

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 2000, the estimated value¹ of nonfuel mineral production for Nebraska was \$170 million, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 9% increase from that of 1999.² Because data for industrial sand and gravel and masonry and portland cement were withheld to protect company proprietary data in 1998, the actual total value for that year was significantly higher than is reported in table 1.

Nebraska's leading nonfuel minerals, in descending order of value, were portland cement, construction sand and gravel, and crushed stone. In 2000, increases in the production values of construction sand and gravel, cement (portland and masonry), plus a smaller increase in crushed stone were responsible for most of Nebraska's increase for the year (listed in descending order of change). In 1999, decreases in the values of construction sand and gravel and crushed stone accounted for most of the State's drop in value. The most significant increase was that of portland cement, while industrial sand and gravel and masonry cement showed small increases. Metals produced in the State, mostly that of raw steel, were processed from materials acquired from other domestic and foreign sources. Uranium was in situ leach mined at one location in northwestern Nebraska, but this information is not included in this publication because uranium is classified as an energy or fuel mineral.

The Nebraska Geological Survey³ (NGS) provided the following narrative information. Limestone operations in the State continued to improve. The Ash Grove Cement Co.'s plant at Louisville, NE, installed an Analyzer Systems, Inc. (Escondido, CA) full-stream analyzer (FSA) on its raw mill feed belt in June 2000. The FSA carries out prompt gamma neutron activation analysis to continuously measure the chemical composition of mill feed in real time. Martin-Marietta Aggregates has been involved in an ongoing and successful land

reclamation program at its limestone quarrying operation near DuBois. Topsoil at the quarry is moved once a year and stockpiled and then replaced over backfill. In 2000, 3 hectares (ha) were returned to row-crop farming in this manner, and a projected 1 ha to 2 ha will be returned to farming by yearend 2001. The quarrying operations of Fort Calhoun Stone Co. (Blair) were purchased by Kiewit Materials Co. (Omaha) in August 2000. Fort Calhoun Stone has experienced significant growth since that time, including a nearly 30% increase in its number of employees; a new scale house with two scales was being planned for construction in 2001.

PCS Phosphate Co., Inc. (Weeping Water) produced granular monocalcium and dicalcium phosphate by reacting limestone (mined on-site) with phosphoric acid. The company remained one of the leading calcium phosphate producers in North America. Ground limestone for agricultural and animal feed purposes was produced by Iowa Limestone Co. (Weeping Water) and by Greenhorn Lime Products Co. (near Garland).

The clay products industry in Nebraska consisted of Endicott Clay Products Co. (Endicott) and Yankee Hill Brick Co. (Lincoln). Yankee Hill Brick mined an estimated 12% to 14% more clay in 2000 than in 1999 as a result of changes in its brick manufacturing process. The company will be producing more oversized brick units for architectural projects during 2001 rather than standardized modular brick alone.

Nucor Steel Corp., a major steel recycler, processed about 900,000 metric tons per year of ferrous scrap at its electric arc furnace near Norfolk. Nucor produced iron bar products such as angle irons, bars, channels, and flats, and the company is seeking a new air quality permit for 2001 to expand its operations. In recent years, Nucor has also been optimizing its production process to minimize internal waste.

Annual production of U₃O₈ at Crow Butte Resources, Inc.'s Crow Butte Mine (an in situ leach operation) near Crawford, NE, was about 363 metric tons. This production was a significant contributor to the overall mineral economy of the State.

Anhydrous ammonia was produced at one plant, Farmland Industries Inc. (Beatrice).

The talc processing plant operated by Luzenac America Inc., Sierra Division at Grand Island, and employing 45 to 50 individuals, was closed in March 2001. The company reportedly sold stock from inventory in 2000. Luzenac was receiving material from a talc mine in Montana. The company continued to operate its mills in Montana, Texas, and Vermont.

In 2000, there were several inquiries about nonfuel mineral resources by corporations, individual investors, mining exploration companies, and private operators at the University of Nebraska Conservation and Survey Division of the NGS. These inquiries were in regard to the potential of Lower Permian cherts as sources of railroad ballast, new operations for producing lime for cattle feed, siting of sand and gravel pits, and the feasibility of subsurface mining of Mississippian-Devonian carbonate rocks in southeastern Nebraska.

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 2000 USGS mineral production data published in this chapter are preliminary estimates as of July 2001 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. A telephone listing of the specialists may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>, by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document #1000 for a telephone listing of all mineral commodity specialists), or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

²Values, percentage calculations, and rankings for 1999 may vary from the Minerals Yearbook, Area Reports: Domestic 1999, Volume II, owing to the revision of preliminary 1999 to final 1999 data. Data for 2000 are preliminary and are expected to change; related rankings may also change.

³Matthew Joeckel, Research Geologist with the University of Nebraska-Lincoln and the NGS, authored the text of mineral industry information submitted by the NGS.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN NEBRASKA 1/ 2/

(Thousand metric tons and thousand dollars)

Mineral	1998		1999		2000 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	134	345	133	W	133	W
Gemstones	NA	3	NA	3	NA	3
Lime	19	1,580	18	1,510	18	1,500
Sand and gravel, construction	13,800	47,000	12,000	40,800	13,600	49,000
Stone, crushed	7,490	49,800	7,090	44,500	7,000	45,000
Combined values of cement, sand and gravel (industrial), and values indicated by symbol W	XX	(3/)	XX	69,400	XX	74,700
Total	XX	98,700 4/	XX	156,000	XX	170,000

p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined values" 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.

4/ Partial total values excluded to avoid disclosing company proprietary data.

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

(Thousand metric tons)

Kind	1998				1999			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	11	7,490	\$49,800	\$6.65	11	7,090	\$44,500	\$6.28

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

TABLE 3
NEBRASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1999,
BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Riprap and jetty stone	34	\$327	\$9.62
Filter stone	W	W	9.75
Other coarse aggregate	19	175	9.21
Total or average	53	502	9.47
Coarse aggregate, graded:			
Concrete aggregate, coarse	(3/)	(3/)	7.96
Bituminous aggregate, coarse	(3/)	(3/)	8.15
Railroad ballast	(3/)	(3/)	6.38
Fine aggregate (-3/8 inch), screening, undesignated	(3/)	(3/)	1.92
Coarse and fine aggregates:			
Graded road base or subbase	89	685	7.70
Unpaved road surfacing	174	1,140	6.55
Crusher run or fill or waste	20	122	6.10
Other coarse and fine aggregates	344	2,740	7.93
Total or average	627	4,680	7.47

See footnotes at end of table.

TABLE 3—Continued
NEBRASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1999,
BY USE 1/ 2/

Use	Quantity	Value	Unit
	(thousand metric tons)	(thousands)	value
Agricultural:			
Agricultural limestone	(3/)	(3/)	5.88
Poultry grit and mineral food	(3/)	(3/)	7.16
Other agricultural uses	(3/)	(3/)	17.00
Chemical and metallurgical:			
Cement manufacture	(3/)	(3/)	5.35
Flux stone	(3/)	(3/)	10.00
Special:			
Asphalt fillers or extenders	(3/)	(3/)	17.71
Other fillers or extenders	(3/)	(3/)	13.29
Other miscellaneous uses, pipe bedding	83	553	6.66
Unspecified, reported 4/	3,280	20,000	6.10
Grand total or average	7,090	44,500	6.28

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/ Includes limestone.

3/ Withheld to avoid disclosing company proprietary data; included in "Grand total."

4/ Reported production without a breakdown by end use.

TABLE 4
NEBRASKA: CRUSHED STONE SOLD OR USED BY
PRODUCERS IN 1999, 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/	53	502
Coarse aggregate, graded 4/	W	W
Fine aggregate (-3/8 inch) 5/	W	W
Coarse and fine aggregate 6/	627	4,680
Agricultural 7/	W	W
Chemical and metallurgical 8/	W	W
Special 9/	W	W
Other miscellaneous use 10/	83	553
Unspecified, reported 11/	3,280	20,000
Total	7,090	44,500

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 filter stone, riprap and jetty stone, and other coarse aggregate.

4/ Includes bituminous aggregate (coarse), concrete aggregate (coarse), and railroad ballast.

5/ Includes screening (undesignated).

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

7/ Includes agricultural limestone, mineral food and poultry grit, and other agricultural uses.

8/ Includes cement manufacture and flux stone.

9/ Includes asphalt fillers or extenders and other fillers or extenders.

10/ Includes pipe bedding.

11/ Reported production without a breakdown by end use.

TABLE 5
NEBRASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	1,380	\$4,190	\$3.05
Plaster and gunite sands	54	152	2.81
Concrete products (blocks, bricks, pipe, decorative, etc.)	8	67	8.38
Asphaltic concrete aggregates and other bituminous mixtures	710	2,240	3.16
Road base and coverings 2/	2,080	6,190	2.97
Fill	666	1,390	2.08
Snow and ice control	57	157	2.75
Roofing granules	13	40	3.08
Other miscellaneous uses	24	191	7.96
Unspecified: 3/			
Reported	1,000	3,680	3.68
Estimated	6,000	22,000	3.67
Total or average	12,000	40,800	3.40

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

2/ Includes road and other stabilization (lime).

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

TABLE 6
NEBRASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	451	1,170	442	1,550	484	1,480	--	--
Plaster and gunite sands	W	W	17	47	W	W	--	--
Concrete products (blocks, bricks, pipe, decorative, etc.)	1	2	2	4	5	61	--	--
Asphaltic concrete aggregates and other bituminous mixtures	W	W	440	1,360	W	W	--	--
Road base and coverings 2/	835	1,800	926	2,970	322	1,430	--	--
Snow and ice control	W	W	28	96	2	10	--	--
Roofing granules	12	40	--	--	--	--	--	--
Fill	142	187	323	812	200	387	--	--
Other miscellaneous uses	215	593	(3/)	2	141	629	--	--
Unspecified: 4/								
Reported	2	20	199	693	799	2,970	--	--
Estimated	750	2,500	3,200	12,000	2,000	8,300	53	197
Total	2,410	6,280	5,550	19,100	3,990	15,200	53	197

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

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

2/ Includes road and other stabilization (lime).

3/ Less than 1/2 unit.

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