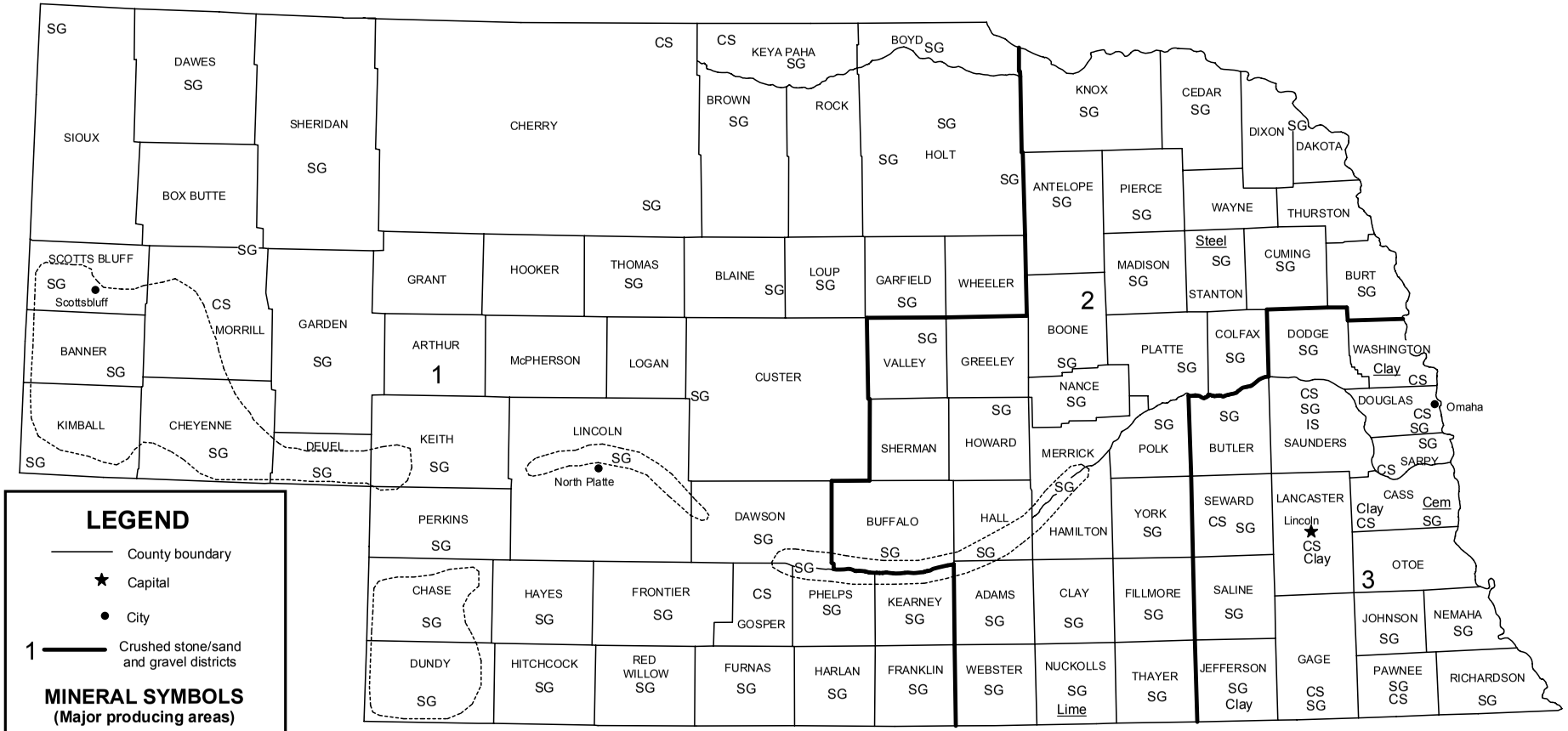
NEBRASKA



LEGEND

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

MINERAL SYMBOLS
(Major producing areas)

Cem	Cement plant
Clay	Common clay
Clay	Clay plant
CS	Crushed stone
IS	Industrial sand
Lime	Lime plant
SG	Construction sand and gravel
Steel	Steel plant
	Concentration of mineral operations

Source: University of Nebraska-Lincoln, Nebraska Geological Survey/U.S. Geological Survey (2003)

The Mineral Industry of Nebraska

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

In 2003, the estimated value[1] of nonfuel mineral production for Nebraska was $94.2 million, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 4% decrease from that of 2002[2] and followed an 8.8% increase from 2001 to 2002. Because specific production data for industrial sand and gravel and masonry and portland cements were withheld to protect company proprietary data, the actual total values for 2001-03 were substantially higher than those reported in table 1.

In 2003, Nebraska's leading nonfuel mineral commodities were, in descending order of value, cement (portland and masonry), crushed stone, and construction sand and gravel, as has been true for the past several years. The State's decrease in value resulted from decreases in the production and values of crushed stone and construction sand and gravel, the values of which were down by about $2 million each. In 2002, the State's rise in value was led by increases in the production and values of crushed stone, the value of which was up by $7.4 million, and construction sand and gravel, which was up by $1.2 million. The value of gemstones was up slightly. Only cement, which was down by about $2 million, and lime showed decreases in value for the year (table 1).

Compared with USGS estimates of the quantities of minerals produced in the 50 States during 2003, Nebraska was a significant producer of construction sand and gravel. Metals produced in the State—mostly raw steel—were processed from materials acquired from other domestic and foreign sources.

The following narrative information was provided by the Nebraska Geological Survey[3] (NGS).

[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 2003 USGS mineral production data published in this chapter are preliminary estimates as of July 2004 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 USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—also may be retrieved over the Internet at URL http://minerals.usgs.gov/minerals.

[2]Values, percentage calculations, and rankings for 2002 may differ from the Minerals Yearbook, Area Reports: Domestic 2002, Volume II, owing to the revision of preliminary 2002 to final 2002 data. Data for 2003 are preliminary and are expected to change; related rankings also may change.

[3]Matthew Joeckel, Research Geologist with the University of Nebraska-Lincoln and the Nebraska Geological Survey (NGS), authored the text of the State mineral industry information provided by the NGS.

Commodity Review

Industrial Minerals

Cement, Crushed Stone, and Sand and Gravel.—The Nebraska Concrete and Aggregates Association reported an overall increase of 1.9% increase in concrete production in the State from 2002 to 2003. The resurfacing of Interstate 80 between Lincoln and Omaha, which was begun in 2002, was expected to continue through 2012. In 2003 alone, the Nebraska Department of Roads (NDOR) produced about 248,000 cubic meters of concrete pavement in which was incorporated approximately 180,000 cubic meters of aggregate (70% sand and gravel and 30% crushed limestone) in the concrete used for both paving and highway structures (bridges, abutments, etc.). NDOR recycled approximately 23,700 cubic meters of crushed concrete for use as base course (the first or lower course of a foundation) in its construction projects in 2003. This figure is equivalent to about one-third of the total new aggregate and crushed stone base course used during the same time period.

In Sarpy County, residents in the southern suburban fringe of the Omaha metropolitan area sought to block a proposed expansion of the former City Wide Quarry, which was owned by Martin Marietta Materials Inc. Blasting and equipment noise were given as concerns. Nonetheless, in July 2002, the Sarpy County Board of Commissioners approved Martin Marietta's permit for expansion, but required that the buffer setback around neighboring residences be increased, that blast monitoring by seismic equipment be carried out through the summer of 2003, and that the hours of quarry operation be limited.

Cement (Fly Ash).—Two companies in Nebraska sold fly ash produced by local coal-fired powerplants. Nebraska Ash Co. (Lincoln) received ash from plants at Nebraska City and Sutherland and sold material for concrete manufacturing and soil stabilization. Flatland Fly Ash (Grand Island) sold fly ash from plants in Grand Island and Hastings. The University of Nebraska Center for Infrastructure Research investigated the potential for high-volume use of locally produced fly ash in controlled low-strength materials, structural fills, subgrade and base stabilization and construction, flowable mortar, and lightweight aggregates.

Clays.—In December, Yankee Hill Brick and Tile announced an $18 million expansion of its operations at Lincoln. The company projected that production would increase from 22 million bricks to as much as 40 million bricks annually, necessitate an increase from 75 to 87 employees, and reduce natural gas use by 25%. A new, 106-meter-long Swindell-Dressler Co. automated tunnel kiln was proposed as part of the expansion.

Endicott Clay Products Co. installed a new Lingl GmbH & Co. dehacker to unload bricks from kiln cars, bind bricks with steel straps, and package them in paper. The new system was

fully automated and incorporated four robotic units. During 2003, Endicott Clay Products also purchased a 3-kilometer segment of the former Burlington Northern Santa Fe (BNSF) rail line between Endicott and Reynolds, NE. Most of the BNSF line was closed during 2003, but Endicott Clay Products decided to purchase the part of the line that extends from the plant to the still-operating Union Pacific rail line in the area. In recent years, Endicott Clay Products transported about 25% of its bricks by the rail line, and the remaining 75% by truck.

Crushed Stone.—Martin Marietta Aggregates experienced a small increase in limestone aggregate sales in Nebraska during the last quarter of 2003, coinciding with the Nation's general economic upturn. Severe winter weather at the end of 2003 curtailed demand slightly, but a favorable market was anticipated by the company throughout 2004.

Ft. Calhoun Stone Co. (which was owned by Rinker Materials Corp.) sold approximately 1.2 million metric tons of aggregate, riprap, and crushed stone from its Pennsylvanian-limestone-mining operations north of Omaha. Rinker anticipated increased production and sales for its Ft. Calhoun subsidiary in 2004 because it supplied raw materials used in the construction of chevron habitat projects (rock structures designed to form sandbars downriver). Designed for endangered species (for example, piping plover and pallid sturgeon) that live along the Missouri River, these habitats were being constructed in conjunction with the U.S. Army Corps of Engineers, river restoration and maintenance efforts.

Sand and Gravel.—Lyman-Richey Corp. opened the new sand and gravel Plant No. 50 near Linoma Beach, approximately 40 kilometers southwest of Omaha. The company mined Quaternary alluvium of the Platte River, and a predevelopment exploration program indicated significant gravel reserves at the site. The plant served the Omaha-area market.

Planning Aggregate Community Environment (PACE), a nonprofit working group, was founded voluntarily by representatives of the mining and mineral processing industry, nonprofit environmental and educational organizations, and State and Federal agencies. PACE seeks to develop and facilitate cooperation among and between communities, conservation interests, and the sand and gravel producers in the State. The key issues that PACE will address in the future include continued access to sand and gravel resources, rapidly changing land use in river-corridor mining areas, business costs, public understanding and awareness of the industry, and environmental and mining regulations.

Metals

Nucor Steel Corp.'s plant in Norfolk increased production in 2003 in response to demands created by the general economic turnaround and the closure of some other special bar quality (SBQ) steel mills in the United States. Total employment at the operation dropped slightly, however, because of attrition. Nucor Steel's annual Household Recycling Day, which was held in honor of Earth Day, brought in 80 metric tons (t) of scrap steel, which was an increase of 27 t more than the 2002 total, as well as 7 t of aluminum beverage cans. The scrap steel collected in this one-day drive included household appliances, and the company paid for the proper disposal of Freon® from air conditioners and refrigerators. The Norfolk plant recycled a grand total of more than 900,000 t of scrap steel in 2003. For the first time in its history, the plant also received the Nucor President's Award for Safety.

Environmental Issues

Martin Marietta's Weeping Water Mine (limestone) won the U.S. Department of Labor Mine Safety and Health Administration's Sentinels of Safety Award for 2002 in the underground nonmetal mine category. The Weeping Water Mine registered 130,000 hours without a lost-time incident.

Government Programs

The Nebraska Conservation and Survey Division (CSD), which tracks the mineral industry in Nebraska through its NGS function, was officially merged with the School of Natural Resources within Institute of Agriculture and Natural Resources of the University of Nebraska-Lincoln in July 2003.

In 2002, the directory of pits, quarries, and mines in Nebraska was updated and made available on the Internet at URL http://csd.unl.edu/csd/general/gis-datasets.asp as a downloadable file (PQM_Directory.xls). With the assistance of the NGS and CSD staff members and those of the State's Natural Resource Districts, more than 3,900 pits, quarries, and mines—active, inactive, and abandoned—were cataloged and mapped.

Geologic mapping continued with Federal matching funding from the STATEMAP program, a component of the USGS National Cooperative Geologic Mapping Program (NCGMP). The NCGMP distributes funding through STATEMAP for participating State geological surveys. In 2003, the Conservation and Survey Division's STATEMAP cooperative geologic mapping program began to examine Cretaceous industrial clay and limestone deposits in the Dakota Formation and Greenhorn Limestone in southern Jefferson County.

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

(Thousand metric tons and thousand dollars)

Mineral	2001		2002		2003[p]	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	W	(3)	W	(3)	W	(3)
Portland	W	(3)	W	(3)	W	(3)
Clays, common[e]	133	338	133	338	133	338
Gemstones	NA	3	NA	4	NA	4
Lime	15	1,330	8	692	8	700
Sand and gravel:						
Construction	13,000	43,000	12,900	44,200	12,200	42,100
Industrial	W	(3)	W	(3)	W	(3)
Stone, crushed	6,360	45,800	7,220	53,200	6,900	51,100
Total	XX	90,400	XX	98,400	XX	94,200

[e]Estimated. [p]Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data. 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.
[3]Value excluded to avoid disclosing company proprietary data.

TABLE 2
NEBRASKA: CRUSHED STONE SOLD OR USED, BY KIND[1]

Kind	2001				2002			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	11	6,360	$45,800	$7.19	11	7,220	$53,200	$7.36
Total	XX	6,360	45,800	7.19	XX	7,220	53,200	7.36

XX Not applicable.
[1]Data are rounded to no more than three significant digits, except unit value.

TABLE 3
NEBRASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2002, BY USE[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Riprap and jetty stone	205	$2,330	$11.39
Other coarse aggregate	11	99	8.93
Total or average	216	2,430	11.26
Coarse aggregate, graded:			
Concrete aggregate, coarse	W	W	9.10
Bituminous aggregate, coarse	W	W	8.14
Bituminous surface-treatment aggregate	W	W	9.58
Total or average	1,490	13,200	8.86
Fine aggregate (-3/8 inch), screening, undesignated	(2)	(2)	4.85
Coarse and fine aggregates:			
Graded roadbase or subbase	W	W	10.00
Unpaved road surfacing	342	3,140	9.19
Terrazzo and exposed aggregate	W	W	7.94
Crusher run or fill or waste	324	2,390	7.38
Total or average	810	6,950	8.58
Agricultural, limestone	273	3,240	11.86
Chemical and metallurgical, cement manufacture	(2)	(2)	4.41
Special:			
Asphalt fillers or extenders	W	W	7.95
Other fillers or extenders	W	W	17.14
Total or average	30	276	9.20
Unspecified:[3]			
Reported	3,660	23,600	6.44
Estimated	160	860	5.25
Total or average	3,820	24,400	6.39
Grand total or average	7,220	53,200	7.36

W Withheld to avoid disclosing company proprietary data; included in "total."
[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
[2]Withheld to avoid disclosing company proprietary data; included in "Grand total."
[3]Reported and estimated production without a breakdown by end use.

TABLE 4

NEBRASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2002, BY USE AND DISTRICT[1, 2]

(Thousand metric tons and thousand dollars)

Use	District 3	
	Quantity	Value
Construction:		
Coarse aggregate (+1 1/2 inch)[3]	W	W
Coarse aggregate, graded[4]	W	W
Fine aggregate (-3/8 inch)[5]	W	W
Coarse and fine aggregate[6]	W	W
Total or average		
Agricultural[7]	W	W
Chemical and metallurgical[8]	W	W
Special[9]	W	W
Unspecified[10]		
Reported	3,660	23,600
Estimated	160	860
Total or average	7,220	53,200

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]No production reported in Districts 1 and 2.

[3]Includes riprap and jetty stone and other coarse aggregates.

[4]Includes bituminous aggregate (coarse), bituminous surface treatment aggregate, and concrete aggregate (coarse).

[5]Includes screening (undesignated).

[6]Includes crusher run (select material or fill), graded road base or subbase, terrazzo, unpaved road surfacing, and exposed aggegate.

[7]Includes agricultural limestone.

[8]Includes cement manufacture.

[9]Includes asphalt fillers or extenders and other fillers or extenders.

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

TABLE 5
NEBRASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2002,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,430	$8,960	$3.69
Concrete products (blocks, bricks, pipe, decorative, etc.) [2]	189	779	4.12
Asphaltic concrete aggregates and other bituminous mixtures	674	2,700	4.01
Road base and coverings [3]	1,580	5,710	3.62
Fill	836	1,530	1.83
Snow and ice control	54	175	3.24
Other miscellaneous uses[4]	53	360	6.79
Unspecified:[5]			
Reported	1,090	3,560	3.27
Estimated	6,000	20,000	3.38
Total or average	12,900	44,200	3.42

[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
[2]Includes plaster and gunite sands.
[3]Includes road and other stabilization (lime).
[4]Includes roofing granules.
[5]Reported and estimated production without a breakdown by end use.

TABLE 6
NEBRASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2002, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	364	966	536	2,220	1,530	5,780
Concrete products (blocks, bricks, pipe, decorative, etc.) [2]	6	12	5	28	178	739
Asphaltic concrete aggregates and other bituminous mixtures	211	533	392	1,790	71	382
Road base and coverings[3]	577	1,430	738	2,700	262	1,580
Fill	W	W	284	559	W	W
Snow and ice control	W	W	21	73	W	W
Other miscellaneous uses[4]	169	453	12	77	457	902
Unspecified:[5]						
Reported	31	175	71	249	892	2,980
Estimated	1,100	3,500	2,700	8,900	2,300	8,100
Total	2,450	7,020	4,740	16,600	5,650	20,500

Use	Unspecified districts	
	Quantity	Value
Concrete aggregate (including concrete sand)	--	--
Concrete products (blocks, bricks, pipe, decorative, etc.) [2]	--	--
Asphaltic concrete aggregates and other bituminous mixtures	--	--
Road base and coverings[3]	--	--
Fill	--	--
Snow and ice control	--	--
Other miscellaneous uses[4]	--	--
Unspecified:[5]		
Reported	93	153
Estimated	3	9
Total	95	162

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses." -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes plaster and gunite sands.
[3]Includes road and other stabilization (lime).
[4]Includes roofing granules.
[5]Reported and estimated production without a breakdown by end use.