



2008 Minerals Yearbook

NEBRASKA

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 2008, Nebraska's nonfuel raw mineral production¹ was valued at \$152 million, based upon annual U.S. Geological Survey (USGS) data. This was a \$5.4 million, or 3.7%, increase compared with that of 2007, which increased by \$16.4 million, or about 11%, from 2006 to 2007. (The State's actual total nonfuel mineral values for 2006–08 were substantially higher than those reported in table 1; data for masonry and portland cement (2006–08), and common clays (2006–08), have been withheld so as to not disclose company proprietary data.)

Nebraska's leading nonfuel mineral commodities were portland cement, crushed stone, and construction sand and gravel, in descending order of value. The State's increase in total mineral industry value was primarily owing to an increase in the value of construction sand and gravel and crushed stone. An increase of \$2.91 million in the value of construction sand and gravel resulted from a 2.0% increase in unit value and 2% increase in the quantity produced. Crushed stone increased by \$2.45 million, owing to a 3.5% increase in quantity produced (table 1). Decreases in the production value took place in the mineral commodities of masonry cement and common clay.

Nebraska continued to produce a significant amount of construction sand and gravel and portland cement in comparison with other producing States. Raw steel produced in the State was processed from materials acquired from other domestic and foreign sources.

The following narrative information was provided by the Nebraska Geological Survey²—the Conservation and Survey Division of the University of Nebraska-Lincoln.

Commodity Review

Industrial Minerals

Aggregates.—CEMEX S.A.B. de C.V.'s Ft. Calhoun stone operation, north of Omaha, continued to supply large quantities of riprap for Missouri River control structures as part of habitat improvement for threatened and endangered species. At yearend, Ft. Calhoun Stone completed its fourth consecutive year without an injury.

The Nebraska Department of Roads (NDOR) recycled approximately 45,400 metric tons (t), or 50,000 short tons, of

¹The 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 1, 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>.

²R.M. Joeckel, Ph.D., Research Geologist and Associate Professor 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.

crushed concrete, mostly for use as base-course material, but also to a lesser extent as material for surface courses and soil embedment.

Cement.—Ash Grove Cement Company's Louisville Plant, Nebraska's only cement-manufacturing plant, had no lost-time accidents in 2008, improving more than 2007 (6 lost-time accidents) and 2006 (2 lost-time accidents).

Clay and Shale.—In 2008, Endicott Clay Products/Endicott Tile, LLC (Fairbury) supplied materials under major contracts for the Columbian condominium building (tallest brick-clad structure in Chicago, IL), the Jefferson County Courthouse (Bessemer, AL), Lucas Oil Stadium (Indianapolis, IN), the New Jersey Devils Hockey Arena (Newark, NJ), the University of North Florida Student Union (Jacksonville, FL), and five school buildings in Pasco and Hernando Counties in Florida. The company also initiated contracts to supply materials for 30 Target Brands, Inc. stores across the United States and for the Defense Information Systems Agency facility in Baltimore, MD. In addition, Endicott completed an ongoing contract for the Four Seasons Centre for the Performing Arts in Toronto, Ontario, Canada.

Fly Ash.—Nebraska Ash (Lincoln), a division of NEBCO, Inc., used 207,000 t (228,000 short tons) of fly ash in 2008, or 47.7% of the fly ash output from source powerplants. Nebraska Ash also used 66,900 t (73,700 short tons) of bottom ash, or 71.2% of the output from source powerplants. Recovered fly ash is used as cement and concrete additives and for soil stabilization. Bottom ash is used in aggregate for farm and county roads and in aggregate for asphaltic concrete. Omaha Public Power District (OPPD) was building the new coal-fired Nebraska City 2 (NC2) generating unit in 2008 and had scheduled commercial production of electricity there for the spring of 2009. Current environmental regulations preclude the use of fly ash from NC2 and it will be disposed of in an onsite landfill.

Sand, Industrial.—Nebraska Sand Company, LLC was formed in April 2008 to produce wet and dry products for golf courses, well pack sands, and proppant "frac" sands at a plant near Elba in east-central Nebraska. The first wet sand production began at the new facility in July, and the construction of a dry sand facility begun in December was to continue into 2009. The company produced 10,900 t (12,000 short tons) of wet sand in 2008. Preferred Rocks of Genoa, LLC (also in east-central Nebraska) began increasing its production of proppant or "frac" sand in 2008 and also initiated a plant upgrade.

Metals

In 2008, approximately 1,030,000 t (1,140,000 short tons) of scrap steel was recycled by Nucor Steel-Nebraska of Nucor Corp. (Norfolk) and the company's annual Earth Day scrap drive yielded 32.6 t (36 short tons) of scrap steel, 20.1 t (22.1 short tons) of computers, 3.84 t (4.24 short tons) of aluminum cans, and televisions, and other electronics.

Mineral Fuels and Related Materials

Ethanol.—Nebraska's groundwater resources are a key ingredient in the State's ethanol production. Ethanol production in the State more than doubled from 2006 to 2008, but overall increase in production slowed to 6.04 billion liters per year (L/yr) (1.6 billion gallons/yr) in 2008, an increase of only 24.4% more than 2007 production.

Uranium.—The U.S. Nuclear Regulatory Commission's (NRC) license for in situ leach recovery of uranium secured by Crow Butte Resources, Inc. expired at the end of February 2008, but an application for renewal had already been submitted by the company in late November 2007. In that application, 10 to 15 new temporary construction jobs and 10 to 12 new permanent jobs were anticipated as part of site development and plant operations. Oral arguments regarding the NRC application for renewal were presented in Chadron on in the early fall of 2008. In August 2008, Crow Butte filed a new Class III Underground Injection Control (UIC) permit for its 850-hectare (ha) (2,100-acre) North Trend expansion area, as well as an Aquifer Exemption petition, with the Nebraska Department of Environmental Quality (NDEQ). Decisions were not rendered on either of these filings before yearend 2008.

Environmental Issues

The U.S. Environmental Protection Agency (EPA) initiated the final stages of the remediation of the Omaha Lead Superfund Site in 2008. Contamination in the area stems from emissions from ASARCO, LLC's former lead-refining facilities in the city. EPA produced a draft Final Remedial Investigation at the end of October. The period of public comment on EPA's proposed plan for the site was announced during that month and was eventually extended into the following year. A Final Record of Decision Declaration was anticipated by mid-2009.

In May, a complaint was filed in the District Court of Lancaster County, NE, against Crow Butte by the State of Nebraska on behalf of the Director of the NDEQ. This complaint, consisting of four claims, alleged that Crow Butte had violated NDEQ UIC Permit NE0122611 and Nebraska Revised Statute 81–1508 during the period extending from July 1, 2003, to March 31, 2006. A consent decree dated May 23, included the allegations that Crow Butte had released well-development waters at the land surface and had recycled such waters rather than treating them as a waste stream. In the same document, fines against Crow Butte were assessed. In August, Crow Butte submitted a new application for a Class III UIC Permit to the NDEQ. This application included comprehensive descriptions of operator expertise, related UIC projects, local to regional geology and seismology, environmental impacts, procedures, and well construction.

Crow Butte's proposed North Trend expansion of its in situ uranium leaching operations southwest of Crawford met with concerns expressed by citizens and by citizen groups during 2008. In January, a NRC panel convened in Chadron to address such concerns; chief among these concerns was the potential pollution of groundwater, the potential adverse effects on human health as far away as the Pine Ridge Reservation in South Dakota,

and the foreign ownership of the operation (Cameco Corp., the parent company of Crow Butte Resources, is based in Canada). The NRC panel released a ruling in late April, in which it agreed to hear additional arguments at a subsequent hearing in late August of the same year, after which the NRC proposed the implementation of a generic environmental impact statement (GEIS) by June 2009. In September, another NRC hearing was entertained to additional arguments for the renewal of Crow Butte's NRC license by the Oglala Sioux Tribe of South Dakota, Owe Aku (*Lakota*: "Bring Back the Way"), Western Nebraska Resources Council, and by individual citizens. In November, additional ruling released by the NRC allowed citizens and groups be "intervenor" in the renewal process of Crow Butte's NRC license, offering the opportunity for the airing and investigation of concerns, and promising additional rulings in 2009.

Government Programs

The Conservation and Survey Division (CSD) of the Nebraska School of Natural Resources, Nebraska's State Geological Survey, continued as an active participant in the STATEMAP program in 2008. STATEMAP is a component of the congressionally mandated National Cooperative Geologic Mapping Program (NCGMP), through which the USGS distributes Federal funds to support geologic mapping efforts through a competitive funding process. The NCGMP has three primary components: (1) FEDMAP, which funds Federal geologic mapping projects, (2) STATEMAP, which is a matching-funds grant program with State geological surveys, and (3) EDMAP, a matching-funds grant program with universities that has a goal to train the next generation of geologic mappers. The Grand Island, Doniphan, Silver Creek SE, and Wynot 7.5 minute quadrangle geologic maps were completed and delivered in November 2008. These maps encompass considerable sand and gravel resources, and the Wynot Quadrangle encompasses exposures of the Niobrara Formation, a potential source of agricultural lime.

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- U.S. Nuclear Regulatory Commission, 2008, Atomic safety and licensing board to hear oral argument Sept. 30 regarding Crow Butte license renewal: U.S. Nuclear Regulatory Commission News, September 22, 1 p. (Accessed January 27, 2010, at <http://www.nrc.gov/reading-rm/doc-collections/news/2008/08-176.html>.)

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

(Thousand metric tons and thousand dollars)

Mineral	2006		2007		2008	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	W	W	W	W	W	W
Portland	W	W	W	W	W	W
Clays, common	158 ^e	W	135 ^e	W	109 ^e	W
Gemstones, natural	NA	4	NA	4	NA	4
Lime	13	700	W	W	W	W
Sand and gravel, construction	13,100	62,000	13,400	70,600	13,700	73,500
Stone, crushed	7,480	67,100	7,690 ^f	75,600 ^f	7,960	78,100
Total	XX	130,000	XX	146,000 ^f	XX	152,000

^eEstimated. ^fRevised. NA Not available. W Withheld to avoid disclosing company proprietary data; excluded from "Total." XX Not applicable.

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

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

TABLE 2
NEBRASKA: CRUSHED STONE SOLD OR USED, BY TYPE¹

Type	2007			2008		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone	8	7,640 ^f	\$75,200 ^f	7	7,910	\$77,700
Miscellaneous stone	1	48	481	1	45	443
Total	XX	7,690 ^f	75,600 ^f	XX	7,960	78,100

^fRevised. XX Not applicable.

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

TABLE 3
NEBRASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2008, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	W	W
Other coarse aggregate	13	157
Fine aggregate (-¾ inch):		
Screening (undesigned)	W	W
Other fine aggregate	1	9
Coarse and fine aggregates:		
Unpaved road surfacing	W	W
Crusher run or fill or waste	W	W
Agricultural:		
Limestone	W	W
Other agricultural uses	54	395
Unspecified: ²		
Reported	4,390	43,300
Estimated	3,300	33,000
Total	7,960	78,100

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

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

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

TABLE 4
NEBRASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2008,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	928	\$3,730	\$4.02
Concrete products (blocks, bricks, pipe, decorative, etc.) ²	17	53	3.12
Asphaltic concrete aggregates and other bituminous mixtures	643	4,970	7.73
Road base and coverings	1,920	11,700	6.11
Fill	438	1,310	2.98
Snow and ice control	56	276	4.93
Filtration	3	30	10.00
Other miscellaneous uses	15	354	23.60
Unspecified: ³			
Reported	1,150	6,190	5.40
Estimated	8,500	45,000	5.29
Total or average	13,700	73,500	5.39

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

²Includes plaster and gunite sands.

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

TABLE 5
NEBRASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2008, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products ²	226	797	W	W	W	W
Asphaltic concrete aggregates and other bituminous mixtures	328	2,090	W	W	W	W
Road base and coverings	490	2,270	1,260	7,860	176	1,610
Fill	57	145	354	1,100	27	65
Snow and ice control	23	95	26	131	6	50
Other miscellaneous uses ³	--	--	948	5,600	105	641
Unspecified: ⁴						
Reported	16	54	6	106	1,120	6,030
Estimated	2,430	12,900	2,880	15,200	3,170	16,800
Total	3,580	18,300	5,470	30,000	4,610	25,200

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

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