine operators, up 28 from 377 operators in 2007, produced nonfuel minerals from 459 mines, up 17 from 442 mines in 2007. However, 632 mining permitted sites were on file, up from 588 in 2007 and 549 in 2006. Most of the producing mines were open pit mines. Exceptions were brine wells from which iodine and salt were produced, natural gas wells from which Grade-A helium was produced, and one underground limestone mine. Out of the 77 counties in Oklahoma, 68 had extant mining permits in 2008.

The downturn in home construction caused a corresponding downturn in the production of construction materials, including that of crushed stone for aggregates, construction sand and gravel, cement (portland and masonry), common clay for brick manufacture, and gypsum used in portland cement and wallboard manufacture.

In 2008, based on preliminary data, the Oklahoma Miner Training Institute (OMTI) (operating under the direction of the Oklahoma Mining Commission and based out of Eastern Oklahoma State College in Wilburton) held 288 classes, totaling almost 35,700 classroom hours of instruction for 83 coal miners and approximately 4,940 metal and nonmetal miners. OMTI provides free mine safety and health classes both at the college and at mine sites throughout the State for all mining companies holding active mining permits in Oklahoma.

Commodity Review

Industrial Minerals

Cement and Sand and Gravel, Construction.—Alan Ritchey Materials Co. (ARMCO) opened its newest operation, a sand production plant, in December 2008. It is capable of producing around 10,900 metric tons (t) (roughly 12,000 short tons) per day of concrete sand. ARMCO's major goal is to supply construction aggregate to north Texas.

On August 4, 2008, Ash Grove Cement Co. announced that it had acquired the assets of Holliday Sand & Gravel Co. to add to its market presence in several midwestern markets. The move also would provide Ash Grove with long-term sand and gravel reserves throughout the region. Holliday Sand & Gravel operated

[3]Stanley T. Krukowski, Industrial Minerals Geologist IV and Chief, Industrial Minerals Unit, Geologic Resources Section of the Oklahoma Geological Survey, authored the text of the State mineral industry information provided by that agency.

several sand and gravel operations throughout Kansas, Missouri, and Oklahoma. Holliday Sand & Gravel was to continue to operate from its Lenexa, KS, corporate office under its existing name. The company operates three plants in Oklahoma at Bixby, Coweta, and Leonard (Ash Grove Cement Co., 2008).

Silica.—Anchor Hocking Co. announced early in 2008 that it would shut down its Sapulpa glass manufacturing plant by June 2008. About 425 people would lose their jobs as a result. Employees were given the option to relocate to other Anchor Hocking facilities, as the company restructures by consolidating all of its manufacturing and distribution operations to Ohio and Pennsylvania locations. The plant first began operations in 1914 under its founders H.U. Bartlett and George F. Collins. In recent years, several different owners operated the plant until it was acquired by Anchor Hocking in November 2007 (Schulte, 2008).

Legislation and Government Actions

The Oklahoma Geological Survey hosted the 44th Forum on the Geology of Industrial Minerals in May 2008. Nine field trips toured industrial minerals operations, manufacturing plants, and an oil and gas drill rig. Two and one-half days of technical sessions presented diverse subjects covering developments on domestic and international industrial minerals topics. The Oklahoma Geological Survey previously hosted the industrial minerals forum in 1978 and 1998.

On May 16, 2008, Oklahoma State Senate Bill 1697 went into effect. The bill aimed to tighten up State regulation of certain mining permits, called Limited Use Permits, which are issued by the Department of Mines. Limited Use Permits are required for any person seeking to engage in any limited mining activity and who is not eligible for a surface mining permit. This would include small mining operations designed for testing purposes. The permits are limited to sites less than 1 hectare (ha) (2 acres), expire within 1 year, and cost $100.00. It also requires permit applicants to provide a reclamation bond; sites are required to be reclaimed within 6 months following the expiration of the permit. The bill modified the Oklahoma Code of Law, Title 45, §723 and 724.

Government and Industry Awards.—At the end of 2008, the "Sentinels of Safety" awards for 2007 were announced by the Mine Safety and Health Administration and the National Mining Association, which jointly sponsored the program. The award for occupational safety, based on the number of hours without a lost-time injury, is the oldest award of its kind, first announced by Secretary of Commerce Herbert Hoover in 1925. The Pope's Point Plant, owned and operated by ARMCO of Yuba, won for more than 65,400 hours in the Large Dredge Group.

References Cited

Ash Grove Cement Company, 2008, Ash Grove Cement Company announces acquisition of Holliday Sand and Gravel Company: Overland Park, KS, Ash Grove Cement Company News and Archive, August 4. (Accessed June 3, 2011, at http://www.ashgrove.com/OurCompany/news_archive.asp.)

Schulte, David, 2008, Anchor Hocking closing Sapulpa plant: Tulsa, Oklahoma, Tulsa World, January 31. (Accessed June 3, 2011, at http://www.tulsaworld.com/business/article.aspx?articleID=20080131_5__Along22517.)

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN OKLAHOMA[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2006		2007		2008	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	1,180	4,700	1,050	5,170 r	756	3,900
Gemstones, natural	NA	106	NA	106	NA	4
Gypsum, crude	3,420	30,200	3,410	26,100	1,370	12,800
Sand and gravel:						
Construction	17,000	91,900	16,200 r	94,100 r	14,600	93,400
Industrial	1,640	40,400	1,710	44,600	2,040	63,700
Stone:						
Crushed	43,800	258,000	45,800	298,000 r	46,600	341,000
Dimension	34 r	6,320 r	65 r	11,700 r	53	8,750
Tripoli metric tons	18,400	1,890	40,600	1,600	86,000	1,800
Combined values of cement, feldspar, helium (Grade-A), iodine (crude), lime, salt,	XX	263,000	XX	261,000 r	XX	285,000
Total	XX	696,000 r	XX	743,000 r	XX	810,000

rRevised. NA Not available. XX Not applicable.

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

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

TABLE 2
OKLAHOMA: CRUSHED STONE SOLD OR USED, BY TYPE[1]

Type	2007 Number of quarries	2007 Quantity (thousand metric tons)	2007 Value (thousands)	2008 Number of quarries	2008 Quantity (thousand metric tons)	2008 Value (thousands)
Limestone[2]	49 r	39,300 r	$255,000 r	49	40,600	$297,000
Granite	4	3,100	20,200	3	1,870	15,300
Sandstone and quartzite	5	691 r	6,060 r	7	777	5,800
Miscellaneous stone	15 r	2,670 r	16,300 r	13	3,310	23,100
Total	XX	45,800	298,000 r	XX	46,600	341,000

rRevised. XX Not applicable.

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

[2]Includes limestone-dolomite reported with no distinction between the two.

TABLE 3
OKLAHOMA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2008, BY USE[1]

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	947	9,670
Filter stone	177	1,010
Other coarse aggregate	35	284
Coarse aggregate, graded:		
Concrete aggregate, coarse	5,940	46,300
Bituminous aggregate, coarse	95	828
Bituminous surface-treatment aggregate	663	5,840
Railroad ballast	791	6,200
Other graded coarse aggregate	317	2,150
Fine aggregate (-⅜ inch):		
Stone sand, concrete	W	W
Stone sand, bituminous mix or seal	W	W
Screening, undesignated	736	4,190
Other fine aggregate	212	768
Coarse and fine aggregates:		
Graded road base or subbase	1,890	12,800
Unpaved road surfacing	W	W
Terrazzo and exposed aggregate	W	W
Crusher run or fill or waste	2,430	16,600
Other coarse and fine aggregates	281	1,530
Other construction materials	284	2,050
Agricultural, limestone	335	1,800
Chemical and metallurgical, cement manufacture	W	W
Unspecified:[2]		
Reported	23,300	176,000
Estimated	4,700	33,000
Total	46,600	341,000

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

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

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

TABLE 4
OKLAHOMA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2008, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	Districts 1 and 2[2]		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch)[3]	125	1,340	132	689	W	W
Coarse aggregate, graded[4]	1,600	13,300	45	320	6,070	46,900
Fine aggregate (-⅜ inch)[5]	460	2,310	W	W	W	W
Coarse and fine aggregate[6]	2,390	17,000	W	W	1,150	7,190
Other construction materials	--	--	276	1,990	--	--
Agricultural[7]	W	W	W	W	--	--
Chemical and metallurgical[8]	W	W	951	7,510	W	W
Unspecified:[9]						
Reported	4,390	32,100	1,280	9,440	12,200	91,500
Estimated	710	5,000	850	6,000	304	2,200
Total	10,400	75,300	4,230	29,200	22,500	166,000

	District 5	
	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch)[3]	W	W
Coarse aggregate, graded[4]	88	806
Fine aggregate (-⅜ inch)[5]	W	W
Coarse and fine aggregate[6]	W	W
Other construction materials	9	62
Agricultural[7]	W	W
Chemical and metallurgical[8]	--	--
Unspecified:[9]		
Reported	5,500	42,900
Estimated	2,800	20,000
Total	9,450	70,700

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

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

[2]Districts 1 and 2 are combined to avoid disclosing company proprietary data.

[3]Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregate.

[4]Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregate.

[5]Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregate.

[6]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.

[7]Includes limestone.

[8]Includes cement manufacture.

[9]Reported and estimated production without a breakdown by end use.

TABLE 5
OKLAHOMA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2008,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates and concrete products	2,600	$19,700	$7.58
Plaster and gunite sands	13	73	5.62
Asphaltic concrete aggregates and other bituminous mixtures	166	1,080	6.48
Road base and coverings	447	2,340	5.22
Fill	1,240	5,720	4.62
Golf course	(2)	2	13.76
Unspecified:[3]			
Reported	2,140	12,900	6.05
Estimated	8,020	51,600	6.44
Total or average	14,600	93,400	6.39

[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
[2]Less than ½ unit.
[3]Reported and estimated production without a breakdown by end use.

TABLE 6
OKLAHOMA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2008,
BY USE AND DISTRICT[1, 2]

(Thousand metric tons and thousand dollars)

Use	District 1		Districts 2 and 3		Districts 4 and 5	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products[3]	737	6,090	1,380	9,870	490	3,800
Asphaltic concrete aggregates and road base materials	381	2,350	68	367	163	689
Fill	50	249	944	4,700	243	763
Golf course	(4)	2	--	--	--	--
Unspecified:[5]						
Reported	602	4,320	1,200	6,240	332	2,370
Estimated	310	2,000	2,800	18,000	4,900	31,000
Total	2,080	15,000	6,420	39,600	6,110	38,800

-- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Specified districts are combined to avoid disclosing company proprietary data.
[3]Includes plaster and gunite sands.
[4]Less than ½ unit.
[5]Reported and estimated production without a breakdown by end use.