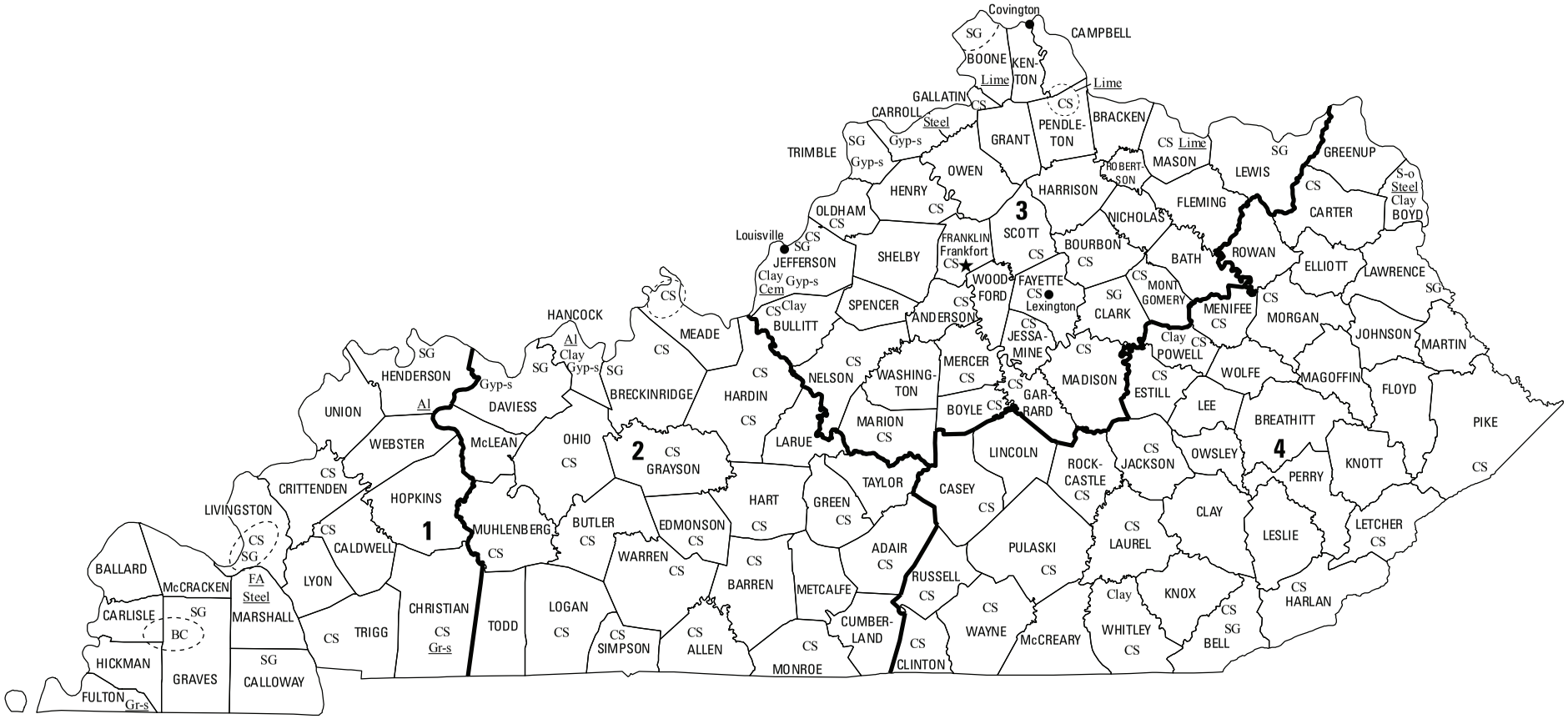
2009 Minerals Yearbook

KENTUCKY [ADVANCE RELEASE]

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

July 2013

KENTUCKY



LEGEND

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

MINERAL SYMBOLS

(Principal producing areas)

Al	Aluminum plant	Gyp-s	Synthetic gypsum
BC	Ball clay	Lime	Lime plant
Cem	Cement plant and quarry	S-o	Sulfur (oil)
Clay	Common clay	SG	Construction sand and gravel
CS	Crushed stone	Steel	Steel plant
FA	Ferroalloys plant		Concentration of mineral operations
Gr-s	Synthetic graphite plant		

0 50 100 Kilometers

Albers equal area projection

Source: Kentucky Geological Survey/U.S. Geological Survey (2009).

The Mineral Industry of Kentucky

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

In 2009, Kentucky's nonfuel raw mineral production[1] was valued at $668 million, based upon annual U.S. Geological Survey (USGS) data. This was a $128 million, or 16%, decrease from the State's total nonfuel mineral production value of $796 million in 2008, which followed a $5 million, or less-than-1%, increase in the State's total production value of $791 million in 2007. Kentucky was 27th, up from 28th in 2008, in rank among the 50 States in total nonfuel mineral production value, accounting for slightly more than 1% of the U.S. total.

In 2009, crushed stone continued to be Kentucky's leading nonfuel mineral commodity by production value, accounting for 58% of the State's total nonfuel raw mineral production value, up from 53% in 2008. The State's second leading nonfuel mineral commodity was lime, followed by portland cement (production and production values withheld for both mineral commodities—company proprietary data), and construction sand and gravel.

All mineral commodities produced in the State decreased in both the quantities produced and production values in 2009. The production of crushed stone was down by 8.4 million metric tons (Mt) and down by $33 million in production value. Smaller, yet significant, decreases also took place in the production of construction sand and gravel, down by 360,000 t, or almost 5%, from that of 2008, and common clays, down by 131,000 metric tons (t), or 31%. Production values for construction sand and gravel and common clays were down $1.9 million, or 5%, and almost $2.2 million, or 27%, respectively, from those of 2008.

In 2009, Kentucky continued to rank 3d in the quantities of lime produced, 4th out of the five ball-clay-producing States, and 19th in common clay production. The State rose significantly in rank from 12th to 7th in the production of crushed stone, accounting for 4% of the total quantity of the almost 1.2 billion metric tons produced in the United States in 2009, and accounting for 3.4% of the total value of $11.3 billion. The State declined in rank from 19th to 21st out of the 36 portland cement-producing States. Additionally, primary aluminum and raw steel were produced from materials obtained from other domestic and foreign sources. Kentucky remained the Nation's leading producer of primary aluminum, producing approximately 36% more primary aluminum than the second leading producer, Indiana (actual values withheld—company proprietary data).

Notable aluminum facilities in the State included Logan Aluminum Inc.'s rolling mill and secondary smelter near Russelville, Logan County; Aleris International Inc.'s rolling mill in Lewisport, Hancock County; Century Aluminum Co.'s primary smelter in Hawesville, Hancock County; and Rio Tinto Alcan's primary smelter in Henderson County, near Sebree in Webster County (Kentucky Cabinet for Economic Development, 2009a, p. 4).

Notable steel-related facilities in the State included North American Stainless, in Ghent, Carroll County; AK Steel Corp., in Ashland, Boyd County; Mubea Inc., Boone County; and, Gallatin Steel Co., in Ghent, Gallatin County (Kentucky Cabinet for Economic Development, 2009b, p. 5).

The following narrative information was provided by the Kentucky Geological Survey[2] (KGS).

Overview

The development of the mineral industry in the State slowed during 2009 as a result of the overall economic slowdown and diminished demand for mineral commodities in the global, national, and local economies, and also in the residential, industrial, and transportation markets. Declines in demand for crushed stone, construction sand and gravel, steel, clay, coal, and declining prices in aluminum caused many mining and associated companies to curtail production, reduce staff, or reduce work hours in order to be cost efficient.

However, even with the economic slowdown, Kentucky continued to be the leading State in the production of primary aluminum and underground limestone in 2009. Synthetic graphite, natural gemstones, and freshwater pearls continued to be produced in several Kentucky counties.

Exploration and Mine Development Activities

Fluorspar.—In 2009, Hastie Mining and Trucking Co. (Cave-In-Rock, IL) continued to develop the Klondike II Mine project in the Western Kentucky fluorspar district and to obtain the necessary permits to open a fluorspar mine. Construction of a tailings pond was completed. Core drilling results from the mine in Livingston County showed that several cores contained a high percentage of fluorspar (Miller, 2011, p. 26.1).

Stone, Crushed.—Hilltop-Ingleside Mine LLC (Cincinnati, OH) continued work to open an underground limestone mine on the property owned by East Kentucky Power Cooperative (EKPC) in Mason County. Plans were announced in September 2008, with Hilltop expecting operations to begin in 2010 to supply approximately 900,000 t (1 million short tons) of desulfurization stone to EKPC's coal-fired powerplants at Spurlock Station, near Maysville, Mason County, on the Ohio-Kentucky border (Toncray, 2010).

[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 2009 USGS mineral production data published in this chapter are those available as of September 2011. 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]Warren H. Anderson, Geologist and Principal Investigator with the Kentucky Geological Survey, submitted the text of the State mineral industry information provided by that State agency.

Commodity Review

Industrial Minerals

Stone, Crushed.—In June, North American Limestone Corp. (Louisville, KY) announced the final approval of mining permits from the State of Kentucky to open a new quarry in Todd County, near the Fort Campbell Military Base, near the Kentucky-Tennessee border. The company estimated the site to contain at least 50 years of high-quality reserves (North American Limestone Corp., 2009). Carmeuse Lime and Stone furloughed 34 hourly workers at its Black River facility in Pendleton County owing to declining demand for its limestone products, particularly in the construction and steel industries (Goldman, 2009).

Summit Materials LLC (Washington, DC) announced the acquisition of Hinkle Contracting Corp., based in Paris, Bourbon County, early in 2010, after pursuing the acquisition during the last months of 2009. Summit Materials was formed in 2009 to grow business in the construction aggregates and heavy building materials industries through strategic acquisitions (Summit Materials LLC, 2009). Hinkle was a major aggregates producer in the northeastern portion of the State. The company was reported to have more than 227 Mt of limestone reserves and its operations included 12 aggregate and 17 asphalt facilities (Summit Materials LLC, 2010).

Metals

Aluminum.—In March 2009, Century Aluminum of Kentucky (a wholly owned subsidiary of Century Aluminum Co. of Monterey, CA) closed one of its five potlines at the Hawesville aluminum smelter as part of an effort to contain costs owing to the decline in aluminum prices since July 2008. The smelter capacity was 250,000 t of primary aluminum annually and the closure of one line was anticipated to reduce production by 4,400 metric tons per month and affect 120 employees (Century Aluminum Co., 2009).

In late November 2009, Electro Cycle Inc. announced plans to invest $2 million at its aluminum recycling plant in Madisonville, where the company processes new production scrap aluminum to produce recycled scrap ingot. Enhancements and upgrades included building an additional furnace, upgrading shredders and conveyor systems, and adding state-of-the-art electronic controls. The company anticipated the preservation of 40 employee jobs (Wiles, 2009).

Government Programs and Activities

The Kentucky Geological Survey's rocks and minerals Web site (http://www.uky.edu/KGS/rocksmn/index.htm) provides introductory information on the mineral resources of the State. KGS continued to work on a long-term project of maintaining a minerals GIS database to allow the user to search specific information on mineral deposits. Information on minerals deposits such as mine maps, cross sections, ore-grade analysis, and log data continued to be scanned and were incorporated into the database. The database can be searched using a specific site location to provide detailed information to the user.

References Cited

Century Aluminum Co., 2009, Century announces the curtailment of one potline at Hawesville, KY, smelter: Monterey, CA, Century Aluminum Co. press release, March 3. (Accessed December 5, 2012, at http://investor.shareholder.com/cenx/releasedetail.cfm?ReleaseID=368647.)

Goldman, Barbara, 2009, Carmeuse Lime and Stone lays off 34: The Ledger-Independent [Maysville, KY], April 11. (Accessed December 5, 2012, at http://www.maysville-online.com/news/carmeuse-lime-and-stone-lays-off/article_674051d7-e768-5c34-8c3c-22f6ae32cd52.html.)

Kentucky Cabinet for Economic Development, 2009a, Profile of Kentucky's aluminum industry: Frankfort, KY, Kentucky Cabinet for Economic Development industry profile, October, 38 p. (Accessed December 5, 2012, at http://dspace.kdla.ky.gov:8080/xmlui/bitstream/10602/1334/1/Aluminum_Report.pdf.)

Kentucky Cabinet for Economic Development, 2009b, Profile of Kentucky's steel industry: Frankfort, KY, Kentucky Cabinet for Economic Development industry profile, August, 27 p. (Accessed December 5, 2012, at http://dspace.kdla.ky.gov:8080/xmlui/bitstream/10602/1343/3/SteelIndustryProfile_2009.pdf.)

Miller, M.M., 2011, Fluorspar, *in* Metals and minerals: U.S. Geological Survey Minerals Yearbook 2009, v. I, p. 26.1–26.13.

North American Limestone Corp., 2009, North American Limestone acquires permit for Kentucky greenfield site: Louisville, KY, North American Limestone Corp. press release, June 29. (Accessed December 5, 2012, at http://www.nalimestone.com/site/index.php?id_news=48.)

Summit Materials LLC, 2009, Blackstone, Silverhawk, Tom Hill and management form Summit Materials: Washington, DC, Summit Materials LLC press release, September 8. (Accessed December 5, 2012, at http://www.summit-materials.com/news/blackstone-silverhawk-tom-hill-and-management-form-summit-materials.html.)

Summit Materials LLC, 2010, Summit Materials announces acquisition of Hinkle Contracting, Inc.: Washington, DC, Summit Materials LLC press release February 1. (Accessed December 5, 2012, at http://www.summit-materials.com/news/summit-materials-announces-acquisition-of-hinkle-contracting-inc.html.)

Toncray, Marla, 2010, Limestone mine receives permit approval: The Ledger-Independent [Maysville, KY], April 2. (Accessed December 5, 2012, at http://www.maysville-online.com/news/local/article_c2871024-3ec1-11df-92b6-001cc4c03286.html.)

Wiles, Patricia, 2009, Electro Cycle plans expansion: The Messenger [Madisonville, KY], November 6. (Accessed December 5, 2012, at http://www.kentuckyedc.com/docs/community data/electrocycleplansexpansion.pdf.)

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

(Thousand metric tons and thousand dollars)

Mineral	2007		2008		2009	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	598	3,720	419	8,170	288	5,980
Gemstones, natural	NA	48	NA	173	NA	37
Sand and gravel, construction	9,070	48,300	7,620 r	41,700 r	7,260	39,800
Stone, crushed	56,000	432,000	52,700 r	422,000 r	44,300	389,000
Combined values of cement, clays (ball), lime	XX	307,000	XX	324,000 r	XX	233,000
Total	XX	791,000	XX	796,000 r	XX	668,000

[r]Revised. NA Not available. XX Not applicable.

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

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

TABLE 2
KENTUCKY: CRUSHED STONE SOLD OR USED, BY TYPE[1]

Type	2008[r]			2009		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone[2]	97	52,700 r	$422,000 r	88	44,300	$389,000

[r]Revised.

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

[2]Includes limestone-dolomite reported with no distinction between the two.

TABLE 3
KENTUCKY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2009, BY USE[1]

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	829	9,930
Filter stone	232	1,790
Other coarse aggregate	814	8,000
Coarse aggregate, graded:		
Concrete aggregate, coarse	1,510	12,600
Bituminous aggregate, coarse	478	4,250
Bituminous surface-treatment aggregate	298	2,580
Railroad ballast	275	1,970
Other graded coarse aggregate	6,620	64,000
Fine aggregate (-⅜ inch):		
Stone sand, concrete	119	943
Stone sand, bituminous mix or seal	194	1,760
Screening, undesignated	1,630	13,800
Other fine aggregate	749	7,600
Coarse and fine aggregates:		
Graded road base or subbase	1,780	13,400
Unpaved road surfacing	374	3,060
Crusher run or fill or waste	243	2,010
Other coarse and fine aggregates	2,130	18,900
Other construction materials	53	435
Agriculture, limestone	354	2,240
Chemical and metallurgical:		
Cement manufacture	W	W
Lime manufacture	W	W
Flux stone	W	W
Chemical stone	W	W
Sulfur oxide removal	W	W
Special, other fillers or extenders	W	W
Unspecified:[2]		
Reported	8,350	74,800
Estimated	11,000	89,600
Total	44,300	389,000

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 and estimated production without a breakdown by end use.

TABLE 4

KENTUCKY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2009, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:								
Coarse aggregate (+1½ inch)[2]	W	W	W	W	268	2,210	W	W
Coarse aggregate, graded[3]	W	W	W	W	2,030	20,000	W	W
Fine aggregate (-⅜ inch)[4]	W	W	W	W	W	W	394	3,710
Coarse and fine aggregate[5]	1,100	7,870	546	4,670	2,130	18,600	757	6,320
Other construction materials	--	--	--	--	--	--	53	435
Agricultural[6]	W	W	W	W	W	W	W	W
Chemical and metallurgical[7]	W	W	W	W	W	W	--	--
Special[8]	--	--	W	W	--	--	--	--
Unspecified:[9]								
Reported	2,200	18,500	651	5,850	3,650	34,600	1,840	15,900
Estimated	582	5,070	4,170	36,800	2,640	19,500	3,570	28,300
Total	10,400	93,000	8,120	72,600	16,700	147,000	9,080	76,600

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

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

[2]Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregate.

[3]Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregate.

[4]Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregate.

[5]Includes crusher run or fill or waste, graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.

[6]Includes limestone.

[7]Includes cement and lime manufacture, chemical stone, flux stone, and sulfur oxide removal.

[8]Includes other fillers or extenders.

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

TABLE 5

KENTUCKY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2009, BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	1,270	$5,830	$4.58
Asphaltic concrete aggregates and road base materials	164	803	4.90
Fill	125	493	3.94
Other miscellaneous uses	7	78	11.14
Unspecified:[2]			
Reported	576	4,490	7.79
Estimated	5,110	28,100	5.49
Total or average	7,260	39,800	5.48

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

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

TABLE 6
KENTUCKY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2009, 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)	W	W	--	--	W	W
Asphaltic concrete aggregates and road base mater	--	--	W	W	W	W
Fill	--	--	--	--	W	W
Other miscellaneous uses	--	--	--	--	W	W
Unspecified:[2]						
Reported	--	--	W	W	W	W
Estimated	W	W	288	1,370	3,840	22,100
Total	1,980	9,030	640	4,070	4,430	25,300

	District 4	
	Quantity	Value
Concrete aggregate (including concrete sand)	--	--
Asphaltic concrete aggregates and road base mater	--	--
Fill	W	W
Other miscellaneous uses	--	--
Unspecified:[2]		
Reported	W	W
Estimated	W	W
Total	198	1,410

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

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

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