

THE MINERAL INDUSTRY OF KANSAS

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

In 2002, the estimated value¹ of nonfuel mineral production for Kansas was \$661 million, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 5% increase from that of 2001² following 2000 to 2001 when the State's total nonfuel mineral value was unchanged. The State increased to 21st from 22d in rank among the 50 States in total nonfuel mineral production value, of which Kansas accounted for more than 1.5% of the U.S. total.

Cement (portland and masonry), Grade-A helium, salt, and crushed stone were Kansas' leading nonfuel mineral commodities in 2002, accounting for about 27%, 26%, 19%, and 16%, respectively, of the State's total nonfuel mineral production value. In 2002, the largest increases in production and value, being those of portland cement and Grade-A helium (descending order of change), were significantly greater than the decreases that occurred in crude helium, gypsum, dimension stone, construction sand and gravel, and crushed stone, resulting in the State's rise in value. In 2001, the most significant increases were those of Grade-A helium (up \$10 million), salt (up \$8 million), dimension stone (up about \$3 million), and construction sand and gravel (up about \$1 million); but these were balanced out mainly by decreases in portland cement (down \$15 million), crude helium, crushed stone (down about \$3 million), and industrial sand and gravel (table 1).

Based upon USGS estimates of the quantities produced in 2002 in the 50 States, Kansas continued as the Nation's leading producer of crude and Grade-A helium and remained fifth in salt, sixth of six States that produce pumice and pumicite, and ninth in gypsum. Additionally, significant quantities of portland cement, crushed stone, construction sand and gravel, and common clays (descending order of value) were produced in the State. Production of nonfuel minerals in Kansas has consisted entirely of industrial minerals since 1970, following nearly a century (since 1877) of metallic mineral mining in the State.

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or 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 2002 USGS mineral production data published in this chapter are preliminary estimates as of July 2003 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2001 may differ from the Minerals Yearbook, Area Reports: Domestic 2001, Volume II, owing to the revision of preliminary 2001 to final 2001 data. Data for 2002 are preliminary and are expected to change; related rankings may also change.

The last zinc and lead mining operation closed in 1970 owing in part to low zinc prices, low-grade ore, and the high operating costs of required pollution control systems.

The following narrative information was provided by the Kansas Geological Survey³ (KGS). In the area of mergers and acquisitions, Pratt Concrete Products and Whitfield Sand and Gravel were both acquired by Klaver Construction Products LLC. All of these operations are in Pratt County.

Employment

According to the Labor Market Information Services of the Kansas Department of Human Resources, an average of 6,500 persons were employed in all aspects of mining during 2002. This represents a drop of nearly 400 persons from the nearly 6,900 reported for 2001. The majority were employed in the oil and gas industry, with the remainder in coal and nonmetallic, nonfuel mining operations. Nonfuel industrial mineral operations averaged nearly 1,240 persons, with an average annual salary of \$34,770. Although the number of employees was down 4.6% from 2001, the average salary decreased 12.6% (about \$5,000).

Mine Reclamation

On Earth Day, it was announced that there would be a governor's reclamation award. A panel of individuals from related State agencies would review and select awardees for both conservation and reclamation awards to be presented at the annual meeting of the Kansas Aggregate Producers Association-Kansas Ready Mix Concrete Association (KAPA-KRMCA) in January 2003. The object of this program is to make the public aware of positive aspects of the mineral extraction industry as well as to recognize companies for their outstanding efforts in returning the land to its original appearance. At the annual meeting, Johnson County Aggregates was named the KAPA winner in the aggregate industry's safety program.

Legislation and Government Programs

Last year, the State legislature passed a law that banned county operations from selling aggregate to the public (U.S. Geological Survey, 2003). Prior to this law, four counties that had their own crushing operations also had been selling their excess capacity on the open market, thereby competing with the private sector. County operations are complying with this new law, but the city of Fort Scott (Bourbon County), which has a crushing operation and has sold a very small amount of aggregate for private driveways, appears to be testing the new law.

³David A. Grisafe, an Associate Scientist with the Kansas Geological Survey, authored the text of the State mineral industry information provided by that agency.

The 10-year Comprehensive Transportation Program (CTP) for Kansas, approved in 1999, continues to face some difficulties because of declining State revenues. Income raised by fuel taxes has been offset by budget cuts. The CTP continues in part because funds earmarked for maintenance are being transferred to new construction. KAPA thinks that this cannot continue and that once maintenance funds are depleted, some new projects may be delayed or canceled during the next year.

The KGS evaluated portions of the Forest City and Cherokee basins for their coalbed methane potential. During 2002, drillers completed 141 wells bringing the total number of wells drilled at yearend to 616. The majority of the wells were drilled to the top of the Mississippian. Some of the wells allow for evaluation of one coalbed, while others are commingled (two or more beds). In some cases, shales in contact with the coal seams are also evaluated.

The multiyear State mapping program continued at the KGS. A geologic map was issued for Comanche County (M-10) with similar maps for Bourbon and Cherokee Counties nearly complete. Digital upgrading is underway for Pottawatomie and Wabaunsee Counties. Mapping is nearing completion in Barber, Clark, Douglas, Franklin, Ford, Gray, Hamilton, Hodgeman, Kearny, Neosho, Osborne, and Republic Counties. Mapping has begun in Crawford, Jefferson, Pawnee, Saline, Sedgwick, and

Washington Counties. Mapping is also underway in Cheyenne and Morton Counties with support by the KGS.

A total of 71 open-file reports (OFR) were filed with the library. Not surprisingly, in view of the natural gas explosion in Hutchinson in 2001, several reports involved seismic and related studies in the Hutchinson area, including the use of high-resolution seismic reflection to characterize a subsidence feature along U.S. Highway 50 near Hutchinson (OFR 2002-17).

Because of budget constraints, it was announced that the internationally known Mathematical Geology Section of the KGS would be eliminated next year. OFR 2002-39 lists the contributions of this section from 1962 to 2002.

Finally, since 1999, the KGS has been gradually adding print bulletins and publications to its Web site at URL www.kgs.ku.edu. Most of these online publications cover the geology and ground water resources of selected counties, but a few examine the mineral resources of counties.

Reference Cited

U.S. Geological Survey, 2003, The mineral industry of Kansas, *in* Area reports—Domestic: U.S. Geological Survey Minerals Yearbook 2001, v. II, p. 18.1-18.5.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2000		2001		2002 ^p		
	Quantity	Value	Quantity	Value	Quantity	Value	
Cement:							
Masonry	W	W	25	2,460 ^e	30 ^e	3,000 ^e	
Portland	1,980	155,000 ^e	1,830	140,000 ^e	2,310 ^e	177,000 ^e	
Clays, common	594	3,970	635	4,280	647	4,230	
Gemstones	NA	12	NA	3	NA	1	
Helium:							
Crude	million cubic meters	W	W	36	39,400	32	35,100
Grade-A	do.	77	153,000	82	163,000	86	171,000
Salt		2,770	114,000	3,130	122,000	3,060	123,000
Sand and gravel, construction		10,000	28,200	10,200	29,100	9,600	27,800
Stone:							
Crushed		23,330	113,000	22,800	110,000	22,000	109,000
Dimension	metric tons	14,100	1,890	13,000	4,780	12,600	1,390
Combined values of clays (fuller's earth), gypsum (crude), pumice and pumicite, sand and gravel (industrial), and values indicated by symbol W							
Total		XX	59,800	XX	14,300	XX	9,930
		XX	629,000	XX	629,000	XX	661,000

^eEstimated. ^pPreliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined values" data.

XX Not applicable.

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

²Data are rounded to three significant digits; may not add to totals shown.

TABLE 2
KANSAS: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2000				2001			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	110	22,600	\$110,000	\$4.88	111	21,200	\$104,000	\$4.90
Sandstone and quartzite	3	641	2,440	3.80	3	1,510	6,150	4.06
Total or average	XX	23,300	113,000	4.85	XX	22,800	110,000	4.85

XX Not applicable.

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

TABLE 3
KANSAS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Macadam	W	W	\$3.53
Riprap and jetty stone	56	\$529	9.41
Filter stone	W	W	7.70
Other coarse aggregates	111	736	6.63
Total or average	167	1,270	7.57
Coarse aggregate, graded:			
Concrete aggregate, coarse	W	W	4.52
Bituminous aggregate, coarse	W	W	4.52
Bituminous surface-treatment aggregate	W	W	6.06
Other graded coarse aggregates	807	3,140	3.89
Total or average	807	3,140	3.89
Fine aggregate (-3/8 inch):			
Screening, undesignated	(2)	(2)	4.79
Other fine aggregates	(2)	(2)	4.52
Coarse and fine aggregates:			
Graded road base or subbase	108	460	4.26
Unpaved road surfacing	784	3,420	4.36
Crusher run or fill or waste	179	723	4.04
Roofing granules	W	W	6.72
Other coarse and fine aggregates	481	2,610	5.42
Total or average	1,550	7,210	4.65
Other construction materials	4	16	4.00
Agricultural limestone	48	234	4.88
Chemical and metallurgical, cement manufacture	1,790	6,750	3.78
Unspecified: ³			
Reported	13,300	67,900	5.11
Estimated	4,800	23,000	4.67
Total or average	18,100	90,500	4.99
Grand total or average	22,800	110,000	4.85

W Withheld to avoid disclosing company proprietary data; included with "Other."

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

²Withheld to avoid disclosing company proprietary data, included in "Grand total."

³Reported and estimated production without a breakdown by end use.

TABLE 4
KANSAS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE AND DISTRICT^{1,2}

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1 1/2 inch) ³	W	W	290	--	--	--
Coarse aggregate, graded ⁴	788	3,020	--	--	--	--
Fine aggregate (-3/8 inch) ⁵	W	W	W	W	--	--
Coarse and fine aggregate ⁶	803	3,780	W	W	173	721
Other construction materials	4	16	--	--	--	--
Agricultural ⁷	42	194	6	40	--	--
Chemical and metallurgical ⁸	--	--	--	--	--	--
Unspecified:⁹						
Reported	5,510	28,900	2,320	10,600	--	--
Estimated	1,400	6,000	600	2,900	23	110
Total	8,970	44,500	3,070	14,500	196	831
	District 5		District 6			
	Quantity	Value	Quantity	Value		
Construction:						
Coarse aggregate (+1 1/2 inch) ³	--	--	W	W		
Coarse aggregate, graded ⁴	W	W	W	W		
Fine aggregate (-3/8 inch) ⁵	--	--	--	--		
Coarse and fine aggregate ⁶	W	W	468	2,020		
Other construction materials	--	--	--	--		
Agricultural ⁷	--	--	--	--		
Chemical and metallurgical ⁸	--	--	1,790	6,750		
Unspecified:⁹						
Reported	526	2,830	4,930	25,600		
Estimated	520	2,500	2,300	11,000		
Total	1,070	5,380	9,460	45,100		

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

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

²No crushed stone was produced in District 4.

³Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.

⁴Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, and other graded coarse aggregates.

⁵Includes screening (undesigned) and other fine aggregates.

⁶Includes crusher run (select material or fill), graded road base or subbase, roofing granules, unpaved road surfacing, and other coarse and fine aggregates.

⁷Includes agricultural limestone.

⁸Includes cement manufacture.

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

TABLE 5
KANSAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY MAJOR USE CATEGORY¹

Use	Quantity		
	(thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand)	2,420	\$6,810	\$2.81
Plaster and gunite sands	60	163	2.72
Concrete products (blocks, bricks, pipe, decorative, etc.)	86	655	7.62
Asphalt concrete aggregates and other bituminous mixtures	1,060	3,270	3.10
Road base and coverings ²	1,680	4,480	2.66
Fill	1,020	2,020	1.98
Snow and ice control	92	364	3.96
Other miscellaneous uses ³	48	166	3.46
Unspecified: ⁴			
Reported	547	1,530	2.79
Estimated	3,200	9,700	2.99
Total or average	10,200	29,100	2.84

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

²Includes plaster and gunite sands.

³Includes snow and ice control.

⁴Reported and estimated production without a breakdown by end use.

TABLE 6
KANSAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	755	2,250	232	1,040	89	265
Asphaltic concrete aggregates and other bituminous mixtures	W	W	W	W	1	4
Road base and coverings ³	W	W	W	W	353	682
Fill	85	271	287	699	34	99
Snow and ice control	W	W	W	W	8	21
Other miscellaneous uses ⁴	260	834	479	1,730	--	--
Unspecified: ⁵						
Reported	--	--	--	--	--	--
Estimated	910	2,600	190	520	65	180
Total	2,010	5,950	1,190	3,990	551	1,260
Use	District 4		District 5		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	242	568	1,250	3,510	--	--
Asphaltic concrete aggregates and other bituminous mixtures	64	184	548	1,660	45	128
Road base and coverings ³	532	1,250	526	1,510	6	18
Fill	53	94	559	856	--	--
Snow and ice control	26	85	24	145	5	14
Other miscellaneous uses ⁴	--	--	1	12	--	--
Unspecified: ⁵						
Reported	5	34	542	1,490	--	--
Estimated	1,100	3,600	990	2,700	--	--
Total	2,000	5,830	4,440	11,900	57	160

W Withheld to avoid disclosing company proprietary data; included with "Other miscellaneous uses." -- Zero.

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

²Includes plaster and gunite sands.

³Includes road and other stabilization (cement).

⁴Includes filtration and snow and ice control.

⁵Reported and estimated production without a breakdown by end use.