



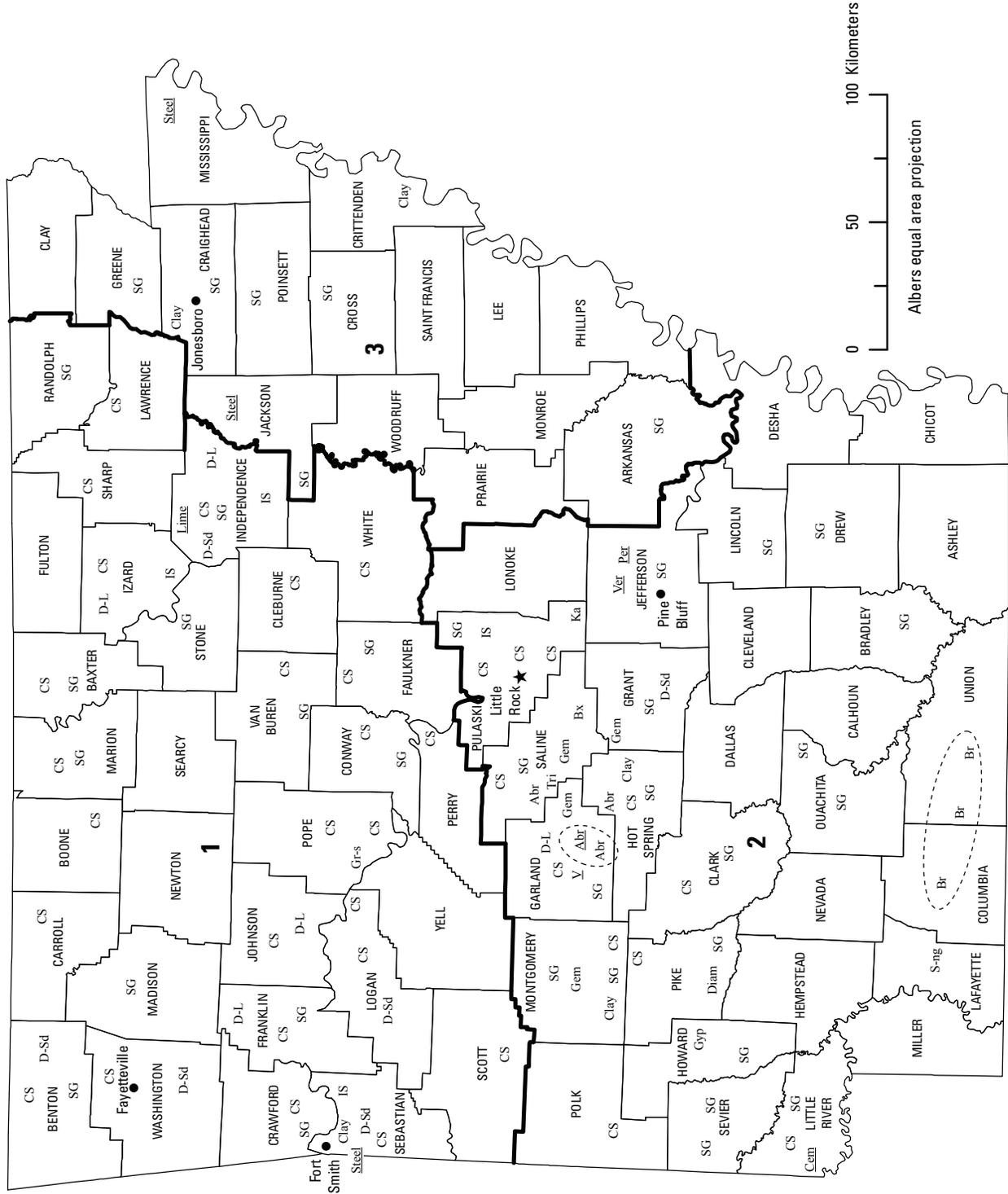
# 2010–2011 Minerals Yearbook

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ARKANSAS [ADVANCE RELEASE]

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# ARKANSAS



# THE MINERAL INDUSTRY OF ARKANSAS

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

In 2011, Arkansas nonfuel mineral production<sup>1</sup> was valued at \$789 million, and in 2010 it was \$714 million, based upon annual U.S. Geological Survey (USGS) data. This was a \$75 million (11%) increase in 2011 from 2010, and an \$89 million (14%) increase from the State's total value of \$625 million in 2009. In 2011, the State's rank rose to 27th, accounting for slightly more than 1% the national total. In 2010 the State rose to 29th in rank from 30th in 2009 among the 50 States in total nonfuel mineral production value with 1% of the U.S. total. On a per capita basis, the State ranked 14th in the Nation for its total nonfuel mineral production value in 2011 with a production value of \$269, just above the national average of \$240.

In 2011, the leading nonfuel mineral commodities, in descending order by production value, were crushed stone, bromine, industrial sand and gravel, portland cement, and construction sand and gravel, accounting for 94% of the total nonfuel mineral production value in Arkansas. The leading nonfuel mineral commodities in 2010, by descending production value, were bromine, crushed stone, portland cement, construction sand and gravel, lime, and industrial sand and gravel. These mineral commodities together accounted for nearly 87% of the State's total nonfuel mineral production value. For nearly four decades, bromine and crushed stone have been the State's two leading nonfuel minerals, by value, bromine leading in value from 1969 up to 1996 when crushed stone, went from second to first. Since then, the two have exchanged rank several times; crushed stone was first in 1996–98, 2001–03, 2005, 2008–09, and 2011, with bromine ranking first in all other years. Actual production values and production data for bromine and portland cement have been withheld (company proprietary data).

In 2011, the mineral commodities that increased in production quantity and production value with respect to 2010 were industrial sand and gravel, production quantity by 294.3% and production value by 451.8%, and crude gypsum, production quantity by 7.5% and value by 20.4%. Decreases in production quantity and production value were observed only in bromine, production quantity by 15.1% and production value by 10.4%. Production quantity decreased for masonry cement by 3.3% and for lime by 0.9%, but the production value increased by 5.4% and 20.4%, respectively. The production quantity for portland cement decreased by 1.9% but its production value increased

by 5.4%. Common clays decreased in production quantity by 0.4% but remained flat in production value. Silica stone and tripoli remained unchanged for both production quantity and production value. There was no production of kaolin clay in 2011.

In 2010, the mineral commodities that increased compared to 2009 were industrial sand and gravel, which increased in production quantity by 121.2% and production value by 30.9%; bromine, for which production quantity increased by 50.3% and production value by 17.8%; and lime, which increased in quantity produced by 10.9% and production value by 18.5%. Crude gypsum production quantity decreased by 13.4% and production value by 19.8%; masonry cement production decreased by 16.7% and production value by 14%; and portland cement production decreased by 4.9% and value by 8.3%. Kaolin clays and silica stone remained essentially unchanged in production quantity and production value, whereas for tripoli the production quantity was less than half, but the production value was slightly higher.

In 2011 and 2010, Arkansas was the Nation's only State to produce bromine. Michigan was the only other State with recent production of bromine, but this ended in 2007. Arkansas continued to be the only State that produced special silica stone and it remained third in the quantities of tripoli produced in both 2011 and 2010 among the four producing States. The State fell to fifth in the quantity of kaolin clays produced in 2010, from fourth in 2009. For gemstones (based upon production value), the State ranked 8th in 2011 and 10th in 2010. Arkansas rose in rank to seventh in 2011 in the quantity of common clays produced, from eighth in 2010, as it was in 2009. In 2011 and 2010, Arkansas ranked eighth in crude gypsum production, after placing seventh in 2009.

Metals that were produced in the State—for the most part steel—were processed from materials acquired from other domestic and foreign sources. The principal steel mills in the State were Quanex Corp. in Sebastian County; Nucor-Yamato Steel Co. and Nucor Corp. near Hickman, Mississippi County; and Arkansas Steel Associates in Jackson County. In addition, Strategic Minerals Corp., or Stratcor, continued operation of the mill facility near Hot Springs in Garland County; the mill extracts vanadium pentoxide from secondary out-of-State vanadium-bearing feed. Bauxitic clays were mined in Saline County for applications in high strength ceramic proppants and cement markets.

The following narrative information was provided by the Arkansas Geological Survey (AGS)<sup>2</sup>.

<sup>1</sup>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 2010 and 2011 USGS mineral production data published in this chapter are those available as of September 2012. 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>.

<sup>2</sup>Authored and reviewed by J. Michael Howard and Lea Nondorf, Arkansas Geological Survey, 2013.

## Commodity Review

### Industrial Minerals

During 2010, 296 noncoal mine sites and quarries were permitted or authorized in Arkansas. The total area of noncoal sites and quarries under permit or authorization was over 8,000 hectares (ha) (19,768 acres). Almost 5,000 ha (12,355 acres) were under bond during 2010. More-recent information can be obtained from the Arkansas Department of Environmental Quality's Facility and Permit Summary database, available at <http://www.adeq.state.ar.us/home/pdssql/pds.aspx>.

**Abrasives, Natural.**—Six companies continued to mine and (or) process novaculite to make whetstones in the Hot Springs area of Garland County, including B & C Abrasives, Inc., Blue Mountain Whetstone Co., Dan's Whetstone Co., Halls Arkansas Oilstones, Inc., Saint Gobain Abrasives, Inc. (Norton Stones Co.), and Smiths Abrasives, Inc. In addition to construction aggregates, Martin Marietta also continued to produce novaculite from a quarry near Glen Rose in Hot Spring County. Malvern Minerals Co. continued to mine tripoli from the Bigfork Chert (Ordovician) at its mine in Saline County for processing at its plant in Hot Springs, Garland County.

**Bromine.**—Albemarle Corp. (Baton Rouge, LA) continued operations at its bromine extraction and production plants near Magnolia, Columbia County. Over 500 employees and two plant sites in the Magnolia area produced more than 30 different chemical ingredients used in the manufacturing of a range of chemicals. Among these products were flame retardants used in household plastics, fabric fibers, and insulation material. These products are found in many consumer products used every day, including the plastic used in televisions and computers, bathroom disinfectants, soaps, and carpeting.

Chemtura Corporation announced mid-June of 2010 that the company and 26 of its U.S. affiliates had filed a joint plan of reorganization and disclosure statement with the United States Bankruptcy Court for the Southern District of New York. Chemtura operates a chemical plant in El Dorado, Union County. The plan was supported by the company's official committee of unsecured creditors and the ad hoc committee of the company's bondholders. The company expected to emerge from Chapter 11 protection within a few months. The company was working with its official committee of equity security holders to address any concerns that they may have had about the plan. Chemtura provided, under the plan, the potential to satisfy all creditors' claims in full, as well as offering value to equity holders.

**Cement.**—Ash Grove Cement Co. in Little River County completed construction and renovation work on its \$550 million plant in Foreman. The installation of the new dry kiln technology in 2009 at the company's flagship plant brings total cement production capacity to nearly 1.5 million metric tons (Mt) per year (Williamson, 2010). Ash Grove used chalk from the Cretaceous Annona Formation and silica from the Cretaceous Ozan Formation.

**Clays.**—Acme Brick Co., owned by Berkshire-Hathaway, near Malvern, Hot Spring County, continued operation of its Wilcox Group (Eocene) clay mines for brick manufacture

at Perla, AR. McGeorge Construction Co. continued custom mining of bauxite on the ALCOA property in Saline County for Saint Gobain. CertainTeed Corp. mined and processed slaty shale from the Stanley Formation (Mississippian) north of Glenwood in Pike County. The company's product was a black roofing granule.

**Gemstones.**—There were 19 quartz contracts, 4 quartz leases, and 2 wavellite leases on the Ouachita National Forest under the U.S. Forest Service in Arkansas. These generated about \$12,500 in revenue for the State.

At the Crater of Diamonds State Park, Pike County, 601 diamonds were recovered in 2010, down from 918 in 2009. The total weight of the stones was almost 131.11 carats, with an average weight of 0.22 carats. Of these diamonds, 23 weighed more than 1 carat. Diamonds recovered included 434 white, 94 brown, and 173 yellow. More than 30,400 diamonds had been recovered since this property became a State park in 1972. The renovation of the Park Museum continued through most of 2010 and the museum was reopened in late 2010 (Arkansas Division of State Parks, 2013).

**Gypsum.**—CertainTeed Corp.'s (Valley Forge, PA) [subsidiary of Saint-Gobain Co. (Courbevoie, France)] gypsum mine and wallboard plant operation near Nashville, Howard County, continued to be a leading wallboard manufacturing plant, with a capacity of 130 million square meters per year of wallboard. The principal markets for the wallboard, sold under the trade name CertainTeed, were in the eastern United States. The plant ran a single 8-hour daily shift in continuing response to the decline in new housing starts for most of 2010.

**Lime.**—Arkansas Lime Co. (part of United States Lime and Minerals, Inc.), of Batesville, Independence County, produced hydrated lime and quicklime, as well as agricultural lime and pulverized limestone for glass manufacturing. Arkansas Lime's quarry was in a section of Ordovician limestones that are of high purity and also low in silica.

**Nepheline Syenite.**—The Big Rock Arch Street Quarry, operated by Minnesota Mining and Manufacturing Co. [a 3M company (Maplewood, MN)], continued to produce nepheline syenite to supply material for the company's roofing granule plant in Sweet Home, Pulaski County.

**Sand and Gravel, Construction.**—During 2010, both gravel pit and quarry operations in the north-central part of the State increased production despite the general economic slowdown, in response to the needs of the petroleum drilling industry in the Fayetteville Shale gas play. More than 40,220 t of aggregate (44,335 short tons), generating almost \$22,167.50 in revenue, was produced from gravel and stone operations under lease in the Ouachita National Forest under the jurisdiction of the U.S. Forest Service.

**Sand and Gravel, Industrial.**—Industrial sand was produced by Unimin Corp. from its mine and processing facility at Guion, Izard County. The sand was sourced from the Ordovician St. Peter Sandstone Formation, found widely in the Midwestern United States. Markets include foundry, glass, and hydraulic fracturing (frac) sand. Frac sand was a washed-and-sized high-silica-content quartz sand with a proper grain size that was used to prop open fractures created by high-pressure fluids pumped into the oil and gas wells, enlarging openings in oil- and

gas-bearing rocks. Arkhola Sand and Gravel Co. of Sebastian County produced industrial sand, as well as construction sand, from its dredging operations on the Arkansas River. Jefferies Sand, North Little Rock, Pulaski County, produced industrial sand, as well as construction sand, from its dredging operations on the Arkansas River. Both companies have local markets for their products.

Delta Co., operating under the name Delta Sand, completed its third year of production from its sand pit east of Little Rock in Pulaski County. The St. Peter Sandstone was being exploited in Independence and Izard Counties by T & H Sand Company with two sites, White Horse Rider Sand and Arkansas Sand; Unimin. was also mining the St. Peter Sandstone. Ozark Premium Sand operates from two sites, one in Jackson County and one in Independence County. Garland Sand operates a site along the Red River, Miller County.

**Stone, Crushed.**—During 2010, increased natural gas drilling operations in the Fayetteville Shale Play caused increased demand for crushed stone for access roads and drilling pad construction within north-central Arkansas. Arkhola continued work with the Jenny Lind Quarry, Sebastian County, in the Hartshorne Formation (Pennsylvanian). R.K. Hall Materials Co. operated the R.D. Plant Quarry, south of Kirby in central Pike County, in the Jackfork Formation (Pennsylvanian). Duffield Stone and Gravel Co. operated two sandstone aggregate quarries (Pennsylvanian) in Pope County—the Newhope Quarry in the Hartshorne Formation and the Gumlog Quarry in the upper Atoka Formation. In 2010, Pyramid Company was purchased by Jeffrey Sand Co., and has since been idle; previously Pyramid had produced aggregate from the middle Atoka Formation (Pennsylvanian) in Faulkner County. B.L. Kennedy started aggregate production at two sites—one in White County producing from the middle Atoka Formation and one in Cleburne County producing from the upper Atoka Formation (Pennsylvanian).

Granite Mountain Quarries, Inc. (GMQ) produced aggregate from nepheline syenite at two quarries in Pulaski County and from the Granite Mountain No. 3 quarry near Bryant, Saline County. In 2010, GMQ idled their sandstone quarry near Y-City, Scott County, in the Atoka Formation (Pennsylvanian). Martin Marietta Co. actively quarried the Hatton Tuff Member of the Stanley Group (Mississippian) near Cove, Polk County, and continued its operations at the company's Jones Mill Quarry near Magnet Cove, Hot Spring County, producing from both the hornfels and quartzite alteration zones in the Stanley Group (Mississippian) adjacent to the Cretaceous-age igneous intrusion and the intrusive rock.

Rogers Group, Inc. continued sandstone aggregate operations at the company's Greenbriar Quarry and its Jefferson Island Quarry in Faulkner County, at its Conway County Quarry south of Solgohachia, at Cabot, Beryl, and Blue Hole Quarries in White County. All production comes from the middle Atoka Formation (Pennsylvanian). Limestone is quarried at its Lowell Quarry from the Boone Formation (Mississippian) in Benton County. Schwartz Stone Co. quarried sandstone from the Hartshorne Sandstone (Pennsylvanian) quarry for aggregate and dimension stone north of Midway, Logan County. McGeorge Sand and Gravel Co. continued riprap barge operations along

the Arkansas River from its River Mountain Quarry in the Hartshorne Sandstone (Pennsylvanian) north of New Blaine, Logan County. Chrisman Co. mined sandstone aggregate from the Hartshorne Sandstone (Pennsylvanian) near Hunt, Johnson County, and from the Savanna Formation (Pennsylvanian) near Ratcliffe, Franklin County.

Vulcan Materials Co. produced aggregate from the upper Morrowan age sandstone operations at Judsonia and Floyd, both sites in White County. Vulcan also produced dolomitic limestone from the lower Ordovician units near Black Rock, Lawrence County. Webco Mining Co. quarried sandstone for aggregate near El Paso, White County, from the middle Atoka Formation (Pennsylvanian). Quality Stone Co. produced sandstone aggregate from the Atoka Formation (Pennsylvanian) at its Lonestar quarry in Cleburne County. Midwest Lime Co. produced aggregate from middle- and upper-Ordovician-age limestones near Batesville, Independence County. Limestone Specialties, Inc. produced aggregate from upper Ordovician units in Independence County.

**Stone, Dimension.**—Oran McBride Stone Co. of Batesville, Independence County, continued production of interior and exterior, structural and architectural stone at its plant in Bethesda, Independence County. Marble, limestone, and sandstone were quarried from Ordovician and Mississippian-age formations from 21 active quarries and processed as polished, cut, and rough- surface product. Schwartz Stone Co. also quarried flaggy sandstone from the Hartshorne Sandstone quarry north of Midway in Logan County for the building trades. Broken dimension stone (Cotter Formation) in a variety of shades was produced by Johnson Landscaping and Construction LLC from their Ozark Southern Stone Quarry, north of Eureka Springs in Carroll County. Eureka Stone Co.'s saw shop is located near this quarry, and produced a variety of sawed and turned architectural pieces. Bennett Brothers Stone Co., Inc. obtained building stone materials from deposits in Garland and Logan, and other counties, principally from Pennsylvanian-age formations. About 626 t (690 short tons) of dimension stone, valued at \$4,140, were removed from national forest-controlled properties in Arkansas in 2010.

## **Environmental Issues and Mine Reclamation**

The Mining Division of the Arkansas Department of Environmental Quality (ADEQ) reported that there were 63.8 ha of reclaimed land released from two permitted and authorized sites during 2010.

Two quarries in Izard County that received authorizations to quarry during 2010 encountered opposition due to water-related issues. One quarry developed problems with process and storm-water discharges. The other quarry had proposed to drill several source water wells that were thought to possibly endanger local drinking-water wells.

## **Legislation and Government Programs and Activities**

There was no activity, either legislatively or regulatory, during 2010 concerning noncoal mineral operations in the State of Arkansas.

The Arkansas Geological Survey (AGS) maintained both paper and digital records on the geology of Arkansas. The AGS Web site, online for 11 years, was reorganized at <http://www.geology.arkansas.gov/home/index.htm>. Information posted on the Web site included State resource data; USGS annual nonfuel mineral production data; publications and map ordering information; State stratigraphic, geologic, and geohazard data; online geologic maps; agency services; and news items. The site had links to State agency services, Federal agencies, geology Web sites, organizations, and universities.

The AGS continued preparation of a spreadsheet database that contained all identified sites of mineral extraction in the State, excluding petroleum and natural gas. By the close of 2010, more than 7,800 records had been entered and field checking for 61 of 75 counties had been completed. Site locations were entered by latitude and longitude and by general land office survey techniques.

The AGS has been an active participant in the STATEMAP program since 1995. 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. During 2010, the Alread, Old Lexington,

and Botkinburg 7.5-minute USGS topographic geologic maps were completed under the STATEMAP cooperative agreement. Three additional 7.5-minute geologic maps were planned to start in late 2011—the Clinton, Scotland, and Rex quadrangles (Arkansas Geological Survey, 2013b). The AGS continued mapping four quadrangles (Big Flat, Buffalo City, Rea Valley, and Cozahome) on the lower end of the Buffalo National River under a contract from the National Park Service that was received in September of 2009. Additional information about the STATEMAP geologic mapping program in Arkansas can be found on the AGS Web site.

Staff cartographers continued to digitize and to perform edge matching of the State's geology onto 1:24,000-scale USGS topographic maps. Digitized 7.5-minute geologic maps are freely available for download from the AGS Web site.

## References Cited

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TABLE 1  
NONFUEL MINERAL PRODUCTION IN ARKANSAS<sup>1,2</sup>

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2009		2010		2011	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	539	7,630	534	7,580	532	7,580
Gemstones, natural	NA	410	NA	424	NA	450
Sand and gravel, construction	7,780 <sup>r</sup>	60,000 <sup>r</sup>	9,050	76,800	7,830	66,800
Stone:						
Crushed	29,400 <sup>r</sup>	215,000 <sup>r</sup>	31,300	240,000	26,100	219,000
Dimension, limestone, sandstone	18	2,360	11	1,580	15	1,770
Combined values of bromine, cement, clays (kaolin), gypsum (crude), lime, sand and gravel (industrial), silica stone, tripoli	XX	339,000	XX	388,000	XX	494,000
Total	XX	625,000 <sup>r</sup>	XX	714,000	XX	789,000

<sup>r</sup>Revised. NA Not available. XX Not applicable.

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

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

TABLE 2  
ARKANSAS: CRUSHED STONE SOLD OR USED IN THE UNITED STATES, BY TYPE<sup>1</sup>

Type	2009				2010				2011			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone <sup>2</sup>	40	10,600	\$70,400 <sup>r</sup>	\$6.62	38	10,600	\$74,600	\$7.05	38	9,250	\$77,300	\$8.36
Dolomite	2	820 <sup>r</sup>	6,930	8.45	1	593	5,070	8.55	1	646	5,710	8.84
Granite	4	6,040	46,300	7.66	4	7,570	61,000	8.05	4	6,400	53,600	8.37
Sandstone and quartzite <sup>3</sup>	23	10,300 <sup>r</sup>	79,800 <sup>r</sup>	7.78	22	11,000	87,400	7.94	23	8,510	71,600	8.42
Slate	--	--	--	--	1	139	995	7.17	1	148	1,280	8.59
Miscellaneous stone	23 <sup>r</sup>	1,630 <sup>r</sup>	11,400 <sup>r</sup>	7.00	14	1,410	10,800	7.68	16	1,100	9,360	8.51
Total or average	XX	29,400 <sup>r</sup>	215,000 <sup>r</sup>	7.31	XX	31,300	240,000	7.66	XX	26,100	219,000	8.40

<sup>r</sup>Revised. XX Not applicable. -- Zero

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

<sup>2</sup>Includes limestone-dolomite reported with no distinction between the two kinds of stone.

<sup>3</sup>Includes sandstone-quartzite reported with no distinction between the two kinds of stone.

TABLE 3  
 ARKANSAS: CRUSHED STONE SOLD OR USED BY PRODUCERS  
 IN 2010, BY USE<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
<b>Construction:</b>		
<b>Coarse aggregate (+1½ inch):</b>		
Macadam	W	W
Riprap and jetty stone	122	\$1,270
Filter stone	92	687
Other coarse aggregate	215	1,730
<b>Coarse aggregate, graded:</b>		
Concrete aggregate, coarse	631	5,340
Bituminous aggregate, coarse	220	1,910
Bituminous surface-treatment aggregate	W	W
Other graded coarse aggregate	550	5,380
<b>Fine aggregate (-¾ inch):</b>		
Stone sand, bituminous mix or seal	W	W
Screening, undesignated	214	1,000
Other fine aggregate	155	1,240
<b>Coarse and fine aggregates:</b>		
Graded road base or subbase	1,860	14,200
Unpaved road surface	407	3,290
Crusher run or fill or waste	W	W
Other coarse and fine aggregates	2,030	15,400
Other construction materials	W	W
<b>Agricultural:</b>		
Agricultural, limestone	121	759
Poultry grit and mineral food	W	W
Other agricultural uses	W	W
<b>Chemical and metallurgical:</b>		
Cement manufacture	W	W
Lime manufacture	W	W
<b>Special:</b>		
Asphalt fillers or extenders	W	W
Other fillers or extenders	W	W
Other miscellaneous uses and specified uses not listed	139	997
<b>Unspecified:<sup>2</sup></b>		
Reported	11,700	95,500
Estimated	10,200	76,200
<b>Total</b>	<b>31,300</b>	<b>240,000</b>

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

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

<sup>2</sup>Reported and estimated production without a breakdown by end use.

TABLE 4  
 ARKANSAS: CRUSHED STONE SOLD OR USED BY PRODUCERS  
 IN 2011, BY USE<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
<b>Construction:</b>		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	153	1,520
Filter stone	117	969
Unspecified coarse aggregate	159	1,130
Coarse aggregate, graded:		
Concrete aggregate, coarse	463	4,180
Bituminous aggregate, coarse	226	2,100
Bituminous surface-treatment aggregate	W	W
Railroad ballast	5	40
Unspecified graded coarse aggregate	482	4,890
Fine aggregate (-¾ inch):		
Stone sand, bituminous mix or seal	W	W
Screening, undesignated	147	767
Unspecified fine aggregate	151	1,210
Coarse and fine aggregates:		
Graded road base or subbase	1,510	10,600
Unpaved road surface	250	1,870
Terrazzo and exposed aggregate	W	W
Crusher run or fill or waste	W	W
Unspecified coarse and fine aggregates	3,140	23,800
Unspecified and other construction materials	W	W
<b>Agricultural:</b>		
Agricultural, limestone	99	634
Poultry grit and mineral food	W	W
Unspecified and other agricultural uses	W	W
<b>Chemical and metallurgical:</b>		
Cement manufacture	W	W
Lime manufacture	W	W
<b>Special:</b>		
Asphalt fillers or extenders	W	W
Other fillers or extenders	W	W
Other miscellaneous uses and specified uses not listed	438	2,880
<b>Unspecified:<sup>2</sup></b>		
Reported	9,250	80,000
Estimated	8,230	70,600
<b>Total</b>	<b>26,100</b>	<b>219,000</b>

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

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

<sup>2</sup>Reported and estimated production without a breakdown by end use.

TABLE 5  
 ARKANSAS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2010, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) <sup>2</sup>	405	\$3,490	W	W	W	W
Coarse aggregate, graded <sup>3</sup>	1,480	13,200	W	W	W	W
Fine aggregate (-¾ inch) <sup>4</sup>	388	2,630	W	W	W	W
Coarse and fine aggregates <sup>5</sup>	3,790	28,400	678	\$5,320	W	W
Other construction materials	W	W	W	W	--	--
Agricultural <sup>6</sup>	185	1,930	--	--	--	--
Chemical and metallurgical <sup>7</sup>	W	W	W	W	--	--
Special <sup>8</sup>	W	W	--	--	--	--
Other miscellaneous uses and specified uses not listed <sup>9</sup>	--	--	3	35	--	--
Unspecified: <sup>10</sup>						
Reported	4,030	31,300	7,660	64,200	--	--
Estimated	5,950	43,400	4,240	32,700	--	--
Total <sup>11</sup>	17,000	132,000	14,000	106,000	28	\$486

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

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

<sup>2</sup>Includes macadam, riprap and jetty stone, filter stone, and other coarse aggregates.

<sup>3</sup>Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregates.

<sup>4</sup>Includes stone sand (concrete), stone sand (bituminous mix or seal), screening (undesignated), and other fine aggregates.

<sup>5</sup>Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, roofing granules, and other coarse and fine aggregates.

<sup>6</sup>Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

<sup>7</sup>Includes cement manufacture, lime manufacture, dead-burned dolomite manufacture, flux stone, chemical stone, glass manufacture, and sulfur oxide removal.

<sup>8</sup>Includes mine dusting or acid water treatment, whiting or whitening substance, and other fillers or extenders.

<sup>9</sup>Includes drain fields, waste material, lightweight aggregate (slate), pipe bedding, refractory stone (including ganister), and other miscellaneous uses.

<sup>10</sup>Reported and estimated production without a breakdown by end use.

<sup>11</sup>District totals may not add up to the published State total, owing to revisions made after the production of the table and (or) proprietary data being withheld.

TABLE 6  
ARKANSAS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2011, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		Unspecified	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) <sup>2</sup>	361	2,930	W	W	W	W
Coarse aggregate, graded <sup>3</sup>	1,210	11,300	W	W	13	233
Fine aggregate (-¾ inch) <sup>4</sup>	302	2,120	W	W	W	W
Coarse and fine aggregates <sup>5</sup>	3,590	26,100	W	W	7	134
Other construction materials	W	W	W	W	--	--
Agricultural <sup>6</sup>	146	1,670	--	--	--	--
Chemical and metallurgical <sup>7</sup>	W	W	--	--	--	--
Special <sup>8</sup>	W	W	--	--	--	--
Other miscellaneous uses and specified uses not listed <sup>9</sup>	--	--	W	W	--	--
Unspecified: <sup>10</sup>						
Reported	3,390	28,600	5,860	51,400	--	--
Estimated	4,130	35,400	4,100	35,200	--	--
Total	14,000	116,000	12,100	102,000	22	403

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

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

<sup>2</sup>Includes macadam, riprap and jetty stone, filter stone, and other coarse aggregates.

<sup>3</sup>Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregates.

<sup>4</sup>Includes stone sand (concrete), stone sand (bituminous mix or seal), screening (undesigned), and other fine aggregates.

<sup>5</sup>Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, roofing granules, and other coarse and fine aggregates.

<sup>6</sup>Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

<sup>7</sup>Includes cement manufacture, lime manufacture, dead-burned dolomite manufacture, flux stone, chemical stone, glass manufacture, and sulfur oxide removal.

<sup>8</sup>Includes mine dusting or acid water treatment, whitening or whitening substance, and other fillers or extenders.

<sup>9</sup>Includes drain fields, waste material, lightweight aggregate (slate), pipe bedding, refractory stone (including ganister), and other miscellaneous uses.

<sup>10</sup>Reported and estimated production without a breakdown by end use.

TABLE 7  
ARKANSAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2010,  
BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity	Value	Unit
	(thousand metric tons)	(thousands)	value
Concrete aggregate (including concrete sand)	1,650	\$13,800	\$8.38
Asphaltic concrete aggregates and other bituminous mixtures	351	3,650	10.40
Road base and coverings	330	2,230	6.74
Road and other stabilization (lime)	5	30	6.00
Fill	65	302	4.65
Other miscellaneous uses <sup>2</sup>	20	177	8.85
Unspecified: <sup>3</sup>			
Reported	1,550	13,500	8.70
Estimated	5,080	43,100	8.49
Total or average	9,050	76,800	8.49

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

<sup>2</sup>Includes golf course, and snow and ice control.

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

TABLE 8  
ARKANSAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2011,  
BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	1,500	\$12,100	\$8.07
Asphaltic concrete aggregates and other bituminous mixtures	257	1,690	6.58
Road base and coverings	228	1,720	7.54
Road and other stabilization (lime)	5	33	6.60
Fill	105	435	4.14
Other miscellaneous uses <sup>2</sup>	21	397	18.90
Unspecified: <sup>3</sup>			
Reported	2,430	22,500	9.26
Estimated	3,290	28,000	8.51
Total or average	7,830	66,800	8.53

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

<sup>2</sup>Includes golf course, and snow and ice control.

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

TABLE 9  
ARKANSAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2010, BY USE AND DISTRICT<sup>1</sup>

(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	425	\$3,660
Asphaltic concrete aggregates and road base materials <sup>2</sup>	W	W	W	W	145	1,110
Fill	60	\$285	5	\$16	--	--
Other miscellaneous uses <sup>3</sup>	184	1,630	4	20	--	--
Unspecified: <sup>4</sup>						
Reported	694	5,930	441	4,130	419	3,470
Estimated	737	6,260	3,400	28,800	940	7,980
Total <sup>5</sup>	1,680	14,100	5,450	46,500	1,930	16,200

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

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

<sup>2</sup>Includes road and other stabilization (lime).

<sup>3</sup>Includes golf course, and snow and ice control.

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

<sup>5</sup>District totals may not add up to the published State total, owing to revisions made after the production of the table and (or) proprietary data being withheld.

TABLE 10  
ARKANSAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2011, BY USE AND DISTRICT<sup>1</sup>

(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	411	3,680
Asphaltic concrete aggregates and road base materials <sup>2</sup>	W	W	W	W	102	1,050
Fill	49	250	56	185	--	--
Other miscellaneous uses <sup>3</sup>	8	115	12	281	--	--
Unspecified: <sup>4</sup>						
Reported	716	6,830	1,400	13,000	317	2,620
Estimated	755	6,430	2,200	18,800	336	2,740
Total	1,690	15,100	4,970	41,600	1,170	10,100

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

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

<sup>2</sup>Includes road and other stabilization (lime).

<sup>3</sup>Includes golf course, and snow and ice control.

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