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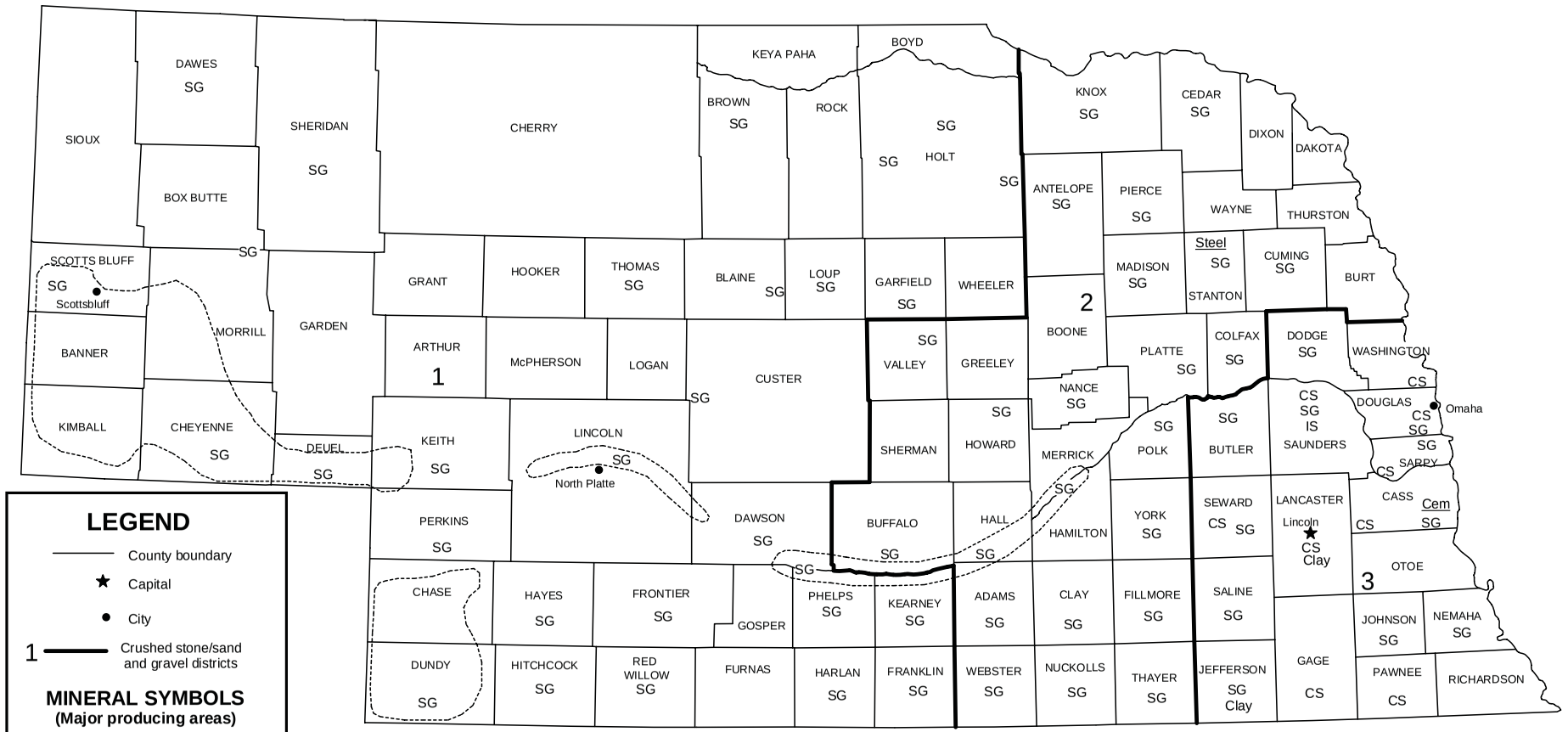
2005 Minerals Yearbook

NEBRASKA

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

July 2008

NEBRASKA



Source: University of Nebraska-Lincoln, Nebraska Geological Survey/U.S. Geological Survey (2005)

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 2005, Nebraska's nonfuel raw mineral production[1] was valued at $110 million, based upon annual U.S. Geological Survey (USGS) data. This was a 3.8% increase compared with that of 2004, which increased by more than 11% from that of 2003. [The State's actual total nonfuel mineral values for 2003-05 were substantially higher than those reported in table 1, from which specific production values for masonry and portland cement, industrial sand and gravel (2003-04), and common clays (2005) were withheld to protect company proprietary data.]

In 2005, Nebraska's leading nonfuel mineral commodities were, in descending order of value, cement, construction sand and gravel, and crushed stone. Construction sand and gravel led the way in the State's increase in total nonfuel mineral value for the year. Although the quantity of construction sand and gravel produced decreased by nearly 5%, a 20% increase in the average price per metric ton generated a 13%, or $7 million increase in the commodity's total value from that of 2004. Smaller yet significant increases also took place in portland cement and common clays (company proprietary data). The only significant decrease in value for a nonfuel commodity was that of crushed stone which, despite a marginal increase in production, had a $2.6 million decrease in its total value from that of 2004 (table 1). Nebraska continued to be a producer of significant quantities of construction sand and gravel in 2005 compared with other producing States. Metals that were 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[2] (NGS) the Conservation and Survey Division of the University of Nebraska-Lincoln.

Commodity Review

Industrial Minerals

Aggregates.—Rinker Materials Corporation Ft. Calhoun Stone (Ft. Calhoun) closed operations at its West Quarry and moved limestone processing equipment to its East Quarry along the Missouri River. The operation's wash plant and barge loadout facility were upgraded in order to increase productivity and efficiency. A county road was armor coated to extend its life and reduce wear and tear on truck traffic going in and out of the facility on nearby U.S. Highway 75. In 2005, Rinker Materials continued its support of local high school booster clubs and 4-H clubs and donated crushed stone and limestone fines to nonprofit organizations. Rinker also cooperated with the Washington County, NE, Gateway Development Corporation, which promotes business expansions, capital investments, and economic opportunities in the area.

Lime.—ILC Resources (Weeping Water) increased its production of feed-grade calcium carbonate from 2004; however, rising fuel prices have been a serious concern for all mineral producers. Agricultural lime sales began to increase as a result of corn ethanol prospects during 2005. The trend is likely to continue as corn prices increase.

Cement.—Ash Grove Cement Company's Louisville plant completed a $1.7 million refurbishment of its central control room, with new computers, software, and high-definition flat-screen control monitors. The plant also purchased a 125-metric-ton (t) 1,500-horsepower General Electric diesel locomotive to move railcars in the plant's switchyard. Ash Grove supplied cement for concrete used in a variety of large construction projects, including the $50 million Tom and Nancy Osborne Athletic Complex at the University of Nebraska-Lincoln and the elevated West Dodge Road project in Omaha, the largest ever road project bid in Nebraska. In early 2005, Ash Grove's Midwest Region North Sales Office in Omaha reached one million tons of cement and cement blends sold.

Although the Nebraska Department of Roads (NDOR) specifications still prohibit the use of Class "C" fly ash in pavement concrete, an increase in the use of fly ash in soil stabilization efforts associated with NDOR activities began in 2005.

Clay and Clay Products.—Yankee Hill Brick and Tile (Lincoln) tested and developed new products and sizes in its new plant, including king size, queen size, and hollow and thin brick. The company provided bricks for projects in the Omaha metropolitan area, local schools, the University of Nebraska, and numerous out-of-State projects. Yankee Hill supplied more than 5 million facing bricks to a $1 billion biotechnology research center on the North Carolina Research Campus in Kannapolis, NC.

Metals

Nucor Steel-Nebraska (Vulcraft Cold Finish Division) of Norfolk, employed 415 workers, recycled about 0.94 million metric tons (Mt) 1.03 (million short tons) of scrap steel in 2005 at a 99% recycled rate for its product. The company sponsored a 2005 Household Scrap Recycling Day program on May 7, 2005, and recovered 32 t (35 short tons) of steel scrap and 4,350 kilograms (kg) (9,600 pounds) of aluminum cans. Two-hundred and forty-five vehicles and 180 air-conditioning units,

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[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 2005 USGS mineral production data published in this chapter are those available as of December 2006. 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]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.

freezers, and refrigerators, were collected; the air-conditioners and freezers were sent to a special facility in order to safely recover chlorofluorocarbon coolants. In October 2005, Nucor Steel-Nebraska was awarded first place in the Business Industry division of the Keep Nebraska Beautiful Awards program for its successes during its Household Scrap Recycling Day. On August 30, 2005, Nucor Steel-Nebraska sponsored a town hall meeting to increase political awareness about environmental issues and trade policies, and the real and potential effects on China's economic growth on the steel industry. In excess of 3,000 citizens attended the meeting as well as Nebraska Senator Ben Nelson and Nucor CEO Dan DiMicco.

Mineral Fuels and Related Materials

Uranium.—Crow Butte Resources, Inc. produced 377,000 kg (or nearly 832,000 pounds) of uranium in 2005, an increase compared with 2004 production. Dramatic rises in uranium prices benefited the company. However, prices stipulated in long-term contracts were significantly below recent spot prices. Nonetheless, the published transaction price for uranium increased from $20.06 per pound in December 2004 to $34.55 per pound in December 2005. Ground water restoration at Crow Butte's Mine Units (Wellfields) No. 3 and No. 4 was initiated. Ground water restoration in Unit 2 was completed, and a full report on its completion was to be registered with the State of Nebraska.

Environmental and Safety Issues

Environmental Technologies.—Ash Grove Cement plant Louisville, NE, conducted a test burn of some 28,000 scrap tires in a tire coal mix in its Humboldt kiln during the summer of 2005. Data concerning emissions from the test burn of tire-derived fuel (TDF) were released by the Nebraska Department of Environmental Quality (NDEQ) in mid-October 2005. Compared with coal only baseline kiln burn, emissions of nitrogen oxides decreased from 145 kilograms per hour (kg/hr) to 89 kg/hr, sulfur oxide emissions decreased from 170 kg/hr to 70 kg/hr, and hourly dust production rates fell by 28% in the test burn of TDF coal mixture. Carbon monoxide emissions, however, decreased only slightly from the coal only baseline. TDF stack tests indicated minimal emissions of arsenic, barium, benzene, beryllium, cadmium, furans, Hexavalent chromium, hydrochloric acid, lead, manganese, mercury, nickel, polychlorinated biphenyls, selenium, and zinc. The tested levels of all of these constituents were well below the EPA Region 9 acceptable thresholds. The company will seek a permit from the State of Nebraska to burn tires regularly as 10% to 20% of the plant's fuel supply, indicating that it would follow public comment procedures established by the NDEQ.

Martin Marietta Materials' Weeping Water Mine was selected runner-up in the 2005 Sentinel of Safety Awards, Large Underground Nonmetal Group, along with only three other operations in the United States. The Weeping Water Mine registered 146,295 hours without a single lost-time injury. An additional 46 Nebraska aggregate operations were recognized for hours without lost-time injuries in the Sentinel of Safety Awards. Included in this group were Rinker Materials Corporation, Ft. Calhoun (70,041 hours in the Large Quarry Group and 44,644 hours in the Large Metal-Nonmetal Mill Group), Kerford Limestone (60,733 hours in the Large Metal-Nonmetal Mill Group), Martin Marietta Materials' Weeping Water Mine (36,462 hours in the Large Metal-Nonmetal Mill Group), Lyman-Richey's Gretna (24,085 hours in the Large Dredge Group), and Omaha sand and gravel operations (23,691 hours in the Large Dredge Group).

Government Programs

The Conservation and Survey Division (NGS) merged into the School of Natural Resources at the University of Nebraska-Lincoln (UN-L) and was firmly scheduled to move into new quarters at Hardin Hall on the East Campus of UN-L by the end of August 2006. New facilities at Hardin Hall were to include a core description, petrography, and x-ray diffraction laboratories.

The Conservation and Survey Division's USGS STATEMAP cooperative mapping efforts continued during 2005. The STATEMAP program is a component of the USGS National Cooperative Mapping Program congressionally mandated National Cooperative Geologic Mapping Program (NCGMP), which distributes Federal funds to support geologic mapping efforts through a competitive funding process. The NCGMP has three primary components: FEDMAP, which funds Federal geologic mapping projects; STATEMAP, which is a matching-funds grant program with State geological surveys; and EDMAP, a matching-funds grant program with universities that has a goal to train the next generation of geologic mappers.

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

(Thousand metric tons and thousand dollars)

Mineral	2003		2004		2005	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	W	(3)	W	(3)	W	(3)
Portland	W	(3)	W	(3)	W	(3)
Clays, common	133 e	338 e	133 e	338 e	160 e	(3)
Gemstones	NA	4	NA	4	NA	4
Lime	8	692	11	514	12	625
Sand and gravel:						
Construction	13,300	45,000	15,100	53,200	14,300	60,200
Industrial	W	(3)	W	(3)	--	--
Stone, crushed	6,960	49,200	6,900	51,900	6,950	49,300
Total	XX	95,300	XX	106,000	XX	110,000

[e]Estimated. NA Not available. W Withheld to avoid disclosing company proprietary data. XX Not applicable. -- Zero.
[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	2004			2005		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone	9	6,900	$51,900	9	6,950	$49,300

[1]Data are rounded to no more than three significant digits.

TABLE 3
NEBRASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE[1]

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch), riprap and jetty stone	W	W
Coarse aggregate, graded:		
Concrete aggregate, coarse	W	W
Bituminous aggregate, coarse	W	W
Coarse and fine aggregates:		
Graded road base or subbase	W	W
Crusher run or fill or waste	W	W
Roofing granules	W	W
Other coarse and fine aggregates	W	W
Agricultural:		
Agricultural limestone	W	W
Other agricultural uses	W	W
Chemical and metallurgical, cement manufacture	W	W
Special, asphalt fillers or extenders	W	W
Unspecified: Reported[2]	4,410	31,500
Total	6,950	49,300

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 production without a breakdown by end use.

TABLE 4
NEBRASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE AND DISTRICT[1, 2]

(Thousand metric tons and thousand dollars)

Use	District 3	
	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch)[3]	W	W
Coarse aggregate, graded[4]	W	W
Coarse and fine aggregate[5]	W	W
Agricultural[6]	W	W
Chemical and metallurgical[7]	W	W
Special[8]	W	W
Unspecified: Reported[9]	4,410	31,500
Total	6,950	49,300

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 2.
[3]Includes riprap and jetty stone.
[4]Includes bituminous aggregate (coarse) and concrete aggregate (coarse).
[5]Includes crusher run or fill or waste, graded road base or subbase, roofing granules, and other coarse and fine aggregates.
[6]Includes agricultural limestone and other agricultural uses.
[7]Include cement manufacture.
[8]Includes asphalt fillers or extenders.
[9]Reported production without a breakdown by end use.

TABLE 5
NEBRASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2005,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,840	$11,700	$4.11
Plaster and gunite sands	74	224	3.05
Concrete products (blocks, bricks, pipe, decorative, etc.)	104	475	4.57
Asphaltic concrete aggregates and other bituminous mixtures	503	3,800	7.55
Road base and coverings[2]	1,960	9,060	4.62
Fill	775	1,830	2.36
Snow and ice control	139	729	5.24
Other miscellaneous uses[3]	67	1,080	16.12
Unspecified:[4]			
Reported	1,230	5,170	4.20
Estimated	6,600	26,200	3.98
Total or average	14,300	60,200	4.22

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

TABLE 6

NEBRASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2005, 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 aggregates and concrete products[2]	388	1,380	W	W	W	W
Asphaltic concrete aggregates and road base materials	671	2,550	W	W	W	W
Fill	29	65	274	568	472	1,200
Snow and ice control	44	160	15	53	80	517
Other miscellaneous uses[4]	24	610	2,170	11,200	2,290	10,600
Unspecified:[5]						
Reported	47	381	59	306	1,120	4,480
Estimated	1,600	6,300	2,400	9,700	2,600	10,200
Total	2,780	11,500	4,960	21,800	6,540	27,000

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses."

[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 railroad ballast.

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