

GEOLOGICAL SURVEY OF ALABAMA

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GEOLOGIC INVESTIGATIONS PROGRAM

MINERALS IN THE ECONOMY OF ALABAMA, 2008-2013

Information Series 64S

by

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The Honorable Kay Ivey
Governor of Alabama
Montgomery, Alabama

Dear Governor Ivey:

It is with pleasure that I make available to you this report entitled *Minerals in the Economy of Alabama, 2008-2013*, by Dane S. VanDervoort, which has been published as Information Series 64S by the Geological Survey of Alabama.

Mineral resources are the basis of an important part of Alabama's industrial economy. Between 2008 and 2013, Alabama remained within the top twenty-five among the states in the value of non-fuel minerals produced. The estimated value of the non-fuel industrial minerals produced in Alabama during this period was greater than \$6.27 billion, nearly two percent of the value of the total national mineral production. The Geological Survey of Alabama has legislative mandate to evaluate Alabama's geologic and mineral resources and therefore carries out a comprehensive minerals assessment program for the state. Under this program, several reports and maps have been published, providing citizens and potential industry investors with basic geological information useful in the development of Alabama's non-fuel mineral resources.

This summary report provides a brief overview of Alabama's non-fuel minerals production for the years 2008 through 2013, as well as a short inventory of all currently known potential mineral resources found in the state.

Respectfully,

Berry H. (Nick) Tew, Jr.
State Geologist

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MEASUREMENT CONVERSION CHART

(modified from Table 5 of Hansen, 1991)

A. Factors for converting SI metric units to inch/pound units

To convert from	To	Multiply by
Length		
millimeter (mm)	inch (in)	0.03937
meter (m)	foot (ft)	3.281
	yard (yd)	1.094
kilometer (km)	mile (mi)	0.6214
Area		
meter ² (m ²)	foot ² (ft ²)	10.76
	yard ² (yd ²)	1.196
	acre	0.0002471
hectometer ² (hm ²)	acre	2.471
kilometer ² (km ²)	mile ² (mi ²)	0.3861
Volume		
centimeter ³ (cm ³)	inch ³ (in ³)	0.06102
decimeter ³ (dm ³)	inch ³ (in ³)	61.02
	pint (pt)	2.113
	quart (qt)	1.057
	gallon (gal)	0.2642
	foot ³ (ft ³)	0.03531
meter ³ (m ³)	foot ³ (ft ³)	35.31
	yard ³ (yd ³)	1.308
	gallon (gal)	264.2
	barrel (bbl), (petroleum, 1 bbl=42 gal)	6.290
	acre-foot (acre-ft)	0.0008107
hectometer ³ (hm ³)	acre-foot (acre-ft)	810.7
kilometer ³ (km ³)	mi ³ (mi ³)	0.2399
Volume per unit time (includes flow)		
decimeter ³ per second (dm ³ /s)	foot ³ per second (ft ³ /s)	0.03531
	gallon per minute (gal/min)	15.85
	barrel per day (bbl/d), (petroleum)	543.4
meter ³ per second (m ³ /s)	foot ³ per second (ft ³ /s)	35.31
	gallon per minute (gal/min)	15,850.0
Mass		
gram (g)	ounce avoirdupois (oz avdp)	0.03527
kilogram (kg)	pound avoirdupois (lb avdp)	2.205
megagram (Mg)	ton, short (2,000 lb)	1.102
	ton, long (2,240 lb)	0.9842
Pressure		
kilopascal (kPa)	pound-force per inch ² (lbf/in ²)	0.1450
	atmosphere, standard (atm)	0.00987
	bar	0.01
	inch of mercury at 60°F (in Hg)	0.2961
Temperature		
kelvin (K)	degrees Fahrenheit (°F)	(¹)
degrees Celsius (°C)	degrees Fahrenheit (°F)	(²)

¹Temp °F=l.8 temp K-459.67. ²Temp °F=l.8 temp °C+32.

B. Factors for converting inch/pound to SI metric units

To convert from	To	Multiply by
Length		
inch (in)	millimeter (mm)	25.4
foot (ft)	meter (m)	0.3048
yard (yd)	meter (m)	0.9144
mile (mi)	kilometer (km)	1.609
Area		
foot ² (ft ²)	meter ² (m ²)	0.09290
yard ² (yd ²)	meter ² (m ²)	0.8361
acre	meter ² (m ²)	4,047.0
	hectometer ² (hm ²)	0.4047
mile ² (mi ²)	kilometer ² (km ²)	2.590
Volume		
inch ³ (in ³)	centimeter ³ (cm ³)	16.39
	decimeter ³ (dm ³)	0.01639
foot ³ (ft ³)	decimeter ³ (dm ³)	28.32
	meter ³ (m ³)	0.02832
yard ³ (yd ³)	meter ³ (m ³)	0.7646
pint (pt)	decimeter ³ (dm ³)	0.4732
quart (qt)	decimeter ³ (dm ³)	0.9464
gallon (gal)	decimeter ³ (dm ³)	3.785
	meter ³ (m ³)	0.00379
barrel (bbl), (petroleum, 1 bbl=42 gal)	meter ³ (m ³)	0.1590
acre-foot (acre-ft)	meter ³ (m ³)	1,233.0
	hectometer ³ (hm ³)	0.00123
mile ³ (mi ³)	kilometer ³ (km ³)	4.168
Volume per unit time (includes flow)		
foot ³ per second (ft ³ /s)	decimeter ³ per second (dm ³ /s)	28.32
	meter ³ per second (m ³ /s)	0.02832
gallon per minute (gal/min)	decimeter ³ per second (dm ³ /s)	0.06309
	meter ³ per second (m ³ /s)	0.00006
barrel per day (bbl/d), (petroleum)	decimeter ³ per second (dm ³ /s)	0.00184
Mass		
ounce avoirdupois (oz avdp)	gram (g)	28.35
pound avoirdupois (lb avdp)	kilogram (kg)	0.4536
ton, short (2,000 lb)	megagram (Mg)	0.9072
ton, long (2,240 lb)	megagram (Mg)	1.016
Pressure		
pound-force per inch ² (lbf/in ²)	kilopascal (kPa)	6.895
atmosphere, standard (atm)	kilopascal (kPa)	101.3
bar	kilopascal (kPa)	100.0
inch of mercury at 60°F (in Hg)	kilopascal (kPa)	3.377
Temperature		
degrees Fahrenheit (°F)	kelvin (K)	(³)
degrees Fahrenheit (°F)	degrees Celsius (°C)	(⁴)

³Temp K=(temp °F+469.67)/1.8. ⁴Temp °C=(temp °F-32)/1.8.

MINERALS IN THE ECONOMY OF ALABAMA, 2008-2013

By

Dane S. VanDervoort

INTRODUCTION

Non-fuel minerals are mined in all 67 Alabama counties and contribute greatly to the state's economy. Between 2008 and 2013, Alabama continued to be the fourth leading overall domestic producer of clay and shale [bentonite (first out of ten producing states), common clay (second out of 35 producing states), and kaolin (third out of nine producing states)] (Virta, 2010, 2011, 2012, 2013, 2014, 2015), and the fourteenth-leading overall domestic producer of crushed stone and aggregate (Willett, 2011a, 2011b, 2013, 2014, 2015, 2016). During this same period, Alabama remained a major producer of other industrial minerals and materials, including bauxite, cement (portland and masonry), chalk, gemstones, dimension stone, iron oxide pigment, lime, marble, mica, salt, sand and gravel (construction and industrial), and sulfur (fig. 1) (U.S. Geological Survey, 2012, 2013, 2015, 2016a).

In 2008, Alabama's non-fuel industrial mineral production was valued at \$1.3 billion, or 1.8 percent of the U.S. domestic total, ranking it 18th among the states in the total value of non-fuel mineral resource production (fig. 2) (U.S. Geological Survey, 2012). This represents a \$30 million, or almost 2.3 percent, decrease compared with that produced during 2007 (U.S. Geological Survey, 2009, 2012). In 2009, the corresponding values were \$1.02 billion and 1.7 percent, ranking it 17th in the Nation (fig. 2) (U.S. Geological Survey, 2013). This represents a \$240 million, or almost 19 percent, decrease compared with 2008 (U.S. Geological Survey, 2012, 2013). In 2010, the corresponding values were \$969 million and 1.5 percent, ranking it 22nd in the Nation (fig. 2) (U.S. Geological Survey, 2015). This

represents a \$51 million, or 5 percent, decrease compared with 2009 (U.S. Geological Survey, 2013, 2015). In 2011, the corresponding values were \$955 million and 1.3 percent, ranking it 23rd in the Nation (U.S. Geological Survey, 2015). This represents a \$14 million, or just over 1.4 percent, decrease compared with 2010 (U.S. Geological Survey, 2015). In 2012, the corresponding values were \$991 million and 1.3 percent, ranking it 23rd in the Nation (fig. 2) (U.S. Geological Survey, 2016a). This represents a \$36 million, or nearly 3.8 percent, increase compared with 2011 (U.S. Geological Survey, 2015, 2016). In 2013, the corresponding values were \$1.04 billion and 1.4 percent, ranking it 24th in the Nation (fig. 2) (U.S. Geological Survey, 2016a). This was a \$49 million, or just over 4.9 percent, increase compared with 2011 (U.S. Geological Survey, 2016a).

During the period between 2008 and 2013, capital investments in mineral exploration and plant development exceeded more than \$3.21 million and included companies involved in the production of calcium carbonate, nonmetallic mineral services, sand and gravel resources, and toll milling (Alabama Development Office, 2012, 2013, 2014, personal communication). Beach renourishment of coastal Alabama also continued along Gulf Shores and Dauphin Island in order to mitigate and repair sand loss resulting from hurricane and storm-related erosion.

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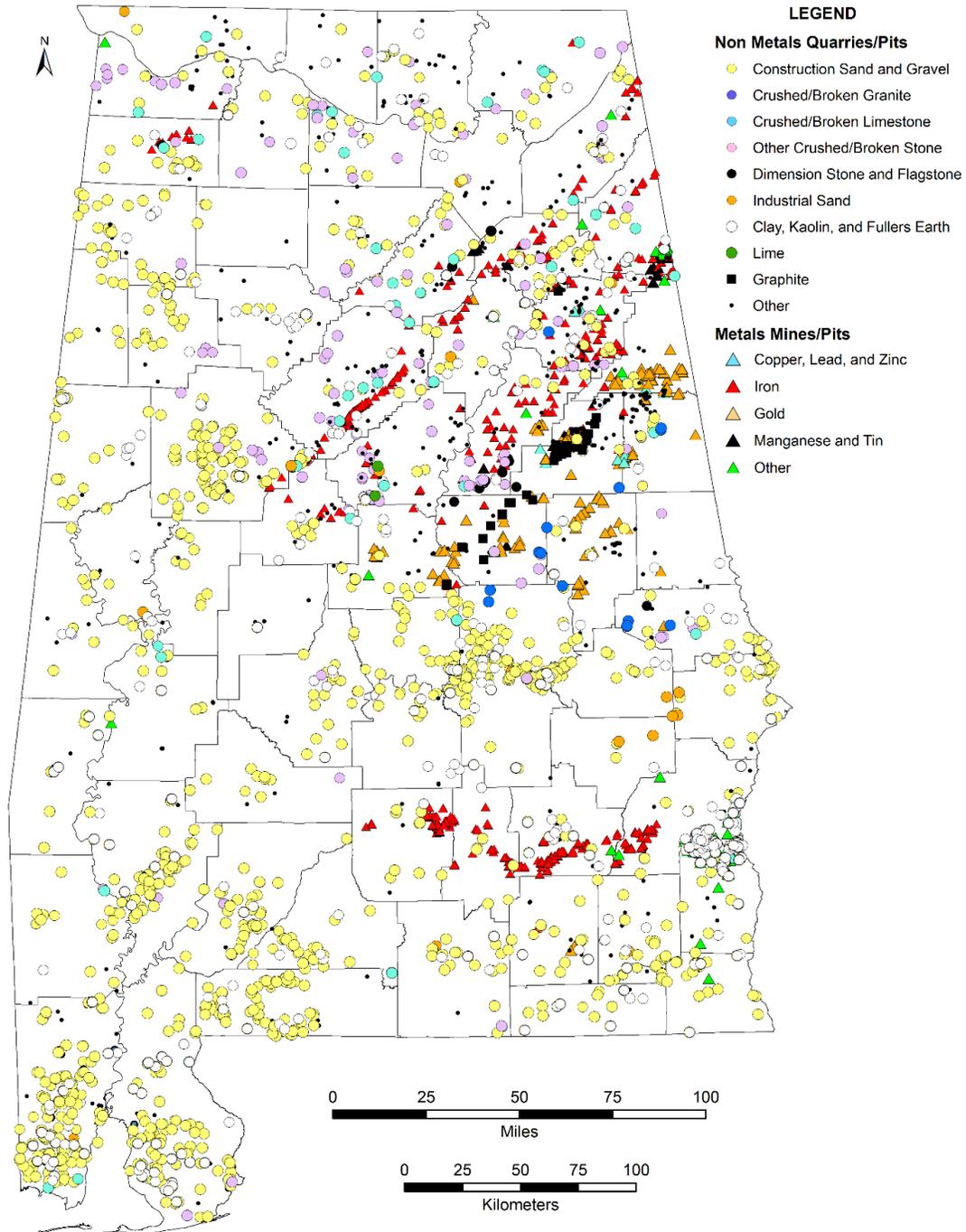


Figure 1.—Map depicting quarries, pits, and mines of current and past producers of non-fuels mineral resources in Alabama (N = 3,843). Location information is from the U.S. Environmental Protection Agency (EPA) Enforcement and Compliance History (ECHO) facilities database (n = 2,059) (U.S. Environmental Protection Agency, 2017) and U.S. Geological Survey Mineral Resource Data System (MRDS) GIS file (n = 1,784) (U.S. Geological Survey, 2017b).

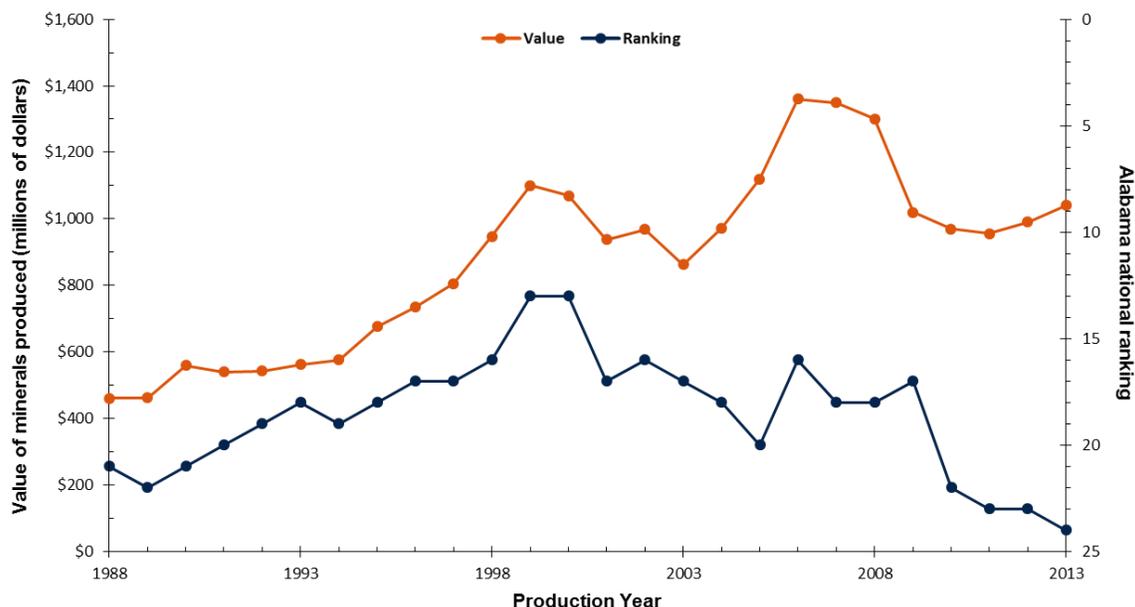


Figure 2.—Value of industrial and construction mineral production in Alabama, 1988-2013.

MINERALS RELATED ACTIVITY

Economically exploitable or potential mineral resources are located in every physiographic province found in Alabama (fig. 3). During fiscal year 2008 (October 1, 2007 to September 30, 2008), 179 individual companies were involved in the mining and production of non-fuel industrial mineral resources in the state (Appendix A.1), producing approximately 63.9 million metric tons of material (table 1) and employing 2,533 people (table 2) (Alabama Department Labor, 2008:). The average annual wage for all mining positions in Alabama during this time was \$66,942 compared with \$38,734 for all other industries (National Mining Association, unpub. data, April 19, 2017). In fiscal year 2009 (October 1, 2008 to September 30, 2009), 184 individual companies were involved in the mining and production of non-fuel industrial mineral resources in the state (Appendix A.2), producing approximately 50.7 million metric tons of material (table 1) and employing 2,150 people (table 2) (Alabama Department Labor, 2009; Appendix A.2). The average annual wage for all mining positions in

Alabama during this time was \$68,151 compared with \$38,322 for all other industries (National Mining Association, unpub. data, April 19, 2017). In fiscal year 2010 (October 1, 2009 to September 30, 2010), 160 individual companies were involved in the mining and production of non-fuel industrial mineral resources in the state (Appendix A.3), producing approximately 52.2 million metric tons of material (table 1) and employing 2,198 people (table 2) (Alabama Department Labor, 2010). The average annual wage for all mining positions in Alabama during this time was \$74,484 compared with \$39,267 for all other industries (National Mining Association, unpub. data, April 19, 2017). In fiscal year 2011 (October 1, 2010 to September 30, 2011), 147 individual companies were involved in the mining and production of non-fuel industrial mineral resources in the state (Appendix A.4), producing approximately 46.7 million metric tons of material (table 1) and employing 2,316 people (table 2) (Alabama Department Labor, 2011). The average annual wage for all mining positions in Alabama during this time was \$79,108 compared with \$40,106 for all other

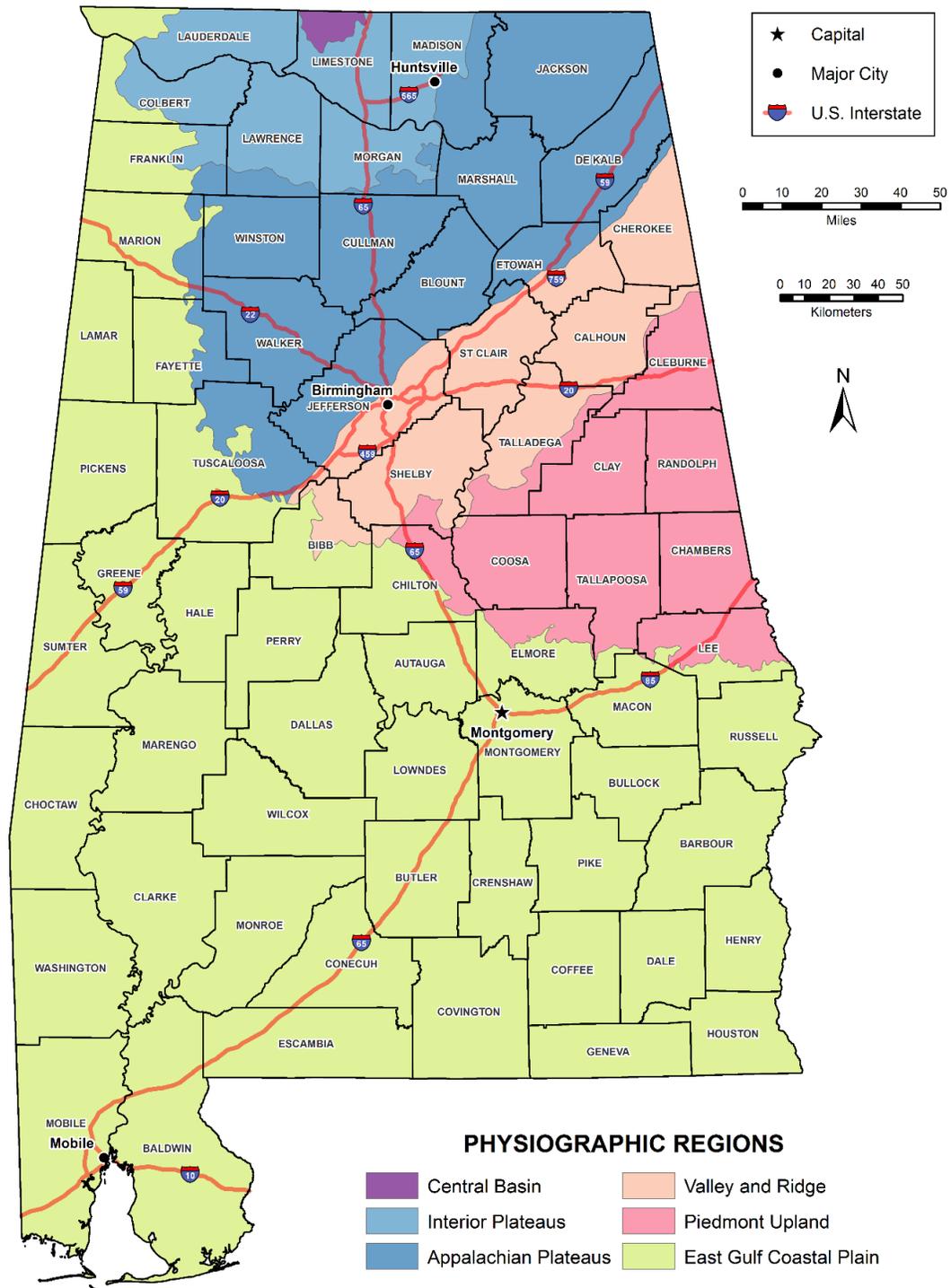


Figure 3.—Map depicting the physiographic regions comprising Alabama in relation to counties, interstate highways, and major cities (modified from Sapp and Emplaincourt, 1975).

Table 1—Production (metric tons) of nonfuel industrial mineral resources in Alabama for fiscal years 2008-2013

Commodity	2008	2009	2010	2011	2012	2013
Limestone	37,249,863	28,641,326	28,340,424	28,059,234	26,620,904	26,062,484
Sand and gravel	10,501,098	10,797,943	9,712,610	8,238,451	6,832,080	7,450,872
Sand and clay	4,843,264	2,733,590	2,110,998	1,919,641	1,041,370	1,142,945
Dolostone	2,907,245	1,064,851	4,836,325	1,527,393	1,453,976	5,941,362
Clay	2,173,098	1,236,603	1,313,046	1,220,936	953,321	1,122,433
Marble	1,965,387	1,815,821	1,514,161	1,893,288	760,289	24,494
Granite	1,642,730	1,923,778	2,006,970	1,885,818	1,249,092	2,227,508
Sandstone	1,279,494	1,124,692	1,041,858	862,948	204,400	405,704
Sand	662,242	855,928	878,439	758,444	521,677	846,776
Quartzite	279,632	227,415	175,830	143,335	149,942	94,529
Shale	162,812	169,903	149,770	121,380	117,756	154,993
Chert	106,032	80,395	97,131	7,484	19,999	14,577
Bauxite	89,626	27,433	53,654	57,262	116,258	122,702
Hematite	5,236	5,236	5,236	1,212	4,099	4,733
Mica	505	771	953	1,422	786	0
TOTAL	63,868,263	50,705,685	52,237,405	46,698,248	40,045,949	45,616,112

Data source: Modified from the Alabama Department of Labor, Mining and Reclamation Division, Mine Safety and Inspection Section, Annual Statistical Reports for Fiscal Years 2008-2013.

industries (National Mining Association, unpub. data, April 19, 2017). In fiscal year 2012 (October 1, 2011 to September 30, 2012), 114 individual companies were involved in the mining and production of non-fuel industrial mineral resources in the state (Appendix A.5), producing approximately 40.0 million metric tons of material (table 1) and employing 1,583 people (table 2) (Alabama Department Labor, 2012). The average annual wage for all mining positions in Alabama during this time was \$76,542 compared with \$41,075 for all other industries (National Mining Association, unpub. data, April 19, 2017). In fiscal year 2013 (October 1, 2012 to September 30, 2013), 125 individual companies were involved in the mining and production of non-fuel industrial mineral resources in the state (Appendix A.6), producing approximately 45.6 million metric tons of material (table 1) and employing 1,615 people (table 2) (Alabama Department Labor, 2013). The

average annual wage for all mining positions in Alabama during this time was \$78,595 compared with \$41,399 for all other industries (National Mining Association, unpub. data, April 19, 2017).

These companies operated an annual average of 62 granite, limestone-dolostone, marble, and sandstone-quartzite operations for dimension and crushed stone, producing an average of more than 35.5 million metric tons annually between 2008 and 2013 (Alabama Department Labor, 2008, 2009, 2010, 2011, 2012, 2013). The production of dimension and crushed stone has trended upward since 1994. However, since 2008, the state has failed to match the record high annual production of 58.3 million metric tons set in 2007 (Dean, 2008; Alabama Department Labor, 2008, 2009, 2010, 2011, 2012, 2013). Additionally, an annual average of 141 operations for clay-shale, sand, and gravel were active between 2008 and 2013 (Alabama Department Labor, 2008, 2009,

Table 2—Number of employees involved in the mining of nonfuel industrial mineral resources in Alabama for fiscal years 2008-2013

Commodity	2008	2009	2010	2011	2012	2013
Limestone/dolostone	1,164	984	869	1,023	639	746
Sand and gravel	402	428	392	350	345	364
Sand and clay	196	216	157	198	103	101
Clay/shale	227	194	163	168	210	176
Marble	285	52	370	344	75	5
Granite	76	82	75	74	54	60
Sandstone/quartzite	72	64	65	51	31	46
Sand	67	92	74	72	85	79
Chert	8	9	6	6	5	7
Bauxite	12	12	4	10	14	16
Hematite	16	12	12	8	16	15
Mica	8	5	11	12	6	0
TOTAL	2,533	2,150	2,198	2,316	1,583	1,615

Data source: Modified from the Alabama Department of Labor, Mining and Reclamation Division, Mine Safety and Inspection Section, Annual Statistical Reports for Fiscal Years 2008-2013.

2010, 2011, 2012, 2013). Several other industrial mineral operations related to the state's coal mining industry in the Black Warrior Basin, such as the production of fireclay, grit-sand, shale, and sandstone, were also active during this period (Alabama Department Labor, 2008, 2009, 2010, 2011, 2012, 2013).

Between 2008 and 2013, the Geological Survey of Alabama continued to publish 1:24,000-scale geological maps of the Alabama Valley and Ridge Province in support of the State Geologic Survey Mapping (STATEMAP) component of the U.S. Geological Survey's National Cooperative Geologic Mapping Program (NCGMP) (fig. 3). This geological mapping is used in a variety of ways in the more rapidly urbanizing parts of the state and plays a critical role in the delineation of current and potential economic mineral resource deposits. For example, geological mapping aids in the identification and exploration of industrial mineral resources (for example, sand, gravel, clay, shale, crushed stone, and high-calcium limestone), urban and industrial planning and development, planning for and mitigation of geologic hazards (for example,

sinkholes and landslides), and the protection of groundwater and surface-water resources, as required by the Alabama Department of Environmental Management. Published geological maps include the Concord (Irvin, 2008) and Wannville quadrangles (Osborne, 2008); the Stevenson (Dinterman, 2009) and Hollywood quadrangles (Irvin, 2009); the Guntersville Dam (Osborne, 2010), Mt. Carmel (Dinterman, 2010), and Swearingin (Irvin, 2010) quadrangles; the Francis Mill quadrangle (Thomas and Osborne, 2011) (fig. 4); the Harpersville (Thomas and Drahovzal, 2012) and Bridgeport (Irvin, 2012) quadrangles; and the Paint Rock (Osborne, 2013), Pell City (Thomas and Ward, 2013), Ohatchee (Osborne and Thomas, 2013), Eulaton (Thomas and Irvin, 2013), and Scottsboro (Raymond, 2013) quadrangles). These geological maps and quadrangle reports are available for purchase in the Publications Office at the Geological Survey of Alabama, and digital data is available for download for some quadrangles through the Geologic Mapping section of the Geologic Investigations Program webpage on the Geological Survey of Alabama website.

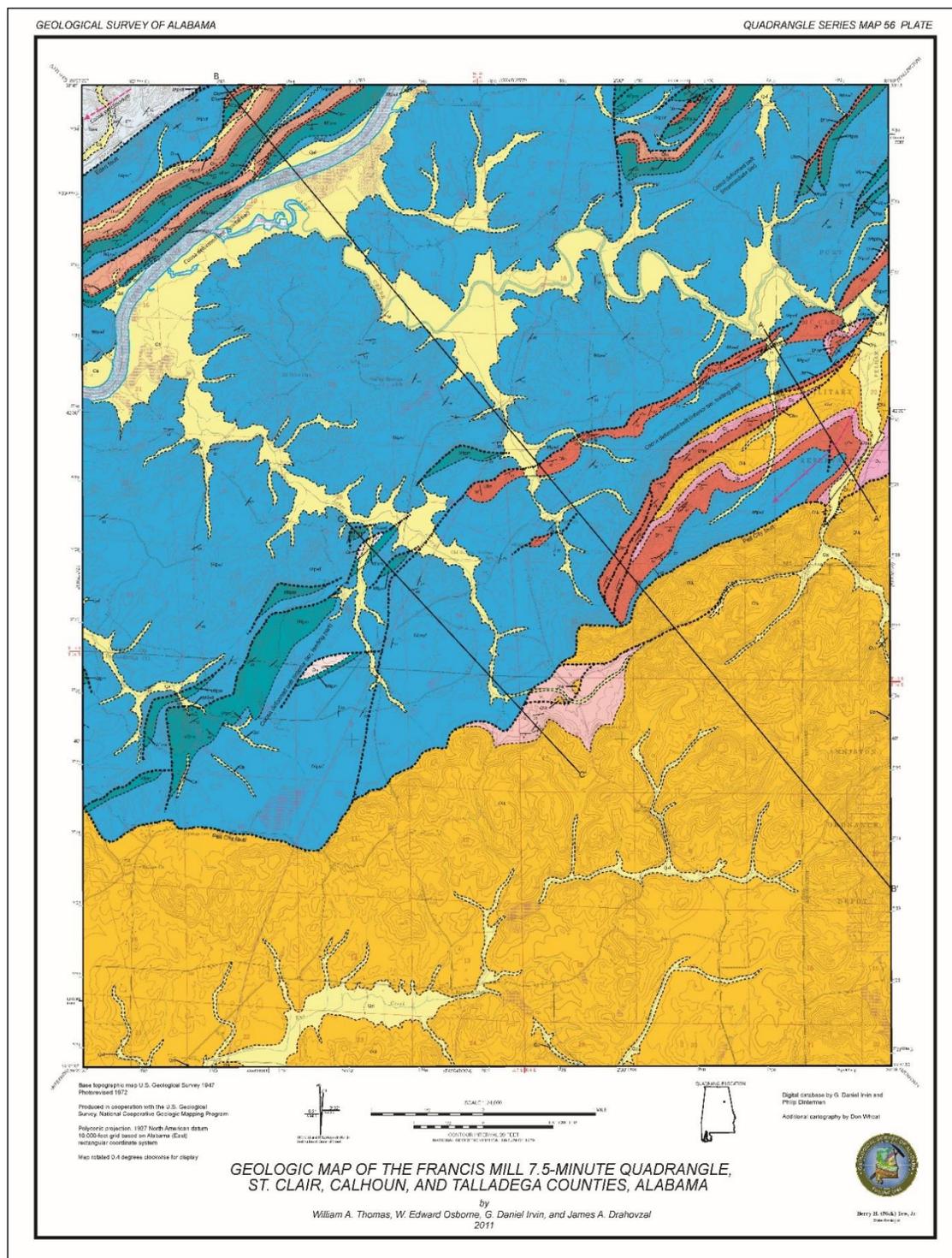


Figure 4.—Example of a quadrangle series geologic map, available for selected areas, from the Geological Survey of Alabama (modified from Thomas and others, 2011).

In addition, the Alabama Department of Transportation continued maintenance and construction of more than 11,000 miles of highway annually. This work represents one of the largest uses of concrete, asphaltic and bituminous base, and aggregate (stone and gravel) in the state (Dean, 2008). A revised listing of approved sources of coarse and fine aggregates is updated annually by the Materials and Tests Bureau and is available on the Alabama Department of Transportation website (Alabama Department of Transportation, 2016).

MINING AND PRODUCTION TRENDS

More than 20 types of mineral and rock products are mined in Alabama. Inasmuch as demand for specific products and minerals changes with technological advancement and economic circumstances, a particular mineral that has been mined in the past may be subeconomic at present or at some point in the future. Conversely, a mineral commodity with subeconomic status in the past or at present may be valuable in the future. Improvements in the availability of electrical power, water resources, and/or transportation could result in changes in the economic status of a non-fuel mineral resource.

Use of current and historical non-fuel mineral production data can provide insight into mineral exploration, consumption, and trade for assessing the economic and technical development of Alabama's mineral industries. The earliest commercial non-fuel mineral production operation in the state began production in 1780 and used clay to make brick, tile, and pottery in Mobile County (Hamilton, 1897, p. 322). Other early commercial non-fuel mineral production occurred in 1809 in Washington County for salt, 1818 in Franklin County for iron ore, 1827 in Tuscaloosa County for sandstone (building stone), 1831 in Chilton County for gold, 1838 in Talladega County for marble, and 1840 in Shelby County for lime and limestone (Dean, 2008). Mineral production was first recorded in Alabama in 1840 for clay (brick and earthenware), stone

(limestone and marble), iron, and gold (Dean, 2002). Since the 1840s, limestone and dolostone (and associated manufacture of lime), sand and gravel, iron ore (up to 1975), clay, marble, bauxite, and sandstone have been the principal minerals produced in Alabama (Dean, 2008).

BAUXITE

Bauxite is a mixture of hydrated aluminum oxide minerals (principally gibbsite) and mineral impurities formed by the weathering of aluminum-rich rocks. The major economic bauxite deposits in Alabama occur within kaolinitic clay deposits in the Barbour-Henry Counties (Eufaula) bauxite district (fig. 1) (Clarke, 1973). Bauxite was first mined in Alabama in 1891 from Rock Run in Cherokee County; and in the 1940s, ore from Calhoun, Cherokee, DeKalb, St. Clair, and Talladega Counties was mined and shipped to Reynolds Metals Company at Muscle Shoals for experimental production of aluminum (Cloud, 1967). Production began in 1927 and has since been maintained on a continuous basis (Cloud, 1967; Clarke, 1973). Because of the irregular distribution of these deposits, considerable exploratory test drilling must be done prior to mining (Clarke, 1973). Alabama bauxite from the Eufaula district is used in making high-temperature refractory products, abrasives, and chemicals. Between fiscal years 2008 and 2013, approximately 466,935 metric tons of bauxite were produced in the Eufaula district (tables 2, 3) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013).

BUILDING STONE

Many stone materials in Alabama are used for building construction or ornamental stone, including limestone, granite, marble, quartzite, and sandstone (fig. 1). Naturally dimensioned blocks and slabs of sandstone and limestone have been widely used in north Alabama. A unique tan- to buff-colored sandstone from the Pottsville Formation is produced from Blount and Cherokee Counties for use as exterior building stone, walkways, and patios (fig. 5) (Fousek, 2002).

Table 3—Production (metric tons) of select clays in Alabama by county for fiscal years 2008-2013

Year	Brick, common clay, and fuller's earth	Shale	Kaolin/kaolinite	Bentonite
2008	2,073,266	162,812	89,626	99,832
2009	1,176,388	169,903	27,433	60,215
2010	1,236,997	149,770	53,654	76,049
2011	1,138,885	121,380	57,262	82,052
2012	875,984	117,756	116,258	77,337
2013	1,055,278	154,993	122,702	67,155
TOTAL	7,556,798	876,614	466,935	462,640

Data source: Modified from the Alabama Department of Labor, Mining and Reclamation Division, Mine Safety and Inspection Section, Annual Statistical Reports for Fiscal Years 2008-2013.

In addition, limestone from the Bangor Limestone is quarried in Franklin County and white marble from the Gantts Quarry Formation (Sylacauga Marble Group) is quarried in Tallapoosa County (fig. 5).

CHERT

Chert is a siliceous stone often associated with weathered limestone and/or dolostone. As such, numerous small scale quarries are developed in outcrops of chert-bearing deposits (for example, Fort Payne Chert and Knox Group) in northern and eastern Alabama (fig. 6). It is a low value mineral commodity, but where a need exists for fill or base material for roads, chert deposits are of economic value (Beg and others, 1983). Between fiscal years 2008 and 2013, approximately 325,620 metric tons of chert were produced from quarries located primarily in Cherokee, Etowah, and St. Clair Counties (table 2) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013).

CEMENT

The cement-manufacturing industry is a major consumer of raw materials in the state (Smith and Epperson, 1984). This industry began in Alabama in 1895 and has since played a key role in the development of the state (Eckel, 1913). Primary uses are for

ready-mix concrete, concrete products, building materials, and highway construction. The principal raw materials used in making cement are limestone and/or chalk, clay and/or shale, silica, and iron oxide. Lime and limestone used in the manufacture of cement is quarried from the Pride Mountain Formation in Colbert County; the Chickamauga Limestone in Blount County; the Lenoir, Little Oak, and Newala Limestones in Shelby County; and the Demopolis Chalk in Sumter County.

CLAY AND SHALE

Clay and shale of variable composition and character occur throughout Alabama (figs. 1, 7, 8) (see Clarke, 1963, 1966, 1968a, 1968b, 1971). Bentonite, kaolin, fuller's earth, fireclay, common clays, and shale are all mined in the state and used for the production of brick, tile, refractory and ceramic products, clay pipe, pottery, and lightweight aggregate (Smith and Wade, 1986). Brick plants are located in Bessemer, Coosada, Huntsville, Montgomery, Leeds, Phenix City, Ragland, and Selma, tile plants are located in Fayette and Lauderdale Counties (Dean, 1992). Between 2008 and 2013, clay and shale production in the state totaled more than 9.3 million metric tons (tables 2, 3) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013) and

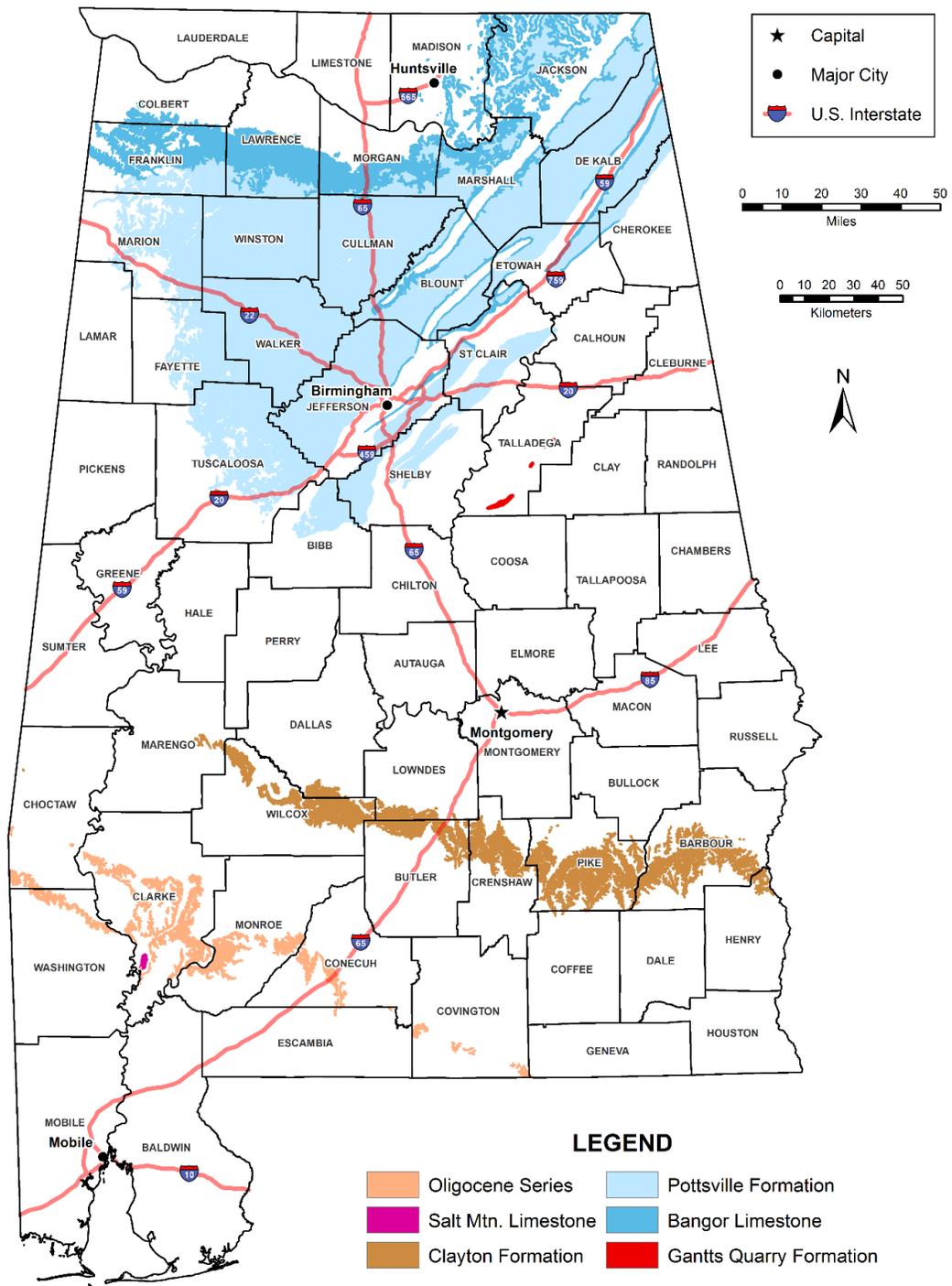


Figure 5.—Map depicting the generalized distribution of major sources of building stone in Alabama (from Szabo and others, 1988).

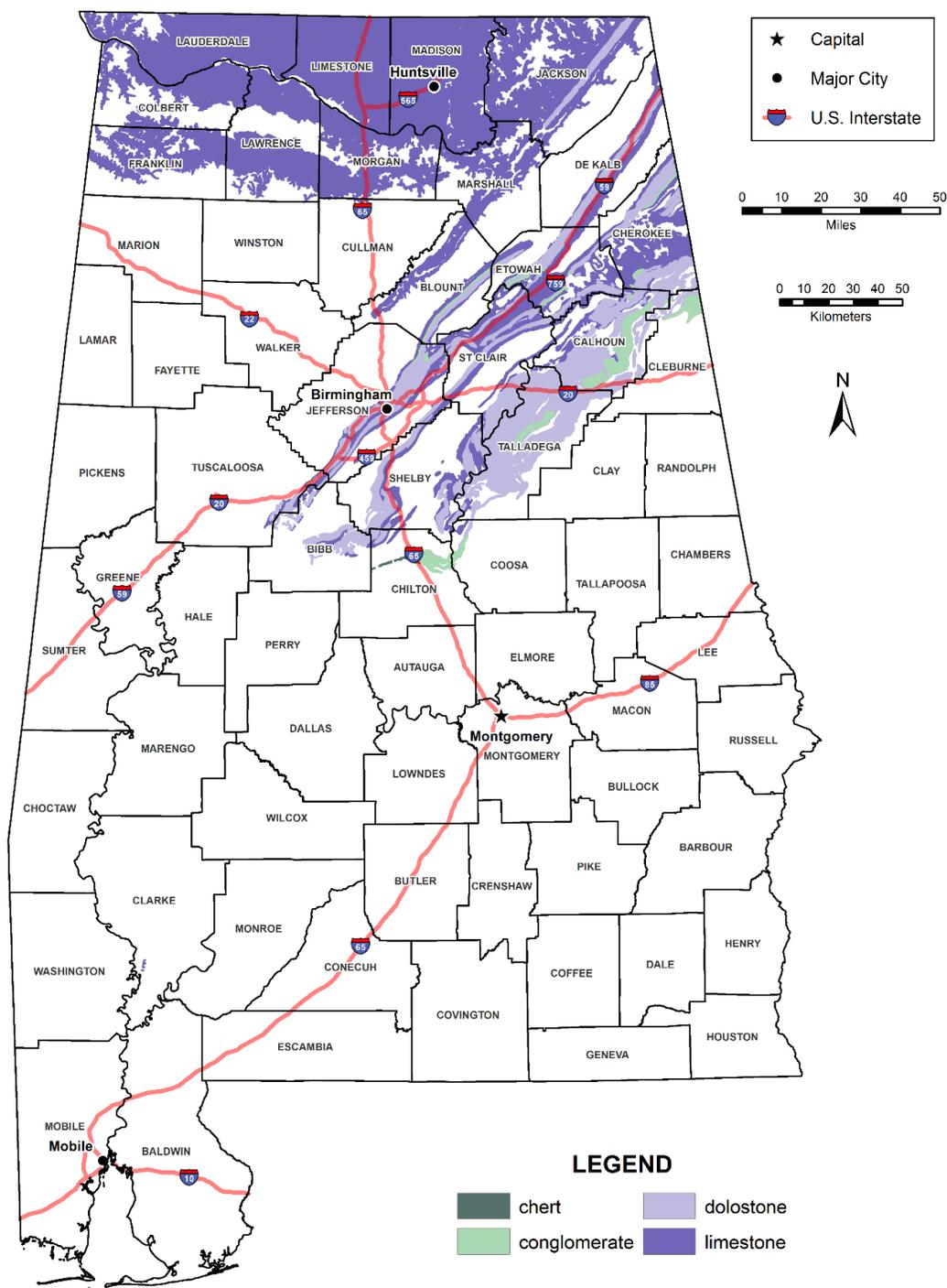


Figure 6.—Map depicting the generalized distribution of the major chert-bearing lithologies in Alabama (modified from Szabo and others, 1988). Chert is also common constituent of many Cretaceous and Quaternary deposits found throughout the state (not shown).

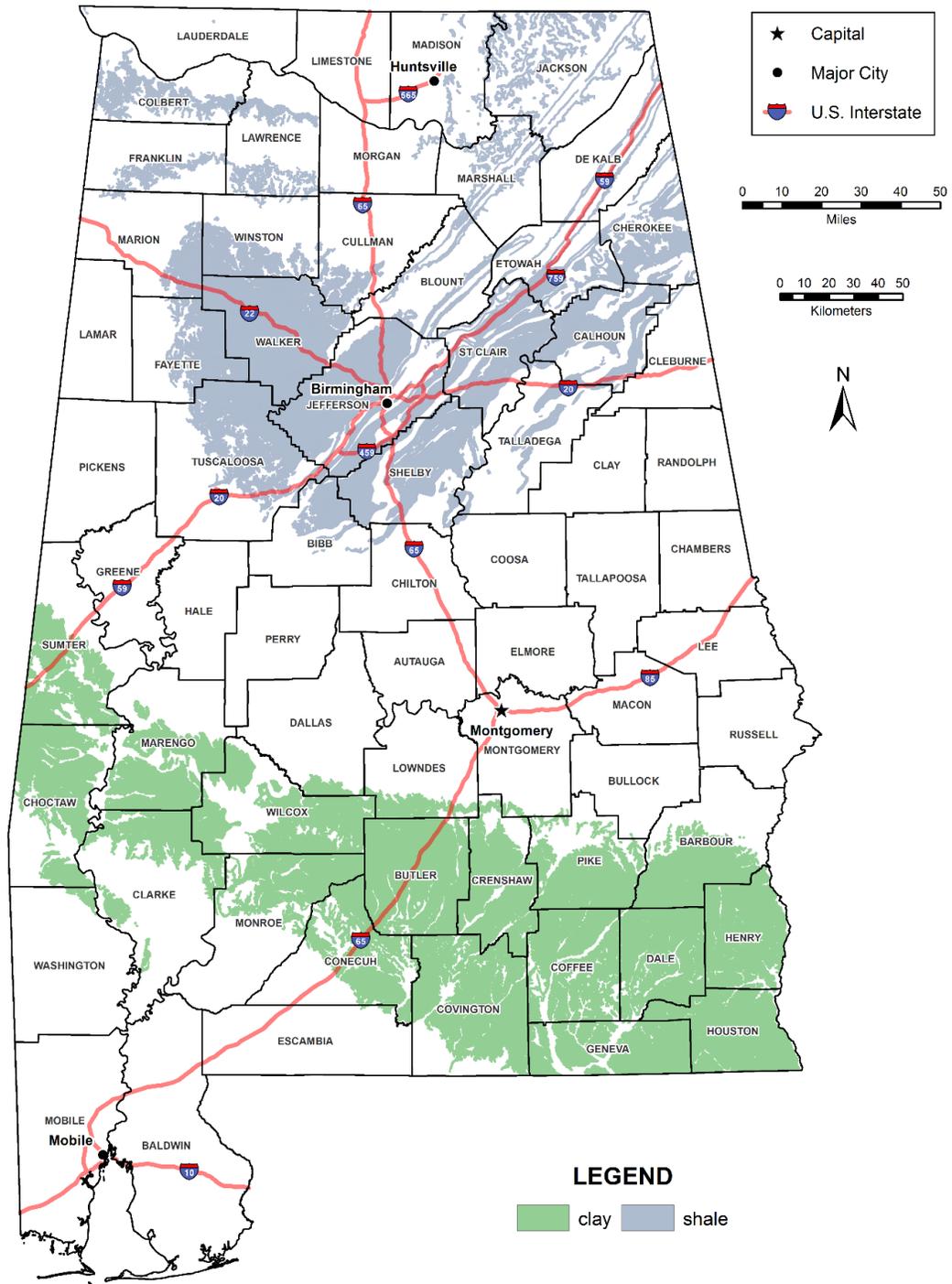


Figure 7.—Map depicting the generalized distribution of major clay and shale resources in Alabama (modified from Szabo and others, 1988).



Figure 8.—Photograph of varicolored clays and shales along the contact between the East Gulf Coastal Plain and Appalachian Plateaus, south of Hamilton in Marion County, Alabama (from Dean, 2008).

had a valuation of approximately \$122.76 million (U.S. Geological Survey, 2012, 2013, 2015, 2016a). During this same period, total shale production exceeded 876,616 metric tons (table 3), and came primarily from deposits located in Jefferson, Lee, Shelby, and St. Clair Counties (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013).

BENTONITE

Bentonite (smectite clays), a weathering product of volcanic ash, occurs near the base of the Ripley Formation at Sandy Ridge in southeastern Lowndes County (Hosterman, 1984). Non-swelling calcium bentonite with a high plasticity and a very high leveling strength is mined from Sandy Ridge and processed for use in agricultural industries and as a binder in foundry sand (Beg and others, 1983). Since mining began in 1964, greater than 4.81 million metric tons of

bentonite has been produced (Dean, 1992), and since 1971, an average of more than 166,000 metric tons of bentonite has been produced annually (Dean, 1991). Bentonite also has been reported in Cretaceous deposits of Montgomery County and from the Tertiary in Clarke County (Hosterman and Patterson, 1992). Between 2008 and 2013, bentonite production in Alabama totaled more than 462,640 metric tons (table 3) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013).

FIRECLAY

Fireclay is a siliceous clay that is rich in hydrous aluminum silicates, useful for the manufacture of refractory ceramic products such as crucibles and firebrick. Many of the clays that occur below coal seams in the Warrior Basin of Alabama (in other words, underclays) commonly have refractory characteristics (Fousek and Cook, 1997).

These underclays are distributed throughout the Black Warrior basin in north-central Alabama—Blount, Fayette, Jefferson, Marion, Tuscaloosa, and Walker Counties—and can be mined in conjunction with coal. The clay that occurs below the Mary Lee coal group in the Cordova district of Walker County is used in making structural products, such as brick and tile (Beg and others, 1983). Siliceous fireclay has also been mined in Calhoun and Shelby Counties (Fousek and Cook, 1997). Since 1925, an estimated 5.44 million metric tons of fireclay has been mined from Walker County, representing an estimated 38 percent of the state's total refractory clay production (Dean, 1995).

KAOLIN

Kaolin, popularly known as china clay, is the best known of the pottery clays. It is composed principally of the mineral kaolinite (hydrous aluminum silicate) and has been produced from deposits in the East Gulf Coastal Plain for more than a century (see Ries, 1903). Economic deposits are associated with bauxite in the Eufaula district in Barbour and Henry Counties (fig. 1) (Clarke, 1973). Kaolin production from the Eufaula district began in 1958 (Clarke, 1973), and between 2008 and 2013, more than 466,927 million metric tons of material has been mined here (table 3) (U.S. Geological Survey, 2012, 2013, 2015, 2016a). Kaolin was also mined in Marion County from 1939 to 1977, with an estimated 604,200 metric tons mined from 1942 to 1977, for use in floor and wall tiles, firebrick, and as a filler in paper and fertilizer (Dean, 1992). Kaolin is also mined in St. Clair County for use in manufacturing cement (Dean, 1992). Between 2008 and 2013, kaolin production in Alabama totaled more than 466,930 metric tons (table 3) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013).

FULLER'S EARTH

Clay suitable for the manufacture of lightweight aggregate occurs in a zone that extends from western Wilcox County through

Marengo County and across southern Sumter County (fig. 1) (Clarke and Tyrrell, 1976). Fuller's earth in the Porters Creek Formation is mined near Livingston in Sumter County for production of lightweight aggregate; lightweight aggregate is made from clay or shale containing carbonaceous or calcareous material (Clarke and Tyrrell, 1976). Heating it to fusion temperature produces carbon dioxide gas, which shapes vesicles, and upon cooling, the expanded product is characterized by numerous cavities. This material can then be used in horticultural applications; as low density, or lightweight, aggregate in making concrete blocks and nonskid pavement; and as an absorbent for oil, grease, and animal waste (Hosterman and Patterson, 1992).

CRUSHED STONE

Rock types in Alabama with good physical characteristics for crushed stone (in other words, loose unit mass, bulk specific gravity, and absorption and abrasion values) include limestone, dolostone, granite, marble, quartzite, and sandstone (fig. 1). The principal uses include construction (for example, aggregate), agricultural, chemical and metallurgical (for example, cement and lime manufacture), and other (for example, including water treatment, mine dusting, and as fillers and extenders) (Dean, 2008). The total value of all crushed stone produced in the state between 2008 and 2013 was 223.7 million metric tons of material valued at nearly \$1.93 billion (U.S. Geological Survey, 2012, 2013, 2015, 2016a).

GEMSTONES AND OTHER MINERALS

A variety of gemstones and other minerals of value occur in Alabama. These minerals include amethyst, beryl (emerald), calcite, fluorite, gypsum, magnetite, quartz (agate), rutile, tourmaline, turquoise, and wavellite (Cook and Smith, 1982). In 1990 "star blue quartz" was designated as the official gemstone for Alabama. This gemstone is asteriated (rutilated) light blue-gray quartz from the Alabama Piedmont

Upland in Chambers County (fig. 3). It exhibits a bluish cast with chatoyance when viewed in direct sunlight, and when faceted, exhibits a strong, central, six-ray star (Rohrbach, 1989). Between 2008 and 2013, more than \$568,000 worth of gemstones were produced in the state (U.S. Geological Survey, 2012, 2013, 2015, 2016a).

GRANITE

Granite is a plutonic rock composed primarily of the minerals feldspar, quartz, and mica. Rocks with granitic mineral composition occur throughout the Alabama Piedmont Upland (figs. 1, 9) (see Drummond and Green, 1987). Such stone has often been quarried for use as dimension stone and crushed stone; granite has been quarried for crushed stone on an intermittent

basis since 1936 (Dean, 1993). Granitic gneiss is presently quarried in Coosa, Elmore, Lee, and Randolph Counties for use as crushed stone, riprap, and aggregate (Beg and others, 1983). Between 2008 and 2013, granite production in the Alabama totaled more than 10.9 metric tons (table 4) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013).

IRON OXIDE PIGMENT (OCHER)

Iron oxide pigment, or ocher, a clayey and unconsolidated form of the minerals limonite and hematite, occurs in sedimentary and residual deposits of the East Gulf Coastal Plain Province in Autauga, Barbour, Bibb, Clarke, Elmore, Marion, Monroe, and Tuscaloosa Counties, and of the Valley and Ridge Province in Calhoun, Cherokee,

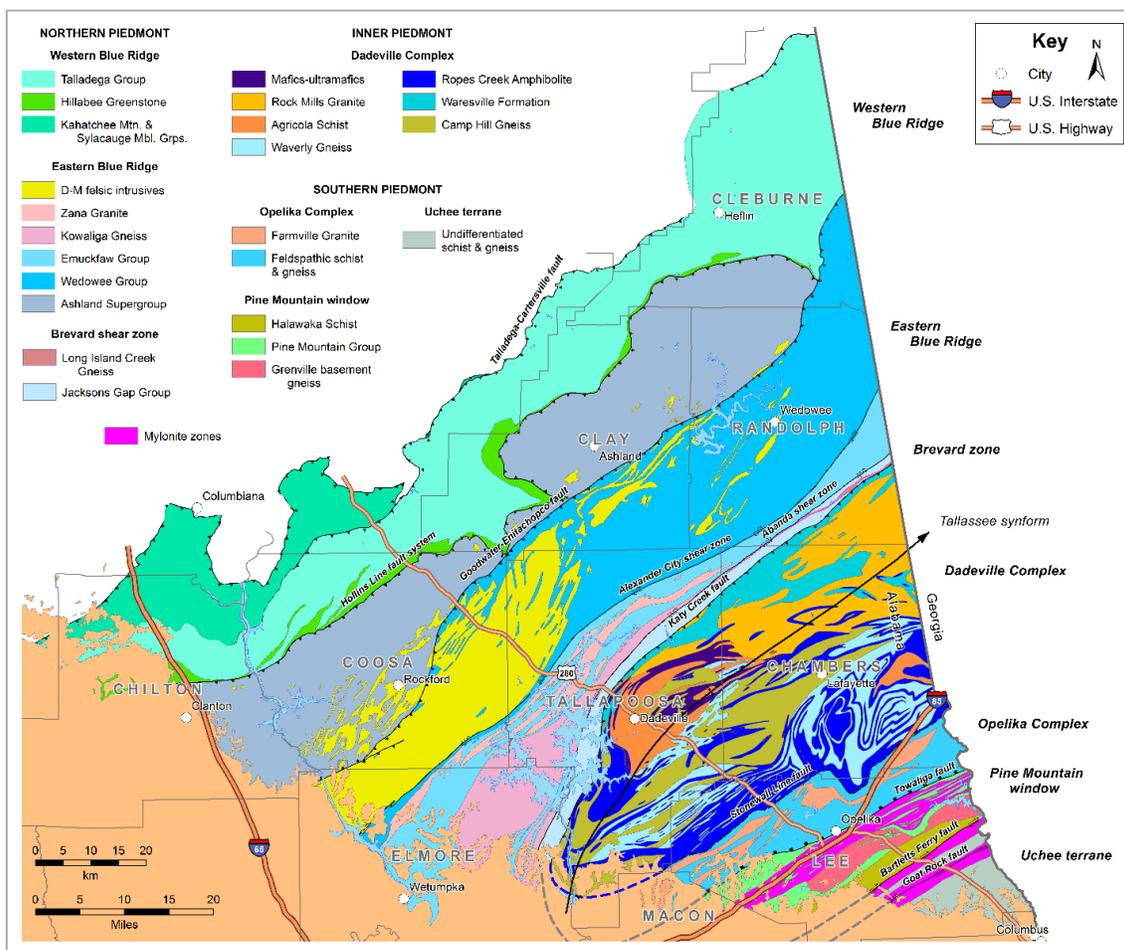


Figure 9.—Map depicting the generalized distribution of major units comprising the Piedmont Upland in east-central Alabama (modified from Szabo and others, 1988).

Table 4–Production (metric tons) of granite in Alabama by county for fiscal years 2008-2013

Year	Coosa	Elmore	Randolph	Lee
2008	275,292	144,398	351,956	871,085
2009	276,522	125,743	206,095	1,315,418
2010	408,743	162,545	393,203	1,042,480
2011	404,832	140,958	438,182	901,846
2012	477,780	135,610	505,336	1,120,106
2013	351,218	247,060	454,357	1,174,874
TOTAL	2,194,387	956,314	2,349,129	6,425,809

Data source: Modified from the Alabama Department of Labor, Mining and Reclamation Division, Mine Safety and Inspection Section, Annual Statistical Reports for Fiscal Years 2008-2013.

Shelby, St. Clair, and Talladega Counties (figs. 1, 3) (Beg and others, 1983). Between 2008 and 2013, Alabama was the second leading producer of iron oxide pigment among the three producing states (Georgia-first; Virginia-third) (U.S. Geological Survey, 2012, 2013, 2015, 2016a, 2016b, 2017 a).

LIME

Lime is principally calcium oxide (CaO) or a mixture of CaO and magnesium oxide (MgO) produced by the calcining of limestone or dolostone. The major uses of lime include steel making, paper manufacture, water purification, and agricultural soil conditioning. In Alabama, the Ordovician Newala Limestone is the primary source of raw material for the production of lime (fig. 1) (Puckett and others, 1990). Large-scale lime production by the Shelby Lime Company began in the 1850s near Montevallo (Dean, 1993). Between 2008 and 2013, lime production in the state totaled more than 13.12 million metric tons and had a valuation of more than \$1.54 billion (U.S. Geological Survey, 2012, 2013, 2015, 2016a).

LIMESTONE AND DOLOSTONE

Limestone suitable for crushed stone and consisting principally of calcium carbonate is widely distributed in Alabama (figs. 1, 10). Most limestone quarries in the state are open pits, but underground mining has been used

in Etowah, Franklin, Jefferson, Marshall, and Shelby Counties (figs. 1, 10, 11) (Wade and Smith, 1985). The limestone units of Alabama have a wide variety of chemical and physical properties and are suitable for various applications (Beg, 1984). Limestone of varying grade is used for flux, aggregate, dimension stone, and soil conditioner, and in many industrial processes including the manufacture of glass, refractories, fillers, abrasives, cement, lime, and chemicals (Beg and others, 1983). The Mississippian Bangor and Tusculumbia Limestones are quarried throughout northern Alabama, and, in Jefferson and Shelby Counties, the Cambrian Conasauga Formation and Ordovician Newala Limestone are extensively quarried (Rheams, 1992).

Chalk, a soft, fine-textured variety of limestone, occurs in the East Gulf Coastal Plain Province of central Alabama (figs. 3, 10) (Szabo and Beg, 1977). The Demopolis Chalk of the Selma Group has been mined for use in the manufacture of Portland cement and agricultural soil conditioner since 1900 (Eckel, 1913). At St. Stephens in Washington County, the Marianna Limestone was mined from 1927 to 1980 for use in cement, and between 1942 and 1980 more than 23.5 million metric tons of limestone was mined (Dean, 1992).

Carbonate rock that consists principally of calcium magnesium carbonate (in other words, dolostone) occurs extensively in

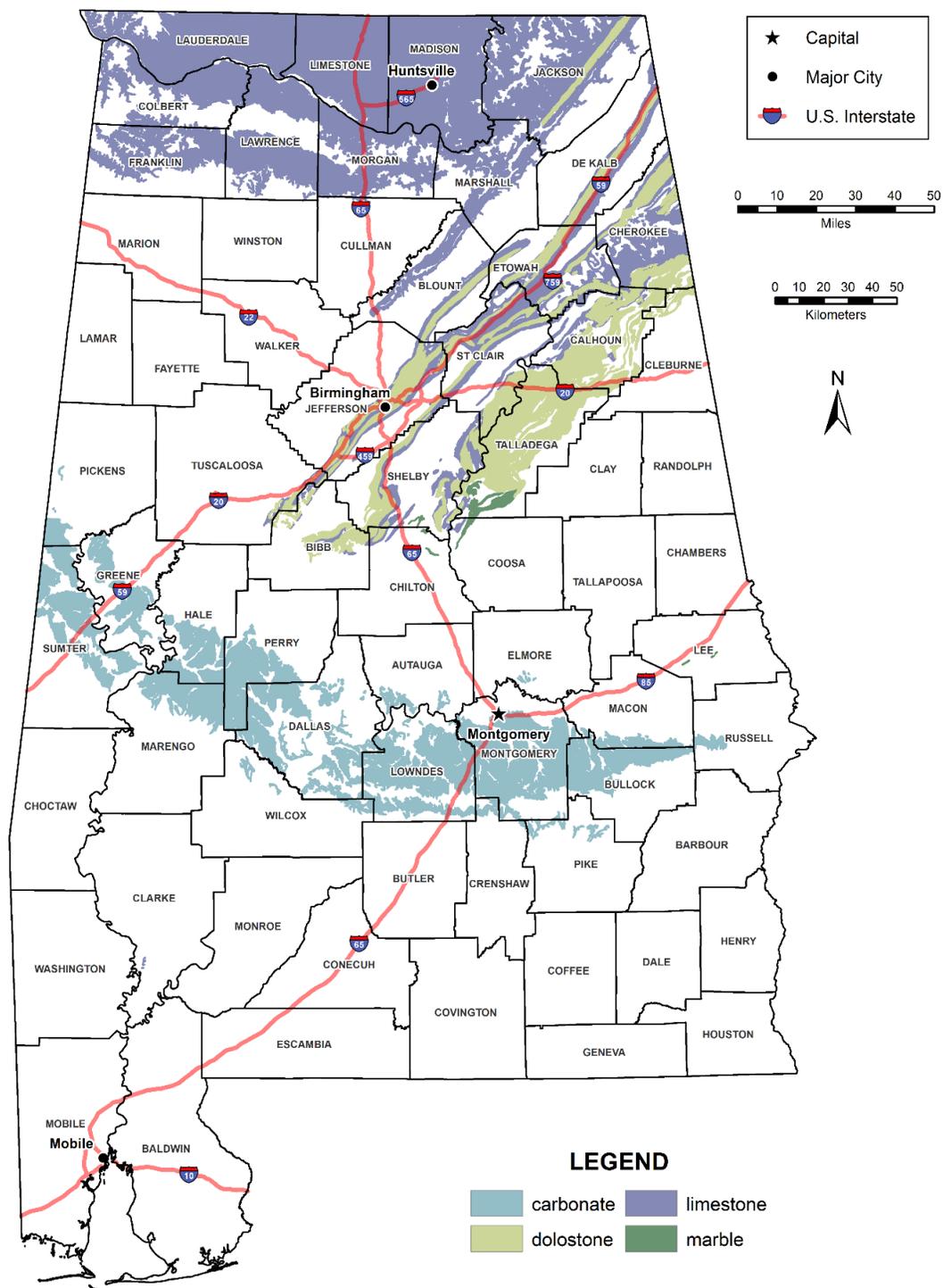


Figure 10.—Map depicting the generalized distribution of major limestone, dolostone, marble, and carbonate—for example, chalk—resources in Alabama (modified from Szabo and others, 1988).



Figure 11.—Photograph of a large-scale limestone-dolostone quarry at Glencoe in Etowah County, Alabama (photo courtesy of Vulcan Materials Company).

northeastern Alabama (fig. 10) (Dean, 1987). Beg (1984) reported on the distribution and characteristics of dolomites in Alabama. Dolostone is used in the manufacture of rock wool, in the chemical industry to extract metallic magnesium, in agricultural applications to condition soil, as flux, and as an alternative to limestone in the production of aggregate (Beg and others, 1983). Most of the dolomitic rock units in Alabama (for example, the Knox Group and Shady Dolomite) have a high content of silica and other impurities, which generally precludes commercial development for most applications (Dean, 1987). One of the purest dolostones in Alabama, the Ketona Dolomite, which contains up to 43.7 percent magnesium carbonate, is quarried in Jefferson and Shelby Counties for a variety of applications (Beg and others, 1983; Dean, 1987). The Ketona Dolomite was mined from the Dolonah Quarry at Bessemer, the first large-scale industrial quarry to produce

nearly 1.7 million metric tons of dolomite annually from 1924 to 1981, for fluxing material (Dean, 1992). The Ketona Dolomite also is mined in the Dolcito Quarry in Birmingham, which has been operating since the early 1900s (Dean, 1999).

Between 2008 and 2013, more limestone and dolostone were produced than any other non-fuel mineral in Alabama (U.S. Geological Survey, 2012, 2013, 2015, 2016a). The major production areas are as follows: Shelby County (33 percent) and Jefferson County (12 percent) from the Cambrian Conasauga Formation, Ketona Dolomite and Ordovician Newala Limestone; and Colbert County (10 percent), Madison County (6 percent), and Morgan County (4 percent) from the Mississippian Bangor and Tusculumbia Limestones (table 5) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013). During this period, limestone and dolostone production totaled more than 192.7 million metric tons (table 2)

Table 5--Production (metric tons) of limestone/dolostone in Alabama by county for fiscal years 2008-2013

Year	Colbert	Jefferson	Madison	Morgan	Shelby	Other
2008	4,235,013	4,929,998	3,290,759	2,165,670	13,038,336	12,497,342
2009	3,418,882	3,973,240	2,012,868	971,701	10,026,941	9,302,554
2010	3,329,952	3,401,055	1,755,711	1,188,693	14,418,417	9,082,930
2011	3,230,249	3,498,905	1,794,612	1,341,602	10,278,368	8,063,979
2012	2,844,480	3,054,011	1,098,203	1,492,207	8,593,780	10,992,207
2013	2,609,211	3,764,968	1,291,442	1,407,994	6,109,013 ^a	16,821,227 ^a
TOTAL	19,667,787	22,622,177	11,243,595	8,567,867	62,464,855^a	66,760,239^a

Data source: Modified from the Alabama Department of Labor, Mining and Reclamation Division, Mine Safety and Inspection Section, Annual Statistical Reports for Fiscal Years 2008-2013.

^aEstimated; some companies within the county did not report annual production totals for the given year.

(Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013) and had a valuation of about \$1.67 billion (U.S. Geological Survey, 2012, 2013, 2015, 2016a).

MARBLE

In Alabama, the major source of marble, the metamorphosed equivalent of limestone and dolostone, is in Talladega County, where it occurs in a narrow outcrop belt in the Piedmont Upland (figs. 9, 10) (Guthrie, 1989). This area is known as the Sylacauga Marble belt, named for exposures near Sylacauga, where marble has been quarried since the late 1700s (Beg and others, 1983). Marble known for its high-grade crystalline texture, whiteness, and beauty has been extensively quarried in the Sylacauga area, with estimated total production exceeding 38 million metric tons (Dean, 2000). In 1969, Sylacauga Marble was designated as the official rock of Alabama. Although marble quarried in early operations was used primarily for monuments and for decorative purposes, today's operations produce predominantly crushed marble, which is used in a number of diversified applications, including industrial fillers, fertilizers, aggregate, and micronized marble, which is shipped as a slurry for use in paper pigment and coating (Dean, 1987).

In addition to the Sylacauga Marble, the dolomitic Chewacla Marble crops out in a

number of large isolated areas in Lee County and has been quarried for aggregate near Auburn (Fousek, 2007). Dolomitic marble was quarried as early as 1849 south of Auburn and utilized in the production of lime (Dean, 1991). Nearly 31 million metric tons of Chewacla Marble has been quarried since 1958, when large-scale mining for crushed stone began (Dean, 2000).

Between 2008 and 2013, marble production in the state totaled more than 7.97 million metric tons (table 2) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013).

MICA

Muscovite mica (hydrous potassium aluminum silicate) is found as sheets or "books" associated with granitic pegmatites occurring as dikes and sills within the metamorphic and igneous rocks of the Alabama Piedmont Upland (figs. 9, 12). Sheet mica-bearing pegmatites have been mined extensively in five major areas: the Pinetucky area, Randolph and Cleburne Counties; the Pyriton area, western Clay County; the Lineville area, eastern Clay County; the Rockford area, Coosa County; and the Dadeville area, Tallapoosa County (Sterrett, 1923). Large concentrations of flake mica also occur as finely disseminated flakes in micaceous schists of the Piedmont Upland (Epperson and Rheams, 1984).

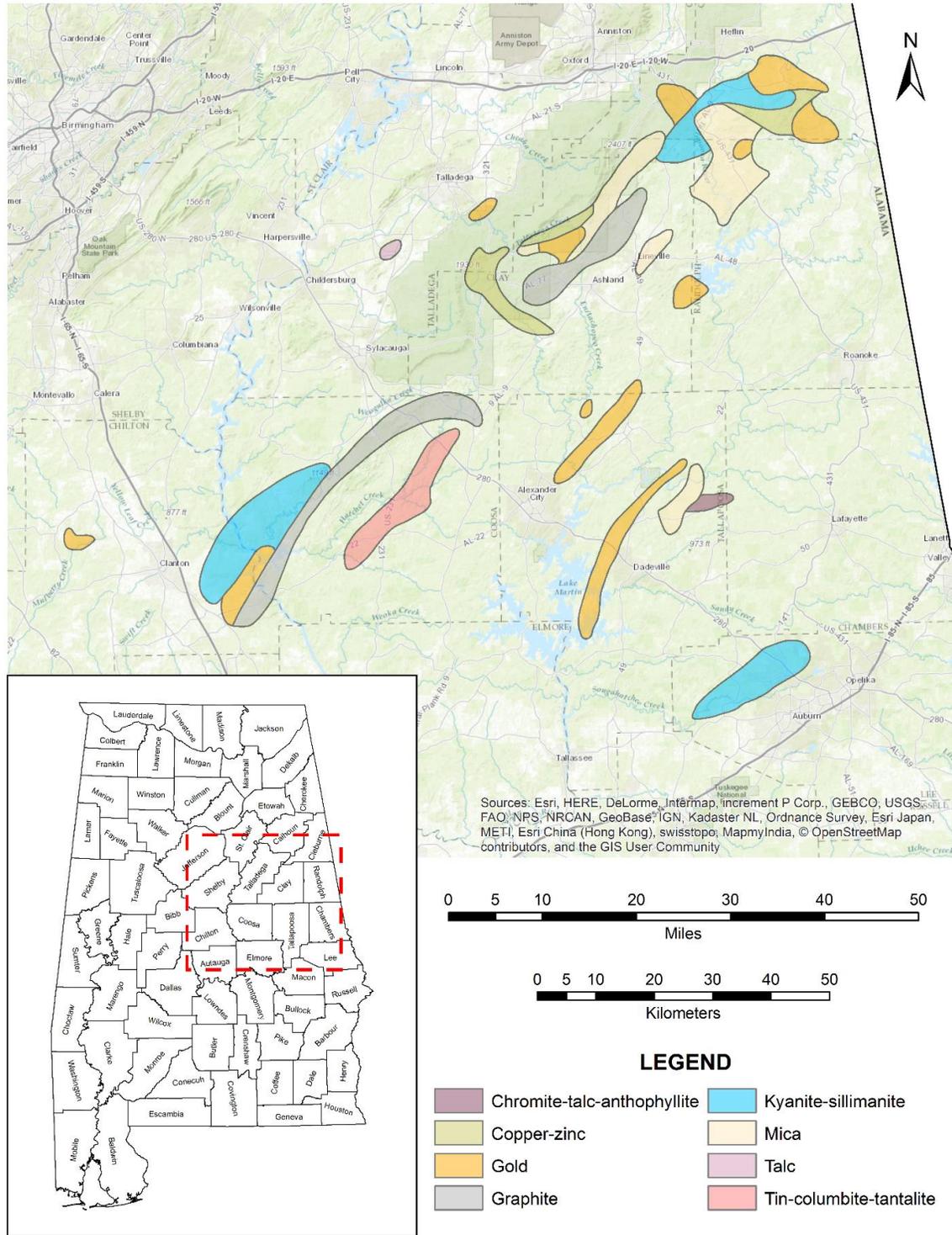


Figure 12.—Map depicting the location of potential mineral resources in east-central Alabama (modified from Dean, 1987). Red box on inset map denotes the location of figure above.

Sheet mica is used primarily in the electrical industry as insulation in a variety of electrical equipment (Beg and others, 1983). Scrap or flake mica is used by industry in dry-, wet-, or micronized-ground form; major uses of dry-ground mica are in drilling muds for the petroleum industry, in the manufacture of asphalt roofing material, and as a filler-extender in gypsum plasterboard; wet-ground mica is used principally by the paint industry as a specialized pigment extender; and micronized-ground mica is used similarly as a filler-extender in paints and plastics, and as a dusting agent in the manufacture of rubber products (Dean, 1987). Between 2008 and 2013, mica production in the state totaled more than 4,430 metric tons (table 1) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013).

SALT

Salt deposits underlie much of southwest Alabama at depths from 400 feet to greater than 18,000 feet, with numerous other salt structures occurring deeper within the subsurface (Moore, 1971). Salt seeps in Washington and Clarke Counties were used to produce salt intermittently during the 1800s (Dean, 1988). Large-scale production of salt brine began in 1952 in order to supply a chlorine and caustic soda plant at McIntosh in Washington County (fig. 1) (Dean, 2000). Salt is currently being produced by solution mining for the manufacture of industrial chemicals (Dean, 1988).

SAND AND GRAVEL

Alabama has an abundance of sand and gravel suitable for most construction needs and many industrial uses (Beg and others, 1983). The most extensive of the many sand and gravel deposits distributed throughout the state occur in the East Gulf Coastal Plain Province in an area extending from Dallas County through Montgomery County and into Russell County (figs. 1, 3, 13) (Dean, 1987). These deposits have the potential for production of high-silica construction sand and industrial gravel (Beg and others, 1983). Sand and gravel deposits in the Interior Low

Plateaus and Valley and Ridge Provinces contain a high percentage of chert gravel, which is unsuited for most industrial applications or as aggregate in concrete but can be used for road-base material and fill (Beg and others, 1983).

The leading use of construction sand and gravel in Alabama is in concrete aggregate, with other uses including asphaltic concrete aggregate, concrete aggregate and concrete products, fill sand and gravel, plaster and gunite sands, road base and coverings, and water filtration (U.S. Geological Survey, 2012, 2013, 2015, 2016a).

The Montgomery district, located in the East Gulf Coastal Plain Province, is the largest sand and gravel producing area in the state (table 6) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013). Large-scale production of sand and gravel in the Montgomery district began in the early 1920s (Dean, 1990). Since 2008, the Montgomery district has produced an average of 1.15 million metric tons of sand and gravel annually, principally from Quaternary alluvium and terrace deposits of the Alabama, Coosa, and Tallapoosa Rivers bordering Montgomery, Autauga, Lowndes, Elmore, and Macon Counties (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013). Between 2008 and 2013, Alabama produced more than 53.5 million metric tons of sand and gravel (table 2) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013), valued at greater than \$371 million (U.S. Geological Survey, 2012, 2013 2015, 2016a).

SANDSTONE AND QUARTZITE

Sandstone is a sedimentary rock (typically with small-scale sedimentary structures) composed of quartz sand grains cemented together (commonly by silica, iron oxide, or calcite) (Dean, 1992). The Pennsylvanian Pottsville Formation is the most widespread unit containing sandstone and has been quarried throughout north Alabama (for building stone and crushed aggregate) for more than 160 years (Dean, 1992). Pottsville sandstone was quarried as

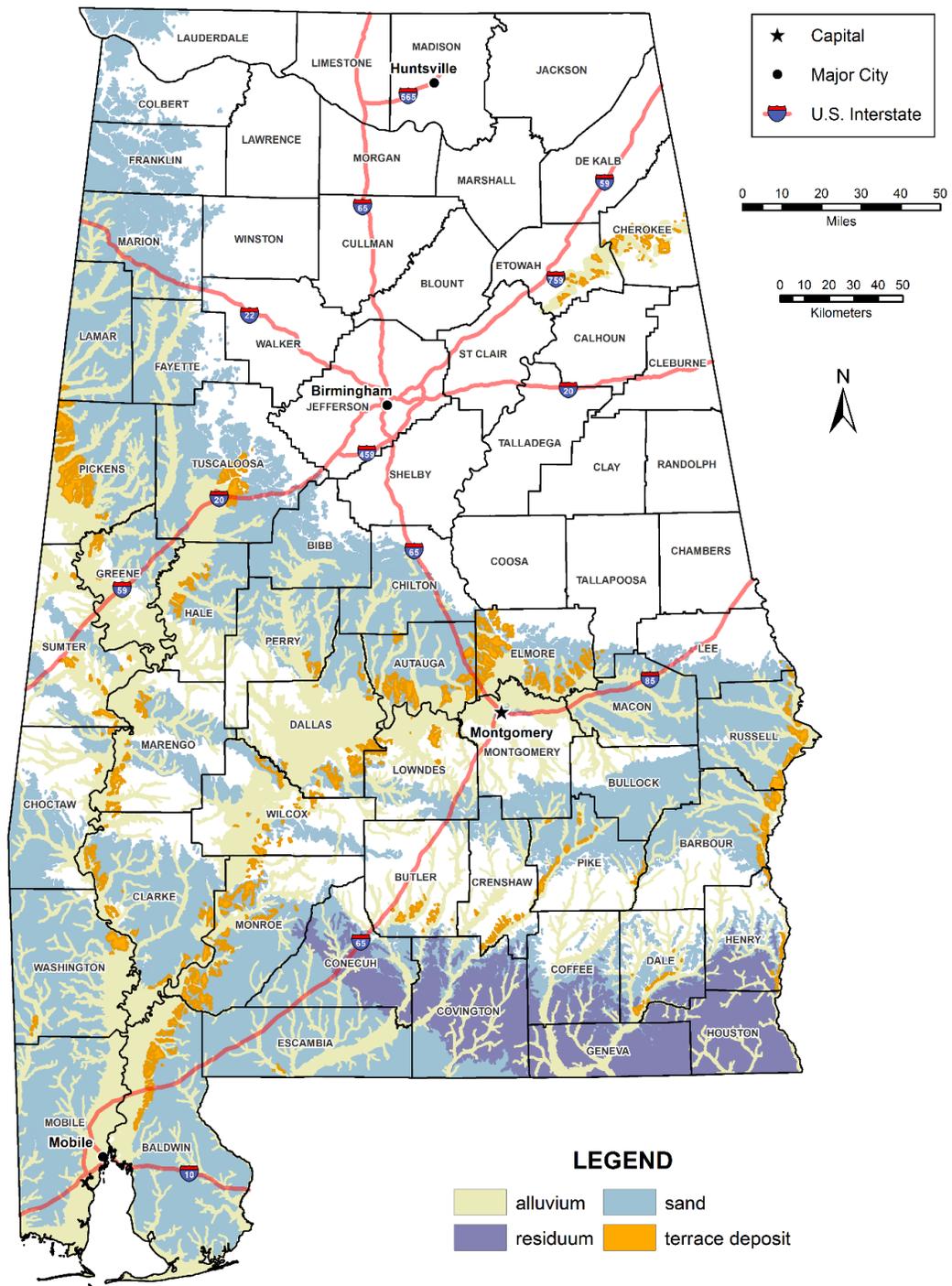


Figure 13.—Map depicting the generalized distribution of major sand and gravel resources in Alabama (modified from Szabo and others, 1988).

Table 6—Production (metric tons) of sand and gravel in Alabama by county for fiscal years 2008-2013

Year	Autauga	Elmore	Escambia	Macon	Montgomery	Other
2008	711,523	757,696	1,251,078	1,426,946	1,076,636	5,277,210
2009	770,263	759,939	1,606,574	1,098,490	1,710,025	4,852,644
2010	969,908	853,434	1,019,008	4,967,481	896,632	1,006,140
2011	1,202,446	416,611	870,760	1,355,255	972,783	3,420,635
2012	781,770	450,456	724,150	483,734	1,352,851	3,039,114
2013	1,011,634	646,909	963,182	591,039	914,396	4,230,889
TOTAL	5,447,544	3,885,045	6,434,752	9,922,945	6,923,323	21,826,632

Data source: Modified from the Alabama Department of Labor, Mining and Reclamation Division, Mine Safety and Inspection Section, Annual Statistical Reports for Fiscal Years 2008-2013.

early as 1827 for building stone used in the construction of the Tuscaloosa State Capitol building (Dean, 1992). Pottsville sandstone has been quarried in Blount, Calhoun, Cherokee, Marshall, and Walker Counties for building stone, sand and gravel, and crushed aggregate (figs. 1, 14) (Dean, 1992). The Mississippian Hartselle Sandstone of north Alabama has also been used as a source of building stone and silica sand (Dean, 2000).

Quartzite (recrystallized sandstone) has been quarried at several sites in east Alabama and used for building stone, riprap, road metal, and in the manufacture of silica brick (Dean, 1992). Quartzite in the Weisner Formation has been previously quarried in Cherokee and Calhoun Counties (Dean, 1992). In addition, the Hollis Quartzite in Lee County has also been previously quarried for use as road metal and as a filler in manufacturing brick (fig. 14) (Dean, 1992). More recent production has come from quartzites found along the crest of Talladega Mountain in the Alabama Piedmont Upland (Dean, 2000).

Between 2008 and 2013, sandstone and quartzite production in the state totaled nearly 6.0 million metric tons (table 2) (Alabama Department of Labor, 2008, 2009, 2010, 2011, 2012, 2013) and had a valuation greater than \$46.6 million (U.S. Geological Survey, 2012, 2013, 2015, 2016a).

SILICON

High-grade silica sand and gravel (< 99 percent SiO₂) from the East Gulf Coastal Plain are used in the furnace production of ferrosilicon and silicon metal at plants in Dallas and Montgomery Counties and lesser amounts in Jackson County (figs. 1, 3) (White and Dean, 1994). Ferrosilicon is used primarily as an additive in steel to achieve complete deoxidization, and silicon is commonly used as an alloying element and as a component in silicone production (Dean, 1990).

SLATE

Slate is a compact, fine-grained metamorphic rock formed by the alteration and recrystallization of clay minerals in sedimentary rock. Its most distinguishing feature is a pronounced cleavage along planes that are independent of original bedding (Smith and Wade, 1986). In Alabama, slate and phyllite with a slaty cleavage (will split into slabs and thin plates) crop out in parts of Shelby, Chilton, Talladega, and Calhoun Counties (fig. 15) (Dean, 1987). Although slate was originally used for building stone, modern uses include industrial extenders, inert fillers, lightweight aggregate, and road aggregate (Dean, 1987). Slate with the physical properties

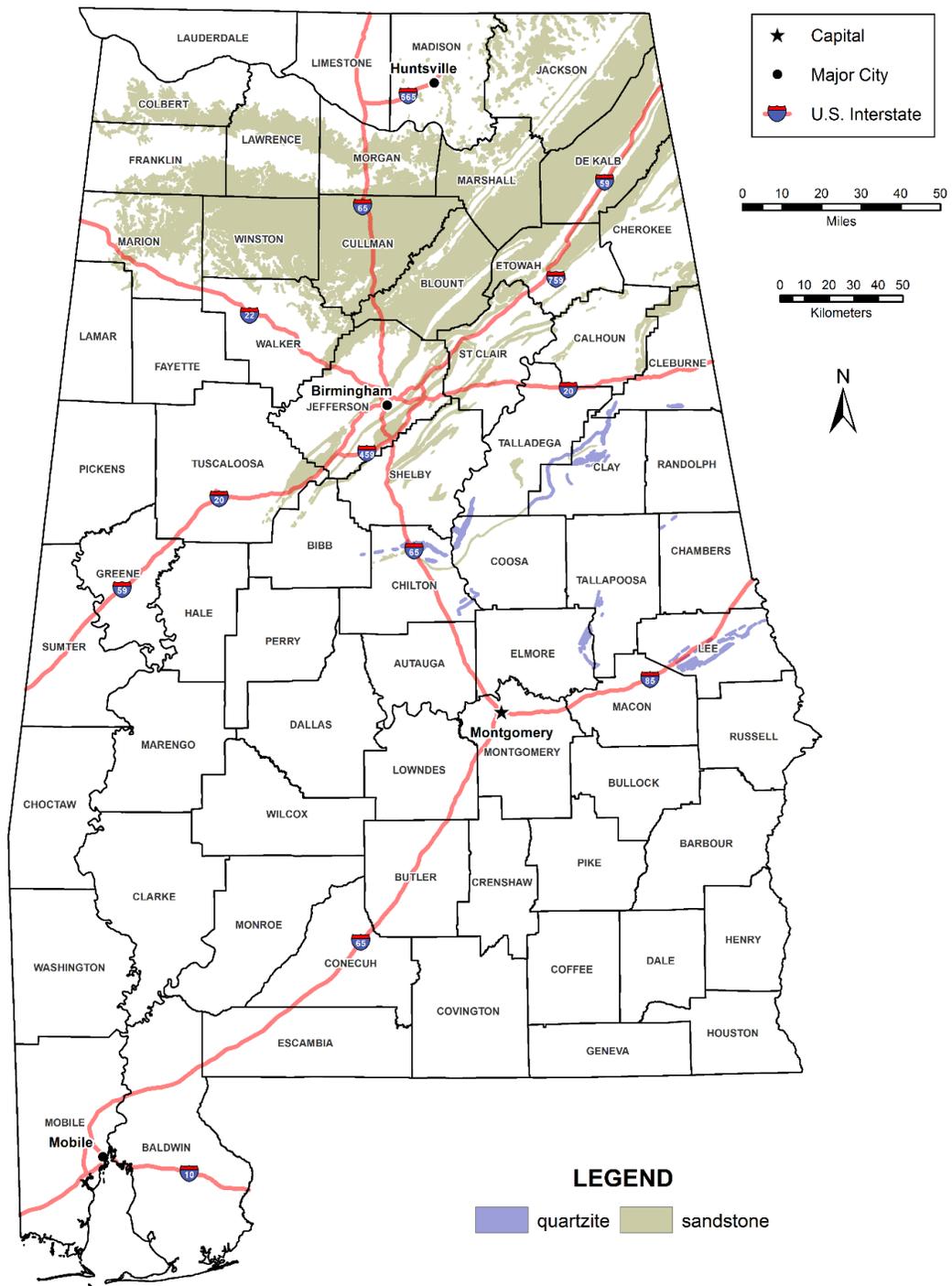


Figure 14.—Map depicting the generalized distribution of major sandstone and quartzite resources in Alabama (modified from Szabo and others, 1988).

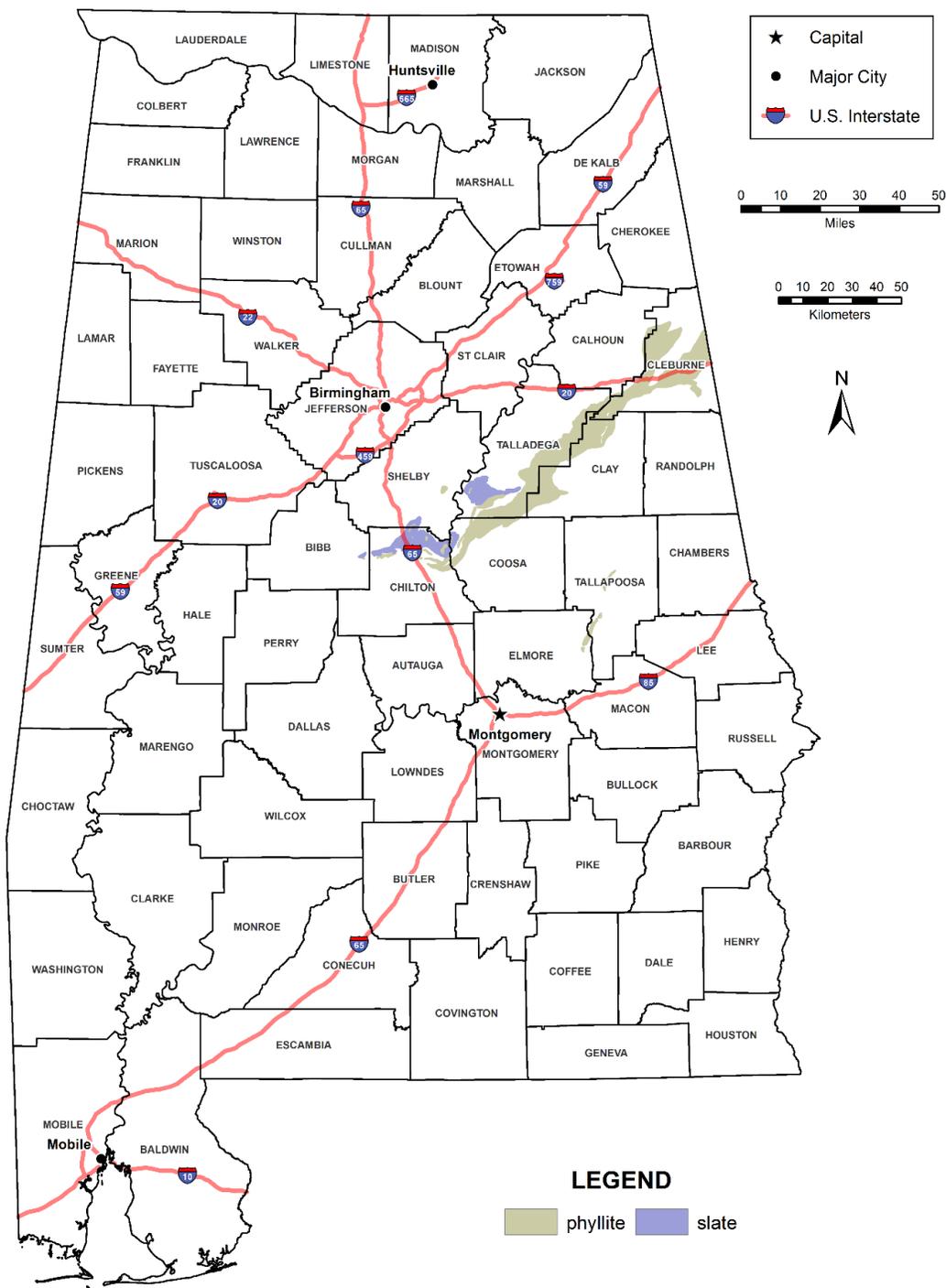


Figure 15.—Map depicting the generalized distribution of major phyllite and slate resources in Alabama (modified from Szabo and others, 1988).

necessary for use as roofing material has been reported in Talladega County, and slate for building stone and other applications has also been mined in northern Chilton and southern Shelby Counties (Dean, 1987). Between 2008 and 2013, slate production (for crushed stone) in the state totaled nearly than 3.92 million metric tons and had a valuation of about \$33.44 million (U.S. Geological Survey, 2012, 2013, 2015, 2016a).

SULFUR

Sulfur is produced as a by-product of gas-cleansing processes in plants operated in Escambia, Mobile, and Washington Counties (Smith and Wade, 1986). Sulfur recovery started in south Alabama in 1972 (Beg and others, 1983), and is continuing to be recovered from petroleum refineries in Escambia, Mobile, and Washington Counties. Between 2008 and 2013, the state produced more than 1.67 million metric tons of sulfur with a valuation of greater than \$230.1 million (Apodaca, 2011, 2012, 2013, 2015a, 2015b, 2016a).

POTENTIAL MINERAL RESOURCES

A number of Alabama's mineral deposits are now classified as potential resources either because they are not presently mined commercially or because they occur in quantity and grade unacceptable for present commercial operations. As knowledge of the state's geology increases or as economic circumstances change, mining of these minerals may become economically feasible.

ANTHOPHYLLITE

Anthophyllite (iron magnesium silicate) occurs in talc-rich alteration zones in mafic and ultramafic rocks of Chambers and Tallapoosa Counties (figs. 9, 12) (Neathery and others, 1967; Neathery, 1968a). Anthophyllite deposits near Dudleyville in northeastern Tallapoosa County have been mined intermittently on a small scale since 1873 (Cook and Smith, 1982). Because of their variable anthophyllite content and the limited commercial applications of asbestos,

the deposits in Chambers and Tallapoosa Counties remain subeconomic (Neathery and others, 1967; Neathery, 1968a).

ASPHALTIC ROCK

Asphalt-impregnated sandstone and limestone (for example, the Mississippian Hartselle Sandstone and lesser amounts in the Pride Mountain Formation and Tusculumbia Limestone) underlie some areas of Colbert, Franklin, Lawrence, and Morgan Counties in northwest Alabama (fig. 16) (Dean, 1987). Crushed asphaltic stone was first used for paving streets in Florence, Alabama (Beg and others, 1983). For many years crushed asphaltic limestone was produced at the Margerum Quarry in Colbert County; however, the quarry closed in July of 1981 (Beg and others, 1983). From 1923 to 1982 about 12.7 million metric tons of asphaltic limestone was mined from Colbert County (Dean, 1992). Renewed interest in the development of new energy resources has prompted investigations of these deposits as potential sources of petroleum (Tew and Mancini, 1986). The reserves of the asphaltic rocks were estimated to be approximately 4.5 billion barrels (Wilson, 1987). For more information on the potential fuel resources available in the Hartselle Sandstone, please contact the Energy Investigations Program of the Geological Survey of Alabama (see Additional Resources section).

BARITE

Barite (barium sulfate) is a colorless to white, chemically inert nonmetallic mineral with a relatively high specific gravity. The majority of barite consumed in the United States is used as an additive to drilling mud for rotary drilling of oil and gas wells; other uses include filler in paper, rubber products, paint, textiles, and as heavy construction aggregate. Barite is also used as a source of barium in the chemical industry (Dean, 1987).

In Alabama, barite occurs as epigenetic vein and breccia deposits in the Ordovician Chepultepec Dolomite, Longview Limestone,

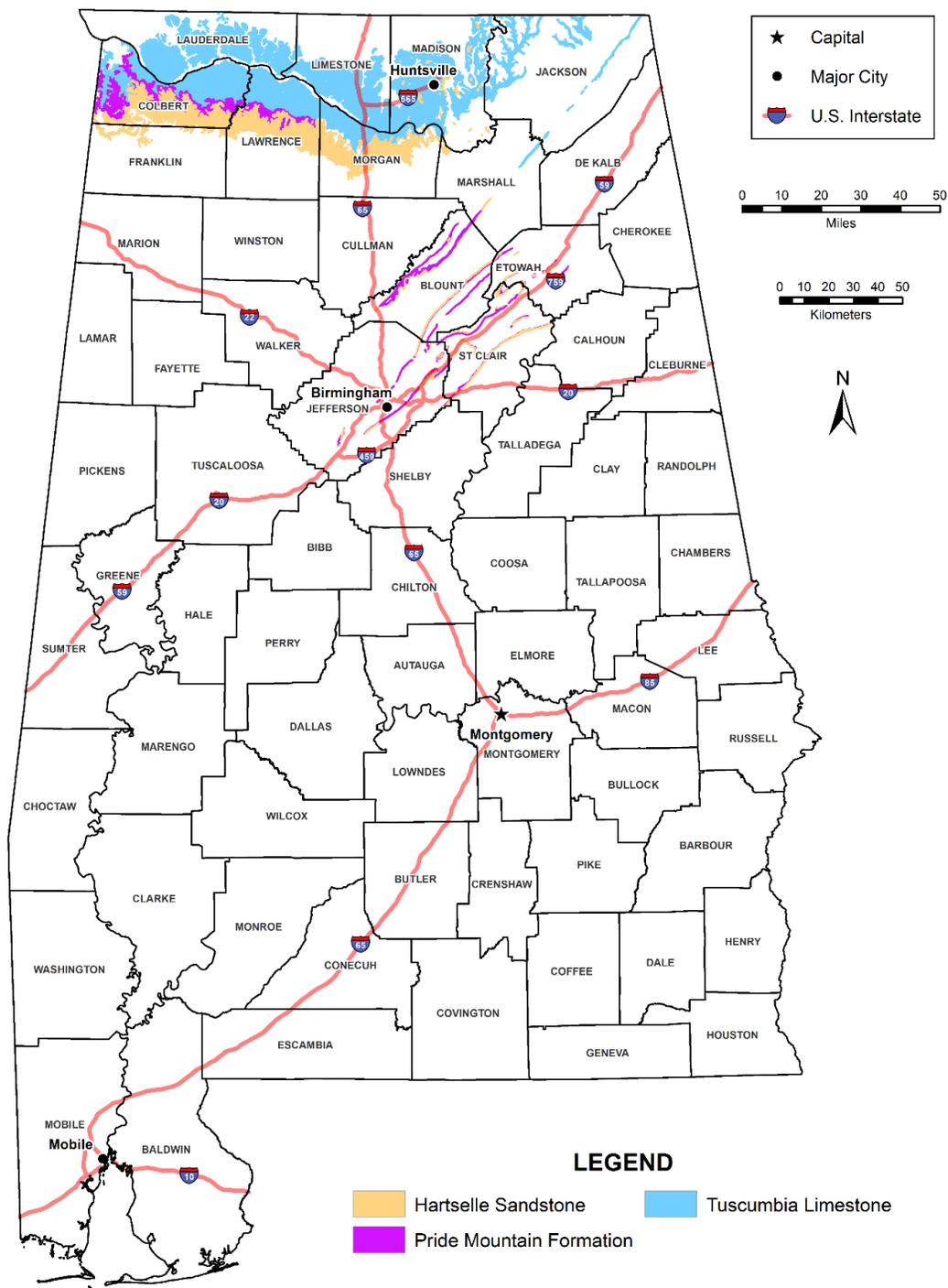


Figure 16.—Map depicting the generalized distribution of asphaltic rocks in northern Alabama (from Szabo and others, 1988).

Newala Limestone, and possibly the Mosheim Limestone Member of the Lenoir Limestone (Adams and Jones, 1940; Hughes and Lynch, 1973). It also occurs in secondary residual deposits of weathered dolostones and limestones situated in a 13-county area that extends from Bibb County in central Alabama to Cherokee County in northeast Alabama (Hughes and Lynch, 1973). In addition, barite occurs as a vein mineral within the Piedmont Upland Province of eastern Alabama (Cook and Smith, 1982). It was mined in Alabama as early as the 1840s, and mining continued sporadically until World War II, with most of the production coming from Bibb, Calhoun, and Shelby Counties (Hughes and Lynch, 1973; Beg and others, 1983). From 1915 to 1924, 28,600 tons of barite was mined, 80 percent of which came from Calhoun County (Dean, 1993). Hughes and Lynch (1973) provide details on barite mines and prospects in Alabama and give specific deposit locations.

CASSITERITE

Cassiterite (tin dioxide), the principal ore of tin, has been prospected at several locations in the Alabama tin belt between Rockford and Goodwater in Coosa County (figs. 1, 9) (Adams, 1930; Ellsworth, 1934; Bowles, 1939a; Hunter, 1944; Reed, 1950). Cassiterite occurs as a rare accessory mineral in pegmatites and quartz veins, which intrude graphitic mica schist and phyllite in the Alabama Piedmont Upland (Cook and Foord, 1986). All of the prospected occurrences are too small to be of economic potential (Cook and Smith, 1982). During World War II, cassiterite was mined from several of the prospects near Rockford with greater than 9,000 metric tons of tin ore concentrate recovered by the Coosa Cassiterite Corporation (Beg and others, 1983).

Numerous geologic and exploration studies have been made in the Alabama tin belt since the 1930s (for example, Hunter, 1944; Reed, 1950). Results of several geologic studies are included in a special volume of papers on granites in Alabama

published by the Geological Survey of Alabama (Drummond and Green, 1987).

CHROMITE

Chromite (iron chromium oxide), a strategic mineral commodity, is the only ore mineral of chromium. Chromite occurrences in Alabama are associated with mafic and ultramafic intrusive rocks near Dudleyville in Tallapoosa County (figs. 9, 12) (Neathery, 1968a; Dean, 1986; Mies and Dean, 1994). While preliminary studies of the geologic occurrence and exploration potential of chromite occurrences in Alabama have been made, no detailed exploration has been undertaken to determine the economic potential of chromite mineralization in Alabama.

COLUMBITE-TANTALITE

The columbite-tantalite (iron manganese niobium-tantalum oxides) series of minerals was only of mineralogical interest when discovered in the 1870s near Rockford, in Coosa County (Smith, 1879). Detailed exploration led to the discovery of mineralization hosted by the Rockford Granite (figs. 1, 9). Mining and production of tantalum concentrate in Coosa County occurred during 1989-91 for the national defense stockpile (White and Dean, 1992), and there has been a recent resurgence in interest in assessing the mining possibilities of these deposits (Dean, 2008).

The columbite-tantalite minerals are the principal sources of tantalum, which is a refractory metal with several strategic industrial applications (Dean, 1993).

COPPER

Copper-bearing minerals, including chalcopyrite, chrysocolla, malachite, and azurite, occur in the Valley and Ridge and Piedmont Upland Provinces, and much prospecting for near-surface copper deposits has been done in the state (Cook and Smith, 1982). While near-surface copper deposits thus far appear to be sub-economic for mining, there exists the possibility that copper and other sulfide deposits occur at

mineable depths (Smith and Epperson, 1984).

Chalcopyrite (copper iron sulfide) is the primary ore mineral of copper in mineralization associated with massive sulfide deposits in Clay and Cleburne Counties (figs. 1, 9, 12) (Adams, 1930). Exploration for copper deposits in the northern Alabama Piedmont has been conducted since the 1850's (for example, Adams, 1930; Pallister and Thoenen, 1949; Lamont and Hastings, 1964; Espenshade, 1963; Neathery, 1968b). The most thoroughly explored deposits are in the Pyriton and Millerville areas in Clay County and the Stone Hill and Smith mines in Cleburne County (Cook and Smith, 1982).

CORUNDUM

Corundum (aluminum oxide), second in hardness only to diamond, occurs in Alabama as an accessory mineral in the margins of altered mafic and ultramafic intrusion in Coosa and Tallapoosa Counties (fig. 9) (Smith and Epperson, 1984). Due to its great hardness and relative chemical stability, corundum may be found as detrital grains in stream deposits (Dean, 1987). Gem varieties of corundum, including sapphire (blue corundum), ruby (red corundum), and alexandrite (blue-red corundum), have been reported in Alabama (Cook and Smith, 1982).

DIAMOND

Diamonds ranging up to 4.5 carats have been reported as being found in Lee, Shelby, and St. Clair Counties (fig. 3) (Cook and Smith, 1982). No specific rock formation or area in the state has been identified as the source for these stones and collected specimens were reportedly collected from alluvium (Smith and Epperson, 1984).

FELDSPAR

Feldspar is the name of a group of abundant rock-forming minerals and is the most widespread of any mineral group in the earth's crust. Feldspars are usually white or shades of pink, tan, yellow, and red. The

feldspars are divided into two distinct groups: the potassium feldspar group and the plagioclase group. Upon weathering, feldspar disintegrates to form clay or kaolin.

Feldspar is a common mineral in pegmatites, granites, gneisses, and schists of the igneous and metamorphic region of east Alabama. Feldspar, although not presently mined in Alabama, is an important economic mineral; it is used as raw material in the ceramic and glass industries, as filler and abrasive in soap and paint, and as ornamental stone; additionally, some varieties of feldspar, such as moonstones, are prized as gemstones (Dean, 1990).

GARNET

The garnet group of minerals $[(Ca, Mg, Fe, Mn)_3Al_2(SiO_4)_3]$ occurs in schists and gneisses of the Piedmont Upland Province in east-central Alabama. Rocks of the Mad Indian, Poe Bridge Mountain, and Higgins Ferry, Wedowee, Emuckfaw, and Jacksons Gap Group contain garnets as ubiquitous minerals in Chambers, Chilton, Clay, Coosa, Elmore, and Tallapoosa Counties (fig. 9) (Dean, 1987). Garnet crystals are usually well-formed dodecahedrons or trapezohedrons, ranging in size from microscopic to greater than 0.5 inch in diameter; the larger crystals usually contain inclusions of mica, quartz, and feldspar, and the smaller crystals tend to be purer and free of inclusions (Bentley and Neathery, 1970).

Garnets are used primarily as abrasives (Beg and others, 1983), and garnet's resistance to weathering results in garnet-bearing zones of heavy minerals in the alluvial sediments associated with the Tallapoosa and Coosa River systems, as well as in the Coastal Plain sedimentary apron on the crystalline rocks of the Piedmont Upland Province (Dean, 1987).

GLAUCONITE

Glauconite, a complex iron-magnesium-aluminum hydrated silicate, is an authigenic mineral found as dark green to black colored pellets in sedimentary rocks of the Alabama East Gulf Coastal Plain

Province (fig. 3) (Smith, 1960, 1967). Glauconite "greensands" from Choctaw County have been exploited on a small scale for use in the purification of water, but this use has long since been discontinued (Beg and others, 1983). Other potential uses are as a catalyst in chemical processes and as an absorbent (Smith and Epperson, 1984).

GOLD AND SILVER

Gold was discovered in the Alabama Piedmont Upland in the early 1830's (see Philips, 1892). Recorded production up to 1939 was about 49,000 troy ounces of gold; however, probably an equal amount has been mined but not reported (Simpson and Neathery, 1980). Gold has been produced from seven districts in the Alabama Piedmont Upland, including:

- (1) the Chulafinnee-Arbacoochee district in southern Cleburne and northern Randolph Counties;
- (2) the Idaho district southwest of Pyriton in west-central Clay County;
- (3) the Cragford district in west-central Randolph and east-central Clay Counties;
- (4) the Riddles Mill district in south-eastern Talladega County;
- (5) the Goldville-Hog Mountain district in north-central Tallapoosa County;
- (6) the Devil's Backbone-Eagle Creek district in Tallapoosa County; and
- (7) the western Coosa and eastern Chilton Counties district.

More than 100 prospects and mines are known in these seven districts (figs. 1, 9, 12) (Cook and Smith, 1982). A report which presents the first collection of papers on the history, geology, metallogenesis, and exploration potential of gold mineralization in the Piedmont Upland has been published by the Geological Survey of Alabama (Leshner and others, 1989)

The towns of Arbacoochee, Chulafinnee, and Goldville, which developed from the gold mining rush of the 1830's, have now been abandoned (Simpson and Neathery, 1980).

The Hog Mountain mine in Tallapoosa County was the most extensively developed gold mine in Alabama and is credited with a total production of about 24,000 troy ounces of gold (Guthrie and Dean, 1989).

Gold mining ceased in Alabama, except on an individual basis, during the late 1930's; however, exploration and prospecting of gold deposits in the state has been carried out intermittently during the past several years in the historic gold districts. Between 2008 and 2013, gold prices averaged nearly \$1,290 per troy ounce, which greatly increased interest in Alabama's historic gold districts (George, 2010, 2011, 2012, 2013, 2015a, 2015b).

Silver deposits have not been authenticated in Alabama, although rumors of "silver mines" have been prevalent throughout the state (Cook and Smith, 1982). These rumors are likely based on the occasional discovery of argentiferous galena crystals (lead sulfide) in the Piedmont Upland (Tuomey, 1858). However, approximately 2,600 troy ounces of silver were produced as a by-product of early gold mining operations in Alabama (see Pardee and Park, 1948).

GRAPHITE

Graphite is the most common mineral form of native, or naturally occurring, pure carbon. In Alabama, graphite generally occurs as disseminated flakes in the metamorphic rocks of the Piedmont Upland Province in the east-central part of the state (Neathery, 1975). The mineral is particularly abundant in Clay, Coosa, and southeastern Chilton Counties, and the graphite-rich rock units within these counties form one of the largest graphite deposits in the United States (figs. 1, 9, 12) (Cook and Smith, 1982). The richest graphite occurrences are associated with micaceous quartzites and mica schists of the Poe Bridge Mountain and Higgins Ferry Groups, which may contain up to 5 percent disseminated graphite (Beg and others, 1983; Dean, 1987). The graphite-rich zones occur as elongate lenses or layers within the rock and their thicknesses range

from a few feet to more than 100 feet (Brown, 1925). Vanadium-bearing mica is commonly associated with graphite-rich zones (Smith and others, 1944).

Graphite is an important commodity used in the manufacture of electrical products and high-temperature refractory crucibles for the metals industry, and more commonly, is used as a dry lubricant or is mixed with clay to form the "lead" of pencils (Beg and others, 1983). Flake graphite was mined extensively in Alabama from 1890 to 1931 (Cook and Smith, 1982). During World War I, graphite mining reached its peak with greater than 3,500 metric tons of graphite produced in Clay and Coosa Counties in 1918 alone (Dean, 1990). Forty-three major mines and 30 processing plants were in operation during this period (Cook and Smith, 1982). From 1910 to 1929 roughly 23,000 metric tons of graphite was produced, and from 1942 to 1953 more than 13,600 metric tons was produced (Dean, 1992). Graphite mining in the state ceased after 1953 due to technological advances, which led to the development and production of artificial graphite, rendering Alabama's graphite deposits subeconomic at the time (Dean, 1987). More recent advances in the production of lithium-ion batteries used in electric cars, however, has renewed interest in the state's graphite deposits (Durgin, 2012).

In 2012, the Alabama Graphite Corporation acquired the Coosa Graphite Project, a 65.6 mi² tract of land located approximately 50 miles (80 km) south-southeast of Birmingham, Alabama. Between 2012 and 2013, the Alabama Graphite Corp conducted two drilling programs in order to characterize and assess the distribution of graphite within the Project and determined an estimated reserve of greater than 78.5 million tons of graphitic carbon (Wilson, 2013)

HEAVY MINERALS

"Heavy minerals" is a general term for a group of minerals that are often concentrated by natural stream or marine processes

because of their durability and relatively high specific gravity (Beg and others, 1983; Wade and Smith, 1985). Small concentrations of heavy minerals, sometimes called "black sands," occur in the sediment of most streams in the state; and large, concentrated deposits containing significant concentrations of economically important and potentially critical rare elements may occur in beach and offshore sand in coastal areas (fig. 13) (Wade and Smith, 1985). Some of the most common minerals included in this group are tourmaline, which contains lithium and boron; rutile, which contains titanium; zircon, which contains zirconium and hafnium; ilmenite, which contains titanium; monazite, which contains several of the rare earth elements; and magnetite, an oxide of iron (Wade and Smith, 1985).

IRON ORE

The development of Alabama's steel industry marked the beginning of the industrial era in Alabama in the late 1800's (Philips, 1912). First efforts at iron making employed massive stone furnaces and used local "brown iron ore" (limonite) and charcoal; such furnaces were located near Russellville (1818), Tannehill (1830), Polkville (1843), Shelby (1848), Round Mountain (1853), and at several other localities in Alabama (Philips, 1912; Burchard and Andrews, 1947; Beg and others, 1983). The iron industry began to expand with the discovery of red ore (hematite) in the Birmingham area, and the mill camps together with the mining camps formed the basis for the present city of Birmingham (Philips, 1912; Beg and others, 1983). In 1967 hematite was designated as the official State mineral of Alabama (Dean, 1989).

Iron ore mining was once the state's most important mineral industry, but all underground mines have ceased operation since the early 1980's due to the availability of higher grade imported ores (Beg and others, 1983). Red iron ore from the Silurian Red Mountain Formation has been mined in Bibb, Blount, Cherokee, DeKalb, Etowah,

Jefferson, and Tuscaloosa Counties (fig. 1) (Philips, 1912; Burchard and Andrews, 1947). Brown iron ore has been mined in Barbour, Butler, Calhoun, Cherokee, Chilton, Colbert, Conecuh, Crenshaw, Franklin, Jefferson, Pike, Shelby, and Tuscaloosa Counties (fig. 1) (Philips, 1912; Burchard and Andrews, 1947). In Talladega County specular hematite (gray iron ore) occurs with pyrite and chalcopyrite in low-grade metamorphosed quartzite of the Cambrian Weisner Formation (fig. 1) (Smith, 1907). The total iron ore production for Alabama from 1840 to 1975 was about 382 million metric tons (Dean, 2000).

Alabama has significant resources of iron ore (see Thoenen and others, 1953; Simpson and Gray, 1968). Although most outcrop areas of the major red ore beds have been strip mined, an estimated 4.4 billion Mt of red ore underlie areas in DeKalb, Etowah, Jefferson, and St. Clair Counties (Beg and others, 1983). These iron ore resources could be mined underground if economic conditions became favorable or if it became strategically necessary (Beg and others, 1983). In addition, resources of brown iron ore in the southeastern, northwestern, and central counties are estimated at approximately 830 million metric tons (Simpson and others, 1978).

KYANITE AND SILLIMANITE

Kyanite and sillimanite (aluminum silicates) are relatively common mineral constituents of the metamorphic rocks and their saprolite in the Piedmont Upland Province of east-central Alabama (figs. 9, 12). Massive quartz-kyanite rock occurs in Cleburne County near Turkey Heaven Mountain (Boles, 1939b; Neathery, 1967). Disseminated kyanite occurs in the schistose rocks of the Poe Bridge Mountain area in Clay County (Heinrich and Olson, 1953; Willman, 1963), to the southwest in Coosa and Chilton Counties (Daniel and others, 1966), and in Lee County in the vicinities of Loachapoka and Andrews (Cook and Smith, 1982). Sillimanite is found disseminated throughout these same kyanite-bearing

schists (Neathery, 1975). Due to their refractory properties these minerals have a wide use in acid refractory products and in ceramic products (Smith and Epperson, 1984).

LEAD AND ZINC

Galena (lead sulfide) and sphalerite (zinc sulfide) occur sporadically in Paleozoic limestones and dolomites of the Shady Dolomite, Longview Limestone, and Newala Limestone in the Valley and Ridge Province of Calhoun County (Tuomey, 1858; Smith, 1875; McCalley, 1897; Adams and Jones, 1940; Neathery and others, 1972). Lead ore was mined in multiple locations during the Civil War period, with the Angel District of Calhoun County being the most productive (McCalley, 1897; Adams and Jones, 1940; Warman and Causey, 1962).

Traces of galena and sphalerite are also associated with many of the gold and massive sulfide deposits found in the Piedmont Upland Province in Tallapoosa, Cleburne, Clay, and Randolph Counties (figs. 1, 9, 12) (Brewer, 1896; Prouty, 1923; Jones, 1926; Adams, 1930; Pardee and Park, 1948; Pallister and Thoenen, 1949; Lamont and Hastings, 1964).

MAGNESIUM

Magnesium occurs in dolomitic limestone (calcium magnesium carbonate) in Bibb, Jefferson, and Shelby Counties and has been recovered from dolostone quarried near Montevallo in Shelby County, from where it was shipped to processing facilities at Selma for magnesium extraction (Beg and others, 1983). Presently, dolomite is not being processed for recovery of magnesium in Alabama, although large reserves of high quality dolomite, particularly the Ketona Dolomite, exist in the state (Beg and others, 1983).

MANGANESE

Manganese deposits occur irregularly in the form of various manganese oxide minerals (most commonly as pyrolusite, cryptomelane, psilomelane, or lithiophorite)

found throughout the state (fig. 1) (Beg and others, 1983). Manganese mineralization that occurs in Alabama can be classified into three associations: manganese associated with ferruginous sandstone and brown iron ore deposits; manganese associated with limestone and chert; and manganese associated with brown iron ore deposits in metamorphic rocks (Dean, 1987).

Manganese associated with ferruginous sandstone (hard pan) deposits in the Tuscaloosa Group has been mined and reported from Autauga, Bibb, Chilton, and Tuscaloosa Counties; and manganese oxide has been mined with brown iron ore from the Weisner Formation in Cleburne County (Dean, 1987).

Manganese associated with the Fort Payne Chert has been mined from residual concentrations of primarily pyrolusite-bearing residuum and replacement fracture filling veins in the Walnut Grove district in Blount and Etowah Counties (Gibson, 1893; McCalley, 1897; Barnes, 1946). Pyrolusite-rich ore has been produced from residuum overlying Knox Group dolomite and near the contact of the Shady Dolomite and the Weisner Formation in the Bluff Town-Rock Run area in Cherokee County (Wyndham, 1953).

Manganese oxide, chiefly pyrolusite, has been mined with brown iron ore associated with the Chulafinnee Schist in Clay and Cleburne Counties and as the residual concentration from the weathering of spessartine garnet in the Poe Bridge Mountain Group (McCalley, 1897; Prouty, 1923; Wyndham, 1953).

PHOSPHATE ROCK

Phosphatic material occurs in nodules, grains, bone fragments, and shark teeth within the Cretaceous Tombigbee Sand Member of the Eutaw Formation, a narrow sand and clay zone at the contact between the Eutaw Formation and Mooreville Chalk in Perry and Dallas Counties (Dean, 1987). This phosphatic zone represents only a potential reserve of low-grade phosphate (Szabo, 1973).

Phosphate rock has also been mined from Limestone County, but operations were discontinued in 1983 (Dean, 1987). In this area, phosphatic material occurs in Ordovician limestone, but it was mined only from the residuum and weathered portions of the phosphatic limestone (Dean, 1987). From 1978 to 1983 roughly 654,000 metric tons of collophane or phosphate-bearing residuum was mined (Dean, 1992). The residual deposits contained appreciable amounts of phosphate, but no attempts have been made to recover phosphate economically from the unweathered limestone (Beg and others, 1983).

PYRITE

Pyrite (iron disulfide) is a common sulfide mineral in the Alabama Piedmont Upland Province, occurring as "fool's gold" in metamorphic, igneous, and sedimentary rocks (figs. 1, 9) (Cook and Smith, 1982). Pyrite has a variety of uses, including the manufacture of iron sinter, sulphuric acid, and sulfur (Smith and Epperson, 1984). Pyrite deposits in the Hillabee Greenstone in the vicinity of Pyriton, Clay County, were first mined in the 1850's, and production of pyrite for sulfur continued intermittently until World War I (Adams, 1930).

PYRRHOTITE

Pyrrhotite (iron sulfide) is the dominant sulfide mineral in several massive sulfide deposits near the Turkey Heaven Mountain and Hightower areas in Cleburne County (Neathery, 1967). Copper was mined in this area at the Stone Hill mine from 1874 to 1879 (Brewer, 1896; Adams, 1930). Exploration and geologic studies in the area have concentrated on base- and precious- metal mineralization associated with rocks in and adjacent to the Hollins Line fault (Mies, 1992).

TALC

Talc (hydrated magnesium silicate) occurs in association with hydrothermally altered dolostone of the Shady Dolomite near Winterboro in Talladega County, and in

altered ultramafics of the Dadeville Complex in Tallapoosa County (figs. 9, 12) (Neathery, 1968a; Blount and Helbig, 1987). In the Winterboro area, prospecting for talc began as early as 1918, but the majority of production occurred between 1955 and 1975 (Beg and others, 1983). From 1955 to 1976, the American Talc Company mined nearly 120,000 metric tons of talc (Dean, 1992). In 1963, a flotation mill was constructed at nearby Alpine, where local and imported high-quality talc is processed for use as a filler in goods such as pharmaceuticals and cosmetics (Dean, 1987). Talc production from the Winterboro area resumed on a small scale from 1988 to 1992 (Dean, 1993). Talc-bearing zones in the Winterboro area are almost 100 percent talc (Blount and Vassilion, 1980). Talc content of deposits near Dudleyville range up to 30 percent (Neathery, 1968a).

TRIPOLI

Tripoli (silicon dioxide) is a light-colored, porous, friable, sedimentary rock that results from the weathering of chert or siliceous limestone (Dean, 1987). Commercial tripoli averages 98 to 99 percent silicon dioxide with minor amounts of alumina (clay minerals), titanium, and iron dioxide (Dean, 1987). Large, undeveloped deposits of commercial-quality tripoli occur in the upper part of the Fort Payne Chert in western Lauderdale and Colbert Counties (Dean, 1987). The tripoli in northwest Alabama is composed of crystalline aggregates of quartz with generally less than 1.5 percent impurities (Dean, 1987). Smaller, scattered deposits of tripoli occur in cherts and dolostones in Calhoun and Talladega Counties (Dean, 1987). These deposits are composed principally of individual, frosted, subangular to rounded quartz grains, with impurities ranging from approximately 2 to 7 percent (Rheams and Richter, 1988).

Tripoli has excellent abrasive qualities and is used mainly as a component of buffing and polishing compounds (Dean, 1987). Because it is chemically inert and resists abrasion, tripoli is used as a filler and

extender in paint, plastics, and enamels (Dean, 1987). During the mid-1960's, a small amount of tripoli was mined northeast of Waterloo, Lauderdale County, for use as foundry facing or silica brick (Dean, 1987).

URANIUM MINERALS

Uranium occurs naturally in the minerals pitchblende or uraninite (partially oxidized U_3O_8) (Dean, 1987). Uraninite is not known to occur in Alabama; however, several areas in Coosa County (in the vicinity of Weogufka) and Clay County (near Ashland) have higher than background concentrations of uranium in soil and stream sediments (Dean, 1987). Reconnaissance radiometric, rock, soil, and stream geochemical exploration in the Higgins Ferry Group in Coosa County and Poe Bridge Mountain Group in Clay County suggests that the potential for the occurrence of uranium-bearing deposits may be small (Cook and others, 1982).

Concentrations as high as 88 parts per million uranium also have been reported from the black shales of north Alabama (Rheams and Neathery, 1988). A resource evaluation including characterization and geochemistry of the Chattanooga Shale in Alabama has been published as Bulletin 128 by the Geological Survey of Alabama (Rheams and Neathery, 1988).

ZEOLITE MINERALS

Zeolites are hydrated aluminosilicates of alkali and alkaline earth metals and are unique in that their crystal structure contains micropores (Dean, 1987). Zeolite minerals occur in the Pine Barren Member of the Clayton Formation, the lower clays of the Porters Creek Formation, the Grampian Hills Member of the Nanafalia Formation, and the Tallahatta Formation in the Paleocene and Eocene deposits in southern Alabama (fig. 17) (Beg, 1992). The zeolite minerals identified in these formations are heulandite $[(Ca_3Na_2)(Al_8Si_{28}O_{72})24H_2O]$, clinoptilolite $[(Na_4Ca)(Al_6Si_{30}O_{72})24H_2O]$, and phillipsite $[(K,Na)_5(Al_5Si_{11}O_{32})10H_2O]$ (Beg, 1992). The primary occurrence of zeolites are in the Tallahatta Formation; however, the zeolites

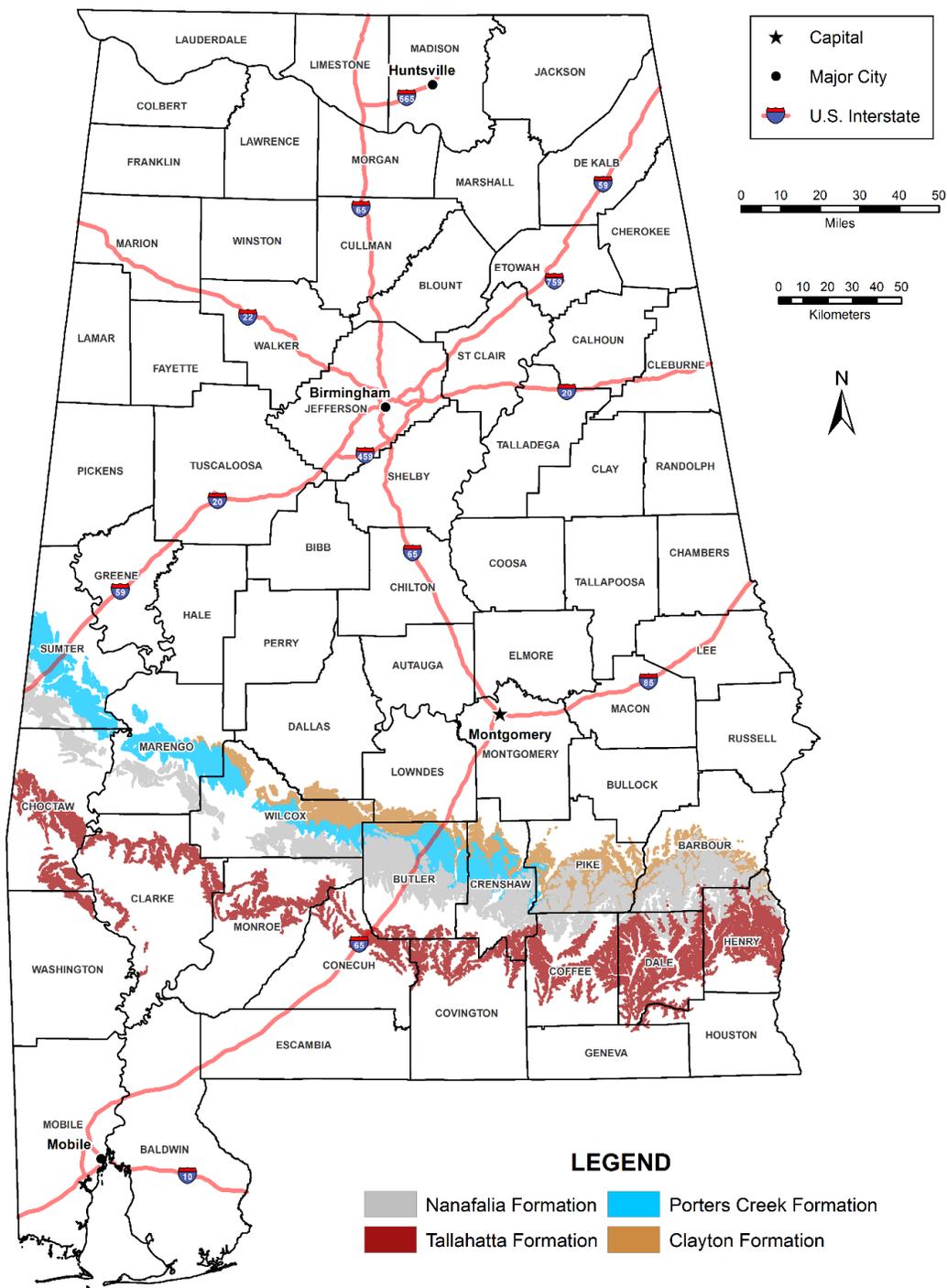


Figure 17.—Map depicting the generalized distribution of the zeolite-bearing deposits in southern Alabama (from Szabo and others, 1988).

have yet to be exploited commercially (Dean, 1987).

The discovery of unusual properties of zeolite minerals, particularly their ability to act as molecular sieves, their ion exchange capabilities, and hydration and rehydration properties, has created a great demand for zeolites by industry (Dean, 1987). Zeolites are used to purify natural and industrial gases, and for water filtration systems, soil conditioning, aquaculture systems, carriers of pesticides, desiccants, and many other uses requiring molecular capillaries (Dean, 1987). At Chickasaw in Mobile County, artificial zeolites are produced for use as molecular sieve absorbents (Dean, 1997).

FURTHER READINGS

Published reports on Alabama's geology and mineral resources are too numerous to include a complete citation in this report. A complete list of Geological Survey of Alabama publications can be accessed on the agency web site at <http://www.gsa.state.al.us>. Also, information on Geological Survey of Alabama publications is available from the Publications Office, Geological Survey of Alabama, P.O. Box 869999, Tuscaloosa, Alabama 35486-6999 (telephone 205-247-3636). The Geological Survey Publications Office is also a repository for U.S. Geological Survey topographic maps, which may be purchased. An index to topographic maps may be obtained free of charge.

The Geological Survey of Alabama reports listed below summarize information on the state's mineral resources and may be obtained from the Publications Office.

- *Summary Report on the Mineral Resources of Southwest Alabama, 1986, by Mirza A. Beg, Bennett L. Bearden, Otis M. Clarke, Jr., Robert L. Barnett, and Thomas W. Daniel, Jr., Geological Survey of Alabama Information Series 65, 33 p.*
- *Mineral Filler and Extender Resources in Alabama, 1990, by*

Karen F. Rheams, Geological Survey of Alabama Circular 145, 77 p.

- *Geologic Map of Alabama, 1988, compiled by Michael W. Szabo, W. Edward Osborne, Charles W. Copeland, Jr., and Thornton L. Neathery, Geological Survey of Alabama Special Map 220 (scale 1:250,000).*
- *Geologic Map of Alabama, 1989, compiled by W. Edward Osborne, Michael W. Szabo, Charles W. Copeland, Jr., and Thornton L. Neathery, Geological Survey of Alabama Special Map 221 (scale 1:500,000).*
- *Assessment of Nonhydrocarbon Mineral Resources in the Exclusive Economic Zone in Offshore Alabama, 1990, by Steven J. Parker, Geological Survey of Alabama Circular 147, 73 p.*
- *Industrial Minerals of the Southeastern United States—Economic Mineral Resources in Central Alabama, 1990, by Karen F. Rheams and Guerry H. McClellan, Geological Survey of Alabama Guidebook 3-3, 60 p.*
- *Selected Industrial Mineral Resource Sites and Processing Facilities in West Alabama, by Karen F. Rheams, 1991, Geological Survey of Alabama Guidebook 4, 56 p.*
- *Industrial Minerals of the Southeastern United States—Proceedings of the 2nd Annual Symposium on Industrial Minerals, 1992, edited by Karen F. Rheams and Guerry H. McClellan, Geological Survey of Alabama Circular 161, 111 p.*

In addition to these resources, online sources of minerals-related data, including recent and current production statistics and operators in the state, are listed in the "References" section.

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ADDITIONAL RESOURCES

Alabama Department of Environmental Management

1400 Coliseum Boulevard
Montgomery, AL 36110
Phone: 334-271-7700
Fax: 334-271-7950
Website: <http://www.adem.alabama.gov>

Alabama Department of Labor, Mining Division

649 Monroe Street
Montgomery, AL 36131
Phone: 334-242-8265
Fax: 334-242-8403
Website: <https://www.labor.alabama.gov/Inspections/Mining>

Alabama Department of Labor, Office of Mine Safety and Inspection

11 West Oxmoor Road, Suite 201
Birmingham, AL 35029
Phone: 205-944-1075
Fax: 205-944-1078
Website: <https://www.labor.alabama.gov/Inspections/Mining/MineSafety.aspx>

Alabama Surface Mining Commission

1811 2nd Avenue, Suite 2
Jasper, AL 35501
Phone: 205-221-4130
Fax: 205-221-5077
Website: <http://www.surface-mining.alabama.gov>

Geological Survey of Alabama

P.O. Box 869999
Tuscaloosa, AL 35486
Phone: 205-349-2852
Fax: 205-349-2861
Website: <http://www.gsa.state.al.us>

Geological Survey of Alabama – Core Warehouse

P.O. Box 869999
Tuscaloosa, AL 35486
Phone: 205-247-3654
Website: http://www.gsa.state.al.us/gsa/core_warehouse.html

Geological Survey of Alabama – Geological Investigations Program

P.O. Box 869999
Tuscaloosa, AL 35486
Phone: 205-247-3626
Fax: 205-349-2861
Website: <https://www.gsa.state.al.us/gsa/geologic>

Geological Survey of Alabama – Energy Investigations Program

P.O. Box 869999
Tuscaloosa, AL 35486
Phone: 205-247-3721
Website: <https://www.gsa.state.al.us/gsa/energy>

Geological Survey of Alabama – Geophysical Well-log Database

P.O. Box 869999
Tuscaloosa, AL 35486
Phone: 205-247-3652
Website: <http://gsa.state.al.us/ogb/database.aspx>

Geological Survey of Alabama – Publications

P.O. Box 869999
Tuscaloosa, AL 35486
Phone: 205-247-3636
Website: <http://www.gsa.state.al.us/publications.aspx>

U.S. Department of Agriculture, Forest Service, Southern Region (R-8)

1720 Peachtree Road NW
Atlanta, GA 30367
Phone: 404-347-3284
Fax: 404-347-1781
Website: <http://www.fs.usda.gov>

U.S. Department of the Interior, Bureau of Land Management, Southeastern District

411 Briarwood Drive, Suite 404
Jackson, MS 39206
Phone: 601-977-5400
Fax: 601-977-5440
Website: <http://www.blm.gov/>

U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement

501 Belle Street, Suite 215
Alton, IL 62002
Phone: 618-463-6460
Fax: 618-463-6470
Website: <http://www.mcrcc.osmre.gov>

U.S. Department of the Interior, U.S. Geological Survey, Mineral Resources Program

12201 Sunrise Valley Drive
Reston, VA 20192
Phone: 703-648-6100
Fax: 703-648-6057
Website: <https://www.minerals.usgs.gov>

U.S. Department of Labor, Mine Safety and Health Administration, Southeast District

1030 London Drive, Suite 400
Birmingham, AL 35211
Phone: 205-290-7294
Fax: 205-290-7299
Website: <https://www.msha.gov>

U.S. Environmental Protection Agency, Region 4

61 Forsyth Street SW
Atlanta, GA 30303
Phone: 404-562-9900
Fax: 404-562-8174
Website: <https://www.epa.gov>

APPENDIX A

Industrial Mineral Producers in Alabama, 2008-2013

The information on mineral producers has been modified from Alabama Department of Labor,
Mining and Reclamation Division, Mine Safety and Inspection Section,
Annual Statistical Reports for fiscal years 2008-2013

APPENDIX A-1.—INDUSTRIAL MINERAL PRODUCERS IN ALABAMA,
FISCAL YEAR 2008

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
BAUXITE				
Mullite Co. of America Eufaula, AL	All pits	6	Barbour	42,926
Mullite Co. of America Eufaula, AL.	All pits	6	Henry	46,700
TOTALS		12		89,626
CHERT				
Ellis Brothers Centre, AL	Ellis Brothers	4	Cherokee	181
J. H. Payne Cedar Bluff, AL	Cullpepper	2	Cherokee	22,208
J. M. Whorton Trust Attalla, AL	Whorton Trust	1	Etowah	18,325
C. Bellew & M. Caldwell Attalla, AL	Bellew & Caldwell	1	St. Clair	65,317
TOTALS		8		106,032
CLAY				
Boral Bricks, Inc. Columbus, GA	7-1	4	Bibb	21,816
Southern Sand & Gravel Greenville, AL	10-1	6	Butler	3,175
Selrahc Family Partnership Florala, AL	23-1	1	Covington	272
Henry Brick Co., Inc. Selma, AL	27-4	61	Dallas	125,837
Jenkins Brick Co. Montgomery, AL	29-4	3	Elmore	18,484
L. Luker Atmore, AL	30-1	2	Escambia	4,332
Boral Bricks, Inc. Columbus, GA	1-1	4	Jefferson	55,724
Waters Bros. Contractors, Inc. Decatur, AL	42-1	1	Lawrence	4,999
Corbett Creek Haulers, Inc. Salem, AL	43-1	1	Lee	7,407
American Colloid Co. Letohatchee, AL	45-4	35	Lowndes	99,832
J. Terrell Montgomery, AL	46-1	1	Macon	4,082

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
CLAY--continued				
Capital Materials, LLC Montgomery, AL	3-1	4	Montgomery	447,580
Hill Land & Timber Co. Inc. Montgomery, AL	3-1	2	Montgomery	2,903
Jenkins Brick Co. Montgomery, AL	Maddox	3	Montgomery	93,433
Spencer Company, LLC Marion Junction, AL	53-1	1	Perry	6,563
Boral Bricks, Inc. Macon, MS	54-1	8	Pickens	58,111
Boral Bricks, Inc. Columbus, GA	57-1 & 57-2	4	Russell	43,428
LaFarge Calera, AL	Roberta	*	Shelby	194,481
Jenkins Brick Co. Montgomery, AL	59-1	4	St. Clair	227,549
Veolia Es Cedar Hill Landfill, Inc. Moody, AL	59-2	1	St. Clair	25,058
Big River Industries, Inc. Livingston, AL	60-1	2	Sumter	630,421
Riverside Refractories, Inc. Pell City, AL	61-1	1	Talladega	25,105
Burton Industries Inc. Jasper, AL	64-1	5	Walker	72,504
TOTALS		154		2,173,098
DOLOSTONE				
Chemical Lime Co. Brierfield, AL	Brierfield	27	Bibb	1,256,249
Lafarge Calera, AL	Roberta	*	Shelby	1,560,277
Rock Products, LLC Sylacauga, AL	Sylacauga	7	Talladega	90,718
TOTALS		34		2,907,245
GRANITE				
APAC-Midsouth, Inc. Birmingham, AL	Alexander City	14	Coosa	275,292
North Mont. Materials, LLC Montgomery, AL	Hard Rock Hill	13	Elmore	144,398
Vulcan Materials Co. Birmingham, AL	Notasulga	36	Lee	871,085

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
GRANITE--continued				
APAC-Midsouth, Inc. Birmingham, AL	Wedowee	13	Randolph	351,956
TOTALS		76		1,642,730
LIMESTONE				
Madison Materials Guntersville, AL	Summit	10	Blount	289,797
Vulcan Materials Co. Birmingham, AL	Ohatchee-122	15	Calhoun	318,050
Hoover, Inc. Lavergne, TN	Allsboro-636	39	Colbert	1,340,007
Rogers Group, Inc. Tuscumbia, AL	Tuscumbia	12	Colbert	447,727
Vulcan Materials Co. Birmingham, AL	Cherokee-138	124	Colbert	907,237
Vulcan Materials Co. Birmingham, AL	Pride	26	Colbert	1,012,117
Vulcan Materials Co. Birmingham, AL	Tuscumbia-114	15	Colbert	527,923
Vulcan Materials Co. Birmingham, AL	Ft. Payne	11	DeKalb	329,977
Blount Springs Mat. Co., Inc. Cullman, AL	Clayton	11	Etowah	209,234
Vulcan Materials Co. Birmingham, AL	Glencoe-112	19	Etowah	430,481
Alabama Stone Co., Inc. Russellville, AL	Rockwood	44	Franklin	6,689
Vulcan Materials Co. Birmingham, AL	South Russellville	14	Franklin	676,728
Rogers Group, Inc. Tuscumbia, AL	Moulton	6	Lawrence	166,671
Martin-Marietta Mat., Inc. Auburn, AL	Auburn	17	Lee	725,748
SRM Aggregates Birmingham, AL	Opelika	18	Lee	475,221
Rogers Group, Inc. Tuscumbia, AL	Limestone	10	Limestone	424,165
Rogers Group, Inc. Tuscumbia, AL	Lacey's Spring	12	Morgan	413,156
Vulcan Materials Co. Birmingham, AL	Scottsboro-116	9	Jackson	372,319

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE--continued				
Lafarge Agg. Southeast, Inc. Lithonia, GA	Lakeshore	15	Jefferson	621,864
Lehigh Portland Cement Co. Leeds, AL	Leeds	16	Jefferson	785,957
SRM Aggregates Birmingham, AL	Tarrant	14	Jefferson	369,590
Vulcan Materials Co. Birmingham, AL	Bessemer-130	18	Jefferson	588,440
Vulcan Materials Co. Birmingham, AL	Dolcito-123	26	Jefferson	1,058,219
Wade Sand & Gravel Co. Birmingham, AL	Wade	30	Jefferson	1,505,927
Hoover, Inc. Lavergne, TN	Huntsville-638	39	Madison	1,441,095
Vulcan Materials Co. Birmingham, AL	Huntsville-110	31	Madison	1,849,664
Cemex, Inc. Demopolis, AL	Webb	6	Marengo	297,235
Cemex, Inc. Demopolis, AL	Wynn	*	Marengo	891,706
C. A. Langford Co., Inc. Guntersville, AL	Langford	17	Marshall	521,631
Y & S Stone, Inc. Guntersville, AL	Madison Materials	12	Marshall	348,107
Blount Springs Mat. Co., Inc. Cullman, AL	Battleground	14	Morgan	510,259
Hoover, Inc. Lavergne, TN	Decatur-641	11	Morgan	183,917
Vulcan Materials Co. Birmingham, AL	Lacon-137	11	Morgan	369,674
Vulcan Materials Co. Birmingham, AL	Trinity-134	15	Morgan	688,664
Carmeuse Lime Saginaw, AL	Carmeuse	43	Shelby	1,810,352
Chemical Lime Co. Co. Calera, AL	O'Neal	40	Shelby	1,814,369
Cheney Lime & Cement Co. Siluria, AL	Landmark	6	Shelby	1,154,167
Lafarge Calera, AL	Roberta #1	209	Shelby	883,109
Martin-Marietta Mat., Inc. Birmingham, AL	Alabaster	13	Shelby	49,714

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE--continued				
Martin-Marietta Mat., Inc. Maylene, AL	Maylene	20	Shelby	907,185
Vulcan Materials Co. Birmingham, AL	Helena-118	9	Shelby	444,332
Vulcan Materials Co. Birmingham, AL	Calera-131	100	Shelby	4,414,827
Blount Springs Mat. Co., Inc. Cullman, AL	Ashville	12	St. Clair	347,154
National Cement Co. of Ala. Ragland, AL	Drag Strip	11	St. Clair	1,120,634
McCartney Const. Co., Inc. Gadsden, AL	Speedway	25	Talladega	710,988
Vulcan Materials Co. Birmingham, AL	Childersburg-121	15	Talladega	600,805
Martin-Marietta Mat., Inc. Vance, AL	Vance	19	Tuscaloosa	831,604
Vulcan Materials Co. Birmingham, AL	Tuscaloosa-129	17	Tuscaloosa	1,055,428
TOTALS				37,249,862
MARBLE				
Alabama Marble, Inc. Sylacauga, AL	Marsh	10	Talladega	24,494
Imerys Sylacauga Op. Sylacauga, AL	Imerys	256	Talladega	1,160,924
Omya, AL, Inc. Sylacauga, AL	Omya	19	Talladega	779,968
TOTALS		285		1,965,387
MICA				
JMays, Inc. Heflin, AL	JMays- Mica Division	7	Randolph	505
Mica & Minerals Mining Montgomery, AL	Mica & Minerals Mining	1	Coosa	0
TOTALS		5		505
OCHER				
Alabama Pigments Co., LLC Green Pond, AL	63-1	16	Tuscaloosa	5,236
TOTALS		12		5,236

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
QUARTZITE				
McCartney Const. Co., Inc. Gadsden, AL	Coldwater	17	Calhoun	279,632
TOTALS		12		279,632
SAND				
Earth, Inc. Daphne, AL	5-1	2	Baldwin	92,805
Sand & Clay, Inc. Daphne, AL	5-1	3	Baldwin	9,646
Woodstock Trucking Co., Inc. Woodstock, AL	7-2	2	Bibb	9,058
Southern Sand & Gravel Greenville, AL	10-2	6	Butler	7,958
U.S. Silica Co., Inc. Hurtsboro, AL	9-9	7	Bullock	53,994
Lingo Sand Co., Inc. Dothan, AL	26-1	8	Dale	54,431
Mark Donnell Sand Co. Daleville, AL	26-2	5	Dale	119,004
Sand Mountain Materials Ider, AL	28-1	4	DeKalb	2,596
Sand Mountain Sand, LLC Ider, AL	28-1	1	DeKalb	569
Coastal Sand & Gravel, Inc. Codan, AL	2-1	2	Mobile	10,017
Jackson Creek Sand Wilmer, AL	2-Robert Beck-1	4	Mobile	13,533
Miller Contracting, LLC Pascagoula, MS	2-3	1	Mobile	78,413
Mobile Materials, LLC Mobile, AL	2-1	1	Mobile	13,866
Smith Sand, Inc. Saraland, AL	2-1	6	Mobile	17,314
Talley Contracting, Inc. Pascagoula, MS	2-1	1	Mobile	6,308
U.S. Silica Co., Inc. Hurtsboro, AL	57-19	7	Russell	36,1664
Jarvis Trucking, Inc. Northport, AL	63-1	1	Tuscaloosa	45,404
Long's Excavation, Inc. Berry, AL	63-1	0	Tuscaloosa	4,354

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND--continued				
M. Sellers Excav. Co., Inc. Northport, AL	63-2	3	Tuscaloosa	7,288
Valley Materials, Inc. Quinton, AL	64-1	2	Walker	80,516
TOTALS		67		662,242
SANDSTONE				
Madison Materials Guntersville, AL	Summit Sand Plant	8	Blount	272,155
Blount Springs Mat. Co., Inc. Cullman, AL	25-2	1	Cullman	25,412
Wilburn Quarries, LLC Bremen, AL	25-1	11	Cullman	140,734
Jackson Paving & Const., Inc. Guntersville, AL	Jackson Quarry	10	Jackson	63,518
Bunn Bros. Materials, Inc. Tuscaloosa, AL	Marion Co. Rock	14	Marion	289,679
Bunn Bros. Materials, Inc. Tuscaloosa, AL	63-4 & 63-5	11	Tuscaloosa	487,996
TOTALS		55		1,279,494
SAND & CLAY				
93, LLC Brewton, AL	93, LLC	1	Baldwin	39,009
A & B Properties, LLC Spanish Fort, AL	Marlow	1	Baldwin	36,235
Affordable Housing, LLC Orange Beach, AL	Loxley	1	Baldwin	90,718
Atlas, Inc. Daphne, AL	5-1	1	Baldwin	38,411
Baldwin County Const., Inc. Summerdale, AL	5-3 & 5-4	7	Baldwin	22,268
Baldwin Mining Co., Inc. Foley, AL	5-1	6	Baldwin	82,038
Bass Properties, Inc. Stapleton, AL	5-1	1	Baldwin	5,439
Big D Const., Inc. Elberta, AL	5-1	1	Baldwin	544
Bill Patterson Const., Inc. Robertsdale, AL	Bill Patterson	2	Baldwin	2,011
H. W. Brantley Daphne, AL	Daphne	1	Baldwin	19,270

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
C. L. Danne Fairhope, AL	5-1	1	Baldwin	21,728
B. Darby Loxley, AL	5- 1	1	Baldwin	36,484
Gene's Dozer Service, Inc. Lillian, AL	5-1	5	Baldwin	45,123
Heaton Brothers Const. Co. Pensacola, FL	Lillian	2	Baldwin	3,435
Hwy. 27 Dirt Fairhope, AL	5-1	3	Baldwin	52,404
D. A. Jacobs Foley, AL	Jacobs	1	Baldwin	1,270
J. W. Joiner Bay Minette, AL	Joiner	1	Baldwin	17,489
K. K. Kirchharr Robertsdale, AL	Triple L	1	Baldwin	254,346
Peed & Raley, LLC Bon Secour, AL	P & R	2	Baldwin	18,981
RLF Baldwin Op., LLC Magnolia Springs, AL	Layco	6	Baldwin	350,652
Sand & Clay, Inc. Daphne, AL	5-5	2	Baldwin	166,647
C. W. Sims Bay Minette, AL	Jones Construction	1	Baldwin	4,536
Southern Excavating, LLC Fairhope, AL	5-2	2	Baldwin	118,279
Temco Corp., Inc. Bay Minette, AL	All pits	7	Baldwin	21,388
T. Warriner Foley, AL	Tim Warriner	1	Baldwin	62,277
APAC-Southeast, Inc. Dothan, AL	19-1	2	Coffee	1,401
APAC-Southeast, Inc. Dothan, AL	26-2	2	Dale	117,263
APAC-Southeast, Inc. Dothan, AL	26-3	2	Dale	5,171
APAC-Southeast, Inc. Dothan, AL	38-1	2	Houston	970
APAC-Southeast, Inc. Dothan, AL	38-5	2	Houston	81,795
Ellenburg Const., Inc. Dothan, AL	38-2	5	Houston	22,680

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
229 Materials, LLC Kent, AL	29-1	1	Elmore	32,250
J & J Gravel Co., Inc. Wetumpka, AL	J & J Gravel	1	Elmore	15,878
L & J Materials Wetumpka, AL	29-1	1	Elmore	8,727
Creamer Dozer Svcs., Inc. Brewton, AL	30-2	10	Escambia	51,639
J & D Fill Montgomery, AL	Tysonville	2	Macon	35,616
D. M. Harbor Hamilton, AL	49-1	2	Marion	1,905
A & S, Inc. Irvington, AL	2-1	4	Mobile	27,947
Adams & Son Const. Co., Inc. Chickasaw, AL	2-1	1	Mobile	81,647
Bill Davis Contractor, Inc. Wilmer, AL	2-2	2	Mobile	90,718
Brownlee Asphalt Paving, Inc. Eight Mile, AL	2-2	3	Mobile	221,338
Esfeller Const. Co., Inc. Codon, AL	All pits	9	Mobile	923,547
Frank Turner Const. Co., Inc. Mobile, AL	Baird Coxwell Pit	1	Mobile	9,072
Grand Bay Sand Pit Codon, AL	2-1	1	Mobile	80,349
Gulf Equipment Corp. Theodore, AL	Hwy. 87	1	Mobile	862
H & S Land, Inc. Mobile, AL	H & S	6	Mobile	20,407
C. E. Hatchett, Jr. Grand Bay, AL	Hatchett	2	Mobile	33,740
Hatter Tenants Mobile, AL	Hatter	1	Mobile	10,352
Holden Earth Moving & Const. Vanceleave, MS	Leverette A & B	1	Mobile	411,360
J. Hunt Enterprises Mobile, AL	Hunt Enterprises	1	Mobile	97,976
L & J Dirt, Inc. Chickasaw, AL	2-1	7	Mobile	8,165
Manning Trucking, Inc. Pascagoula, MS	2-1	2	Mobile	49,344

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
Midway Materials, Inc. Semmes, AL	Midway Materials	2	Mobile	70,396
B. Smith Churchula, AL	Churchula Investment	1	Mobile	46,103
T & T, Inc. Mobile, AL	2-1	2	Mobile	132,151
Taylor Services, Inc. Axis, AL	Taylor Services-1	2	Mobile	61,914
Taylor Services, Inc. Axis, AL	Taylor Services-2	1	Mobile	8,510
Walco, Inc. Mobile, AL	Walco-3	1	Mobile	1,225
R & R Contractors, LLC Monroeville, AL	51-1	2	Monroe	17,010
North Mont. Materials, LLC Montgomery, AL	North Mont. Materials	11	Montgomery	210,614
Edwards Specialties, Inc. Huntsville, AL	52-1	1	Morgan	137,892
K W Plastics Troy, AL	55-1	2	Pike	454
Dykes & Son, Inc. Phenix City, AL	Dykes	6	Russell	7,511
National Cement Co. of Ala. Birmingham, AL	Ashville	15	St. Clair	186,323
Dillard Covington McIntosh, AL	65-1	3	Washington	1,397
TOTALS		196		4,843,264
SAND & GRAVEL				
Gentry Sand & Gravel, Inc. Prattville, AL	4-1	2	Autauga	62,002
Murphy Excavation, LLC Montgomery, AL	Murphy Excavation	1	Autauga	23,877
Red Bluff Sand & Gravel, LLC Birmingham, AL	4-1	12	Autauga	623,236
Woodstock Trucking Co. Woodstock, AL	7-2	2	Bibb	2,801
Blount Springs Mat. Co., Inc. Cullman, AL	8-1	10	Blount	79,236
Mid-state Sand & Gravel, LLC Alabaster, AL	14-1	11	Chilton	276,296

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
Superior Products, Inc. Birmingham, AL	Benchmark	13	Chilton/ Bibb	508,023
Triangle Aggregates, Inc. Jackson, AL	16-1,2,3	28	Clarke	480,808
W. N. Downing Mexia, AL	21-1	1	Conecuh	15,266
Cosby-Carmichael, Inc. Selma, AL	27-7	4	Dallas	90,222
Alabama Gravel, LLC Millbrook, AL	Deatsville	10	Elmore	200,690
Area Sand & Gravel, Inc. Wetumpka, AL	29-1	8	Elmore	19,504
EEDA, Ltd. Montgomery, AL	EEDA	1	Elmore	154,221
Elmore Sand & Gravel, Inc. Elmore, AL	Scott	12	Elmore	326,587
S & E Dirt & Gravel Bay Minette, AL	Emmons	1	Elmore	5,278
Campbell Sand & Gravel Co. Century, FL	Flomaton	2	Escambia	27,009
P & R, LLC Bon Secour, AL	30-1	15	Escambia	251,905
Pace Sand & Gravel Brewton, AL	Pace Sand & Gravel	5	Escambia	74,689
G. B. Trucking Atmore, AL	30-1	1	Escambia	12,164
S & S Const., LLC Grand Bay, AL	S&S Const.	1	Escambia	49,327
Southeastern S & G, LLC Century, FL	Pit #505	6	Escambia	253,927
Southeastern S & G, LLC Century, FL	Pit #507	6	Escambia	121,677
Vulcan Materials Co. Birmingham, AL	Atmore Sand & Gravel	12	Escambia	513,502
Coosa Sand & Gravel, Inc. Birmingham, AL	31-3	12	Etowah	314,793
Turkey Creek S & G, Inc. Winfield, AL	32-1	4	Fayette	18,144
West Ala. Sand & Gravel, Inc. Fayette, AL	32-1	6	Fayette	90,718
Holland Co., Inc. Decatur, AL	Chicken House	14	Franklin	318,650

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
North Ala. Sand & Gravel, LLC Decatur, AL	Plant 2	10	Franklin	635,029
Davis Sand & Gravel, Inc. Tuscaloosa, AL	36-1	5	Hale	168,724
Johnco Materials, Inc. Fayette, AL	45-1	5	Lowndes	200,000
Scott Callen Sand & Gravel Lowndesboro, AL	45-1	2	Lowndes	387,806
Foley Materials Co. Columbus, GA	#502 & #503	10	Macon	259,765
Martin-Marietta Mat., Inc. Mandeville, LA	Shorter Sand & Gravel	12	Macon	400,000
Martin Pinkston Pike Road, AL	Pinkston	1	Macon	4,382
Wiregrass Const. Co. Inc. Ariton, AL	Lambert	18	Macon	376,052
Blue Ridge S & G, Inc. Winfield, AL	#1	11	Marion	121,963
Russell Materials Alexander City, AL	29-1	1	Marion	56,695
Hill Builders, Inc. Saraland, AL	Pit II	18	Mobile	52,186
S & S, LLC Robertsdale, AL	S & S	7	Mobile	80,494
Excel Sand & Gravel, LLC Excel, AL	51-1	3	Monroe	43,545
Lanier Sand & Gravel Castleberry, AL	51-1	1	Monroe	11,731
Little Hawk Mining, LLC Monroeville, AL	51-1	6	Monroe	48,898
Partin Sand & Gravel Repton, AL	Partin Sand & Gravel	2	Monroe	29,928
Southeastern S & G, LLC Century, FL	Pit #509	6	Monroe	149,716
O. S. Wiggins Estate Monroeville, AL	Wiggins	1	Monroe	78,585
Anderson Road Materials, LLC Montgomery, AL	3-1	6	Montgomery	351,766
APAC-Southeast, Inc. Montgomery, AL	Poundstone Pit	2	Montgomery	19,532
C. T. Thackston S & G, Inc. Montgomery, AL	Maddox/ Prattville	8	Montgomery/ Autauga	45,610

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
Dubose Const. Corp. Mt. Meigs, AL	293 Pit	2	Montgomery	454
Foley Materials Co. Columbus, GA	#511 & #512	15	Montgomery	375,488
Hill Land & Timber Co. Inc. Montgomery, AL	Hill Land & Timber	1	Montgomery	100,000
Red Bluff Sand & Gravel, LLC Birmingham, AL	Waugh Plant	5	Montgomery	215,910
J. Robison Detroit, AL	49-2	1	Montgomery	1,361
Odell Mining Co., Inc. Prattville, AL	CCF	2	Montgomery	66,653
Spencer Company, LLC Marion Junction, AL	Spencer	1	Perry	6,323
Foley Materials Co. Columbus, GA	#501 & #505	10	Russell	830,117
Billy Boyd Realty & Const. Co. Tuscaloosa, AL	63-1	2	Tuscaloosa	318
Unimin Corporation New Canaan, CT	63-1	10	Tuscaloosa	151,115
TOTALS		402		10,501,098
SHALE				
Henry Brick Co., Inc. Selma, AL	Brierfield	61	Bibb	23,151
Boral Bricks, Inc. Columbus, GA	1-1	4	Jefferson	82,903
Boral Bricks, Inc. Columbus, GA	43-2	4	Lee	22,575
Lafarge Calera, AL	Roberta	*	Shelby	6,612
Ragland Clay Products, LLC Ragland, AL	Ragland	1	St. Clair	10,219
Cordova Clay Co. Cordova, AL	Cordova Clay	3	Walker	17,351
TOTALS		65		162,812

*Employees listed in other pits

**Did not report

APPENDIX A-2.—INDUSTRIAL MINERAL PRODUCERS IN ALABAMA,
FISCAL YEAR 2009

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
BAUXITE				
Mullite Co. of America Eufaula, AL	All pits	12	Barbour	27,433
TOTALS		12		27,433
CHERT				
Ellis Brothers Centre, AL	Ellis Brothers	3	Cherokee	214
J. H. Payne Cedar Bluff, AL	Cullpepper	1	Cherokee	23,455
J. M. Whorton Trust Attalla, AL	Whorton Trust	1	Etowah	10,583
C. Bellew & M. Caldwell Attalla, AL	Bellew & Caldwell	1	St. Clair	35,388
Golden Excavating, Inc. Pell City, AL	Golden Excavating	3	St. Clair	3,292
TOTALS		9		72,933
CLAY				
Mullite Co. of America Eufaula, AL	All pits	12	Barbour	24,887
Boral Bricks, Inc. Columbus, GA	Centreville	3	Bibb	20,182
Travis Creek Energy, LLC Trafford, AL	8-1	5	Blount	13,828
Southern Sand & Gravel Greenville, AL	10-1	5	Butler	3,612
Selrahc Family Partnership Floralta, AL	23-1	1	Covington	907
Henry Brick Co. Selma, AL	27-4	55	Dallas	66,562
B. R. Franklin Brewton, AL	30-1	1	Escambia	417
L. Luker Atmore, AL	30-1	1	Escambia	2,509
Boral Bricks, Inc. Columbus, GA	1-1	4	Jefferson	62,670
Corbett Creek Haulers, Inc. Salem, AL	43-1	1	Lee	13,063
American Colloid Co. Letohatchee, AL	Sandy Ridge	26	Lowndes	60,215

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
CLAY—continued				
Johnson Terrell Montgomery, AL	46-1	1	Macon	1,560
Capital Materials, LLC Montgomery, AL	3-1	4	Montgomery	206,626
Jenkins Brick Co. Montgomery, AL	Maddox	4	Montgomery	103,306
Spencer Company, LLC Marion Junction, AL	53-1	1	Perry	7,618
Columbus Brick Co. Columbus, MS	54-1	1	Pickens	58,352
Boral Bricks, Inc. Columbus, GA	Uchee	4	Russell	26,421
LaFarge Calera, AL	Roberta	*	Shelby	216,326
Jenkins Brick Co. Montgomery, AL	59-1	4	St. Clair	62,935
Big River Industries, Inc. Livingston, AL	60-1	3	Sumter	270,043
Riverside Refractories, Inc. Pell City, AL	61-1	2	Talladega	27,769
Burton Industries Inc. Jasper, AL	64-1	3	Walker	11,679
TOTALS		129		1,236,603
DOLOSTONE				
Chemical Lime Co. Brierfield, AL	Brierfield	28	Bibb	627,709
Lafarge Calera, AL	Roberta	*	Shelby	418,998
Rock Products, LLC Sylacauga, AL	Rock Products	2	Talladega	18,144
TOTALS		30		1,064,851
GRANITE				
APAC-Midsouth, Inc. Birmingham, AL	Alexander City	14	Coosa	276,522
North Mont. Materials, LLC Montgomery, AL	Hard Rock Hill	12	Elmore	125,743
Vulcan Materials Co. Birmingham, AL	Notasulga	41	Lee	1,315,418
APAC-Midsouth, Inc. Birmingham, AL	Wedowee	15	Randolph	206,095

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
GRANITE--continued				
TOTALS		82		1,923,778
LIMESTONE				
Madison Materials Guntersville, AL	Summit	8	Blount	287,326
Vulcan Materials Co. Birmingham, AL	Ohatchee	11	Calhoun	159,498
Hoover, Inc. Lavergne, TN	Allsboro-636	47	Colbert	1,075,917
Rogers Group, Inc. Tuscumbia, AL	Tuscumbia	11	Colbert	377,654
Vulcan Materials Co. Birmingham, AL	Cherokee-138	17	Colbert	771,107
Vulcan Materials Co. Birmingham, AL	Pride	22	Colbert	752,298
Vulcan Materials Co. Birmingham, AL	Tuscumbia	13	Colbert	441,904
Vulcan Materials Co. Birmingham, AL	Ft. Payne	9	DeKalb	217,180
Vulcan Materials Co. Birmingham, AL	Atmore	6	Escambia	215,910
Blount Springs Mat. Co., Inc. Cullman, AL	Clayton	11	Etowah	241,760
Vulcan Materials Co. Birmingham, AL	Glencoe	19	Etowah	322,517
Alabama Stone Co., Inc. Russellville, AL	Rockwood	45	Franklin	15,454
Vulcan Materials Co. Birmingham, AL	South Russellville	13	Franklin	476,272
Vulcan Materials Co. Birmingham, AL	Scottsboro	9	Jackson	226,796
Lafarge Agg. Southeast, Inc. Lithonia, GA	Citadel	11	Jefferson	324,287
Lafarge Agg. Southeast, Inc. Lithonia, GA	Lakeshore	11	Jefferson	414,706
Lehigh Portland Cement Co. Leeds, AL	Leeds	14	Jefferson	732,445
SRM Aggregates Birmingham, AL	Tarrant	15	Jefferson	137,232
Vulcan Materials Co. Birmingham, AL	Bessemer-130	16	Jefferson	408,233

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE—continued				
Vulcan Materials Co. Birmingham, AL	Dolcito-123	20	Jefferson	674,485
Wade Sand & Gravel Co. Birmingham, AL	Wade	29	Jefferson	1,281,852
Rogers Group, Inc. Tuscumbia, AL	Moulton	8	Lawrence	63,429
Martin-Marietta Mat., Inc. Auburn, AL	Auburn	15	Lee	522,538
SRM Aggregates Birmingham, AL	Opelika	24	Lee	624,560
Rogers Group, Inc. Tuscumbia, AL	Limestone	9	Limestone	204,992
Hoover, Inc. Lavergne, TN	Huntsville-638	35	Madison	902,289
Vulcan Materials Co. Birmingham, AL	Huntsville	30	Madison	1,110,578
Cemex, Inc. Demopolis, AL	Webb	6	Marengo	217,702
Cemex, Inc. Demopolis, AL	Wynn	*	Marengo	653,106
C. A. Langford Co., Inc. Guntersville, AL	Langford	16	Marshall	498,952
Y & S Stone, Inc. Guntersville, AL	Madison Materials	7	Marshall	255,080
Blount Springs Mat. Co., Inc. Cullman, AL	Battleground	11	Morgan	307,047
Hoover, Inc. Lavergne, TN	Decatur-641	8	Morgan	99,403
Rogers Group, Inc. Tuscumbia, AL	Lacey's Spring	10	Morgan	181,095
Vulcan Materials Co. Birmingham, AL	Lacon	11	Morgan	259,321
Vulcan Materials Co. Birmingham, AL	Trinity	13	Morgan	431,883
Carmeuse Lime Saginaw, AL	Carmeuse	54	Shelby	1,649,719
Chemical Lime Co. Co. Calera, AL	O'Neal	45	Shelby	1,814,369
Cheney Lime & Cement Co. Siluria, AL	Landmark #2	9	Shelby	815,597

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE—continued				
Lafarge Agg. Southeast, Inc. Lithonia, GA	Calera	12	Shelby	547,405
Lafarge Calera, AL	Roberta #1	72	Shelby	205,229
Blount Springs Mat. Co., Inc. Cullman, AL	Ashville	10	St. Clair	220,227
Martin-Marietta Mat., Inc. Birmingham, AL	Alabaster	6	Shelby	85,766
Martin-Marietta Mat., Inc. Maylene, AL	Maylene	17	Shelby	816,466
Vulcan Materials Co. Birmingham, AL	Calera	79	Shelby	3,405,768
Vulcan Materials Co. Birmingham, AL	Helena-118	11	Shelby	267,619
National Cement Co. of Ala. Ragland, AL	Drag Strip	13	St. Clair	829,455
McCartney Const. Co., Inc. Gadsden, AL	Speedway	24	Talladega	539,564
Vulcan Materials Co. Birmingham, AL	Childersburg-121	10	Talladega	317,515
Martin-Marietta Mat., Inc. Vance, AL	Vance	15	Tuscaloosa	576,692
Vulcan Materials Co. Birmingham, AL	Tuscaloosa	17	Tuscaloosa	663,127
TOTALS		954		28,641,326
MARBLE				
Alabama Marble, Inc. Sylacauga, AL	Marsh	8	Talladega	24,494
Imerys Sylacauga Op. Sylacauga, AL	Imerys	29	Talladega	847,855
Omya, AL, Inc. Sylacauga, AL	Omya	15	Talladega	943,472
TOTALS		52		1,815,821
MICA				
JMays, Inc. Heflin, AL	JMays- Mica Division	5	Randolph	771
TOTALS		5		771

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
OCHER				
Alabama Pigments Co., LLC Green Pond, AL	63-1	12	Tuscaloosa	5,236
TOTALS		12		5,236
QUARTZITE				
McCartney Const. Co., Inc. Gadsden, AL	Coldwater	12	Calhoun	227,415
TOTALS		12		227,415
SAND				
Earth, Inc. Daphne, AL	5-1	2	Baldwin	18,253
Sand & Clay, Inc. Daphne, AL 36526	5-1	3	Baldwin	8,102
Woodstock Trucking Co., Inc. Woodstock, AL	7-2	2	Bibb	3,866
U.S. Silica Co., Inc. Hurtsboro, AL	9-9	6	Bullock	26,642
Southern Sand & Gravel Greenville, AL	10-2	5	Butler	5,492
Lingo Sand Co., Inc. Dothan, AL	26-1	8	Dale	56,608
Mark Donnell Sand Co. Daleville, AL	26-2	5	Dale	147,871
Sand Mountain Materials Centre, AL	28-1	4	DeKalb	18,331
Couch Ready Mix USA Dothan, AL	34-1	6	Geneva	204,117
A. R. Taylor Demopolis, AL	48-1	3	Marengo	44,756
Coastal Sand & Gravel, Inc. Codan, AL	Nicholson	2	Mobile	1,715
Miller Contracting, LLC Pascagoula, MS	2-3	1	Mobile	39,674
Mobile Materials, LLC Mobile, AL	2-1	1	Mobile	2,673
Smith Sand, Inc. Saraland, AL	2-1	5	Mobile	15,473
Talley Contracting, Inc. Pascagoula, MS	2-1	20	Mobile	4,227
U.S. Silica Co., Inc. Hurtsboro, AL	57-19	6	Russell	25,895

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND—continued				
Couch Ready Mix USA Dothan, AL	63-1	4	Tuscaloosa	131,542
Jarvis Trucking, Inc. Northport, AL	63-1	1	Tuscaloosa	11,583
Long's Excavation, Inc. Berry, AL	63-1	1	Tuscaloosa	2,177
M. Sellers Excav. Co., Inc. Northport, AL	63-2	3	Tuscaloosa	1,656
Valley Materials, Inc. Quinton, AL	64-1	4	Walker	85,275
TOTALS		92		855,928
SANDSTONE				
Madison Materials Guntersville, AL	Summit Sand Plant	8	Blount	187,783
Blount Springs Mat. Co., Inc. Cullman, AL	25-2	3	Cullman	31,595
Wilburn Quarries, LLC Bremen, AL	25-1	12	Cullman	106,317
Jackson Paving & Const., Inc. Guntersville, AL	Jackson Quarry	7	Jackson	974
Bunn Bros. Materials, Inc. Tuscaloosa, AL	Marion Co. Rock	13	Marion	208,652
Bunn Bros. Materials, Inc. Tuscaloosa, AL	63-4 & 63-5	9	Tuscaloosa	589,372
TOTALS		52		1,124,692
SAND & CLAY				
C. H. Watkins Prattville, AL	4-1	1	Autauga	17,726
93, LLC Brewton, AL	93, LLC	1	Baldwin	907
A & B Properties, LLC Spanish Fort, AL	Marlow	1	Baldwin	14,631
Baldwin County Const., Inc. Summerdale, AL	5-3 & 5-4	7	Baldwin	5,555
Baldwin Mining Co., Inc. Foley, AL	5-1	6	Baldwin	50,576
Bass Properties, Inc. Stapleton, AL	5-1	1	Baldwin	3,705
Bill Patterson Const., Inc. Robertsdale, AL	Bill Patterson	2	Baldwin	544

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
R. D. Croston Elberta, AL	Big D	1	Baldwin	686
B. Darby Loxley, AL	5- 1	1	Baldwin	24,687
C. L. Danne Fairhope, AL	5-1	1	Baldwin	8,853
G & M Properties, LLC Bay Minette, AL	5-1	1	Baldwin	1,406
Gene's Dozer Service, Inc. Lillian, AL	5-1	7	Baldwin	38,955
Heaton Brothers Const. Co. Pensacola, FL	Lillian	33	Baldwin	22,120
Howard W. Brantley Daphne, AL	5-1	1	Baldwin	8,248
Hwy. 27 Dirt Fairhope, AL	5-1	4	Baldwin	40,563
D. A. Jacobs Foley, AL	Jacobs	1	Baldwin	682
J. W. Joiner Bay Minette, AL	Joiner	2	Baldwin	6,153
K. K. Kirchharr Robertsdale, AL	Triple K	1	Baldwin	176,216
RLF Baldwin Op., LLC Magnolia Springs, AL	Layco	5	Baldwin	218,663
Sand & Clay, Inc. Daphne, AL	5-5	2	Baldwin	149,343
Southern Excavating, LLC Fairhope, AL	5-2	1	Baldwin	11,159
Temco Corp., Inc. Bay Minette, AL	All pits	7	Baldwin	33,804
T. Warriner Foley, AL	Tim Warriner	1	Baldwin	50,893
Weeks Mining, LLC Robertsdale, AL	5-1	1	Baldwin	789
Blount Springs Mat. Co., Inc. Cullman, AL	Sand Plant	10	Blount	109,912
APAC-Southeast, Inc. Dothan, AL	19-1	2	Coffee	1,814
Beckham & Watson Enterprise, AL	19-1	2	Coffee	26,178

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
APAC-Southeast, Inc. Dothan, AL	26-2 & 26-3	2	Dale	93,168
229 Materials, LLC Kent, AL	29-1	1	Elmore	5,624
J & J Gravel Co., Inc. Wetumpka, AL	J & J Gravel	1	Elmore	12,267
Creamer Dozer Service, Inc. Brewton, AL	30-1&2	10	Escambia	5,144
Chase Ridge Clay Co. Geneva, AL	Chase Ridge	1	Geneva	10,433
APAC-Southeast, Inc. Dothan, AL	38-1	2	Houston	6,350
Ellenburg Const., Inc. Dothan, AL	38-2	4	Houston	9,072
Hughes Farm, LLC Dothan, AL	Dirt Pit	1	Houston	59,861
J & D Fill Montgomery, AL	Tysonville	2	Macon	12,477
J. T. Smith Owens Cross Roads, AL	47-2	1	Madison	2,087
D. M. Harbor Hamilton, AL	Blue Diamond	1	Marion	635
A & S, Inc. Irvington, AL	2-1	4	Mobile	19,595
Adams & Son Const. Co., Inc. Chickasaw, AL	2-1	1	Mobile	81,647
Bay Equipment Co., Inc. Chickasaw, AL	2-1	2	Mobile	6,982
Brownlee Asphalt Paving, Inc. Eight Mile, AL	2-2	3	Mobile	103,291
C. E. Hatchett, Jr. Grand Bay, AL	Hatchett	2	Mobile	265,254
Dirt, Inc. Wilmer, AL	2-6	1	Mobile	590
Esfeller Const. Co., Inc. Codan, AL	All pits	9	Mobile	244,542
Frank Turner Const. Co., Inc. Mobile, AL	Baird Coxwell Pit	1	Mobile	9,072
Grand Bay Sand Pit Codan, AL	2-1	1	Mobile	134,738

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
Gulf Equipment Corp. Theodore, AL	McNeil	1	Mobile	5,715
Gulf Hauling & Const., Inc. Wilmer, AL	2-1	2	Mobile	27,020
H & S Land, Inc. Mobile, AL	H&S	8	Mobile	14,656
Holden Earth Moving & Const. Vancleave, MS	Leverette A & B	5	Mobile	73,453
Jackson Creek Sand Wilmer, AL	2-Robert Beck-1	3	Mobile	36,578
L & J Dirt, Inc. Chickasaw, AL	2-1	6	Mobile	10,886
Manning Trucking, Inc. Pascagoula, MS	2-1	2	Mobile	36,717
Midway Materials, Inc. Semmes, AL	Midway Materials	1	Mobile	105,713
B. Smith Churchula, AL	Churchula Investment	1	Mobile	8,880
Southern Land Dev., LLC Theodore, AL	2-1	7	Mobile	30,708
T & T, Inc. Mobile, AL	2-1	2	Mobile	102,240
Walco, Inc. Mobile, AL	Walco-3	1	Mobile	612
R & R Contractors, LLC Monroeville, AL	51-1	10	Monroe	16,397
Southern Athletic Fields, Inc. Columbia, TN	52-1	2	Morgan	22,680
K W Plastics Troy, AL	55-1	2	Pike	454
Dykes & Son, Inc. Phenix City, AL	Dykes	5	Russell	5,171
National Cement Co. of Ala. Birmingham, AL	Ashville	1	St. Clair	119,873
D. Covington McIntosh, AL	65-1	2	Washington	3,062
Taylor Services, Inc. Calvert, AL	65-1	1	Washington	5,179
TOTALS		216		2,733,590

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL				
Alabama Sand and Gravel, Inc. Billingsley, AL	4-2	20	Autauga	262,969
Thackston Sand & Gravel, Inc. Montgomery, AL	Prattville	1	Autauga	32,381
Gentry Sand & Gravel, Inc. Prattville, AL	Independence	2	Autauga	56,247
Murphy Excavation, LLC Montgomery, AL	Murphy Excavation	1	Autauga	5,534
Red Bluff Sand & Gravel, LLC Birmingham, AL	Red Bluff	11	Autauga	413,132
Woodstock Trucking Co. Woodstock, AL	7-2	2	Bibb	1,308
Superior Products, Inc. Birmingham, AL	Jemison/ Benchmark	15	Bibb/ Chilton	355,254
Triangle Aggregates, Inc. Jackson, AL	16-1,2,3	28	Clarke	1,421,520
Carters Contracting Svcs., Inc. Andalusia, AL	Carter Pit	40	Covington	24,879
Cosby-Carmichael, Inc. Selma, AL	27-7	4	Dallas	95,480
Selma Gravel, Inc. Montgomery, AL	27-1	7	Dallas	202,671
Alabama Gravel, LLC Millbrook, AL	Deatsville	7	Elmore	233,980
Area Sand & Gravel, Inc. Wetumpka, AL	29-1	8	Elmore	17,237
EEDA, Ltd. Montgomery, AL	EEDA	1	Elmore	22,742
Elmore Sand & Gravel, Inc. Elmore, AL	Scott	33	Elmore	453,592
RMC & C, LLC Montgomery, AL	RMC & C	1	Elmore	45
Russell Materials, LLC Alexander City, AL	29-1	1	Elmore	32,343
Campbell Sand & Gravel Co. Century, FL	Flomaton	3	Escambia	37,302
P & R, LLC Bon Secour, AL	30-1	15	Escambia	1,176,080
Pace Sand & Gravel Brewton, AL	Pace Sand & Gravel	5	Escambia	68,813

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
S & E Dirt & Gravel Bay Minette, AL	Emmons	1	Escambia	415
Southeastern S&G, LLC Century, FL	Pit #507	21	Escambia	226,489
Viking Industries, LLC Atmore, AL	30-1	4	Escambia	97,892
Coosa Sand & Gravel, Inc. Birmingham, AL	31-3	11	Etowah	170,093
Turkey Creek S&G, Inc. Winfield, AL	32-1	4	Fayette	59,874
West Ala. Sand & Gravel, Inc. Fayette, AL	32-1	5	Fayette	108,862
Alliance Sand and Agg., LLC Decatur, AL	Plant 2	10	Franklin	566,990
Davis Sand & Gravel, Inc. Tuscaloosa, AL	36-1	5	Hale	128,918
Johnco Materials, Inc. Fayette, AL	45-1	5	Lowndes	181,437
K. Lawrence Hayneville, AL	Kelvin's Dev. Co.	1	Lowndes	4,536
Scott Callen Sand & Gravel Lowndesboro, AL	45-1	1	Lowndes	184,376
Foley Materials Co. Columbus, GA	#502 & #503	2	Macon	150,863
Martin-Marietta Mat., Inc. Mandeville, LA	Shorter Sand & Gravel	12	Macon	362,874
Martin Pinkston Pike Road, AL	Pinkston	1	Macon	568
Wiregrass Const. Co., Inc. Ariton, AL	Lambert	14	Macon	576,129
Blue Ridge S & G, Inc. Winfield, AL	#1	11	Marion	63,327
J. Robison Detroit, AL	49-2	1	Marion	4,082
Hill Builders, Inc. Saraland, AL	Pit II	18	Mobile	47,342
S & S Construction, LLC Grand Bay, AL	S & S Const.	2	Mobile	95,650
Taylor Services, Inc. Calvert, AL	2-1	1	Mobile	90,010

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
Excel Sand & Gravel, LLC Excel, AL	51-1	2	Monroe	32,659
Lanier Sand & Gravel Castleberry, AL	Blanton	1	Monroe	10,642
Little Hawk Mining, LLC Monroeville, AL	51-1	6	Monroe	44,360
Partin Sand & Gravel Repton, AL	Partin Sand & Gravel	2	Monroe	8,058
Southeastern S&G, LLC Century, FL	Pit #509	*	Monroe	118,741
O. S. Wiggins Estate Monroeville, AL	Wiggins	1	Monroe	8,573
Anderson Road Materials, LLC Montgomery, AL	3-1	6	Montgomery	127,172
APAC-Southeast, Inc. Montgomery, AL	3-5	1	Montgomery	58,722
Asphalt Contractors, Inc. Montgomery, AL	3-2	8	Montgomery	84,005
Couch Ready Mix USA Dothan, AL	B & R Sand & Gravel	12	Montgomery	566,083
Dubose Const. Corp. Mt. Meigs, AL	293 Pit	2	Montgomery	454
Foley Materials Co. Columbus, GA	#511 & #512	7	Montgomery	393,106
Hill Land & Timber Co. Inc. Montgomery, AL	Hill Land & Timber	1	Montgomery	90,718
North Mont. Materials, LLC Montgomery, AL	3-1	6	Montgomery	44,983
Odell Mining Co., Inc. Prattville, AL	CCF	2	Montgomery	80,276
Red Bluff Sand & Gravel, LLC Birmingham, AL	Waugh Plant	5	Montgomery	230,425
Red Eagle Sand & Gravel, Inc. Montgomery, AL	3-1	9	Montgomery	34,082
Spencer Company, LLC Marion Junction, AL	Spencer	1	Perry	5,322
Foley Materials Co. Columbus, GA	#501 & #505	7	Russell	642,622
Dillard Lands, LLC Notasulga, AL	62-1	1	Tallapoosa	31,751

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
Billy Boyd Realty & Const. Co. Tuscaloosa, AL	63-1	2	Tuscaloosa	308
Todd Shirley Grading, Inc. Northport, AL	63-2	2	Tuscaloosa	3,629
Unimin Corporation New Canaan, CT	63-1	9	Tuscaloosa	147,017
TOTALS		428		10,797,943
SHALE				
Boral Bricks, Inc. Columbus, GA	1-1	4	Jefferson	92,665
Boral Bricks, Inc. Columbus, GA	43-2	4	Lee	12,764
Columbus Brick Co. Columbus, MS	Bankston	1	Fayette	39,551
Henry Brick Company, Inc. Selma, AL	Brierfield	55	Bibb	14,645
Lafarge Calera, AL	Roberta	*	Shelby	1,380
Ragland Clay Products, LLC Ragland, AL	59-1	1	St. Clair	8,899
TOTALS		65		169,903

*Employees listed in other pits

**Did not report

APPENDIX A-3.—INDUSTRIAL MINERAL PRODUCERS IN ALABAMA,
FISCAL YEAR 2010

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
BAUXITE				
Cumbie, Inc. Eufaula, AL	Cumbie	4	Barbour	53,654
TOTALS		4		53,654
CHERT				
Ellis Brothers Centre, AL	Ellis Brothers	3	Cherokee	228
J. H. Payne Cedar Bluff, AL	13-Payne-1	1	Cherokee	9,814
J. Mack Whorton Trust Attalla, AL	Whorton Trust	1	Etowah	17,237
C. Bellew & M. Caldwell Attalla, AL	Bellew & Caldwell	1	St. Clair	69,853
TOTALS		6		97,131
CLAY				
Boral Bricks, Inc. Columbus, GA	Centreville	4	Bibb	18,592
Henry Brick Co. Selma, AL	27-4	6	Dallas	66,114
B. R. Franklin Brewton, AL	30-1	1	Escambia	1,551
L. Luker Atmore, AL	30-1	1	Escambia	2,411
Corbett Creek Haulers, Inc. Salem, AL	43-1	1	Lee	16,533
American Colloid Co. Letohatchee, AL	45-ACC-5	31	Lowndes	76,049
Capital Materials, LLC Montgomery, AL	3-1	4	Montgomery	389,023
Jenkins Brick Co. Montgomery, AL	Maddox	9	Montgomery	153,405
Spencer Company, LLC Marion Junction, AL	53-1	1	Perry	4,444
Boral Bricks, Inc. Columbus, GA	57-1 & 57-2	4	Russell	28,481
LaFarge Calera, AL	Roberta	*	Shelby	160,896
Super Step Development Co. Montgomery, AL	59-1	3	St. Clair	907

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
CLAY—continued				
Big River Industries, Inc. Livingston, AL	60-1	2	Sumter	310,274
Riverside Refractories, Inc. Pell City, AL	61-1	2	Talladega	31,867
Burton Industries Inc. Jasper, AL	64-1	2	Walker	39,009
Cordova Clay Company, Inc. Cordova, AL	Cordova Clay	2	Walker	13,487
TOTALS		73		1,313,046
DOLOSTONE				
Chemical Lime Co. Brierfield, AL	Brierfield	28	Bibb	1,090,723
Lafarge Calera, AL	Roberta	*	Shelby	3,740,779
Rock Products, LLC Sylacauga, AL	Rock Products	1	Talladega	4,824
TOTALS		29		4,836,325
GRANITE				
APAC-Midsouth, Inc. Birmingham, AL	Alexander City	11	Coosa	408,743
North Mont. Materials, LLC Montgomery, AL	Hard Rock Hill	12	Elmore	162,545
Vulcan Materials Co. Birmingham, AL	Notasulga	12	Lee	1,042,480
APAC-Midsouth, Inc. Birmingham, AL	Wedowee	40	Randolph	393,203
TOTALS		75		2,006,970
LIMESTONE				
Madison Materials Guntersville, AL	Summit	8	Blount	230,360
Vulcan Materials Co. Birmingham, AL	Ohatchee	8	Calhoun	339,235
Hoover, Inc. Lavergne, TN	Allsboro-636	46	Colbert	1,089,164
Rogers Group, Inc. Tuscumbia, AL	Tuscumbia	12	Colbert	401,883
Vulcan Materials Co. Birmingham, AL	Cherokee-138	18	Colbert	976,578

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE—continued				
Vulcan Materials Co. Birmingham, AL	Pride	20	Colbert	535,338
Vulcan Materials Co. Birmingham, AL	Tuscumbia	13	Colbert	326,988
Vulcan Materials Co. Birmingham, AL	Ft. Payne	9	DeKalb	277,824
Blount Springs Mat. Co., Inc. Cullman, AL	Clayton	12	Etowah	196,746
Vulcan Materials Co. Birmingham, AL	Glencoe	12	Etowah	337,698
Alabama Stone Co., Inc. Russellville, AL	Rockwood	42	Franklin	10,092
Vulcan Materials Co. Birmingham, AL	South Russellville	13	Franklin	588
Vulcan Materials Co. Birmingham, AL	Scottsboro	9	Jackson	218,038
Lafarge Agg. Southeast, Inc. Lithonia, GA	Citadel	9	Jefferson	379,053
Lafarge Agg. Southeast, Inc. Lithonia, GA	Lakeshore	9	Jefferson	278,506
Lehigh Portland Cement Co. Leeds, AL	Leeds	15	Jefferson	746,603
Vulcan Materials Co. Birmingham, AL	Bessemer-130	10	Jefferson	287,026
Vulcan Materials Co. Birmingham, AL	Dolcito-123	22	Jefferson	663,882
Wade Sand & Gravel Co. Birmingham, AL	Wade	29	Jefferson	1,045,984
Rogers Group, Inc. Tuscumbia, AL	Moulton	1	Lawrence	58,060
Martin-Marietta Mat., Inc. Auburn, AL	Auburn	13	Lee	453,592
SRM Aggregates Birmingham, AL	Opelika	17	Lee	528,063
Rogers Group, Inc. Tuscumbia, AL	Limestone	9	Limestone	300,278
Hoover, Inc. Lavergne, TN	Huntsville-638	31	Madison	787,256
Vulcan Materials Co. Birmingham, AL	Huntsville	29	Madison	968,455

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE—continued				
Cemex, Inc. Demopolis, AL	Webb	6	Marengo	319,121
Cemex, Inc. Demopolis, AL	Wynn	*	Marengo	480,723
C. A. Langford Co., Inc. Guntersville, AL	Langford	17	Marshall	362,874
Y & S Stone, Inc. Guntersville, AL	Madison Materials	9	Marshall	296,795
Blount Springs Mat. Co., Inc. Cullman, AL	Battleground	11	Morgan	370,251
Rogers Group, Inc. Tuscumbia, AL	Lacey's Spring	9	Morgan	359,245
Vulcan Materials Co. Birmingham, AL	Lacon	10	Morgan	382,187
Vulcan Materials Co. Birmingham, AL	Trinity	10	Morgan	447,260
Carmeuse Lime Saginaw, AL	Carmeuse	47	Shelby	1,475,527
Chemical Lime Co. Co. Calera, AL	O'Neal	45	Shelby	1,587,573
Cheney Lime & Cement Co. Siluria, AL	Landmark #2	9	Shelby	1,067,069
Lafarge Agg. Southeast, Inc. Lithonia, GA	Calera	10	Shelby	670,410
Lafarge Calera, AL	Roberta #1	58	Shelby	1,602,545
Blount Springs Mat. Co., Inc. Cullman, AL	Ashville	13	St. Clair	307,477
Martin-Marietta Mat., Inc. Birmingham, AL	Alabaster	6	Shelby	196,216
Martin-Marietta Mat., Inc. Maylene, AL	Maylene	14	Shelby	362,874
Vulcan Materials Co. Birmingham, AL	Calera	72	Shelby	3,519,514
Vulcan Materials Co. Birmingham, AL	Helena-118	4	Shelby	195,907
National Cement Co. of Ala. Ragland, AL	Drag Strip	12	St. Clair	791,532
McCartney Const. Co., Inc. Gadsden, AL	Speedway	23	Talladega	453,592

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE—continued				
Vulcan Materials Co. Birmingham, AL	Childersburg-121	11	Talladega	320,721
Martin-Marietta Mat., Inc. Vance, AL	Vance	15	Tuscaloosa	565,907
Vulcan Materials Co. Birmingham, AL	Tuscaloosa	13	Tuscaloosa	767,814
TOTALS		840		28,340,424
MARBLE				
Alabama Marble, Inc. Sylacauga, AL	Marsh	11	Talladega	27,216
Imerys Sylacauga Op. Sylacauga, AL	Imerys	284	Talladega	994,609
Omya, AL, Inc. Sylacauga, AL	Omya	75	Talladega	492,336
TOTALS		370		1,514,161
MICA				
JMays, Inc. Heflin, AL	JMays- Mica Division	11	Randolph	953
TOTALS		11		953
OCHER				
Alabama Pigments Co., LLC Green Pond, AL	63-1	12	Tuscaloosa	5,236
TOTALS		12		5,236
QUARTZITE				
McCartney Const. Co., Inc. Gadsden, AL	Coldwater	13	Calhoun	175,830
TOTALS		13		175,830
SAND				
Earth, Inc. Daphne, AL	5-1	2	Baldwin	20,503
Sand & Clay, Inc. Daphne, AL 36526	5-1	3	Baldwin	11,057
Woodstock Trucking Co., Inc. Woodstock, AL	7-2	2	Bibb	5,393
U.S. Silica Co., Inc. Hurtsboro, AL	9-9	6	Bullock	37,343

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND—continued				
Southern Sand & Gravel Greenville, AL	10-2	5	Butler	5,336
Lingo Sand Co., Inc. Dothan, AL	26-1	5	Dale	40,823
Mark Donnell Sand Co. Daleville, AL	26-2	4	Dale	158,757
Couch Ready Mix USA Dothan, AL	34-1	5	Geneva	186,880
A. R. Taylor Demopolis, AL	48-1	1	Marengo	40,911
Coastal Sand & Gravel, Inc. Codon, AL	Boe Road Pit	2	Mobile	27,692
Mobile Materials, LLC Mobile, AL	2-1	1	Mobile	913
Talley Contracting, Inc. Pascagoula, MS	2-1	21	Mobile	45,171
U.S. Silica Co., Inc. Hurtsboro, AL	57-19	6	Russell	61,120
Couch Ready Mix USA Dothan, AL	63-1	4	Tuscaloosa	156,943
Long's Excavation, Inc. Berry, AL	63-1	2	Tuscaloosa	1,814
M. Sellers Excav. Co., Inc. Northport, AL	63-2	2	Tuscaloosa	814
Valley Materials, Inc. Quinton, AL	64-1	3	Walker	82,716
TOTALS		74		878,439
SANDSTONE				
Madison Materials Guntersville, AL	Summit Sand Plant	9	Blount	283,804
Blount Springs Mat. Co., Inc. Cullman, AL	25-2	3	Cullman	64,954
Wilburn Quarries, LLC Bremen, AL	25-1	10	Cullman	4,879
Jackson Paving & Const., Inc. Guntersville, AL	Jackson Quarry	7	Jackson	56,977
Bunn Bros. Materials, Inc. Tuscaloosa, AL	Marion Co. Rock	13	Marion	191,787
Bunn Bros. Materials, Inc. Tuscaloosa, AL	63-4 & 63-5	10	Tuscaloosa	439,458
TOTALS		52		1,041,585

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY				
A & B Properties, LLC Spanish Fort, AL	Marlow	1	Baldwin	12,205
Baldwin County Const., Inc. Summerdale, AL	Baldwin County Construction	4	Baldwin	6,622
Baldwin Mining Co., Inc. Foley, AL	5-1	6	Baldwin	19,695
Bass Properties, Inc. Stapleton, AL	5-1	1	Baldwin	1,660
C. L. Danne Fairhope, AL	5-1	1	Baldwin	4,697
B. Darby Loxley, AL	5- 1	1	Baldwin	14,253
G & M Properties, LLC Bay Minette, AL	5-1	1	Baldwin	12,286
Gene's Dozer Service, Inc. Lillian, AL	5-1	6	Baldwin	34,414
D. A. Jacobs Foley, AL	Jacobs	1	Baldwin	588
J. W. Joiner Bay Minette, AL	Joiner	2	Baldwin	7,830
K. K. Kirchharr Robertsdale, AL	Triple K	1	Baldwin	165,754
Quality Materials Point Clear, AL	Quality	1	Baldwin	10,019
RLF Baldwin Op., LLC Magnolia Springs, AL	Layco	4	Baldwin	187,198
Sand & Clay, Inc. Daphne, AL	5-2 & 5-5	3	Baldwin	82,286
Sonora Partners LLC Summerdale, AL	Marlow 9	1	Baldwin	21,587
Southern Excavating, LLC Fairhope, AL	5-2	1	Baldwin	4,169
Strickland's Const. Co. Foley, AL	Strickland	1	Baldwin	1,225
Temco Corp., Inc. Bay Minette, AL	All pits	7	Baldwin	1,459
T. Warriner Foley, AL	Warriner	1	Baldwin	39,670
Blount Springs Mat. Co., Inc. Cullman, AL	Sand Plant	10	Blount	64,807

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
Travis Creek Energy, LLC Trafford, AL	Trafford	5	Blount	1,621
APAC-Southeast, Inc. Dothan, AL	19-1	2	Coffee	13,608
Beckham & Watson Enterprise, AL	19-1	13	Coffee	4,536
APAC-Southeast, Inc. Dothan, AL	26-2 & 26-3	2	Dale	45,813
J & J Gravel Co., Inc. Wetumpka, AL	J & J Gravel	1	Elmore	5,432
Chase Ridge Clay Co. Geneva, AL	Chase Ridge	1	Geneva	2,268
APAC-Southeast, Inc. Dothan, AL	38-1	2	Houston	24,948
Ellenburg Const., Inc. Dothan, AL	Ellenburg	1	Houston	454
Hughes Farm, LLC Dothan, AL	Dirt Pit	1	Houston	67,160
Lewis Materials Headland, AL	Lewis	1	Houston	9,072
J & D Fill Montgomery, AL	Tysonville	2	Macon	5,472
A & S, Inc. Irvington, AL	2-1	4	Mobile	17,468
Adams & Son Const. Co., Inc. Chickasaw, AL	2-1	1	Mobile	27,216
Bay Equipment Co., Inc. Chickasaw, AL	2-1	2	Mobile	6,416
Brownlee Asphalt Paving, Inc. Eight Mile, AL	2-2	3	Mobile	53,131
C. E. Hatchett, Jr. Grand Bay, AL	Hatchett	2	Mobile	61,287
Dirt, Inc. Wilmer, AL	2-4, 2-6, & 2-7	1	Mobile	748
Esfeller Const. Co., Inc. Codan, AL	All pits	8	Mobile	262,224
Frank Turner Const. Co., Inc. Mobile, AL	Baird Coxwell Pit	1	Mobile	9,072
Grand Bay Sand Pit Codan, AL	2-1	1	Mobile	181

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
Gulf Hauling & Const., Inc. Wilmer, AL	2-1	2	Mobile	71,123
H & S Land, Inc. Mobile, AL	H&S	4	Mobile	17,123
Holden Earth Moving & Const. Vanceleave, MS	Blaine Pit	2	Mobile	29,869
Jackson Creek Sand Wilmer, AL	2-Robert Beck-1	2	Mobile	14,962
L & J Dirt, Inc. Chickasaw, AL	2-1	3	Mobile	39,916
Manning Trucking, Inc. Pascagoula, MS	All pits	4	Mobile	39,916
Midway Materials, Inc. Semmes, AL	Midway Materials	1	Mobile	66,403
Southern Land Dev., LLC Theodore, AL	2-1	1	Mobile	123,491
T & T, Inc. Mobile, AL	2-1	1	Mobile	82,586
Taylor Services, Inc. Calvert, AL	2-1	1	Mobile	104,699
Wolf Ridge Properties, LLP Mobile, AL	2-1	1	Mobile	3,629
R & R Contractors, LLC Monroeville, AL	51-1	10	Monroe	19,486
Southern Athletic Fields, Inc. Columbia, TN	52-1	3	Morgan	27,216
K W Plastics Troy, AL	55-1	3	Pike	272
National Cement Co. of Ala. Birmingham, AL	Ashville	1	St. Clair	96,684
D. Covington McIntosh, AL	65-1	1	Washington	18,144
Taylor Services, Inc. Calvert, AL	65-1	1	Washington	10,075
TOTALS		157		2,110,998
SAND & GRAVEL				
Alabama Sand and Gravel, Inc. Billingsley, AL	4-2	21	Autauga	453,592
Allstate Deatsville, LLC Prattville, AL	4-1	8	Autauga	117,270

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
Gentry Sand & Gravel, Inc. Prattville, AL	Independence	2	Autauga	28,992
Murphy Excavation, LLC Montgomery, AL	Murphy Excavation	1	Autauga	363
Red Bluff Sand & Gravel, LLC Birmingham, AL	Red Bluff	12	Autauga	325,316
Thackston Sand & Gravel, Inc. Montgomery, AL	Thackston	6	Autauga	44,445
Woodstock Trucking Co. Woodstock, AL	7-2	2	Bibb	1,956
Superior Products, Inc. Birmingham, AL	Superior	14	Chilton	393,174
Carters Contracting Svcs., Inc. Andalusia, AL	Carter Pit	41	Covington	14,706
Cosby-Carmichael, Inc. Selma, AL	27-7	4	Dallas	123,746
Selma Gravel, Inc. Montgomery, AL	27-1	7	Dallas	286,434
Alabama Gravel, LLC Millbrook, AL	Deatsville	7	Elmore	156,322
Elmore Sand & Gravel, Inc. Elmore, AL	Scott	38	Elmore	662,503
Russell Materials, LLC Alexander City, AL	29-1	1	Elmore	34,610
Campbell Sand & Gravel Co. Century, FL	Flomaton	4	Escambia	29,906
P & R, LLC Bon Secour, AL	30-1	14	Escambia	642,346
Pace Sand & Gravel Brewton, AL	Pace Sand & Gravel	5	Escambia	79,169
Southeastern S&G, LLC Century, FL	Pit #507	12	Escambia	106,133
Viking Industries, LLC Atmore, AL	30-1	5	Escambia	9,072
Vulcan Materials Co. Birmingham, AL	Atmore	8	Escambia	152,383
Allstate Coosa, LLC Gadsden, AL	31-1	11	Etowah	254,012
Turkey Creek S&G, Inc. Winfield, AL	32-1	4	Fayette	59,874

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
West Ala. Sand & Gravel, Inc. Fayette, AL	32-1	6	Fayette	122,470
Alliance Sand and Agg., LLC Decatur, AL	Plant 2	14	Franklin	725,748
Davis Sand & Gravel, Inc. Tuscaloosa, AL	36-1	4	Hale	126,100
Johnco Materials, Inc. Fayette, AL	45-1	7	Lowndes	90,718
K. Lawrence Hayneville, AL	Kelvin	1	Lowndes	11,340
Scott Callen Sand & Gravel Lowndesboro, AL	45-1	2	Lowndes	295,195
Foley Materials Co. Columbus, GA	Tysonville	2	Macon	472,993
Lambert Materials, LLC Millbrook, AL	Lambert	14	Macon	795,751
Martin-Marietta Mat., Inc. Mandeville, LA	Shorter Sand & Gravel	10	Macon	181,437
Wiregrass Const. Co., Inc. Ariton, AL	Lambert	5	Macon	795,751
Blue Ridge S & G, Inc. Winfield, AL	#1	4	Marion	38,120
J. Robison Detroit, AL	49-2	1	Marion	1,633
Hill Builders, Inc. Saraland, AL	Natural Resources	20	Mobile	12,352
S & S Construction, LLC Grand Bay, AL	S & S Const.	2	Mobile	57,974
Taylor Services, Inc. Calvert, Inc.	Taylor	1	Mobile	18,043
Excel Sand & Gravel, LLC Excel, AL	51-1	3	Monroe	34,564
Little Hawk Mining, LLC Monroeville, AL	51-1	5	Monroe	52,326
R. J. Hyatt Bay Minette, AL	Jaco	4	Monroe	124,745
O. S. Wiggins Estate Monroeville, AL	Wiggins	1	Monroe	8,573
Partin Sand & Gravel Repton, AL	Partin Sand & Gravel	1	Monroe	3,654

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
Anderson Road Materials, LLC Montgomery, AL	3-1	3	Montgomery	68,135
Couch Ready Mix USA Dothan, AL	B & R Sand & Gravel	5	Montgomery	87,997
Dubose Const. Corp. Mt. Meigs, AL	293 Pit	2	Montgomery	454
Foley Materials Co. Columbus, GA	Dozier	7	Montgomery	141,007
Odell Mining Co., Inc. Prattville, AL	CCF	2	Montgomery	40,415
Red Bluff Sand & Gravel, LLC Birmingham, AL	Waugh Plant	4	Montgomery	177,355
Red Eagle Sand & Gravel, Inc. Montgomery, AL	3-1	14	Montgomery	381,270
Spencer Company, LLC Marion Junction, AL	Moore	1	Perry	1,343
Foley Materials Co. Columbus, GA	Bickerstaff & state	9	Russell	596,381
Dillard Lands, LLC Notasulga, AL	62-1	1	Tallapoosa	3,175
Unimin Corporation New Canaan, CT	63-1	10	Tuscaloosa	122,851
TOTALS		392		9,712,610
SHALE				
Boral Bricks, Inc. Columbus, GA	1-1	4	Jefferson	84,261
Boral Bricks, Inc. Columbus, GA	43-2	4	Lee	15,329
Henry Brick Company, Inc. Selma, AL	Brierfield	57	Bibb	16,391
Lafarge Calera, AL	Roberta	*	Shelby	3,887
Ragland Clay Products, LLC Ragland, AL	59-1	25	St. Clair	15,257
TOTALS		90		149,770

*Employees listed in other pits

**Did not report

APPENDIX A-4.—INDUSTRIAL MINERAL PRODUCERS IN ALABAMA,
FISCAL YEAR 2011

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
BAUXITE				
Carbo Ceramics, Inc. Eufaula, AL	Carbo	5	Barbour	27,142
Cumbie, Inc. Eufaula, AL	Cumbie	5	Barbour	30,120
TOTALS				57,262
CHERT				
Ellis Brothers Centre, AL	Ellis Brothers	4	Cherokee	136
J. H. Payne Cedar Bluff, AL	13-Payne-1	2	Cherokee	7,348
TOTALS		6		7,484
CLAY				
Henry Brick Co. Selma, AL	27-4	56	Dallas	70,155
L. Luker Atmore, AL	30-1	2	Escambia	953
Corbett Creek Haulers, Inc. Salem, AL	43-1	1	Lee	9,798
Capital Materials, LLC Montgomery, AL	3-1	8	Montgomery	352,952
Jenkins Brick Co. Montgomery, AL	Maddox	5	Montgomery	154,448
MBT Services, LLC Theodore, AL	MBT	1	Perry	17,358
Jenkins Brick Co. Montgomery, AL	59-1	4	St. Clair	27,216
Big River Industries, Inc. Livingston, AL	60-1		Sumter	
Riverside Refractories, Inc. Pell City, AL	61-1	2	Talladega	22,198
Burton Industries Inc. Jasper, AL	64-1	4	Walker	52,617
TOTALS		127		1,220,936
DOLOSTONE				
L. Hoist North America Brierfield, AL	Brierfield	27	Bibb	1,498,505
Rock Products, LLC Sylacauga, AL	Rock Products	3	Talladega	28,888

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
DOLOSTONE--continued				
TOTALS		30		1,527,393
GRANITE				
APAC-Midsouth, Inc. Birmingham, AL	Alexander City	12	Coosa	404,832
North Mont. Materials, LLC Montgomery, AL	Hard Rock Hill	9	Elmore	4140,958
Vulcan Materials Co. Birmingham, AL	Notasulga	43	Lee	901,846
APAC-Midsouth, Inc. Birmingham, AL	Wedowee	10	Randolph	438,182
TOTALS		74		1,885,818
LIMESTONE				
Madison Materials Guntersville, AL	Summit	6	Blount	280,646
Vulcan Materials Co. Birmingham, AL	Ohatchee	15	Calhoun	293,016
Hoover, Inc. Lavergne, TN	Allsboro-636	46	Colbert	1,208,029
Rogers Group, Inc. Tuscumbia, AL	Tuscumbia	10	Colbert	544,373
Vulcan Materials Co. Birmingham, AL	Cherokee-138	22	Colbert	763,542
Vulcan Materials Co. Birmingham, AL	Pride	18	Colbert	413,796
Vulcan Materials Co. Birmingham, AL	Tuscumbia	14	Colbert	300,509
Vulcan Materials Co. Birmingham, AL	Ft. Payne	14	DeKalb	222,747
Blount Springs Mat. Co., Inc. Cullman, AL	Clayton	8	Etowah	216,859
Vulcan Materials Co. Birmingham, AL	Glencoe	10	Etowah	256,814
Alabama Stone Co., Inc. Russellville, AL	Rockwood	34	Franklin	3,309
Vulcan Materials Co. Birmingham, AL	South Russellville	14	Franklin	447,297
Vulcan Materials Co. Birmingham, AL	Scottsboro	18	Jackson	268,310
Lafarge Agg. Southeast, Inc. Lithonia, GA	Citadel	12	Jefferson	371,482

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE--continued				
Lafarge Agg. Southeast, Inc. Lithonia, GA	Lakeshore	14	Jefferson	359,846
Lehigh Portland Cement Co. Leeds, AL	Leeds	15	Jefferson	730,407
Vulcan Materials Co. Birmingham, AL	Bessemer-130	12	Jefferson	353,921
Vulcan Materials Co. Birmingham, AL	Dolcito-123	24	Jefferson	685,345
Wade Sand & Gravel Co. Birmingham, AL	Wade	25	Jefferson	997,903
Rogers Group, Inc. Tuscumbia, AL	Moulton	8	Lawrence	51,183
Martin-Marietta Mat., Inc. Auburn, AL	Auburn	15	Lee	453,592
SRM Aggregates Birmingham, AL	Opelika	12	Lee	464,347
Rogers Group, Inc. Tuscumbia, AL	Limestone	9	Limestone	269,155
Hoover, Inc. Lavergne, TN	Huntsville-638	27	Madison	629,582
Vulcan Materials Co. Birmingham, AL	Huntsville	34	Madison	1,165,029
Cemex, Inc. Demopolis, AL	Webb	6	Marengo	286,731
Cemex, Inc. Demopolis, AL	Wynn	*	Marengo	430,096
C. A. Langford Co., Inc. Guntersville, AL	Langford	17	Marshall	362,874
Y & S Stone, Inc. Guntersville, AL	Madison Materials	8	Marshall	255,264
Blount Springs Mat. Co., Inc. Cullman, AL	Battleground	10	Morgan	265,492
Rogers Group, Inc. Tuscumbia, AL	Lacey's Spring	9	Morgan	302,570
Vulcan Materials Co. Birmingham, AL	Lacon	13	Morgan	348,376
Vulcan Materials Co. Birmingham, AL	Trinity	15	Morgan	425,164
Carmeuse Lime Saginaw, AL	Carmeuse	39	Shelby	1,495,333

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE--continued				
Chemical Lime Co. Co. Calera, AL	O'Neal	43	Shelby	1,465,850
Cheney Lime & Cement Co. Siluria, AL	Landmark #2	9	Shelby	736,315
Lafarge Agg. Southeast, Inc. Lithonia, GA	Calera	11	Shelby	524,289
Lafarge Calera, AL	Roberta #1	185	Shelby	1,996,109
Blount Springs Mat. Co., Inc. Cullman, AL	Ashville	9	St. Clair	296,463
Martin-Marietta Mat., Inc. Maylene, AL	Maylene	13	Shelby	395,815
Vulcan Materials Co. Birmingham, AL	Calera	79	Shelby	3,453,250
Vulcan Materials Co. Birmingham, AL	Helena-118	9	Shelby	211,404
National Cement Co. of Ala. Ragland, AL	Blue Forks Spring	10	St. Clair	808,302
McCartney Const. Co., Inc. Gadsden, AL	Speedway	21	Talladega	476,272
Vulcan Materials Co. Birmingham, AL	Childersburg-121	12	Talladega	360,698
Martin-Marietta Mat., Inc. Vance, AL	Vance	15	Tuscaloosa	635,029
Vulcan Materials Co. Birmingham, AL	Tuscaloosa	24	Tuscaloosa	776,499
TOTALS		993		28,059,234
MARBLE				
Alabama Marble, Inc. Sylacauga, AL	Marsh	10	Talladega	31,751
Imerys Sylacauga Op. Sylacauga, AL	Imerys	269	Talladega	1,060,493
Omya, AL, Inc. Sylacauga, AL	Omya	65	Talladega	801,044
TOTALS		344		1,893,288
MICA				
Mica & Minerals Mining Montgomery, AL	Mica & Mineral	1	Coosa	23
JMays, Inc. Heflin, AL	JMays- Mica Division	11	Randolph	1,399

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
MICA—continued				
TOTALS		12		1,422
OCHER				
Alabama Pigments Co., LLC Green Pond, AL	63-1	8	Tuscaloosa	1,212
TOTALS				
QUARTZITE				
McCartney Const. Co., Inc. Gadsden, AL	Coldwater	12	Calhoun	143,335
TOTALS		12		143,335
SAND				
Earth, Inc. Daphne, AL	5-1	2	Baldwin	89,689
Sand & Clay, Inc. Daphne, AL	5-1	3	Baldwin	11,053
Woodstock Trucking Co., Inc. Woodstock, AL	7-2	2	Bibb	3,657
U.S. Silica Co., Inc. Hurtsboro, AL	9-9	6	Bullock	18,433
Southern Sand & Gravel Greenville, AL	10-2	5	Butler	4,396
Lingo Sand Co., Inc. Dothan, AL	26-1	5	Dale	40,823
Mark Donnell Sand Co. Daleville, AL	26-2	4	Dale	136,078
Couch Ready Mix USA Dothan, AL	34-1	5	Geneva	115,013
Saiia Construction, LLC Birmingham, AL	Demopolis Yacht	2	Marengo	34,477
Coastal Sand & Gravel, Inc. Codan, AL	Boe Road Pit	2	Mobile	74,109
Maeco Fabrication, Inc. Grand Bay, AL	Maeco	1	Mobile	44,394
Smith Sand, Inc. Saraland, AL	2-1	4	Mobile	16,381
Talley Contracting, Inc. Pascagoula, MS	2-1	21	Mobile	18,574
Couch Ready Mix USA Dothan, AL	63-1	4	Tuscaloosa	82,454

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND—continued				
Long's Excavation, Inc. Berry, AL	63-1	2	Tuscaloosa	1,814
M. Sellers Excavating Co., Inc. Northport, AL	63-2	2	Tuscaloosa	719
Valley Materials, Inc. Quinton, AL	64-1	2	Walker	68,091
TOTALS		72		758,444
SANDSTONE				
Madison Materials Guntersville, AL	Summit Sand Plant	9	Blount	286,698
Blount Springs Mat. Co., Inc. Cullman, AL	Drummond	3	Cullman	18,975
Jackson Paving & Const., Inc. Guntersville, AL	Jackson Quarry	9	Jackson	55,127
Bunn Bros. Materials, Inc. Tuscaloosa, AL	Marion Co. Rock	10	Marion	208,804
Bunn Bros. Materials, Inc. Tuscaloosa, AL	Tuscaloosa Quarry	8	Tuscaloosa	293,345
TOTALS		39		862,948
SAND & CLAY				
Affordable Housing, LLC Orange Beach, AL	Loxley	1	Baldwin	22,099
Baldwin County Commission Bay Minette, AL	Dial Pit	1	Baldwin	45,816
Baldwin County Const., Inc. Summerdale, AL	Baldwin	5	Baldwin	6,650
Baldwin Mining Co., Inc. Foley, AL	5-1	2	Baldwin	20,080
Bass Properties, Inc. Stapleton, AL	Styx River Pit	1	Baldwin	1,802
C. L. Danne Fairhope, AL	5-1	1	Baldwin	5,757
B. Darby Loxley, AL	5- 1	1	Baldwin	2,202
G & M Properties, LLC Bay Minette, AL	5-1	1	Baldwin	7,929
Gene's Dozer Service, Inc. Lillian, AL	5-1	3	Baldwin	29,923
D. A. Jacobs Foley, AL	Jacobs	1	Baldwin	2,141

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
J. W. Joiner Bay Minette, AL	Joiner	2	Baldwin	6,001
K. K. Kirchharr Robertsdale, AL	Triple K	1	Baldwin	126,927
Quality Materials Point Clear, AL	Quality	1	Baldwin	31,625
RLF Baldwin Op., LLC Magnolia Springs, AL	Layco	6	Baldwin	173,087
Sand & Clay, Inc. Daphne, AL	5-2 & 5-5	3	Baldwin	48,275
Sonora Partners, LLC Summerdale, AL	Marlow 9	2	Baldwin	5,774
Southern Excavating, LLC Fairhope, AL	5-2	1	Baldwin	25,719
Summit Industries, LLC Magnolia Springs, AL	Wilcox Pit	1	Baldwin	45,359
Temco Corp., Inc. Bay Minette, AL	Foley Pit	7	Baldwin	14,457
T. Warriner Foley, AL	Warriner	1	Baldwin	34,117
Blount Springs Mat. Co., Inc. Cullman, AL	Sand Pit	8	Blount	62,542
Travis Creek Energy LLC Trafford, AL	Trafford	1	Blount	11,648
APAC-Southeast, Inc. Dothan, AL	Griffin Pit	2	Coffee	907
Beckham & Watson Enterprise, AL	19-1	1	Coffee	11,074
APAC-Southeast, Inc. Dothan, AL	Logan Pit	2	Dale	454
J & J Gravel Co., Inc. Wetumpka, AL	J & J Gravel	1	Elmore	9,070
L & J Materials, LLC Wetumpka, AL	L&J	1	Elmore	19,105
Creamer Dozer Service, Inc. Brewton, AL	Creamer	11	Escambia	15,917
Chase Ridge Clay Co. Geneva, AL	Chase Ridge	1	Geneva	45
APAC-Southeast, Inc. Dothan, AL	Ward Pit	2	Houston	6,804

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
Ellenburg Const., Inc. Dothan, AL	Ellenburg	1	Houston	454
Hughes Farm, LLC Dothan, AL	Dirt Pit	1	Houston	735
J & D Fill Montgomery, AL	Tysonville	2	Macon	9,779
J. T. Smith Owens Cross Roads, AL	47-2	1	Madison	227
A & S, Inc. Irvington, AL	2-1	4	Mobile	12,800
Adams & Son Const. Co., Inc. Chickasaw, AL	2-1	1	Mobile	27,216
Bay Equipment Co., Inc. Chickasaw, AL	Bay Borrow Pit	2	Mobile	6,416
Brownlee Asphalt Paving, Inc. Eight Mile, AL	2-2	2	Mobile	51,289
C. E. Hatchett, Jr. Grand Bay, AL	Hatchett	1	Mobile	16,848
Dirt, Inc. Wilmer, AL	2-4, 2-6, & 2-7	1	Mobile	91
Esfeller Const. Co., Inc. Codan, AL	All pits	65	Mobile	316,067
Frank Turner Const. Co., Inc. Mobile, AL	Baird Coxwell Pit	1	Mobile	9,072
Gulf Hauling & Const., Inc. Wilmer, AL	2-1	2	Mobile	590
H & S Land, Inc. Mobile, AL	H&S	6	Mobile	1,134
Holden Earth Moving & Const. Vanceleave, MS	2-1	3	Mobile	128,797
Jackson Creek Sand Wilmer, AL	2-Robert Beck-1	1	Mobile	33,845
Manning Trucking, Inc. Pascagoula, MS	2-1	2	Mobile	34,478
Midway Materials, Inc. Semmes, AL	Midway Materials	1	Mobile	36,634
Southern Land Dev., LLC Theodore, AL	2-1	7	Mobile	60,875
Taylor Services, Inc. Calvert, AL	Taylor Pit 2	1	Mobile	239,355

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
R & R Contractors, LLC Monroeville, AL	51-1	10	Monroe	16,047
Southern Athletic Fields, Inc. Columbia, TN	52-1	3	Morgan	25,401
Dykes & Sons, Inc. Phenix City, AL	Dykes	6	Russell	8,777
National Cement Co. of Ala. Birmingham, AL	Ashville	1	St. Clair	86,347
D. Covington McIntosh, AL	65-1	1	Washington	3,062
TOTALS		198		1,919,641
SAND & GRAVEL				
Alabama Sand and Gravel, Inc. Billingsley, AL	4-2	26	Autauga	453,592
Alabama Sand and Gravel, Inc. Billingsley, AL	4-3	29	Autauga	362,829
Gentry Sand & Gravel, Inc. Prattville, AL	Independence	2	Autauga	15,848
Murphy Excavation, LLC Montgomery, AL	4-1 & 4-2	1	Autauga	4,536
Red Bluff Sand & Gravel, LLC Birmingham, AL	Red Bluff	10	Autauga	344,730
Thackston Sand & Gravel, Inc. Montgomery, AL	Thackston	2	Autauga	20,912
Woodstock Trucking Co. Woodstock, AL	7-2	2	Bibb	2,247
Superior Products, Inc. Birmingham, AL	Superior	14	Chilton	349,266
G. Bradford Dickinson, AL	Bradford Gravel	8	Clarke	91,581
Carters Contracting Svcs., Inc. Andalusia, AL	Covington	1	Covington	23,404
Cosby-Carmichael, Inc. Selma, AL	27-7	4	Dallas	100,375
Selma Gravel, Inc. Montgomery, AL	27-1	8	Dallas	264,979
Alabama Gravel, LLC Millbrook, AL	Deatsville	8	Elmore	144,456
Elmore Sand & Gravel, Inc. Elmore, AL	Scott	44	Elmore	272,155

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
Campbell Sand & Gravel Co. Century, FL	Alabama Mine	3	Escambia	30,981
P & R, LLC Bon Secour, AL	30-1	21	Escambia	730,403
Pace Sand & Gravel Brewton, AL	30-1	5	Escambia	13,503
Southeastern S&G, LLC Century, FL	Pit #507	12	Escambia	95,873
Allstate Coosa, LLC Gadsden, AL	Coosa	10	Etowah	258,548
Turkey Creek S&G, Inc. Winfield, AL	32-1	4	Fayette	57,153
Alliance Sand and Agg., LLC Decatur, AL	Plant 2	14	Franklin	816,466
Davis Sand & Gravel, Inc. Tuscaloosa, AL	36-1	5	Hale	115,086
K. Lawrence Hayneville, AL	Kelvin	1	Lowndes	136
Scott Callen Sand & Gravel Lowndesboro, AL	45-1	4	Lowndes	186,419
Foley Materials Co. Columbus, GA	Tysonville	9	Macon	528,635
Martin-Marietta Mat., Inc. Mandeville, LA	Shorter Sand & Gravel	12	Macon	46,193
Wiregrass Const. Co., Inc. Ariton, AL	Lambert	5	Macon	780,428
Blue Ridge S & G, Inc. Winfield, AL	#1	4	Marion	45,370
J. Robison Detroit, AL	49-2	1	Marion	3,447
Hill Builders, Inc. Saraland, AL	Natural Resources	20	Mobile	26,362
S & S Construction, LLC Grand Bay, AL	S & S Const.	2	Mobile	1,698
Taylor Services, Inc. Calvert, AL	Taylor	1	Mobile	176,004
Little Hawk Mining, LLC Monroeville, AL	51-1	5	Monroe	45,178
O. S. Wiggins Estate Monroeville, AL	Wiggins	1	Monroe	1,429

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
Partin Sand & Gravel Repton, AL	Partin Sand & Gravel	2	Monroe	13,657
Southeastern S&G, LLC Century, FL	Pit #509	*	Monroe	123,938
Anderson Road Materials, LLC Montgomery, AL	3-1	1	Montgomery	27,989
Capitol Materials, LLC Montgomery, AL	Waugh Pit	8	Montgomery	173,436
Couch Ready Mix USA Dothan, AL	B & R Sand & Gravel	7	Montgomery	132,177
Dubose Const. Corp. Mt. Meigs, AL	293 Pit	2	Montgomery	454
Foley Materials Co. Columbus, GA	Dozier	1	Montgomery	44,129
Red Eagle Sand & Gravel, Inc. Montgomery, AL	3-1	13	Montgomery	594,600
Foley Materials Co. Columbus, GA	Bickerstaff & state Docks	8	Russell	623,950
Unimin Corporation New Canaan, CT	63-1	10	Tuscaloosa	93,944
TOTALS		350		8,238,497
SHALE				
Boral Bricks, Inc. Columbus, GA	1-1	4	Jefferson	97,668
Boral Bricks, Inc. Columbus, GA	Hearn Mine	4	Lee	8,332
Ragland Clay Products, LLC Ragland, AL	59-1	33	St. Clair	15,381
TOTALS		41		121,380

*Employees listed in other pits

**Did not report

APPENDIX A-5.—INDUSTRIAL MINERAL PRODUCERS IN ALABAMA,
FISCAL YEAR 2012

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
BAUXITE				
Carbo Ceramics, Inc. Eufaula, AL	Carbo	5	Barbour	43,731
Cumbie, Inc. Eufaula, AL	Cumbie	5	Barbour	44,642
Eufaula Pulpwood Co., Inc. Eufaula, AL	Eufaula Pulpwood	4	Barbour	27,885
TOTALS		14		116,258
CHERT				
Ellis Brothers Centre, AL	Ellis Brothers	4	Cherokee	240
J. H. Payne Cedar Bluff, AL	Culpepper	1	Cherokee	19,758
TOTALS		5		19,999
CLAY				
Boral Bricks, Inc. Columbus, GA	Centreville	4	Bibb	22,007
Southern Sand & Gravel Greenville, AL	10-1	5	Butler	3,704
Henry Brick Co. Selma, AL	27-4	56	Dallas	80,649
L. Luker Atmore, AL	30-1	1	Escambia	1,043
Corbett Creek Haulers, Inc. Salem, AL	43-1	1	Lee	2,933
Capital Materials, LLC Montgomery, AL	3-1	8	Montgomery	126,298
Jenkins Brick Co. Montgomery, AL	Maddox	52	Montgomery	127,890
Boral Bricks, Inc. Columbus, GA	Uchee Mine	4	Russell	21,766
Jenkins Brick Co. Montgomery, AL	59-1		St. Clair	
Super Step Development Co. Montgomery, AL	59-1	3	St. Clair	99,790
Big River Industries, Inc. Livingston, AL	60-1	2	Sumter	355,567
TOTALS		201		953,321

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
DOLOSTONE				
L. Hoist North America Brierfield, AL	Brierfield	28	Bibb	1,453,976
TOTALS		28		1,453,976
GRANITE				
APAC-Midsouth, Inc. Birmingham, AL	Alexander City	11	Coosa	477,780
North Mont. Materials, LLC Montgomery, AL	Hard Rock Hill	9	Elmore	135,610
Vulcan Materials Co. Birmingham, AL	Notasulga	25	Lee	1,120,106
APAC-Midsouth, Inc. Birmingham, AL	Wedowee	9	Randolph	523,479
TOTALS		54		1,249,092
LIMESTONE				
Madison Materials Guntersville, AL	Summit	9	Blount	332,133
Vulcan Materials Co. Birmingham, AL	Ohatchee	6	Calhoun	241,319
Hoover, Inc. Lavergne, TN	Allsboro-636	42	Colbert	876,717
Rogers Group, Inc. Tuscumbia, AL	Tuscumbia	9	Colbert	422,729
Vulcan Materials Co. Birmingham, AL	Cherokee-138	19	Colbert	926,390
Vulcan Materials Co. Birmingham, AL	Pride	8	Colbert	349,900
Vulcan Materials Co. Birmingham, AL	Tuscumbia	10	Colbert	268,744
Vulcan Materials Co. Birmingham, AL	Ft. Payne	6	DeKalb	226,153
Blount Springs Mat. Co., Inc. Cullman, AL	Clayton	14	Etowah	260,333
Vulcan Materials Co. Birmingham, AL	Glencoe	10	Etowah	291,629
Alabama Stone Co., Inc. Russellville, AL	Rockwood	45	Franklin	2,860
Vulcan Materials Co. Birmingham, AL	South Russellville	10	Franklin	586,370
Vulcan Materials Co. Birmingham, AL	Scottsboro	6	Jackson	346,653

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE--continued				
Lehigh Portland Cement Co. Leeds, AL	Leeds	9	Jefferson	771,107
Vulcan Materials Co. Birmingham, AL	Bessemer-130	8	Jefferson	709,891
Vulcan Materials Co. Birmingham, AL	Dolcito 123	17	Jefferson	847,809
Vulcan Materials Co. Birmingham, AL	Lakeshore	10	Jefferson	382,527
Vulcan Materials Co. Birmingham, AL	North Bham.	1	Jefferson	11,145
Wade Sand & Gravel Co. Birmingham, AL	Wade	24	Jefferson	1,179,340
Rogers Group, Inc. Tuscumbia, AL	Moulton	11	Lawrence	112,816
APAC-Midsouth, Inc. Birmingham, AL	Opelika	10	Lee	592,230
Martin-Marietta Mat., Inc. Auburn, AL	Auburn	12	Lee	453,592
Rogers Group, Inc. Tuscumbia, AL	Limestone	11	Limestone	544,311
Hoover, Inc. Lavergne, TN	Huntsville-638	23	Madison	755,463
Vulcan Materials Co. Birmingham, AL	Huntsville	20	Madison	1,098,202
Cemex, Inc. Demopolis, AL	Webb	7	Marengo	259,348
Cemex, Inc. Demopolis, AL	Wynn	*	Marengo	389,021
C. A. Langford Co., Inc. Guntersville, AL	Langford	8	Marshall	297,465
Y & S Stone, Inc. Guntersville, AL	Madison Materials	7	Marshall	128,994
Blount Springs Mat. Co., Inc. Cullman, AL	Battleground	10	Morgan	290,305
Rogers Group, Inc. Tuscumbia, AL	Lacey's Spring	11	Morgan	419,114
Vulcan Materials Co. Birmingham, AL	Lacon	9	Morgan	345,729
Vulcan Materials Co. Birmingham, AL	Trinity	8	Morgan	437,058

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE--continued				
Carmeuse Lime Saginaw, AL	Carmeuse	14	Shelby	3,628,739
Chemical Lime Co. Co. Calera, AL	O'Neal	40	Shelby	1,632,933
Martin-Marietta Mat., Inc. Maylene, AL	Maylene	13	Shelby	362,874
Vulcan Materials Co. Birmingham, AL	Calera	55	Shelby	2,755,034
Vulcan Materials Co. Birmingham, AL	Helena-118	6	Shelby	188,930
Vulcan Materials Co. Birmingham, AL	Roberta	1	Shelby	25,268
Blount Springs Mat. Co., Inc. Cullman, AL	Ashville	10	St. Clair	291,610
McCartney Const. Co., Inc. Gadsden, AL	Speedway	21	Talladega	453,592
Vulcan Materials Co. Birmingham, AL	Childersburg 121	8	Talladega	245,812
Martin-Marietta Mat., Inc. Vance, AL	Vance	19	Tuscaloosa	680,187
Vulcan Materials Co. Birmingham, AL	Tuscaloosa	14	Tuscaloosa	1,198,528
TOTALS		611		26,620,904
MARBLE				
Alabama Marble, Inc. Sylacauga, AL	Marsh	5	Talladega	24,494
Omya, AL, Inc. Sylacauga, AL	Omya	70	Talladega	735,795
TOTALS		75		760,289
MICA				
JMays, Inc. Heflin, AL	JMays-Mica Division	6	Randolph	786
TOTALS		6		786
OCHER				
Alabama Pigments Co., LLC Green Pond, AL	63-1	16	Tuscaloosa	4,099
TOTALS		16		4,099

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
QUARTZITE				
McCartney Const. Co., Inc. Gadsden, AL	Coldwater	9	Calhoun	149,942
TOTALS		9		149,942
SAND				
Sand & Clay, Inc. Daphne, AL 36526	5-1	3	Baldwin	12,471
Woodstock Trucking Co., Inc. Woodstock, AL	7-2	2	Bibb	1,989
U.S. Silica Co., Inc. Hurtsboro, AL	9-9	7	Bullock	90,200
Southern Sand & Gravel Greenville, AL	10-2	5	Butler	3,330
Lingo Sand Co., Inc. Dothan, AL	26-1	5	Dale	40,823
Mark Donnell Sand Co. Daleville, AL	26-2	4	Dale	6,089
Couch Ready Mix USA Dothan, AL	34-1	3	Geneva	149,726
Saiia Construction, LLC Birmingham, AL	Demopolis Yacht	2	Marengo	34,135
Coastal Sand & Gravel, Inc. Codan, AL	Boe Road Pit	2	Mobile	46,072
Maeco Fabrication, Inc. Grand Bay, AL	Maeco	20	Mobile	27,234
Talley Contracting, Inc. Pascagoula, MS	2-1	25	Mobile	13,613
Jarvis Trucking, Inc. Northport, AL	63-1	1	Tuscaloosa	3,782
Long's Excavation, Inc. Berry, AL	63-1	2	Tuscaloosa	1,814
M. Sellers Excav. Co., Inc. Northport, AL	63-2	2	Tuscaloosa	435
Valley Materials, Inc. Quinton, AL	64-1	2	Walker	89,961
TOTALS		85		521,677
SANDSTONE				
Blount Springs Mat. Co., Inc. Cullman, AL	Drummond	3	Cullman	1,304
Jackson Paving & Const., Inc. Guntersville, AL	Jackson Quarry	7	Jackson	50,850

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SANDSTONE—continued				
Bunn Bros. Materials, Inc. Tuscaloosa, AL	Marion Co. Rock	12	Marion	152,246
TOTALS		22		204,400
SAND & CLAY				
Affordable Housing, LLC Orange Beach, AL	Loxley	1	Baldwin	15,454
Baldwin Mining Co., Inc. Foley, AL	5-1	2	Baldwin	8,465
Bass Properties, Inc. Stapleton, AL	Styx River Pit	1	Baldwin	4,920
B. Darby Loxley, AL	5- 1	1	Baldwin	11,036
D & D Dirt & Excavating, LLC Daphne, AL	5-1	1	Baldwin	56,780
D. A. Jacobs Foley, AL	Jacobs	1	Baldwin	825
Heaton Brothers Const. Co. Pensacola, FL	Lillian	20	Baldwin	6,755
Highway 87 Dirt Elberta, AL	Dirt Pit	1	Baldwin	2,092
K. K. Kirchharr Robertsdale, AL	Triple K	1	Baldwin	193,830
Quality Materials Point Clear, AL	Quality	1	Baldwin	20,908
Sand & Clay, Inc. Daphne, AL	5-2 & 5-5	2	Baldwin	95,612
Sonora Partners LLC Summerdale, AL	Marlow 9	2	Baldwin	18,496
T. Warriner Foley, AL	Warriner	1	Baldwin	15,974
Blount Springs Mat. Co., Inc. Cullman, AL	Sand Pit	10	Blount	67,750
Beckham & Watson Enterprise, AL	19-1	17	Coffee	15,724
J & J Gravel Co., Inc. Wetumpka, AL	J & J Gravel	1	Elmore	10,702
L & J Materials, LLC Wetumpka, AL	L&J	1	Elmore	27,856
Hughes Farm, LLC Dothan, AL	Dirt Pit	2	Houston	30,789

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
J & D Fill Montgomery, AL	Tysonville	2	Macon	1,990
J. T. Smith Owens Cross Roads, AL	47-2	1	Madison	921
A & S, Inc. Irvington, AL	2-1	4	Mobile	7,668
Adams & Son Const. Co., Inc. Chickasaw, AL	2-1	1	Mobile	27,055
Bay Equipment Co., Inc. Chickasaw, AL	Bay Borrow Pit	2	Mobile	6,378
Brownlee Asphalt Paving, Inc. Eight Mile, AL	2-2	2	Mobile	16,598
Esfeller Const. Co., Inc. Codon, AL	2-2	2	Mobile	169,742
Esfeller Const. Co., Inc. Codon, AL	2-3	1	Mobile	50,799
Gulf Hauling & Const., Inc. Wilmer, AL	2-1	2	Mobile	1,759
H & S Land, Inc. Mobile, AL	H&S	5	Mobile	1,948
Holden Earth Moving & Const. Vanceleave, MS	2-1	3	Mobile	1,500
Jackson Creek Sand Wilmer, AL	2-Robert Beck-1	1	Mobile	15,689
Manning Trucking, Inc. Pascagoula, MS	2-1	2	Mobile	14,661
Midway Materials, Inc. Semmes, AL	Midway Materials	1	Mobile	15,830
Pit Development Corp. Mobile, AL	2-1	1	Mobile	5,711
S.J. & L Inc. Mobile, AL	2-1	1	Mobile	22,068
TOTALS		103		1,035,243
SAND & GRAVEL				
Alabama Sand and Gravel, Inc. Billingsley, AL	4-2	40	Autauga	768,998
C. T. Thackston S & G, Inc. Montgomery, AL	4-1	6	Autauga	10,505
Murphy Excavation, LLC Montgomery, AL	4-1 & 4-2	1	Autauga	2,268

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
Woodstock Trucking Co. Woodstock, AL	7-2	2	Bibb	1,313
Superior Products, Inc. Birmingham, AL	14-1	14	Chilton	379,203
Fuller Gravel Company, Inc. Whatley, AL	16-2	2	Clarke	363
J.O. Griffin Contracting, Inc. Jackson, AL	16-1	1	Clarke	5,625
Cosby-Carmichael, Inc. Selma, AL	27-7	4	Dallas	90,959
Selma Gravel, Inc. Montgomery, AL	27-1	8	Dallas	226,158
Alabama Gravel, LLC Millbrook, AL	29-1	9	Elmore	117,612
EEDA, LTD. Montgomery, AL	29-1	1	Elmore	3,770
Elmore Sand & Gravel, Inc. Elmore, AL	29-1	30	Elmore	272,155
Russell Materials, LLC Alexander City, AL	29-1	1	Elmore	56,919
Campbell Sand & Gravel Co. Century, FL	30-8	19	Escambia	14,163
P & R, LLC Bon Secour, AL	30-1	20	Escambia	709,987
Allstate Coosa, LLC Gadsden, AL	Coosa	12	Etowah	246,119
Turkey Creek S&G, Inc. Winfield, AL	32-1	3	Fayette	54,250
Alliance Sand and Agg., LLC Decatur, AL	Plant 2	14	Franklin	816,466
Johnco Materials, Inc. Fayette, AL	45-1	9	Lowndes	81,737
K. Lawrence Hayneville, AL	45-1	1	Lowndes	907
Scott Callen Sand & Gravel Lowndesboro, AL	45-1	3	Lowndes	200,621
Foley Materials Company Columbus, GA	Tysonville	12	Macon	483,734
J. Robison Detroit, AL	49-1	2	Marion	1,905

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
Hill Builders, Inc. Saraland, AL	Natural Resources	19	Mobile	34,028
Taylor Services, Inc. Calvert, AL	2-1	1	Mobile	9,778
Little Hawk Mining, LLC Monroeville, AL	51-1	3	Monroe	44,778
Randall Jason Hyatt Bay Minette, AL	Jaco	4	Monroe	100,731
Capitol Materials, LLC Montgomery, AL	Waugh Pit	8	Montgomery	242,706
Couch Ready Mix USA Dothan, AL	3-1	6	Montgomery	186,262
Red Bluff Sand & Gravel, LLC Birmingham, AL	Red Bluff	11	Montgomery	331,122
Red Eagle Sand & Gravel, Inc. Montgomery, AL	3-1	14	Montgomery	592,761
Burns Dirt Const. Inc. Columbus, MS	54-1	48	Pickens	24,189
Foley Materials Company Columbus, GA	Bickerstaff & State Docks	6	Russell	406,663
Dillard Lands, LLC Notasulga, AL	62-1	1	Tallapoosa	267
Unimin Corporation New Canaan, CT	Crabtree #1	10	Tuscaloosa	93,247
TOTALS		345		6,832,080
SHALE				
Boral Bricks, Inc. Columbus, GA	1-1	4	Jefferson	97,668
Boral Bricks, Inc. Columbus, GA	Hearn Mine	4	Lee	8,332
TOTALS		8		117,756

*Employees listed in other pits

**Did not report

APPENDIX A-6.—INDUSTRIAL MINERAL PRODUCERS IN ALABAMA,
FISCAL YEAR 2013

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
BAUXITE				
Carbo Ceramics, Inc. Eufaula, AL	Carbo	5	Barbour	15,946
Cumbie, Inc. Eufaula, AL	Cumbie	7	Barbour	65,933
Eufaula Pulpwood Co., Inc. Eufaula, AL	Eufaula Pulpwood	4	Barbour	40,823
TOTALS		16		122,702
CHERT				
Ellis Brothers Centre, AL	Ellis Brothers	5	Cherokee	227
J. H. Payne Cedar Bluff, AL	Culpepper	1	Cherokee	9,814
C. Bellew Attalla, AL	Bellew/Caldwell	1	St. Clair	4,536
TOTALS				14,577
CLAY				
Boral Bricks, Inc. Columbus, GA	7-1	4	Bibb	10,039
L. Luker Atmore, AL	30-1	1	Escambia	91
Columbus Brick Co. Columbus, MS	Bankston	1	Fayette	91,620
Chase Ridge Clay Co. Geneva, AL	#1	1	Geneva	1,207
Hughes Farm, LLC Dothan, AL	38-1	1	Houston	25,565
Corbett Creek Haulers, Inc. Salem, AL	43-1	1	Lee	3,765
American Colloid Co. Letohatchee, AL	Sandy Ridge	30	Lowndes	67,155
Capital Materials, LLC Montgomery, AL	3-1	7	Montgomery	326,094
Jenkins Brick Co. Montgomery, AL	Maddox	4	Montgomery	90,764
MWB, LLC Birmingham, AL	53-1	1	Perry	22,182
Columbus Brick Co. Columbus, MS	Gordo Pit	1	Pickens	95,625

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
CLAY—continued				
Boral Bricks, Inc. Columbus, GA	57-1 & 57-2	5	Russell	37,124
Argos Cement, LLC Calera, AL	Argos	35	Shelby	171,970
Jenkins Brick Co. Montgomery, AL	59-1	2	St. Clair	99,790
Burton Industries Inc. Jasper, AL	Hay Valley	4	Sumter	89,442
TOTALS		98		1,122,433
DOLOSTONE				
Chemical Lime Co. Brierfield, AL	Dolomite	27	Bibb	3,119,298
Argos Cement, LLC Calera, AL	Argos	35	Shelby	2,822,064
TOTALS		62		5,941,362
GRANITE				
APAC-Midsouth, Inc. Birmingham, AL	Alexander City	11	Coosa	351,217
North Mont. Materials, LLC Montgomery, AL	Hard Rock Hill	9	Elmore	247,060
Vulcan Materials Co. Birmingham, AL	Notasulga	30	Lee	1,174,873
APAC-Midsouth, Inc. Birmingham, AL	Wedowee	10	Randolph	454,357
TOTALS		60		2,227,508
LIMESTONE				
Madison Materials Guntersville, AL	Summit	8	Blount	159,297
Vulcan Materials Co. Birmingham, AL	Ohatchee	13	Calhoun	253,622
Hoover, Inc. Lavergne, TN	Allsboro-636	40	Colbert	960,143
Rogers Group, Inc. Tuscumbia, AL	Tuscumbia	12	Colbert	533,878
Vulcan Materials Co. Birmingham, AL	Cherokee-138	18	Colbert	529,990
Vulcan Materials Co. Birmingham, AL	Pride	15	Colbert	247,848

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE--continued				
Vulcan Materials Co. Birmingham, AL	Tuscumbia	14	Colbert	337,350
Vulcan Materials Co. Birmingham, AL	Ft. Payne	10	DeKalb	253,154
Blount Springs Mat. Co., Inc. Cullman, AL	Clayton	10	Etowah	204,329
Vulcan Materials Co. Birmingham, AL	Glencoe	9	Etowah	203,306
Alabama Stone Co., Inc. Russellville, AL	Rockwood	38	Franklin	3,543
Vulcan Materials Co. Birmingham, AL	South Russellville	13	Franklin	580,532
Vulcan Materials Co. Birmingham, AL	Scottsboro	10	Jackson	222,144
Lafarge Agg. Southeast Inc. Birmingham, AL	Lakeshore	11	Jefferson	257,679
Lehigh Portland Cement Co. Leeds, AL	Leeds	9	Jefferson	771,107
Vulcan Materials Co. Birmingham, AL	Bessemer-130	11	Jefferson	174,634
Vulcan Materials Co. Birmingham, AL	Dolcito-123	25	Jefferson	1,079,397
Vulcan Materials Co. Birmingham, AL	North Birmingham	1	Jefferson	29,077
Vulcan Materials Co. Birmingham, AL	Lakeshore	12	Jefferson	244,039
Wade Sand & Gravel Co. Birmingham, AL	Wade	24	Jefferson	1,209,034
Rogers Group, Inc. Tuscumbia, AL	Moulton	10	Lawrence	100,698
APAC-Midsouth Inc. Birmingham, AL	Opelika	13	Lee	519,485
Martin-Marietta Mat., Inc. Auburn, AL	Auburn	**	Lee	**
Rogers Group, Inc. Tuscumbia, AL	Limestone	12	Limestone	746,613
Hoover, Inc. Lavergne, TN	Huntsville-638	22	Madison	708,867
Vulcan Materials Co. Birmingham, AL	Huntsville	28	Madison	1,281,878

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE--continued				
Vulcan Materials Co. Birmingham, AL	Gurley	3	Madison	9,564
Cemex, Inc. Demopolis, AL	Webb	7	Marengo	315,240
Cemex, Inc. Demopolis, AL	Wynn	*	Marengo	315,240
C. A. Langford Co., Inc. Guntersville, AL	Langford	15	Marshall	253,224
Madison Materials Guntersville, AL	Madison	6	Marshall	126,452
Blount Springs Mat. Co., Inc. Cullman, AL	Battleground	9	Morgan	337,649
Rogers Group, Inc. Tuscumbia, AL	Lacey's Spring	10	Morgan	449,056
Vulcan Materials Co. Birmingham, AL	Lacon	13	Morgan	268,072
Vulcan Materials Co. Birmingham, AL	Trinity	13	Morgan	353,216
Argos Cement LLC Calera, AL	Robert	35	Shelby	2,098,626
Carmeuse Lime Saginaw, AL	Carmeuse	15	Shelby	3,810,176
L. Hoist North America Calera, AL	O'Neal	**	Shelby	**
Martin-Marietta Mat., Inc. Maylene, AL	Maylene	15	Shelby	317,515
Vulcan Materials Co. Birmingham, AL	Helena-118	8	Shelby	196,904
Vulcan Materials Co. Birmingham, AL	Calera	55	Shelby	2,761,787
Vulcan Materials Co. Birmingham, AL	Roberta	1	Shelby	10,742
Blount Springs Mat. Co., Inc. Cullman, AL	Ashville	11	St. Clair	266,327
McCartney Const. Co., Inc. Gadsden, AL	Speedway	23	Talladega	453,592
Vulcan Materials Co. Birmingham, AL	Childersburg-121	11	Talladega	202,752
Martin-Marietta Mat., Inc. Vance, AL	Vance	15	Tuscaloosa	714,623

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
LIMESTONE--continued				
Vulcan Materials Co. Birmingham, AL	Tuscaloosa	31	Tuscaloosa	1,190,083
TOTALS		684		26,062,484
SAND				
Gene's Dozer Service, Inc. Lillian, AL	5-1	3	Baldwin	7,862
RLF Baldwin Op., LLC Magnolia Springs, AL	5-1 & 5-2	7	Baldwin	105,301
U.S. Silica Co., Inc. Hurtsboro, AL	9-9	7	Bullock	137,048
Lingo Sand Co., Inc. Dothan, AL	26-1	8	Dale	42,456
Mark Donnell Sand Co. Daleville, AL	26-2	4	Dale	53,705
Creek Indian Enterprises Atmore, AL	Magnolia	5	Escambia	9,330
Perdido, LLC Perdido, AL	30-1	1	Escambia	7,189
Coastal Sand & Gravel, Inc. Codan, AL	Boe Road Pit	2	Mobile	22,680
Esfeller Const. Co., Inc. Codan, AL	2-4	2	Mobile	89,086
C. E. Hatchett, Jr. Grand Bay, AL	Hatchett	1	Mobile	10,160
Calvin J. Hill Saraland, AL	2-1	21	Mobile	52,046
L & J Dirt, Inc. Chickasaw, AL	2-2	3	Mobile	19,861
Lynn Nolen Const. Inc. Grand Bay, AL	2-2	4	Mobile	22,680
Maeco Fabrication, Inc. Grand Bay, AL	Maeco	1	Mobile	131,114
Dykes & Son Inc. Phenix City, AL	57-1	6	Russell	7,167
J. Goza Bessemer, AL	Goza Trucking	1	Tuscaloosa	4,717
Long's Excavation, Inc. Berry, AL	63-1	2	Tuscaloosa	1,814
M. Sellers Excav. Co., Inc. Northport, AL	63-2	7	Tuscaloosa	91

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND—continued				
W. F. Rogers, III Ralph, AL	63-1	1	Tuscaloosa	22,680
Valley Materials, Inc. Quinton, AL	64-1	2	Walker	99,790
TOTALS		79		846,776
SANDSTONE				
Blount Springs Mat. Co., Inc. Cullman, AL	Drummond	3	Cullman	25,975
Jackson Paving & Const., Inc. Guntersville, AL	Jackson Quarry	9	Jackson	45,518
Bunn Bros. Materials, Inc. Tuscaloosa, AL	Marion Co. Rock	11	Marion	234,466
Bunn Bros. Materials, Inc. Tuscaloosa, AL	Tuscaloosa Quarry	16	Tuscaloosa	99,745
TOTALS		39		405,704
SAND & CLAY				
Murphy Excavation, LLC Montgomery, AL	4-1 & 4-2	2	Autauga	1,542
Atlas, Inc. Daphne, AL	5-1	1	Baldwin	75,577
Bass Properties, Inc. Stapleton, AL	Styx River Pit	1	Baldwin	8,506
B. Darby Loxley, AL	5- 1	5	Baldwin	7,669
G & M Properties Bay Minette, AL	2-1	1	Baldwin	1,437
J & M Materials, LLC Bay Minette, AL	5-1	1	Baldwin	554
J. W. Joiner Bay Minette, AL	5-1	2	Baldwin	4,723
K. K. Kirchharr Robertsdale, AL	Daphne Pit	1	Baldwin	115,622
K. K. Kirchharr Robertsdale, AL	Foley Pit	1	Baldwin	52,961
Quality Materials Point Clear, AL	Quality	1	Baldwin	25,134
Richard Rider, LLC Robertsdale, AL	5-1	1	Baldwin	25,106
S. Styron Foley, AL	5-1	1	Baldwin	816

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
Sand & Clay, Inc. Daphne, AL	5-5	4	Baldwin	149,452
Sonora Partners, LLC Summerdale, AL	Marlow 9	1	Baldwin	25,563
T. Warriner Foley, AL	Warriner	1	Baldwin	7,032
Blount Springs Mat. Co., Inc. Cullman, AL	Sand Pit	9	Blount	59,831
Beckham & Watson Enterprise, AL	19-1	17	Coffee	26,774
J & J Gravel Company, Inc. Wetumpka, AL	J & J Gravel	1	Elmore	11,335
Ellenburg Const. Co. Dothan, AL	38-2	1	Houston	454
J. T. Smith Owens Cross Roads, AL	47-2	2	Madison	544
Willis Excav. & Land. LLC Gallion, AL	48-3	2	Marengo	4,015
A & S Inc. Irvington, AL	2-1	4	Mobile	10,545
Adams & Son Const. Co., Inc. Chickasaw, AL	2-1	1	Mobile	36,287
Brownlee Asphalt Paving, Inc. Fairhope, AL	2-2	2	Mobile	28,321
Esfeller Const. Co. Inc. Codan, AL	2-3	2	Mobile	136,078
Frank Turner Const. Co. Inc. Mobile, AL	2-1	1	Mobile	454
G & D Farms Inc. Wilmer, AL	2-1	1	Mobile	907
Gulf Hauling & Const. Inc. Wilmer, AL	2-1	2	Mobile	5,307
Holden Earth Mov. & Con. Inc. Vanceleave, MS	2-1	5	Mobile	162,487
K. K. Kirchharr Robertsdale, AL	Howells Ferry Pit	1	Mobile	30,793
Midway Materials, Inc. Semmes, AL	Midway	1	Mobile	21,201
Miller Contracting, LLC Pascagoula, MS	2-3	1	Mobile	21,811

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & CLAY—continued				
RDA Service Co. Inc. Citronelle, AL	2-1	3	Mobile	4,541
S & S Const. LLC Grand Bay, AL	2-1	1	Mobile	9,901
S. J. & L. Inc. Mobile, AL	2-1	1	Mobile	18,779
Smith Sand Co. Inc. Churchula, AL	2-1	7	Mobile	34,191
R & R Const. LLC Monroeville, AL	R & R	10	Monroe	16,240
Dubose Const. Co. LLC Mt. Meigs, AL	3-1	2	Montgomery	454
TOTALS		101		1,142,945
SAND & GRAVEL				
Alabama Sand and Gravel, Inc. Billingsley, AL	4-2	65	Autauga	997,903
C. T. Thackston S & G, Inc. Montgomery, AL	4-1	6	Autauga	13,732
Woodstock Trucking Co. Woodstock, AL	7-2	2	Bibb	3,991
Superior Products, Inc. Birmingham, AL	14-1	15	Chilton	355,890
Fuller Gravel Company, Inc. Whatley, AL	16-2	2	Clarke	1,996
J.O. Griffin Contracting, Inc. Jackson, AL	16-1	1	Clarke	45
Triangle Aggregates Jackson, AL	16-3	19	Clarke	274,174
Cosby-Carmichael, Inc. Selma, AL	27-7	4	Dallas	80,100
Selma Gravel, Inc. Montgomery, AL	27-1	10	Dallas	376,410
Alabama Gravel, LLC Millbrook, AL	29-1	2	Elmore	55,104
EEDA, LTD. Montgomery, AL	29-1	1	Elmore	1,288
Elmore Sand & Gravel, Inc. Elmore, AL	29-1	35	Elmore	531,469
Russell Materials, LLC Alexander City, AL	29-1	1	Elmore	59,049

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
P & R, LLC Bon Secour, AL	30-1	33	Escambia	766,729
South Alabama Materials Gonzalez, FL	30-11&12	5	Escambia	196,454
Allstate Coosa, LLC Gadsden, AL	Coosa	11	Etowah	253,105
Turkey Creek S&G, Inc. Winfield, AL	32-1	4	Fayette	55,520
West Ala. Sand & Gravel, Inc. Fayette, AL	32-1	4	Fayette	85,929
North Ala. Sand & Gravel LLC Decatur, AL	33-2	18	Franklin	725,748
Davis Sand & Gravel Inc. Tuscaloosa, AL	36-1	6	Hale	155,746
Scott Callen Sand & Gravel Lowndesboro, AL	45-1	2	Lowndes	149,713
Foley Materials Company Columbus, GA	Tysonville	11	Macon	591,039
APAC-Midsouth, Inc. Inc. Jackson, MS	49-1	5	Marion	185,973
J. Robison Detroit, AL	49-1	2	Marion	1,361
Little Hawk Mining, LLC Monroeville, AL	51-1	4	Monroe	50,566
Red Bluff Sand & Gravel, LLC Birmingham, AL 35208	Red Bluff	12	Montgomery	365,553
Red Eagle Sand & Gravel, Inc. Montgomery, AL	3-1	13	Montgomery	548,844
Burns Dirt Const. Inc. Columbus, MS	54-1	45	Pickens	29,215
Foley Materials Company Columbus, GA	Bickerstaff & State Docks	6	Russell	317,489
Dillard Lands, LLC Notasulga, AL	62-1	2	Tallapoosa	3,175
North Creek Development Northport, AL	63-1	1	Tuscaloosa	18,144
Unimin Corporation New Canaan, CT	Crabtree #1	9	Tuscaloosa	111,001
B. Darby Loxley, AL	65-1	5	Washington	82,856

*Employees listed in other pits

**Did not report

Name and address of operation	Quarry or pit	Number of employees	County	Production (metric tons)
SAND & GRAVEL—continued				
WPR Materials Inc. Milton, FL	Lois Lane	3	**	5,562
TOTALS		364		7,450,872
SHALE				
Boral Bricks, Inc. Columbus, GA	1-1	5	Jefferson	104,226
Boral Bricks, Inc. Columbus, GA	Hearn Mine	5	Lee	27,947
Argos Cement, LLC Calera, AL	Argos	35	Shelby	3,361
Ragland Clay Products, LLC Ragland, AL	59-1	32	St. Clair	14,515
West Ala. Forest Products Northport, AL	63-1	1	Tuscaloosa	4,944
TOTALS		78		154,993

*Employees listed in other pits

**Did not report

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